



Navigating Patents for Sustainable Development: Green Technology and Intellectual Property

G. ELIAS

Introduction

Critical to the attainment of sustainable development and combatting climate change is innovation in the form of green technology. With green technology comes intellectual property (IP) concerns. Patents, a critical component of IP, can either drive innovation in green technology or create obstacles to its dissemination. Thus, effective navigation of the patent landscape is essential for fostering the development and deployment of sustainable technologies worldwide.

Green Technology

Green technology refers to the innovative and sustainable technologies aimed at minimizing the environmental impact of human activities. Also known as clean technology, it spans the diverse fields of renewable energy, sustainable transportation, sustainable waste management, and sustainable building construction practices. The primary objective of green technology is to foster sustainable development by reducing carbon emissions, conserving natural resources, and enhancing overall environmental quality.¹ Examples of green technology include solar panels, wind turbines, electric vehicles, biodegradable materials, and advanced recycling systems.

By reducing human reliance on fossil fuels, minimizing waste, and conserving natural resources, these technologies play a crucial role in achieving the Sustainable Development Goals (SDGs) outlined by the United Nations.

Patents and Green Technology

The protection of the rights associated with the creative processes of these technologies is critical in ensuring innovation. A patent is an exclusive intellectual property right granted for an invention, which is a product or a process that provides, in general, a new way of doing something, or offers a new technical solution to a problem. To get a patent, technical information about the invention must be disclosed to the public in a patent application.² Patents are typically granted for 20 years and are territorial although common filing for group of countries exist for example, the African Intellectual Property Organization (OAPI) grants regional patents that are enforceable in all OAPI member states.

Green technology patents have played a crucial role in helping to advance sustainable practices. Patents in green technology incentivise innovation, knowledge sharing and disclosure, licensing and collaboration, gaining competitive advantage, acquiring legal protection as well as certification.

With the exclusive rights granted to innovators, it encourages them to invest their time (and finances) in research and development of green technologies with the assurance of legal protection if successful. With the successful grant of a patent, the innovator gains a competitive edge in the market due to the need for their license to use the patented technology allowing them to acquire and maintain a fair market share. The grant of a patent also means income from licensing the patents to others, the possibility of more investors, and collaboration with the innovator's choice persons.

There, however must be drawn, a difference between technology companies with green technology aspirations and companies who focus on green technology. Apple, Google and Meta rank amongst technology companies with green technology aspirations while companies like Malta Inc. which is building a grid-scale energy storage technology that stores electricity from renewable energy sources as heat inside large tanks of high temperature molten salt and as cold in large tanks of chilled liquid³

¹ [Understanding Green Technology \(gritdaily.com\)](https://gritdaily.com) Accessed May 21, 2024

² [Patents \(wipo.int\)](https://wipo.int) Accessed June 5, 2024

³ [Malta - X, the moonshot factory](https://www.malta-inc.com), Accessed June 5, 2024

and Carbfix, an Icelandic company with its focus on carbon capture for injection into underground rock sediments in an attempt to reduce the CO₂ in the atmosphere.⁴

Surely, one can see the appeal for patents in green technology in the light of the urgent need to address environmental crisis. In a 2023 Report, EconSight identified 1000 best companies in green technologies. Topping the ranking is CRRS Corporation Limited, a Chinese railway manufacturer which holds 922 world class patents with South Korean battery manufacturer LG Chem as second with 803 world class patents and Hyundai Motor third on the list with 743 world class patents. Other top ranking companies worthy of mention are Nissan Motor CATL which holds over 130 world class lithium battery patents,⁵ and Vestas, a wind turbine manufacturing company with a total of 7,789 patents globally, 4,746 of which have been granted as at November 7, 2023⁶.

Challenges Posed by Patents in Green Technology

The essence of patents is exclusivity to the components of an invention which can indeed incentivise creativity, however the exclusivity may sometimes create unintended barriers, especially for green technology urgently needed to address increasing environmental crisis.

Patented green technologies may also prove to be more expensive than those in great need of them like developing countries can afford thus limiting access to much needed technology. There is also the risk of patent thickets, a dense web of overlapping intellectual property rights that a company must hack its way through in order to actually commercialize new technology.⁷ These thickets can make it difficult for new companies and innovators to develop and commercialize new technologies without running into legal issues related to existing patents. For example, Tesla and Panasonic hold several patents related to lithium-ion battery technology which can make it challenging for new entrants to develop and market new battery technologies without infringing on those existing patents or considering increased costs due to the need to acquire licences from existing patent holders.

Strategies for Navigating the Patent Landscape

With the United Nations warning that the world has entered an era of global boiling due to the severity of climate change⁸, the need for green technologies cannot be overestimated. How then can green innovators continue to be encouraged and assuaged that their inventions will be protected?

A viable option is the creation of patent pools such as the energy patent pool proposed by LG Chem⁹ for large market share holders to prevent continuous infringement and offer a welcoming environment for new creators. Further, public-private partnerships can encourage the development of green technologies. Public funding can support the research and development of green technology while private companies leverage patents to bring innovations to the market. Further, the integration of traditional knowledge with modern green technologies can enhance sustainability efforts. Protecting the creation rights of indigenous communities ensures fair benefit-sharing and promotes biodiversity conservation.

Another is compulsory licensing for green technologies. There have been several discourses on whether climate change is a dire enough threat to justify compulsory licencing for green technologies with authors taking one stance or the other. In any case, compulsory licensing was adopted during the

⁴ [Carbfix - Carbfix](#) Accessed June 6, 2024

⁵ [Microsoft Word - EconSight-Greentech-Studie 2023_EN.docx](#)

⁶ [Vestas Patents - Key Insights and Stats - Insights:Gate \(greyb.com\)](#) Accessed June 7, 2024

⁷ [Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard Setting: Innovation Policy and the Economy: Vol 1 \(uchicago.edu\)](#)

⁸ [Hottest July ever signals 'era of global boiling has arrived' says UN chief | UN News](#) Accessed June 7, 2024

⁹ [LG Energy Solution to Take Firm Stance Against Patent Infringers – LG Energy Solution \(lgensol.com\)](#) Accessed June 7, 2024

AIDS crisis and the COVID-19 pandemic, we beg to say that climate change warrants another look at compulsory licensing for green technologies.

Collaboration with intellectual property experts and legal professionals will serve to help creators avoid legal battles on their inventions. Successful navigation of green technology patents is nevertheless achievable. There is the Eco-Patent Commons¹⁰ launched in 2008 by companies like IBM, Nokia, and Sony which provides a means of sharing knowledge for mutual and wider social benefit; Tesla's Open patents,¹¹ wherein Tesla announced that it will not initiate a lawsuit against any party for infringing a Tesla Patent through activity relating to electric vehicles or related equipment for so long as such party is acting in good faith and the World Intellectual Property Organization's (WIPO) Green platform which connects providers and seekers of green technologies. It facilitates the exchange of knowledge and promotes the use of sustainable technologies worldwide.¹²

Conclusion

In conclusion, while the patent landscape in green technology is complex, it is not unnavigable. Patents play a crucial role in driving innovation in green technology, which is essential for sustainable development there must be a balance between the incentives for innovation and the need for widespread access to sustainable solutions. By adopting innovative approaches and fostering a collaborative environment, the world can ensure that patents serve as a catalyst for, rather than a barrier to, the sustainable development needed to combat climate change ensuring that green technologies are developed and deployed effectively, contributing to a more sustainable and resilient global community.

¹⁰ [The Eco-Patent Commons: Caring through sharing \(wipo.int\)](https://www.wipo.int/presscenter/2008/08/08_01_en.htm) Accessed June 7, 2024

¹¹ [All Our Patent Are Belong To You | Tesla](https://www.tesla.com/newsroom/press-releases/2014/04/all-our-patents-belong-to-you) Accessed June 7, 2024

¹² [Wipogreen Database](https://www.wipogreen.org/)

Authors



Similoluwa Oyelude
Partner
simi.oyelude@gelias.com



Shukurat Oladejo
Associate
shukurat.oladejo@gelias.com

LOCATIONS

LAGOS OFFICE
6 Broad Street
Lagos, Nigeria

T: +234 (1) 460 7890
E: gelias@gelias.com

ABUJA OFFICE
2nd Floor, Abia House,
Plot 979, First Avenue,
Central Business District
F.C.T, Abuja.

T: +234 (1) 888 8881

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