

Independent Project Analysis, Inc. is the preeminent organization for quantitative analysis of capital project effectiveness worldwide. At IPA, we identify Best Practices to drive successful project outcomes.

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## Determining if You Are Ready to Build

*Leveraging Big Data With IPA's Enhanced Construction Readiness Assessment*  
By David Gottschlich, IPA Chief Scientist

Field problems in process plant projects are increasingly common. Owner companies have tried to improve field labor productivity by adopting workforce planning and providing training to construction workers and their supervisors.

Although well-intended, these efforts to increase field productivity amount to doing too little too late. That's because the actual source of poor field productivity is rooted earlier in project execution, when engineering and construction work ordinarily overlap, and engineering runs late. Construction should not be blamed for lost hours when designs and fabrications that should have been finished remain undone or arrive in the field late.

IPA has been examining issues surrounding construction readiness for the last several years. Earlier research concluded that engineering and procurement

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## Avoiding Early Operability Problems

*IPA's Production Readiness Assessment Identifies Gaps in Planning*

By Lynn Dickey, IPA Senior Project Analyst

In an IPA operability study conducted a few years ago, plant operators identified technical or mechanical engineering and construction errors in approximately half the projects reviewed. These projects suffered 11 percent worse operability, on average, than projects in which post-startup engineering and construction problems were not identified.

A more recent 2014 study of upstream projects conducted by IPA determined that for projects that carry fabrication work offshore there is a 65 percent probability of an operability problem within first year. Those projects achieved production attainment of just 67 percent.

Despite proof supporting the importance of production readiness, owner companies have a difficult time figuring out which production readiness activities help projects transition from engineering and construction

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## IPA's Recommendations for Project Restarts



**Successful Restarts Depend on the Work Done Before Projects Are Suspended**





## Gas Plant Cost, Schedule Targeting Trails Industry Average

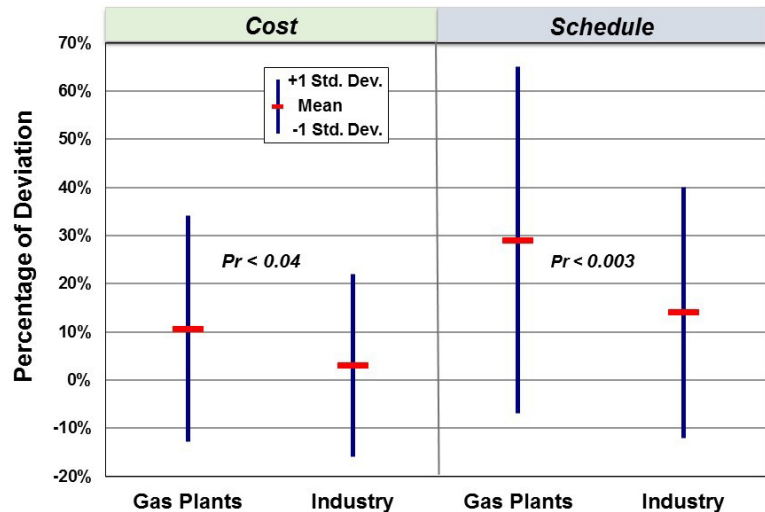
### Development Gaps, Commercial Deal Timing May Undermine Performance

Andras Marton, IPA Business Areas Manager, Hydrocarbon Processing & Transportation

The abundance of gas production in North America has resulted in an increase in the construction of natural gas processing plants. Market forecasts predict that industry will continue spending significant capital on gas plant projects over the next several years, given that gas is regarded as a clean, low carbon, relatively inexpensive fuel.

Compared to other capital investment opportunities, however, the processing industries have a harder time hitting cost and schedule targets for delivering natural gas-related plants. This is contrary to the expected learning curve gains that ordinarily accompany the development of industry-specific technologies and subsequent execution processes. As the accompanying chart shows, the cost of completed gas plant projects deviates from authorized amounts by about 11 percent, on average. That's higher, by around 3 percent, than the average cost deviation for other large [mid- and downstream] oil sector projects. Gas plant schedule predictability is substantially worse. Gas plants miss schedule targets set at authorization by nearly 30 percent, on average.

A better understanding of gas process facility portfolio planning, development processes, process standardization, and modularization approaches can improve project cost and schedule outcomes. They can also help in building a project scope that is just right for the business opportunity. Based on IPA's evaluations of gas plant projects in recent years, owner companies encounter pitfalls specific to both project and commercial development practices. In particular, the planning phase of gas processing facilities is often overlapped with upstream and commercial deal developments. When the overlap is too extensive, the required project flexibility conflicts with the project team's need to freeze the scope to progress planning. The resulting inefficiencies can have significant adverse effects on project performance. Approaches such as



**Missing Targets:** Gas plants are less predictable than other large oil sector projects.

phased capacity build-out and techniques that allow for faster and less expensive project delivery, however, could enable delayed decision making with minimal disruption to project development.

With insights into specific project practice use, project organizations have better chances of avoiding unpredictable performance. With an extensive database of gas plant facilities and decades of experience in researching project practices, IPA is able to provide owners with data to increase their project capital effectiveness through improved planning and cost and schedule target setting. IPA is also able to help clients identify the project strategy most likely to deliver business success, such as when a modular construction approach is likely to improve schedule predictability in execution.

Through a joint-industry study expected to kick-off in the second quarter of 2016, IPA will examine industry trends with respect to gas plant projects. Owner company participants have the opportunity to benchmark their individual processing plant project performance against industry peers. As a result, owners will gain a complete understanding of the gaps affecting their project performance.

**For more information, contact Andras Marton at [amarton@ipaglobal.com](mailto:amarton@ipaglobal.com).**

RESEARCH CORNER



# The Hidden Costs of Our Contracting Choices

## Inside the Industry Contracting Strategies for Capital Projects

By IPA Project Research Division Director Michael McFadden, and IPA Project Analyst Olfa Hamdi

One most-often overlooked, though seemingly obvious, element of a successful industrial project is ensuring that every part of the contracting set-up supports not only the project's unique characteristics and environment but also the unique capabilities of the involved stakeholders, from the owner to various contractors.

Many owner companies generally do not quantify the direct effects of their deals on their office costs when considering growth strategies in an increasingly turbulent market. Instead, the larger the company's project portfolio is, the more it gets absorbed in its own contracting tradition, easily neglecting the importance of closely understanding the connections between the industry contracting trends and the company's deal shaping elements such as scaling, timing, and risk allocation.

As shown, we found split form contracting<sup>1</sup> has recently become the industry's dominant contracting strategy, moving ahead of the reimbursable engineering, procurement, and construction (EPC reimbursable) form.<sup>2</sup> In addition, based on IPA's dataset of global projects, we found that industry projects are most cost effective when using split form contracting.

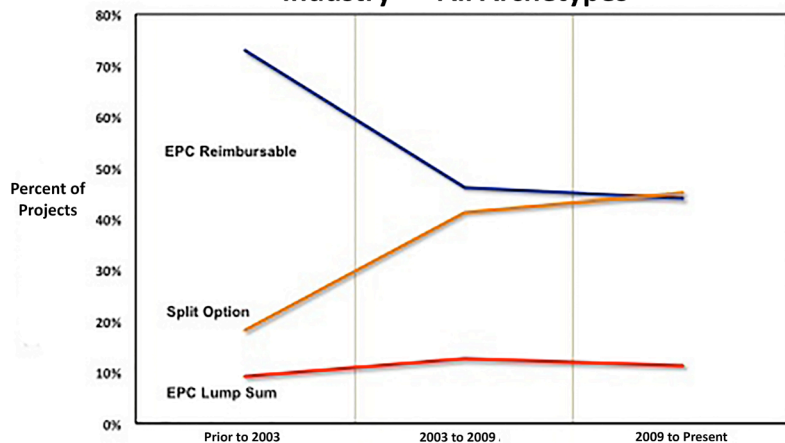
Major international oil and gas companies are still dominantly using an EPC reimbursable contracting strategy across their projects, in contrast to the industry trend. This leads one to ask many questions on how these companies will adjust to ensure the successful execution of their deals. For instance, project executives should ask themselves if they have enough resources to manage a

voluntary, or in many cases market-imposed, shift to split form contracting as the latter requires more owner hours—compared to EPC reimbursable—to manage the interface between engineering and construction contractors.

Furthermore, the complexity of such questions increases with the changes in other contracting elements, such as sourcing. For instance, over the past 10 years, the overall use of Engineering Value Centers (EVCs) has increased

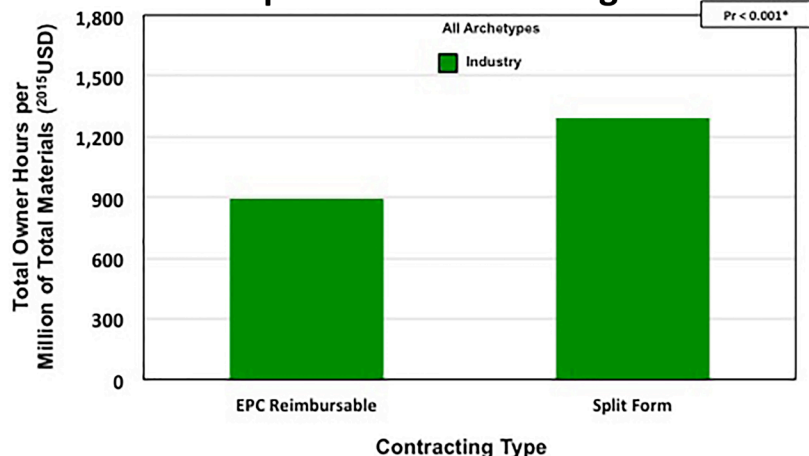
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### Use of Split Form Contracting Has Increased Industry\* – All Archetypes



\* IPA's downstream owner study database is composed of 1384 projects with an average size of \$420 Million (2015 USD). The average authorization year is 2007.

### Industry Owners Hours Are Higher With Split Form Contracting



\*Statistical model controlling for time, project scope, size, and location

<sup>1</sup> Split Option: Engineering contractor (or contractors in multi-prime situation) who performs engineering and procurement is separate from contractor(s) who perform construction management and/or construction.

<sup>2</sup> EPC Reimbursable: Engineering contractor (or contractors in multi-prime situation) performs engineering, procurement, construction management, and/or construction on a reimbursable basis.





INDUSTRY BENCHMARKING CONSORTIUM

## IBC Convenes to Advance Capital Effectiveness in the Process Industries

### *New Capital Projects Research at IBC 2016*

Owner firms in the process industries are meeting starting March 14, for IBC Week at the Landsdowne Resort in Northern Virginia. This will be the 26th annual meeting of the Industry Benchmarking Consortium. In a period of low commodity prices and uncertain markets, members are focusing on how to produce significant savings in their capital project portfolios while meeting their businesses' needs for new capacity and expenditures.

Close to 50 companies drawn from chemicals, minerals, petroleum refining, pharmaceuticals, consumer products, and the power industry are meeting to hear the latest research on how to improve project effectiveness, to compare their performance to that of the industry at large, and to discuss the best avenues to capital project improvement.

This year's research agenda includes studies on improving safety, measuring engineering progress, and exploring what makes effective project managers.

**Project Safety Culture: The Principles and Practices of the Best Performers.** IBC member companies turn in remarkably good safety performances year in and year out. Construction safety of member companies has improved dramatically

in the 26 years the IBC has been active. Recently, however, safety outcomes have started to plateau. This study explores how the best performing companies differ from the already good industry average in terms of how they approach safety on their projects.

**Engineering Progress: Are You Ready to Build?** Significant slip in detailed engineering has almost become a way of life in industrial projects. Late engineering means equipment and materials procurement are also late, which means construction start will either be delayed significantly or construction labor productivity will be hit with inadequate design and material. This study explores the reasons for engineering slip and develops the early warning indicators of slip that can then lead to timely actions to keep the project on the rails.

**Characteristics of an Effective Project Manager.** This is the first in a series of project competency studies that IPA will conduct over the next 3 to 4 years. This study explored the background, experience, management habits, and personality characteristics associated with the most effective project managers for different kinds of projects. The profile of the effective cost-driven project

looks quite different from that of the effective schedule-driven project. Large projects managers differ from small project managers. Nearly 400 project leaders participated in this ground-breaking study.

#### **Team Functionality Revisited.**

This study reported on IPA's rebuild of the Team Functionality measurement system we have employed for over 10 years now. The new system is developed from over 18,000 Team Functionality surveys completed by project team members. The new system is easier to interpret and generates clear guidance for project leaders with teams that are struggling to work together effectively.

**Key Ingredients to Good Site-Based Estimates.** This examination of site-based project estimating practices aims to increase Industry's understanding of how project managers can develop better estimate quality and improve predictability.

Presentations by industry leaders will provide IBC attendees with expert insights into the global landscape for capital projects and the capital projects market. In addition, IBC will include panel discussions, breakout sessions, and focused workshops for dissecting current industry issues. This year's conference includes a Power Forum in which members of the electric power industry are meeting to discuss improvement in power projects around the world.

The IBC companies are united in their commitment to responsible capital development and continuous improvement.

**For more information about the IBC and the studies presented at the 2016 meeting, please contact Jennifer Nicolaisen at [jnicolaisen@ipaglobal.com](mailto:jnicolaisen@ipaglobal.com).**



IPA's Project Research Division (PRD) brings a deep understanding of what drives the successful development and delivery of capital projects. Companies who turn to IPA's research services receive practical insights and actionable recommendations to strengthen capital project business decision making, governance, and project development work processes.

To learn more about the industry research services IPA provides through PRD, go to [www.ipaglobal.com/services/research](http://www.ipaglobal.com/services/research)

**Hidden Costs** – Continued from page 3

in the pursuit of lowering project costs along with a shortage of available engineers in developed countries.

Although using EVCs promises achievable benefits provided the right practices are used, our research shows it remains challenging and, therefore, requires more effort focused on the interface and “set-up,” detailed communication plans, detailed and written documentation, and work sharing discipline across the offices.

Many deals underperform because decision-makers neglect the hidden costs of the un-identified connections between a contracting strategy and the environment the strategy will be executed in, taking a one-size-fits-all approach to their deals without properly assessing the company's time trends compared to Industry from various unconventional analytical aspects.

To avoid such problems, often, a good place to start is to independently analyze the company's effectiveness using different contracting strategies in relation to the evolution of its internal project capabilities.

For more information, please contact Michael McFadden, Director, IPA Project Research Division at [mmcfadden@ipaglobal.com](mailto:mmcfadden@ipaglobal.com).

## Power Project Capital Effectiveness in Focus

### IPA Hosts a Power Forum at IBC 2016

IPA is hosting a Power Forum March 15-16, 2016, at the Lansdowne Resort in Leesburg, Virginia. The Power Forum is an opportunity to discuss common issues and exchange ideas specific to capital projects in the power sector. Across the power industry, owner companies have been dissatisfied with their capital project performance and are re-examining the way they organize project delivery and govern capital project commitments.

The Power Forum is being held in parallel with the 26th annual meeting of the Industry Benchmarking Consortium (IBC). The integration of the Power Forum and IBC allows learnings to span industries.

Several leading power companies will be attending and presenting their capital project experiences. Key elements of the 2-day agenda are described below.

- Presentations by Southern Company will share its journey of improving capital project performance
- Capital project comparisons between the power sector and other sectors will identify key improvement opportunities
- Representatives from Dow and Praxair will share their experiences at implementing capital project improvements
- Discussion of the importance of project system predictability
- Best Practices for managing a portfolio of projects
- Other presentations will discuss project organizations and staffing, the role and limitations of project assurance, and characteristics of successful project leaders

Power Forum participants will gain a detailed understanding of what companies in their industrial sector, as well as other sectors, are doing to improve capital projects. The event is expected to serve as the launching point for sustained improvement in the development of power projects for the next several years.

For further information, please contact Dean Findley at [dfindley@ipaglobal.com](mailto:dfindley@ipaglobal.com).



**Power Forum:** Participants at the 2-day gathering will examine capital project effectiveness in the power industry.



**Preparing for Project Restarts:** Documenting the decisions that lead to a project suspension and creating thorough restart and risk mitigation plans are key activities for a smooth stop/restart process.

## Restarting Capital Projects the Right Way

### *Challenges and Lessons Learned on Successfully Restarting Suspended Projects*

By Apostolos Nikolopoulos, IPA Senior Project Analyst

**C**ompanies in the process industries spend billions of dollars annually to develop and execute capital projects and maintain their capital assets. However, market volatility, driven by events such as the lasting effects of the 2008 global financial crisis and the recent plunge in oil prices, has muddied the waters with respect to investment economics. A tightening market often drives cash flow constraints and, in some instances, drives businesses to suspend capital projects during project planning and scope definition—or even during execution.

Decisions to stop capital projects with the intent to restart them when economic conditions improve are not uncommon. In fact, this project restart approach appears to have become more prominent in the aftermath of the global financial crisis. Several projects in the chemicals and refining industries that had been stopped during the crisis have been, or are, in the process of restarting. In contrast, exploration and production (E&P) companies are entering a period of capital investment turbulence. Faced with serious cash flow constraints, E&P companies are feeling pressure to suspend numerous ongoing capital investments.

In 2010, IPA facilitated a roundtable discussion among industry experts on how to stop and restart projects. Since then, IPA has evaluated projects of various types and sizes that were stopped and later restarted. IPA has captured challenges, lessons learned, and recommendations on successfully restarting suspended projects.

Here, we present some key recommendations to help businesses and capital project teams better prepare for and respond to these challenges. We begin with what ought to be done before projects are suspended.

Recommendations for restarting capital projects successfully follow.

### **Recommendations for Effective Project Suspension**

**Reach a natural stopping point.** It is easier to restart a project that was suspended immediately after the completion of a phase, such as scope development, project planning, or even detailed engineering. Suspending a project before the start of execution requires completion of all basic design deliverables, including plot plans, soil and underground analysis, site utility and infrastructure analysis, equipment specifications, issue-for-design P&IDs, and electrical drawings. It is also recommended that any required environmental assessments are completed and permitting issues are fully addressed before a project is suspended.

Suspending a project after the start of execution (but before construction starts) necessitates completion of all detailed engineering activities (construction packages) and all equipment and bulk materials procurement activities. The extra effort and associated cost to reach a natural stopping point will typically be more than counterbalanced by a timely and effective restart.

### **Document the suspended project status in detail.**

To facilitate a smooth restart, develop a final project status report that documents the status and location of deliverables. The status report should include a decision log documenting the key decisions that drove project suspension, plus lessons learned from all



stakeholders. The report should also list all activities that were not completed, as well as all activities expected to be completed just before suspending the project. For example, the report should include details on the storage of any equipment or materials that were delivered to the site during project suspension.

**Maintain team (and contractor) continuity.** Good team development and continuity from project definition through execution drives good performance for all projects. This applies especially to projects being considered for suspension and restart. Maintaining team continuity, especially for key functions like project manager, engineering leads, cost estimator, project controls, and operations, is crucial; otherwise, prior completed work is more likely to be revisited and redone by the new team members. Similarly, continuity of the contractor team facilitates timely restarts. Retaining the contractor team is likely to reduce design changes and minimize any ambiguity in accepting responsibility for any design changes.

IPA evaluations of well-defined chemical projects ranging in value between US\$20 million to \$400 million that restarted without key team member turnover were found, on average, to have competitive cost and schedule outcomes, minimal cost growth, and limited execution slip (after adjusting for idle time). In contrast, projects with similar characteristics that had team member turnover as a result of the suspension incurred major changes and had issues in execution, resulting in measurable cost growth and significant schedule slip (even after adjusting for idle time); these projects also experienced early operation issues.

**Develop a restart plan.** Prior to project suspension, the team should develop a restart plan that covers the business and project objectives, priorities, and targets. The restart plan should also include the updated cost estimate and schedule, updated execution plan, and detailed restart activities and corresponding resources. Resource availability is critical for timely restart. In addition, the plan should include provision for long-term storage and check-up on any equipment or materials already procured. The restart plan should be developed, reviewed, and approved by all stakeholders at project suspension, not merely prior to project restart. Providing a cost estimate regarding suspension activities and getting business approval at suspension (rather than before restart) strengthens alignment on the stop and restart strategy and facilitates cost control for the remainder of the project.

Projects that had detailed restart plans developed and approved at suspension (not just prior to restart) exhibited fewer issues in execution, minimal cost growth, and limited execution slip, and achieved

competitive cost and schedule outcomes, on average (after adjusting for idle time).

**Develop a risk analysis and risk mitigation plan for restart.** A risk analysis and mitigation plan should be developed that focuses on specific suspension and restart risks, in addition to other project execution risks. The team needs to be aware of and closely monitor such risks if a project is to restart successfully. Like the restart plan, the risk analysis and mitigation plan should be developed prior to project suspension.

**Recognize that stopping/restarting in construction can be a major challenge for site logistics and resources.** At the time construction is suspended, value preservation is usually lower priority than cash preservation. Thus, expectations of orderly suspension followed by effective restart of construction are typically unrealistic from a cost, schedule, and operability perspective. Common issues involve equipment and materials preservation. Construction sites have a poor record of preserving materials over long periods; material value deteriorates because of inadequate protection against corrosion, contamination, or “misplacement,” as in unrecorded “borrowing” and use by others.

Projects are able to restart quickly if procurement and materials delivery is allowed to progress and advance plans are made for an adequate laydown area or warehouse storage. Tight control of stored materials helps ensure preservation and inhibits “borrowing.” Secure storage, record keeping, and thorough inspection and testing of materials before installation can prevent delays, extensive rework, and issues in startup or early operation.

## Recommendations for Effective Project Restarts

**Reconfirm business and project objectives, priorities, targets, and success criteria.** The business and project objectives, priorities, updated targets, success criteria, and updated execution plan for restart should be reestablished based on an updated economic or market analysis after all issues that drove the suspension have been addressed. As the first step in the restart process, these elements should also be reviewed and approved by all stakeholders to confirm stakeholder alignment.

**Reconfirm the design basis and update the risk mitigation plan.** Reconfirming the design criteria and deliverables is the basis for the restart work. The team should also revisit the risk mitigation plan and update the risk register because new project

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**Restarts** – Continued from page 7

risks may have evolved during the suspension period, such as a reshaped market environment, new site requirements, and permit requirement modifications.

In summary, clearly documenting the decisions that led to the suspension and restart strategy at the end of a phase (not mid-phase) and creating thorough restart and risk mitigation plans are key activities for a smooth stop/restart process. These practices, in conjunction with strong team development, good project definition, and application of good project controls during execution (the fundamental practices that drive project performance), have been shown to drive successful restarted projects.

**For more information about this report on project suspension and restart practices, please contact Apostolos Nikolopoulos at [anikolopoulos@ipaglobal.com](mailto:anikolopoulos@ipaglobal.com)**

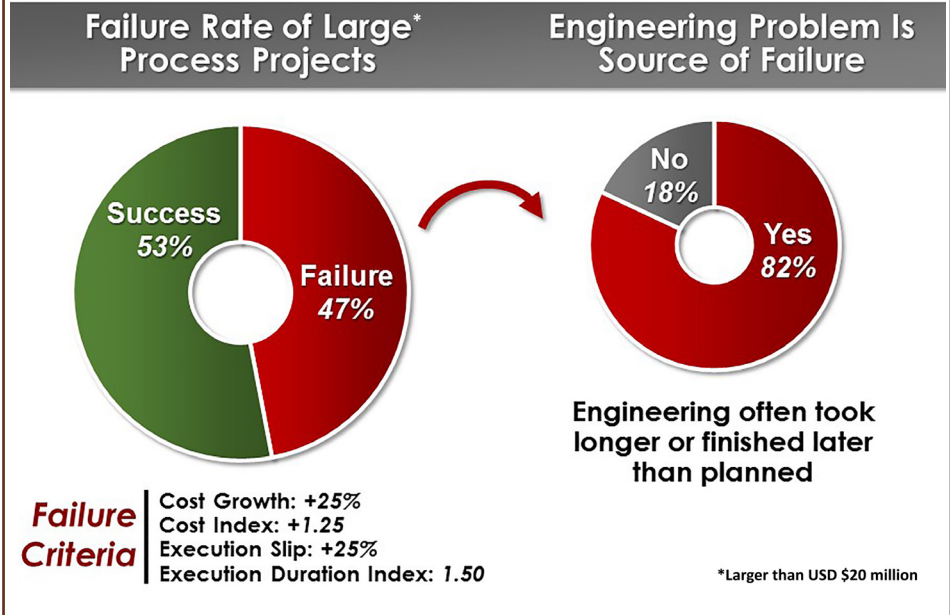
*The above article was originally published in IPA's **EPC Market Forecast Newsletter** (November 2015, Volume 9, Issue 4).*

*Since 2007, the newsletter has forecast key capital project cost trends, including engineering services, construction labor, major equipment, bulk materials, and the composite regional price for several world regions. Regions currently covered include Australia, Brazil, Canada, China, Europe, the Middle East, Singapore, South Africa, and the United States.*

*The newsletter is published quarterly.*

**Contact Dean Findley at [dfindely@ipaglobal.com](mailto:dfindely@ipaglobal.com) for additional information about this IPA subscription service.**

**Construction Readiness** – Continued from page 1



slips during execution are responsible for cost and schedule overruns that amount to failed projects—cost growth of more than 25 percent from sanction and schedule slip of more than 25 percent. By these criteria, nearly half of large projects are failures. Notably, more than 80 percent of these failed projects experienced engineering problems.

Today, new sources of engineering and construction data are available, making construction readiness evaluations more powerful. IPA began conducting Construction Readiness Assessments (CRAs), an IPA Project Evaluation System (PES®\*) product, for its clients in 2011. The CRA quickly identifies project gaps that should be closed prior to construction mobilization and provides recommendations that help client project teams focus on the most important project execution improvement opportunities.

Owners are recognizing the importance of being involved in detailed engineering as well as the field, and having more control over engineering, procurement, and

\*PES is a registered trademark of IPA

construction workflows. Recognizing the need to help owners increase capital effectiveness in execution, IPA has enhanced its CRA, teaming with Bentley Systems, Inc., to tap into the power that big data analytics can offer in determining whether a project is ready for construction to commence. IPA is now able to supplement the engineering design, procurement, and construction schedule data used for its CRAs with virtualized work packaging and up-to-date analytics available from Bentley's ConstructSim. Increased visibility into the flow of engineering and procurement information during construction is possible thanks to more robust detailed designs aided by virtualized work packaging.

The teaming of IPA and Bentley allows owners the ability to avoid lost opportunity costs by delaying the start of plant construction until engineering is complete.

**For more information about the enhanced CRA, contact IPA Chief Scientist David Gottschlich at [dgottschlich@ipaglobal.com](mailto:dgottschlich@ipaglobal.com).**



**Production Readiness** – Continued from page 1

to operations. IPA's newest product, the Production Readiness Assessment (PRA), addresses this issue.

A PRA focuses on the planning needed to start up and operate a physical asset. Based on past research findings and its proprietary capital project databases, IPA conducts PRAs to help clients determine what they need to accomplish before startup to ensure that startup and first-year operational goals are achieved.

The PRA is designed to identify and eliminate gaps in planning for an effective transition from project execution to startup and operations. The assessment reviews production readiness activities and evaluates specific practices correlated with startup duration, startup slip, and early operational performance.

The PRA considers production readiness activities such as quality assurance reviews, hiring and training, schedule development, acceptance testing, commissioning plans, team integration, vendor support, permitting, change management, procurement, and safety planning.

IPA has identified three areas of production readiness planning and control. Each of these areas is explored in detail and referenced in the report delivered to the client.

**1) People Readiness** addresses the staffing of the operations and maintenance teams, their experience and training, and the procedures developed to guide them; it also includes team and site integration. Early completion of operating manuals and the involvement of the operations representative throughout all project phases, beginning in Front-End Loading 2 (FEL 2), are among the factors correlated with better

startup outcomes.

**2) Asset Readiness** refers to planning for commissioning, startup, and transition to operations, including details such as vendor support during commissioning and change management during startup. Planning for safety once the asset is fully operational is also considered part of asset readiness. Factory acceptance testing and equipment rotation testing affect startup and early operations.

**3) Logistics and Support Systems Readiness** includes preparation for regulations on utility installation and permitting; procurement planning based on required inventory levels and spare parts; decisions on support services and retention of such services; and development of schedules in conjunction with the project execution schedule.

The recommended time for a PRA is during project execution, preferably during detailed engineering or near the start of construction. The assessment follows normal IPA methodology: team interviews typically take 1 day, and reports are developed and sent to the client 3–4 weeks after

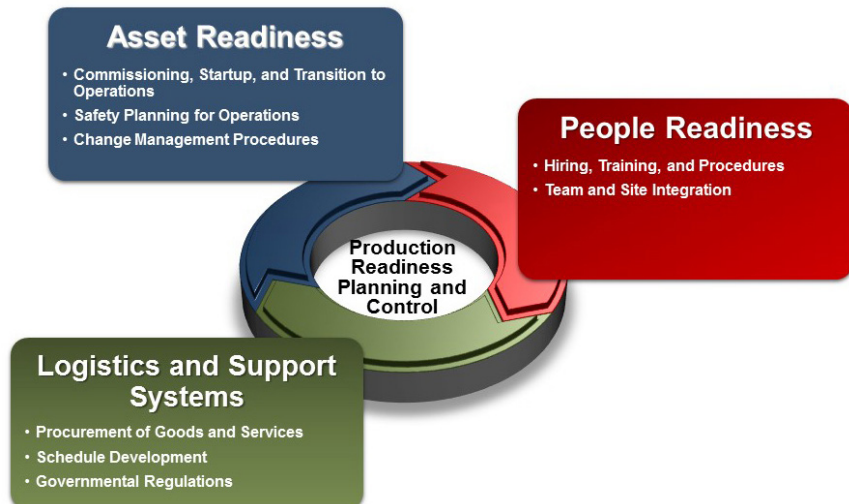
the data collection/interview.

Specifically, the reports include:

- Benchmarks for startup duration and early operational performance.
- An assessment of specific practices correlated with startup duration, startup slip, and early operational performance.
- Comparison of production readiness plans with leading industry practices.
- Measurement of progress on over 30 production readiness activities and identification of gaps.

**For further information on the PRA product, contact Lynn Dickey ([ldickey@ipaglobal.com](mailto:ldickey@ipaglobal.com)) or one of our regional points of contact:**  
**For North America, Adam Pountney ([apountney@ipaglobal.com](mailto:apountney@ipaglobal.com))**  
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**For EMEA, Maria Pinilla ([mpinilla@ipaglobal.com](mailto:mpinilla@ipaglobal.com))**  
**For Asia-Pacific, Tas Hellis ([thellis@ipaglobal.com](mailto:thellis@ipaglobal.com))**

## Production Readiness Elements





# 2016 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. 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).*

## **Megaprojects - Concepts, Strategies, and Practices for Success (24 PDU's)**

April 5-7: New Orleans, Louisiana

May 10-12: Lima, Peru

July 19-21: Brisbane, Australia

## **Project Management Best Practices (24 PDU's)**

March 22-24: Austin, Texas

April 19-21: Santiago, Chile

April 26-28: Shanghai, China

May 17-19: Houston, Texas

May 17-19: Mumbai, India

June 7-9: Buenos Aires, Argentina

July 12-14: Sao Paulo, Brazil

July 26-28: Johannesburg, South Africa

## **Establishing Effective Capital Cost and Schedule Processes (16 PDU's)**

March 22-23: Houston, Texas

May 10-11: Dubai, United Arab Emirates

## **Best Practices for Small Projects (24 PDU's)**

April 5-7: São Paulo, Brazil

April 12-14, 2016: Sydney, Australia

## **On-Demand Webinars**

- **Coping With Resource Limitations on Capital Projects**
- **An Agenda for the Lull: Coping Successfully in Volatile Times**
- **Gatekeeping: The Role and Limitations of Project Assurance**

Free  
Webinars  
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 visit the Institute's website at [www.IPAInstitute.com](http://www.IPAInstitute.com).

## Upcoming IPA Events & Presentations



**March 30**

### **SPE-GCS PF&C Series on Project Management**

*At this Society of Petroleum Engineers' Gulf Coast Section event, **Neeraj Nandurdikar, Director, IPA Oil & Gas Practice**, will discuss the actions owners must take to get ahead of the market downturn and deliver successful projects. Owners have to reduce "company standards," strengthen their use of owner-led project teams, and get EPC firms to rethink their approach to designs.*

*The event will be held at Texas A&M Mays Business School at CityCentre, Houston, Texas. For more information, visit <http://www.spegcs.org/events/3141/>*

**April 14**

### **18th International Conference and Exhibition on Liquefied Natural Gas**

*IPA Oil & Gas Practice Director **Neeraj Nandurdikar** will speak at LNG 18 in Perth, Australia. Drawing on an empirical database of thousands of projects, Nandurdikar will talk about project "information flow" and the need for our PM systems to be structured around this information flow.*

*For more information, visit [www.lng18.org/](http://www.lng18.org/).*

**June 22-23**

### **UCEC 2016 Annual Meeting**

*The **Upstream Cost Engineering Committee (UCEC)** is an approved subcommittee of the Upstream Industry Benchmarking Consortium (UIBC). The UCEC's purpose is to improve upstream project and business results by providing metrics for better cost engineering. The UCEC metrics provide asset evaluation and concept development professionals with a better understanding of costs and schedules.*

*For more information, contact **Jonathan Walker** at [jewalker@ipaglobal.com](mailto:jewalker@ipaglobal.com).*

**October 12**

### **Calgary Energy Roundtable**

*IPA COO **Elizabeth Sanborn** will deliver remarks at the 13th annual Calgary Energy Roundtable. Industry leaders at the conference will examine how companies can survive and prosper in the region's volatile market landscape and review the strategies that are being deployed to deliver successful projects.*

*For more information, visit <http://energyroundtable.net/calgary/>*



*The IPA Newsletter is published quarterly to keep industry professionals and other interested individuals informed of the latest capital projects related news, research highlights, and training opportunities.*

*If you have any questions or comments about this newsletter, please send them to [IPA-Newsletter@ipaglobal.com](mailto:IPA-Newsletter@ipaglobal.com).*





# IPA's CAPITAL PROJECT REGIONAL PUBLICATIONS

IPA's *Capital Project Regional Publications* are focused on deepening the knowledge around regional or local issues that shape how projects are developed. We seek to describe and quantify the set of circumstances that surround the development of capital projects in a particular region. This knowledge will help organizations better manage the regional constraints so that capital project performance is improved. The regions will be prioritized based on client interest. Current publications report on Western Canada and the U.S. Gulf Coast. Other regions of potential interest to clients include the Middle East, Central/North Europe, the Caspian Region, and Southeast Asia. The purpose of these publications is to improve our collective understanding of the interaction between project context and project success.

Each Regional Publication will be approximately 25 pages of text and graphics. Regional issues that will be covered regularly include the economic, social, and political environment, infrastructure and climate topics, project contextual factors, and related data such as the engineering services market (wages, productivity, availability), procurement of materials and equipment, and the construction labor market.

## HOW CAN COMPANIES PARTICIPATE?

Each publication will be available subject to the terms and conditions of the existing contract between IPA and the purchasing organization.

For more information, contact Dean Findley at +1 703-729-8300 or [dfindley@ipaglobal.com](mailto:dfindley@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.