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Oil States Energy Services v. Greene's Energy Group: The Future of Inter Partes Review and Its Impact on the Energy Sector

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ONE J

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*OIL STATES ENERGY SERVICES V. GREENE'S
ENERGY GROUP: THE FUTURE OF INTER
PARTES REVIEW AND ITS IMPACT
ON THE ENERGY SECTOR*

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Table of Contents

Introduction.....	1344
I. Purpose and Goals of Patents.....	1347
II. Inter Partes Review.....	1349
A. Pre-AIA Patent Reexamination.....	1350
B. The IPR Process.....	1351
C. IPRs and Relation to Oil States.....	1354
III. Oil States Energy Services, LLC v. Greene's Energy Group, LLC..	1354
A. Prior History.....	1355
B. Analysis and Decision by the PTAB.....	1356
C. Patents as Public vs. Private Rights.....	1357
IV. IPR Use.....	1358
A. Use of Inter Partes Review in General.....	1358
B. IPR Statistical Overview.....	1360
C. Breakdown of Technology of Challenged Patents in the Energy Sector.....	1361
V. Effect on Patents.....	1362
A. Advantages of an IPR System.....	1362
1. Discouragement of Patent Trolls.....	1362

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2. “Zombie” Patents	1365
B. Disadvantages of an IPR System.....	1366
1. Lack of Protection for Patent Owners	1366
2. Misplaced Economic Incentives and Heavy Financial Burden on US Economy	1368
3. Inter partes Review is “Killing the Patent Field”	1369
VI. Implication on the Energy Sector.....	1370
A. Clean Energy Patents.....	1370
B. Clean Energy and Innovation.....	1371
C. IPR Impact on Clean Energy Patents.....	1372
VII. Conclusion.....	1372

Introduction

The society in which we presently live and colloquially consider to be “modern” would not be where it is today without constant innovation. From agriculture to meteorology, from medicine to robotics, the list is extensive, if not endless, and goes on into what some may consider perpetuity. Yet, the concept of innovation is nothing new. It is a byproduct of, and a natural response to, the ever-growing and ever-evolving challenges that confront the world and all those who live in it. Visionaries in science and technology, both past and present, have worked determinedly to solve the most prevalent challenges facing their respective eras.

In a time where the workday largely ended with the setting of the sun, scientists responded, leading to the discovery and patenting of the incandescent light bulb by Thomas Edison in 1879.¹ However, the discovery that most people today attribute solely to Edison was, in fact, a collaborative effort. Edison was guided by the many scientists and inventors who preceded him, including William Sawyer and Albon Man, who registered a successful U.S. patent for the incandescent lamp, and Joseph Swan, who registered his patent for the light bulb in England. As a result, Thomas Edison was able to improve upon the discoveries and inventions that preceded his to innovate, develop, and perfect his own. Because of his successes, Edison’s patents continue to be used by the countless inventors that have come after him, forever changing the trajectory of modern science and the human race.²

1. Daniel Wood & Rebecca Matulka, *History of the Lightbulb*, ENERGY.GOV, <http://energy.gov/articles/history-light-bulb> (last visited Mar. 24, 2018).

2. *Id.*

In the 1960s, the global scientific community collaborated, focusing its effort on the final frontier—space. In response to President John F. Kennedy’s repeated declarations detailing the nation’s ultimate goal of landing a man on the moon, the “space race” began, spurring mathematicians, scientists, and innovators from all over the world to pour their collective efforts into space travel.³

President Kennedy in 1961 vowed to “land a man on the moon and return him safely to earth,” before the end of the decade, but in order to achieve this spirited goal, the need to develop new methods and technologies became apparent and crucial.⁴ Scientists around the world labored diligently to make technological advancements in space travel until finally, in July 1969, the United States landed Neil Armstrong and Edwin Aldrin successfully and safely on the Moon.⁵ Six years later, the United States and the Soviet Union launched the first joint US-USSR space mission with the Apollo-Soyuz project, effectively ending the space race.⁶ But despite this reality, the end of the “space race” did not mean the end of innovation in space altogether.

In 2016, NASA released 56 patents, whose terms had finally expired, into the public domain.⁷ This release of information to the public will undoubtedly lead to collaboration and inevitable advancement as scientists and entrepreneurs work to explore new pathways towards innovation. Even NASA recognized that key advancements cannot be made in solitude without collaborative effort. Daniel Lockney, executive of NASA’s Technology Transfer program, noted that “[b]y making these technologies available in the public domain, we are helping foster a new era of entrepreneurship that will again place America at the forefront of high-tech manufacturing and economic competitiveness.”⁸ Humans made it to space and back, but new obstacles continue to surface each day.

3. *Space Law: The Commercialization of Space and its Patents*, INTELL. PROP. (Apr. 16, 2015), <http://sites.udel.edu/cisc356/2015/04/16/space-law-the-commercialization-of-space-and-its-patents/>.

4. Jim Schultz, *Launching the Space Race: Making Space*, NASA.GOV, <http://www.nasa.gov/langley/100/making-space> (last updated Aug. 6, 2017).

5. J. Llewellyn et al., *The Space Race*, ALPHAHISTORY.COM, <http://alphahistory.com/coldwar/space-race/> (last visited Mar. 24, 2018).

6. *Id.*

7. Bec Crew, *NASA Just Released 56 Patented Space and Rocket Technologies to the Public*, SCIENCEALERT.COM, <https://www.sciencealert.com/nasa-just-released-56-patented-space-and-rocket-technologies-to-the-public> (last visited Mar. 24, 2018).

8. *Id.*

With a new millennium comes a new set of challenges, and with the upsurge of recent advancements in technology, problems that once seemed unsolvable have become troubles of the past. Nevertheless, new problems have arisen to take their place. One of the leading challenges facing today's society involves energy: how to acquire it and transform renewable sources into usable forms in new, inventive, and efficient ways. Since the commercialization of oil drilling in the 1850s, more than 135 billion tonnes of crude oil have been used as the primary means of fueling modern society.⁹ According to the U.S. Energy Information Administration's March 2016 Energy Review, fossil fuels, like oil, coal, and natural gas, accounted for eighty-one percent of the national demand.¹⁰

However, as important as crude oil is to fueling today's world, fossil fuels remain finite resources, which will inevitably go dry. And as both the population of Earth and its demand for energy increase, so too does the need to come up with creative solutions to combat this ever-growing dilemma. There is now a new race: to find and perfect alternate forms of energy before the world's limited energy resources run out. In 2008, the National Academy of Engineering released a list of Grand Challenges for Engineering in the 21st Century, and the list highlights making renewable energy economical as one of only fourteen of the greatest challenges facing our time.¹¹ This organization and others recognize that something must be done to solve this issue. Whether the solution comes in the form of the perfection of solar energy, or some other method, it is undeniable that patents will play a significant role in the process.

The International Renewable Energy Agency ("IRENA") published a paper in 2013 titled "The Role of Patents in Renewable Energy Technology Innovation."¹² In this paper, IRENA stated what many now recognize: that patents play a crucial role in technological innovation.¹³ In a patent mapping study titled *Patents and Clean Energy: Bridging the Gap Between Evidence and Policy*, United Nations Environment Programme ("UNEP")

9. Richard Gray, *The Biggest Energy Challenges Facing Humanity*, BBC.COM, <http://www.bbc.com/future/story/20170313-the-biggest-energy-challenges-facing-humanity> (last visited Mar. 24, 2018).

10. U.S. ENERGY INFO. ADMIN., MONTHLY ENERGY REVIEW (2016), <http://www.eia.gov/totalenergy/data/monthly/archive/00351603.pdf>.

11. 14 GRAND CHALLENGES FOR ENGINEERING IN THE 21ST CENTURY, <http://www.engineeringchallenges.org/challenges> (last visited Mar. 2, 2018).

12. INT'L RENEWABLE ENERGY AGENCY, INTELLECTUAL PROPERTY RIGHTS: THE ROLE OF PATENTS IN RENEWABLE ENERGY TECHNOLOGY INNOVATION (2013), http://www.irena.org/DocumentDownloads/Publications/Intellectual_Property_Rights.pdf.

13. *Id.* at 5.

found that between 1978 and 2006, the annual number of renewable energy technology patents increased by a factor of between two and six for the various types of energy.¹⁴ The patenting rate doubled for hydro and geothermal energy patents, increased four-fold for biofuels, five-fold for wind, and six-fold for solar.¹⁵ This consistent and extensive growth in patents, cutting across numerous energy sectors, is indicative of the changes taking place in the energy sector and its importance to this industry going forward.

The purpose of this comment is to offer an analysis of a particular process used in patent law and its potential impact on the energy sector. Part I will provide a general overview of the purpose and goals of patent law. Part II will then describe the *inter partes* review process, a process used in patent law that allows parties to challenge the validity of previously issued patents. Part III will provide an overview of *Oil States Energy Servs., LLC v. Greene's Energy Group*, the case currently before the Supreme Court in which the constitutionality of the *inter partes* review process is being challenged. Part IV will discuss how the *inter partes* review process has been used, in general as well as within the energy sector. Part V will discuss the various advantages and disadvantages of the *inter partes* review system. Part VI will then discuss the Supreme Court's impending decision and the effect it may have on the energy sector, in particular. Finally, Part VII will conclude by arguing the importance of holding the *inter partes* review process constitutional.

I. Purpose and Goals of Patents

Although the novelty of an invention typically decides its patentability, the concept and process by which an inventor claims right to her invention is not at all “novel.”¹⁶ Patents are, and have always been, fundamental in the process of positively fostering and stimulating modern innovation. In fact, the right to patent inventions in an effort to inspire innovation is a right that is constitutionally mandated. The U.S. Constitution grants Congress the power to “promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.”¹⁷ The disclosure of patented inventions is an important policy consideration of the patent system that is critical to

14. *Id.* at 16.

15. *Id.*

16. 35 U.S.C. § 102 (2012).

17. U.S. CONST. art. I, § 8, cl. 8.

providing the public with access to valuable information.¹⁸ This disclosure ensures compliance with the goals of patent law by clearly explaining the invention, detailing how the invention works, and illustrating the utility of the invention.¹⁹

Further, a valid patent affords its owner exclusive rights, for a limited period of time, to make, use, offer, or sell the invention.²⁰ The right to exclude has long been a key right protected by property law, and moreover, the Supreme Court described it as “one of the most essential sticks in the bundle of rights that are commonly characterized as property.”²¹ In addition to serving as a central regime within the realm of intellectual property law, patents have also long been considered property rights. The Patent Act itself expressly grants to a patentee “the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States.”²² Yet the dividing line between patents and other more conventional forms of property is the fact that a patent includes “*only* the right to exclude *and nothing else*.”²³

It is these exclusive rights which, when coupled with the constitutionally imposed time limitation, enable both the U.S. patent system and its product—patents—to spur advancement in all areas. Once the time limitation runs its course, previously protected inventions become part of the public domain.²⁴ From that point forward, any previously protected claims may be used by anyone. Often, in fact, adversaries in related industries use these patents to their advantage in the hopes of making improvements that they may themselves later patent. But innovation may be stimulated even before a patent’s term expires.

While a patent is still in force, the patent itself functions as a beneficial instrument toward advancement. The patent document “*becomes* part of the published technology in the field,” serving as an educational tool for researchers and inventors, allowing competitors to better understand advancements that have already been made.²⁵ Issued patents not only

18. *Bonito Boats v. Thunder Craft Boats*, 489 U.S. 141, 155 (1989).

19. *See generally* Gavin P.W. Murphy, *Revising Markman: A Procedural Reform to Patent Litigation*, 95 TEX. L. REV. 1425 (2017).

20. 35 U.S.C. § 271(a) (2012).

21. *Kaiser Aetna v. United States*, 444 U.S. 164, 176 (1979).

22. 35 U.S.C. § 154(a)(1) (2012).

23. ROBERT PATRICK MERGES & JOHN FITZGERALD DUFFY, *PATENT LAW AND POLICY* 56 (7th ed. 2017).

24. PETER K. YU ET AL., *INTELLECTUAL PROPERTY LAW* 168 (2015).

25. *Id.* (emphasis added).

provide easier access to finding licensed technologies,²⁶ but also allow competitors to study these already existing patents that do have protections. For example, competitors may study and use existing and valid patents in an effort to design around what exists and work towards finding alternative designs, processes, or substitutes to enter into the market, thereby promoting advancement in innovation.²⁷

In a 1966 report, the President's commission specified four purposes of the patent system: (1) provide an incentive to invent; (2) encourage investment leading to commercialization; (3) allow for the disclosure of new technology to reduce duplicitous inventions; and (4) enrich international exchange.²⁸ Indeed, at critical moments in history, patents play a critical role in solving the world's most immediate concerns. Considering contemporary challenges facing society and the large emphasis placed on finding alternate, renewable forms of energy, patents have become increasingly important to solving one of the more pressing concerns of the 21st century. However, there may soon be an enormous change in patent law, which could vastly change the trajectory of innovation in the energy sector.

II. Inter Partes Review

Currently before the United States Supreme Court, on a grant of certiorari, is *Oil States Energy Servs., LLC v. Greene's Energy Group*.²⁹ The Court will determine the constitutionality of allowing Article I tribunals, such as the Patent Trial and Appeal Board ("PTAB") to have the authority to extinguish patent rights by a process called *inter partes* review.³⁰ *Inter partes* review ("IPR") is a process used by the United States Patent and Trademark Office ("PTO") through which third parties may challenge the patentability of one or more claims in an issued US patent by making the argument that the claimed invention is not novel.³¹ The Federal Rules of Evidence otherwise used in an Article III court are applicable to

26. *Id.*

27. *Id.* at 169.

28. U.S. PRESIDENT'S COMM'N ON THE PATENT SYS., REPORT TO PROMOTE THE USEFUL ARTS IN AN AGE OF EXPLODING TECHNOLOGY 10-11 (1966).

29. 639 Fed. Appx. 639 (Fed. Cir. 2016), *cert. granted*, 137 S. Ct. 2239 (June 12, 2017) (No. 16-712).

30. See generally *Oil States Energy Services, LLC v. Greene's Energy Group, LLC*, SCOTUSBLOG.COM, <http://www.scotusblog.com/case-files/cases/oil-states-energy-services-llc-v-greenes-energy-group-llc/> (last visited Mar. 24, 2018).

31. 35 U.S.C. § 311 (2012).

IPR proceedings, which conclude with a determination made by the PTAB of the validity of the patent.³²

A. Pre-AIA Patent Reexamination

Prior to 1980, there was no administrative body through which the validity of an already issued patent could be disputed. Accordingly, an issued patent's validity could only be challenged through the court system.³³ This led to flooding of the federal courts with numerous and cumbersome patent challenges.

However, in 1979, President Carter announced in his Industrial Initiative Message to Congress that “[p]atents can provide a vital incentive for innovation, but the patent process has become expensive, time-consuming, and unreliable.”³⁴ Many echoed these sentiments, voicing their concerns and the desire for a “strong, dependable patent system . . . to meet the challenges of the future.”³⁵ In response, Congress, in 1981, created an “administrative alternative to federal court litigation known as *ex parte* reexamination.”³⁶ Congress passed the reexamination statute, enacting it with three key benefits in mind.³⁷ First, this new process could foreseeably settle issues of validity more quickly and in a manner that would be less financially burdensome to parties involved.³⁸ Second, issues of patentability would now be subject to the expertise of the PTO, allowing the agency to make more informed decisions on patent validity.³⁹ Lastly, this reexamination process could potentially reinforce “investor confidence in the certainty of patent rights” by entrusting the PTO with a broader authority and opportunity to review patents.⁴⁰

Ex parte reexamination allowed an owner of a patent or a third party to request a reexamination of the substantive patentability of an issued patent.⁴¹ Yet, in this process, if the PTO accepted a third-party *ex parte*

32. Joseph W. Dubis, *Inter Partes Review: A Multi-Method Comparison for Challenging Patent Validity*, 6 CYBARIS® 107, 119 (2015).

33. *Patlex Corp. v. Mossinghoff*, 758 F.2d 594, 601 (Fed. Cir. 1985).

34. Industrial Innovation Initiatives Message to the Congress on Administration Actions and Proposals, 15 WEEKLY COMP. OF PRES. DOC. 2069, 2070 (Oct. 31, 1979).

35. *Patent Reexamination: Hearings on S. 1679 Before the Comm. on the Judiciary*, 96th Cong., 1 (1979).

36. *Cooper v. Lee*, 86 F. Supp. 3d 480, 483 (E.D. Va. 2015).

37. *Patlex*, 758 F.2d at 602.

38. *Id.*

39. *Id.*

40. *Id.* (quoting 126 Cong. Rec. 29,895 (1980)).

41. 35 U.S.C. § 302 (2012).

reexamination request, only the patent owner and PTO could be parties to the reexamination proceedings.⁴² The statute gave third parties “no further, specific right to participate in the reexamination proceeding.”⁴³ If the examiner presiding over the reexamination proceeding made the determination that the issued patent’s claims were not valid, the examiner could issue a final office action rejecting the claims in dispute.⁴⁴ This means that following the issuance of office action, only the patent owner had the ability to seek administrative appellate review of its now rejected or cancelled claims to the PTAB.⁴⁵

Following the creation of *ex parte* reexamination proceedings, Congress found that this process was not being utilized because “a third party who requests reexamination cannot participate at all after initiating the proceedings.”⁴⁶ In response, Congress created an *inter partes* reexamination procedure in 1999, which also allowed third-parties to participate in reexamination proceedings.⁴⁷ As in an *ex parte* reexamination, in an *inter partes* reexamination, the patent examiner could reject, and thus cancel, challenged claims in an issued patent upon a finding of invalidity. In *inter partes* reexaminations, however, unlike in *ex parte*, both the owner of the patent and the third-party making the request to cancel the patent could seek to review the examiner’s determination of validity to the PTAB and the Federal Circuit.⁴⁸

However, by 2011, there was still a problem: despite improvements, critiques of being “costly [and] taking several years to complete,” plagued the reexamination proceedings.⁴⁹ Consequently, Congress again made changes, creating a new type of administrative proceeding through which individuals and entities could request a review of already issued patents by the PTO.

B. The IPR Process

The *inter partes* review process, borne out of the Leahy-Smith America Invents Act (“AIA”), was enacted in 2012 with the overarching goal of providing a quicker and less expensive avenue to challenge a patent’s

42. 35 U.S.C. §§ 304, 305 (2012).

43. *Syntex (U.S.A.) Inc. v. USPTO*, 882 F.2d 1570, 1573 (Fed. Cir. 1989).

44. 35 U.S.C. § 305 (2012).

45. 35 U.S.C. § 134 (2012).

46. *Cooper*, 86 F. Supp. 3d at 484 (citation omitted).

47. 35 U.S.C. § 314 (2012).

48. 35 U.S.C. §§ 315(a)-(b) (2012).

49. H.R. REP. No. 112-98, at 45 (2011).

validity.⁵⁰ Additionally, it sought to improve patent quality by reviewing previously issued patents that may have been poorly examined, thereby helping to bring an end to improper and misused patents.⁵¹ The AIA sought to improve the prior *inter partes* reexamination proceeding with the implementation of the new and improved *inter partes* review proceeding.⁵² Significant changes from the previous reexamination proceeding included converting the process from an examinational to an adjudicative proceeding and allowing parties other than the patentee to bring such adversarial proceedings in the PTO to determine whether the patent claims are invalid.⁵³

Another rationale for the implementation of the IPR process includes the notion that these proceedings should be a low-cost alternative to the increasingly high expense of litigation in the district courts.⁵⁴ By providing a cheaper way to invalidate patents, Congress hoped that this process would increase the likelihood of weeding out invalid patents.⁵⁵ There are indications that the IPR process seems to be doing just that.⁵⁶

Moreover, the new IPR procedure was designed to (1) reduce the time the PTO spends reviewing validity to 12 months from the previous reexamination average of 36.2 months; (2) increase coordination between district court litigation and *inter partes* review; and (3) allow for some limited discovery in review proceedings.⁵⁷ Whereas the preceding reexamination process was conducted through an amendment-response interaction with a PTO examiner, the IPR process is conducted before a panel of three Administrative Patent judges, all technically trained, of the newly formed PTAB.⁵⁸ In theory, by allowing third parties to make these

50. *Universal Elecs., Inc. v. Universal Remote Control, Inc.*, 943 F. Supp. 2d 1028, 1029 (C.D. Cal 2013).

51. Changes to Implement Inter Partes Review Proceedings, Post-Grant Review Proceedings, and Transitional Program for Covered Business Method Patents, 77 Fed. Reg. 48,680 (Aug. 14, 2012) (to be codified at 37 C.F.R. pt. 42 (2016)).

52. 35 U.S.C. §§ 311-319 (2012).

53. *Universal Elecs.*, 943 F. Supp. 2d at 1030.

54. MERGES & DUFFY, *supra* note 23, at 945.

55. *Id.* (citing Joseph Farrell & Robert P. Merges, *Incentives to Challenge and Defend Patents: Why Litigation Won't Reliably Fix Patent Office Errors and Why Administrative Patent Review Might Help*, 19 BERKELEY TECH. L.J. 9430 (2004)).

56. *Id.* (citing Saurabh Vishnubhakat, Arti K. Rai & Jay P. Kesan, *Strategic Decision Making in Dual PTAB and District Court Proceedings*, 31 BERKELEY TECH. L.J. 45 (2016)).

57. *Id.* at 1029.

58. 35 U.S.C. § 6 (2012).

assertions, patents that should not have been granted can be invalidated, thereby ensuring that only patents of the highest quality remain intact.

The IPR process begins with a party, one other than the patent owner, filing a petition for review with the PTO and requesting the cancellation of one or more claims of an issued patent as being obvious in light of prior art.⁵⁹ The PTO Director (“Director”) may only authorize an *inter partes* review if he or she determines that there is a “reasonable likelihood that the petitioner would prevail with respect to at least one of the claims challenged in the petition.”⁶⁰ The Director must then determine whether or not to institute an IPR within three months of either (1) receiving a response from the patent owner to the petition under § 313 or (2) the last date such response was filed.⁶¹ Once an IPR is instituted, the claims are then presented to the PTAB before a panel of at least three administrative patent judges of “competent legal knowledge and scientific ability.”⁶² The petitioner then bears the burden of proof, by a preponderance of the evidence, to demonstrate that the patent in question is unpatentable.⁶³

The patent’s specification, along with its prosecution history, constitutes intrinsic evidence given priority by the PTAB when construing claims.⁶⁴ In an IPR proceeding, the PTAB must examine the challenged claims, giving them their “broadest construction in light of the specification of the patent in which [they] appear[],”⁶⁵ the specification including both the written description and the claims of the patent.⁶⁶ Although the application of this standard may result in the possibility that the PTAB and district court findings may differ, the Supreme Court has recognized this possibility and confirmed that is something that has long been present in the patent system and is not inconsistent with the law.⁶⁷ Moreover, these different evidentiary burdens mean, “the possibility of inconsistent results is inherent to Congress’ regulatory design.”⁶⁸

59. 35 U.S.C. § 311(a), (b); 37 C.F.R. § 42.101 (2018); *see also* 35 U.S.C. §§ 102-103 (2012).

60. 35 U.S.C. § 314(a) (2012).

61. 35 U.S.C. § 314(b) (2012).

62. 35 U.S.C. § 6 (2012).

63. 35 U.S.C. § 316(e) (2012).

64. *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1297-98 (Fed. Cir. 2015).

65. 37 C.F.R. 42.100(b) (2018).

66. *In re Packard*, 751 F.3d 1307, 1320 n.11 (Fed. Cir. 2014).

67. *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2146 (2016).

68. *Id.*

A final determination in an IPR is then issued no later than one year after the grant of the petition, unless the Director chooses to extend the period for good cause by no more than six months.⁶⁹ In response to the Director's final written determination, a patent owner may file a motion to amend the patent in one or both of the following ways: (1) request the cancellation of any challenged patent claim; (2) propose a reasonable number of substitute claims for each of the challenged claims.⁷⁰

C. IPRs and Relation to Oil States

At the heart of patent law rests a balance between protecting the legally granted patent monopoly and the rights of the public to challenge a patent's validity.⁷¹ Although some criticize the AIA's conception of procedures allowing for the review of patentability of previously issued claims, there is no doubt that it is "faithful to federal patent policy."⁷² The IPR process, though imperfect, as many processes are, is an admirable attempt at addressing all of the intricacies of a complicated patent system.

Even though the IPR process has long been used successfully, in *Oil States*, the Petitioner argues that *inter partes* review "violates the Constitution by extinguishing private property rights through a non-Article III forum without a jury."⁷³ If the Supreme Court finds for the Petitioner and holds that *inter partes* review does, in fact, violate the constitution, this could have a substantial impact on the course of innovation within the energy sector. This will undoubtedly affect the patentability of inventions that seek to solve the innovative gridlock of renewable energy technology.

III. *Oil States Energy Services, LLC v. Greene's Energy Group, LLC*

To understand the importance of the *inter partes* review process and the potential impact the upcoming Supreme Court decision may have on the patent system, a background of *Oil States* is necessary.

69. 35 U.S.C. § 316(a)(11) (2012).

70. 35 U.S.C. § 316(d)(1) (2012).

71. *See generally* *Lear, Inc. v. Adkins*, 395 U.S. 653 (1969).

72. Brief for the Patent Trial and Appeal Board Bar Association as Amicus Curiae at 2, *Oil States Energy Servs., LLC v. Greene's Energy Group, LLC*, 137 S. Ct. 2239 (2017) (stating that the AIA appropriately "strikes a balance by creating avenues to request review of previously issued patents in the USPTO, while offering benefits to patent owners that prevail in those proceedings").

73. Brief for the Petitioner at i, *Oil States Energy Servs., LLC v. Greene's Energy Group, LLC*, 137 S. Ct. 2239 (2017).

A. Prior History

The dispute in *Oil States* emerged from a dispute on which the PTAB entered a decision in 2015.⁷⁴ Oil States Energy Services (“Patent Owner”) provides support and service equipment to many in the oil and gas industry. In the present case, it owns U.S. Pat. No. 6,179,053 (“the ’053 patent”) that “covers apparatuses and methods of protecting wellhead equipment from the pressures and abrasion involved in the hydraulic fracturing of oil wells.”⁷⁵

The patent in dispute is the “Lockdown Mechanism for Well Tools Requiring Fixed-Point Packoff,” which discloses an apparatus and method used to secure a mandrel within a well designed to protect the wellhead from continued exposure to fracking fluids.⁷⁶ The apparatus uses a mechanical lockdown mechanism to secure the mandrel after it has been inserted.⁷⁷ Patent litigation ensues when an owner of a patent “accuses another party of infringing the patent owner’s rights by creating . . . a product that falls within the scope of the patent.”⁷⁸ Here, the Petitioner challenged claims 1 and 22, which describe the mandrel and method for lockdown of the aforementioned mandrel in detail.⁷⁹

Oil States subsequently filed an infringement suit in 2012 against Greene’s Energy Group (“Petitioner”), who filed an answer asserting the affirmative defense and counterclaim of invalidity. Petitioner made a request to the PTAB to institute *inter partes* review of claims 1 and 22 of the previously issued patent, arguing that the issued patent was anticipated by prior art,⁸⁰ and based on the information provided, the PTAB subsequently instituted a trial with respect to the disputed claims pursuant to 35 U.S.C. § 318(a).⁸¹ Upon grant of trial, Petitioner filed a reply and

74. Greene’s Energy Group, LLC v. Oil States Energy Servs., LLC, No. IPR2014-00216 (PTAB May 1, 2015).

75. Brief for Petitioner at 11, *Oil States Energy Servs., LLC v. Greene’s Energy Group, LLC*, 137 S. Ct. 2239 (2017).

76. *Id.* at 2.

77. *Id.*

78. Murphy, *supra* note 19, at 1427.

79. Brief for Petitioner at 4-5.

80. Brief of Respondent at 1, *Oil States Energy Servs., LLC v. Greene’s Energy Group, LLC*, 137 S. Ct. 2239 (2017).

81. 35 U.S.C. § 318 (a) (2012) (“If an inter partes review is instituted and not dismissed under this chapter, the Patent Trial and Appeal Board shall issue a final written decision with respect to the patentability of any patent claim challenged by the petitioner and any new claim added under section 316(d).”).

Patent Owner filed a Motion to Amend, proposing substitution of claim 28 in the case that claim 1 is found unpatentable, and substitution of claim 29 if claim 22 is found unpatentable.⁸²

B. Analysis and Decision by the PTAB

When evaluating one or more patent claims in an *inter partes* review, claims should be construed by applying the broadest interpretation reasonable in light of the specification.⁸³ Moreover, the terms within the claims are presumed to retain their ordinary meaning in the context of the patent disclosure in its entirety, as would be understood by a person having ordinary skill in the art.⁸⁴ In order to succeed, Petitioner must demonstrate, by a preponderance of the evidence, that the claims at issue are not patentable.⁸⁵ Petitioner contended that because claims 1 and 22 of the '053 patent were already disclosed by another Canadian Patent Application ("the Dallas '118"), the '053 patent was anticipated by prior art and was thus unpatentable.⁸⁶

Under 35 U.S.C. § 102(b), a reference is anticipatory when it (1) discloses each element of the challenged claim⁸⁷ and (2) enables one having ordinary skill in the art to make or recreate the anticipating subject matter without undue experimentation.⁸⁸ Thus, anticipation, whether a claim is disclosed in the prior art, is a question of fact.⁸⁹

The PTAB ultimately agreed with Petitioner, concluding that the claims made by Patent Owner were unpatentable and that Petitioner demonstrated, by a preponderance of the evidence, that both claims 1 and 22 were anticipated by the Dallas '118 patent.⁹⁰ The PTAB consequently denied Oil

82. Brief of Respondent at 1, *Oil States Energy Servs., LLC v. Greene's Energy Group, LLC*, 137 S. Ct. 2239 (2017).

83. 37 C.F.R. § 42.100(b) (2018).

84. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

85. 35 U.S.C. § 316(e) (2012).

86. Brief of Respondent at 12, *Oil States Energy Servs., LLC v. Greene's Energy Group, LLC*, 137 S. Ct. 2239 (2017).

87. *Eli Lilly & Co. v. Zenith Goldline Pharms., Inc.*, 471 F.3d 1369, 1375 (Fed. Cir. 2006).

88. *Impax Labs., Inc. v. Aventis Pharms. Inc.*, 545 F.3d 1312, 1314 (Fed. Cir. 2008).

89. *Eli Lilly*, 471 F.3d at 1375.

90. Brief of Respondent at 13, *Oil States Energy Servs., LLC v. Greene's Energy Group, LLC*, 137 S. Ct. 2239 (2017).

States's application to amend its claims and substitute claims 28 and 29, invalidating them instead.⁹¹

Patent Owner appealed the PTAB's final judgment to the Federal Circuit, challenging the constitutionality of *inter partes* review under Article III and the Seventh Amendment. The panel summarily affirmed the Board without issuing an opinion, and the court of appeals denied panel rehearing and rehearing *en banc*.⁹² In response, Oil States petitioned for a writ of certiorari on three issues: (1) whether *inter partes* review violates the Constitution by "extinguishing" private property rights through a non-Article III forum without a jury;" (2) whether the IPR process as implemented by the PTO is in conflict with Supreme Court precedent and congressional design; and (3) whether traditional claim construction doctrines must be applied by the PTAB when construing claims under the broadest reasonable interpretation.⁹³ The Supreme Court subsequently granted Patent Owner's petition for a writ of certiorari but only on the Petitioner's first issue: "Whether *inter partes* review – an adversarial process used by the Patent and Trademark Office (PTO) to analyze the validity of existing patents – violates the Constitution by extinguishing private property rights through a non-Article III forum without a jury."⁹⁴

C. Patents as Public vs. Private Rights

At the heart of the dispute rests the question of whether patents are a public property right or a private one. If the Supreme Court determines, as Oil States argues it should, that patents are a private right, then the *inter partes* review process must be unconstitutional under Article III of the Constitution. The reason: because such a process would have the power to extinguish private rights through a non-Article III forum without a jury. Article III of the Constitution states that the "judicial Power of the United States, shall be vested in one supreme Court, and in such inferior Courts as the Congress may from time to time ordain and establish."⁹⁵

Thus, if patent rights are not public rights, then it would arguably be unlawful and unconstitutional for any administrative agency, such as the

91. *Greene's Energy Grp., LLC v. Oil States Energy Servs., LLC*, IPR 2014-00216, Paper 52 at 16 (PTAB Feb. 11, 2015).

92. *Id.*

93. Petition for a Writ of Certiorari at I, *Oil States Energy Servs. LLC v. Greene's Energy Group, LLC*, 639 F. App'x 639 (2016) (No. 16-712).

94. Brief for Petitioner at i, *Oil States Energy Servs., LLC v. Greene's Energy Group, LLC*, 137 S. Ct. 2239 (2017).

95. U.S. CONST. art III, § 1.

PTAB, to have the authority, without permission from the patent owner, to revoke a patent once it has been issued.⁹⁶ Much of what the Supreme Court will decide in *Oil States* will be determined in light of what the Court determines on this core issue.

IV. IPR Use

Relatively new, in comparison to the many other legal principles and processes used in the American legal system, *inter partes* review has been in use for a significant period of time and long enough now that it has made its way to the Supreme Court. This section will discuss how and in what contexts *inter partes* review proceedings have been used.

A. Use of Inter Partes Review in General

Oil States is not the first case in which the process of *inter partes* review and the issue of a private versus public right in patents has been challenged. The Supreme Court in 1898 stated that the “only authority competent to set a patent aside, or to annul it, or to correct it *for any reason whatsoever*, is vested in the courts of the United States, and not in the department which issued the patent.”⁹⁷ Even more than 100 years ago the Supreme Court wrestled with the question of what bodies could have the authority to extinguish patent rights, a question similar to the one brought to the Supreme Court in *Oil States*.

The United States Patent and Trademark Office (“USPTO”) is a United States agency established within the Department of Commerce.⁹⁸ The AIA created the Patent Trial and Appeal Board as an administrative body of the USPTO to decide issues of patentability, and it is this body that is tasked with determining the validity of patents when an appeal for *inter partes* review is raised.⁹⁹

The USPTO released a report in 2017 disclosing that, to date, 70,060 claims have been challenged under *inter partes* review, and of those, only 5,172 have been found patentable by the PTAB in a Final Written

96. Dennis Crouch, *Whether a Patent Right is a Public Right*, PATENTLYO.COM, <http://patentlyo.com/patent/2017/02/whether-patent-public.html> (last visited Mar. 24, 2018).

97. *McCormick Harvesting Mach. Co. v. C. Aultman & Co.*, 169 U.S. 606, 609 (1898).

98. 35 U.S.C. § 1(a) (2012).

99. *Petitions and Matters Decided by the Chief Administrative Patent Judge of the Patent Trial and Appeal Board* (R-07.2015), MPEP § 1002.02(f).

Decision.¹⁰⁰ With only 7.4% of claims surviving challenges of validity, many argue that this process is hostile to patent holder rights, is inefficient, and does no more than increase costs incurred by patent owners. As a result, this decreases incentives to invent, directly contradicting the core goals at the heart of patents.¹⁰¹

However, these contentions are not necessarily true. In the report released by the PTO, the number and frequency of IPR settlements over the last three years have decreased, with 189 trials settling after the institution of an IPR proceeding in 2015, 184 in 2016, and 98 in 2017.¹⁰² In an area where high settlement rates are associated with the hot-button term “patent troll” and feelings of ill-will, perhaps this downward trend in settlements is indicative of the PTAB’s positive effects on using this process to truly serve its purpose to determine the validity of already registered patents.

Although there are many proponents calling for the Supreme Court to find *inter partes* review unconstitutional, there are still many who advocate in support of IPRs and its role in the patent system. Like numerous other procedures that have long pre-existed it, the IPR process allows the PTO to “reexamine[e] an earlier agency decision.”¹⁰³ This concept of a constitutionally authorized body is not something new that has never been seen before.

In an amicus brief filed by the Patent Trial and Appeal Board Bar Association, the Association reiterates that this IPR process “strike[s] a balance between the interests of patent owners and those of the public by creating efficient, but limited, procedures to revisit the initial decision to grant patents.”¹⁰⁴ Moreover, the brief emphasizes the many advantages that are provided by IPRs. One key distinction between an IPR proceeding and one through the US courts is the level of skill and knowledge of the fact-finder. Whereas judges in the district courts are familiar and knowledgeable in many wide-spread areas of the law, USPTO judges are selected for their specialized knowledge and because they are well-versed in patent law and

100. U.S. PATENT TRIAL AND TRADEMARK OFF., PATENT TRIAL AND APPEAL BOARD STATISTICS (2017) http://www.uspto.gov/sites/default/files/documents/AIA%20Statistics_March2017.pdf.

101. Neal Solomon, *The Problem of Inter-Partes Review (IPR)*, IPWATCHDOG.COM, <http://www.ipwatchdog.com/2017/08/08/problem-inter-partes-review-ipr/id=86287/> (last visited Mar. 24, 2018).

102. U.S. PATENT TRIAL AND TRADEMARK OFF., *supra* note 100.

103. *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144 (2016).

104. Brief for the Patent Trial and Appeal Board Bar Association as Amicus Curiae at 2, *Oil States Energy Servs., LLC v. Greene’s Energy Group, LLC*, 137 S. Ct. 2239 (2017).

the numerous technologies involved in the patenting of various inventions, furthering the notion that they are the best body to make determinations of patent validity.¹⁰⁵ The brief concludes by stating that “[h]olding the IPR procedure unconstitutional would deprive the public and patentees of [the] . . . benefits to the patent system.”¹⁰⁶

Moreover, in favor of upholding IPRs is the fact that the USPTO has long had the ability to review its prior decisions. The USPTO was created specifically in an attempt to have a body with “special expertise in evaluating patent applications” in order to be best fit to issue and interpret patents.¹⁰⁷ One example is interference proceedings, which were utilized prior to the AIA, in which the USPTO could declare “interferences” between issued patents and pending applications directed to the same invention.¹⁰⁸ The interference began with a preliminary motions phase, in which parties could make motions for invalidity based on prior art, decided through briefs and expert testimony, as is similar to the process still used today in IPRs.¹⁰⁹ The determination made by the USPTO in an interference could be subsequently challenged in a district court and appealed to the Federal Circuit.¹¹⁰

Based on this precedent, there is a strong argument to be made that the IPR proceedings, as they are currently construed, are not in violation of any constitutional rights. However, that is for the Supreme Court to ultimately decide.

B. IPR Statistical Overview

Instituted in 2012, *inter partes* review has now been in use for five years, and in those five years, the PTAB has been busy with proceedings, in 2015 becoming the second busiest patent jurisdiction in the United States, trailing only the Eastern District of Texas.¹¹¹ In an analysis of IPR proceedings from 2012 – 2015, IPR petition filings increased steadily from less than 10 per week in 2012 to roughly 30 in 2015.¹¹²

105. *Id.* at 3.

106. *Id.*

107. *Kappos v. Hyatt*, 566 U.S. 431, 445 (2012).

108. 35 U.S.C. § 135 (2012); U.S. Patent & Trademark Office, *Manual of Patent Examining Procedure* §§ 2300-2309.

109. *Id.*

110. *See generally Kappos*, 566 U.S. 431.

111. Matt Cutler, *Expert Analysis: 3 Years of IPR: A Look at the Stats*, LAW360.COM (Oct. 9, 2015, 3:59 PM) <http://www.law360.com/articles/699867/3-years-of-ipr-a-look-at-the-stats>.

112. *Id.*

In the data provided annually by the United States Patent and Trademark Office, of the 4,563 total IPR petitions completed as of March 31, 2017, 1,577 of these petitions made it to trial, and of those, in 1,029 trials, all instituted claims were found to be unpatentable, while in 248 trials, at least some instituted claims were found unpatentable.¹¹³ But in only 300 trials, out of the initial 4,563, were no instituted claims found to be unpatentable.¹¹⁴ Comprising only seven percent (7%) of total petitions, twelve percent (12%) of trials instituted, and nineteen percent (19%) of final written decisions,¹¹⁵ it appears that surviving an IPR petition with a patent fully intact is becoming increasingly challenging.

In 2015, of the 2,203 IPR petitions filed as of October 31, only four percent (4%) of the total number of petitions filed survived trial unscathed with no instituted claims found to be unpatentable,¹¹⁶ while in 2016, as of the same date, October 31, of the 406 IPR petitions filed, in only four trials were no instituted claims found unpatentable, accounting for only 1% of the total number of petitions.¹¹⁷ Thus, while the volume of IPR proceedings has steadily increased, the claim survival rate at final decision are steadily decreasing.¹¹⁸

C. Breakdown of Technology of Challenged Patents in the Energy Sector

In an analysis by Law360 of the USPTO statistics, IPR proceedings were also analyzed with respect to the subject matter of the patents at issue. In 2015, of the 3408 patents challenged in AIA proceedings, 15.7% were chemical and biotech patents, 60.8% were electrical and computer, 21.1% were mechanical and business method, and less than 1% were design patents.¹¹⁹ These numbers are consistent with the statistics released by the PTAB for September 2017 in which 7% of IPR petitions filed were for

113. U.S. PATENT TRIAL AND TRADEMARK OFF., *supra* note 100.

114. *Id.*

115. *Id.*

116. U.S. PATENT TRIAL AND TRADEMARK OFF., PATENT TRIAL AND APPEAL BOARD STATISTICS (2015) <http://www.uspto.gov/sites/default/files/documents/2015-09-30%20PTAB.pdf>.

117. U.S. PATENT TRIAL AND TRADEMARK OFF., PATENT TRIAL AND APPEAL BOARD STATISTICS (2016) <http://www.uspto.gov/sites/default/files/documents/2016-07-31%20PTAB.pdf>.

118. Gene Quinn & Steve Brachman, *Patent Killing Fields of the PTAB: Erasing Federal District Court Verdicts on Patent Validity*, IPWATCHDOG.COM, <http://www.ipwatchdog.com/2018/01/14/patent-killing-fields-ptab-erasing-federal-district-court-verdicts-patent-validity/id=92375/> (last visited Mar. 24, 2018).

119. *Id.*

chemical patents, 11% were for biotech, 59% were electrical and computer, 22% were mechanical and business method, and design patents were again less than 1%.¹²⁰

Though there are no clear statistics indicating into which categories listed by the PTO most energy patents would fall, some inferences may be drawn. For instance, fuel cell technology converts chemical energy into electricity.¹²¹ Moreover, with so many renewable energy patents focused on mechanical devices used to convert renewable energy sources, it would be reasonable to infer that these types of patents, if challenged in an IPR proceeding, would likely fall into one or more of the USPTO's top three listed categories: (1) electrical and computer, (2) mechanical and business method, or (3) chemical and biotech.

V. Effect on Patents

The upcoming decision by the Supreme Court will certainly impact how litigants challenge the validity of patents as well as the structure of such claims. There are various compelling arguments for each position. This section will discuss the most compelling advantages and disadvantages of both potential outcomes that could be reached regarding the constitutionality of *inter partes* review in the patent system.

A. Advantages of an IPR System

There are many proponents of the *inter partes* review system. After all, it must have been instituted for a reason. And in the years since the inception of *inter partes* review proceedings, with the passing of the America Invents Act, and especially in light of the recent dispute now being heard and decided by the Supreme Court, many have come forward to argue the reasons for which IPR proceedings are not only constitutional, but necessary to further the goals of the patent regime.

1. Discouragement of Patent Trolls

The *inter partes* review process was created with good intentions of improving an ever-evolving patent system, but as with many concepts

120. Nathanael Luman & Kerry S. Taylor, *PTAB Releases September 2017 Stats*, KNOBB.COM, <https://www.knobbe.com/news/2017/10/ptab-releases-september-2017-stats> (last visited Mar. 24, 2018).

121. CBInsights, *US Renewable Energy Patents: What GM, GE, IBM, And Other Top Corporates Are Working On*, CBINSIGHTS.COM, http://www.cbinsights.com/research/renewable-energy-patents-trends-corporates/?utm_source=linkedin&utm_campaign=Varadharajan&utm_medium=contentteam#granted%20by%20type (last visited Mar. 24, 2018).

borne out of good intentions, the IPR system has been subject to systematic abuse. One of the most criticized byproducts of the American patent system concerns “patent trolls,” rent-seeking entities whose business model and income depend solely on owning patents in products and services which they do not actually provide, but nevertheless demanding royalties for their use by others, thereby creating undeserved monopolies in said patents.¹²² Technically speaking, a patent troll is more appropriately referred to as a type of “non-practicing entity” (“NPE”), or an entity that “does not research and develop new technology, but rather acquires patents, licenses the technology, and sues alleged infringers.”¹²³

Nevertheless, these NPEs, when acting in a manner that takes advantage of the patent system, have become known in recent years as patent trolls. In similar fashion to the well-known mythical troll acting in its capacity as a villain from legend and folklore, the *patent* troll “extort[s] by acting as [a] compan[y] protecting [its] rightfully-owned patents when [it] either do[es] not own the rights to that claimed property or [is] asserting those rights against someone they have no reason to believe infringes.”¹²⁴ These trolls seek to make their money by threatening patent infringement claims, albeit often weak claims, against businesses who are more likely to prefer settling or paying a license fee rather than risk the high cost and lengthy process of patent litigation.¹²⁵ Patent trolls, in the modern patent system, arguably add no value to a system whose primary goal is to promote progress and innovation. Thus, discouraging the exploitative processes of patent trolls is a goal of both legislative bodies and the courts.¹²⁶

There have been arguments made that the *inter partes* review system has become an avenue to help thwart the increasing presence of patent trolls in the intellectual property arena. Invalidity Assertion Entities (“IAE”) are similar to patent trolls by adhering to a rent-seeking business model; these entities merely make the argument that a certain patent is invalid, rather

122. John M. Golden, “*Patent Trolls*” and *Patent Remedies*, 85 TEX. L. REV. 2111, 2112 (2007).

123. *Pragmatus AV, LLC v. Facebook, Inc.*, 769 F. Supp. 2d 991, 995 (E.D. Va. 2011).

124. John D. Weidman, *The Future of Patent Troll Legislation and Its Effects on the Energy Industry*, 3 OIL & GAS, NAT. RESOURCES & ENERGY J. 39, 41 (2017), <http://digitalcommons.law.ou.edu/onej/vol3/iss1/3>.

125. *Id.*; see Matteo Sabattini, *NPEs vs. Patent Trolls: How to Build a Healthy Innovation Ecosystem*, IPWATCHDOG.COM, <http://www.ipwatchdog.com/2015/02/04/npe-patent-trolls-innovation-ecosystem/id=54427/> (last visited Mar. 24, 2018).

126. W. Michael Schuster, *Invalidity Assertion Entities and Inter Partes Review: Rent Seeking as a Tool to Discourage Patent Trolls*, 51 WAKE FOREST L. REV. 1163, 1163 (2016).

than alleging patent infringement.¹²⁷ To do this, IAEs use the IPR process to challenge and discourage the very trolls that attempt to exploit this very system.¹²⁸ Although there are many who argue that IAEs misuse the patent system and should be barred from participating therein, there are many proponents of the use of these entities to eliminate a more prevalent problem.

Patent trolls generally possess weak patents because these patents are comprised of empty claims and thus would likely be invalidated if ever contested through an IPR due to their inherent weakness.¹²⁹ Yet, once one of these entities obtains its valid, albeit weak, patents, it wields a threatening club with which to intimidate its opponents, who, in light of ever-increasing litigation costs, are powerless to defend against these challenges.¹³⁰ Therefore, even if a patent troll asserts weak claims, infringing defendants are likely to choose settlement over a time-consuming and costly litigation battle.¹³¹

However, because the nature of these claims is often so weak, the IPR process provides an alternative avenue for entities to attack them offensively. A 2013 study found that patents owned by alleged patent trolls were more likely to be invalidated in litigation than those owned by legitimate industry entities.¹³² In studying 980 patents, the study found that one or more claims of patent troll-owned patents were invalidated 61% of the time for obviousness or as being anticipated by prior art, grounds upon which a patent may be invalidated through an IPR, whereas only 37% of patents were invalidated for patents generally.¹³³

127. *Id.* at 1164.

128. *Id.*

129. *Id.*; see Henry M. Gladney, *Digital Intellectual Property: Controversial and International Aspects*, 24 COLUM. J.L. & ARTS 47, 84; Chris L. Gilbert et. al., THE IMPACT OF RECENT LAW CASES AND DEVELOPMENTS 167, 179 (2014).

130. Schuster, *supra* note 126, at 1164; see Colleen V. Chien, *Of Trolls, David, Goliaths, and Kings: Narratives and Evidence in the Litigation of High-Tech Patents*, 87 N.C. L. REV. 1571, 1579 & n.36 (2009).

131. Schuster, *supra* note 126, at 1188; see Brad A. Greenberg, *Copyright Trolls and Presumptively Fair Uses*, 85 U. COLO. L. REV. 53, 79 (2014); Robert G. Harris, *Patent Assertion Entities & Privateers: Economic Harms to Innovation and Competition*, 59 ANTITRUST BULL. 281, 295 n.193, at 284-285.

132. Schuster, *supra* note 126, at 1190; see Shawn P. Miller, *Where's the Innovation: An analysis of the Quantity and Qualities of Anticipated and Obvious Patents*, 18 VA. J.L. & TECH. 1, 49 (2013).

133. Schuster, *supra* note 126, at 1190; see U.S. PATENT TRIAL AND TRADEMARK OFF., *supra* note 100.

Those that hope to dissuade this deceitful practice have asserted that IAEs, through the IPR process, have the potential to do just that and are in fact incentivized by this system to target patent trolls.¹³⁴ Because patents held by patent trolls are statistically more susceptible to invalidation, IAEs have greater incentive to target those entities. And while IAE assertions against patent trolls are unlikely to eliminate trolls altogether, IAE abuse of IPR procedures undeniably assists in reducing the number of invalid patents in the arena, making the IPR process critical to upholding the values of the American patent system.

2. “Zombie” Patents

Even though not necessarily an *advantage* of the IPR system, there do exist negative effects and relative uncertainty that may result if *inter partes* review is found to be unconstitutional by the Supreme Court. Some have argued that if IPRs are ruled unconstitutional in *Oil States*, then patents previously invalidated by the PTAB in IPR proceedings may “come back to life, as zombie patents, dead but still alive.”¹³⁵ In *Oil States*, the Patent Trial and Appeal Board found that the patent’s claims were invalid in view of prior art disclosing hydraulic pressure lockdowns. However, if *Oil States* is victorious at the Supreme Court, though there will be an answer to the question of whether IPRs are unconstitutional, there would be uncertainty going forward as to what may happen next.

Generally, in civil litigation, a law deemed unconstitutional is to be viewed retrospectively as “inoperative as though it had never been passed.”¹³⁶ Thus, it would logically follow that this decision could have the potential to render all prior IPR invalidations void.¹³⁷ Yet, the Supreme Court still reserves the power to give its rulings only prospective effect “to avoid injustice or hardship to civil litigants who have justifiably relied on prior law.”¹³⁸ Under another test, the Supreme Court held that a decision would apply prospectively when retroactive application would put

134. Schuster, *supra* note 126, at 1188.

135. Charles W. Shifley, IF INTER PARTES REVIEWS ARE UNCONSTITUTIONAL, WILL THERE BE ZOMBIE PATENTS? YIKES! IT COULD HAPPEN (2017), <https://bannerwitcoff.com/wp-content/uploads/2017/08/If-Inter-Partes-Reviews-Are-Unconstitutional-Will-There-Be-Zombie-Patents.pdf>.

136. Norton v. Shelby County, 118 U.S. 425, 442 (1886).

137. Clint Maynard, *Patent Apocalypse*, MINNESOTALAWREVIEW.ORG, <http://www.minnesotalawreview.org/2017/10/patent-apocalypse/> (last visited Mar. 24, 2018).

138. Suesz v. Med-1 Solutions, LLC, 757 F.3d 636 (7th Cir. 2014).

“substantial injustice and hardship upon litigants” who have relied on prior law.¹³⁹

The future may be unclear as to what will become of previously invalidated patents in light of what will soon be decided, but there will certainly be more issues that must be decided.

B. Disadvantages of an IPR System

As is the case with most disputed issues, here, in *inter partes* review, there are certainly disadvantages to weigh. Otherwise, this debate would not exist. As proponents of the IPR system have come forward, so, too, have those who wish to see its end. Here follow some of the most persuasive arguments.

1. Lack of Protection for Patent Owners

The American patent system is what it is because of the patent owners who have worked to create, develop, and improve the many technologies and inventions that foster innovation in modern society. In a persuasive argument, these very patent owners filed a Brief of *Amici Curiae* of thirty-nine affected patent owners (“APO”) asserting the reasons for which the Supreme Court should reverse the judgment of the Court of Appeals and find that the *inter partes* review process should be ruled unconstitutional.¹⁴⁰

These thirty-nine APOs allege that the American system promised protections in exchange for their lengthy, expensive, and often risky ventures, but those promised protections are not being adhered to as these APOs have been “stripped of their level of judicial protection to which patent holders are entitled under the U.S. Constitution.”¹⁴¹ The main argument put forward by these APOs is that the IPR process, which allows the PTAB to conduct invalidity trials, exists only because Congress exceeded its authority under the United States Constitution.¹⁴² When viewed through the lens of those whom the patent system was theoretically intended to protect, it becomes difficult not to be persuaded that the patent process, through IPRs, leaves much to be desired.

The Supreme Court, in *Commodity Futures Trading Comm’n v. Schor*, stated that Article III of the Constitution “serves both to protect the role of the independent judiciary within the constitutional scheme” and “to

139. *Chevron Oil Co. v. Huson*, 404 U.S. 97, 107 (1971).

140. Brief for the Thirty-Nine Affected Patent Owners as Amicus Curiae at 2, *Oil States Energy Servs., LLC v. Greene’s Energy Group, LLC*, 137 S. Ct. 2239 (2017).

141. *Id.*

142. *Id.*

safeguard litigants' right to have claims decided before judges who are free from potential domination by other branches of government."¹⁴³ Further, even slight encroachments from one branch into another are contrary to what the Framers of the Constitution intended.¹⁴⁴ Although Congress established *inter partes* review to create a more efficient and effective patent system,¹⁴⁵ this fact alone, though commendable in its purpose, does not give it legal ground to stand on if, in order to serve its purpose, it exceeds what is permissible under the Constitution.¹⁴⁶

In patent validity disputes, Article III Courts provide proceedings with (1) a neutral adjudicator; (2) a presumption of an issued patent's validity; (3) a clear and convincing standard of proof; (4) a correct interpretation of the patent's claims; (5) liberal discovery; (6) live testimony; (7) tenured judges; and (8) a jury.¹⁴⁷ Alternatively, Article I Tribunals, as allowed by the AIA, provide (1) a right-grantor as that right's adjudicator; (2) no presumption of an issued patent's validity; (3) only a preponderance of the evidence standard of proof; (4) a more liberal interpretation of the patent's claims (5) more limited discovery; (6) no live testimony; (7) fireable, appointed adjudicators; and (8) no jury.¹⁴⁸

APOs argue that the PTAB has "accepted Congress's legislative mandate to tilt the playing field against patent owners,"¹⁴⁹ citing a finding that roughly 84% of patent challenges to the PTAB have been determined invalid, with only four percent of all PTAB petitions for review ending in a final written decision in which all claims are found to be valid and patentable.¹⁵⁰ Moreover, the PTAB consistently invalidates patents at a greater rate than in the district courts, which leads to speculation.¹⁵¹ With such vigorous and aggressive use of IPRs to invalidate such a high rate of patents, it is questionable as to whether or not the PTAB is acting within the scope of its Constitutionally granted rights and, in fact, hurting the very

143. 478 U.S. 833, 848 (1986).

144. *Stern v. Marshall*, 564 U.S. 462, 503 (2011).

145. 37 C.F.R. § 42 (2012).

146. *INS v. Chadha*, 462 U.S. 919, 944 (1983).

147. Brief for the Thirty-Nine Affected Patent Owners as Amicus Curiae at 4-5, *Oil States Energy Servs., LLC v. Greene's Energy Group, LLC*, 137 S. Ct. 2239 (2017).

148. *Id.*

149. *Id.* at 7.

150. Steve Brachmann & Gene Quinn, *Are More Than 90 Percent of Patents Challenged at the PTAB Defective?*, IPWATCHDOG.COM, <http://www.ipwatchdog.com/2017/06/14/90-percent-patents-challenged-ptab-defective/id=84343/> (last visited Mar. 24, 2018).

151. *Id.*

inventors who seek to “promote the progress of science and useful arts” instead.¹⁵²

Furthering their argument, APOs assert that patent rights are a private right, and that if the Supreme Court upholds IPRs as constitutional, this will mean a determination that patent rights are, in fact, a public right, which would “threaten[] to destroy the integrity of the American patent system,” affecting every present and future inventor of a US patent and depriving private litigants certain constitutional protections.¹⁵³

Additionally, there are arguments that the IPR process places upon the inventor too high a financial burden, especially after said inventor has already placed a considerable amount of time, effort, and money into acquiring a valid patent. As described by Patently-O, the IPR process is essentially a “request for the Patent Office to admit that they made a mistake and reverse themselves on the validity of the patent.”¹⁵⁴

However, from the perspective of the inventor, should the inventor have to suffer for the mistakes of the PTO who should have made the correct determination in the first place? By the time the initial determination of validity has been made, the inventor has already relied on what the PTO determined to be a *valid* patent, and from that point forward he or she relies on the validity of the patent in making business and financial decisions.¹⁵⁵ Thus, a subsequent reversal of the patent at the hands of an *inter partes* review proceeding would undeniably have an enormous negative impact on the investment made in the invention.¹⁵⁶

2. Misplaced Economic Incentives and Heavy Financial Burden on US Economy

Whereas proponents of the IPR process have asserted that it is necessary to “weed out” weak patents that should never have been validated to begin with, some statistics suggest that, in fact, the opposite is true. As of 2015, the average cost for a company to file and prosecute an IPR proceeding to the PTAB was between \$200,000 and \$500,000.¹⁵⁷ The implication: due to

152. U.S. CONST. art. I, § 8, cl. 8.

153. Brief for the Thirty-Nine Affected Patent Owners as Amicus Curiae at 17, *Oil States Energy Servs., LLC v. Greene’s Energy Group, LLC*, 137 S. Ct. 2239 (2017).

154. Richard Baker, *Guest Post: America Invents Act Cost the US Economy Over \$1 Trillion*, PATENTLYO.COM, <https://patentlyo.com/patent/2015/06/america-invents-trillion.html> (last visited Mar. 24, 2018).

155. *Id.*

156. *Id.*

157. *Id.*

the high cost associated with the IPR process, corporations are unlikely to file an IPR unless the involved patent poses a significant threat.¹⁵⁸ Otherwise, the cost is not worth the risk. But these “significant threats,” often those considered to be in the top tier of all patents, are the ones that are often the subjects of IPRs.¹⁵⁹

Additionally, the high invalidation rate in IPR proceedings has had a dramatic impact on the economy as well. According to IPOffering’s Patent Value Quotient Annual Report of patent sales, between 2012 and 2014, since the enacting of the AIA, the number of patents sold decreased from 6,985 in 2012 to only 2,848 in 2014, while the average price per patent dropped from \$422,286 to \$164,232.¹⁶⁰ Converting these numbers to dollar sales, based on this report, sales of US patents decreased from \$2,949,666,000 in 2012 to only \$467,731,502 in 2014, a massive decrease by 84%.¹⁶¹

It may be a stretch to say this decrease in dollar sales and loss to the United States economy is due entirely to the implementation of the IPR process, but it remains a concern to be considered.

3. Inter partes Review is “Killing the Patent Field”

While some argue that the rate of patents invalidated through *inter partes* review has been modest and relatively comparable to the invalidation rate in the district courts, some have fired back, arguing that IPRs are better described as a “patent killing field.”¹⁶² Proponents of this view argue that the Patent and Trademark Office’s reported numbers are somewhat misleading, making IPR proceedings appear less harmful than they may be in reality. In fact, many note that invalidations under § 102 and § 103 are higher in IPR proceedings than in district courts.¹⁶³

According to some reports on the statistics released by the PTO, 82.5% of patents reviewed by the PTAB in a final written decision were found defective, and 69% of patents that reached a final written decision resulted

158. *Id.*

159. *Id.*

160. *Final Patent Value Quotient Report Shows Strong Demand and Increased Pricing for U.S. Patents*, IPOfferings.COM, <http://www.ipofferings.com/patent-value-quotient.html> (last visited Mar. 24, 2018).

161. *Id.*

162. Samson Vermont, *IPR Statistics Revisited: Yep, It’s A Patent Killing Field* PATENTATTORNEY.COM, <http://www.patentattorney.com/ipr-statistics-revisited-yep-its-a-patent-killing-field/> (last visited Mar. 24, 2018).

163. *Id.*

in the invalidation of all claims.¹⁶⁴ Further, the same report found that 23% of IPR petitions result in a settlement, which, by some, is nothing more than a “free license to the challenger.”¹⁶⁵ Many in the patent field question the merits of a system that has the potential to extinguish such a high percentage of patents, all of which were previously deemed valid and enforceable.

VI. Implication on the Energy Sector

Oil and natural gas are finite resources, and as their supplies continue to be depleted, the world has begun to make serious efforts to combat this challenge. Moreover, in a society that places a great emphasis on the environment and sustainability, clean energy patents are becoming vastly more popular, and patents are an integral part of the technological advancements at the forefront of energy innovations.

A. Clean Energy Patents

Clean and renewable energy are the future for energy resources and patentable technologies. As oil and gas resources dwindle, new and inventive patents will be the key to ensuring that society continues to be fueled. The Clean Energy Patent Growth Index (“CEPGI”), published quarterly by the Cleantech Group at Heslin Rothenberg Farley & Mesiti P.C., provides trends in innovation in clean energy from 2002 to the present and tracks US patents granted for solar, wind, hybrid/electric vehicles, fuel cells, hydroelectric, tidal/wave, geothermal, biomass/biofuels, and other clean renewable energy.¹⁶⁶ In the most recent CEPGI report published on October 31, 2016, US patents for clean energy technologies were at an all-time high, with 3,613 patents granted.¹⁶⁷

But while the number of patents granted has increased consistently from year to year, the rate of increase has gradually begun to slow. Whereas the number of clean energy patents granted increased by roughly 500 – 1000 each year between 2009 and 2012, 2015 saw the smallest year-to-year gain, increasing by only four granted patents, since the total fell from 2006 to

164. Gene Quinn et al., *PTAB Facts An Ugly Picture of a Tribunal Run*, IPWATCHDOG.COM, <http://www.ipwatchdog.com/2018/01/08/ptab-facts-ugly-picture-tribunal-run-amok/id=91959/> (last visited Mar. 24, 2018).

165. Gene Quinn & Steve Brachman, *supra*, note 118.

166. CLEAN ENERGY PATENT GROWTH INDEX (CEPGI) – 2015 YEAR IN REVIEW, <http://cepgi.typepad.com/files/h0731144-1.pdfhtml> (last visited Mar. 27, 2018).

167. *Id.*

2007.¹⁶⁸ This downward trend in the rate of increase in granted patents was paralleled in some of the individual sector sub-components as well.

In 2015, solar technologies ranked first in granted patents, despite a decrease of 14 patents from 2014, while the number of patents granted in fuel cells, wind, bio fuels, hydroelectric, and geothermal technologies all fell slightly from 2014.¹⁶⁹ Moreover, there seems to be a similar trend in other areas as well. Whereas the number of issued patents in fields related to cutting carbon emissions increased from 15,970 to approximately 35,000 between 2009 and 2015, the numbers fell slightly to approximately 32,000 in 2016.¹⁷⁰

B. Clean Energy and Innovation

Patents have been used time and time again as a means of protecting new and useful inventions, but this protection has also spurred innovation by inspiring and encouraging competition in numerous and diverse fields. This concept is no different in the energy sector. Patent law grants the owner of a patent a time-limited monopoly on that technology, but once the patent is issued, from that moment forward, it may be used as inspiration to find new and inventive ways to combat the same problems. And when the patent's term inevitably expires, others are free to use and exploit the technology in the furtherance of their own pursuits.

For example, in the universe of electric vehicles and fuel cell cars, companies like Toyota, Ford, General Motors, Tesla, and others are hard at work creating and improving inventions and registering patents each year in an attempt to compete in a highly competitive and increasingly crowded market. In 2013, Mercedes created an electric vehicle that had the capabilities of competing with Tesla while at the same time using Tesla technology to compete against it.¹⁷¹ This is the nature of competition in the realm of patenting useful inventions, and it is this competitive nature that allows for not only the creation of new ideas and technologies, but also for

168. *Id.*

169. *Id.*

170. Warren Cornwall, *Clean Energy Patent Slump in U.S. Stirs Concern* (Apr. 26, 2017, 12:15 AM) <http://www.sciencemag.org/news/2017/04/clean-energy-patent-slump-us-stirs-concern>.

171. Victor Cardona, *Mercedes Competes with Tesla in EV's While Tesla Competes with Itself . . . Fuel Cell Cars Coming, Patents All Around* (May 29, 2014, 4:01 PM) <http://www.cepgi.com/2014/05/mercedes-competes-with-tesla-in-evs-while-tesla-competes-with-itself-fuel-cell-cars-coming-patents-a.html>.

the continued use of those inventions by others to improve upon what has already been done. It is this cyclical process that spurs innovation.

C. IPR Impact on Clean Energy Patents

Now may be too soon to tell whether the data discussed above simply show a small dip in growth in the number of registered patents for a one to two-year period or whether these numbers, in fact, indicate a downward trend that may be indicative of some larger problem. Regardless of whether the numbers indicate the former or the latter, these trends should not be ignored.

Though it is not necessarily indicative of anything yet, the downward trends in the number of granted patents, as shown in the CPEGI report, began approximately around 2012, the same year in which *inter partes* review was established. This could be viewed in a number of ways. On the one hand, the decline in number of patents registered could be seen as the result of an institutional change with the implementation of the new *inter partes* review system. Thus, it could be inferred that if IPRs are upheld in *Oil States*, then this downward trend in the number of clean energy patents would continue to decline. The decline in numbers of clean energy patents could result in a step backward for innovation and a decline in competition among market competitors.

Conversely, there could be an argument made that the decline is actually precisely what IPRs endeavored to do. The slight decline in recent years in the number of patents granted could be viewed as a desired result of an *inter partes* review system that seeks to ensure that only patents of the highest quality remain issued. Though IPRs involve the cancellation of all or some claims of an already issued patent, it could be reasoned that the decline may be an anticipatory response to patents that may never have survived an IPR proceeding. Though innovation is important and the protection of intellectual property and useful inventions is critical, sheer volume is not necessarily the best mode of achieving those ends. Refusing to grant patents up front has the potential to reduce traffic at the PTAB down the line and increases the likelihood that what has already been granted will not be challenged. Perhaps IPRs, though indirectly, are assisting a system in ways beyond those which its creators envisioned.

VII. Conclusion

Whatever the Court does decide, its decision will have the potential to make a monumental impact on not only the patent system, but also on the patent system's effect on the energy sector. Although *Oil States* is a case

involving a patent for an oil well tool, it is undeniable that changes will come along with the decision. The case at bar is about much more than a mere determination of the constitutionality of a process used by the USPTO. The implications of this decision have the potential to wholly alter the patent procedural process—from application to litigation.

Ideally, the Supreme Court will hold that the IPR process, which has been in use for years, is not unconstitutional. Although there are numerous and compelling advantages as well as disadvantages of the *inter partes* review system, public policy seems to tip slightly in favor of upholding the constitutionality of the IPR process. In a system that relies on and thrives on competition to make inventive advancements and spur innovation, the disadvantages do not seem to carry enough weight to overturn a process that has, thus far, done what its purpose was intended. If this holds true, then the upward trends in renewable energy technology patents are likely to continue.

Alternatively, in the event the Court finds that IPRs are unconstitutional, it will undoubtedly have a drastic impact on patents. If the Supreme Court determines that the IPR process is unconstitutional, patents that would have certainly been invalidated by the PTAB, the Board specifically created *because of* the expertise of its members, may pass through, flying under the radar. In an area as important as the energy sector, where innovation is key to advancing society and overcoming the challenges faced in light of the depletion of finite resources, quality of issued patents is critical.

Federal patent policy rests upon providing patent-holders with time-limited rights to their inventions in an attempt to incentivize innovation by encouraging inventors to build upon the ideas of others before them.¹⁷² The patent system, as it is currently in place through the use of IPRs, ensures, or at least makes a strong attempt to ensure, that patents that are issued are of the highest quality and have the potential to further innovation going forward.

172. *Brulotte v. Thys Co.*, 379 U.S. 29, 31-32 (1964).