Driving capital efficiency to fuel oil and gas projects

Capital projects and infrastructure: Energy

June 2016
Driving capital efficiency to fuel oil and gas projects

Capital projects and infrastructure: Energy

Does your team select, plan, and execute projects with capital efficiency?

Between 2006 and 2013 upstream oil and gas players spent more than $3.1 trillion in capital expenditure towards exploration and production projects alone.\(^1\) Due to this investment, and the increasing lifting costs and increase in capital productivity, there was a projected deceleration of capital velocity in 2014. For some of the more mature E&Ps, this deceleration was accompanied by a heightened focus on selectivity and capital discipline in 2015. Even those companies that were deliberate about their capital investments in 2014 and 2015—redirecting capital from gas to oil and liquids-rich plays, or maintaining activity in productive plays while shutting down operations in less productive assets with more expensive lifting costs—have doubled down on capital discipline in 2016 due to today’s “leaner for longer” environment. Industry veterans who have lived through previous oil slumps feel that the need for ruthless selectivity and capital efficiency has never been greater.

With this market volatility comes the demand for energy companies to adhere to stricter policies toward capital allocation and more frequent capital reprioritization decisions. Mega-projects, asset developments, and even drilling programs have been delayed or cancelled due to the uncertainty in today’s market. Oil and gas investors are looking for more accuracy in project estimates which typically deteriorate when cost or schedule deviate from the originally planned AFE (Authorization For Expenditure) and business case. In addition, these investors desire a higher degree of project monitoring, visibility of suppliers and 3rd party costs, and management reporting to measure capital productivity.

E&Ps are reviewing capital allocation and performance at higher frequencies, assessing strategy and accelerating or deferring projects on a monthly basis to ensure capital dollars are directed towards the highest return. This will better position those players to not only survive but thrive when oil prices and profitability return.

Highlights

- Define capital efficiency, how critical it is in today’s market, and where there are opportunities to improve.
- Identify the measures for capital efficiency and how they are implemented throughout the asset lifecycle.
- Determine how efficiently your organization allocates its capital to ensure you take advantage of opportunities to sharpen the sword and optimize return on capital employed.
- Address the shift from capital efficiency being driven by capital selectivity, not velocity.

Energy executives see the demand...

...and are driving to meet that demand.

Getting started...

It’s time to close the gap.

Energy executives see the demand...

74% of the 600+ energy leaders we surveyed see capital efficiency as a business imperative in today’s market.\(^2\)

64% acknowledge they have implemented both cost-reduction and capital-allocation efforts to utilize their capital more effectively.\(^3\)

30% of respondents across all sectors (upstream, midstream, and downstream) have attempted stronger capital project controls to drive returns on capital employed.\(^4\)

Over 70% of respondents believe their organizations’ ability to drive capital efficiency was not at a high level of maturity from a project controls (estimating, risk, cost, schedule, change and scope control) point of view.\(^5\)

The twelve elements of capital efficiency

Capital efficiency is required throughout the entire asset lifecycle from strategy through execution. Benchmarking your organization against a standard framework (see figure below) helps to determine blind spots where you can capture value and achieve the most benefit from your capital allocation strategy, selection, and project execution.

**Capital agility:** Understanding the unique dependencies between these twelve elements allows organizations to better integrate strategy with planning and execution—through measurement, feedback, and lessons learned—to better inform capital allocation.

As an example, the ability to quantify the benefits of a capital project through **value measurement** creates a more holistic basis to define how to measure value and strengthen **corporate strategy** and shareholder value.
Capital efficiency starts with corporate strategy and requires agility and foresight to pursue, abandon, or defer capital projects. This is critical to companies who are chasing margin over revenue in today’s market.

From a capital project perspective, capital efficiency requires defining a clear corporate capital investment strategy; optimizing an organization’s portfolio and projects to align with that strategy; developing internal processes, procedures, and capabilities to execute projects that align contract strategies; establishing how “value” is measured; and enabling technology with an organization’s capabilities and risk appetite.

This enhances your ability to not only deliver projects on time and on budget, but ensures you optimize your return on capital employed. Capital efficiency also requires the courage to abandon, suspend, or divest under-performing projects that no longer align with your portfolio or corporate strategy.

Which internal function owns capital efficiency?

Capital efficiency is the result of cross-competency, cross-functional collaboration. In the majority of energy companies there is no single function which “owns” capital efficiency. It is an integrated process, involving the selection of projects (or project mix) with highest value, aligning asset mix and projects with corporate strategy, delivering projects flawlessly (on time/on budget), and operating those assets at optimal efficiency. Capital efficiency permeates all business units from Strategy, Finance, Technology, HR, Legal, Capital Projects, Supply Chain, and Operations. The key to capital efficiency is dynamic capital allocation—the ability to ensure the portfolio aligns with strategy on a rolling basis. It is not achieved by simply executing projects well.

What is capital efficiency?

The measure of a company’s ability to select, deploy, and manage capital investments that maximize shareholder value.
What does capital efficiency look like?

For an organization to achieve a high level of capital efficiency, it will need to establish and implement a robust capital decision and project lifecycle framework. There are five key components to achieving this:

- Align growth portfolio with business strategy.
- Establish a formal approach to portfolio optimization, including a strong framework for evaluation and prioritization of investment alternatives.
- Identify and select investment alternatives based on strategy, values, risks, and dependency.
- Monitor performance and reevaluate the capital allocation at the portfolio or project level.
- Maintain rigor throughout investment lifecycle and measure benefits realized at all stages.

A holistic approach manages projects in a dynamic sense: they can be initiated, altered, maintained, suspended, and terminated based upon market, competitive, and internal environments. By establishing these processes, methodologies, and tools, your capital investments are more likely to hit budget, schedule, scope, and strategic targets.

From bit to boardroom

A key element of measuring capital project performance of a field, pad, well, infrastructure project, or portfolio is having sufficient granularity of data (cost, schedule, safety, quantity, quality) and integration of the tools used to capture, analyze, and report to leadership. Removing subjectivity in the chain of custody, progress, and financial reporting ensures capital allocation or redeployment decisions are informed with accurate real-time data.

Five super-majors: BP, Chevron, Exxon Mobil, Shell, and Total

Source: Form 10-Ks for each of the aforementioned super-majors
**Measuring capital efficiency**

Capital efficiency is tailored by each oil and gas organization in terms of compatibility with enterprise value, strategy and asset mix.

**Enhancing value and free cash flow (FCF)**

To be more productive, capital projects and operations must be pushed to the superior free cash flow curve shown below. The ability to influence cost reduction through continuous improvement and lessons learned depends on early intervention in the well-field lifecycle. Efficiencies that drive both cost and schedule reduction will optimize free cash flow and drive field, pad, or wellhead, profitability.

When discussing measures of capital efficiency, each sector and segment has its own methodology to quantify capital efficiency. Regardless of how capital efficiency is quantified, the underlying goal is to be ruthlessly disciplined in measuring the capital invested and the value captured from each dollar spent.

**Capital efficiency in play**

Given today’s macro-economic market conditions and the need for dynamic capital allocation in the oil and gas sector, competitive pressures are forcing management to improve productivity and efficiency to drive and sustain profits.

Capital efficiency is being deployed in the E&P space today, but mainly in highly productive assets with very little activity.

When E&Ps attempt to scale these benefits on an enterprise-wide level, integration of front- and back-office resource and cost systems becomes essential to enable bit-to-boardroom decision support. In order to accomplish capital efficiency at this enterprise-wide level, management has been exploring the use of emerging technology.

Efficiency gains have been achieved partially through enhanced oversight, decreased volume, allowing increased transparency and granularity due to less activity. Sustaining those gains will require elements of capital efficiency.

Below is a summary of some of the more popular capital efficiency units:

- **Return on investment (ROI):** the amount of return on an investment relative to the investment’s cost.
- **Fully burdened operating income (FBOI):** the amount of profit realized from a business’s operations after taking out operating expenses and depreciation.
- **Return on capital employed (ROCE):** the rate of return the business is generating compared to the capital employed to generate those returns.
- **Operating margin:** a measurement of what proportion of a company’s revenue is left over after paying for all operating costs such as variable and fixed costs.
- **Capital velocity:** ratio of annual capex to the capital employed in the business and a proxy for measuring the growth agenda of organizations in capital intensive industries.
- **Capital productivity:** a company’s ability to use the capital employed in the business to generate revenue. Calculated by dividing average revenue by average capital employed.
How do you stack up?

Benchmarking among peers is critical

Capital efficiency is driven by continuous improvement initiatives as well as the use of external benchmarks.

In capital-intensive industries like oil and gas, ongoing measurement of value from capital investment is standard practice. This return fluctuates with commodity price, resulting in inconsistent and unpredictable revenue forecasts. Successful E&Ps will differentiate themselves from their competitors by optimizing the return from each capital dollar invested.

Determining the best metric to evaluate performance against your peers provides opportunities to learn from those in the top quartile, as well as see how others are interpreting current trends and market recovery scenarios and in turn managing their portfolio of assets. While each organization may measure capital efficiency in a different manner, baselines have been developed in order to compare organizations’ capital spending effectiveness.

Other measures provide qualitative insight into an organization’s ability to manage its portfolio to better achieve capital efficiency. The PwC capital efficiency scorecard is one such baseline that allows an organization to see where their strengths/weaknesses lie. (See page 8 for more details.)

How can capital efficiency be compared?

Benchmarking against peers using ROCE is a worthy proxy for comparing value, but a key question for investors and company executives is whether the capital invested is earning a higher return than other investments with a lower risk profile. This can be derived through a focus on operating efficiency and capital productivity (i.e., ROCE).

The significant reductions in operators’ capital spending, coupled with the natural depletion curves of oil extracted from shale formations, will likely continue to constrain US production growth. However, we expect the decline to be gradual given the number of drilled but uncompleted wells. At the same time, we see global demand growth similar to 2015, which is a bit more than most are expecting. Taken together, an inflection point is on the horizon.

No one can predict when E&Ps will increase velocity following the slowdown in 2015 and more recently in 2016; but when the time comes for companies to pursue future growth (velocity), they will have different measures of value against their peers—measures focused more on capital efficiency than velocity.
Selectivity vs. velocity

Capital efficiency is driven by selectivity, not velocity

A fluctuating price environment has created a shift from capital velocity to capital selectivity among E&Ps’ capital projects.

Three core differentiators of value

- Selectivity, not velocity, in a company’s approach to capital management
- Commitment to driving capital productivity
- A focus on operating excellence

The chart above plots ROCE against capital velocity to determine top quartile performers. The values acquired for this analysis are 5-year averages with the last year being 2015. In addition to considering ROCE and capital velocity, distinguished E&Ps tend to have strong results both in terms of operating margins and capital productivity; being good at only one is generally not enough to put a company in the top quartile in terms of generating value.

While E&P’s focused on capital velocity by avidly deploying capital when oil prices were high during the most recent boom, they have shifted to being more judicious in their capital investments by focusing on margin, not revenue. The organizations that will survive and ultimately position themselves for the market recovery will be those that make effective selections when deploying capital today and have a strategy for scaling and maintaining today’s efficiencies when the market allows for further expansion.
PwC capital efficiency scorecard

By working with organizations pursuing capital efficiency, PwC has developed a “capital efficiency scorecard” which is an organizational assessment of all “elements of capital efficiency” tailored to energy specific drivers. The assessment addresses all elements—from strategy, capital allocation to performance measurements—to identify gaps, quick wins, and long-term strategies, all of which help develop a roadmap to enhance your capital efficiency along with a relative score to allow “apples to apples” comparison with peers.

Those in the oil and gas sector can safely assume there will be continued need for capital efficiency and increased productivity. Top performers will be measured by their ability to ride out the “leaner for longer” storm, while competitive forces and oil prices will challenge companies to find new and innovative ways of deploying capital to its highest and best use. Capital efficiency is not “one size fits all” and requires breaking down barriers in organizations to fully enable cross-functional initiatives required to drive capital efficiency.

To have a deeper discussion about capital efficiency, please contact:

**Anthony Caletka**
Capital projects and infrastructure
Partner
(347) 574-2285
anthony.caletka@pwc.com

**Peter Raymond**
Capital projects and infrastructure
US leader
(703) 918-1580
Peter.d.raymond@pwc.com

**Brett Bisaga**
Capital projects and infrastructure
Director
(856) 816-5222
brett.bisaga@pwc.com

**Reid Morrison**
US energy advisory
Leader and partner
(713) 356-4132
reid.morrison@pwc.com

**Peter Totev**
Capital projects and infrastructure
Director
(713) 356-5978
peter.totev@pwc.com

**Donna Coallier**
Strategic value consulting
Partner
(646) 471-8760
donna.coallier@pwc.com

A special thanks to Irina Penovska and Casey Carringer for their contributions to this publication