This Article is brought to you for open access by the Central Institute for Social and Humanities Studies. It has been accepted for inclusion in International Journal of Law, Social Science and Humanities (IJLSH) by an authorized editor of Central Institute for Social and Humanities Studies.
Follow this and additional works at: https://journal.lps2h.com/ijlsh/index

International Journal of Law, Social Science and Humanities (IJLSH)

Volume 2, Issue 3, 2025

E-ISSN: 3063-7554

https://doi.org/10.70193/ijlsh.v2i3.269

Transfer of Sustainable Technology Based on Compulsory Licensing Principle under the WTO Law

Bani Adam[1*]

[1] Business Law Department, Faculty of Humanities, BINUS University, Jakarta, Indonesia

Submitted: 21 September 2025 *Revised: 01 November 2025* *Published: 09 November 2025*

Abstract:

Development of electric vehicles (EV) constitutes a transformation of transportation in combating global warming. It also purposes for overcoming increase of premature death of human being as consequence of high fossil fuel consumption in transportation particularly in Indonesia as developing countries. The situation appears willingness by the developing world to adopt the technology massively. However, the technology application is a challenge for such countries to develop independently for public usage. The challenge faced by Indonesia is private rights of intellectual property holder affecting barriers for mass production. This article purposes to look for justification for Indonesia's adoption of transfer of green technology for protection of public health regarding the WTO rule and international conventions concerning on climate change. It would examine the WTO rules to acquire green technology regarding compulsory principle. The article uses legal-descriptive and normative approach methodology with the WTO's legal instrument and treaties become primary sources, including litigation judgments. It is, then, supported through library research as secondary sources. It is found that Article 31 of TRIPs Agreement regulates that compulsory licensing might be imposed for adoption of technology transfer in circumstances for protection of public health. It could be extensively interpreted that air pollution may threaten health of human being as Doha Declaration 2001 justify flexibility application of compulsory licensing. The UNFCCC and Paris Agreement 2015 mandate industrial countries should contribute development of green technology to developing countries through transfer of technology. Eventually, the WTO rules are considered as part of public international law as Panel in the case of US-Gasoline (DS2) provides the rule of WTO should be interpreted as accordance with the objective of international law. The Panel's decision proves that provision of TRIPs may override exclusive rights of IP temporarily for public rights with special circumstances.

Keywords: TRIPs Agreement; Compulsory Licensing; Transfer of Technology; Climate Change

INTRODUCTION

Proliferation of electric vehicles (EV) has been becoming concern increasingly in global discussions on handling of air pollution. The vehicles transformation needs to be conducted to avoid global premature mortality rate increase. The Lancet Commission reveals that air pollution is the worst contribution to premature death in the world with amount 9 million people (Fuller et al., 2022). For Indonesia, the pollution is expected that it could be worse for human health amidst growth of internal engine combustion vehicles usages foremost in major cities. According to the Air Quality Life Index (AQLI), high air pollution in Indonesia could lose life expectancy of local residents until 5.5 years in the 2019 which is described unhealthy standard of WHO (Lee & Greenstone, 2025.). The report urges the government to develop local EV industries through inviting multinational corporations to participate in the national ambitious program. Furthermore, the transformation program should be applied by the archipelagic states declaring commitment to reduce greenhouse gas emissions (GHG) with target 29% reduction by 2030 (Eko Cahyono et al., 2022). The actual reason leads Indonesia to

*Corresponding Author : Bani Adam, Business Law Department, Faculty of Humanities, BINUS University, Jakarta, Indonesia, ORCID iD: 0009-00007-1458-9046, E-mail: baniadamb4n1@gmail.com

This work is licensed under a Creative Commons Attribution 4.0 International License

launch initiative which decide development of electric vehicles into national strategic priority under the Presidential Decree No. 55/2019 (Mahalana & Yang, 2021).

At the same occasion, current social economic situation is also facing challenges for Indonesia to stable growth amidst high unemployment and poverty rate in ASEAN 5 countries (Yulianti & Fitriansyah, 2024). The situation results in the strategic program might settle the national unemployment problem with emerging desire to establish national EV manufacture industry. The desire may hopefully develop its own technologies with the purpose to sustainability productions supporting economic growth. It means that Indonesia desires transfer of technology could be applied to tackle social economic development.

Meanwhile, the World Trade Organization (WTO) protects intellectual property rights provided under Agreement on Trade-Related Aspect of Intellectual Property Rights (TRIPs Agreement). Article 1.3 TRIPs Agreement provides that members should ensure protection on eligible intellectual property regarding the relevant conventions, particularly Paris Convention 1967 on Protection of Industrial Property. However, Article 31 TRIPs Agreement stipulates probability for the members to release from the obligation to use the technology without authorization of the right holder. The measures might be adopted through compulsory licensing mechanisms which waive normal licensing application procedure provided in accordance with the provision concern.

In international level, practice of compulsory licensing is commonly applied in facing emergency situations, such as pharmaceutical products (Wibulpolprasert et al., 2011). Even, the global leaders lately agree to set aside protection of IPRs to settle the health issues in 12th Ministerial Decision on the TRIPs Agreement (Schovsbo, 2024). Previously, the WTO has granted flexibility policy under the Doha Declaration on TRIPs Agreement and Public Health in 2001 which justify free access on public goods (Wong, 2020). Thus, transfer of technology on medicines productions are probably conducted automatically with reason of special circumstances.

Unfortunately, transfer of green technology is a new challenge for Indonesia to implement compulsory licensing in getting the EV technology to develop their own technologies independently. The measures should be applied in consideration that highly cost of EV productions come from protection of intellectual property payment (Lewis, 2018.). This could affect against leverage of consumer purchasing on EV who is directly affected by the pollution. The challenge is whether air pollution could be considered as an emergency or extreme urgency situation which should carry out an extra ordinary measures as legal basis to justify imposition of obligation on transfer of green technology by adoption of compulsory licensing in conformity with Article 31 of TRIPs Agreement.

In addition, transfer of green technology constitutes under covering multilateralism discussions with commitment on high pollution reduction causing adverse climate change. The discussion decides that climate change could affect against sustainable development, including eradicating of poverty (Lyster, 2021). Those are reflected in various international agreements stipulating as well that transfer of technology is pivotal role to support combat on global warming and ensure sustainable development as provided under UNFCCC, Kyoto Protocol, and Paris Agreement.

However, although TRIPs agreement acquires chance to free access on unauthorize of intellectual property, Article 2 of the agreement also mention that it is subjected the relevant international agreements, namely the Paris Convention 1967. In this term, Article 2 of The Paris Convention 1967 provides that any invention should enjoy protection in all nationals of member countries which is advantages and without prejudice the rights granted by the convention. The provision concern could appear as a legal barrier for the developing country to undertake global commitments on global warming abatement and sustainable development. Then, the contradiction would emerge between global commitments on environment and private IP monopoly.

There were some related articles examining justification for transfer of green technology for developing countries previously. The first one conducted by Leslyn Lewis revealed transfer of green technology is getting obstacles from difficulty access on trade secret (Lewis, 2018.). The article found that trade secret may steadily extend existence although patent has expired. Then, openness of trade secret is supposed a significant element to sharing know-how as essential ingredient in transfer of

green technology due to covering of business strategy, including secretive technical nature. This situation could take place is caused there is no obvious regulations governing on time limit of the trade secret. The second article revealed that developing countries are facing transfer of technology obstacle due to unable to pay royalty (Javadi, 2019). It unveiled those developing countries pose lack of financial resources and capacity to invent patentable green technologies. At the same time, those countries suffer difficulties for obtaining license from the patent holders. This argument is based on data revelation from the 2010 UNEP Study on 160 patents, which was less than half percent of patent holders concluded license agreement with developing countries. The research also adds that developed countries oppose on TRIPs Agreement which weaken patent protection. Same result found in the third article describing that adoption of green technology poses less effectiveness on transfer of technology to developing countries (Nguyen et al., 2022).

The article reveals that paucity of specific regulations on environment standard protection result in lack of efficiency of green technologies transfer. However, there is legal uncertainty on transfer of technology to developing countries, including Indonesia which are fully mandated to implement climate change reduction and ease access to transformation development for sustainable development. It is provided under Article 13 of the Paris Agreement 2015 on Climate Change which persuade developed countries to share its technology transfer in achieving nationally determined contribution (NDC) of developing countries as required Article 3 of the Climate agreement. Yet, Article 13 seems voluntary provision for the members to provide secret information for another members. As shielded by the Paris Convention, private exclusive rights hinder technology adaption for developing countries without patent license from the holder rights.

This article would discuss the legal probability to implement compulsory licensing for transfer sustainable green technology to Indonesia in conformity with the international law provisions. It would analyze rule of the World Trade Organization as part of international agreements governing protection on intellectual property rights. Then, global commitment on climate change reduction becomes additional issues relating with implementation of sustainable development which need to be forced primary for the interest of the country as developing countries. The article will begin with a basic understanding on intellectual property protection covering under international law, particularly TRIPs Agreement. Other relevant international agreement would be presented which legalize the protection. Then, it reveals international legal commitment discussing global warming. Discussion theoretical legal position under international agreements would be covered in the next part purposing to know in depth pertaining raising conflict between different WTO law and international environment agreements. Finally, analyzing on probability implementations on transfer of green technology to Indonesia regarding the rule provisions of the WTO.

METHODS

The research method used in this article is legal-descriptive and normative approach applied with descriptive analysis (Mohammad et al., 2020). Rule of WTO instruments and any relevant international agreements, including environmental agreement become primary sources in analysing the probability of transfer of technology. It also explores other instruments which appear from litigation judgments under WTO Dispute Settlement Body (DSB). Data collection originate from library research. The library research is conducted to seek relevant information by collecting secondary data and valid information to assist researcher answer the research question. The tertiary data also became an additional source from mass media to support the main and the secondary sources.

RESULTS

Conceptual Framework on Compulsory Licensing under IPRs

Basically, intellectual property rights (IPRs) constitute a private right monopolized by inventors which should be protected from piracy. The inventors have privilege rights to enjoy economic benefit from public utilization (Hans Dembowski, 2011.). It is created by mind creativity covering invention,

literacy, and artistic works. Intellectual property consists of two categories, namely (1) Industrial Property which protect pertaining on Patents, trademarks, and industrial designs and (2) Copyrights which cover original literacy, artistic, and musical works.

Protection of IPRs is governed under international law, which is regulated in some agreements, particularly Paris Convention 1967 in the field of industrial invention. The convention exists for special agreement which become reference for TRIPs Agreement according to Article 2.2 of the agreement. Article 1 (2) and (3) of the convention provides that industrial intellectual property does not only protect patents, utility models, industrial designs, etc, but also those are including manufacturing process of products. The convention imposes the union member to protect the intellectual property rights in which Article 2 (1) provides that those mandatory obligations protection of IPRs are burdened to whole members of the union stipulated under domestic law. This provision grants guarantee advantages for inventors from any infringement prejudicing their rights.

However, Article 5 (2) of the Paris Convention enacts that protection of the creator rights could be waived as effort to prevent abuse of exercising of the exclusive rights which would suffer needy. Then, in paragraph (3) of Article 5 adds that implementation of compulsory license could not be applied as there are no sufficient situation which justify the measures. It means that compulsory licensing result in forfeiture of the rights should not be imposed if nothing special circumstances which support such measures. The special circumstances may grant opportunity to commit transfer of technology for the member countries in solving domestic problem as taking place in some developing countries in order to produce more accessible products.

In this term, TRIPs Agreement regulates compulsory licensing requirements for use patents products as justification without authorization of the rights holder. As Article 31 (b) of the agreement explains that compulsory licensing measures could be applied in the case of national emergency or other circumstances of extreme urgency or in cases of public non-commercial use. This provision allows the member countries to override protection on the patents without notification of the rights holder for reason national emergency or extreme urgency circumstances, whereas latter reason for public non-commercial use should notify the right holder as soon as possible.

Commonly, transfer of technology is conducted through application of compulsory licensing measures for production of medicine products. The measures are taken effective in use flexibilities term provided by TRIPs Agreement which leeway for the member to design their own national intellectual property system (Ooms & Hanefeld, 2019). This situation persuades member countries to use compulsory licensing for copying manufacturing generic products without authorization from the patents owner, particularly developing countries (Ooms & Hanefeld, 2019). In many cases, the developing countries are urgent to impose the measures as effort to tackle health emergency emerging in society. The measures should be applied to ease access on certain pharmaceutical products to respond toward national need. For instance, Thailand and Brazil resort compulsory licencing in purposing for public interest to save public healthy which is suffering some severe diseases, such HIV/AID, cancer and cardiovascular (Le & Hyland, 2020).

In addition, Doha Ministerial Declaration on the TRIPs Agreement and Public Health has agreed to set aside IP protection for producing pharmaceutical products. The declaration accords that the member countries may carry out compulsory licensing as flexibility right for the members to use it in necessary term (Gurgula & Hull, 2021). Furthermore, it emphasizes on state authorization to produce the pharmaceutical products by public agency or state own entity as effective way to give affordable access on medicine for severe people in the state territory (Gurgula & Hull, 2021). Presence of the declaration is resulted from the obstacle of developing countries to promote unlimited access on medicines to certain diseases and public national health (Correa & Hiltyy, 2022). Thus, maintaining of public health reason could become legal reasoning for justification for the members to implement compulsory licensing.

At the same time, the flexibility protection on IPRs has been allowed by TRIPs Agreement stipulating under Article 1.1 that the members have freedom to determine appropriate method of the property protection regarding their own legal system and practice. The provision opens various interpretations pertaining to the protection of intellectual property. Moreover, flexibility protection is firstly

introduced by paragraph 4 of Doha Declaration said that the members affirm that the agreement should be interpreted and implemented in a manner supportive of the WTO members' right to protect public health and to use the TRIPs provision with flexibility for this purpose. The declaration extends coverage of flexibility provision to include developing countries facing obstacle to medicine for public interest (Correa & Hiltyy, 2022).

However, TRIPs flexibility is facing reluctance from developed countries threatening trade sanction against countries impose the measures, such as imposition of the Special Section 301 of the US Trade Act 1974 and European Commission Staff Working Document on the protection and enforcement of IPRs in third countries (Correa & Hiltyy, 2022). In contrast with the panel report in case *Australia – Tobacco Plain Packaging* (DS467) refers to Doha Declaration to justify flexibilities protection on IPRs for public health (Correa & Hiltyy, 2022.). The same argument provided by the panel report in the case *the US – Section 211 Omnibus Appropriations Act of 1998* (DS176) that IP protection should create balancing between rights and obligations in a good faith principle (Nirmalya Syam, 2023). Hence, requirement of Article 31 in TRIPs Agreement could include public health protection as reason of national emergency or extreme urgency to applied compulsory licensing. The member also could enjoy flexibilities to interpret IP protection regarding their own public objective.

Compulsory Licensing Application in Some Countries

In terms of practice of compulsory licensing, some developing countries have experienced such measures for public interest reason. On the one side, it is applied with objective to fulfil goods affordable price access for their citizens through taking benefit from domestic existence of the relevant industry or in cooperation with another country to import important cheaper goods. On the other side, such measures are carried out by each country with different objectives which desire to solve public health, including access on transfer of technology into the states concerns.

India, Brazil, and Thailand are among developing countries which commonly apply compulsory licensing for tackling health problems. However, those countries pose distinction orientation for such measures. The first case is India granting the compulsory licensing for domestic private companies. The Indian Controller of Patents grants compulsory licensing for pharmaceutical product named Nexavar for liver treatment and kidney cancer to local producer under name Natco (Le, 2021). Natco argues that its proposal for compulsory licensing is based upon unavailable or unaffordable of the medicines for India people. Previously, Natco requests voluntary licence for the health product to Bayer as the IP holder and rejected by the holder. Finally, the authority passes the compulsory licensing proposed by Natco with reasons unavailability, non-affordability, and lack of local working. Furthermore, argument of lack of local working is interesting part on granting compulsory licence for Natco. The Indian IP controller said that IP protection could not be granted merely to monopolise the product concern through importation without local development manufacture. This argument is justified by the India IP Appellate Board arguing that patentee must prove evidence regarding inability of the holder to develop local manufacture (Le, 2021). The Appellate Board decision is supported by India Hight Court explaining that rejection of compulsory licensing by the holder must be proven with manufacture locally or otherwise proven (Le, 2021).

Meanwhile, Brazil also carries out compulsory licensing measures in tackling HIV/AIDS diseases. It begins the health campaign in 2001 with imposition of compulsory licensing after failing to get reduction price of efavirenz from Merck as the IP holder (Le & Hyland, 2020). This effort is conducted regarding to Article 68 to 74 of Brazil Intellectual Property Law1996 stipulating that compulsory licensing could be granted if the patent holder is in abuse of its rights, lack of exploitation or insufficient exploitation of the patent in Brazil (Federal Public Service Ministry Of Economy Brazilian National Institute Of Industrial Property Directorate For Patents, Computer Programs And Topographies Of Integrated Circuits, 2019). In this context, the Brazilian government tries to get access on transfer of technology by imposition of compulsory licensing on the pharmaceutical product. The first step carried out by the government is with purchasing agreement between the Indian government and the Merck with discount price. Second step, the government revises their own regulation which allow imposition of compulsory licensing imported from countries does not protect the patents after failing negotiation for voluntary license agreement. This measure is successful to

push Merck to drop price of the medicines (Urias, 2019). Finally, public-private partnership is launched with the IP holder which grant voluntary license for local production through local private pharmaceutical companies as process to transfer of technology. The partnership set fully involvement of local manufacturers covering from upstream to downstream processing production (Urias, 2019).

Another application of compulsory licensing is also taken by Thailand. Thailand applies such measures for human health purposing whether for domestic health protection ground or exporting to other tropical countries. The action is started with issuance of compulsory licensing on seven medicines products for healing chronic diseases and HIV/AIDS treatment (Le & Hyland, 2020). The measures take effective under Section 51 of Thai Patent Act justifying the government agency to issue compulsory licensing for public health and non-commercial usage without prior negotiation with the patent holder (Le & Hyland, 2020). In this term, the sections concern regulates the agency has authority to exploit the right unilaterally for any public consumption or to prevent or relieve critical shortages of food, drugs or other essential item for public services (Skees, 2007). However, the section further provides that patent holder has right to accept royalties and notification from the recipient. At the same time, the patent owner does not have chance to appeal against the government decision (Kuanpoth, 2014). Regarding the provision promulgated, the measures has two benefit between the patentee and Thailand recipient in which the property right is remains respected through royalty payment periodically, whereas Thailand people could access on affordable medicines, including improving quality of Thailand health care system (Kuanpoth, 2014).

Transfer of Technology for Health Protection

Issues on transfer of technology has long been discussed in some global summits. It is begun since conclusion of United Nations Framework Convention on Climate Change (UNFCCC). The convention shapes general framework concerning issues to tackle raising of global warming. The Preamble of the convention expressed that the members recognize that global emissions does not only originate from developed countries, but also contributed by developing countries which fossil fuel consumption steady increase periodically and their share could potentially grow against increase of CO_2. In addition, UNFCCC considers that settling environmental issues constitutes primary objective because it could affect the social economy effectively (Majekolagbe, 2020). For this reason, the convention persuades developed countries to support transfer of technology to developing countries (Zhou, 2019). This effort should be conducted as it could jeopardize economic interest of developing which rely on export of mineral commodities. It also takes transformation of development orientation which is agreed by various global leaders meetings.

Furthermore, Bali Climate Change Conference 2007 is staged for negotiation on transfer of technology to developing countries. The conference concludes the Bali Action Plan which request to enhance action for transfer of technology to developing world through simplification mechanism policy in supporting affordability access on the green technologies (Decision 1/CP.13 Bali Action Plan, n.d.). This action plan strives to remove any barriers on development sustainable technology desired by developing countries. This action is also supported under meeting of COP7 in Marrakesh which states transfer of technology could only be reached starting from the willingness of government and integrated work (Majekolagbe, 2020). However, as Copenhagen Conference 2009 shows that it gets obstacles from industrial countries especially the US takes strong position to reluctant sharing the technology development which is inconsistent with IP protection (Zhou, 2019).

Request for diffusion of transfer of technology is regulated under the Paris Agreement 2015 on Climate Change. Article 2 of the Agreement is strongly commitment to achieve global warming reduction below 2ºC force developing countries to transform their economic development orientating toward industrialization. The Preamble acknowledges the need of effective measures to combat climate change with scientific knowledge and support transfer of technology regarding the principles of equity and differentiated responsibility among the members (Rimmer, 2019). In this term, group of developing countries strongly demand to adopt intellectual property flexibility in tackling climate change issue (Rimmer, 2019). In addition, Article 10.1 of Paris Agreement orders the members have long-term vision to develop and transfer the technology for improving resilience to climate change and reduce the greenhouse emissions. Then, Article 10.2 reaffirms the importance of technology

development to mitigate climate change effect and cooperation among members to development such technologies. Support mechanism in technology development could be carried out through financial assistance to developing countries and cooperative action for transfer at different stages of technology cycle.

However, Paris Agreement provisions do not regulate mandatory transfer of technology, except optional measures taken by industrial countries. In this context, Article 10 of Paris Agreement governs the members to make national long-term planning describing transformation of fossil fuels to environment friendly technology periodically. For this matter, Article 10.3 may become legal basis for developing countries to push transfer of technology secured under role of technology mechanism. It is mandated by the UNFCCC that importance of technology development and transfer of technology to developing countries which is further discussed under COP meetings (Stephen Minas, 2020.).

Under COP26, the member countries stress commitment in addressing climate change to protect human health. This reason urges developed countries to provide their regulation which cover supporting on financial climate change assistance and transfer of technology to developing countries (The Intergovernmental Panel on Climate Change (IPCC), 2025.). Hence, the conference reaffirms obligation of industrial countries to share and support capacity building of developing world in facing increase of global warming.

DISCUSSION

The World Trade Organization constitutes international organization which is established by multilateral treaty as accordance with Vienna Convention on Law of Treaties (VCLT). Article 2 VCLT stipulates that a treaty concluded in written form between states is defined as international agreement. Furthermore, International Court of Justice expresses that international agreement is primary source of international law. It is reflected under Article 38 of the ICJ Statute mentions that international agreements or conventions are the highest sources for the judge to decide cases before him.

However, the WTO agreement is considered as separated legal regime which is not subject under public international law. It looks from authority of the organization to settle trade disputes under mechanism of Dispute Settlement Body of WTO. Meanwhile, Appellate Body in cases US-Gasoline argues that Article 3.2 of Dispute Settlement Body recognizes in seeking to clarify unclear provisions of general agreement and covered agreement of the Marrakesh Agreement on WTO establishment should refer to Vienna Convention (VCLT) accepted as customary international law in interpretation of general international law (The World Trade Organization (WTO), 2025). In this term, the WTO is subject to public international law which purpose to reach objective of the general international law.

In this context, air pollution might be a legal reason to apply compulsory licensing for transfer of sustainable technologies to developing countries. Although the common practice of compulsory licenses is applied for medicines purposes, it could be interpreted extensively. Agreement on WTO establishment grant discretionary measures to overcome emergency which is not covered by existence provision. It is relevant to Doha Declaration 2001 justifying the members to take any effective compulsory licensing measures in accordance with the current existing situation faced by the members.

WTO General Council Decision 2003 on implementation of paragraph 6 of the Doha Declaration on TRIPs Agreement justify the member countries to impose compulsory licensing with purposing to export health product amidst emergencies. This situation could be taken into consideration in handling matter of public health for transfer of technology to Indonesia because of air pollution. In addition, Article 7 of TRIPs Agreement provides the objective of TRIPs Agreement is to protect intellectual property rights and to grant balancing advantages between the rights holder and the consumers through transfer of technology mechanism. Then, Article 8.1 of TRIPs Agreement justify creating a rule to improve people prosperity and develop technology by compulsory licensing mechanism. This action could be implemented to avoid in abusing rights by the patent holders as accordance with

Article 8.2. The action is also allowed by paragraph 5 of Doha Declaration concerning on public health granting flexibility for the members to interpret the TRIPs Agreement in conformity with the principle general international law.

In terms of health emergency interpretation, extensive interpretation could be conducted without existence public health emergency. This situation is carried out regarding the same situation is faced by other developing countries and become global commitment to solve the problem. At the same time, transfer of technology to Indonesia constitutes commitment of establishment of the WTO to support development toward developing world. It is reflected in the preamble of the Marrakesh Agreement explaining that the existence of WTO is to take prosperity for global community, in particular developing countries as balancing between developed and developing countries.

CONCLUSION

Protection on intellectual property rights are mandatory global obligations to respect the rights holder's satisfaction and for sustainable research development as provided under TRIPs Agreement and Paris Convention. Nevertheless, current social situation is suffering barriers to access on industrial products caused by costly price of certain products, such as pharmaceutical and manufacture goods. Compulsory licensing principle may become problem solver in settling access barriers toward the public goods. Application of compulsory licensing grants the members to waive the patent holder rights for some circumstances required by Article 31 TRIPs Agreement.

The measures has been commonly imposed in some developing countries, such as Thailand, India, and Brazil with purposing for human health protection. It is supported by Doha Ministerial Declaration of WTO summit 2001 concluding granting flexibility for the members to interpret relating to application of compulsory licensing for human protection. Current high air pollution has threatened health problem of human being proven by increasing premature mortality in some developing countries, including Indonesia. In addition, UNFCCC and Paris Agreement also emphasize transfer of green technologies originating from industrial countries to developing world as consequence of transformation of development to mitigate increase greenhouse gas emissions effect. Hence, interpretation of compulsory licensing might be extended for transfer of technology to Indonesia as air pollution become worse in the country. Flexibility recognized under the Doha Declaration 2001 might be adopted extensively as pollution mitigation constitutes part of the protection of human health.

Conflict of Interest

All the authors declare that there are no conflicts of interest.

Funding

This study received no external funding.

How to cite:

Adam, B. (2025). Transfer of Sustainable Technology Based on Compulsory Licensing Principle under the WTO Law. *International Journal of Law, Social Science and Humanities (IJLSH)*, *2*(3), 355-364. https://doi.org/10.70193/ijlsh.v2i3.269.

REFERENCES

Zhou, C. (2019). Can intellectual property rights within climate technology transfer work for the UNFCCC and the Paris Agreement? *BMC Agriculture, 19,* 107-122. https://doi.org/10.1007/s10784-018-09427-2

Kuanpoth, J. (2014). Compulsory Licences: Law and Practice in Thailand. *Springer Nature, 22*, 61-77. https://doi.org/10.1007/978-3-642-54704-1_4.

Correa, C., & Hiltyy, R. (2022). Access to Medicines and Vaccines: Implementing Flexibilities Under Intellectual Property Law. USA: Springer Nature. 10.1007/978-3-030-83114-1.

The Intergovernmental Panel on Climate Change (IPCC). “Decision-/CP.26 Glasgow Climate Pact.” IPCC, (2025). https://www.ipcc.ch/report/ar6/wg1/.

Eko Cahyono, W., Parikesit, Joy, B., Setyawati, W., & Mahdi, R. (2022). Projection of CO2 emissions in Indonesia. *Materials Today: Proceedings*, *63*, S438–S444. https://doi.org/10.1016/j.matpr.2022.04.091.

Federal Public Service Ministry of Economy Brazilian National Institute Of Industrial Property Directorate For Patents, Computer Programs And Topographies Of Integrated Circuits. (2019). http://www.planalto.gov.br/ccivil_03/decreto/D3201.htm.

Fuller, R., Landrigan, P. J., Balakrishnan, K., Bathan, G., Bose-O’Reilly, S., Brauer, M., Caravanos, J., Chiles, T., Cohen, A., Corra, L., Cropper, M., Ferraro, G., Hanna, J., Hanrahan, D., Hu, H., Hunter, D., Janata, G., Kupka, R., Lanphear, B., Yan, C. (2022). Pollution and health: a progress update. *The Lancet Planetary Health*, *6*(6), e535–e547). https://doi.org/10.1016/S2542-5196(22)00090-0.

Javadi, S. (2019). Green Technologies, Intellectual Property Regime and Climate Change. Geneva: Cuts International.

Gurgula, O & Hull, J. (2021). Compulsory licensing of trade secrets: ensuring access to COVID-19 vaccines via involuntary technology transfer. *Journal of Intellectual Property Law and Practice*, *16*(11), 1242–1261. https://doi.org/10.1093/jiplp/jpab129

Le, V. A. (2021). Compulsory patent licensing and access to medicines: A silver bullet approach to public health? In Compulsory Patent Licensing and Access to Medicines: A Silver Bullet Approach to Public Health? USA: Springer International Publishing. https://doi.org/10.1007/978-3-030-84193-5

Le, V. A., & Hyland, M. (2020). Compulsory Licensing for Patented Medicines: A Comparative Legal Analysis of India, Brazil and Thailand. *Manchester Journal of International Economic Law, 17.*

Lee, K., & Greenstone, M. (2025). Indonesia’s Air Pollution and its Impact on Life Expectancy. The University of Chicago. . https://aqli.epic.uchicago.edu/about/methodology/.

Lewis, L. (2018). Evergreening Through Trade Secrets as an Impediment to Green Technology Transfer to the Developing World. *Asper Review of International Business and Trade Law, 18*(1).

Lyster, R. (2021). The Glasgow Climate Pact: Is It All Just “Blah, Blah, Blah?” *Yearbook of International Disaster Law*, *4*(1), 382–395. https://doi.org/10.1163/26662531_00401_018.

Mahalana, A., & Yang, Z. (2021). Overview of vehicle fuel efficiency and electrification policies in Indonesia. International Council on Clean Transportation. https://theicct.org/publication/overview-of-vehicle-fuel-efficiency-and-electrification-policies-in-indonesia/

Majekolagbe, A. (2020). The Evolution Of The Unfccc Environmentally Sound Technology Development And Transfer Framework. *Law, Environment and Development Journal*, *16*(2), 114–133. https://doi.org/10.25501/SOAS.00033481

The World Trade Organization (WTO). (2025). Appellate Body. WTO. https://www.wto.org/english/tratop_e/dispu_e/appellate_body_e.htm.

Minas, S. (2020). The Paris Agreement’s Technology Framework and the Need for “Transformational Change. *Carbon & Climate Law Review*, *14*(4), 241-254. https://www.jstor.org/stable/27076699.

Mohammad, E., Amaren, A., Hamad, A., Farouk, O., Mashhour, A., Al Amaren, E. M., Hamad, A. M. A., & Al Mashni, M. I. (2020). Public Administration-From Vision To New Solutions For Sustainable Development: View project the Period of Palestinian Political Division View project An Introduction to the Legal Research Method: To Clear the Blurred Image on How Students Understand the Method of the Legal Science Research. In *International Journal of Multidisciplinary Sciences and Advanced Technology*, 1(9).

Nguyen, H. T., Hoang, T. G., Nguyen, L. Q. T., Le, H. P., & Mai, H. X. V. (2022). Green technology transfer in a developing country: mainstream practitioner views. *International Journal of Organizational Analysis*, *30*(3), 699–720. https://doi.org/10.1108/IJOA-11-2019-1941.

Ooms, G., & Hanefeld, J. (2019). Threat of compulsory licences could increase access to essential medicines. *The BMJ*, *365*. https://doi.org/10.1136/bmj.l2098.

Rimmer, M. (2019). Beyond the Paris Agreement: Intellectual Property, Innovation Policy, and Climate Justice. *Laws*, *8*(1). https://doi.org/10.3390/laws8010007.

Schovsbo, Jens. (2024). Intellectual property rights in times of crisis. USA: Edward Elgar Publishing Limited.

Skees, S. (2007). Pace International Law Review Thai-ing up the TRIPS Agreement: Are Compulsory Licenses the Answer to Thailand' s AIDS Epidemic? *Pace International Law Review*, *19*(2), 223. https://doi.org/10.58948/2331-3536.1068.

Syam, N. (2023). A Review of WTO Disputes on TRIPS: Implications for Use of Flexibilities for Public Health. *SSRN*. https://dx.doi.org/10.2139/ssrn.4082862.

Dembowski, H. (2011) The Wto-Trips Agreement And Intellectual Property Rights Enforcement In Nigeria. https://www.dandc.eu/en/article/brief-history-wto

Urias, E. (2019). The potential synergies between industrial and health policies for access to medicines: insights from the Brazilian policy of universal access to HIV/AIDS treatment. *Innovation and Development*, *9*(2), 245–260. https://doi.org/10.1080/2157930X.2019.1567964.

Wibulpolprasert, S., Chokevivat, V., Oh, C., & Yamabhai, I. (2011). Government use licenses in Thailand: The power of evidence, civil movement and political leadership. In *Globalization and Health*, *7*. https://doi.org/10.1186/1744-8603-7-32

Wong, H. (2020). The case for compulsory licensing during COVID-19. *Journal of Global Health*, *10*(1). https://doi.org/10.7189/jogh.10.010358

Yulianti, D., & Fitriansyah, A. (2024). Employment and Skill Development Initiatives in the Labor Markets: The Cases of Indonesia and Thailand. *Journal of Policy Studies*, *39*(1), 41–55. https://doi.org/10.52372/jps39104