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**The Eye of the Beholder:
An Introduction to Key Clauses in Solar
Engineering, Procurement and Construction
Contracts**

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THE EYE OF THE BEHOLDER:
AN INTRODUCTION TO KEY CLAUSES IN SOLAR ENGINEERING,
PROCUREMENT AND CONSTRUCTION CONTRACTS

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According to data released by the Solar Energy Industries Association and Wood Mackenzie Power and Renewables, solar electric generating systems accounted for 40% of all new electric generating capacity in the United States in 2019, its highest share ever and more than any other source of electricity.² Recent projections indicate this trend is poised to continue and with increased growth comes increased demand for construction services.³ In 2017 alone, U.S. developers are reported to have spent nearly \$12 billion in construction costs on solar photovoltaic facilities.⁴ Given the increase in market growth and anticipated industry expansion, the time is ripe for project owners and contractors to proactively review the contractual provisions that serve as the foundation for allocating and managing construction risks.

This paper offers an introduction to some of the key terms and practical considerations for those negotiating solar photovoltaic construction contracts in the United States. The paper is primarily focused on commercial and industrial (or non-residential distributed generation) projects, however, many of the same issues apply to projects of differing sizes and technologies. Part I of this paper contains an overview of the risk allocation process and the types of contract structures that are commonly used to address these risks. Part II contains a more detailed discussion of some of the key provisions in these construction contracts from the perspective of both owners and contractors. Part III concludes with some emerging trends and developments in negotiating *force majeure* clauses as the industry grapples with managing these types of claims in the wake of the coronavirus disease (“COVID-19”) pandemic.

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² *Solar Accounts for 40% of U.S. Electric Generating Capacity Additions in 2019, Adds 13.3 GW*, SOLAR ENERGY INDUSTRIES ASSOCIATION (March 17, 2020), <https://www.seia.org/news/solar-accounts-40-us-electric-generating-capacity-additions-2019-adds-133-gw>.

³ According to the U.S. Solar Market Insights 2019 Year-in-Review Report published by the Solar Energy Industries Association and Wood Mackenzie Power and Renewables, the total installed photovoltaic solar capacity in the United States was initially projected to rise in 2020 by 47% and each of the next two years was projected to be the largest on record for the U.S. solar industry. *Id.* However, the report was released at a time when the full impacts associated with the COVID-19 pandemic were still developing. Revised projections suggest the annual growth may be closer to 33% in 2020 in light of impacts due to the pandemic. *Solar Market Insight Report 2020 Q2*, SOLAR ENERGY INDUSTRIES ASSOCIATION and WOOD MACKENZIE POWER & RENEWABLES (June 11, 2020), <https://www.seia.org/research-resources/solar-market-insight-report-2020-q2>.

⁴ Alex Mey, *Average U.S. Construction Costs for Solar Generation Continue to Decrease*, U.S. ENERGY INFORMATION ADMINISTRATION (September 3, 2019), <https://www.eia.gov/todayinenergy/detail.php?id=41153>.

I. OVERVIEW OF ENGINEERING, PROCUREMENT AND CONSTRUCTION CONTRACTS

A. Risk Identification by Participant

Every construction project will contain some degree of risk, although the exact risk profile will vary depending on the unique factors and constraints of a particular project. Risk is viewed and managed differently depending on the eye of the beholder. A risk that is acceptable to one party may not be acceptable to another (and, in some cases, may not be acceptable to the same party on a different project). While many risks can be mitigated, the analysis should begin by identifying the risks and which of the parties is best positioned to mitigate each risk based on their role in the project.

A project owner is typically focused on ensuring that the construction project is “bankable”, so that it can obtain financing for the construction of the facility. The key considerations for owners and their financing parties are whether the project will be built on time, on budget and perform at the level specified in the contract. Financing parties, in particular (and often owners by extension), are conservative in each of these areas given the consequences associated with failure to timely perform. Increased construction costs may lead to increased financing costs and/or increase the amount of equity capital an owner is required to provide for a project. Delays in construction will have further financial implications such as lost revenue from the delay in operation or potentially liquidated damages under the offtake agreement. Worse yet, extensive delays may entitle the offtaker to terminate the offtake agreement entirely, which for certain projects is the primary revenue-generating agreement the project may have secured. Performance failures have similar implications for lost revenue and damages. These outcomes could be catastrophic for the project, and lenders typically have the lowest risk appetite of all the project stakeholders. Given this, financing parties will seek to shift as much construction risk as possible to the owner and, in turn, require the owner to pass as much of that risk as possible to the contractor in the construction contract.

The contractor is the party primarily responsible for delivering a completed project, often at a fixed price and by a certain date. In agreeing to enter into an arrangement with these terms, the contractor will be concerned about the difficulty of predicting future events that could affect price, schedule and performance.⁵ The more uncertainty in predicting these events, the more the contractor may seek to allocate certain risks to the owner or, alternatively, to assess a risk premium and increase the contract price in exchange for assuming those risks.⁶ The less margin there is to be earned on a project, the less a contractor is inclined to take on a high degree of risk. As a result, the contractor will seek

⁵ Scott L. Hoffman, The Law of Business of International Project Finance, 35 (3d ed. 2008).

⁶ *Id.*

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