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Rethinking risk management & planning for Infra projects

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You do not need to look to the compound disasters that befell Japan after the Fukushima earthquake to witness the "improbable" becoming front page headlines.

In the US this year, there have been floods and tornadoes in the Midwest, wildfires in the West, and the one-two punch of the Mineral, Virginia, earthquake that rattled the East Coast, before the onslaught of Hurricane Irene. The Mid-Atlantic was particularly hard hit by Irene, with extensive flooding, power outages and loss of life and property. Had circumstances been even slightly different, the devastation could have been many times worse.

The lesson is clear: The algebra of infrastructure project risk management has reached a new level of complexity, and creating effective risk management strategies requires a constant re-evaluation of existing approaches.

Past Performance Does Not Guarantee Future Results

Every infrastructure project is unique. Yet infrastructure project risk managers sometimes start, and effectively finish, the risk planning process with the coverage provisions in the engineering, procurement and construction (EPC) contracts and financing documents from a previous, successful project. This approach has the appeal of simplicity and familiarity, which can be important motivators, particularly when the imperative is to get a deal done quickly.

The unavoidable fact, however, is that the extent and nature of the risks faced varies significantly from project to project. Even for projects in the same industry sector, risks evolve over time, and the best approach to managing, transferring and financing your risk likely evolves as well. Further, coverage forms evolve over time, and seldom are carriers voluntarily adding to the coverage provided in their standard forms, as opposed to adding new exclusions and limitations.

If you have not experienced a major loss resulting in a coverage dispute or other costly disruptions after an accident or Act of God, gaps in your insurance coverage, inadequate limits or other problems may never have surfaced. You should not automatically assume you have adequately planned for risk, including your insurance needs, simply because models

employed on prior projects are used again, and the failure to do so can be the difference between the success and failure of a major project.

We often see clients incur significant losses that could have been avoided had more attention been paid to their insurance programme and other risk transfer vehicles at project inception. A major loss should not be the event that prompts study of why certain coverage exclusions were tolerated, or why a given risk factor was given scant notice, in hindsight.

A template approach to these issues may also appear to accrue savings, at least in the short-term. In many cases, however, there are alternative approaches to risk management and financing, including the implementation of project specific insurance programmes, which are likely to have more beneficial long term financial results. Again, there is no one-size-fits-all solution.

For some projects, having each participant provide (and bill the developer for) its own coverages may make sense, particularly where a large, sophisticated EPC contractor can bring the full range of needed coverages to the table, together with appropriate indemnification and other contractual provisions. In other cases, however, a project specific program, with some loss sensitive pricing, may promise better results. The long term cost differences can be significant.

Further, the template approach fails to address the uniqueness of each project, and the risk-challenges of new technologies, such as mapping out the potential scenarios that might take a power plant offline or irreparably damage difficult-to-replace equipment.

Longer-term coverage and cost analysis can provide significant advantages which far outweighing the efficiency benefits of more traditional, familiar approaches. Losses can range from uncovered physical damage to work in progress or completed plants, to operational interruptions, to the fiscal and reputational damages that follow a tragic loss of life.

Today's Risk Management is Forward-Looking

Nowhere is the disclaimer "past performance does not guarantee future results" more true than in today's infrastructure risk planning process. Again, it is critical to treat each project as unique, illustrated clearly by the shifting ranks of stakeholders driving a project, the specific mix of private and public-sector investors, and the changing ranks of project managers, underwriters and construction companies involved. This is intuitive, but easier said than done in practice, particularly when each stakeholder brings specific and sometimes conflicting views and objectives.

It is important to recognise the increasing importance of geography and the role it plays in differentiating otherwise similar projects. Risk managers need to ask hard questions about whether a project's risk plan covers all of the contingencies and considerations unique to a particular region. What resources are available for repair or resupply? How reliable is local

infrastructure for supporting your recovery efforts – roads, rail, airports? How long might it take for replacement equipment to reach the site?

Historical data can help of course, but it can only take you so far when the "unlikely" or even "impossible" is increasingly shown to be quite possible indeed.

Learning from the Renewable Energy Sector

The renewable energy sector offers a valuable look at how a new approach to risk planning is both necessary and pays dividends. Solar plants and wind farms have little historical data to rely upon. How the plants hold up to routine, long-term use - much less how they fare in specific disaster scenarios - remain open questions.

One obvious, yet crucial fact is that the most common renewables projects - wind and solar farms - are by design particularly vulnerable to catastrophic weather and the elements, since their generation technologies rely on these elements to function. These facilities do not have the luxury of being able to encase themselves behind concrete and steel walls. Renewable power plants also make extensive use of high-tech and precision-engineered components that are often fragile and susceptible to damage.

This raises new issues like how to get high-end replacement parts into operation quickly, especially when your supplier is overseas or, equally challenging, in the same region and thus likely to be similarly impacted by a disaster. Modeling the risk profile of a renewable energy facility, then, requires a distinctly different approach than modeling a fossil-fuel plant. With little historical data and reduced availability of replacement equipment, qualified engineers and other key personnel, renewable facilities do not benefit from a cookie-cutter risk-planning approach.

Lessons from Irene

The performance of East Coast wind turbines during Hurricane Irene offers an informative example. Per the manufacturers' recommendations, many wind farms deactivated their wind turbines prior to the hurricane's landfall, before sustained winds reached 40mph. Somewhat counter-intuitively; wind turbines are susceptible to damage at even elevated wind speeds short of "hurricane-force."

The turbines are able to lock themselves down and maintain an optimal facing for the blades and nacelles in heavy wind. But this functionality requires external power: the turbine must be hooked into and receiving power from the electrical grid, or other back-up source, to do this and avoid possibly irreparable damage. Media reports indicate highly varied responses to the hurricane by operators.

In some cases, backup diesel generators were hooked up to the turbines. In many cases, however, no steps were taken to ensure continued power supply in the event of power loss to the grid. Few reports indicate the latter approach led to damaged turbines. But what if Irene

had been a more severe storm, or what about next year's hurricane season? Wind farm operators have no doubt been compiling these and other important lessons.

Good Preparedness Plans are Multi-Dimensional

From the aftermath of the Fukushima disaster to the many challenges that arose across the US, 2011 offers a sobering reminder of the importance of preparedness planning that prioritises human safety, rapid recovery, and the recouping of financial losses or liability.

But successfully managing project risk is both an art and a science. Historic data is useful, but far more useful is a multi-dimensional planning process that considers scenarios that have not (and hopefully will never) come to pass. Such a plan can best be documented with the help of experienced legal counsel who have a working understanding of the needs and objectives of all classes of stakeholders in a project.

Experienced attorneys provide the fresh perspective that is central to a successful risk plan, considering not only history but how new technology, maintenance needs, and supply chain issues might change over time. Consultation with project engineers, to understand the possible risks during both construction and operations, is essential to developing an intelligent plan.

The Greek philosopher Heraclitus, one of the earliest voices on change management, proposed: "You cannot step twice into the same river; for other waters are ever flowing on to you." No project is like your last project, nor does the documentation from one successful project ensure success on another. Accepting this is easy, but applying it to project management is inherently challenging. Make the upfront investment of time and resources to fully consider the unique aspects of your current project—doing so will lead to better long-term risk management strategies that can spare stakeholders from unnecessary legal, regulatory or other costs, whether from business disputes or the forces of nature.

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