

Achieving Financial Close When Contractors Won't Take Risks

May 2007

A World of Opportunity – If Risks Can Be Managed

\$20 trillion: This is the IEA's¹ estimate of the worldwide investment in energy infrastructure from now to 2030. While there may be considerable debate about the technologies to be used to create fuels, feed-stocks and power, there is little as to the world's growing requirements. The intersection of demographics, business conditions, geopolitics, and environmentalism creates a real dilemma for energy investors: pursue significant opportunities with extraordinary risks, or adapt a defensive posture and wait for better times?

What makes the risks of today's energy projects so extraordinary?

- The current generation of energy projects are large and costly, with management complexity that makes significant cost overruns and schedule delays common.
- Current seller's market conditions for materials, engineered equipment, labor and engineering services have doubled project costs in the past 3 years, and this trend is expected to continue.
- Emerging technology is required to produce hydrocarbons in the Arctic or deepwater, or to generate clean power from coal/petcoke while capturing carbon and meeting other environmental requirements.

High project costs, escalation and technology create a climate in which providers like OEMs and engineering & construction (E&C) contractors cannot, will not, and indeed should not take major risks. As a result, the allocation of risks that in the past could be covered by a fully risk-wrapped contract are now left unresolved.

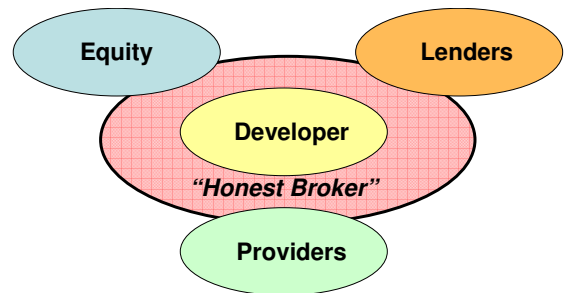
For owners, developers, and investors for whom non- or limited-recourse financing is required, there can be no project unless some way is found to resolve these risks so that financial close can be achieved.

So how is the dilemma to be resolved? How can these major project risks be covered and optimally assigned so the project's economics work and financial close is achieved? We propose a methodology called Risk Resolution[™] that addresses this problem head-on. *The goal is to facilitate a process by which all project participants understand and agree on the risks, their potential impact, and the optimum way to allocate them so the project can proceed.*

Resolving Risks Requires an “Honest Broker”

Up to now, the risks to construction projects have seldom been discussed openly. The traditional practice of driving risks down to contractors can often result in actually driving the price of risk coverage up. When the only avenue of communication is across a negotiating table, it is not surprising that risks are poorly understood and inefficiently priced. Resolving risks requires transparency – and this can best be achieved with the facilitation of an honest broker.

The role of the honest broker in optimizing the allocation and pricing of risk coverage is illustrated by the diagram below.

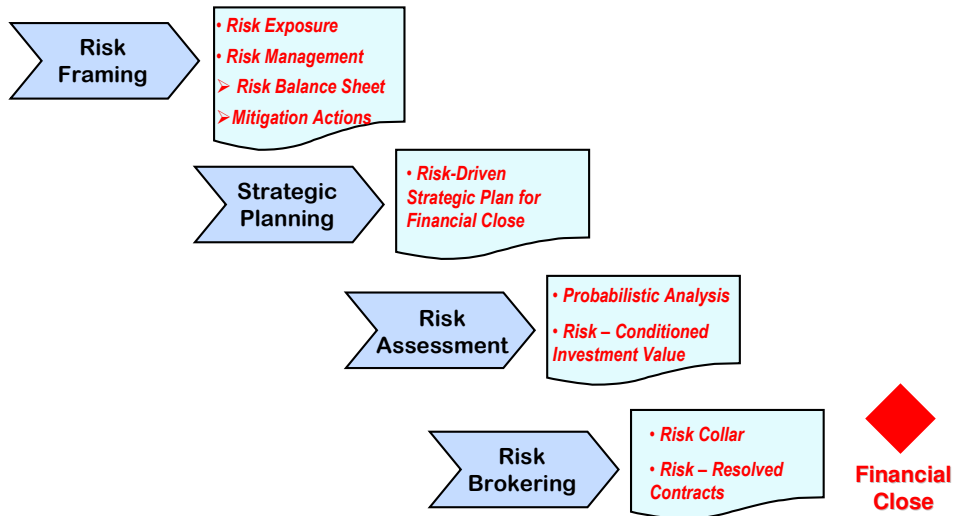


- “Equity” is being invested in the special purpose entity/project company for an operating interest or return on capital – their perception of risk affects the valuation of that investment.
- “Providers” are OEMs, licensors of technology, and contractors. Their perception of risk drives risk premiums for providing guarantees and warranties.
- “Developers” perception of risk affects their planning and commercial arrangements.
- “Lenders” perception of risk affects the basis points and amount of equity required. If the lenders are not confident all project risks have been covered, there will be no financial close.
- The “Honest Broker” (i.e., a “neutral mediator”) provides the transparency needed to drive all parties to a common understanding of the project's risks, how they are to be valued, and the optimum allocation so the project can proceed.

The Honest Broker must be independent, and have extensive industry experience, facilitation skills, and an efficient work process for resolving risks. This Risk Resolution[™] process must cover the risks of cost overruns, schedule delays, and ensuring a reliable revenue stream.

Developing the Risk-Conditioned Investment Value™ (RCIV)

The **Risk-Conditioned Investment Value™ (RCIV)** provides the means to achieve financial close. The RCIV is the predicted capital value that meets the project's economic and schedule goals and is acceptable to an independent investor or lender as inclusive of all project risks. The diagram below illustrates the **Risk Resolution™ Process** that develops the RCIV and the tools to achieve financial close. The deliverables from each step in the process are shown in red, and each step is described below.



Risk Framing

Timing: Performed early in Feasibility.

Objective: Provide an early indication of the nature and severity of strategic and tactical project risks to enable effective risk management.

Process: The Risk Discovery process combines checklists, research and interviews with key knowledge holders to identify and assess project risks and required mitigations. Experience and industry intelligence drives the discussion into details where root causes of critical risks can be determined. Scenario-type planning provides the basis for assessing strategic risks.

Deliverables:

- **Risk Exposure:** the likely, cumulative financial impact of all project risks. Risk Exposure is an amount that must be added to the project cost estimate to account for all project risks.
- **Risk Balance Sheet:** a means to manage the funds allocated to cover the Risk Exposure (see further explanation provided below).
- **Risk Mitigation Actions:** Actions to mitigate the most severe risks.

Strategic Planning

Timing: Begun with Risk Framing; evolves into a complete Strategic Plan to achieve Financial Close.

Objective: Develop a Strategic Plan that addresses Risk Mitigation Requirements and sets the direction for further planning and development to ensure the requirements for Financial Close are met.

Process: Facilitates early planning and risk mitigation strategies including Organization & Contract Strategy, Permitting, Schedule and Scope Management.

Deliverable: **Risk-Driven Strategic Project Plan** that provides the basis for Risk Brokering and includes:

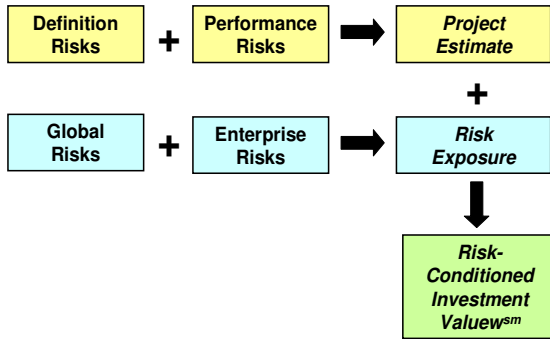
- Scope and Change Management Plan.
- Risk-Driven Contract Plan.
- Risk-Driven Organization Plan.
- Execution Strategies for Front End Engineering Design, Procurement & Construction.
- Key Decision Points on the path to Financial Close.

Risk Assessment

Timing: Begun when a comprehensive cost estimate and schedule are available, (usually early in Definition), updated as needed.

Objective: Develop a probabilistic analysis of capital cost and schedule, reflecting both tactical and strategic risks, so that the Risk-Conditioned Investment Values™ (RCIV) can be determined.

Process: The Risk Framing scenario-type planning is updated, and uses purpose-built methodologies to develop cost and schedule risk models for Monte Carlo simulation. The development of RCIV is illustrated below. Note that the process addresses both Strategic Risks (i.e., those that are not anchored to the estimate and require management at a level above the project team) as well as Tactical Risks (i.e., those that a project team traditionally includes in its contingency and for which it is responsible).



Deliverables:

- **Probabilistic Cost & Schedule Analysis:** cumulative probability curves that allow management to consider the Capital Value at Risk (CAPEX VaR™) and balance cost or schedule expectations against the probability of overrun.
- **Updated Risk Balance Sheet:** with “T-Accounts” for each Risk Frame
- **Risk-Conditioned Investment Value™ (RCIV):** the predicted capital value that meets the project’s economic and schedule goals and is acceptable to an independent investor or lender as inclusive of all project risks.

The RCIV is the capstone of Risk Resolution™. It provides developers, investors and lenders with a realistic value that is acceptable and transparent to all parties. RCIV is clearly differentiated from traditional approaches in that it monetizes each party’s risks and provides cover of the risk exposure such that a predictable outcome can be expected. It allows the full range of financing and risk-hedging options to be utilized so the project can proceed.

Risk Brokering

Timing: During Definition, leading to final negotiations and Financial Close.

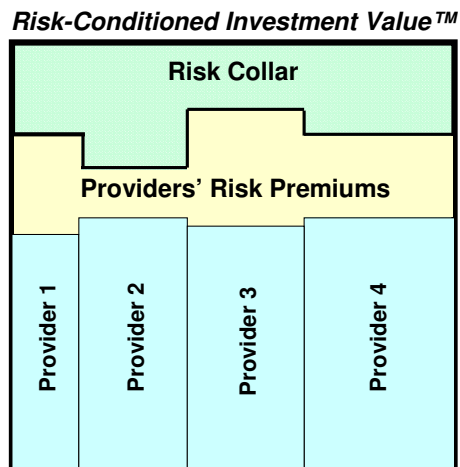
Objectives:

- Allocate project risks to various providers (of technology, engineered equipment, or engineering & construction services) such that each provider’s levels of cost and risk are optimized.
- Define a Risk Collar of unallocated risks to meet the lender’s requirements for risk cover.

Process: The Honest Broker mediates the dialogue between providers and potential sources to backstop risks. Providers at all levels may be included (such as prime contractors, OEMs, critical subcontractors). In order to construct the risk coverage needed for the required guarantees and warranties, three tranches of risk coverage may be used:

- Purchased from the provider.
- Included in the Risk Collar and secured by mezzanine debt to the provider.
- Included in the Risk Collar and funded by the project using an optimum arrangement of the many risk coverage financing options typically available.

This process is illustrated by the diagram below which represents monetized risks.



Deliverables:

- **Risk Collar:** the difference between the RCIV and the extent to which the Providers have covered risks in their guarantees and warranties plus the “make-up” amount agreed with the lender. It becomes part of the project financing scheme.
- **Risk-Resolved Contracts:** The final agreement between the project company and each provider, including an agreed allocation and pricing of project risks.

Summary

With investments in energy industry projects rising, and the size/risk of project continuing to increase, the optimal allocation of risk between lenders, investors, operators and contractors has becoming more challenging. The role of an independent party, acting as an “honest broker” between the parties can assist in this process. A multi-step process, including Risk Framing, Strategic Planning, Risk Assessment and Risk Brokering provides the framework for developing the Risk Conditioned Investment Value and achieving financial close.

About Westney Consulting Group, Inc.

Founded in 1978, Westney Consulting Group is internationally recognized for thought leadership in the risk management, strategic planning, and organizational effectiveness of large, complex engineering and construction projects. Based in Houston, Texas, the company advises owner/operator, developer, and financial executives in the energy, chemicals, mining & minerals industries.

For more information visit our website at www.westney.com or call us at 713-861-0800.