Risks and Opportunities for the Construction Industry During the Transition to Next-Generation Energy

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Summary

- The widespread shift to next-gen energy is here.
- These large, complex, and cost-intensive projects come new risks of potential disputes.
- There are several ways to mitigate these disputes.

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As the U.S. strives to meet its net-zero emissions goal by 2050, the push for next-gen energy sources has picked up in kind. (Net-zero refers to the balance between the amount of greenhouse gas that is produced and the amount that is removed from the atmosphere.) A 2023 Energy Information Administration report found that wind and solar provided energy for 13 percent of domestic electricity consumption, up from 1 percent in 2000; natural gas increased 25 percent during this time, while reliance on coal decreased by 33 percent, dropping the U.S. to number three on the list of global coal consumers behind India and China, the latter of which accounts for half of the world's coal use.

The road to net-zero presents a monumental investment opportunity—$30 trillion, according to Bloomberg—and construction activity, catalyzed by numerous incentives under the Inflation Reduction Act, is accelerating as a result.

Yet these projects come with heightened risk. Their vast and complex scope, costs, and scale, as well as the number of stakeholders involved, can lead to complex claims related to delays, disruptions, cost overruns, and design errors and omissions. Constructors are often exposed to massive, liquidated damages for late performance and all participants

encounter supply chain uncertainties that can make or break a project. Meanwhile, new, often-untested technologies can lead to breach of contract or claims related to late or insufficient system performance, while ongoing regulatory issues can create tensions and impact stakeholder investments.

There's a reason that, from 2021 to 2022 alone, the average value of construction disputes in North America increased by 42 percent. Large energy projects, due to their size and ravenous appetite for labor, contribute readily to those figures. In what follows, we'll delve deeper into the evolving dispute landscape for stakeholders in this fast-growing area, the complex nature of construction contracts, and how best to prepare and resolve emerging claims.

What's Driving Construction Disputes for Next-Gen Energy Projects?

Contractors, developers, investors, outside counsel, experts and other participants should be cognizant of the steep risks associated with construction of next-gen energy projects. The larger and faster-paced the project, the more a dispute can contribute to the project's potential failure.

As with any major infrastructure project, typical construction disputes—e.g., claims related to delays, cost overruns, construction defects, and design errors and omissions—may arise. Yet next-gen energy projects have the potential to exacerbate the complexity of such disputes, largely due to the number of stakeholders involved, their scope complexity and scale, long-term construction duration, their intensive technical nature, and distinctive regulatory and political pressures.

Costs for these projects, for example, are outsized, be it for raw materials or emerging technologies, both of which are heightened by ongoing supply chain issues. As a 2022 study by Queen Mary University of London notes, the "volatile price of raw materials and energy supply are predicted to be primary causes of disputes in the energy sector globally over the next five years."

Meanwhile, recent technologies—such as those related to new wind turbine generator components, solar modules, hydroelectric turbines, hydrogen and nuclear systems, and more—drive up the risk of disputes even further by bringing in additional third-party stakeholders and creating hurdles should the technologies not meet expectations. To stem these additional costs, owners may require the use of their own proprietary equipment, presenting additional challenges for contractors who consequently may have less control over the path of the project. The burgeoning use of artificial intelligence and machine learning tools in construction—be it for design, project management, or safety assessment purposes—creates risks as well, largely related to data privacy, intellectual property, and employment decisions.

Regulatory and political issues pose obstacles, too, particularly because next-gen energy projects may incorporate government incentives, loan guarantees, grants and/or require acquisition of large tracts of land. Stakeholders may need to navigate negotiations with local populations and governing agencies and obtain environmental permits, while voluntary (or mandatory) sustainability or sustainability reports can lead to "greenwashing" claims.

Construction Contractual Frameworks and Best Practices

Construction contracts for next-gen energy projects are frequently complex, particularly in the U.S., where participants tend to customize turnkey approaches, including those from the International Federation of Consulting Engineers, the American Institute of Architects, and standard engineering, construction, and procurement (EPC) contracts.

Most common are some form of EPC, in which the contractor assumes the majority of risks associated with design, procurement, and construction. This means they are responsible for any number of subcontractors they hire, as well as for any delays, defects, and/or performance liabilities. For next-gen energy projects, this can be particularly problematic: for instance, given the newness and complexity of these technologies, many contractors may be inexperienced, underscoring the importance of finding quality talent. The most successful projects marry what stakeholders have learned on foreign infrastructure projects with the realities of the U.S. market participants, which tend to be less willing to assume uncapped risk of poor performance or system failures. Insurance, surety, and demand guaranty issues increase daily pressure on EPC teams to perform and manage obstacles.

Certain factors can be helpful to consider while preparing contracts to mitigate future disputes, be they clearly defined nominated subcontractor provisions, risk of price

fluctuations/supply chain volatility, or freezing clauses that fix applicable domestic regulations that may impact a project during its term. Maintaining detailed project records and using building information modeling technology where applicable can improve coordination and help resolve disputes in an efficient manner, as can dispute review boards and other project-specific processes intended to foster collaboration for the best of the project.

Joint ventures or consortiums can also spread and manage EPC contract risk, though doing so successfully requires that each party's respective obligations be clearly defined and that procedures be put in place to discuss important decisions, like budgets and developer relations.

Finally, stakeholders should fully define the project's scope at the outset to avoid "scope creep," which often occurs towards the end of a project when owners ask contractors to make last-minute adjustments or additions to match preferences or newer technologies that postdate contract execution.

Preparing Claims

When it's time to prepare claims, stakeholders and their counsel should consider the following best practices:

- Focus on claims entitlement and adequacy of backup documentation to substantiate the claim.
- Root your analysis in the construction documentation, such as schedules. Know which tasks were critical and when.
- Be realistic about how each party's conditions gave rise to current challenges. Demonstrate and establish a connection between the events and critical losses. Avoid pie in the sky concepts of recovery.
- Recall that speed and efficiency in concluding disputes may be preferred over a greater victory much later, e.g., one that nets a poorer final result due to the time and cost of prosecuting the claim.

Dispute Resolution

Most of the disputes that arise from these complex next-gen energy projects will go through an interim project dispute-resolution process, potentially involving dispute-

resolution boards. However, many will ultimately end up in arbitration or litigation in multiple forums.

In light of the risks involved, it behooves all parties to carefully craft and negotiate the terms of the contract to address dispute resolution in ways which provide multiple opportunities to truncate, sever, and/or strategically resolve segments of disputes on the project. For instance, stakeholders should consider including the International Federation of Consulting Engineers' default provision that appoints a dispute avoidance and adjudication board at the outset of the project. In addition, parties would be well-advised to incorporate terms that stipulate specific negotiations or mediation prior to the start of arbitration. Integrated project delivery requires a stepped dispute-resolution process to bring the parties into a room to try and avoid a broader, deeper and much more expensive dispute process.

With that said, arbitration is extremely popular in this area given the number of players involved, the technical and financial complexities, and significant project costs. In 2023, construction/engineering and energy disputes represented 45 percent of new International Court of Arbitration cases. There's a reason: arbitration is confidential, protecting the data behind innovative technologies and the reputation of the sector writ large; arbitration is also theoretically less hostile and provides a forum for stakeholders from across jurisdictions (common in these projects) to reach a faster resolution, while arbitral orders and awards are generally easier to enforce than some court decisions. Done right, the quality and reliability of an arbitral tribunal's award should be more precise than a court's due to the subject matter expertise of the decider of fact.

Notably, there are key differences between American-style arbitrations and international ones: international arbitration tends to be more streamlined, focused on a narrow document exchange, with a more cooperative development of expert testimony. As the number of foreign players in U.S.-based next-gen energy projects increases, we can expect to see more aspects of international arbitration creep into these proceedings.

The Importance of Timely Involvement of Experts

The selection of the right arbitrators and expert witnesses is critical; these large-scale disputes contain complex issues that require extensive experience in the field—whether it involves calculating damages related to disruptions to the project construction flow, cost overruns, extended general conditions costs from project delays, assessing defects of new technologies, or identifying and understanding the root cause of delays. All of these can involve thorough analyses of construction costs and schedules made with specialized software and scientific techniques.

While involvement of experts in the early stages of a dispute can result in partial or complete early resolution, experts are typically brought in toward the end of the dispute-resolution process due to budget limitations or timing of the proceedings.

Fortunately, more and more domestic arbitrators are following guidance from their international counterparts and having their experts “hot tub,” or meet with one another to share information and insights in a fashion that creates a mutual understanding and interpretation of the evidence and reduces advocacy for diametrically opposed conclusions. Though each tribunal is different, this process can make arbitration more efficient and effective.

Conclusion

The widespread shift to next-gen energy is here—and shows no signs of slowing down. Yet with these large, complex, and cost-intensive projects come new risks of potential disputes. The use of new technologies, the number of (often cross-jurisdictional) stakeholders, and shifting regulations only raise the stakes further.

With that said, there are several ways to mitigate these disputes, from the contract negotiation phase all the way through to dispute resolution and arbitration. Throughout, early engagement of expert witnesses and experienced outside counsel are beneficial and even crucial in certain circumstances.

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