High EPC Risk Premiums Strain New Transmission Projects

Burned by years of volatile material costs, EPC contractors are passing that risk along to project developers thru historically high risk premiums

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EPC Risk Premiums Remain Historically High

The EPC Risk Premiums associated with Lump-Sum, Turn-Key contracts on Transmission projects remain historically high. For projects with two year construction cycles, the premiums are at 33.2% of the total cost of the project. Three year projects are around 40.6%.

This is the second highest risk premium for two year projects (exceeded only by last year's 33.6% premium). The premium for three year projects experienced its fifth consecutive year of decline, but remains extremely high compared to values experienced ten years ago.

Table 1 - EPC Risk Premiums (as percentage of overall project cost)

	2 Year Projects	3 Year Projects
2003	19.6%	21.4%
2004	23.7%	27.0%
2005	26.6%	32.0%
2006	28.6%	35.8%
2007	32.5%	43.1%
2008	32.7%	41.9%
2009	32.0%	41.5%
2010	31.9%	41.0%
2011	33.6%	40.7%
2012	33.2%	40.6%

The Growth of the North American Transmission Market

The demand for new and improved North American transmission infrastructure continues to drive new project development in the industry. The Trimountaine Group's (TMG's) analysis of SNL Energy's database of proposed transmission projects suggests that **over $90B** of new transmission is scheduled to be built in the US and Canada thru 2017.

If history is a guide, that number is probably lower than what the final costs for those projects will eventually be. Major transmission projects, like most capitally intensive infrastructure projects, have a poor history of meeting original budget estimates. Recent history, in particular, is littered with cautionary stories. The Sunrise Powerlink was originally proposed at $1.2B before being completed at $1.9B. The Tehachapi Renewable Transmission Project was proposed at $0.9B before nearly tripling in cost to $2.5B.

The Impact of Global Price Movements on Project Costs

The reasons behind these cost overruns are varied. They may include a lack of detailed engineering, changes in right-of-way, increased environmental compliance, or a number of other variables.

The industry is also challenged by the prices of materials and services that remain extraordinarily high compared to historical norms. Steel prices are 88% more expensive

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than they were ten years ago. Copper prices have escalated by over 400% during the same time frame. Since 2006, labor wages have escalated by a modest 21%, but the productivity of that labor force has actually dropped by a remarkable 11.2%. The result has been an increased real cost of 34% to get the same output that was achievable just a few years ago.[1]

This cost escalation is of concern not only to project developers, but also to the EPC (Engineer, Procure, and Construct) contractors engaged in the programs. Exposed through contracted Lump-Sum, Turn-Key (LSTK) arrangements, the EPC contractor has been increasingly relying upon other means to push this price volatility back onto the project owner.

In many cases, this has been through alternative contracting structures. The usage of Cost Reimbursable, Target Price, or Time and Material contracts has risen over the past few years.

In addition, the use of EPCM (Engineer, Procure, and Construction Manage) contracts has become much more widely accepted. Under an EPCM contract, the contractor continues to manage the project, but the procurement is on the paper of the project developer, shifting escalation risk back to the owner.

But while project cost escalation has been well documented, what is less well understood is the impact that the volatility, itself, has had on EPC risk premiums.

[1] All referenced increases are based on analysis of appropriate Bureau of Labor Statistics (BLS) Producer Price Indices (PPI)

The "Worst Case Scenario"

Volatility is expensive for transmission projects. Estimators who are faced with variables that have a consistent annual escalation can predict and manage that escalation by incorporating known future values into their estimates. However, once volatility is introduced, the estimator not only needs to incorporate the assumed escalation, but include a mechanism to account for the risk that costs could exceed that forecast. The greater the volatility, the more contingency or reserve needs to be held on the part of the EPC.

Transmission project developers are faced with this dilemma today as they contract for their projects. EPC contractors must account for the uncertainty on the high end around escalating prices, which means that they must use a "worst case scenario" mentality when contracting for LSTK projects. And that cost gets passed along to project developers in the form of expensive risk premiums.

Not all of those risk premiums are carefully spelled out in an EPC contract. In fact, the risk premium is often a combination of many factors, such as the project contingency, price buffers on unit price estimates, volume contingencies, EPC fees, and others. The compounded effect of these factors results in the actual risk premium assumed by the project.

TMG annually evaluates transmission cost escalation to help determine the cost of these risk premiums. We assume transmission project schedules of two and three year windows as projects expecting a commercial operation date further off in the future are more exposed to cost volatility than ones with a closer completion date. We then evaluate a generic transmission project based on the underlying cost component volatility, the fees paid to the EPC contractors, and the contingencies held either in the contract or in a manager's reserve for budgetary approval.

The result provides a snapshot as to how risk premiums have changed over the years. The below chart provides a historical perspective on these premiums.

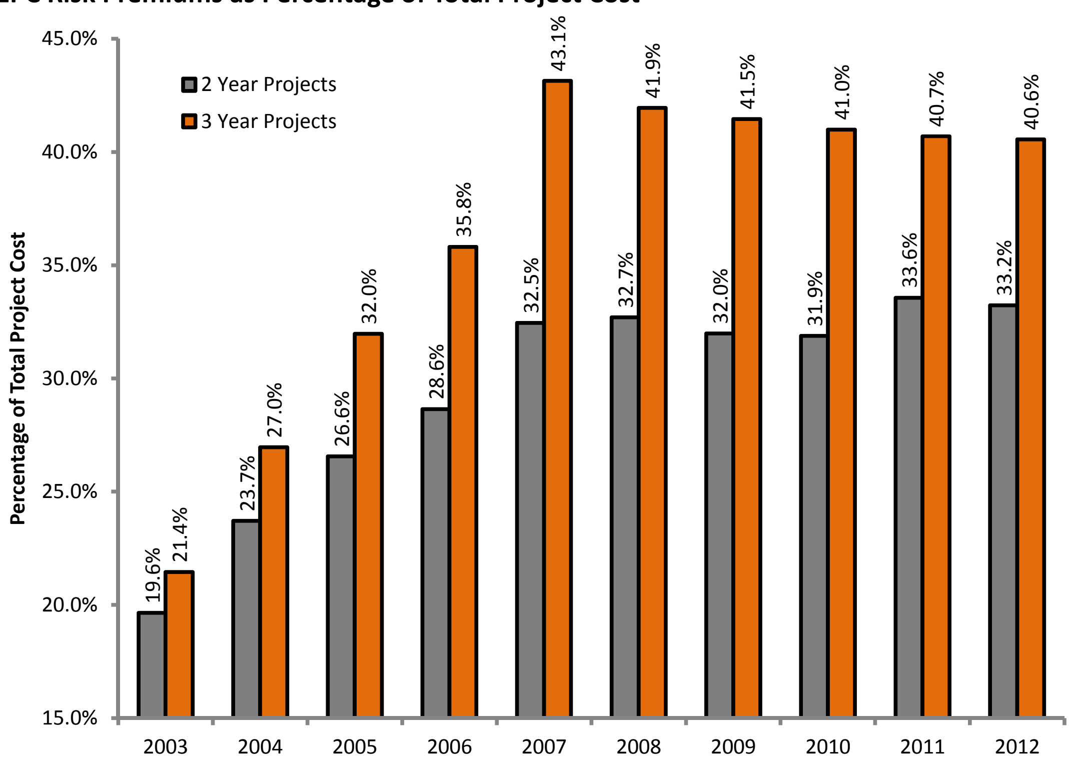
As is immediately obvious, the effect of the volatile cost components has been a pronounced increase of the risk premiums over the past ten years. Risk premiums have shot up to 33-41% the cost of the project from only around 20% back in 2003.

To be clear, this 13-20% increase in project cost is not due to increased prices. That has already been captured elsewhere. Rather, this increased risk premium is due entirely to uncertainty. There is no intrinsic value to this risk premium. But merely protecting against the "worst case scenario" has now become one of the largest expenses related to project development.

Financially Hedging Escalation Risk

The primary reason this risk premium is so high is due to the fact that the EPC contractor, quite simply, has no better way to manage the risk than the project owner. Neither party is able to

EPC Risk Premiums as Percentage of Total Project Cost



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control the macro markets that determine pricing for steel, copper, labor and equipment. Unfortunately, the EPC is left having to build into their proposals an extra cushion to cover against the risk.

TMG advocates a more efficient way to spread this risk. Rather than forcing the EPC to absorb it, pushing the risk to a third party (such as an investment bank, a hedge fund, or a reinsurer) places the risk with an entity better able to manage it. In most cases, the risk has actual value to a third party financial institution as it can act as a diversifying force on a portfolio of other investments.

Some projects are already tapping into the derivatives market to hedge exposure to such commodities as copper and aluminum. However, the entire project (including steel and labor) would benefit from comprehensive hedging strategies through the use of alternative risk transfer programs such as Index Based Hedging.

*Rather than **33-41%** premiums, projects utilizing financial hedges are lowering all-in premiums to **16-17%** the cost of the project*

The value can be seen in the deltas between EPC Risk Premiums and the related financial hedging premiums. Rather than 33-41% premiums, projects utilizing risk transfer hedges are lowering all-in premiums to 16-17% the cost of the project[2].

Conclusion

As new transmission build continues, it is to be expected that the demand on materials and equipment for the industry will continue to drive up prices. However, it's not enough to simply understand and forecast these price escalations. Rather, the volatile, random walk that prices take on their path up also has real economic consequences. A well planned risk management strategy can not only protect a project against dramatic cost overruns but can do so at a significant discount to having the EPC contractor provide that guarantee themselves.

2 Trimountaine Group Analysis

For more information on our Transmission modeling and risk management strategies, please reach out to The Trimountaine Group. We would be happy to discuss a review of your project and how our risk management expertise may assist you.

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