GREEN IP & HARMONIZATION

2023 SUMMIT MEETING OF GNIPA

OCTOBER 26, 2023

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*This presentation was prepared by the author to provide educational background about these issues, which are among those being discussed by IPO's Green IP Subcommittee. It should not be construed as providing legal advice or as presenting the views of IPO.

INTERSECTION OF GREEN & IP

- Climate change is a serious problem that requires innovative technologies to solve
- High quality and enforceable IP rights and predictable legal systems will enhance the prospects of developing such solutions
- Proactive measures that are actionable and useful in addressing climate change must be taken
- Climate change is a global issue and appropriate harmonization of IP procedures related to green innovation should be encouraged

REASONS BEHIND A GREEN IP GROUP

- Governments setting sustainability goals
- Pressures onto companies
- How can IP accelerate the rate of innovation while remaining an asset of a company ?
- March 2023: Founding of the Green IP subcommittee at IPO to pool our knowledge and understand the new paradigm
- Various individual initiatives from governments, patent offices, and private actors
- Track the threat of compulsory licensing under the premise of climate urgency

INITIATIVES

- From Governments
  - Regulations
  - Taxation

- From Patent Offices
  - Acceleration programs
  - Classifications
  - Platform/exchange (WIPO Green)

- From companies
  - Patent pledging / patent commons

NECESSITY OF HARMONIZATION

- The history of patent law harmonization goes back to the adoption of the Paris Convention for the Protection of Industrial Property in 1883.

- Climate change is a global issue <> Patents are territorial

- Putting up common definitions and criteria available to all allows:
  - Predictability
  - Reduce administrative burden
  - Accelerate processes

POTENTIAL HARMONIZATION

- (1) What is considered “green” ?

Office	Context	Definition
USPTO	Acceleration program	Product or process that mitigates climate change by being designed to: (a) remove greenhouse gases already present in the atmosphere; (b) reduce and/or prevent additional greenhouse gas emissions; and/or (c) monitor, track, and/or verify greenhouse gas emission reductions.
EPO	Classification	Technologies or applications for mitigation or adaptation against climate change
UKIPO	Acceleration program	Invention has an environmental benefit
CIPO	Acceleration program	Technology that either helps resolve or mitigate environmental impacts or conserves the natural environment and resources.
JPO	Acceleration program	A kind of invention that has an energy-saving effect and contributes to CO2 reduction
	Classification	Potential to reduce greenhouse gas emissions
WIPO	WIPO Green	Environmentally sound technologies as defined in Chapter 34 of Agenda 21 (The United Nations Program of Action from Rio, 1992).

POTENTIAL HARMONIZATION

- (1) What is considered “green” ?

Agenda 21 – Chapter 34
TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGY, COOPERATION AND CAPACITY-BUILDING

34.1. Environmentally sound 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 wastes in a more acceptable manner than the technologies for which they were substitutes.

34.2. Environmentally sound technologies in the context of pollution are "process and product technologies" that generate low or no waste, for the prevention of pollution. They also cover "end of the pipe" technologies for treatment of pollution after it has been generated.

34.3. Environmentally sound technologies are not just individual technologies, but total systems which include know-how, procedures, goods and services, and equipment as well as organizational and managerial procedures. This implies that when discussing transfer of technologies, the human resource development and local capacity-building aspects of technology choices, including gender-relevant aspects, should also be addressed. Environmentally sound technologies should be compatible with nationally determined socio-economic, cultural and environmental priorities.

POTENTIAL HARMONIZATION

- (1) What is considered “green” ?

- If patent offices agreed upon a definition of a green invention:
  - accelerations examinations from one country to another would be eased
  - classification harmonization would be eased

POTENTIAL HARMONIZATION

- (2) Classifications

Overview of patent classification systems

System	Governance	Number of Entries	Documentation coverage
IPC	IPC/CE (Committee of Experts); supervised by WIPO	70K	- almost all patent docs published worldwide
FI/F-term	JPO	190K/ 380K	- JP docs
CPC	EPO/USPTO	250K (main trunk / 2000 series = 160K/ 80K)	- the subset of "min-PCT" documentation in one of the three EPO languages - patent docs classified by CPCNO

POTENTIAL HARMONIZATION

- (2) Classifications

- CPC Classification Y02
  - EPO established a classification for green inventions
  - CPC Class Y02 aims to identify technologies or applications for mitigating or adapting to climate change
  - Was devised in close co-operation with expert partners in the field, using technological guidelines produced by the United Nations Framework Convention on Climate Change (UNFCC) and the Intergovernmental Panel on Climate Change (IPCC).
  - This class covers selected technologies, which control, reduce or prevent emissions of greenhouse gases [GHG], in the framework of the Kyoto Protocol and the Paris Agreement, and also technologies which allow adapting to the adverse effects of climate change
  - Class Y02 is only used for tagging documents which are already classified or indexed elsewhere
  - Primary purpose of the tagging is to monitor new technological development and to tag cross-sectional technologies.
  - The Y tags are updated by running search algorithms designed by expert examiners and relying on other CPC symbols, IPC symbols and keywords.

POTENTIAL HARMONIZATION

- (2) Classifications

- CPC Classification Y02
- 80 million patent documents in the EPO databases, 1.5 million relate to class Y02
- BUT
- We do not know how the patent applications are classified (keywords / formulas)

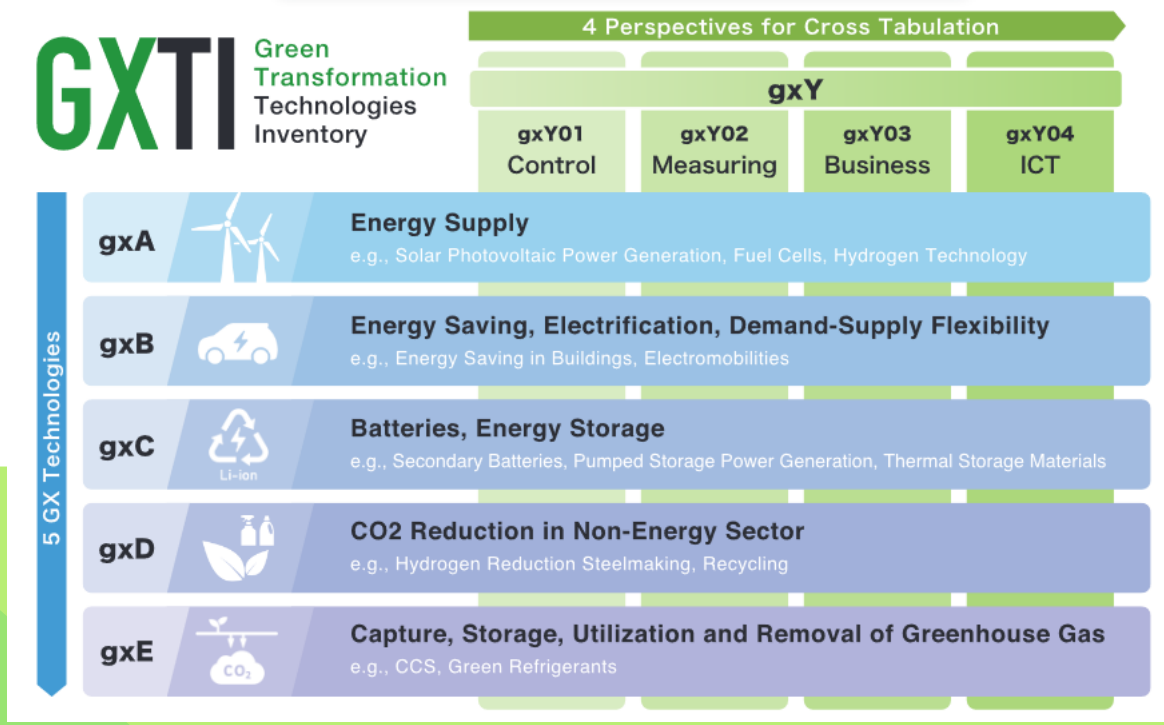
Section	Status
Y02A (Adaptation to climate change)	December 2021
Y02B (Buildings)	December 2021
Y02C (Capture and storage of greenhouse gases)	December 2021
Y02D (ICT aiming at the reduction of own energy use)	December 2021
Y02E (Production, distribution and transport of energy)	December 2021
Y02P (Industry and agriculture)	December 2021
Y02T (Transportation)	December 2021
Y02W (Waste and wastewater)	December 2021

Symbole de classification	Titre et description
Y	GENERAL TAGGING OF NEW TECHNOLOGICAL DEVELOPMENTS; GENERAL TAGGING OF CROSS-SECTIONAL TECHNOLOGIES SPANNING OVER SEVERAL SECTIONS OF THE IPC; TECHNICAL SUBJECTS COVERED BY FORMER USPC CROSS-REFERENCE ART COLLECTIONS [XRACs] AND DIGESTS
Y02	TECHNOLOGIES OR APPLICATIONS FOR MITIGATION OR ADAPTATION AGAINST CLIMATE CHANGE
Y02A	TECHNOLOGIES FOR ADAPTATION TO CLIMATE CHANGE
Y02B	CLIMATE CHANGE MITIGATION TECHNOLOGIES RELATED TO BUILDINGS, e.g. HOUSING, HOUSE APPLIANCES OR RELATED END-USER APPLICATIONS
Y02C	CAPTURE, STORAGE, SEQUESTRATION OR DISPOSAL OF GREENHOUSE GASES [GHG]
Y02D	CLIMATE CHANGE MITIGATION TECHNOLOGIES IN INFORMATION AND COMMUNICATION TECHNOLOGIES [ICT], I.E. INFORMATION AND COMMUNICATION TECHNOLOGIES AIMING AT THE REDUCTION OF THEIR OWN ENERGY USE
Y02E	REDUCTION OF GREENHOUSE GAS [GHG] EMISSIONS, RELATED TO ENERGY GENERATION, TRANSMISSION OR DISTRIBUTION
Y02P	CLIMATE CHANGE MITIGATION TECHNOLOGIES IN THE PRODUCTION OR PROCESSING OF GOODS
Y02T	CLIMATE CHANGE MITIGATION TECHNOLOGIES RELATED TO TRANSPORTATION
Y02W	CLIMATE CHANGE MITIGATION TECHNOLOGIES RELATED TO WASTEWATER TREATMENT OR WASTE MANAGEMENT

POTENTIAL HARMONIZATION

- (2) Classifications

- JPO Green Transformation Technologies Inventory (GXTI)



POTENTIAL HARMONIZA

- (2) Classifications

- JPO Green Transformation Technologies Inventory (GXTI)

Level 1	Level 2	Level 3
gxA Energy Supply		
	01 Solar Photovoltaic Power Generation	
		a Solar Photovoltaic Power Generation
	02 Solar Thermal Energy Utilization	
		a Solar Thermal Power Generation
		b Solar Thermal Collectors, Solar Thermal Systems
	03 Wind Power Generation	
		a Wind Power Generation
	04 Geothermal Utilization	
		a Geothermal Power Generation
		b Geothermal Collectors, Geothermal Systems
	05 Hydro-Power Generation	
		a Hydro-Power Generation
	06 Ocean Energy Power Generation	

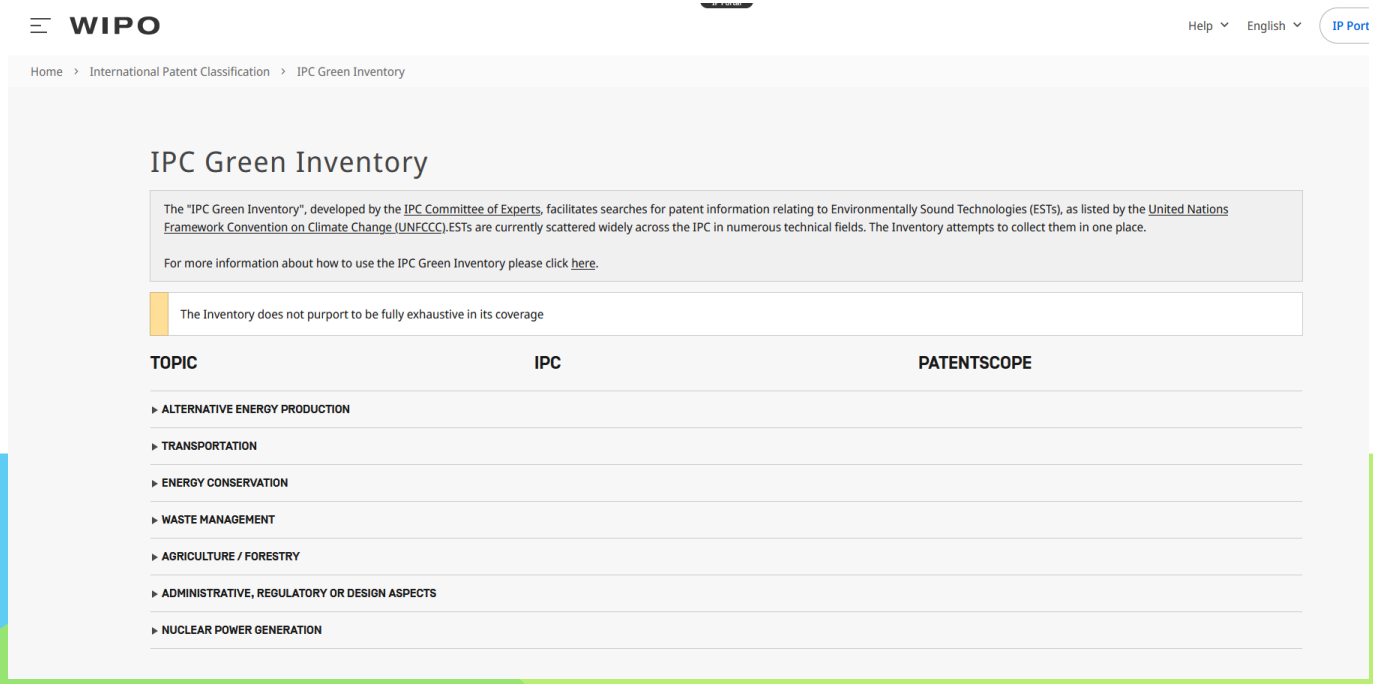
GXTI			Formula	Search Formulae			J-PlatPat Format	J-PlatPat Format (Only IPC)
Level 1	Level 2	Level 3	No.	IPC	×	text (title, abstract, claim)		
gxA Energy Supply								
	01 Solar Photovoltaic Power Generation							
		a Solar Photovoltaic Power Generation	No. 1	H01L31/04-31/078, H01L51/42-51/48, H02S	×	***None***	H01L(31/04+51/42)/ip+H02S/ip+H02J7/35/ip	H01L(31/04+51/42)/ip+H02S/ip+H02J7/35/ip
			No. 2	H02J7/35	×	***None***		
	02 Solar Thermal Energy Utilization							
		a Solar Thermal Power Generation	No. 1	H02S10/30	×	***None***	H02S10/30/ip+[H02K(24/00+25/00+26/00+27/00+35/00+39/00+47/00+53/00+99/00)/ip+H02N(1/00+3/00+10/00+11/00+13/00+15/00+99/00)/ip+F02C1/05/ip]*solar,10n,(thermal+heat)/(ab+ti+cl)+[H01L35/00/ip+H01L37/00/ip]*[solar/ab+solar/ti+solar/cl]+F03G6/00/ip*[(turbine+turbines)/ab+(turbine+turbines)/ti+(turbine+turbines)/cl]	H02S10/30/ip+H02K(24/00+25/00+26/00+27/00+35/00+39/00+47/00+53/00+99/00)/ip+H02N(1/00+3/00+10/00+11/00+13/00+15/00+99/00)/ip+F02C1/05/ip+H01L(35/00+37/00)/ip+F03G6/00/ip
			No. 2	H02K24/, H02K25/, H02K26/, H02K27/, H02K35/, H02K39/, H02K47/, H02K53/, H02K99/, H02N1/, H02N3/, H02N10/, H02N11/, H02N13/, H02N15/, H02N99/	×	solar,10n,(thermal+heat)		
			No. 3	F02C1/05-1/06	×	solar,10n,(thermal+heat)		
			No. 4	H01L35/, H01L37/	×	solar		
			No. 5	F03G6/	×	turbine+turbines		
		b Solar Thermal Collectors, Solar Thermal Systems	No. 1	F24S	×	***None***	F24S/ip	F24S/ip
	03 Wind Power Generation							
		a Wind Power Generation	No. 1	F03D	×	***None***	F03D/ip+B60L53/52/ip+B60L8/00/ip*wind,5n,('generat*'+'electric*')/(ab+ti+cl)+H02S10/12/ip+G06F113/06/ip	F03D/ip+B60L(53/52+8/00)/ip+H02S10/12/ip+G06F113/06/ip
			No. 2	B60L53/52	×	***None***		
			No. 3	B60L8/	×	wind,5n,('generat*'+'electric*')		
			No. 4	H02S10/12	×	***None***		
			No. 5	G06F113/06	×	***None***		
	04 Geothermal Utilization							
		a Geothermal Power Generation	No. 1	H02K24/, H02K25/, H02K26/, H02K27/, H02K35/, H02K39/, H02K47/, H02K53/, H02K99/, H02N1/, H02N3/, H02N10/, H02N11/, H02N13/, H02N15/, H02N99/	×	geothermal×('differen*'+variation),5n,(degree+temperature)	[H02K(24/00+25/00+26/00+27/00+35/00+39/00+47/00+53/00+99/00)/ip+H02N(1/00+3/00+10/00+11/00+13/00+15/00+99/00)/ip]*[geothermal/ab*('differen*'+variation),5n,(degree+temperature)/ab+geothermal/ti*('differen*'+variation),5n,(degree+temperature)/ti+geothermal/cl*('differen*'+variation),5n,(degree+temperature)/cl]+[H02P9/04/ip+F01K25/00/ip+H01L(35/00+37/00)/ip]*[geothermal/ab+geothermal/ti+geothermal/cl]+F03G4/00/ip*[(turbine+turbines)/ab+	H02K(24/00+25/00+26/00+27/00+35/00+39/00+47/00+53/00+99/00)/ip+H02N(1/00+3/00+10/00+11/00+13/00+15/00+99/00)/ip+H02P9/04/ip+F01K25/00/ip+H01L(35/00+37/00)/ip+F03G4/00/ip
			No. 2	H02P9/04	×	geothermal		

neration, Tidal Power Generation
Energy Conversion, Ocean Salinity Gradient Power Generation
, Nuclear Reactors, Nuclear Power Plant

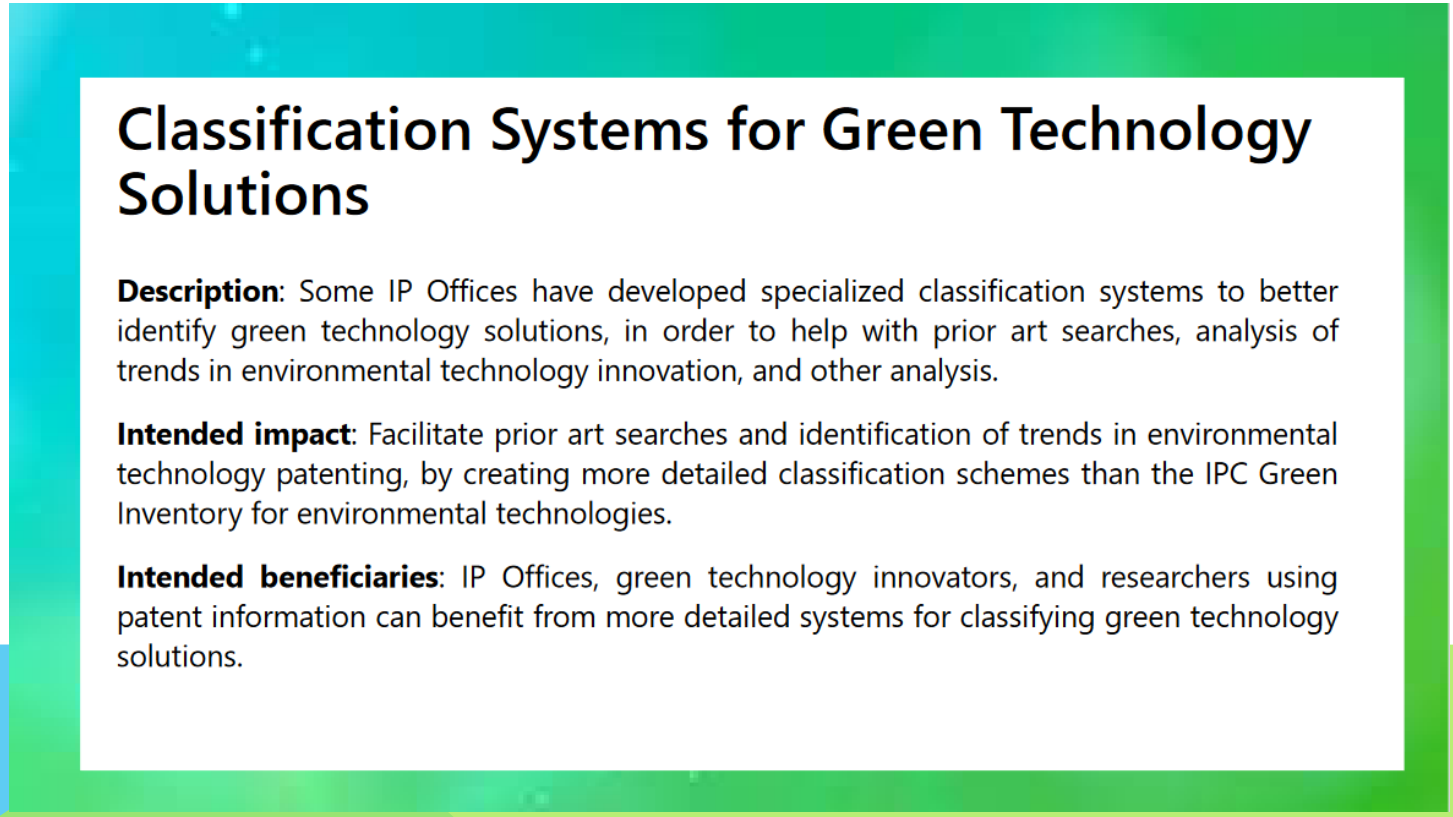
POTENTIAL HARMONIZATION

- (2) Classifications

- WIPO Green Inventory



POTENTIAL HARMONIZATION

- 

Source: https://www.wipo.int/edocs/mdocs/mdocs/en/wipo_webinar_wipogreen_2022_1/wipo_webinar_wipogreen_2022_1_p2.pdf

POTENTIAL HARMONIZATION

- (3) Prosecution

Figure 1. Countries with fast-track programs for green technology patent applications: Australia, Brazil, Canada, China, Israel, Japan, South Korea, Taiwan, the United Kingdom, and the United States.

Source: https://www.sternekessler.com/news-insights/publications/options-accelerating-examination-renewable-technology-patent

POTENTIAL HARMONIZATION

- (3) Prosecution

Country	Starting date	Criteria
AU	2009	• Any “environmentally beneficial” technologies • Applicant files a statement that the technology provides some environmental benefits • No fee
BR	2012	• Any technologies in line with the Green Inventory of the International Patent Classification are eligible • Qualifying patents are marked with an official “Patentes Verdes” (Green Patents) stamp.
CA	2011	• Green “technology that if commercialized would help to resolve or mitigate environmental impacts or to conserve the natural environment or natural resources” • Declaration stating that their “application relates to technology that if commercialized would help to resolve or mitigate environmental impacts or to conserve the natural environment or natural resources;”
CN	2012	• Technologies relating to “energy conservation and environmental protection, new-generation information technology, biologics, high-end equipment manufacturing, new energy, new material, new energy vehicle, intelligent manufacturing, etc.,” • No additional fee

Source: https://www.sternekessler.com/news-insights/publications/options-accelerating-examination-renewable-technology-patent

POTENTIAL HARMONIZATION

- (3) Prosecution

Country	Starting date	Criteria
IL	2009	• The invention described [improves] the environment, inter alia, by preventing the causes of global warming, reducing the air or water pollution, promoting nonpolluting agriculture, dealing with alternative energy sources, etc., • No additional fees
JP	2009	• Green inventions “that [have] an energy-saving effect and contribute[] to CO2 reduction” • Submitting a written explanation (in Japanese) of the need for accelerated examination
KR	2015	• “Green technology” is broadly interpreted to include technologies that prevent or decrease pollution • Applicants requesting accelerated examination must provide documentation that demonstrates how the application qualifies as green technology accompanied by a statement of explanation. • Fee of 200,000 KRW (approximately 153 USD)
US	2022	• Technologies pertaining to climate-related topics • Max 4 four other petition to make special under this program • No additional fee

Source: https://www.sternekessler.com/news-insights/publications/options-accelerating-examination-renewable-technology-patent

POTENTIAL HARMONIZATION

Green Patent Prosecution Highways

Description: Some IP Offices have put in place green Patent Prosecution Highways, known as "PPH". These arrangements involve offices working together to share the results of their search and examination. A green PPH involves collaboration in relation to green patent applications that have been filed in both countries. A PPH can speed up the prosecution process, since one office can build on the work already done by the partner office. Within a PPH, search and examination results are shared among the participating offices. However, the decision as to whether to grant the patent rests firmly with each office, in line with national legislation.

Intended impact: Encourage green innovation, by supporting green technology innovators who have filed the same application in two countries to secure quality patents more quickly, in line with their IP management strategies. Expedited delivery of patents is intended to enable green innovators to more rapidly use their portfolios for partnerships, investments, and tax incentives.

Intended beneficiaries: Green technology innovators applying for patents across multiple jurisdictions are the beneficiaries, due to enhanced search and examination and possibly faster grant. IP Offices also benefit from participation in a green PPH arrangement, which can improve patent quality and enhance efficiency.

Source: https://www.wipo.int/edocs/mdocs/mdocs/en/wipo_webinar_wipogreen_2022_1/wipo_webinar_wipogreen_2022_1_p2.pdf

ANY QUESTIONS?