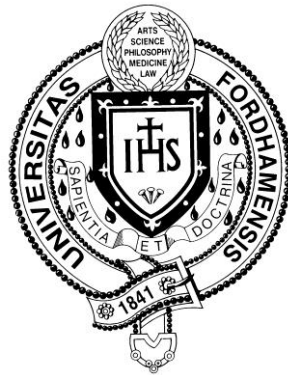


FORDHAM ENVIRONMENTAL LAW REVIEW



COVID-19 IMPACTS: HOW A GLOBAL PANDEMIC AMID THE SUNSETS OF
THE PTC AND ITC MADE THE U.S. WIND AND SOLAR INDUSTRIES
MORE RESILIENT

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*Kimberly E. Diamond*¹

ABSTRACT

A cataclysmic event is sometimes the necessary catalyst for companies within certain industries to re-examine, radically shift, and replace their standard practices with technologically-advanced alternatives. In the United States, the occurrence of the Coronavirus pandemic (“COVID-19”) during the sunsets of the Production Tax Credit (“PTC”) and the Investment Tax Credit (“ITC”) created a unique confluence of factors that produced a perfect storm tantamount to such a cataclysmic event for companies in the wind and solar industries, particularly developers. Over the years, the domestic utility-scale wind industry has come to rely heavily upon the PTC, while the domestic utility-scale solar industry has come to rely significantly upon the ITC. Developers within each of these renewable energy industries originally planned to qualify for such federal tax credits, relying upon the presumption that goods would be delivered and services would be rendered in accordance with historical norms for “ordinary course of business” operations.

¹ Kimberly E. Diamond – Adjunct Professor of Energy Law, Fordham University, School of Law School, New York City, NY, U.S., Email: kdiamond2@fordham.edu. This paper is dedicated to the memory of Michael Bernard Aaronson. Please note that this paper was written prior to the issuance of the Internal Revenue Service’s Notice 2021-5 on Dec. 31, 2020, and therefore does not discuss this item. INTERNAL REVENUE SERVICE [IRS], Notice 2021-5. Notice 2021-5 extends the beginning of construction deadline (*see* Part I. *infra* subsec. B.2.) to Dec. 31, 2025 for qualified offshore projects, including offshore wind projects, that elect to use the Investment Tax Credit (*see* Part II., *infra*) in lieu of the Production Tax Credit (*see* Part I, *infra*). Notice 2021-5 also extends the Continuity Safe Harbor (*see* Part I. *infra* subsec. B.2.) for offshore projects and for renewable energy projects on federal lands, for projects placed in service within 10 calendar years after the calendar year in which construction of the project began.

This, however, did not occur. COVID-19 abruptly and unexpectedly emerged, with the virus's widespread transmission sweeping the world during the end of fourth quarter 2019 and first quarter 2020. COVID-19's consequences disrupted the global supply chain, creating workforce shortages, causing factories that manufactured equipment and components for wind farm and solar array construction to shut down, and presenting substantial hurdles for many developers to overcome in order to reach certain project construction and operations milestones – milestones that would have been readily reachable under normal circumstances. Irrespective of COVID-19 and its related ramifications, the step-down and phase-out periods of the PTC and ITC, respectively, nevertheless required these milestones to be met by certain fixed, federally-mandated deadlines. These rigid requirements posed an imminent threat to many commercial wind developers and solar developers alike, as failure to meet such milestones and deadlines meant tremendous adverse implications for their utility-scale wind or solar projects. Specifically, missing a deadline under the PTC or ITC meant that a project either would only qualify for a lesser federal tax credit amount than originally anticipated or would be forced to forego use of the federal tax credit altogether. For developers relying on one of these federal tax credits for purposes of financing their respective projects, neither of these alternatives were viable options.

As there was no guarantee during first quarter 2020 that either the United States Congress or the United States Department of the Treasury would extend the PTC's and ITC's deadlines, developers were forced to pivot quickly, think out-of-the-box, and innovate. Consequently, a heightened level of inter-industry collaboration occurred within both the U.S. wind and solar industries. Developers throughout these industries also began re-examining the force majeure provisions in their contracts, evaluating the benefits of expanding the definition of a force majeure event to

include health emergencies such as pandemics, and considering the merits of adopting uniform standards across contracts, including the mandatory requirement that identical force majeure definitions be used across the multiple contracts relating to the same project. This elevated contract drafting standards in both the U.S. wind and solar industries. Moreover, developers in these industries not only re-thought their equipment procurement strategies, but they turned to technological innovations to mitigate and refine their own internal operations and maintenance (“O&M”) practices. This resulted in ramped-up adoption of and increased reliance on high-tech devices, such as drones and Doppler Light Detection and Ranging systems (“LIDAR”), which helped to automate and streamline many companies’ internal O&M protocols. These changes permanently modified the character of O&M standards across the domestic utility-scale wind and solar industries, accelerating these industries’ advancement down the technology continuum and causing them to evolve more rapidly than they would have ordinarily. Ultimately, while the PTC’s and ITC’s deadlines did eventually get extended in late May 2020, prior to such time, in addition to smoothing the project permitting process and strengthening the finance industry’s pre-merger due diligence disclosure requirements for mergers and acquisitions (“M&A”) transactions, COVID-19’s impacts permanently transformed the U.S.’s wind and solar industries from a technological perspective, yielding positive operational outcomes and building resilience in both industries that will benefit them in the future.

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INTRODUCTION

Investors must have confidence that each large, state-of-the-art, utility-scale² wind or solar project in which they invest will receive sufficient financing from other sources to adequately cover that project's outstanding balance of financing. The rationale for this is simple: having a project's financing "fully baked" at the project's outset lessens investors' exposure to unnecessary financial risk and makes the project financially viable. Federal programs in the form of grants, loans, and tax credits (collectively, "Federal Programs")³ have often filled large gaps in renewable energy project financing, providing the difference between the project's total cost of construction and the aggregate amount of project funding received from other sources. As a result of this federal government assistance, otherwise risk-adverse investors have gotten comfortable viewing these renewable energy projects as feasible investment options. The knowledge that the federal government will provide the balance of project funding has elevated such investors' comfort level with respect to investing in utility-scale renewable energy projects. This level of comfort, in turn, has prompted such investors to outlay capital for these projects' development, allowing initial financing for the projects to be put in place, and enabling these projects to move forward. Federal Programs, consequently, have played a key role in helping the U.S.'s young renewable energy industry evolve and progress, particularly within the domestic wind and solar energy sectors.

² Throughout this paper, the terms "utility-scale" and "commercial" will be used interchangeably.

³ See Nicola Lemay, et al., "Treasury Issues Guidance for Cash Grant Program for Qualifying Renewable Energy Projects," *Foley Hoag LLP - Energy Technology and Renewables Alert*, (July 14, 2009), <https://foleyhoag.com/publications/alerts-and-updates/2009/july/treasury-issues-guidance-for-cash-grant-program-for-qualifying-renewable-energy-projects> (Examples of these Federal Programs include: (i) the U.S. Treasury Cash Grant Program for qualifying renewable energy projects, under Section 1603 of the American Recovery and Reinvestment Act of 2009 ("ARRA"); (ii) the Department of Energy Loan Program; and (iii) the Production Tax Credit and the Investment Tax Credit); see also U.S. Dept. of Energy, *Advancing the Growth of the U.S. Wind Industry: Federal Incentives, Funding, and Partnership Opportunities*, OFFICE OF ENERGY EFFICIENCY & RENEWABLE ENERGY [OEERE] (Mar. 2018), https://www.energy.gov/sites/prod/files/2018/03/f49/eere_wind_funding_fs_2018_0.pdf.

Throughout this last decade, Federal Programs such as the Production Tax Credit⁴ (“PTC”) and the Investment Tax Credit⁵ (“ITC”) have significantly contributed to the financial lifeblood of U.S.-based utility-scale renewable energy projects. For instance, in recent years, the U.S. wind industry has relied heavily on the PTC for its utility-scale projects, while the U.S. solar industry has placed similar reliance on the ITC for its commercial projects. These industries’ financial dependence on the PTC and ITC, respectively, has been a key factor in helping bring utility-scale projects in each of these sectors’ pipelines to fruition. These projects’ access to federally-sponsored financial assistance in the form of tax credits, in turn, has created a robust U.S. project pipeline of commercial wind and solar projects,⁶ enabling many of these projects to be built, become operational, and provide a means of helping certain states in which they are located reach their renewable portfolio standards (“RPS”) and renewable energy targets.⁷

⁴ See Part A., *infra* subsec. 1. (For an in-depth discussion of the Production Tax Credit.)

⁵ See Part A., *infra* subsec. 2. (For an in-depth discussion of the Investment Tax Credit.)

⁶ *New Report: Wind Power Development Pipeline Up 40%*, AM. WIND ENERGY ASSOC. (May 4, 2018), <https://www.awea.org/resources/news/2018/new-report-wind-power-development-pipeline-up-40> (As illustration, according to the American Wind Energy Association, the U.S. wind industry has experienced an approximately 40% year-over-year growth rate, with over 5.5 gigawatts (“GW”) being added to the project development pipeline in 2018 alone.); *First Quarter Results: Records Keep Falling as Wind Pipeline Hits All-Time High*, AM. WIND ENERGY ASSOC. (Apr. 30, 2019), <https://www.awea.org/resources/news/2019/first-quarter-results-records-keep-falling-as-wind> (In the first quarter of 2019, a record 39,000 megawatts (“MW”) of utility-scale wind farm projects were under construction.); *U.S. Utility Solar Pipeline Soars to 37.9 GW, a New Record*, Press Release, SOLAR ENERGY INDUS. ASS’N. [SEIA] (Sept. 17, 2019), <https://www.seia.org/news/us-utility-solar-pipeline-soars-379-gw-new-record> (With respect to the solar industry, according to the Solar Energy Industries Association, the amount of utility-scale solar photovoltaic (“PV”) installations in the project pipeline escalated to a record 37.9 GW in 2019, the highest amount in U.S. history. In comparison, during 2018, the amount of utility-scale solar PV installations was only 15 GW.)

⁷ See, *Renewable Energy Explained: Portfolio Standards*, U.S. ENERGY INFO. ADMIN. [EIA] (Nov. 18, 2019), <https://www.eia.gov/energyexplained/renewable-sources/portfolio-standards.php> (A Renewable Portfolio Standard, or RPS, is a policy that a state adopts regarding its targeted amount of renewable energy usage by a fixed date. States adopt these policies as a means of increasing the number of renewable energy generation facilities within their borders. While there is currently no federal RPS, the overwhelming majority of states possess an RPS, while eight states possess

The PTC and ITC, though, each possess longevity issues, including phase-out periods entailing significant annual reductions in their amounts available for tax purposes that precede these Federal Programs' respective imminent sunsets. These issues have substantial ramifications for the U.S. wind and solar industries, both now and in the near future. Specifically, due to the short-term nature of the PTC and the ITC, the amount of federal tax credits that historically have been available to qualified renewable energy projects are shrinking substantially for certain utility-scale projects, and are being eliminated completely for others based on the timing of their construction, including when they are placed in service.

The imminent fading away of both the PTC and ITC has caused numerous Developers⁸ of utility-scale renewable energy projects to conduct careful advanced planning regarding construction and operational milestones their respective projects need to meet. This planning allots for various delays traditionally experienced under "normal" conditions, thereby enabling these projects to satisfy federally-mandated deadlines and qualify for the maximum federal tax credit percentage available. Consequently, a major, unexpected hiccup in a utility-scale project's originally envisioned construction timeline could be catastrophic, jarring the project, causing it to fall short of meeting construction targets, and resulting in mandatory federal deadlines being missed. As a result, a project that misses a federal deadline potentially could be forced to use a smaller tax credit percentage, or could be disqualified from taking advantage of the PTC or ITC whatsoever.

Renewable Portfolio Goals. As of June 2019, only 13 states lacked either an RPS or Renewable Portfolio Goals.)

⁸ SCOTT L. HOFFMAN, *THE LAW AND BUSINESS OF INTERNATIONAL PROJECT FINANCE* 71 (3d. ed., Cambridge Univ. Press (2008)) (A "developer" is the name given to the project sponsor, an entity or group of entities interested in developing a utility-scale renewable energy project. The developer benefits economically or otherwise from the construction, development, and operation of such a project. A "project company" is the special purpose entity that owns, develops, constructs, operates, and maintains the project. For purposes of this paper, "developer" and "project company" will be referenced collectively as the "Developer.").

Due to the enormity of the cost generally associated with building a utility-scale renewable energy project,⁹ losing all or a portion of this expected tax-based financing, based on a missed PTC- or ITC-related federal deadline, could severely disrupt or completely derail financing expectations. The absence of the originally expected tax percentage amount that a Developer was expecting to apply to its project's overall cost of construction could result in a shortfall between the amount of funds received from the project's other financing sources and the project's actual cost of construction. This is because a reduction in the tax credit amount under the PTC or ITC, as applicable, would leave a gap between the cost savings that the originally-anticipated tax credit amount would have provided and the actual cost savings that the reduced tax credit amount will provide. This financing gap could transform what was once a promising renewable energy project into a project at risk for non-completion. Such shift in financing could also put in jeopardy part or all of the up-front investments that a Developer already expended on a project, including financing from arranging banks,¹⁰ funds, other investment banks, and lending institutions that engage in debt financing (collectively, "Lenders").¹¹

⁹ See Lauren Tyler, *GE, Citi Close Tax Equity Financing on Block Island Wind Farm*, NORTH AMERICAN WIND POWER [NAWP] (Oct. 11, 2016), <https://nawindpower.com/ge-citi-close-tax-equity-financing-on-block-island-wind-farm>; *Block Island Wind Farm*, Power Technologies (2021), <https://www.power-technology.com/projects/block-island-wind-farm/> (Depending on the number and size of the wind turbines involved, a utility-scale wind project can cost hundreds of millions or even several billion dollars to build. For instance, the Block Island Wind Farm, a five-turbine offshore wind farm demonstration project located off the Rhode Island coast and the U.S.'s first offshore wind project, received \$290 million investments from lead arrangers Société Générale and KeyBank National Association, as well as \$70 million in equity funding from a D.E. Shaw Group affiliate, in addition to tax equity financing from GE Energy Financial Services and Citi that took advantage of the Production Tax Credit.); see also Kimberly Diamond, *Footfall and Social Media v. Concentrated Solar Power: When the Power of Choice in a Behavior-Based Economy Can be More Powerful than the Power of the Sun*, 28 *FORDHAM ENVTL L. REV.*, 136, 146-47 (2017), <http://ir.lawnet.fordham.edu/elr/vol28/iss2/1/> (As illustration of a solar power project that received a large amount of funding through a Federal Program, the Ivanpah concentrated solar power facility, located in the Ivanpah Dry Lake in California's Mojave Desert, cost approximately \$2.2 billion to build, having received a \$1.6 billion U.S. Department of Energy federal loan guarantee.).

¹⁰ HOFFMAN, *supra* note 8, at 72 (Collectively, a group of arranging banks is often called a "syndicate," with the lead lending bank that creates such an arrangement being designated as the "arranging bank.").

¹¹ *Id.* (For instance, large projects that may receive financing from bondholders, investors who purchase the project's debt in the form of bonds.).

Against this backdrop, the global COVID-19 pandemic, as detailed further in Part III.A., introduced unanticipated, adverse rippling effects along the supply chain. Developers often source from other countries the materials needed to construct their renewable energy projects. If this materials sourcing process is disrupted for an extended length of time, then many Developers' originally anticipated timelines for their respective U.S.-based utility-scale wind and solar projects also experience disruptions. The COVID-19-induced hiccup along the global supply chain caused such disruptions to occur. As a result, Developers of U.S.-based utility-scale wind and solar projects, respectively, were forced to suddenly pivot and adapt. This included re-examining standard operational procedures upon which they had come to rely. Flaws in common practices, such as workforce protocols, the absence of uniformity across contracts within the same project transaction, and inconsistencies among contractual terms such as *force majeure* definitions, as discussed in further detail in Part III.B.1.a., suddenly became evident.

Addressing these weaknesses across industry standards and traditional norms within the domestic wind and solar industries, nevertheless, generated positive outcomes. COVID-19 impacts forced these industries to increase their reliance on technological advancements. Absent this COVID-19-induced disruption, Developers, Lenders, and other impacted entities would not likely have undergone such an abrupt self-evaluation. By requiring these industry players to re-think their standard practices, pivot, and take steps forward by refining or replacing their business practices with state-of-the-art technologies, COVID-19 impacts collectively were a catalyst that transformed the domestic wind and solar industries, causing them to experience an "innovation transformation." As a result of this unexpected push forward down the technological continuum that the domestic wind and solar industries received, these industries evolved at an accelerated rate, becoming more efficient, high-tech, and resilient than they otherwise would have been at this point in time.

This paper explores how the PTC and ITC's respective step-down periods and phase-outs amid the COVID-19 global pandemic impacted the U.S. commercial wind and solar industries. It also illustrates how lessons learned from this experience helped players in the U.S. wind and solar industries to improve their resiliency much more quickly than a natural evolution would have allowed. Part I

provides background about the PTC and provides an overview of its step-down and phase-out. Part II explains the step-down, phase-out, and safe harbor parameters for the ITC. Part III examines COVID-19's impacts on utility-scale wind and solar projects in the U.S. renewable energy project pipeline, given the PTC and ITC's respective step-down and phase-out periods. In particular, this Part focuses on disruptions to the supply chain, workforce, and scheduling these projects faced as a result of the COVID-19 global pandemic. It also explores available remedies that these projects' respective Developers used, such as enforcing *force majeure* contractual provisions and participating in the heightened amounts of inter-industry collaborations that became available, in addition to relying upon federal tax credit extensions. Part IV discusses specific positive outcomes that emerged as a result of COVID-19 for Developers and other players in the U.S. wind and solar industries, in terms of reliance on technological innovations to increase business efficiencies and improve operational streamlining. Part V concludes that although COVID-19 resulted in certain adverse impacts across the supply chain and in the wind, solar, and finance industries, it nevertheless proved to be an effective, though unexpected, catalyst for change that enabled these industries to evolve, become more efficient, and adopt improved practices and standards that have made these industries more resilient.

I. PRODUCTION TAX CREDIT – BACKGROUND, STEP-DOWN AND PHASE-OUT

A. *Background*

For a renewable energy facility owner, which generally is the project's Developer, the PTC provides a "per-kilowatt-hour (kWh)" federal tax rebate, based on the amount of energy the facility generates and sells to another, unrelated person.¹² The PTC, which was originally enacted in 1992 to promote closed-loop biomass projects, is similar to

¹² Kevin Doran, *Investment Tax Credit Vs. Production Tax Credit*, HOUS.CHRON (2021), <https://smallbusiness.chron.com/investment-tax-credit-vs-production-tax-credit-67549.html>; MOLLY F. SHERLOCK, CONG. RESEARCH SERV., R43453, THE RENEWABLE ELECTRICITY PRODUCTION TAX CREDIT: IN BRIEF, (2020) (The full text of the PTC can be found in § 45 of the Internal Revenue Code ("IRC")); *Id.* at 1.

a phoenix.¹³ This is because its characteristically short-term lifespan necessitated that it be renewed 12 times since 1999 – a vast amount of times within the short period of approximately two decades – having been resurrected and revived at three different times after it expired during this approximately 20-year period.¹⁴ As the PTC evolved, it also became available for projects in a broad range of renewable energy sectors, including wind, geothermal, small irrigation, hydropower, marine and hydrokinetic, and trash.¹⁵ While this project diversity enabled Developers to use the PTC across a wide range of projects, the PTC’s lifespan remained incredibly brief throughout each of its iterations.

The PTC’s somewhat erratic life cycle may have been a bit off-putting for certain investors, particularly those who preferred stability in the form of a tax credit that lasted for a longer period, such as 10 years or more. As a result, such investors who nevertheless desired to invest in utility-scale wind projects, or any of the aforementioned types of domestic energy projects, had to become comfortable with the phasing-in and phasing-out of the PTC throughout the last two decades. As the U.S. wind industry has relied heavily on the PTC as a crucial means of financing utility-scale wind projects, it stands to reason that many of these investors were, in fact, able to get comfortable with the PTC’s repeatedly-imposed short-term lifespan and the concurrent renewal risk such brief lifespan carried with it.

B. Qualification Requirements and the Continuity Safe Harbor

1. Continuous Construction Test

The PTC’s qualification requirements have been ever evolving and far from static. This mutability is likely to have raised concerns

¹³Geller, *Phoenix*, MYTHOLOGY.NET (Sept. 29, 2018), <https://mythology.net/mythical-creatures/phoenix/> (According to legend, a phoenix is a mythical, majestic, bird-like creature that resided in a perfect world. It sang a beautiful, yet haunting, melody before it died an extraordinary death by bursting into flames after catching fire while in a nest it created from herbs that ignited from a spark that fell from the sky. The phoenix, however, did not completely disintegrate into the ashes; rather, it transformed into a small worm. After three days, the worm morphed into a new phoenix that rose from the surrounding ashes. This new phoenix then began the same 1,000-year cycle, ending its life and being resurrected from the ashes in the same manner as its predecessor.).

¹⁴SHERLOCK, *supra* note 12, at 1.

¹⁵*Id.*

among certain investors seeking stability and predictability for utility-scale wind projects in which they invest. As illustration, Internal Revenue Service (“IRS”) and U.S. Department of the Treasury (“Treasury”) Notice 2013-29 provides guidance for the two ways a company currently can qualify for the PTC.¹⁶ The first way is to prove that physical work of significant nature with respect to the project’s construction (“Physical Work Test”) began as of a certain date and has remained continuous (“Continuous Construction Requirement”), with no specified minimum construction completion milestone that needs to be met. Collectively, the Physical Work Test and the Continuous Construction Requirement constitute the “Continuous Construction Test.”¹⁷

2. *Five Percent Safe Harbor Test*

The second way for a renewable energy project to be eligible for the PTC is for the project owner, or Developer, to qualify for the Five Percent Safe Harbor.¹⁸ This requires the project and its Developer to have satisfied the following two requirements: (1) as of a certain date, have expended at least 5% of the project’s total property costs, including equipment purchase, to evidence that physical work of significant nature has begun on the project (“Begun Construction Requirement”); and (2) prove that continuous construction efforts remained in effect thereafter (“Continuous Efforts Test”).¹⁹ To prove satisfaction of the Five Percent Safe Harbor, Developers using a cash accounting method need to show that they “paid” 5% of the project’s costs, whereas Developers using an accrual accounting method – the most common accounting method among developers – need to show that they “incurred” this 5% cost amount.²⁰ As a practical matter, the

¹⁶*What Happened to Wind Energy? Explaining the Production Tax Credit*, SILVER TAX GROUP (Nov. 8, 2019), <https://silvertaxgroup.com/production-tax-credit/> [hereafter *What Happened to Wind Energy?*]

¹⁷ IRS, Notice 2013-29, Sec. 4.

¹⁸ *Id.* (Section 5).

¹⁹ See Notice 2013-29, *supra* note 17, at 3, 7; see also, Energy Credit – In General, 26 U.S.C. § 48(a)(1) (LexisNexis, Lexis Advance through Pub. L. No. 116-193 9 (2020)); *What Happened to Wind Energy?*, *supra* note 16; IRS, Notice 2016-31 Secs. 2 & 5 [hereafter *Beginning of Construction*].

²⁰ Sam B. Guthrie, et al., *AG Speaking Energy – 30% ITC Safe from Delivery Delays Due to Coronavirus*, AKIN GUMP STRAUSS HAUER & FELD LLP [AKIN GUMP] (Feb. 14, 2020), <https://www.akingump.com/en/experience/industries/energy/speaking-energy/30-itc-safe-from-delivery-delays-due-to-coronavirus.html>.

easiest way for a Developer to prove that it “incurred” such cost is to have taken title or delivery of the project property,²¹ such as wind turbine blades, towers, or other components.

Collectively, the IRS refers to the Continuous Construction Test and the Continuous Efforts Test as the “Continuity Requirement.” A Developer is deemed to have satisfied the Continuity Requirement if its renewable energy facility is placed in service within four years after satisfying the Begun Construction Requirement (the “Continuity Safe Harbor”).²² To qualify for the PTC, then, under IRS guidance, a taxpayer, such as the Developer, must be deemed to have satisfied the Begun Construction Requirement,²³ so that it can proceed to demonstrate the satisfaction of the Continuous Efforts Test and the Continuity Requirement,²⁴ and so that the project is poised to qualify for the Continuity Safe Harbor.²⁵

C. Step-Down and Phase-Out

Despite a wind farm Developer’s reliance on the PTC, even if that Developer’s utility-scale wind farm project qualifies for the PTC, the PTC’s currently-scheduled step-down and phase out period may limit the project Developer’s eligibility, so that such Developer is only eligible to use a reduced percentage of the PTC, rather than the full 100% of it. Prior to May 2013, Developers that qualified for the Continuity Safe Harbor could take advantage of 100% of the tax benefit the PTC offered.²⁶ Today, Developers are focused on qualifying for the PTC before its January 1, 2021 expiration date (“PTC Phase-Out”), also known as the PTC Cliff.²⁷ Under the PTC Phase-Out, even if a project qualifies for the PTC using the standards

²¹ *Id.*

²² Beginning of Construction, *supra* note 19.

²³ Letter from Senator Charles E. Grassley, et al., U.S. Senate, to The Honorable Steven T. Mnuchin, Secretary of the Treasury (Apr. 23, 2020), [https://www.finance.senate.gov/imo/media/doc/2020-04-23%20CEG,%20RW,%20et%20al%20to%20Treasury%20\(Energy%20Tax%20Credits%20Safe%20Harbor\).pdf](https://www.finance.senate.gov/imo/media/doc/2020-04-23%20CEG,%20RW,%20et%20al%20to%20Treasury%20(Energy%20Tax%20Credits%20Safe%20Harbor).pdf) (*Citing* IRC § 45(b)(5), § 45(d), § 48(a)(2)-(7), and § 48(c); 2 IRS Notice 2013-29, 2018-59.; and IRS Notice 2016-31, 2018-59.).

²⁴ Grassley, *supra* note 23.

²⁵ *See* Part I., *supra* subsec. B.2.

²⁶ *What Happened to Wind Energy?*, *supra* note 16.

²⁷ *The US Wind PTC Cliff Keeps Looking Less and Less Scary*, QATAR GREEN LEADERS (2017), <https://www.qatargreenleaders.com/news/sustainability-news/4389-the-us-wind-ptc-cliff-keeps-looking-less-and-less-scary>.

described in Part I.B. above, the project still may only be eligible to use a portion of the PTC, depending on whether and when the project began construction between 2017 – 2020 (“PTC Step-Down Period”).

As illustrated in Table 1 below, in accordance with the PTC Step-Down Period, utility-scale wind projects that began construction in 2017, 2018, 2019, or 2020 will only be able to take partial advantage of the PTC, in the amounts of 20%, 40%, 60%, and 40% of the PTC, respectively.²⁸ Developers that meet the PTC’s Begun Construction Requirement for a renewable energy facility prior to the PTC Phase-Out, though, can take advantage of the PTC for 10 years after such facility is placed in service and satisfies the Continuity Safe Harbor.²⁹ However, if a project begins construction after December 31, 2020, its Developer will be unable to take advantage of the PTC whatsoever.³⁰

Table 1

	PTC Step-Down Period and PTC Phase-Out Year Construction Began or Is Deemed to Have Begun				
	Jan. 1, 2017 – Dec. 31, 2017	Jan. 1, 2018 – Dec. 31, 2018	Jan. 1, 2019 – Dec. 31, 2019	Jan. 1, 2020 – Dec. 31, 2020	On or after Jan. 1, 2021
PTC Percentage Available	20%	40%	60%	40%	0%

Certain wind industry players are optimistic that the PTC Phase-Out will attract a new, broader base of investors who will

²⁸ See Energy Credit, 26 U.S.C. § 48(a)(5)(E)(i) – (iv) (“(E) Phaseout of credit for wind facilities. In the case of any facility using wind to produce electricity which is treated as energy property by reason of this paragraph, the amount of the credit determined under this section (determined after the application of paragraphs (1) and (2) and without regard to this subparagraph) shall be reduced by — (i) in the case of any facility the construction of which begins after December 31, 2016, and before January 1, 2018, 20 percent, (ii) in the case of any facility the construction of which begins after December 31, 2017, and before January 1, 2019, 40 percent, (iii) in the case of any facility the construction of which begins after December 31, 2018, and before January 1, 2020, 60 percent, and (iv) in the case of any facility the construction of which begins after December 31, 2019, and before January 1, 2021, 40 percent.”); see also SHERLOCK, *supra* note 12, at 1 – 2.

²⁹ IRS, Notice 2013-29, *supra* note 17, at 3, 7; Energy Credit, 26 U.S.C. § 48(a)(1).

³⁰ IRS, Notice 2013-29, *supra* note 17, at 11.

compete against one another for the best wind farm investment opportunities and, as a result of such competition, will decrease Developers' capital costs.³¹ Under this scenario, the domestic wind industry would effectively develop legs upon which to stand on its own, so that it no longer would need to rely on federal assistance and would be self-sustaining. While this potential scenario may come to fruition, there is no guaranty that it will actually occur.

II. INVESTMENT TAX CREDIT (“ITC”)

A. Background

Due to the PTC Step-Down Period and the PTC Phase-Out, investors in large renewable energy projects who disfavored the PTC may instead have elected to take advantage of the ITC as an alternative. For more than a decade, the utility-scale solar industry has relied heavily on the ITC, often referring to it as the Solar Investment Tax Credit.³² The ITC has played a key role in the solar industry's growth because the 30% tax credit on equipment is highly beneficial to the commercial solar equipment owners and Developers³³ that have been receiving it.³⁴ The Solar Energy Industries Association (“SEIA”), the trade association for the U.S. solar industry, acknowledges that the domestic solar industry has relied heavily on the ITC since its enactment in 2006. SEIA also acknowledges that since such time, the ITC has helped the U.S. solar industry flourish and increase by 10,000%.³⁵ In fact, since 2010, the ITC has helped the solar industry experience an average annual growth rate of over 50%.³⁶

³¹ Chris Brown, *US Wind Market Will See More Investors and Cheaper Capital Without the PTC*, GREENTECHMEDIA [GTM] (Apr. 10, 2019), <https://www.greentechmedia.com/articles/read/ptc-sunset-means-more-investors-for-us-wind-market>.

³² *Solar Investment Tax Credit (ITC)*, SEIA (2021), <https://www.seia.org/initiatives/solar-investment-tax-credit-itc>.

³³ For purposes of this paper, the terms “equipment owner” and “Developer” will be used synonymously.

³⁴ See Part II., *infra* subsec. B. (Table 2).

³⁵ *Extend the Solar Investment Tax Credit: Defend Solar Energy Jobs*, SEIA (2021), <https://www.seia.org/defend-solar-investment-tax-credit>; *Solar Investment Tax Credit (ITC)*, *supra* note 32.

³⁶ Doran, *supra* note 12; *Solar Investment Tax Credit - Quick Facts*, SEIA (2021), <https://www.seia.org/initiatives/solar-investment-tax-credit-itc>.

In contrast to the PTC, which focuses on energy produced, the ITC is effectively a tax rebate on equipment assets. The ITC is meant to refund a certain percentage of a particular asset's original purchase price, known as its tax basis.³⁷ For example, a solar facility asset, or "energy property" under the ITC, refers to equipment that either (i) generates electricity to heat or cool a structure other than a swimming pool, provide hot water in a structure, or provide solar process heat, or (ii) illuminates the inside of a structure that uses "fiber-optic distributed sunlight" for equipment, on which construction begins before January 1, 2022.³⁸ A commercial solar facility developer whose equipment within the solar array fulfills this "energy property" requirement gets to use a percentage of the equipment's tax basis as a tax credit, based upon the year construction involving the equipment began.³⁹

B. Step-Down, Phase-Out, and Significance of the 3-1/2 Month Rule

Similar to the PTC, the ITC is bound by the Continuity Requirement and is experiencing a step-down period (the "ITC Step-Down Period") that precedes its phase-out. This is known as its Evergreen Period.⁴⁰ However, the ITC's federal tax credit percentages available during the ITC Step-Down Period differ from those under the under the PTC Step-Down Period. The ITC Step-Down Period incentivizes solar project Developers to order their project equipment, take delivery or receive title to it, and place it in service so that their solar array is up and running as soon as possible. As Table 2 below illustrates, Developers have incentive to complete these steps quickly. This is because the ITC percentage available to them is higher the sooner in time that their array is completed, based upon both the date on which project construction began or is deemed to have begun, as well as the date on which the equipment itself was actually placed in service.

³⁷ Doran, *supra* note 12; *Basis, The Free Dictionary (2003-2021)*, <https://legal-dictionary.thefreedictionary.com/Tax+basis> (The term "basis" or "tax basis" refers to the original purchase price of an item.).

³⁸ I.R.C. § 48 (a)(3)(A)(i) – (ii).

³⁹ I.R.C. § 48(a)(1).

⁴⁰ See Evergreen, *infra* note 46 (For a description of what constitutes an "Evergreen Period.").

Specifically, ITC Step-Down Period focuses both on the timing of equipment purchase for a particular project, as well as the timing of construction with respect to that equipment. If construction involving that equipment began on December 31, 2019 or earlier, the Developer can receive a tax credit in the amount of 30% of that equipment's tax basis ("2019 30% Tax Credit").⁴¹ Even if the Developer did not actually take delivery or receive title of the equipment in 2019, if the Developer paid or incurred an expense for that equipment in 2019 that was in the amount of 5% or more of the overall cost of the project itself ("2019 Payment Date"), then that Developer is deemed to have triggered the Begun Construction Requirement. Such Developer is also deemed to have satisfied the Five Percent Safe Harbor requirement with respect to the project's construction timeline. Based on reaching both of these milestones, if the Developer reasonably expects to take delivery or title of the equipment within 105 calendar days, or 3-1/2 months, following the 2019 Payment Date, then the Developer may claim the full 2019 30% Tax Credit ("3-1/2 Month Rule").⁴²

Developers are in a much more unfavorable position if their project construction began or is deemed to have begun later than December 31, 2019, and if the project equipment is placed in service in 2020. This is because, as [Table 2](#) illustrates, if a Developer triggers, or is deemed to have triggered, the Begun Construction Requirement in 2020, the Developer will receive a tax credit in the amount of only 26% of the equipment's basis ("2020 26% Tax Credit"),⁴³ a comparatively lower tax credit than the 2019 30% Tax Credit. While this 4% difference in the amount of equipment tax basis that can be deduced appears to be small, this difference translates monetarily into a shortfall between the overall expected cost of the project and its actual cost. Such a funding deficiency can disrupt the project's expected financing, thereby leaving a financing gap and having the potential to delay project construction and operation.

A Developer's already unfavorable position continues to deteriorate the longer it waits to begin construction on a solar project during the ITC Step-Down Period. According to [Table 2](#), if project construction begins in 2021 or is deemed to have triggered the Begun Construction Requirement in 2021, the Developer will only be able to

⁴¹ I.R.C. § 48(a)(3)(A)(i) – (ii).

⁴² Guthrie, et al., *supra* note 20.

⁴³ I.R.C § 48(a)(6)(A)(i), *supra* note 41; I.R.C § 48(a)(2)(A)(i) – (ii).

deduct 22% of the equipment’s basis, an even further-reduced amount than was available for triggering the Begun Construction Requirement in either 2019 or 2020 (the “2021 22% Tax Credit,” and, collectively with the 2019 30% Tax Credit and the 2020 26% Tax Credit, the “ITC Safe Harbor Rules”).⁴⁴

Those solar projects that satisfy the ITC Safe Harbor Rules by either beginning construction or being deemed to have begun construction on or before December 31, 2021 may yet encounter an even further-reduced equipment deduction percentage. Once again, as Table 2 indicates, even if construction began or is deemed to have begun on the project, if the energy system is not placed in service on or before December 31, 2023, then the Developer will only receive a tax credit of 10% of the equipment’s basis.⁴⁵ Moreover, if project construction begins after December 31, 2021 (“Evergreen Period”), this 10% tax credit will become an “evergreen”⁴⁶ percentage (“10% Evergreen Tax Credit”)⁴⁷ and will be the only ITC percentage available to be applied against the equipment’s cost basis.

Table 2

⁴⁴ I.R.C § 48(a)(6)(A)(ii), *supra* note 41; I.R.C§ 48(a)(2)(A)(i) – (ii), *supra* note 43.

⁴⁵ I.R.C § 48(a)(6)(B).

⁴⁶ *Id.*; Evergreen, *The Free Dictionary (2003-2021)*, <https://financial-dictionary.thefreedictionary.com/Evergreen> (In finance, the term “evergreen” generally refers to a long-term contract that automatically renews after a fixed, short-term period, unless the contract itself is terminated.). *See* I.R.C § 48(a)(6)(A)(ii), *supra* note 41 (As applied to the ITC, “evergreen” means that the 10% ITC will apply as long as the ITC is available as a federal tax credit).

⁴⁷ I.R.C § 48(a)(6)(A)(ii), *supra* note 41; *see also Maximizing the Solar ITC Phaseout: Lessons from Wind*, POWER (June 30, 2019), <https://www.powermag.com/maximizing-the-solar-itc-phaseout-lessons-from-wind/>.

	ITC Step-Down Period Year Construction Began or Is Deemed to Have Begun				
	On or Prior to Dec. 31, 2019	Jan. 1, 2020 - Dec.31, 2020	Jan. 1, 2021 - Dec. 31, 2021	Any Date Prior to Dec. 31, 2021, But Asset Placed in Service on or After Jan. 1, 2024	On or after Jan. 1, 2022
ITC Percentage Available	30%	26%	22%	10%	10%
	2019 30% Tax Credit	2020 26% Tax Credit	2021 22% Tax Credit	10% Evergreen Tax Credit	10% Evergreen Tax Credit

Solar project Developers that want to take advantage of the ITC, therefore, have incentive to satisfy the Begun Construction Requirement for their projects and have their project equipment placed in service as soon as possible. Developers that fulfill these requirements will be eligible to receive the maximum financial benefit available for their projects during the ITC Step-Down Period.

Given the rigid parameters of the ITC Step-Down period, unanticipated disruptions impacting a solar project's supply chain, workforce, or construction schedule can potentially derail it from meeting its targeted construction milestones and qualifying for the maximum tax credit percentage available under the ITC. Not surprisingly, many solar project Developers who did not anticipate or plan for major supply chain disruptions that substantially delayed the delivery of their equipment have become concerned about whether they, in fact, have taken sufficient steps to qualify under the ITC Safe Harbor Rules for purposes of having satisfied the Begun Construction Requirement.⁴⁸ Also, many Lenders and Investors planned on the solar projects in which they invested taking advantage of the 3-1/2 Month Rule, qualifying for the Five Percent Safe Harbor, and qualifying for the 2019 30% Tax Credit in 2020. However, these Lenders and Investors may receive a rude awakening if the project in which they invested fails to satisfy the Begun Construction Requirement by a

⁴⁸ POWER, *supra* note 47.

particular cut-off date and fails to satisfy the requirements under the 3-1/2 Month Rule. As Table 2 above illustrates, a delayed project increases overall project costs and may force a Developer to have a much smaller ITC available to it than originally anticipated. Rather than being able to use the 2019 30% Tax Credit, this Developer may instead be forced to take the lower 2020 26% Tax Credit, the 2021 22% Tax Credit, or the 10% Evergreen Tax Credit, depending on the project's construction timeline.

III. COVID-19'S IMPACTS ON THE U.S. WIND AND SOLAR INDUSTRIES, GIVEN THE PTC'S AND ITC'S RESPECTIVE PHASE-OUT AND STEP-DOWN PERIODS

A. *Supply Chain, Workforce, and Scheduling Disruptions*

The Coronavirus, or COVID-19,⁴⁹ triggered a global pandemic that claimed the lives of thousands, caused acute sickness in others, and disrupted business and workforce operations worldwide.⁵⁰ While the virus purportedly originated in China,⁵¹ the rapid rate at which COVID-19's transmission occurred during the end of fourth quarter 2019 and first quarter 2020 resulted in governments around the world adopting measures aimed at slowing the rate of its spread. In the U.S., as well as in other countries, some of these measures included social distancing among people, requiring individuals to remain at least 6 feet

⁴⁹ *Coronavirus Disease 2019 (COVID-19) – Symptoms of Coronavirus*, CTR. FOR DISEASE CONTROL AND PREVENTION [CDC] (Dec. 22, 2020), <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html> (The Coronavirus is a sickness that permeated the global human community rapidly. Its symptoms generally include cough, shortness of breath, fever, chills, muscle pain, sore throat, and loss of taste or smell.); *Coronavirus History*, WEBMD (2005-2021), <https://www.webmd.com/lung/coronavirus-history> (Thought to have originated in bats, SARS-CoV-2 is the strain of virus that caused COVID-19 to occur.).

⁵⁰ Sarwant Singh, *Impact of the Coronavirus on Business*, FORBES (Mar. 2, 2020), <https://www.forbes.com/sites/sarwantsingh/2020/03/02/impact-of-the-coronavirus-on-business/#5072cabe4414>; *Outmaneuver Uncertainty: Navigating the Human and Business Impact of COVID-19 - Pairing People with Opportunity Resilience*, ACCENTURE (July 31, 2020), <https://www.accenture.com/us-en/about/company/coronavirus-business-economic-impact>.

⁵¹ *Coronavirus History*, *supra* note 49 (Specifically, COVID-19 is thought to have originated in Wuhan, China in late 2019, in an open-air “wet market” where people purchase animals for consumption that are slaughtered at the time of purchase. The crowded conditions of wet markets allow for viruses to spread among different animal species, mutate, and be transmitted to humans.).

apart from one another, and not gathering in crowds.⁵² These measures also included mandates for certain businesses to shut down their physical facilities, and for non-essential workers to stay at home with their families and “shelter-in-place” during this health emergency.⁵³

COVID-19 did not fit within the traditional rubric of project risks. Unlike ordinary risks such as development risks, design and engineering risks, construction risks, or operating risks, a global pandemic, while a *force majeure* event, was something that did not register on most utility-scale wind Developers’ or solar Developers’ radar as a potential threat. For this reason, neither the domestic wind industry nor the domestic solar industry anticipated either the onset of COVID-19 or the uncertainty its resulting impacts created in terms of obtaining goods and the magnitude of losses and damages these impacts caused. Consequently, when COVID-19 occurred, these Developers were suddenly faced with confronting COVID-19 impacts with respect to their original project timelines. Given the PTC Step-Down Period and the ITC Step-Down Period, these Developers became acutely aware that COVID-19 impacts could pose real, highly unfavorable ramifications insofar as their ability to reach certain project milestones – ones that would have been reachable under ordinary circumstances. Moreover, these Developers realized that their failure to meet these milestones as a consequence of the pandemic would prevent them from qualifying for the maximum amount of tax benefits they originally envisioned receiving under the PTC or ITC, as applicable.

1. Wind Industry Impacts to Utility-Scale Projects

⁵² *Coronavirus Disease 2019 (COVID-19) – Social Distancing – What is Social Distancing*, CDC (Nov. 17, 2020), <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/social-distancing.html>.

⁵³ Eric Levenson, et al., *What is and isn’t Allowed During a “Shelter-in-Place” Order*, CNN (Mar 18, 2020), <https://www.cnn.com/2020/03/17/us/shelter-in-place-coronavirus-trnd/index.html>; Jordan Culver, *Can You Leave Home with Shelter-In-Place Order in Effect During Coronavirus Crisis? Yes, Under Certain Circumstances*, USA TODAY (Mar. 19, 2020), <https://www.usatoday.com/story/news/health/2020/03/17/coronavirus-san-francisco-california-shelter-in-place/5073397002/>; Sarah Midkiff, *What Does a “Shelter-In-Place” Order Mean for You?*, MSN (Mar. 17, 2020), <https://www.msn.com/en-us/news/us/what-does-a-shelter-in-place-order-mean-for-you/ar-BB11kaJR>.

As of the beginning of first quarter 2020, many utility-scale wind projects were on-track to satisfy the PTC's conditions precedent, as articulated in Part I.B. herein, so that they qualified for the PTC's Continuity Safe Harbor. Given the PTC Step-Down Period, projects that actually began construction in 2019, or that were deemed to have begun construction in 2019, would be able to take advantage of the PTC at a rate of 60%, the highest PTC percentage rate available for Developers during the PTC Step-Down Period.⁵⁴ However, projects that missed the window to be deemed to have begun construction during 2019 would instead be deemed to Have Begun Construction in 2020. This would force these projects' respective Developers to use the comparatively smaller rate of 40% of the PTC. Accordingly, due to the substantial difference in federal tax credit savings a project that was deemed to have begun construction in 2019 could receive, 2020 was poised to be a "monster year" in terms of wind project installed capacity.⁵⁵

As a result of COVID-19 impacts, though, as of the end of first quarter 2020 and the beginning of second quarter 2020, utility-scale wind projects faced supply chain disruptions⁵⁶ due to the overall

⁵⁴ See Part I., *supra*, subsec. C. (Table 1).

⁵⁵ Interview by Todd Alexander, Partner, Norton Rose Fulbright US LLP of Ken Elser, Senior Vice President for Project Finance and M&A, DNV GL, *EP96: DNV GL on COVID-19 and the Renewables Industry* (May 5, 2020), <https://www.projectfinance.law/podcasts/2020/may/ep96-dnv-gl-on-covid-19-and-the-renewables-industry/> [hereafter, Elser Interview].

⁵⁶ Sidley Austin LLP, *When Coronavirus Forces Force Majeure: An Essential Webinar for Companies at All Stages of the Supply Chain* (Mar. 19, 2020), <https://www.sidley.com/en/insights/events/2020/03/when-coronavirus-forces-force-majeure> (Even in the absence of *force majeure* provisions in supply contracts or other procurement contracts, the contracting party who was to receive the goods has an obligation to obtain replacement goods, even if those replacement goods are more expensive than the originally contracted-for goods. An issue with this is that the good sought may be unique in the market and may be unavailable. This means even if the contracting party expends efforts to mitigate its damages and creates a paper trail to document its efforts to procure replacement goods, such replacement goods may be unobtainable. Alternatively, in situations where the supply or procurement contracts do contain *force majeure* provisions, the producer itself may have been experiencing COVID-19 impacts that prevent it from meeting ordinary business demands, even if the producer has a stable supply of the goods in question. In such situations, the producing party may invoke the *contract's force majeure* provision, leaving the recipient party scrambling to find replacement goods and to potentially launch a lawsuit against the producing party.); Part III.B, *infra* subsec. 1 (Many wind farm Developers who contracted for certain equipment or component parts for their wind turbines were at risk for neither receiving timely

supply chain being pushed to its limits.⁵⁷ Mitigation levels and measures taken across utility-scale wind farm projects were non-uniform and highly project-specific.⁵⁸ Each project faced its own unique issues with workforce shortages, equipment supply shortages, general construction operations, and meeting permitting timelines, among other things (collectively, “COVID-19 Threats”).⁵⁹ In the aggregate, throughout the U.S. wind energy industry, COVID-19 Threats impacted utility-scale wind projects in which approximately \$35 billion had already been invested. Collectively, these projects were slated to produce approximately 25 GW⁶⁰ of energy. COVID-19 Threats placed a number of these projects in jeopardy of failing to qualify for the PTC’s Continuity Safe Harbor.⁶¹ Despite COVID-19 Threats, second quarter 2020 projections indicated that the U.S. wind industry would nonetheless see a tremendous jump in installed capacity during 2020.⁶² During first quarter 2020 and early second quarter 2020, though, the COVID-19 pandemic forced an already overstretched U.S. wind industry to stretch further in order to enable the industry to reach its original, pre-pandemic installed capacity goals.⁶³

2. *Solar Industry Impacts to Utility-Scale Projects*

Similar to the COVID-19 Threats facing the utility-scale wind industry, with respect to timing for being deemed to have begun

the originally contracted-for equipment or parts, as well as for not finding suitable substitute goods under tight milestones and timelines that they need to meet for their project to qualify for the Continuity Safe Harbor.).

⁵⁷ Elser Interview, *supra* note 55 (For instance, the initial COVID-19-related lockdowns in Spain and Italy heavily impacted factories in Spain and Italy that manufactured wind turbine parts. Many of those factories were able to re-engage in production in mid-second quarter 2020.).

⁵⁸ *Id.*

⁵⁹ Grassley, *supra* note 23.

⁶⁰ *How Much Power is 1 Gigawatt?*, OEERE (Aug. 12, 2019), <https://www.energy.gov/eere/articles/how-much-power-1-gigawatt> (“GW” is an abbreviation for gigawatt. A gigawatt is the equivalent of 1 billion watts. To illustrate one GW’s magnitude, one GW provides enough energy to power 110 million light-emitting diode (“LED”) A19 lamps. For further frame of reference, 1 million watts is the equivalent of one megawatt, abbreviated “MW.”).

⁶¹ Catherine Morehouse, *Bipartisan Senators Ask Mnuchin to Extend Safe Harbor Deadlines for Renewable Projects*, *UTILITY DIVE* (Apr. 24, 2020), <https://www.utilitydive.com/news/bipartisan-senators-ask-mnuchin-to-extend-safe-harbor-deadlines-for-wind-s/576757/>.

⁶² *Id.*

⁶³ *Id.*

Construction in 2019 and qualifying for the maximum benefit under the PTC, the utility-scale solar industry also faced COVID-19 Threats for purposes of qualifying for the 2019 30% Tax Credit during the ITC Step-Down Period.⁶⁴ Workforce shortages and difficulties related to transporting the appropriate workers – including specialists – to particular sites existed, given certain state-specific and certain site-specific quarantine rules.⁶⁵ Also, proper risk mitigation programs, including ways to minimize person-to-person contact, may have been missing for solar construction crews.⁶⁶ These construction crews ordinarily would have needed to gather at common worksites. The absence of such mitigation measures meant that these crews were prohibited from gathering at these worksites. Consequently, a lack of the ability to formulate and deploy risk mitigation measures in standard construction practice may have resulted in project construction delays.

Early-stage utility-scale solar projects possess a large in-person component at the outset of their development, due to negotiations that occur with landowners and permitting offices. Consequently, these early-stage projects were the ones most at risk for experiencing hold-ups.⁶⁷ Although Developers for these projects prudently incorporated time buffers into their project construction timelines with respect to reaching certain completion milestones, these forecasts often did not allot as large a time buffer as COVID-19 impacts ultimately warranted.⁶⁸

In addition to labor issues, COVID-19 impacts caused the utility-scale solar industry to experience supply chain disruptions that presented substantial delays. During first quarter 2020, many solar Developers were unable to obtain critical components and equipment

⁶⁴ Due to the shorter construction timeline associated with utility-scale solar projects compared to utility-scale wind projects, these solar projects tend to attract a different type of investor base relative to that for utility-scale wind projects.

⁶⁵ Elser Interview, *supra* note 55.

⁶⁶ *COVID-19: What It Means for the Power and Utilities Industry*, PwC (2017 – 2021), <https://www.pwc.com/us/en/library/covid-19/how-covid-19-is-impacting-power-and-utilities.html>.

⁶⁷ Adam Krop, *Solar Project Bottlenecks Starting to Ease*, N. AM. CLEAN ENERGY [NACE], 12 (July-Aug. 2020), https://issuu.com/northamericancleanenergy/docs/nace_julaug2020-web (Must download to access.).

⁶⁸ *Id.* at 12-13.

within originally projected timelines.⁶⁹ Chinese factories alone accounted for a 3.5 – 4 GW shortage of solar module production during such time, due to these factories' shut downs.⁷⁰ While this production deficiency was rectified early in second quarter 2020, this brief blip in the solar module production timeline nevertheless caused certain deals in the U.S. utility-scale solar market to experience mild, short-term delays and adverse impacts.⁷¹ Although this slight disruption meant that the amount of commercial solar market growth domestically would be less than originally projected, as of mid-second quarter 2020, the U.S. solar industry was still poised to experience "very robust growth" for new solar installed capacity during 2020 as a whole.⁷²

B. Remedies – Force Majeure Contractual Provisions, Ramped-Up Inter-Industry Collaborations, and Federal Tax Credit Extensions

Throughout first and second quarter 2020, many utility-scale wind farm Developers and solar Developers, respectively, found themselves facing adverse economic circumstances, particularly for early-stage projects that were far from reaching financial close. Limited options existed as remedies to the various adverse circumstances they faced. As discussed below, these options consisted generally of taking one or more of the following approaches, which themselves varied in the level of control a Developer could exert regarding that particular remedy: (i) the traditional contractual route of invoking a contract's *force majeure* clause, (ii) the industry-wide resource sharing route, and (iii) the PTC and ITC extension route.

1. The Traditional, Contractual Route – Focus on Force Majeure Provisions

COVID-19 Threats shined a bright spotlight on the importance of *force majeure* contractual provisions and a contracting party's ability to invoke its protections. Generally, at the outset of contractual negotiations, Developers possess a certain level of control over how certain terms are defined in contracts to which they are parties. Developers generally also possess a high level of discretion regarding the enforcement of terms of their existing contracts. COVID-19

⁶⁹ *Id.*

⁷⁰ Elser Interview, *supra* note 55.

⁷¹ *Id.*

⁷² *Id.*

Threats, however, delivered a rude awakening to many such Developers. A number of Developers abruptly learned that certain contracts to which they were parties omitted crucial terms, such as *force majeure* provisions. Other Developers found that the manner in which contracts to which they were parties either defined *force majeure* triggers too vaguely or not inclusively enough to cover COVID-19 itself or the COVID-19 Threats that befell them. These Developers whose contracts did not provide them with sufficient *force majeure* protections often found themselves in unfortunate predicaments.

a. No Standardized Force majeure Provisions in Wind and Solar Contracts

In certain industries, standardized forms of contracts exist. The terms of the contracts have undergone rigorous vetting among industry experts, and everyone industry-wide who uses these contracts begins from the same common baseline. This standardization sets reliable expectations among all parties. It also ensures that parties to the same contract start at a level playing field. For instance, in the swaps and credit derivatives industry, all contracting parties use forms that International Swaps and Derivatives Association (“ISDA”) developed. Each swap or derivative transaction begins with an ISDA Master Agreement (“Master Agreement”) that contains standardized, fixed provisions that are accepted internationally. The contracting parties can then either enter into the Master Agreement as is, or they can agree to add a contract-specific ISDA Schedule, ISDA Credit Support Annex, and other standard ISDA form documents of their choosing to modify or clarify the Master Agreement’s standard terms.⁷³

In contrast to the swaps and derivatives industry, neither the wind industry nor the solar industry possesses standard form contracts. This means that neither supply contracts between a Developer and its

⁷³See *About ISDA*, ISDA (2021), <https://www.isda.org/about-isda/> (ISDA Master Agreements, ISDA Schedules, and ISDA Credit Support Annexes (“CSAs”) are agreements commonly used globally for documentation purposes with respect to over-the-counter (“OTC”) swaps and derivatives contracts. The International Swaps and Derivatives Association designed these documents with the aim of making the global swaps and derivatives market safer and more efficient for transacting parties.); see also *Schedule to the 2002 ISDA Master Agreement*, ISDA (2021), <https://www.isda.org/book/schedule-to-the-2002-isda-master-agreement/>; James Chen, *ISDA Master Agreement*, INVESTOPEDIA (Apr. 10, 2020), <https://www.investopedia.com/terms/i/isda-master-agreement.asp>.

suppliers, nor Engineering, Procurement, and Construction Contracts (“EPC Contracts”) between a Developer and its respective contractors contain across-the-board, standard form provisions. Rather, contractual provisions are largely left to the discretion of the contracting parties during the contract negotiation process, including *force majeure* clauses. *Force majeure* clauses commonly appear in construction-related contracts as a safeguard to protect the contracting parties in case an unexpected event occurs that prevents them from performing their contractual obligations. Generally, *force majeure* clauses cover circumstances beyond the contracting parties’ control that could not have been avoided through the exercise of reasonable care.⁷⁴ Parties to a supply contract or an EPC Contract have discretion to either include or omit certain provisions, such as a *force majeure* clause, during the contract negotiation and drafting process.

Such discretion among drafting parties also means that there is room for inconsistencies among EPC Contracts, supply contracts, and other various contracts that have been negotiated for a single project. This is especially the case if a project is an “international project” in which different parties involved for different purposes in the project’s overall effectuation may be based in different locations globally.⁷⁵ Also, because these parties may have different lawyers negotiating their contractual terms, the respective *force majeure* provisions across contracts for the same project may differ from one another.⁷⁶ These inconsistencies, in turn, may result in certain parties being excused from their contractual performance obligations while other parties are not.⁷⁷ Although these differences within the definition of a single

⁷⁴ BLACK’S LAW DICTIONARY, *Force Majeure*, 645 (6th ed. 1990).

⁷⁵ HOFFMAN, *supra* note 8, at 61, 119-209 (Notably, a “resurrection clause” may cure the inconsistency among *force majeure* clauses within contracts that relate to a single project. Such a clause enables the contractor to agree with the project company that where *force majeure* inconsistencies exist among the project’s contracts, the contractor and the project company both agree that the relief afforded to one of these parties will not be greater than the relief available to the other party under the other relevant project contracts. Using a resurrection clause ensures that the same relief available in the project contracts must also be available in the energy off-take sales agreement, the contract between the project company and the entity that will be purchasing the product or service that the project company generates. Having a resurrection clause also may enable a contractor to delay performance, rather than be excused from performance entirely. This may enable the project to still meet its timing milestones and enable it to satisfy its timing obligations under its energy off-take contract.).

⁷⁶ *Id.*

⁷⁷ *Id.*

defined term may not be dramatic, they nevertheless can be significant enough to lead to substantial disruptions within the project's original construction schedule that may significantly impact the project's economics.⁷⁸

b. Nebulous Nature of "Force Majeure" Definitional Content and Why Defining This Phrase Properly May Offer Clients Protection in the Future

i. Defining What Constitutes a "Force Majeure"

Even for those contracts containing a *force majeure* provision, there is no uniform standard for how to define a "*force majeure*" event. Accordingly, a *force majeure* clause can be defined in a multitude of different ways, allowing for broad diversity in the scope of its definition. As a result, the elements constituting a *force majeure* under one contract may be different from what constitutes a *force majeure* under another. This is why foresight in contract drafting plays a critical role. A lawyer's ability to think like a businessperson by anticipating potential future risks and addressing those risks in contractual provisions, such as by the well-crafted terminology included in a *force majeure* clause's definition, may prove extremely beneficial to that lawyer's client. As case law illustrates, such as in the United Kingdom's case *Pink Floyd v. EMI Records*,⁷⁹ this type of savvy contract drafting offers clients protections that may prove financially advantageous well after the date on which the parties execute the contract.

⁷⁸ *Id.*

⁷⁹ See *Pink Floyd v. EMI Records*, [2010] EWHC Ch D 533, HIGH CT. OF JUST., Case No. HC09CO0991 (UK) (para. 46-47, 52-53) (In *Pink Floyd v. EMI Records*, the lawyer(s) negotiating the contract on behalf of their mega-successful, globally acclaimed rock band client, Pink Floyd, had the foresight to define "Records" broadly, so that they consisted of "any sound alone devices . . . now known and currently exploited *together with formats to be devised and derived as a whole or in part from the Master Tapes*" (emphasis added). Including this forward-looking language was a brilliant move on the part of Pink Floyd's lawyers, as the court interpreted the "true construction" of this definition as capturing the contracting parties' intent to preserve the artistic integrity of the sound recordings in any medium. Accordingly, this definition enabled Pink Floyd to prevail on its summary judgment motion and preserve its rights to collect royalties in a new medium, digital sound, a technology that did not yet exist at the time that the contract was executed and at a time when only physical recordings (records) existed.).

Generally, a *force majeure* clause is broader than a more narrow “Act of God”⁸⁰ clause that only includes events resulting from the “direct, immediate, and exclusive” forces of nature, without any human control or influence, that no amount of human foresight or reasonable degree of care or diligence could have prevented.⁸¹ For instance, a *force majeure* clause may also include lockouts, labor disputes, wars, strikes, and embargos as an excuse for performance.⁸² In addition to these specifically articulated risks, a *force majeure* clause can contain more general language that is intended to shield all project parties against more unquantified, nebulous, adverse risks. For instance, a *force majeure* clause may include broad language, such as “other casualties that materially and adversely affect the business or properties or the operation of the Developer, or materially and adversely affects the ability of any project participant to perform its obligations under any project document to which it is a party.”⁸³ This type of phrasing, however, is subjective and leaves room for debate among the contracting parties as to what events fall within this phrase’s parameters.

ii. *Determining Whether COVID-19 Constitutes a “Force Majeure” Event*

Whether or not COVID-19 qualifies as a *force majeure* event depends on the wording of the *force majeure* definition in the particular contract at issue, if, indeed, that contract even contains such a provision. With respect to natural disasters, “*force majeure*” is generally limited to generic geological events, such as earthquakes and fires, or hydrological events, such as floods.⁸⁴ Given this general rule, classifying COVID-19 as a “physical natural disaster”⁸⁵ may stretch

⁸⁰ See HOFFMAN, *supra* note 8, at 132 (In certain cultures, the phrase “Act of God” is considered offensive, due to its being considered disrespectful and derogatory with respect to certain religious beliefs. Articulating the actual potential risks, or using a phrase that makes broad reference to potential risks, is a preferable alternative.).

⁸¹ BLACK’S LAW DICTIONARY, *Act of God*, 33 (6th ed. 1990) (Examples of an Act of God include physical events, such as accidents resulting from lightning, tornados, or perils of the sea, among other things.).

⁸² HOFFMAN, *supra* note 8, at 132.

⁸³ *Id.*

⁸⁴ *COVID-19 and the Solar Industry - Application to COVID-19*, 4 PwC (Mar. 2020), <https://www.pwc.com.au/legal/assets/legal-covid19-solar-industry-040320.pdf> [hereafter *COVID-19 and the Solar Industry*].

⁸⁵ *Id.* at 5; see also BLACK’S LAW DICTIONARY, *supra* note 74.

the ordinary meaning of the *force majeure* phrase beyond the scope of the originally-intended business purpose among the contracting parties at the time they entered into their written agreement. Moreover, because there is speculation that COVID-19 may have originated in a laboratory rather than in nature,⁸⁶ and because of the manner in which humans assisted in its rapid global transmission, it is arguable that COVID-19 may not be considered a “natural” occurrence, but instead, may be considered the result of human activity.⁸⁷ If the human activity was, indeed, involved in COVID-19’s origin, this becomes significant for contractual purposes. Specifically, the intent to create COVID-19 in a laboratory setting raises the issue of whether COVID-19 was a foreseeable outcome, and therefore disqualifies it from falling under the protections of the *force majeure* clause.

Certain definitions of “*force majeure*,” though, may be defined more broadly to include triggering events such as an “epidemic,” a “national emergency,” or “biological contamination.”⁸⁸ A contract containing this expansive language in its *force majeure* definition may enable its contracting parties to experience more ease in qualifying COVID-19 as a *force majeure* event, particularly as the World Health Organization has classified COVID-19 as a “Public Health Emergency of International Concern.”⁸⁹ From a lessons learned perspective, parties to supply contracts and EPC Contracts are now acutely aware of the need for a *force majeure* provision to appear in these contracts as a safeguard, and for such provisions to be drafted with clearly articulated, yet comprehensive, criteria that provides greater certainty

⁸⁶ See Eric Mack, *Nobel Bio Researcher: COVID-19 Was Lab Accident*, NEWSMAX (Apr. 19, 2020), <https://www.newsmax.com/us/hiv-malaria-wuhan-lab/2020/04/19/id/963563/> (Nobel Prize-winner Luc Montagnier, a French professor and virologist, speculated that the Wuhan National Biosafety Laboratory in Wuhan, China was endeavoring to find a cure for the AIDS virus when, as part of an industrial accident, the vaccine being tested escaped. His theory was that SARS-CoV-2 contains elements of malaria and HIV because since the early 2000’s, this laboratory has been specializing in experiments with coronaviruses.). See also Jack Brewster, *A Timeline of the COVID-19 Wuhan Lab Origin Theory* (May 24, 2020), <https://www.forbes.com/sites/jackbrewster/2020/05/10/a-timeline-of-the-covid-19-wuhan-lab-origin-theory/?sh=65f2d6605aba> (Article presents a timeline from Jan. 26 – May 24, 2020, highlighting statements from various scientists and U.S. officials regarding the diversity of opinions regarding the potential origins of COVID-19.)

⁸⁷ *COVID-19 and the Solar Industry*, *supra* note 84, at 5.

⁸⁸ *Id.*

⁸⁹ *Id.*

regarding covered occurrences rather than vague, generic references and subjective terminology.⁹⁰

c. *Reservation of Right to Claim a Force majeure vs. Quantifying COVID-19's Impacts*

According to Ken Elser, Senior Vice President for Project Finance and M&A at DNV GL,⁹¹ at the outset of the COVID-19 quarantine process, most major manufacturers and major EPC contractors whose contracts contained *force majeure* provisions registered their reservation of right to claim that a *force majeure* event had occurred, despite the actual COVID-19 impacts on their business operations not being well-quantified at the time they asserted such reservation.⁹² The Developers, who would have had an obligation to mitigate their damages and find substitute goods and services to replace those under their EPC Contracts and supply contracts,⁹³ generally pushed back when their respective contractual counterparties made such reservations, arguing that a counterparty cannot claim that a *force majeure* event had been triggered and had occurred until after such time as the impacts of the COVID-19 Threats they sustained had been quantified.⁹⁴ This “dance” between parties to the same contract not only occurred between Developers and their contractors, but also occurred between Developers and their grid interconnection providers when grid interconnection networks were unable to be built-out quickly enough to support projects coming on-line to the electric power grid.⁹⁵

The take-away from using contractual provisions to address COVID-19 impacts on supply chain and workforce issues is that even

⁹⁰ *Id.*

⁹¹ *About US*, DNV GL, <https://www.dnvgl.com/about/index.html> (DNV GL is a global, independent expert in risk management and quality assurance relating to energy projects.).

⁹² Elser Interview *supra* note 55 (These reservations of right were essentially an indication that an adverse impact may arise. By making this reservation of right, those who made this claim aimed to preserve their right to claim in the future that an actual *force majeure* event, indeed, had occurred and that it had adversely impacted their ability to perform their contractual obligations.).

⁹³ See Sidley Austin LLP, *supra* note 56 (For a discussion of how a *force majeure* impacts replacement of goods and business demands.); see also *COVID-19 and the Solar Industry*, *supra* note 84.

⁹⁴ See Sidley Austin LLP, *supra* note 56 (As of mid-second quarter 2020, many tangible impacts had not yet been quantified.).

⁹⁵ *Id.*

if their contracts contain well-defined *force majeure* clauses, Developers may still be at risk for immediate losses that are not easily mitigatable. While waiting for losses to be fully quantified at some future date may be the most fair and reasonable approach to assess accurately certain damages that occurred, a Developer may still sustain real-time, real-world impacts in the interim. These impacts could threaten the Developer's viability as a going concern, could cost the Developer millions of dollars in the future based on milestones missed to qualify for the maximum available federal tax credits, or could cause the project itself to become permanently derailed. Reliance on *force majeure* contractual provisions, therefore, may not act as a shield against immediate damages, but, rather, may only act as a bandage to treat retrospectively certain contractual issues that arose as a COVID-19 consequence.

2. *Ramped-Up Inter-Industry Collaborations*

Developers generally determine whether or not they share their resources with their industry competitors. Even if they are generous and share their resources with these competitors, they have no guarantees that their competitors will reciprocate with respect to the resources under the competitors' control. During historically "normal" circumstances, many Developers would not be willing to undertake such "sharing" risk. Interestingly, though, COVID-19 provided businesses in the wind and solar industries, respectively, with an opportunity to undergo a Renaissance of sorts in terms of engaging in a culture of mutual assistance. Social science research indicates that when others perceive players in the same game acting generously toward one another, they, too, tend to act generously.⁹⁶

These findings, in fact, played out among utility-scale wind Developers and solar Developers during first quarter 2020 and second quarter 2020, when COVID-19 impacts across the labor and equipment supply chains were the most sudden and unexpected. Many companies, particularly Developers, collaborated together to assist one another, drawing upon the broader power industry's century-long tradition of sharing.⁹⁷ Given COVID-19's impacts on personnel and

⁹⁶ FREDERICK H. ALEXANDER, *BENEFIT CORPORATION LAW AND GOVERNANCE: PURSUING PROFIT WITH PURPOSE* 49 (Berrett-Koehler Publishers, Inc., 2018).

⁹⁷ *COVID-19: What It Means for the Power and Utilities Industry*, *supra* note 66, Crisis Management and Response – Steps to Consider.

the supply chain alike, “sharing” among Developers included sharing workforce members and supplies. This cooperation among Developers aided in resolving labor deficiencies and supply chain sourcing for both human capital and equipment resources that were in short supply and were difficult to procure during the first half of 2020.⁹⁸

Due to Developers shifting into survival mode during COVID-19, though, while a culture of increased cooperation and helpfulness may have existed, it did so within a broader, survival of the fittest culture bubble. For example, within the solar industry, the spirit of sharing and cooperation did not extend to all impacted Developers. In fact, as of mid-second quarter 2020, the U.S. solar industry did not possess an industry-wide, collaborative approach to assist those in need, such as changes in companies’ operations and strategies in response to these impacted contemporaries.⁹⁹ Accordingly, ramped-up collaborations may have helped to keep only certain utility-scale solar projects afloat, while other utility-scale projects may not have been able to progress or survive.¹⁰⁰ This loss of originally-projected utility-scale solar project growth is why SEIA stated that the solar sector could lose half its 250,000 workers and billions of dollars in solar project investments in 2020 as a result of the COVID-19-induced economic shutdown.¹⁰¹

3. Federal Tax Credit Extensions

As of mid-second quarter 2020, there were two ways that the PTC, as well as the ITC, could be extended: (i) through Treasury (“Treasury Approach”) or (ii) through Congress (“Congressional Approach”).¹⁰² A number of U.S. Senators who were members and leaders of the Congressional Energy and Natural Resources Committee took the initial steps to accomplish the Treasury Approach by submitting a written request to Treasury Secretary Steve Mnuchin on April 23, 2020 (“Congressional Request”).¹⁰³ This Congressional Request explicitly requested that existing Treasury guidance be

⁹⁸ *Id.*

⁹⁹ *Id.*

¹⁰⁰ *Id.*

¹⁰¹ Catherine Morehouse, *Bipartisan Senators Ask Mnuchin to Extend Safe Harbor Deadlines for Renewable Projects*, UTILITY DIVE (Apr. 24, 2020), <https://www.utilitydive.com/news/bipartisan-senators-ask-mnuchin-to-extend-safe-harbor-deadlines-for-wind-s/576757/>; see also Grassley, *supra* note 23.

¹⁰² Morehouse, *supra* note 61.

¹⁰³ Morehouse, *supra* note 101.

amended so that both the PTC and the ITC safe harbors would be extended one more year for projects that began construction in 2016 and 2017.¹⁰⁴ If approved, this amendment would have the effect of extending the Continuity Safe Harbor, so that projects placed in service within five years, rather than four years, after satisfying the Begun Construction Requirement would qualify for this protection.

Given the COVID-19 Threats that were rattling both the U.S. wind and solar industries at the time of the Congressional Request's submission, many domestic utility-scale wind and solar projects were poised to benefit from a federally-imposed longevity extension for the PTC and ITC, respectively. Despite these circumstances, there was no guarantee that Treasury, indeed, would grant such an extension. Moreover, if Treasury did not grant such an extension, there was no back-stop guarantee that Congress would grant such an extension either. Given the time parameters of the impending PTC and ITC sunsets, many Developers did not have the benefit of time to await a response and linger in a state of limbo with respect to making reparations to their disrupted construction schedules. Rather, these Developers necessarily had to make certain strategic decisions, such as those discussed in Part V below, to take immediate actions and to keep their projects progressing forward on a steady course and at an accelerated speed to compensate for such disruptions.

On May 7, 2020, Treasury responded to the Congressional Request in a 3-sentence letter ("Response Letter"), announcing vaguely its "plans to modify the relevant rules in the future."¹⁰⁵ The American Council on Renewable Energy ("ACORE") and the American Wind Energy Association ("AWEA"),¹⁰⁶ the trade association for the U.S. wind industry, generally interpreted this language as meaning that the Treasury Approach would, in fact, be

¹⁰⁴ *Id.*; see also Grassley, *supra* note 23.

¹⁰⁵ Letter from Frederick W. Vaughan, Principal Deputy Assistant Secretary, to Senator Charles E. Grassley, U.S. Dep't of the Treasury, (May 7, 2020), <https://www.finance.senate.gov/imo/media/doc/2020-05-.07%20UST%20Response%20to%20Grassley%20et%20al%2004-23%20letter.pdf>.

¹⁰⁶ See *Tax Policy – Post-PTC Wind*, AWEA, at <https://www.awea.org/policy-and-issues/tax-policy> (For years, the U.S. wind industry has been preparing itself for the PTC's non-renewal. As AWEA's website indicates, while the PTC has been helpful in "establish[ing] a reliable, competitive domestic wind industry," AWEA expects the wind industry to "remain strong" once the PTC Phase-Out occurs.).

adopted, given that Treasury was on-board with extending the Begun Construction requirement as well as the placed in service deadlines, so that renewable energy projects at-risk for not meeting these deadlines once again would have the opportunity to satisfy the Continuity Requirement and qualify for the Continuity Safe Harbor.¹⁰⁷ SEIA's position regarding the Response Letter, though, was less enthusiastic, indicating that SEIA would continue to push for the Congressional Approach, so that Congress would develop a legislative solution with respect to these federal tax credits, particularly the ITC.¹⁰⁸

To the relief of both the wind industry and the solar industry, on May 27, 2020, Treasury and the IRS collectively issued Notice 2020-41,¹⁰⁹ which eliminated the need for the Congressional Approach regarding PTC and ITC extensions. For the wind industry, Notice 2020-41 officially extended the Continuity Safe Harbor to five years for renewable energy projects that began construction in either 2016 and 2017, satisfied the Begun Construction Requirement, and were placed in service “no more than five calendar years after the calendar year during which construction with respect to that qualified facility or energy property began.”¹¹⁰ Projects that satisfied this current Continuity Safe Harbor would qualify for the PTC.¹¹¹

For the solar industry, Notice 2020-41 also extended the ITC's Five Percent Safe Harbor through the creation of a safe harbor for the 3-1/2 Month Rule (the “3-1/2 Month Safe Harbor”).¹¹² The 3-1/2 Month Safe Harbor provides “certainty and assurance” to solar

¹⁰⁷ Emma Foehringer Merchant, *US Treasury to Tweak Tax Credit Deadlines for Renewables Projects*, GTM (May 7, 2020), <https://www.greentechmedia.com/articles/read/treasury-department-to-tweak-tax-credit-deadlines-offering-renewables-relief>.

¹⁰⁸ *Id.*

¹⁰⁹ See IRS Notice 2020-41, *Beginning of Construction for Sections 45 and 48; Extension of Continuity Safe Harbor to Address Delays Related to COVID-19 – Section 3. Extension of the Continuity Safe Harbor for Sections 45 and 48*, 7, <https://www.irs.gov/pub/irs-drop/n-20-41.pdf>; see also Treasury, *IRS Provide Safe Harbor for Taxpayers that Develop Renewable Energy Projects - IR-2020-106*, IRS (May 27, 2020), <https://www.irs.gov/newsroom/treasury-irs-provide-safe-harbor-for-taxpayers-that-develop-renewable-energy-projects>.

¹¹⁰ IRS Notice 2020-41, *supra* note 109.

¹¹¹ Michael Bates, *PTC and the IRS: Safe Harbor Extended One Year*, NAWP (May 28, 2020), <https://nawindpower.com/ptc-and-the-irs-safe-harbor-extended-one-year>.

¹¹² See IRS Notice 2020-41, *supra* note 109 (Section 4. Safe Harbor for 3-1/2 Month Rule, 7 – 8).

Developers by explicitly stating that if they paid for property or services for their respective projects on or after September 16, 2019, they would be deemed to have had a reasonable expectation of receiving those items within 3-1/2 months of that 2019 Payment Date, provided that they received such items on or before October 15, 2020.¹¹³

Indeed, the Continuity Safe Harbor and the 3-1/2 Month Safe Harbor enabled both the U.S. wind and solar industries to take a collective breath of relief due to the deadline extensions that Notice 2020-41 provided for both the PTC and the ITC. However, this relief came only after weeks of uncertainty that Developers in these industries experienced just waiting to see if either Treasury or Congress would, in fact, grant relief in the form of PTC and ITC safe harbor extensions. This waiting period provided both industries with a harsh reminder that heavy reliance on federal tax credits may not be the best approach for project actualization going forward. It also hit home the point that each of these industries' ability to find their own financing legs on which to stand, absent a large crutch of federal incentives, may be an alternative approach to project financing worth considering.

IV. THE POSITIVES FROM COVID-19 – IMPACTS ON BUSINESS EFFICIENCIES, OPERATIONAL STREAMLINING, AND INCREASED RELIANCE ON TECHNOLOGICAL INNOVATIONS

While the COVID-19 pandemic spotlighted longevity issues with the PTC and the ITC in a very unexpected and unusual manner, it also forced business leaders, including Developers, to shift into survival mode by undergoing intense, introspective reviews of their internal operational practices – something which may not have otherwise occurred until years later, if at all. As a result of this internal analysis, many Developers implemented business practices that made their businesses more nimble and efficient. This included streamlining operations, lowering operational costs, undertaking better social practices, and adopting or increasing reliance on cutting-edge, technologically-advanced devices, such as drones and LIDAR¹¹⁴ sensors, to improve services that also provided positive environmental benefits. Through this abrupt pivoting born out of necessity,

¹¹³ *Id.* at 8.

¹¹⁴ Part IV., *infra* subsec. B (For a definition of LIDAR and a more in-depth discussion of LIDAR's usage.).

Developers became more receptive to thinking outside the box and working in novel, creative ways to move their projects forward.¹¹⁵ Arguably, as a result of these shifts, Developers adopted improved corporate management strategies, potentially creating better long-term value for both their respective companies and investors.¹¹⁶

A. Greater Drone Usage

In terms of operations, maintenance, and safety, as a result of Developers re-examining their standard protocols, many Developers opted to streamline certain tasks by integrating greater reliance on technological innovations, such as drone usage, into their routine practices. For instance, to reduce their need for in-person, on-site facility visits during shelter-in-place measures, certain wind Developers became more heavily reliant on drone usage for remote monitoring purposes.¹¹⁷ This increased reliance on automated drone inspections reduced the need for human inspections, solving workforce-related limitations. Drone inspections also indirectly enhanced safety measures for on-site workers by decreasing the number of people on the project site.¹¹⁸ In addition to this drone usage strategy lessening the on-site human interactions that otherwise would have needed to occur,¹¹⁹ this strategy also produced environmental benefits. In particular, placing greater reliance on drones contributed to high levels of avoided carbon dioxide emissions from automobiles, airlines, and other means of transportation that Developers would have had to use to import labor from far away locations to their respective project sites. Developers' ability to work closely with the investment community during COVID-19 also helped to accelerate the investment community's adaptation timeline for getting comfortable with heightened levels of drone usage, greater reliance on data collected from drones, and decreased frequency of in-person site visits.¹²⁰

¹¹⁵ Elser Interview, *supra* note 55; Interview by Todd Alexander, Partner, Norton Rose Fulbright US LLP of Richard Dove, Co-Founder and Managing Member of C2 Energy Capital, *EP105: Distributed Generation's Reaction to COVID-19* (June 23, 2020), <https://www.projectfinance.law/podcasts/2020/june/ep105-distributed-generations-reaction-to-covid-19/>.

¹¹⁶ ALEXANDER, *supra* note 96, at 47.

¹¹⁷ Elser Interview, *supra* note 55.

¹¹⁸ *Id.*

¹¹⁹ *Id.*

¹²⁰ *Id.*

Effectively, COVID-19 Threats catalyzed wind and solar Developers alike to become more efficient, causing them to modify longstanding, traditional industry operational protocols regarding the labor force and labor usage. Additionally, COVID-19 Threats may have provided a needed push for Developers that previously were hesitant to transition to a more automated workforce status. Developers' taking these forced, and perhaps uncomfortable steps forward, nonetheless, helped both the commercial wind and solar industries to evolve through a widespread adoption more resilient operational practices that will set new benchmarks from a custom and usage perspective within both industries. Not only did Developers in these industries re-evaluate ways to cut workforce costs and build efficiencies by gathering data through drone usage, but this greater reliance on technological know-how also assisted in establishing a more robust, reliable track record for drone usage and drone data collection in both industries.¹²¹ COVID-19 Threats, consequently, helped to ramp-up drone usage, heralding what may be a permanent shift in traditional industry operational standards for drone usage.

B. Increased Reliance on LIDAR

Traditionally, within the utility-scale wind industry, Developers erect meteorological masts (known as "met masts") to measure wind direction and gather wind speed data at fixed locations, a practice that assists at a macro level in optimizing wind farm layouts and assists at a micro level in determining where to site individual wind turbines at specific locations, including the direction each turbine faces.¹²² Moreover, met masts can also gather data relating to wind

¹²¹ *Id.*

¹²² See *Power Purchase Agreements (PPAs) and Energy Purchase Agreements (EPAs)*, WORLD BANK GROUP (Mar. 22, 2020), <https://ppp.worldbank.org/public-private-partnership/sector/energy/energy-power-agreements/power-purchase-agreements>; Kimberly E. Diamond, *Wake Effects, Wind Rights, and Wind Turbines: Why Science, Constitutional Rights, and Public Policy Issues Play a Crucial Role*, 40 WM. & MARY ENVTL. L. & POL'Y REV. 813, 815, 832 (2016), <http://scholarship.law.wm.edu/wmelpr/vol40/iss3/5/> (Wind turbine siting has significant monetary implications for Developers, as optimizing the wind flow to a particular wind turbine placed on a certain parcel enables that turbine to produce a greater amount of energy. Over the course of the wind turbine's useful life of approximately 20 – 30 years, the aggregated amount of energy a single wind turbine produces can be significant. A turbine's energy output factors into a wind farm's ability to meet its energy deliverability requirements under a Power Purchase Agreement ("PPA"), the agreement between the wind farm

wakes, turbulence, and wind speed impacts resulting from adjacent, neighboring wind farms on which utility-scale turbines have already been placed.¹²³ The downside of met mast installation, though, is that a single met mast generally requires eight or more individuals to install it properly.¹²⁴ As a result of social distancing requirements aimed at reducing the spread of COVID-19,¹²⁵ wind farm Developers were essentially required to have fewer people on the job as a safety precaution measure.¹²⁶ This forced reduction in on-site staff caused Developers to break from tradition, improvise, and seek alternatives to using met masts to gather wind data.¹²⁷

Doppler LIDAR¹²⁸ sensors proved to be a viable solution to address this met mast issue. LIDAR, a ground-based, state-of-the-art, advanced remote sensing measurement technique, has grown in popularity across the global wind industry during the course of the last decade.¹²⁹ Not only are LIDAR sensors easy to install, including in areas with topographically complex terrain, but, compared to met masts, they take approximately one-third of the time to erect.¹³⁰ Due to COVID-19 Threats, particularly workforce shortages, Developers that had not already shifted to LIDAR in place of met masts were effectively forced to make this technological transition. Although Developers that originally prepared to use met masts did not anticipate implementing this change, pivoting to a LIDAR system enabled them to capture needed wind data safely, comply with workforce social distancing mandates,¹³¹ and stay on-schedule with respect to meeting

or other power-generating facility and the energy off-taker, generally an electric utility, which also factors into the wind farm's profitability.).

¹²³ Diamond, *supra* note 122, at 818.

¹²⁴ Ameya Paseband, *How Tech is Driving Wind Success Post-Pandemic*, NACE, 40, 41 (July – Aug. 2020).

¹²⁵ See Part III., *supra* subsec. A.

¹²⁶ Paseband, *supra* note 124, at 41.

¹²⁷ *Id.* at 40–41.

¹²⁸ See *What Is Lidar?*, NAT'L OCEAN SERV., NAT'L OCEANIC AND ATMOSPHERIC ADMIN., AND U.S. DEP'T OF COMMERCE [NOAA] (Dec. 4, 2020), <https://oceanservice.noaa.gov/facts/lidar.html> (“LIDAR” is the abbreviated term used to describe Doppler Light Detection and Ranging systems. This remote sensing method uses pulses from laser light in combination with other atmospheric data to generate precise, three-dimensional information with respect to land topography.).

¹²⁹ Paseband, *supra* note 124, at 41.

¹³⁰ *Id.* (Whereas a met mast generally takes approximately three days to install, ground-based LIDAR units can be installed within a single day.).

¹³¹ *Id.*

their respective projects' development milestones. It also provided them with an opportunity to advance technologically, enabling them to catch up to and be on par with other industry players who had already taken this innovative step forward. Collectively, this shift in high-tech equipment choice further solidified LIDAR technology's place as the industry standard for wind data collection, while streamlining the workforce needed to gather this data.

C. Streamlining of the Project Permitting Process

COVID-19 also spurred the streamlining of the project permitting process, particularly in the utility-scale solar industry. During the first and second quarters of 2020, permitting offices, or Authorities Having Jurisdiction ("AHJs"), were adverse to changing their standard practices, causing public hearings to be put on hold and creating permitting bottlenecks.¹³² Following this period, though, certain AHJs, particularly in New York and Maine, began to adopt technology-based practices that allow for the virtualization and standardization of the permitting process.¹³³ Consequently, while COVID-19 Threats may have hindered the permitting process for certain utility-scale solar projects, working through the difficulties these projects experienced provided a means for employing technology to overcome permitting hurdles. This technological leap forward will assist future solar products during each's respective permitting process, insofar as it will reducing permitting costs¹³⁴ and potentially smooth and accelerate the permitting process itself.

D. Re-Evaluation of Sources for Equipment Procurement

COVID-19 Threats also caused Developers to re-evaluate their equipment procurement practices along the supply chain. Prior to COVID-19, if sufficient time buffers were built into the equipment component delivery schedule, Developers historically were comfortable with ordering these components from manufacturers across the globe.¹³⁵ As a result of COVID-19 Threats, however, many

¹³² Krop, *supra* note 67, at 12.

¹³³ *Id.* at 13.

¹³⁴ *Id.*

¹³⁵ See David Nurse, *2019 Top 10 Wind Turbine Manufacturers – Wind Supplier Analysis*, ENERGY ACUITY (July 31, 2019), <https://energyacuity.com/blog/2019-top-10-wind-turbine-manufacturers/> (For instance, in the wind industry, in 2019, the top 10 global manufacturers of

Developers became laser-focused on the sources from which they ordered their equipment.¹³⁶ They also reconsidered the sufficiency of contractual terms and delivery schedule time buffers, particularly those Developers who anticipated building more projects in the future.¹³⁷ Investors also demanded not only a higher degree of scrutiny with respect to project schedules, but also with respect to project budgets and financial reserves.¹³⁸ As a result, many Developers engaged in a self-evaluation of their procurement practices, determining ways to mitigate against their financial reserves' depletion by revisiting their choices of equipment suppliers, revamping their standard practices regarding budget and schedule risk, and identifying areas for improvements in contractual provisions that would mandate more lengthy time buffers for equipment delivery for future projects. Collectively, due to Developers tweaking their equipment purchasing practices, the overall effect going forward will likely be a more resilient procurement supply chain for the wind and solar industries.

E. Banking Community's Refinement of Pre-Merger Due Diligence Requirements

Lenders also strengthened their due diligence practices with respect to merger and acquisition ("M&A") transactions as a result of COVID-19 impacts. Lenders are risk-adverse by their very nature. They are also in the business of making money from interest paid over a fixed period of time on the debt instruments into which they enter with their borrowers. To earn this money, Lenders invest large amounts of capital in borrowers' projects to optimize the amount of these borrowers' interest payments in future years. This investment capital is at risk of loss when Lenders' respective borrowers enter into loans, revolving credit facilities, or other structured financing vehicles for their projects, as these borrowers could default on their payment obligations. For these reasons, Lenders endeavor to identify, implement, and standardize new protocols aimed at reducing the risk of borrower non-payment or default.

commercial wind turbines were as follows: (1) Siemens; (2) Vestas; (3) GE Renewable Energy; (4) Enercon; (5) Nordex SE; (6) Senvion; (7) Goldwind (Xinjiang Goldwind Science & Technology Co., Ltd.); (8) Sinovel Wind; (9) Suzlon; and (10) MHI Vestas Offshore Wind; Denmark. Many of these companies have their main corporate headquarters and manufacturing facilities located outside the U.S.).

¹³⁶ Elser Interview, *supra* note 55.

¹³⁷ *Id.*

¹³⁸ *Id.*

During 2020, certain Lenders faced an increased risk of borrower non-payment or default as a consequence of their respective borrowers' entering into contracts with vague, faulty, or missing *force majeure* terms, or with insufficient equipment delivery time buffers. As discussed in Part III.B.1.a, due to different drafting preferences among contracting parties during the contract drafting stage, certain Developers possessed supply contracts and EPC Contracts that lacked *force majeure* provisions, contained *force majeure* clauses that did not cover or were vague about covering either COVID-19 or COVID-19 Threats, or contained *force majeure* clauses that were inconsistent with other contracts for the same project and that led to certain project parties' non-performance. Also, as discussed in Part III.A.2., certain of these contracts possessed equipment delivery periods whose durations were too short, given the unforeseen supply chain disruptions that COVID-19 initiated. These omissions, vague contractual terms, and inconsistencies across contracts likely jeopardized lending arrangements into which these Developers had entered. While various Lenders may have been able to craft work-out arrangements with certain of their Developer borrowers, other Lenders may have been less fortunate and may have lost some or all of their investment capital.

To enhance their risk reduction strategies and increase the probability of fulfilling their investment-backed expectations, in 2020, Lenders adopted additional safeguards as part of their standard vetting procedures regarding potential borrowers. For instance, as of mid-second quarter 2020, credit committees at certain Lenders involved in M&A transactions, such as investment banks, began requiring a new section in the standard pre-merger due diligence memo that focused on *force majeure* events.¹³⁹ This requirement addressed Lenders' respective credit committees' elevated concerns regarding risk exposure across firm portfolios. Adding this improvement to the borrower vetting process has better positioned credit committees to more accurately assess equity and debt investors' relative risk exposure to *force majeure*-induced delays.¹⁴⁰ This strategic tweak will aid in Lenders' risk minimization by reducing their future loss exposure risk, preventing against future borrower loan defaults to the extent possible, and decreasing the number of potential debt

¹³⁹ *Id.*

¹⁴⁰ *Id.*

restructurings and other work-outs that they would otherwise need to implement with their borrowers regarding payment defaults.

CONCLUSION

During 2020, the domestic wind and solar industries were each hit with a double whammy. Not only did they face issues with the step-downs and impending sunsets of both the PTC and the ITC, but, as a result of the COVID-19 pandemic, Developers and Lenders doing business in these sectors also faced unexpected disruptions to their normal practices. Also, COVID-19 Threats jolted many Developers into pivoting abruptly to implement dramatic changes to their workplace staffing procedures. Developers' equipment sourcing and acquisition practices took on a game-like quality, making each Developer effectively a competitor for goods relative to other similarly situated market players who were vying for products that had suddenly become scarce commodities. Suppliers and purchasers globally found themselves focusing on their contracts' *force majeure* provisions, putting them under a microscope, scrutinizing their content, and endeavoring to enforce them in unprecedented numbers. Moreover, although Treasury ultimately extended certain milestones for both the PTC and ITC during mid-second quarter 2020, the weeks leading up to that time were fraught with the uncertainty of whether such an extension, in fact, would be granted. Developers were forced to withstand the COVID-19 Threats and rebound from these unanticipated disruptions within their standard operations. As a result, COVID-19 Threats sent certain Developers scrambling, due to the urgency of meeting certain federally-mandated milestones under the PTC and ITC, in order to qualify for the maximum benefit each of these tax credits respectively afforded, or to qualify for either tax credit whatsoever.

While COVID-19 Threats stressed the domestic wind and solar industries, COVID-19 impacts' rattling of the global equipment supply chain amid workforce shortages helped to magnify certain procedural road bumps that could be smoothed. It also highlighted to Developers and Lenders alike other areas for improvement and innovation. COVID-19's unexpected impacts on these renewable energy industry market players caused them to re-examine and streamline certain of their practices. This included re-evaluating external, outward-facing practices. As a result, Developers across both the wind and solar industries, respectively, considered the merits of having uniform

standards across contracts, including having consistent, well-crafted *force majeure* contractual provisions in contracts for the same project. This helped to elevate the contract drafting standard in both industries.

Addressing COVID-19 Threats also accelerated the refinement of internal practices that could be automated. Many Developers adopted more technologically sophisticated strategies for data collection through state-of-the-art drone and LIDAR usage. They also placed greater reliance on a more streamlined workforce. As a result of breaking from the norm and incorporating these practices into their regular operational routines, Developers reached certain project development milestones during early and mid-2020 in a much more condensed period of time than they likely would have, absent COVID-19 impacts. COVID-19 impacts also caused market players to remove certain obstructions in industry-wide procedures, such as those that existed in the project permitting process. They also caused Developers to re-think their procurement strategies and resulted in the finance industry strengthening its pre-merger due diligence disclosure requirements for M&A transactions.

Collectively, COVID-19, COVID-19 Threats, and COVID-19 impacts proved to be an unexpected yet valuable catalyst, accelerating and advancing the technological and operational evolution of the domestic wind and solar industries, with the added benefit of elevating industry-wide standards throughout these industries and within the U.S. finance industry. Indeed, COVID-19 sparked a brief upheaval among Developers and Lenders within the U.S. wind and solar industries in early 2020. Nevertheless, these Developers and Lenders were able to adapt nimbly to their new and unusual circumstances by capitalizing on technological know-how. This yielded operational benefits, produced certain positive technological outcomes, and enabled Developers and Lenders within these industries to incorporate practices that will help their industries be more resilient in the future.

