CONTRACTUAL APPROACHES FOR ALLOCATING THE RISK OF PRODUCTIVITY LOSS IN ENERGY CONSTRUCTION

S. Scott Gaille[*] *& Tanner Harris*[**]

Synopsis: Construction productivity is the rate at which the contractor advances its work. Productivity can be affected by many factors, each of which enhances or impedes a contractor's performance. While it is possible to measure and compare the contractor's productivity at different points in time, it is difficult to measure the extent to which an individual factor enhanced or impeded productivity. This unknowability creates a risk of expensive and uncertain litigation, with dueling experts drawing opposing conclusions and telling different stories of causation from the underlying data. Like *ex ante* waivers of other speculative and unpredictable damages (*e.g.*, consequential and punitive damages), parties to construction agreements can contractually allocate the risk of productivity loss before the project begins. Such *ex ante* risk allocation benefits the energy industry by enhancing predictability, aligning incentives, and reducing transaction costs.

* S. Scott Gaille is Managing Partner of the Houston-based energy law boutique GAILLE PLLC and a Lecturer in Law at The University of Chicago Law School. GAILLE PLLC has represented project owners and contractors on more than $25 billion of construction matters since 2015.

** Tanner Harris is Managing Counsel at GAILLE PLLC and has represented contractors on more than 30 energy projects in the past 18 months. Brian Murphy, a JD/MBA student at The University of Chicago Law School and The University of Chicago Booth School of Business, provided research assistance on this article and the authors extend their gratitude for his efforts.

I. INTRODUCTION

Energy project owners and their contractors are among the most sophisticated contracting parties in the world. They routinely negotiate and perform construction agreements with values in the hundreds of millions — and even billions — of dollars. They employ expert lawyers with many years of experience to draft, negotiate, and enforce their agreements. And they are repeat players, able to continuously implement new information and experiences into subsequent contractual arrangements. As such, owners and contractors in the energy industry typically understand the tradeoffs between *ex ante* risk allocation and the uncertainty of *post hoc* dispute resolution.[1]

Owners usually select their construction contractors through a competitive "request for proposal" or RFP process. By inviting multiple contractors to submit and present their own cost, schedule, and technical proposals for completing the subject project, the owner can identify and consider the tradeoffs between cost certainty, contractor experience, technical capability, and other factors. The RFP typically also requires participating contractors to submit a redline of the project owner's construction agreement alongside their technical and commercial proposals.

Tension necessarily exists between a contractor's pricing and its proposed allocation of risk in the construction agreement — because bearing more risk generally costs more money.[2] For example, if the construction agreement pays the contractor standby payments when severe weather prevents the work from progressing, then the owner should expect little or no contingency[3] for severe weather in that contractor's commercial proposal.[4] Conversely, if a contractor agrees to accept the risk of severe weather delaying the work, then the owner should expect that the contractor's price will be somewhat higher (to compensate the contractor for the possibility of incurring standby costs due to severe weather).

It can be more efficient — and create a Pareto[5] improvement for the parties — to allocate the risk of certain events to only one of the parties. For example, if

---

1. *See* S. Scott Gaille, *Reducing Conflict and Risk: Why Parties Benefit From Using Enumerated Adjustment Clauses in Energy Construction and Services Agreements*, 42 ENERGY L.J. 123, 126-128 (2021).

2. *See, e.g.*, McNamara Constr. of Man., Ltd. v. United States, 206 Ct. Cl. 1, 8, 509 F.2d 1166, 1169-70 (1975) ("In firm fixed-price contracts, risks fall on the contractor, and the contractor takes account of this through his prices") (quoting Ralph C. Nash, Jr., *Risk Allocation in Government Contracts*, 34 GEO. WASH. L. REV. 693, 694-96, 701-02 (1966)).

3. By contingency, we mean additions to the proposed price to account for the risk of an uncompensated occurrence for which the contractor bears the risk under the construction agreement.

4. *See, e.g.*, CNX Midstream Devco I LP v. Applied Constr. Sols., Inc., No. 20-0290, 2021 U.S. Dist. LEXIS 166701 (W.D. Pa. Sept. 2, 2021) ("After some correspondence, [the contractor] submitted, [at project owner]'s request, a revised bid that removed various 'contingencies' in order to provide [project owner] a lower price as requested . . . 'We included a contingency for inclement weather, snow or rain. Our goal was to take care of any makeup days. Basically, we tried to cover all possible issues to avoid any addition [sic] cost to [project owner]'").

5. By Pareto, we mean that either the owner or contractor is made better off without the other party being made worse off. *See, e.g.*, RICHARD A. POSNER, ECONOMIC ANALYSIS OF LAW 41-42 (9th ed. 2014) ("A Pareto-superior transaction (or 'Pareto improvement') is one that makes at least one person better off and no one worse off.").

the project owner agrees to pay the contractor's standby cost for hurricane impacts, the owner may save money on a system-wide basis because the owner avoids paying contingency for a rare event across the many projects that were not impacted by a hurricane.[6] Likewise, there are circumstances where it is more efficient to allocate the risk of a given event to the contractor. We argue here that loss of productivity falls into the latter category, and that allocating loss of productivity costs to the contractor serves the interests of project owners and contractors alike and may create value for society generally.

Energy construction agreements allocate two types of risk: (i) the risk of an *event* occurring and (ii) the risk of a party incurring certain types of *damages*. Allocating event-driven risk is comparatively easier and subject to precision because most events are easily defined, observed, and measured. In the case of severe weather, the agreement might specify that the contractor will be compensated if rainfall in excess of three inches is recorded at the nearest weather station in a 24-hour period. As the rainfall maximum is easily defined and the quantity of rainfall is publicly reported, precise allocation of risk is achievable at low cost.

In contrast, allocating the risk of a party incurring certain types of damages is more difficult. Either party may be incurring costs that the other may be unaware of, that are disproportionate to the cost or value of the project, or that are difficult to measure. For example, consider a project owner that engages a contractor to construct a facility upgrade, which will result in $5 million of profit for the contractor. During the construction, the facility will need to operate below its capacity, resulting in lost profits to the owner of $10 million per month. While the project may be typical, the potential losses are not. At $10 million a month, delay damages could easily exceed the contractor's expected profits from the project.[7] In the absence of a clause limiting the contractor's exposure to the owner's lost profits, the contractor would be exposed to a mismatch between its compensation and the downside of being late. The contractor would either refuse to undertake the project or would demand a much higher price to compensate for this risk. For this reason, project owners and their contractors commonly agree to waive the right to recover lost profits in their construction agreements.[8]

In this same category is a type of damage called "loss of productivity," in which any number of events reduces the speed at which the contractor progresses its work. Even if a contractor's overall productivity on a project can be measured,

---

6. Gaille, *supra* note 1, at 135 ("Under a discretionary adjustment clause, the contractor is likely to include more contingency in its pricing to address the possibility that the owner's project manager will deny claims. In this respect, the owner effectively pays for some portion of known unknowns whether they come to pass or not. In contrast, under an enumerated adjustment clause, the price paid by owners should be lower (because such contingency is unnecessary due to the express contractual assurance of an adjustment)").

7. *See* Megan A. Ceder & Travis J. Distaso, *Consequential Damages Waivers: How to Consequentially and Incidentally (Including Indirectly) Waive Your Remedy*, 6 HOUS. L. REV. 1, 3 (2015).

8. *Understanding Waiver of Consequential Damages in Construction Contracts*, AIA CONT. DOCUMENTS (Feb. 28, 2023), https://learn.aiacontracts.com/articles/understanding-waiver-of-consequential-damages/ ("Waiver of consequential damages provisions are extremely common in construction contracts. For example, Section 15.1.7 of the A201-2017 states: 'The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract.'").

many factors can enhance or impede productivity — most of which are largely within the contractor's control. Thus, when a contractor seeks damages for loss of productivity, the usual result is a long, expensive, and fact-intensive dispute over causation.[9]

Due to the complexity of energy construction, the relationships between project owners and their construction contractors are important. There is neither an unlimited pool of energy contractors with the resources and capabilities necessary to build complex projects nor an unlimited slate of projects to be built. For example, consider offshore pipeline construction, which requires the use of specialized pipelay vessels. One such category of pipelay vessel, referred to as "Ultra High-Spec" or UHSV, is designed for installation of pipelines in deep water.[10] Project owners have very few places to shop around for contractors operating UHSVs — a recent analysis of worldwide pipelay vessel inventory indicated that only *four* such vessels exist on Earth.[11] Similarly, the limited number of project owners building offshore pipelines creates risk for contractors due to revenue concentration risk:

> Offshore contractors may derive a significant amount of revenues and profit from a relatively small number of customers. Problems or cutbacks from one or more customers may materially impact business operations. Customers change over time as contracts are fulfilled, but, if new contracts are not replaced or found, financial conditions and cash flows could be adversely affected. Loss of a major customer may adversely impact financial conditions.[12]

Construction disputes in the energy industry thus carry the additional risk that the parties will not be able to work together on future projects.

This article evaluates common contractual provisions which may preclude some types of loss of productivity claims and proposes two contractual solutions to universally allocate the risk of loss of productivity:

- a productivity damages waiver clause — akin to the consequential damages waiver clause that is ubiquitous in construction agreements; or
- alternatively, a liquidated damages clause that compensates the contractor for loss of productivity based on the value of change orders.

---

9. *See* MECH. CONTRACTORS ASS'N OF AM., CHANGE ORDERS, PRODUCTIVITY, OVERTIME: A PRIMER FOR THE CONSTRUCTION INDUSTRY 124 (2024), https://www.mcaa.org/resource/change-orders-productivity-overtime-a-primer-for-the-construction-industry-2-2/ [hereinafter CHANGE ORDERS, PRODUCTIVITY, OVERTIME] (discussing expense of design and coordination productivity claims); Samuel I. Portnoy & Kate E. Janukowicz, *No-Damages-for-Delay Provisions: How to Make Them Enforceable*, N.J. L.J. (Apr. 23, 2018), https://www.law.com/njlawjournal/2018/04/25/no-damages-for-delay-provisions-how-to-make-them-enforceable/ ("[a]lthough claims for delay damages in construction litigation are fairly common, they are notoriously difficult and expensive to prosecute or defend.").

10. MARK J. KAISER, THE OFFSHORE PIPELINE CONSTRUCTION INDUSTRY – ACTIVITY MODELING AND COST ESTIMATION IN THE U.S. GULF OF MEXICO § 6.1.5 (2020).

11. *Id*. § 6.2.2.

12. *Id*. § 8.3.1.8.

Holding all else equal, we would expect that the contractor's initial bid would be slightly higher when the agreement bans productivity damages than when it provides for liquidated damages because, as discussed above, when a contractor bears greater risk it will typically "take account of this through [its] prices."[13] Therefore, a contractor bearing the risk of loss of productivity is expected, all else equal, to price its bid higher than a contractor who does not bear the risk of loss of productivity.

Our analyses in this article and the use of representative contractual language are based on our experience with energy construction agreements.[14] As such, we recognize that construction contracts in other sectors may or may not benefit from the analysis presented here.

II. WHAT IS LOSS OF PRODUCTIVITY?

Construction productivity is generally defined as the output achieved per hour of input.[15] In other words, "productivity is a measurement of rate of output per unit of time or effort usually measured in labor hours."[16] Loss of productivity, therefore, is typically defined as occurring when "a contractor is not accomplishing its anticipated achievable or planned rate of production and is best described as a contractor producing less than its planned output per work hour of input."[17] At its core, a loss of productivity occurs when a contractor must expend more effort in terms of man hours, equipment hours, and overhead hours to complete the same amount of work.

Courts describe the damages resulting from a loss of productivity using a variety of terms. The same damages may be interchangeably referred to as "loss of production," "loss of efficiency," "impact costs," or "ripple costs." A United States administrative judge explained these types of losses as follows:

> Impact costs are additional costs occurring as a result of the loss of productivity; loss of productivity is also termed inefficiency. Thus, impact costs are simply increased labor costs that stem from the disruption to labor productivity resulting from a change in working conditions caused by a contract change. Productivity is inversely proportional to the man-hours necessary to produce a given unit of product. As is self-evident, if productivity declines, the number of man-hours of labor to produce a given

13. *McNamara Constr. of Man., Ltd.,* 509 F.2d at 1169-70 ("In firm fixed-price contracts, risks fall on the contractor, and the contractor takes account of this through his prices" (quoting Nash, Jr., *supra* note 2, at 694-96, 701-02)).

14. Energy construction contracts are for the most part unpublished and include procedures for the contractor to advance claims against the owner privately, including through the change order process, officers' meetings, mediations, expert resolution, or arbitration. Where this article discusses agreements or claims without a citation, the statements being made in this article are based on our personal ranges of experience.

15. AACE INT'L RECOMMENDED PRAC. NO. 25R-03, ESTIMATING LOST LABOR PRODUCTIVITY IN CONSTRUCTION CLAIMS 1 (2004), https://www.alphathree.com/sites/default/files/publication_pdfs/RP25R-03.pdf [hereinafter AACE INT'L PRAC. No. 25R-03].

16. *Id.*

17. *Id.*

> task will increase. If the number of man-hours increases, labor costs obviously increase.[18]

The challenges of loss of productivity are illustrated by a claim that arose in the wake of a Gulf Coast hurricane.[19] Hundreds of miles from the affected area, a construction contractor was building an energy facility. The construction site was not impacted by the hurricane. However, many people in the contractor's workforce had significant ties to the Gulf Coast. Some personnel experienced — or narrowly avoided — damage to their own homes and offices or those of their friends and relatives.

A few months after the storm passed, the contractor raised a claim for additional compensation, alleging that the distant hurricane decreased the productivity of its work crews. The gist of the claim was that even though the crews continued to work their originally scheduled hours, people were distracted. They were worried about their families, friends, and property to such an extent that their work was out-of-rhythm, slower than normal, and even more prone to mistakes. Since the contractor was paying for personnel and equipment on an hourly basis, this meant that its costs had increased — compared to what it had been incurring prior to the hurricane.

The contractor hired claims consultants to prepare reports showing what its productivity had been before and after the hurricane. These reports showed a decline in productivity after the hurricane. Even three months after the hurricane passed, productivity remained below pre-hurricane levels. The contractor sought millions in damages from the owner — based on the difference between the labor, equipment, and overhead costs it had actually incurred post-hurricane versus those the contractor claimed it would have incurred had its pre-hurricane productivity levels continued.

But as this claim illustrates, "loss of productivity cannot generally be directly observed."[20] It is based on comparing two periods of time to one another — before and after the alleged cause — and assuming that the difference is attributable to the alleged cause. When contractors make such claims, their experts rarely look for or consider other potential causes. In doing so, they are committing the *post hoc* fallacy. As two public policy practitioners observed, this fallacy is a common issue when expert testimony is introduced in civil proceedings:

> [The *post hoc* fallacy], which is observable in many aspects of daily life, presumes that if one thing follows something else, that first thing must have caused the second thing. For example, a person who develops a fever after eating leftovers the night before might erroneously assume the two are related. A person who lets a friend use

18. Clark Constr. Grp., Inc., 00-1 BCA ¶ 30,870 (2000) (VABCA No. 5674).

19. A summary of this claim is described here based on the personal knowledge of the authors, with some details unrelated to the subject matter of this article changed to anonymize the parties involved.

20. Daniel E. Toomey et al., *Calculating Lost Labor Productivity: Is There a Better Way?*, 35 CONSTR. LAW. 27, 28 (2015) (quoting Andrew D. Ness, *Delay, Suspension of Work, Acceleration and Disruption, in* FEDERAL GOVERNMENT CONSTRUCTION CONTRACTS 558-59 (Aaron P. Silberman et al. eds., 2d ed. 2010)).

> her cell phone to make a call and notices the returned phone is not working properly might erroneously assume the friend is to blame.[21]

The hurricane loss of productivity claim assumed that just because productivity declined after the hurricane, the hurricane was the cause of that decline.[22]

Another loss of productivity claim we defended was based on the cumulative impact of change orders. Over the course of that project, the owner and contractor negotiated and executed over 200 change orders[23] — and the contractor had been paid millions of dollars in price adjustments for them. After the project was complete, the contractor brought a claim seeking additional loss of productivity damages beyond what had been paid in the change orders. The dollar amount sought by the contractor was about equal to the *entire contract value* of the project, thus seeking to double the cost of construction. The contractor based its claim on a measured mile analysis — comparing its higher productivity during the early stage of the project (before there were many change orders) with its lower productivity later in the project (after there had been many change orders).[24] As with the hurricane example, the contractor committed the *post hoc* fallacy, ignoring the possibility that productivity had declined, in whole or in part, for reasons other than the number of change orders.

III. THE LOSS OF PRODUCTIVITY CLAIM PROCESS

The problem with adjudicating loss of productivity claims is the myriad of factors affecting productivity:

> [P]roving lost productivity is one of the most contentious and controversial areas in construction claims and disputes. . . . This can be readily understood because productivity decline can occur in many circumstances on construction projects, which may be attributed to the owner, the contractor's estimate, the ability to execute as estimated, or to a third party.[25]

The table below illustrates the wide range of circumstances that can affect productivity:

---

21. Victor E. Schwartz & Christopher E. Appel, *Roundup Cases May Be a New Example of an Old Problem: The* Post Hoc *Fallacy*, WASH. LEGAL FOUND. (Aug. 9, 2019), https://www.wlf.org/2019/08/09/publishing/roundup-cases-may-be-a-new-example-of-an-old-problem-the-post-hoc-fallacy/.

22. The *post hoc* fallacy results from conflating causation with correlation. *See Correlation and causation*, AUSTL. BUREAU OF STAT., https://www.abs.gov.au/statistics/understanding-statistics/statistical-terms-and-concepts/correlation-and-causation (last visited Apr. 11, 2025) ("Correlation is a statistical measure (expressed as a number) that describes the size and direction of a relationship between two or more variables. A correlation between variables, however, does not automatically mean that the change in one variable is the cause of the change in the values of the other variable. Causation indicates that one event is the result of the occurrence of the other event; i.e. there is a causal relationship between the two events. This is also referred to as cause and effect.").

23. In our experience, it is typical for major energy construction projects to be the subject of more than a hundred change orders — due to their complexity and duration of construction.

24. This end-of-project claim was ultimately defeated by clear waiver language in the contract and each executed change order.

25. Toomey et al., *supra* note 20, at 27 (quoting Tong Zhao & J. Mark Dungan, *Proving Lost Productivity in International Construction Claims*, 31 INT'L L.Q., 11, 11 (2014)).

Examples of How Loss of Productivity Can Be Caused by Contractor[26]	1. Absenteeism and the missing man syndrome 2. Availability of skilled labor 3. Competition for craft labor 4. Craft turnover 5. Crowding of labor or stacking of trades (interfering with each other) 6. Insufficient or inexperienced supervision 7. Excessive overtime/fatigue 8. Failure to coordinate subcontractors and vendors 9. Labor relations or conflict 10. Learning curve issues (less-experienced labor) 11. Materials, tools, or equipment shortages or incorrect tools 12. Overmanning 13. Poor morale of labor 14. Project management factors (failure to properly schedule and coordinate the work) 15. Out of sequence work 16. Rework and errors
Examples of How Loss of Productivity Can Be Caused by Owner	1. Too many changes in the work (cumulative impact) 2. Acceleration (directed or constructive) 3. Defective or ambiguous drawings 4. Site location or access restrictions 5. Untimely responses to contractor requests for information 6. Owner materials and other deliverables are late 7. Other owner personnel interfere with contractor's work
Examples of How Loss of Productivity Can Be Otherwise Caused	1. Weather 2. Protesters 3. Other force majeure 4. Differing site conditions

In 2021, the American Society of Civil Engineers published *Identifying, Quantifying, and Proving Loss of Productivity*, the "first loss of productivity document written and published in accordance with ANSI Standard Guidelines and ASCE Rules for Standards Committees."[27] The publication is more than 25,000 words long, cites over 240 sources, and justifies its purpose as follows:

26. AACE INT'L PRAC. NO. 25R-03, *supra* note 15, at 4.

27. AM. SOC'Y OF CIV. ENG'RS, ANSI/ASCE/CI 71-21, IDENTIFYING, QUANTIFYING, AND PROVING LOSS OF PRODUCTIVITY at vii (2021) [hereinafter IDENTIFYING, QUANTIFYING, AND PROVING LOSS OF PRODUCTIVITY].

> The numerous published treatises and studies on loss of productivity in the construction industry highlight its importance. Despite that importance, there are inconsistencies in the methodologies used to identify, quantify and determine causation and liability for labor productivity losses. Compounding this lack of consistency is the fact that loss-of-productivity disputes and claims are increasing in frequency and magnitude. An additional characteristic of loss of productivity claims is that they can be quite complex for many reasons. . . .[28]

The very fact that such an endeavor is needed raises questions regarding the continued efficacy and advisability of evaluating, calculating, and litigating loss of productivity claims.

The difficulty of measuring and proving loss of productivity has not stopped contractors and their lawyers from trying. There are at least seven different methodologies that contractors have used in loss of productivity claims:

- *Total Cost Method*. "[T]he estimated labor costs for the project are subtracted from the costs as actually incurred, including profit, to arrive at the amount of the equitable adjustment. . . . The total cost method is not favored and often is not accepted by courts [because it] does not differentiate among problems caused by the Government, private owner, and contractor."[29]
- *Modified Total Cost Method*. The modified total cost method seeks to "calculate the inefficiency cost . . . [by] subtract[ing] out (1) costs incurred due to contractor error and (2) the bid price for the project."[30]
- *Measured Mile Method*. "This method involves a comparison of the productivity achieved by the contractor in an undisrupted area of work with the contractor's productivity on a similar task during a disrupted work period."[31]
- *Earned Value Method*. "The earned value method is premised on the fact that documents normally present on a construction project can be used to determine a level of effort required to perform discrete activities on a period-by-period basis. From these determinations, it may be possible for an expert to arrive at conclusions regarding productivity impacts."[32]
- *Industry Studies and Guidelines*. "*Clarke Concrete Contractors, Inc.* also allowed for the use of industry guidelines in calculating lost productivity costs with some downward adjustment. In *Clarke Concrete*, one of the contractor's subcontractors based its claim on

28. *Id.*

29. Reginald M. Jones, *Lost Productivity: Claims for the Cumulative Impact of Multiple Change Orders*, 31 PUB. CONT. L.J. 1, 30, 31 (2001).

30. *Id.* at 33.

31. *Id.* at 34.

32. Paul L. Stynchcomb et al., *Preparing and Presenting Loss of Labor Productivity Claims: Analysis of the Methodologies with Two Exemplars*, 40 CONSTR. LAW. 18, 21 (2020).

the labor productivity rates established by the Mechanical Contractors Association (MCAA)."[33]

- *Time and Motion Studies*. "This method requires using a consultant to prepare a time and motion study that compares the workers' performance on [an] unimpacted area of the work with an impacted area. The study can include observation and documentation of the work over a period of time and video tape analysis of the work as it is being performed. This approach is best suited when the work requires repetitive tasks and there is sufficient detailed documentation to allow for the calculation."[34]
- *Expert Opinions*. "The retained expert will . . . obtain anecdotal statements from the field personnel relative to the disruptive event. In addition to obtaining statements from the project personnel, the expert will review the as-planned and as-built project documentation. After the expert has gathered the appropriate project information, the consultant will rely on his experience with similar projects to render an opinion as to the nature and cost of the disruption on the subject project."[35]

While contractors' lawyers and their experts have devised multiple methodologies for seeking to prove their claims, no particular methodology has prevailed:

> One of the most contentious areas in construction claims is the calculation or estimation of lost productivity. Unlike direct costs, lost productivity is often not tracked or cannot be discerned separately and contemporaneously. As a result, both causation and entitlement concerning the recovery of lost productivity are difficult to establish. Compounding this situation, **there is no uniform agreement within the construction industry as to a preferred methodology of calculating lost productivity**.[36]

This is because, "like snowflakes, each construction project is different," and "no courts or boards have devised either a foolproof or fail-safe procedure for comparing similar work, or clear and foolproof guidelines to eliminate the often-fuzzy boundaries between 'similar' and 'dissimilar' work."[37]

Even the American Society of Civil Engineers' standard failed to settle on a single methodology. Instead, it selected three of the methodologies and rank-ordered them:

> The preferred order of methods for quantifying productivity loss is
> Tier 1: Measured Mile.
> Tier 2: Academic and Industry Productivity Factors Studies and Modified Total Cost.

---

33. Gerald P. Klanac & Eric L. Nelson, *Trends in Construction Lost Productivity Claims*, 130 J. PRO. ISSUES ENG'G EDUC. & PRAC. 226, 234 (2004).

34. William C. Last, Jr., *Are You Including a Loss of Productivity Cost Component In Your Change Orders? Techniques For Establishing a Lost Productivity Claim*, LAST FAORO & WHITEHORN, https://www.lastfaoro.com/articles/are-you-including-a-loss-of-productivity-cost-component-in-your-change-orders-techniques-for-establishing-a-lost-productivity-claim/ (last visited Apr. 1, 2025).

35. *Id*.

36. AACE INT'L PRAC. NO. 25R-03, *supra* note 15, at 1 (emphasis added).

37. Toomey et al., *supra* note 20, at 28.

> Tier 3: Total Cost.
> Before moving from one tier to a lower tier, reasonable degree of certainty that a higher-tier method could not be used should be shown.[38]

The presence of so many approaches illustrates the "biggest problem with proving causation" — that is "separating internally (contractor) caused inefficiencies from externally (Government or private owner) caused inefficiencies."[39]

IV. THE COSTS OF LOSS OF PRODUCTIVITY CLAIMS

Loss of productivity claims are "difficult to identify, quantify, and prove, and often involve significant sums of money."[40] Escalating labor cost is a major driver for such claims:

> In the mechanical contracting sector of the construction industry, as with all labor intensive trades, once the project has been bought out and the material and equipment purchase orders have been entered into the job cost system, the largest single variable (and the most volatile component) that controls profit on the project is the expenditure of labor hours. Therefore, one of the keys to profitability on a project-by-project basis is maintaining control of labor productivity.[41]

This is even more so for energy projects, which require large numbers of construction workers. For example, the "workforce for the duration of the approximately 55-month [Port Arthur LNG] Expansion Project construction period would average approximately 1,554 workers per month."[42] The Line 3 oil pipeline replacement project in Minnesota averaged "4,157 jobs per year . . . with peak employment reaching more than 13,000 jobs in 2021."[43] Attempting in hindsight to discern productivity for thousands of people — and the causes thereof — results in factually intensive disputes with considerable discovery and dueling expert witnesses.

In other words, loss of productivity claims are a lawyer's dream, and an expensive and uncertain nightmare for both the contractor and owner:

> As anyone knows who has been through the experience of either prosecuting or defending against a loss-of-productivity claim, this can be a very expensive undertaking. It normally involves retaining an experienced construction productivity expert, preferably one with direct experience in the type of construction involved and trades whose productivity is claimed to have been disrupted; depending upon the available project records, the expert may need to spend many hours analyzing the claimant's original productivity on the project at hand and, potentially, may be required to examine records from other similar projects for the purpose of developing reasonable proof of the loss of productivity and causation as a result of impacts for which the

---

38. IDENTIFYING, QUANTIFYING, AND PROVING LOSS OF PRODUCTIVITY, *supra* note 27, at 17.

39. Jones, *supra* note 29, at 38.

40. IDENTIFYING, QUANTIFYING, AND PROVING LOSS OF PRODUCTIVITY, *supra* note 27, at 22.

41. CHANGE ORDERS, PRODUCTIVITY, OVERTIME, *supra* note 9, at 139.

42. *Port Arthur LNG Expansion Project Environmental Assessment*, FERC Docket No. CP20-55-000, at 12 (Jan. 2021), https://www.ferc.gov/sites/default/files/2021-01/CP20-55%20EA%20Port%20Arthur%20LNG%20Expansion%20Project%201.15.21.pdf.

43. *Line 3: By the Numbers*, MINNESOTANS FOR LINE 3, https://www.minnesotansforline3.com/#:~:text=It%20is%20estimated%20that%20the,peak%20of%20the%20construction%20activity (last visited Apr. 20, 2025).

> contractor is not responsible. Correspondingly, in defending against such a claim, the opponent often must incur comparable costs in expert fees to not only refute such claims, but, very possibly, to persuade the trier-of-fact that the opponent's expert is not qualified or his/her analysis fails to meet the *Daubert* threshold for admissibility.[44]

Both parties face other costs, too, including: (i) distraction of personnel who must respond to document production requests and interrogatories and attend depositions; (ii) inability of either party to close their books on the project in question; (iii) unlikelihood that the parties will be willing to work together on other projects during the pendency of a multiyear dispute; and (iv) the possibility that the parties may never work together again.

And then there is the question of which party will prevail. Fact-intensive disputes with multiple potential causes are fraught with uncertainty. It may not be possible for either party to handicap their chances of victory until the trial or arbitration proceeding is nearing completion. The percentage of published cases in which contractors succeeded on loss of productivity claims has been reported as 38%.[45] For the contractor, a loss of productivity claim is effectively a spin of the roulette wheel, in which the contractor may win millions of dollars but also could lose millions of dollars in costs and attorneys' fees. Even if the contractor can find a lawyer who will take the case on a contingency fee basis, a losing contractor may be required to pay the owner's legal fees.

V. PRECEDENT FOR A LOSS OF PRODUCTIVITY DAMAGES WAIVER: CONSEQUENTIAL DAMAGES LIMITATIONS

The seminal case on consequential damages in a contractual context is the 1854 English case *Hadley v. Baxendale*. The plaintiff, Hadley, operated a mill powered by a steam engine. When the mill's crankshaft broke, Hadley did not have a spare on hand and the engineers who originally built the custom crankshaft could not produce a replacement from scratch without using the damaged crankshaft as a pattern.[46] Therefore, it became necessary for the damaged crankshaft to be transported to the engineer's facility.[47]

Hadley engaged Baxendale, a well-known carrier, to transport the damaged crankshaft to the engineer's facility and specifically emphasized the need for haste.[48] Baxendale promised to deliver the crankshaft to the engineers by the next day but failed to deliver it for several days.[49] During this period of delay, Hadley's mill was inoperable and he suffered lost profits due to the pause in the mill's operation, which Hadley subsequently attempted to recover from Baxendale.[50]

---

44. Toomey et al., *supra* note 20, at 27-28.

45. William Ibbs & Oskar Gentele, *Usage and Acceptance Rates for Loss of Productivity Damage Quantification Methods*, 41 CONSTR. LAW. 26, 28 (2021).

46. Hadley v. Baxendale, 156 Eng. Rep. 145, 146 (Ex. 1845).

47. *Id*.

48. *Id*. at 147.

49. *Id*.

50. *Hadley*, 156 Eng. Rep. at 147.

The Court of Exchequer, while acknowledging Baxendale's contractual breach, declined to find Baxendale liable for Hadley's lost profits.[51] The court stated:

> . . . [T]he loss of profits here cannot reasonably be considered such a consequence of the breach of contract as could have been fairly and reasonably contemplated by both the parties when they made this contract. For such loss would neither have flowed naturally from the breach of this contract in the great multitude of such cases occurring under ordinary circumstances, nor were there special circumstances, which, perhaps, would have made it a reasonable and natural consequence of such breach of contract, communicated to or known by the defendants.[52]

Hadley's economic loss rule has also been extended to tort law.[53] Noted jurist Richard Posner saw three "animating principles" driving the holding in *Hadley*:

- a defendant should not be liable for consequential damages, absent notice of special circumstances;
- the party who can avoid a loss at the cheapest cost should bear the burden of the loss; and
- only foreseeable damages should be recoverable.[54]

As a United States Court of Appeals judge, Posner applied this theoretical framework to a tort case — even though *Hadley* is a contracts case — and thereby illustrated the utility of its theoretical underpinnings in deciding how to handle situations with the same underlying factors.[55] As Thomas J. Miles, the current Dean of the University of Chicago Law School, observed, each of Posner's perspectives on *Hadley* identify a policy rationale for the economic loss rule, and, collectively, they offer a framework for understanding the seemingly inconsistent application of the economic loss rule in other cases.[56]

In the construction context, these principles have led to the widespread adoption of consequential damages waivers in construction agreements:

> One of the best-known cases involving consequential damages arising from construction contracts is *Perini Corp. v. Greate Bay Hotel & Casino, Inc.*, 129 N.J. 479, 610 A.2d 364 (N.J. 1992). In this case, a New Jersey court upheld an arbitration panel's decision that the construction management firm engaged to manage a casino restoration project owed the owner $14,500,000 in lost profits due to delays in the project.[57]

Perini Corp presented an extreme result. The contractor was only four months late on a project for which it had been paid $600,000. Yet the contractor found itself responsible for an amount of damages *twenty-four times* what it had been paid for its work.

---

51. *Id*. at 151.

52. *Id.*

53. Thomas J. Miles, *Posner on Economic Loss in Tort: EVRA Corp v Swiss Bank*, 74 U. CHI. L. REV. 1813 (2007).

54. *Id.* at 1816-29 (discussing Evra Corp. v. Swiss Bank Corp., 673 F.2d 951 (7th Cir. 1982) (Posner, J., opinion)).

55. Evra Corp. v. Swiss Bank Corp., 673 F.2d 951, 957 (7th Cir. 1982).

56. Miles, *supra* note 53, at 1816.

57. Gail S. Kelley, *Waiver of Consequential Damages*, STRUCTURE, https://www.structuremag.org/article/waiver-of-consequential-damages/ (last visited Apr. 19, 2025).

The outcome in Perini Corp is largely credited with being the:

> impetus for adding a mutual waiver of consequential damages clause to the AIA A201 [model construction contract in 1997]. This clause (subparagraph 15.1.7 of the 2017 A201) includes a broad list of the consequential damages that the Owner waives, including rental expenses, loss of use, income, profit, financing, business and reputation, and loss of employee productivity and services. The Contractor waives the right to claim principal office expenses, lost opportunities and profit, loss of bonding or increased bonding costs, and damages to reputation.[58]

While the waivers of lost profits, lost income, and loss of use in such clauses may be mutual on their face, they (usually) disproportionately benefit the construction contractor. Consider a wind turbine project with expected annual revenues of $25,000,000. A contractor's exposure for late completion could be upwards of $70,000 a day in lost income to the owner alone. This is likely substantially higher than the owner's exposure for the contractor's "extended home office overhead,"[59] which may even be compensated as a portion of price adjustments paid for owner-caused delays (thereby circumventing most of the owner's benefits from the damage limitation).[60]

In any event, the rationale for excluding consequential damages is the same:

> By their subjective nature, these claims [for consequential damages] typically are the largest, most costly and the most likely to lead to a windfall to one party and economic disaster to the other. The possibility of a windfall recovery is one of the most substantial impediments to settlement in disputes over delays or change orders. Eliminating these exposures should substantially reduce the overhead cost of contractors for the benefit of the whole construction industry.[61]

For these reasons, "[c]ontractual provisions that mutually waive the rights of the owner and contractor to recover consequential damages have become commonplace in today's construction contracts."[62] With respect to complex energy projects, our experience has been that waiver of consequential damages clauses are almost always present.

In fact, construction agreements for energy projects may even list "loss of productivity" as a prohibited type of consequential damages. Does it make sense to think about loss of productivity in the same way as we do consequential damages? Applying Judge Posner's *Hadley* framework to loss of productivity claims provides the answer:

---

58. *Id.*

59. J. William Ernstrom & Michael F. Dehmler, *Mutual Waiver of Consequential Damages: The Contractor's Perspective*, 18 CONSTR. L. 4, 4 (1998); *see also* James G. Zack, Jr., *Calculation and Recovery of Home Office Overhead*, CM EJOURNAL 12 (Aug. 2021), https://www.cmaanet.org/sites/default/files/inline-files/home_office_overhead.pdf.

60. For example, if standby time is paid for owner-caused delay, the construction agreement may provide for a percentage fee (additional profit and overhead) in addition to the out-of-pocket costs for personnel and equipment on standby. *See, e.g.*, Gaille, *supra* note 1, at 123.

61. Lynn R. Axelroth, *Mutual Waiver of Consequential Damages — The Owner's Perspective*, 18 CONSTR. L. 11, 11 n.1 (1998) (quoting Memorandum from Howard Goldberg to Am. Inst. of Architects Documents Comm. 1 (Apr. 18-20, 1996)).

62. Jason L. Richey & William D. Wickard, *Waiving Good-Bye to Consequential Damages: Drafting Effective Waivers in Today's Marketplace*, K&L GATES CONSTR. L. (Dec. 01, 2007), https://www.klconstructionlawblog.com/2007/12/01/waiving-good-bye-to-consequential-damages-drafting-effective-waivers-in-todays-marketplace/.

- *Hadley Principle 1: Asymmetric Information.* The information-forcing rationale of *Hadley* — that is, allocating liability by default to the party who knows the most about the specific details of its own potential losses — applies equally to allocating the risk of loss of productivity to the contractor. As in the hurricane example above, a contractor will have a high level of familiarity with the unique characteristics of its workforce and how that workforce might be affected under a variety of conditions. The contractor is therefore in a better position to price for this risk than the owner due to the information asymmetry and the inability of the owner to lessen this asymmetry.
- *Hadley Principle 2: Least Cost Avoider*. The contractor also is in the best position to mitigate and avoid productivity-related damages, including the ability to manage which crews are working where and when and how work is sequenced.
- *Hadley Principle 3: Foreseeability*. As the hurricane and cumulative impact examples demonstrate, the owner is often blindsided by unforeseeable loss of productivity claims. Even when loss of productivity is foreseeable, the owner likely is surprised by its magnitude.

If loss of productivity is sufficiently similar to consequential damages, the ASCE standard and the hundreds of articles it cites may be imposing complexity where simplicity is needed. Perhaps the question should not be how to measure loss of productivity — but whether loss of productivity should be measured at all.

VI. METHODS FOR CONTRACTUALLY ALLOCATING THE RISK OF LOSS OF PRODUCTIVITY

One of the principal purposes of negotiating a construction contract is to undertake "a conscious effort to anticipate the unexpected and to allocate the risk so the project can go forward."[63] While contractors may assume that contractual silence implies a right to receive compensation for claims not expressly prohibited, the opposite may be true. Many of the cases granting relief for loss of productivity arise under the United States government's changes clause, which has been interpreted as authorizing loss of productivity claims. Where private construction agreements lack such an express pathway to recovery, the contractor may implicitly waive these types of damages:

> The court declined to follow federal precedent, reasoning that the subcontract at issue did not contain language similar to the federal Changes clause, which expressly authorizes an equitable adjustment for changes that increase or decrease the cost and time required for work under the contract, "whether or not changed by any such order." The court acknowledged that change orders may delay a project, disrupt productivity, and increase costs, but asserted that if a contractor does not intend to waive its inefficiency claims, it must reserve that right in the contract. Specifically, the court explained: "To avoid such an unfavorable occurrence, a contract could pro-

63. Hazel Glenn Beh, *Allocating the Risk of the Unforeseen, Subsurface and Latent Conditions in Construction Contracts: Is There Room for the Common Law?*, 46 U. KAN. L. REV. 115, 116 (1997).

> vide that in the event of such situations, the contractor reserves its right to claim impact costs until the full impact of the changed or 'extra work' is appreciated. Or, the contract could contain a clause patterned after the federal [Changes clause]." . . . In the absence of specific contractual language, the board in *Beaty* had to determine the intent of the parties by examining extrinsic evidence. Instead of leaving the question to the judgment of a board or a court, "prudence dictates that contractors expressly reserve the right to such a claim when signing off on change orders."[64]

However, owners should not assume that silence means the contractor is barred from seeking damages for loss of productivity. Owners seeking to avoid loss of productivity claims should "limit or altogether exclude lost productivity claims through restrictive provisions in the contract documents."[65] Among the contractual options discussed below, the trend in construction agreements for major energy projects is to expressly bar claims for loss of productivity damages — in a manner similar to which they bar consequential damages — with contractors then being forced to include some contingency in their pricing to account for this risk.[66] Even if contingency does not fully compensate the contractor for a major impact on productivity occurring on a single project, over time, the accumulated contingency from many projects can place a contractor in the same or better position than its estimated gain from a single productivity claim (after taking into account all of the costs of bringing a productivity claim and the probability of prevailing).

A. Including Loss of Productivity in the Consequential Damages Waiver

It is not uncommon to see "loss of productivity" or similar wording included in consequential damages waivers in energy construction agreements. Two examples of this clause are as follows:

> *Variation A*: Notwithstanding anything else in this Agreement, neither Party will be liable for any consequential or indirect damages, including, without limitation: (a) damages in respect of (i) a loss of profits or revenues, (ii) a delay of profits or revenues, (iii) a loss of productivity, (iv) a loss of production, (v) a loss of opportunity, (vi) a loss of efficiency, (vii) a loss of use, (viii) delay, and (ix) interest owed on debt to third parties; and (b) damages similar to (a)(i)-(ix) that arise from the specific nature of the claimant's circumstances.
>
> *Variation B*: Notwithstanding anything else in this Agreement, neither Party will be liable for: (a) damages in respect of (i) a loss of profits or revenues, (ii) a delay of profits or revenues, (iii) a loss of productivity, (iv) a loss of production, (v) a loss of opportunity, (vi) a loss of efficiency, (vii) a loss of use, (viii) delay, and (ix) interest owed on debt to third parties; and (b) any other indirect or consequential damages

64. Jones, *supra* note 29, at 44, 45 (first quoting Uhle v. Tarlton, 938 S.W.2d 594, 597 n.3, 599 (Mo. Ct. App. 1997); and then quoting Haas & Haynie Corp., 84–2 BCA ¶ 17,446, 86,897, 86,899 (GSBCA Nos. 5530 et al.)); *see also* 48 C.F.R. § 52.243–1(b) (2001) (The United States Government change clause provides: "If any such change causes an increase decrease in the cost of, or the time required . . . by the order, the Contracting Officer shall make an equitable adjustment in the contract price, the delivery schedule or both, and shall modify the contract for, performance of any part of the work under this contract, whether or not changed.").

65. Klanac & Nelson, *supra* note 33, at 231.

66. It should be noted that statutory or common law limitations on waivers of consequential damages would likely also apply to waivers of loss of productivity damages. For example, the waiver might not be effective in circumstances amounting to the owner's willful misconduct.

> similar to (a)(i)-(ix) that arise from the specific nature of the claimant's circumstances.

While both clauses contain a similar list, Variation B *directly* bans "damages in respect of . . . a loss of productivity." Variation A likely accomplishes the same result — but by listing loss of productivity as an example of the types of consequential/indirect damages that the parties intend to exclude. Given the importance of clarity regarding loss of productivity claims, parties should try to avoid relegating productivity waivers to the list of examples.

The potential pitfalls of relying on the consequential damages waiver in this way were illustrated in *Kiewit Offshore Servs., Ltd. v. Dresser-Rand Glob. Servs., Inc.* There, the consequential damages waiver provided as follows:

> [Dresser-Rand] and [Kiewit] each hereby waive any and all Claims it may have against the other for consequential, special, punitive, or indirect damages, including but not limited to lost profits or business interruption, however same may be caused. The term "consequential damages" includes, but is not limited to, **loss of production**, loss of profits, loss of business, and loss of use.[67]

Construction contracts routinely refer to "loss of productivity" in a variety of ways, including "loss of production." However, the words "loss of production" in upstream projects may also refer to claims by the owner for loss of oil and gas production. This was one of the issues in the *Kiewit* case:

> Dresser-Rand argues that Kiewit's Project Impact Damages claim seeks consequential damages and therefore is barred under Article 909's consequential damages waiver. Dresser-Rand contends that, despite Kiewit's attempt to characterize these damages as "impact damages," Kiewit plainly seeks damages for delay costs, loss of efficiency, and loss of productivity, which are consequential in nature. Dresser-Rand emphasizes at multiple points that Kiewit's Project Impact Damages claim seeks to recover for "delay damages" or "loss of productivity" damages. However, Dresser-Rand has cited to no authority indicating that these types of damages are considered "consequential" under Texas law. Moreover, the plain language of Article 909 does not prevent Kiewit from seeking damages for delays. Article 909 does mention "loss of production"; however, Dresser-Rand admitted at oral argument that this provision refers to loss of oil production, not loss of a contractor's productivity.[68]

While consequential damages waiver clauses can effectively also waive loss of productivity, *Kiewit* illustrates the importance of clear drafting to accomplish this result.

B. Standalone Loss of Productivity Damages Waiver

The best practice for addressing loss of productivity damages in construction agreements is to include a stand-alone clause barring them altogether. Several of our clients have taken this approach. In doing so, productivity can be addressed just like any other risk. If the parties agree to include a clause that bars loss of productivity claims, then the contractor can add dollars to its lump sum or fee

---

67. Kiewit Offshore Servs. v. Dresser-Rand Glob. Servs., No. H-15-1299, 2016 U.S. Dist. LEXIS 117835, at *15 (S.D. Tex. Sept. 1, 2016) (emphasis added).

68. *Id.* at *34, *36 (citations omitted).

(contingency) to compensate the contractor for bearing a risk for which the agreement provides no compensation. Parties to construction agreements do this all of the time with weather, force majeure, and the like.[69] In this way, the negotiation over a loss of productivity clause is not win-or-lose, but whether (and how much) the contractor is paid up front to bear the risk (similar to how an insured pays an insurance premium).[70]

Below is an example of a no damages for loss of productivity clause (that assumes the contractor is being compensated for this risk up front via contingency):

> Contractor is not entitled to any Price Adjustment or compensation for diminished productivity, loss of productivity, lost efficiencies, or any other similar damages, including due to the impact of a Change made to one portion of the Work on the efficiency or productivity of other portions of the Work or the cumulative impact of multiple Changes. The nature of the Work is such that Contractor expects to incur periods of diminished productivity, and the Contract Price includes reasonable compensation to Contractor for the risk of incurrence of loss of productivity.[71]

Such a clause provides benefits similar to those of a consequential damages waiver in that it forecloses the risk of amorphous and costly claims.

C. Liquidated Damages for Loss of Productivity

A liquidated damages clause provides a pre-agreed dollar amount as compensation for the occurrence of a particular defined event. In construction agreements, the liquidated damages clause often serves as a specific, intentional exception to a consequential damages waiver — by requiring the contractor to pay the owner $X per day if completion is not achieved by the guaranteed completion date. In such cases, liquidated damages effectively compensate the owner for what would otherwise be consequential damages, including the owner's loss of profits during the delay. By agreeing to a fixed dollar amount per day, however, the parties know in advance precisely what the exposure will be.

---

69. *See, e.g.*, Gaille, *supra* note 1, at 142.

70. The amount of contingency is likely to vary based on the degree of control the contractor has over the work site. In greenfield projects where a single contractor is in control of access to the site and the personnel undertaking work there, the risk of owner-caused productivity losses is lower—and therefore, we would expect contingency for productivity loss to be low/negligible. However, as a project involves more overlap between contractor-controlled personnel and owner-controlled personnel, there is a greater risk of the owner getting in the way of the contractor's sequencing and management of labor—in which case, we would expect contingency values for productivity loss to increase. *Id.* at 146.

71. As with other liability limitations clauses, consider whether an exception should be provided for insurance recoveries. *See* Ty D. Laurie & Jessica Manning, *AIA A201's "Mutual" Waiver of Consequential Damages*, LAURIE & BRENNAN (Oct. 18, 2016), https://www.lauriebrennan.com/blog/aia-a201s-mutual-waiver-of-consequential-damages/ ("There is also no exclusion for insurance recovery. As a result, this clause has perhaps the unintended consequence of barring recovery for lost profits and other damages that the owner may have required the general contractor to insure as part of its insurance program. Contract drafters should exercise caution so that the contractor's insurance program procured for a particular project is not eroded or limited by liability limitation clauses such as a waiver of consequential damages").

A similar approach can be used to address loss of productivity — as a specific exception to a loss of productivity damages waiver. For example, loss of productivity damages could be compensated as a percentage adder to the value of each change order. The value of change orders can be a reasonable proxy for productivity impact on the basis that lost productivity (likely) increases along with the dollar value of change orders.[72] Below is an example of such a clause:

> The nature of the Work is such that Contractor expects to incur periods of loss of productivity. As liquidated damages for loss of productivity, the Contractor shall be paid an amount equal to one-half percent (0.5%) *multiplied by* the value of each Change Order's Price Adjustment (the "Productivity Liquidated Damages"). The Parties have agreed to provide for Productivity Liquidated Damages because productivity losses will be difficult to calculate precisely. The Productivity Liquidated Damages set forth herein are a fair and reasonable estimation of Contractor's expected productivity losses, are not meant to serve as penalties designed to deter breach, and reflect the Parties' assessment and estimate of Contractor's productivity losses. Except for Productivity Liquidated Damages, Contractor is not entitled to any Price Adjustment or compensation for diminished productivity, loss of productivity, lost efficiencies, or any other similar damages, including due to the impact of a Change made to one portion of the Work on the efficiency or productivity of other portions of the Work or the cumulative impact of multiple Changes.[73]

Such an approach eliminates the need for the contractor to include contingency for loss of productivity in its pricing. Instead of paying up front for loss of productivity — whether or not any loss of productivity ever occurs — the owner only pays for loss of productivity as the project progresses, based on the magnitude of Price Adjustments in change orders. Another variation of this clause would be inclusion of a deductible, such that the liquidated damages would not commence until the cumulative value of change orders exceeded, for example, 20% of the original contract price.[74]

Whether liquidated damages for loss of productivity or an outright waiver is more efficient for a given project likely hinges on the extent to which the contractor will be in control of the work site and labor force.[75] When a contractor controls access to the construction site and the workforce there (*e.g.*, at a greenfield energy project), the contractor is in a strong position to mitigate productivity impacts from change orders and other circumstances. As a contractor's control over the site declines and more owner personnel are working there, the contractor's ability to manage the impact of change orders on productivity declines. In such blended control/workforce projects, contractors may require more contingency for an outright waiver, leading the owner to opt for the alternative of productivity liquidated damages — hoping to pay less over time than the proposed contingency.

---

72. CHANGE ORDERS, PRODUCTIVITY, OVERTIME, *supra* note 9, at 211-16.

73. Laurie & Manning, *supra* note 71.

74. The basis for such an approach would be that productivity impact from accumulating change orders may be negligible until the dollar value exceeds a certain threshold. *See* CHANGE ORDERS, PRODUCTIVITY, OVERTIME, *supra* note 9.

75. The concept of control also routinely determines the type of indemnity used in construction contracts. *See generally* S. Scott Gaille & Tanner Harris, *Control, Fault, And Knock-For-Knock: A Guide To Selecting Indemnities In Energy Construction And Services Agreements*, 44 ENERGY L.J. 101 (2023).

D. No Damages for Cumulative Impact Clause

Cumulative impact claims are based on an excessive number of change orders over the course of a construction project, which diminish the contractor's productivity on the unchanged portion of the work:

> Unlike the direct impact claim, which can be recognized when a change order is issued, the cumulative impact claim represents a claim for lost productivity on unchanged work that contractors claim is not foreseeable at the time the change order is issued. Specifically, unchanged work refers to the contract work not covered by a specific contract change order.[76]

As such, the cumulative impact of change orders is one potential cause for a contractor's loss of productivity. By the time a contractor brings a cumulative impact claim, the contractor will have signed many change orders and will have received additional compensation for each of the changes. Owners generally view cumulative impact claims as an attempt to reopen the previously signed change orders, each of which was supposed to be a settlement agreement that completely compensated the contractor for the events described therein: "At least one commentator has gone so far as to state that 'there is no such thing as synergistic, greater-than-the-sum-of-its-parts cumulative disruption,' but rather only local impact claims that the contractor failed to capture while pricing change orders."[77]

The following is an example of a no damages for cumulative impact clause:

> The Contractor understands that the Work may result in multiple Change Directives and Change Orders. The value, quantity, timing, or complexity of Change Directives or Change Orders (or the events giving rise to them) shall not constitute an independent basis for a Price Adjustment (or an increase in the amount thereof) and/or Schedule Adjustment (or an increase in the duration thereof).

The inclusion of such language makes it incumbent upon the contractor to estimate the productivity impact of each change and include adequate compensation for reduced productivity in each change order.

Another defense owners have against cumulative impact claims is the language in the change order itself. Change orders can become a battleground for owners seeking to preclude cumulative impact claims and contractors seeking to reserve their right to bring such claims in the future:[78]

> The trend in the law appears to require contractors to expressly reserve the right to request an equitable adjustment for the cumulative disruption, even before any impact becomes known. Failure to make an express reservation of right in change orders . . . may prevent a contractor from seeking recovery under the affirmative defense of accord and satisfaction. The issue is generally a question of fact (whether rights were

76. Jones, *supra* note 29, at 6.

77. *Id.* at 5.

78. *Id.* at 43 (An example of a reservation of rights by a contractor is: "Please be advised that we are not asking for additional time for this change; however, should this change, or the accumulation of changes impact the original schedule, installation sequences creating delays or accelerations which affect our work, we reserve the right to submit our cost for additional compensation.").

> reserved) and not a question of law. Accordingly, courts and boards look to the language contained in the contract modifications or to the general conditions of the contract to determine whether a contractor has waived or released its rights.[79]

Owners typically seek to include language in their change orders to ensure there is no question of fact whether the contractor has waived its right to bring further claims on the basis of the same underlying cause or event. For example, a change order might contain the following language:

> This [Change Order] represents final adjustment for any and all amounts due or to become due to Contractor for changes referred to herein. Contractor further releases all other claims, if any (except those claims previously submitted in writing in strict accordance with the Contract), for additional compensation under this Contract, **including without limitation any rights Contractor may have for additional compensation arising out of delays or disruption of Contractor's schedule as may have arisen prior to the date of this [Change Order]**. Unless otherwise expressly provided herein, the time of completion and all other terms and conditions of the Contract remain unchanged.[80]

Language such as the above, whether coupled with a no damages for cumulative impact clause or not, can limit the reopening of change orders on the basis of loss of productivity.[81]

E. No Damages for Delay Clause

Loss of productivity often arises from delays of one kind or another. If damages for delay are contractually barred, that exclusion may effectively preclude loss of productivity claims related to delays. These clauses may take many forms, including:

- The contractor has no claim or cause of action against the owner for delay;
- The contractor's sole remedy for delay caused by the owner is an adjustment in the contract time;
- The contractor has no right to damages for delay caused by the owner;
- The contractor has no right to compensation for delay; or
- The owner has no liability for delay caused by the owner.[82]

Such clauses have been the subject of controversy, with "[l]egislatures in some states hav[ing] enacted statutes that render some or all no-damages-for-delay

---

79. *Id.* at 42; *see also The Waiver or Reservation of Impact Costs*, CONSTR. CLAIMS MONTHLY, Feb. 2001, at 7 (recognizing that the traditional change order language may not adequately address the impact of change order work on unchanged work and recommending that contract modifications expressly take cumulative impacts into account as well as establish ground rules for handling such claims).

80. MMR Constructors, Inc. v. Dow Chemical Co., No. 01-19-00039-CV, 2020 WL 7062325, at *3 (Tex. App. Dec. 3, 2020) (emphasis added).

81. If a construction contract already includes a loss of productivity damages waiver clause, does it also need a no damages for cumulative impact clause? Probably. While cumulative impact claims are mostly seeking damages for loss of productivity, best practice is to separately and specifically address cumulative impact claims.

82. STANLEY A. MARTIN & LEAH A. ROCHWARG, CONSTRUCTION LAW HANDBOOK § 25.03 (4th ed. 2018).

clauses unenforceable" and "[m]any courts hav[ing] articulated rationales either for strictly construing these provisions or for developing exceptions to their enforcement."[83]

For example, Texas generally allows no-damages-for-delay provisions:

> Texas courts uphold no-damages-for-delay clauses; however, such provisions do not give "license to cause delays 'wilfully,' by 'unreasoning action,' 'without due consideration,' and in 'disregard for the rights of other parties,' nor [do] the provision[s] grant . . . immunity from damages if delays were caused . . . under such circumstances."[84]

Other states, such as Washington, have banned no-damages-for-delay provisions under many circumstances:

> Any clause in a construction contract . . . which purports to waive, release, or extinguish the rights of a contractor . . . to damages or an equitable adjustment arising out of unreasonable delay in performance which delay is caused by the acts or omissions of the contractee or persons acting for the contractee is against public policy and is void and unenforceable.[85]

Assuming the no-damages-for-delay clause is enforceable under applicable law, courts have been willing to enforce it against a contractor seeking loss of productivity damages on the basis of a delay:

> The plaintiff argued that the "no damages for delay" provision was inapplicable to its claims because the emphasis of its claims was not based on "delay," but was based on "hindrances" and "interferences" with the orderly performance of its work, resulting in a loss of productivity. The SJC rejected this argument and determined that the "no damages for delay" clause applied to the plaintiff's claims.[86]

Nonetheless, relying exclusively on a no-damages-for-delay clause — even if enforceable — exposes the owner to claims that the loss of productivity arose from something other than delay.

VII. CONCLUSION

Given the high cost of waging loss of productivity claims, a cottage industry has developed around preserving them.[87] Yet project owners and their contractors appear to be moving in the opposite direction — increasingly treating loss of productivity as tantamount to consequential damages. Consequential damages waivers are ubiquitous in energy construction agreements and are often paired with liquidated damages clauses, which provide limited compensation to owners for delayed completion. A similar approach is being taken for loss of productivity. Instead of risking a long and expensive dispute, parties to energy construction

---

83. *Id.* § 25.04.

84. *Id.* § 25.64 (quoting Carrothers Constr. Co. v. City of Dallas, No 95-10723, 1996 WL 625433, at *3 (5th Cir. 1996)).

85. WASH. REV. CODE § 4.24.360; *see* MARTIN & ROCHWARG, *supra* note 82, § 25.02 (providing a complete list of treatment by states). In Washington, no-damages-for-delay clauses may be enforceable if the construction contract (i) requires notice of delays, (ii) provides for arbitration or other procedure for settlement, or (iii) provides for reasonable liquidated damages. *See* WASH. REV. CODE § 4.24.360.

86. JRJ Constr. Co. v. R.W. Granger & Sons, No. 97-2194, 1999 Mass. Super. LEXIS 322, at *20 (July 26, 1999) (citation omitted).

87. *See, e.g.,* IDENTIFYING, QUANTIFYING, AND PROVING LOSS OF PRODUCTIVITY, *supra* note 27.

agreements are opting to allocate productivity risk *ex ante*, with a clause that waives damages for loss of productivity altogether and/or a liquidated damages provision that seeks to compensate the contractor in a limited manner for productivity loss.