

# SUCCESSFULLY NAVIGATING THE IP RIGHTS LANDSCAPE



# WATCH YOUR STEP



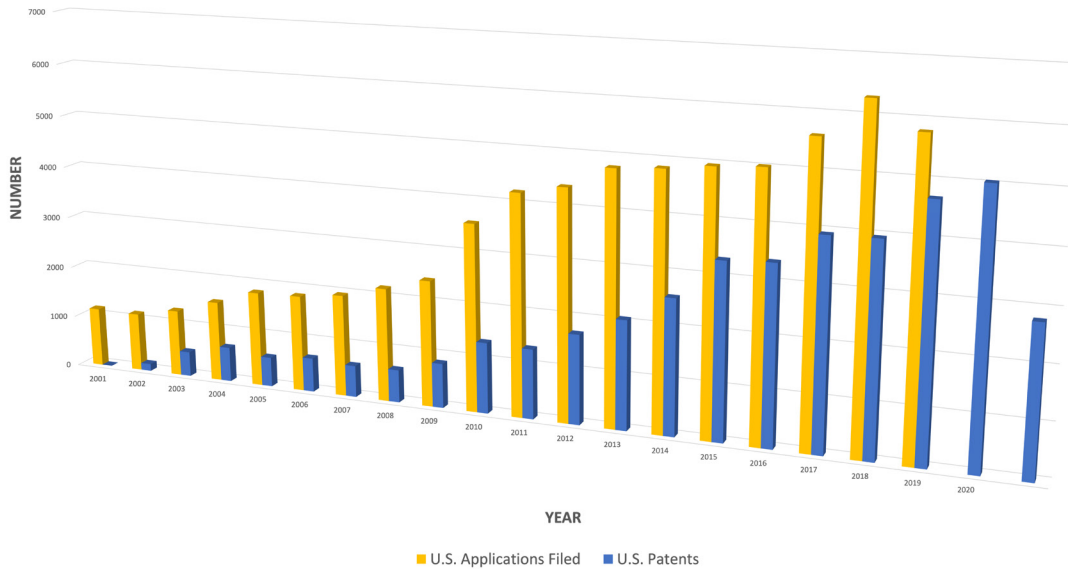
# THE IP RIGHTS LANDSCAPE

Nearly all businesses use and create intellectual property (IP) rights regularly. Operating blindly to the IP rights landscape your business occupies can set you on a collision course for disaster and significantly reduce the value of the business. So, maintaining an awareness of the IP rights landscape you are in is always important.

This is certainly true for the energy storage industry. Electricity from solar power in the U.S. is projected to increase from 3% presently to possibly as much as 37% by 2035 and as much as 44% by 2050<sup>1</sup>. **\$562 billion is projected for solar power infrastructure investment, and a critical component of most solar power systems is energy storage.** So, this is an exciting time for the energy storage industry. However, as great as the opportunities are which lie ahead, **there are many IP rights issues to be navigated in achieving success.** Among these are the many unexpired U.S. patents applicable to modern energy storage systems.

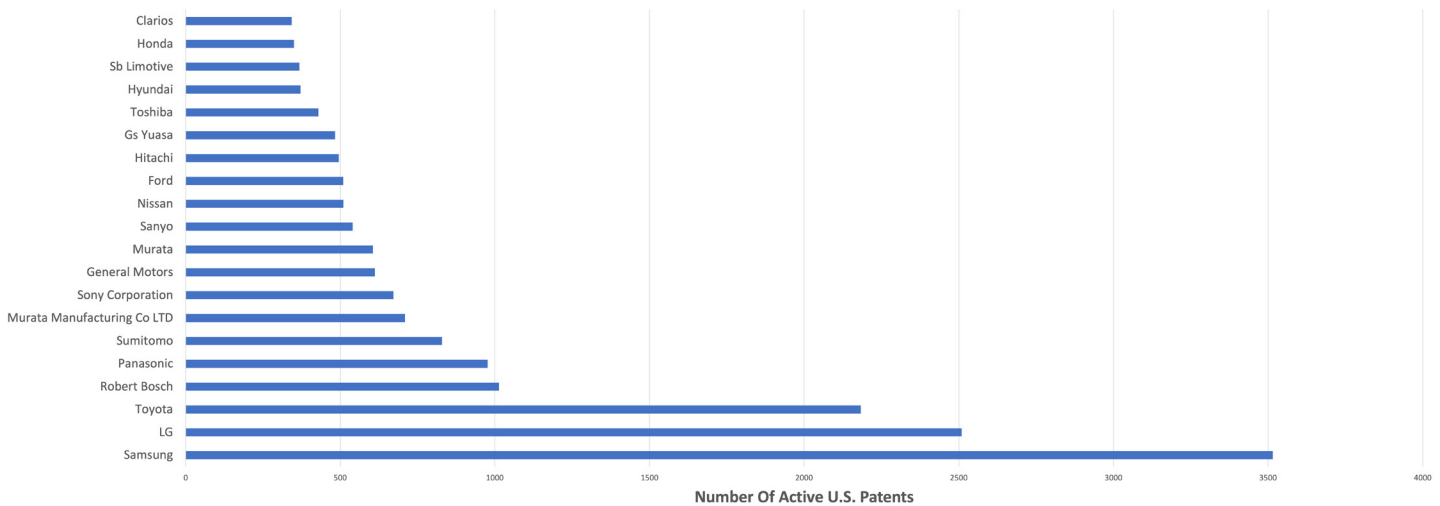
There are many different energy storage technologies, which include things such as pumped hydroelectric, flywheels, compressed air, thermal storage (e.g., molten salt), and fuel cells. However, it is increasingly routine to combine solar power systems with battery energy storage<sup>1</sup>. **Currently there are more than 35,000 unexpired U.S. patents, and nearly 10,000 pending U.S. patent applications, for battery energy storage technologies.**

**FIG 1.**  
**U.S. Patent Applications & Patents (2001-2021)**  
 Battery Storage



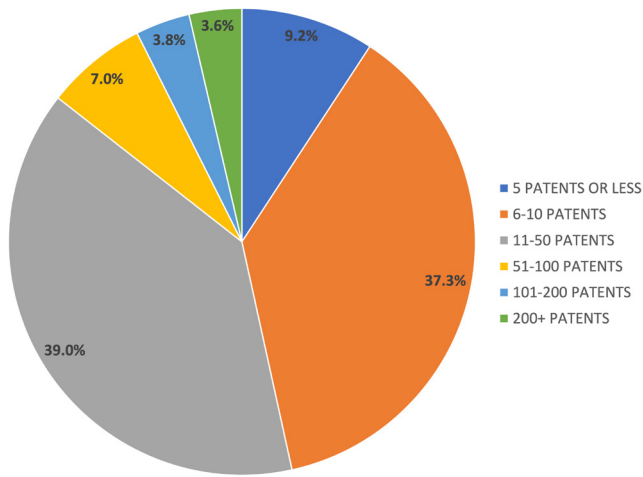
As shown in the accompanying figures, over the past 20 years there has been significant growth in the number of U.S. patent applications filed, and U.S. patents granted, for battery technology. See Fig 1. **The overall average annual growth rate of battery storage U.S. patents from 2015-2020 has been 13%.** Lithium ion technology has been dominant, but there has also been significant investment in innovation for other technologies. See Fig 4. The patent landscape is dominated by very large companies, and the top 1% of owners of battery patents own 39% of all unexpired U.S. patents. See Fig 2 and Table 1.

**FIG 2.**  
**U.S. Granted Active Patents - Top 20 Owners**  
 Battery Storage



**FIG 3.**

**Number Of Patents Owned**  
Battery Storage - Distribution Among Top Active U.S. Patent Owners



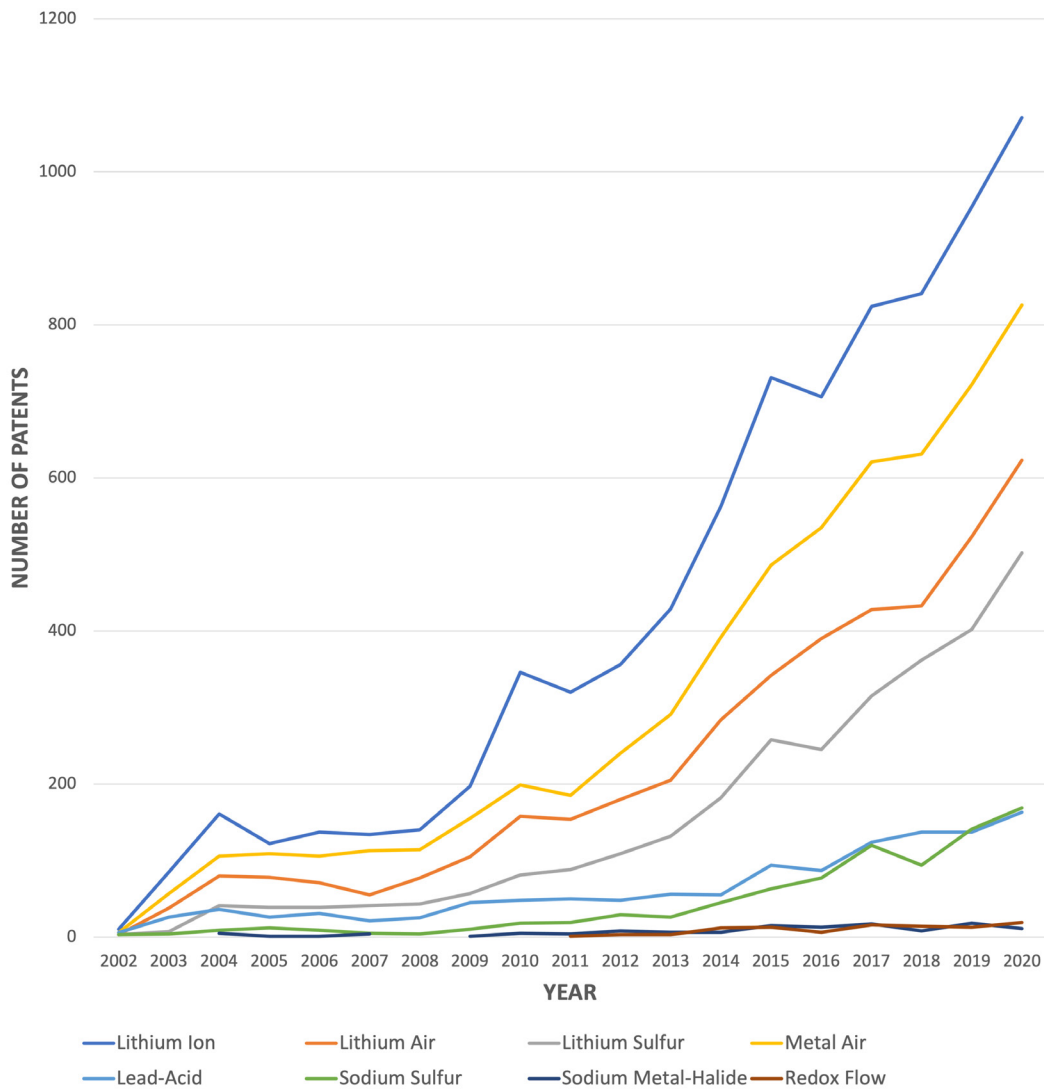
**TABLE 1**

<b>U.S. PATENT APPLICATIONS<sup>2</sup> - Battery Storage</b>	
Total U.S. Applications Filed 2015-2019	27965
Average Annual Growth (2015-2019)	+4%
Number Currently Pending In The USPTO	9856
<b>U.S. PATENTS<sup>2</sup> - Battery Storage</b>	
Unexpired Patents	35238
Number Granted (2015-2020)	21017
Avg. Annual Growth Rate (2015-2020)	+13%
Percentage Held By Top 1% Of Owners	39%

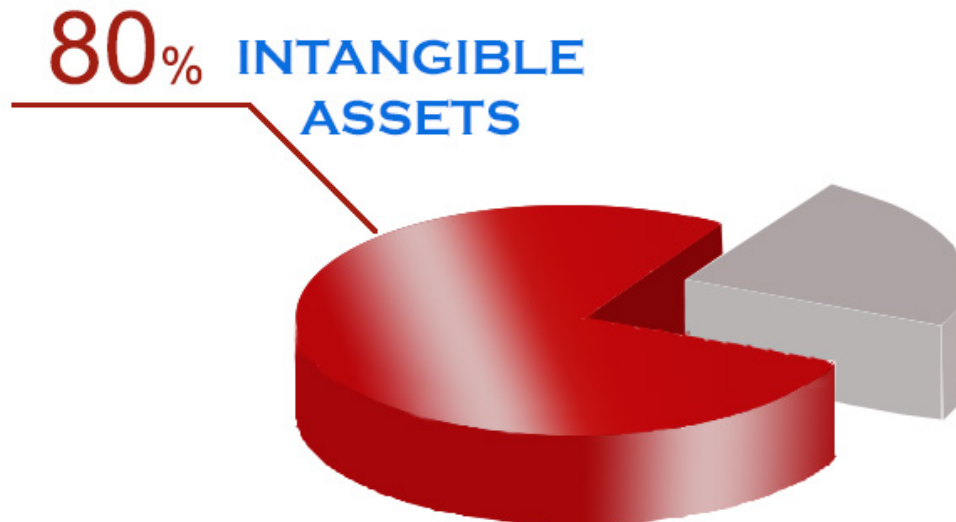
**FIG 4.**

**Battery Energy Storage Technologies**

U.S. Patent Grants



## Business Valuations



Each unexpired U.S. patent gives its owner a set of powerful exclusive legal rights within the U.S. to make, use, offer to sell, sell, and import the invention claimed in the patent. A business which infringes upon the exclusive legal rights of the patent owner can be sued for patent infringement, whether they knew about the patent or not.

Aside from the enormous expense of patent litigation, liability can mean payment of steep damages (no less than a reasonable royalty and going as far back as six years). It can also mean paying the patent owner's attorney fees and costs, and being court ordered to stop making, using, importing, or selling the invention. In sum, a patent infringement lawsuit has the potential to ruin a small or medium sized business enterprise, and even some larger ones.

Of course, patent rights are not the only IP rights those in the energy storage industry must successfully navigate. For example, there are currently **more than 18,000 U.S. trademarks registered for use in connection with the sale of batteries.**

**Copyright protection** also exists on the software, media, and other works of authorship that are used in connection with energy storage systems and businesses. **Trade secrets** on confidential business information and technologies (e.g., manufacturing processes) must also be properly managed, particularly in the context of employees moving between employers.

On the flip-side of the IP infringement dangers to an energy storage business there are also IP opportunities: Being the owner of important IP rights offers potentially lucrative opportunities for increased market share, profit margins, and/or beneficial licensing deals. **Studies have estimated that today 80% or more of the value of a company may often be found in the intangible assets of the business such as its patents, trademarks, copyrights, trade secrets, and goodwill.** Competitors will gladly take your sales and force your prices down if given the opportunity. This is what can happen when important IP rights are not properly secured.

# THE IP RIGHTS AUDIT

## SUCCESSFULLY NAVIGATING YOUR IP RIGHTS LANDSCAPE



So, a wise business leader will always seek to maintain a situational awareness of the IP rights landscape they are operating in: Both to secure valuable IP rights for the business itself, and to avoid very expensive legal disputes and liability for claims of IP rights infringement.

The IP rights dangers to a business are very real. Between March 2019, and March 2020, over 11,000 intellectual property rights lawsuits were filed in the U.S. district courts.

**The range of median costs a business faces if it must fully litigate a lawsuit for infringement of intellectual property rights is \$250,000 to \$5,000,000.** Many standard business insurance policies offer little or no coverage for these types of claims.

With respect to maintaining market share and profit margins to attract investors, financing, or a purchaser a business needs to be on top of both acquiring and maximizing the value of its IP assets. These assets can easily be lost, or suffer significant loss in value, if the right actions aren't taken at the right times by business management.

Performing a periodic IP rights audit is a best practice for achieving the IP rights situational awareness needed. For readers unfamiliar with the term, an IP rights audit is a tool that identifies the potential IP rights assets and liabilities of a business enterprise. An IP rights audit can be used to create a map of the IP rights landscape for a particular business. This can be invaluable to the business in navigating the IP rights landscape and achieving success.

**Given the very crowded IP rights landscape energy storage businesses operate in, performing an IP rights audit is one of the best, most important, and relatively affordable investments such a business can make.** So, if your business hasn't recently performed an IP rights audit to map the current IP rights landscape, now would be the time.

## About This Report

This special report has been published as a public service by attorney David M. Kleiman. It aims to provide valuable information and perspective on IP rights issues impacting businesses involved with fighting the climate change crisis. It is a free resource.

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## References



1. *Solar Futures Study*, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, September 2021.
2. Data sources which may have been consulted in preparing this publication included the United States Patent & Trademark Office, The Administrative Office of The U.S. Courts, The Lens, RPX, Patent Bots, WIPO, and Google Patents.
3. This text was obtained from the website of the United States Department of Energy.
4. The United States patent laws and regulations referenced herein may generally be found at 35 U.S.C. § 1 et seq. and 37 CFR § 1.1 et seq.
5. *U.S. Puts \$562 Billion Price Tag On Boosting Solar Power by 2050*, Timothy Puko and Jennifer Hiller, Wall Street Journal, September 9, 2021.

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David M. Kleiman is in private practice in the greater Los Angeles area. He provides affordable intellectual property and business law services to clients involved with technology, innovation, and creation.

Mr. Kleiman has degrees in applied sciences and physics, as well as years of R&D experience. He is a dean's list graduate of the nation's #1 law school for trial advocacy, and holds a diploma in intellectual property law from the nation's #1 law school for intellectual property law.

Since 1998 David M. Kleiman has helped clients acquire intellectual property rights, civil litigation settlements, IP sale and licensing deals, and defense savings valued in excess of \$300 million.

A patent is a legal document that sets forth in writing a set of national legal exclusivity rights in an invention. A patent is acquired by filing a written application with the appropriate national government agency (e.g., the United States Patent & Trademark Office). A patent application must set forth a detailed description, drawings as needed, and a precise legal claim for the invention.

An examiner employed at the national government agency will examine the filed application to determine if it complies with the legal requirements for obtaining a patent in that jurisdiction. In the United States Patent & Trademark Office the examiners are employed in numbered “Technology Centers” which each deal with a particular area of technology (e.g., Technology Center 1700 covers Chemical and Materials Engineering). The examiners working in each Technology Center are then further divided into “Technology Groups”, with each Technology Group having an even more specific technological focus (e.g., Technology Group 1720 is for Fuel Cells, Battery, Flammable Gas, Electrophotography, Photolithography). Patent applications are matched to examiners based upon the subject matter of the application matching that of the Technology Group.

In general, the primary legal requirements that an examiner checks for are that the claimed invention is (1) eligible subject matter, (2) novel, and (3) non-obvious. If a claimed invention is a useful process, machine, article of manufacture, or composition of matter, then in general it is eligible subject matter. Note that this covers an enormous amount of subject matter because so many things can be described as fitting into one of these broad categories. A claimed invention will be novel if the same invention wasn't already in the prior art (i.e., it wasn't already known at the time the application was filed). A claimed invention will be non-obvious if the differences between the invention and what is in the prior art would not have been obvious to those having skill in the art.

It is quite common during the patent application examination process to receive rejections of an application for allegedly failing to meet one

or more of the legal criteria. However, if through amendment and/or arguments the government examiner is ultimately persuaded that all of the legal criteria for a valid patent are satisfied, then the application will be allowed to issue as a patent.

Once issued, the set of national legal exclusivity rights the owner of an issued patent enjoys typically includes the exclusive right, within national boundaries, to make, use, offer to sell, sell, and import the invention claimed in the patent. These exclusive rights exist for a fixed period. For U.S. utility and plant patents the time is typically 20 years from the date the application was filed. For U.S. design patents the term is 15 years from the date of issue.

The exclusive rights of a patent may be sold or licensed by the owner, in whole or in part. They may also be enforced by the patent owner through the courts against those who infringe upon the rights without permission of the patent owner. An infringer of a patent could be held liable in a patent infringement lawsuit for monetary damages (no less than a reasonable royalty in the U.S.), punitive damages if the infringement was willful, and the attorney fees and court costs of the patent owner. In addition, the infringer may be subject to court injunction barring the infringer from any further use or sale of the invention.

It is important to note in today's global economy that there is no such thing as a “worldwide” patent. Each nation issues its own patents and has its own system for the enforcement of patent rights. There are patent treaties between countries, including the Patent Cooperation Treaty (“PCT”) which establishes a system for the filing of a single “international patent application” that can be used in multiple jurisdictions. However, any person who wants patent rights in a country for an invention must obtain patent protection from the national government of that country, and if necessary enforce those patent rights in that country.



**WHATEVER YOUR PATH, TREAD WISELY**

**KLEIMAN**