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GREENING INTELLECTUAL PROPERTY :A CRITICAL ANALYSIS OF LEGAL INSTRUMENTS FOR GREEN TECH PROTECTION

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ABSTRACT

Recent times have seen climate change crises and environmental imbalances becoming a major global concern. The changes in climate lead to numerous problems including global warming, ozone layer depletion, resource deterioration, soil erosion, deforestation, and others. Numerous national and international treaties and policies have been established to safeguard the environment, ranging from the UNFCCC to the recent Paris Agreement, with the goal of addressing escalating environmental challenges. The idea of sustainable development is linked to global issues concerning human activity and the operation of economies and societies in both developed and developing nations. For economic entities, this signifies a method of management that considers economic, environmental, and social factors associated with their operations simultaneously and on equal footing. In organizations pursuing this developmental route, a new caliber of management should emerge.In economic practice, organizations need to increasingly concentrate on products (and/or services), technologies, and resources that provide benefits not just for the organization but also for the broader environment. Overseeing such an organization demands not just a shift in the mindsets and actions of both managers and staff, but also recognizing and incorporating the inventive application of both physical and non-physical resources, as well as the development of novel ideas and approaches.

Keywords: Intellectual Property, Sustainable development goals,WIPO,Green Technology,

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INTRODUCTION

Intellectual property (IP) refers to creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names and images used in commerce.It is protected in law by, for example patents,copyright and trademarks which enable people to earn recognition or financial benefit from what they invent or create. By striking the right balance between the interests of innovators and the wider public interest, the IP system aims to foster an environment in which creativity and innovation can flourish.[2] Green technology and innovation thereof will be of paramount importance, and Intellectual Property (IP) rights play a major role. The term 'Green Intellectual Property' refers to the protection of innovations in the field of green technology. The UN Rio Declaration on Environment and Development of 1992 stated that Green Technology means "*environmentally sound technologies that protect the environment, are less polluting, use all resources in a more sustainable manner, recycle more of their wastes and products, and handle residual wastes in a more acceptable manner than the technologies for which they were substitutes*".[3]

GREEN INVETION AND GREEN INTELLECTUAL PROPERTY

Green inventions, are new devices, systems and concepts that are curated keeping focus on environment, and using protective methods that is not harmful in long run and sustainable and non exhaustible in nature. It includes inventions that will reduce environmental pollution, adopt ways that will conserve energy in an effective manner for future usages, and using resources in such manner that it will not exhaust natural resources and it will be available for upcoming generation. The International Patent Classification (IPC) Green Inventory divides these technologies into subcategories such as energy conservation, waste management, sustainable transportation and green farming and forestry. solar panels are generally used to convert sunlight into electricity for further usages ; wind turbines produce power and later convertible energy through the wind and The trendy Electronics vehicles such as Tata ev cars , electronic busses, scooters does not use fuel as petrol diesel thereby not producing any

[2] WIPO, What is Intellectual property?, https://www.wipo.int/en/web/about-ip,(last visited Oct.5, 2025).
[3] Mathews Verghese,Green Intellectual Property ,https://foxmandal.in/green-intellectual-property/FoxMandal. (last visited Oct.5, 2025).

pollutant. Packaging made from biodegradable substances does not harm the nature as plastic does and LEDs light are used for conservation of energy.[4]

These inventions together with the patent that contains these green ideas are mostly covered by green intellectual property. In order to see this further let us use an example: the company had invented a unique solar panel that captures the sunrays in a better and more efficient way, so company X had patented the technique so that no other company could take the technique. It will motivate more entrepreneurs to obtain their sustainable productive means via green patent.

Green trademarks in straightforward sense implies attaching an Energy Star label on a product that is reflective of the reality that the product is effectively energy efficient and thus sustainable. By supporting and securing green inventions using intellectual property rights, we can aid in the growth of clean technology, reduce our impact on the environment and move towards a greener future. Severe issues of environment like soil depletion, environmental pollution ,global warming ,ozone depletion etc are need to be solve by the arising of these green inventions and the green intellectual property regulate these invention by granting them patentary rights trademark rights and copyrights.

These rights will encourage individuals and companies and people conducting research to come up with new technologies which will protect the environment by enabling them to be able to enjoy the product of their invention. Eco-labels and other green trademarks like eco-labels, Energy Star and Organic Certified can help consumers identify green products. Green invention are in need of protecting empowering them through the green intellectual property grants. Otherwise the ideas would be replicated by other people at will and the innovators would have no incentive to produce more.[5]

SUSTAINABLE DEVELOPMENT GOALS

The Sustainable Development Goals (SDGs), referred to as the Global Goals, were embraced by the United Nations in 2015 as a worldwide imperative to eradicate poverty, safeguard the

[4]Anand Barnabas,Green Innovation And IP: Legal Frameworks For Sustainable Technologies In India, https://www.mondaq.com/india/patent/1419990/green-innovation-and-ip-legal-frameworks-for-sustainable-technologies-in-india,(last visited Oct.5, 2025).

[5] Anand Barnabas,Green Innovation And IP: Legal Frameworks For Sustainable Technologies In India, https://www.mondaq.com/india/patent/1419990/green-innovation-and-ip-legal-frameworks-for-sustainable-technologies-in-india,(last visited Oct.5, 2025).

planet, and guarantee that by 2030 every individual experiences peace and prosperity. The seventeen SDGs are interconnected—they acknowledge that efforts in one domain will influence results in others, and that progress must harmonize social, economic, and environmental sustainability. Nations have pledged to focus on advancing the needs of those who are left behind the most. The SDGs aim to eliminate poverty, hunger, AIDS, and gender discrimination. Achieving the SDGs in every context requires the creativity, expertise, technology, and financial resources from all sectors of society.[6]

INTERLINKING SDGS AND INTELLECTUAL PROPERTY LAWS

Sustainable development, in its many manifestations, is of high and growing importance across the globe. Increasingly, governments are setting targets for sustainability improvements ranging from societal inclusiveness to carbon emission reductions; corporations are marketing their products and services by highlighting their 'eco' credentials; and consumers are basing buying decisions on sustainable criteria. As a United Nations (UN) agency, WIPO has an important role to play in the achievement of the UN's sustainable development goals (SDGs). While the relationship between SDGs and WIPO's activities may not be as clear-cut and obvious as, for example, those of the World Health Organization, which has clear responsibility for SDG 3 relating to good health and well-being, there are compelling reasons to believe that intellectual property (IP) systems can and should contribute to SDGs, and in doing so, can be more responsive to WIPO customer and societal needs. It is apparent that WIPO itself already contributes to the achievement of SDGs – albeit sometimes unintentionally. The best example of this is its long-term stewardship and promotion of IP treaties, which have led to efficiency and sustainability benefits that enable access to economic incentives for innovators, and thereby foster the technological and societal advancement. These initiatives predate the articulation of SDGs by decades. WIPO has also recently started to address its own operational carbon footprint. However, there still remains room for a more proactive strategy to encourage and lead active consideration of sustainability. This will require the establishment of SDG focused programs and partnerships, both within the UN family and beyond, and critically, with commercial organizations. It is

[6] UNDP Sustainable Development Goals,https://www.undp.org/sustainable-development-goals,(last visited Oct.5, 2025).

also likely to involve the youth and adoption of new technologies, such as machine translation, to deepen the scope of WIPO's sustainability initiatives.[7]

WIPO AND GREEN TECHNOLOGY PROMOTION

WIPO GREEN is an online platform for technology exchange. It supports global efforts to address climate change by connecting providers and seekers of environmentally friendly technologies. Through its database, network and acceleration projects, it brings together key players to catalyze green technology innovation and diffusion. WIPO GREEN is a public-private partnership established in 2013 by the World Intellectual Property Organization (WIPO). "Green technologies" are environmentally sound technologies as defined in Chapter 34 of Agenda 21 (The United Nations Program of Action from Rio, 1992). Green technologies "protect the environment, are less polluting, use all resources in a more sustainable manner, recycle more of their wastes and products, and handle residual waste in a more acceptable manner than the technologies for which they were substitutes". These "include know-how, procedures, goods and services, and equipment as well as organizational and managerial procedures."[8] Member states of the WIPO can promote the initiative at national and regional levels and/or finance projects via funds-in-trust. The WIPO GREEN Advisory Board, comprising partners and the WIPO Secretariat, guides the activities of WIPO GREEN. The Board advises on strategy, amendments to the WIPO GREEN Charter, the classification of green technologies on the WIPO GREEN database, and conduct outreach activities. The Advisory Board is an important consultative and counseling body but does not exercise any influence over WIPO's program and budget.

Ipo Green[9]

Intellectual Property Offices are key actors in green innovation ecosystems.They deliver patents and other intellectual property (IP) rights, provide services and guidance to entrepreneurs, and publish data and analysis. With the green transition rapidly becoming a

[7] WIPO,Intellectual property offices and sustainable innovation Implementing the SDGs in national intellectual property systems.https://www.wipo.int/edocs/pubdocs/en/wipo-pub-rn2023-10-en-intellectual-property-offices-and-sustainable-innovation.pdf,(last visited Oct.5, 2025).

[8] WIPO GreenThe Marketplace for Sustainable Technology, https://www3.wipo.int/wipogreen/en/,(last visited Oct.5, 2025).

[9] IPO Green ,https://www3.wipo.int/wipogreen/en/ipo-green/.,/,(last visited Oct.5, 2025).

priority for governments everywhere, IP Offices work in concert with other agencies to deliver on green goals. Their role typically involves programming to support green innovation and effective IP management by entrepreneurs working in this space. IPO GREEN is an initiative that supports IP Offices to enact green policies and programs.It was launched in 2022 with funding from the Japan Patent Office, the initiative brings IP Offices together to share their experiences and insights. It also provides research and analysis about IP Offices' activities that help to stimulate the development and deployment of new green technology solutions. There are some key works and procedure done for green technology promotion which are enumerated below.

- *Accelerated Patent Prosecution*[10]

Green technology Patent acceleration programs enable green technology patents to receive expedited treatment in an Intellectual Property (IP) Office, drastically cutting the time it takes to have a patent examined and granted. Currently operational national programs, more than 10 years old, differ in details; some IP offices provide this as a fee-based, sector-neutral fast track, others as a green solutions program. Faster first office actions contribute to shorter overall application to grant times, with first office actions (typically taking no more than three months) potentially being up to two-thirds faster. To enter, a participant seeks the acceleration and must prove the green technology character of their solution, typically by proving an environmental advantage. The important motive is to promote green innovation as it will allow the inventors to get their intellectual property rights faster, allowing their portfolios to be used faster to make investments, create partnerships, and receive tax incentives. IP Office must ensure that it has the ability and competent examiners that quality should not be compromised in the fast procedure when uptake by the clients.

- *Provision of Green Data and Analysis by the IP Office*[11]

IP Offices assist green innovators by serving as sources of useful information, research, and analysis to guide their R&D and commercialisation plans. This is done by releasing patent landscapes, research reports, trend analyses, and data sets, which assist entrepreneurs and the IP Offices themselves in identifying the most influential players and priority areas in which to focus green projects. Another way in which IP offices can cooperate with their international

[10] IPO Green Policy note 1, https://www3.wipo.int/wipogreen/en/docs/ipo-green-policy-note-1.pdf,(last visited Oct.5, 2025).
[11] IPO Green Policy note 2, https://www3.wipo.int/wipogreen/en/docs/ipo-green-policy-note-2.pdf,(last visited Oct.5, 2025).

colleagues on common reports about regional or global trends is through this information, which can be used to influence national and regional policies in areas such as waste management or agriculture. In addition, there are IP offices that collaborate with WIPO to organize a national and regional survey to identify areas of priority in green investment and major technology users and providers that can be used in matchmaking programs. They are reports and analyses (in many cases sustainability-focused) prepared on the behalf of varied beneficiaries, such as SMEs and researchers in the public sector, and published to signal the public policy debate and demonstrate a white space in which future research can be undertaken. This project uses existing analytical tools of the IP Offices, and only needs extra human resources to develop and distribute the products, so it is important to determine efficient channels of communication to ensure the products align to the needs and interests of the stakeholders.

- *Training Government Officials about Green Innovation*[12]

Some IP Offices are offering training about green technology solutions and about green innovation overall to patent examiners and other government officials. A goal of providing training for patent examiners is to ensure they are familiar with cutting-edge green technologies, so they can do their jobs effectively and also so they can execute special programs such as green accelerated prosecution programs. Similarly, some IP Offices operate training programs to raise awareness among colleagues outside of the IP Office about trends in green innovation, and the role of IP and other enabling policies in supporting advancement in the sector. Such programs can reinforce an all-of-government approach to advancing the green transition, by creating linkages between the IP Office and other agencies. In some cases, such training is provided to other domestic stakeholders as well, such as industry groups and NGOs, as part of efforts to generate support for and a better understanding of the government's broader sustainability programs and policy objectives.

- *Upcycling Program for Counterfeit Goods*[13]

The growing effectiveness of the detection and seizure of counterfeit products raise serious logistic and environmental concerns on its disposal, since conventional means such as air-incineration, crushing, or burying the waste in landfills usually have devastating long-term

[12] IPO Green Policy note 7, https://www3.wipo.int/wipogreen/en/docs/ipo-green-policy-note-7.pdf , (last visited Oct.5, 2025).
[13] IPO Green Policy note 9, https://www3.wipo.int/wipogreen/en/docs/ipo-green-policy-note-9.pdf , (last visited Oct.5, 2025).

consequences on the environment and human health. Although it is always best to make sure that the goods will never return to the market, more and more IP Offices are seeking means to recycle or upcycle the seized fake goods to provide a more favorable environmental footprint, as well as economic and social advantages. An example is the UK where recycling has been addressed by dividing the process to different government and non-profit groups. One such initiative is a pilot project in South Africa by the Companies and IP Commission (CIPC) that seeks to re-use and re-purpose confiscated items, like clothing and bags, by breaking them down and re-writing them into completely different products (e.g., aprons), all false branding and markings meticulously removed. This new solution is not only supposed to produce a more environment-friendly disposal system, but it is also supposed to create employment and to bring in more revenue to the IP Office, but also to focus specifically on hiring women and engaging local artists to paint the final products. The program is expected to have a wide-ranging effect, benefiting society by lowering environmental and health hazards, creating jobs, and backing artists as well as guaranteeing the right owners that their products would be out of the market forever without causing the adverse effects of destruction. Although this model of upcycling can be adopted, many resources are needed to implement it: recruitment, tools, the creation of distribution channels and, most importantly, strong communication and support of rights holders who might not initially welcome the idea of not destroying the goods completely.

- *Financial Support for Green Patent Applications*[14]

One way that IP Offices can contribute to green innovation is by reducing fees for patent prosecution for companies with green technology solutions. This can apply to green innovative SMEs, or it can apply on a sectoral basis to cover any green innovator. Another approach is the provision of an IP "voucher" that covers part of the costs of preparing the patent application, without reduction of the fees for the application. Denmark, for example, hasthis type of program in place. It is applicable to all sectors, with strong representation of the green technology sector among the applicants. The program is reserved for SMEs.

CONCLUSION

Climate change and environmental imbalance are global problems making sustainable development and green technology the global necessity. Intellectual Property (IP) rights, also

[14] IPO Green Policy note 11 , https://www3.wipo.int/wipogreen/en/docs/ipo-green-policy-note-11.pdf, (last visited Oct.5, 2025).

known as Green Intellectual Property, are increasingly being seen as a core tool to spur and secure the innovation solutions required to make this transition. The rights protect so-called green inventions, which are eco-friendly technologies that are less polluting, more efficient in resource use, and more sustainable, and may therefore provide the much-needed economic incentive to get innovators to work on solutions in the most critical fields, such as renewable energy, sustainable transport and waste management. It is important in the IP system to grant recognition and monetary gain so as to create an environment where creativity can thrive and benefit the greater good of environmental stewardship. The International Patent Classification (IPC) Green Inventory also contributes to this process and brings these technologies into greater visibility and reach of researchers and entrepreneurs by systematically classifying them.

The global and domestic policy environment has been proactive in incorporating IP systems in the environmental agenda, the most evident being the United Nations Sustainable Development Goals (SDGs). International organizations such as the World Intellectual Property Organization (WIPO) have taken this role by not only supporting core IP treaties that encourage technological progress, but also by individual programs. The flagship programme, WIPO GREEN, is an important partnership between the public and the private sector, linking the providers and demand of green technologies with its database, network and the acceleration projects and, therefore, actively catalyzing the innovation and diffusion of green technology globally. This shows that there is an obvious desire to use the current global IP infrastructure to fulfil modern societal demands.

National IP Offices on the ground are becoming necessary participants in the green transition, via the IPO GREEN initiative. These offices are also putting into place various strategic programs that are not within their normal functions. To start with, they provide Accelerated Patent Prosecution of green technology, which significantly reduces the period of examination and grant, allowing innovators to use their IP portfolios to invest, partner and claim tax incentives faster. Second, they proactively encourage R&D by Providing Green Data and Analysis, whereby industry leaders and policy makers can discover what is needed in the market, who is leading or lagging, and where there is a white space so that information can be developed in future. Thirdly, IP Offices have participated in Capacity Building, which creates specialized Government Official Training, such as patent examiners, to ensure they know the latest green technologies, as a booster to an effective all-of-government strategy to sustainability. Moreover, putting creativity at work, there are offices that lead the pack,

establishing Upcycling Programs of Counterfeit Goods, transforming confiscated goods in new products, which not only generates employment and income and offers an environmentally friendly alternative to destruction. Lastly, IP Offices explicitly deal with financial obstacles through Financial Support of Green Patent Applications, including fee cuts or IP vouchers, directly aimed at SMEs and innovators in green technology. All these activities emphasize the IP system strategic shift towards a multidisciplinary driver of global environmental objectives.