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The Fukushima Dumping by Law and the Environment

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ABSTRACT

Marine pollution is a topic that humanity has been trying to tackle for decades. One notorious example of marine pollution is Japan's plan to dump toxic nuclear wastewater into the Pacific as a result of the Fukushima nuclear disaster of 2011. It is currently a pressing point of concern due to the fact that the plan is opposed by various different parties from local fishermen to other neighboring coastal nations. The Japanese government has tried to educate the public on the safety of their actions, yet many remain skeptical on the permissibility of their actions in the eyes of the law. This paper will discuss the relevance of Japan's actions in the eyes of international law, as well as its impact on the environment on both a macro and micro scale.

Keywords: marine pollution, international law, nuclear waste, Fukushima nuclear disaster, Japanese government.

INTRODUCTION

The usage of nuclear energy has been something deemed as sensitive by the world ever since the first nuclear bombs dropped on Hiroshima and Nagasaki during the second World War. With its radiative effects being able to severely deteriorate one's health, many realized that it was truly a substance to be reckoned with. As a result of it, the general public has had varying reactions to the idea of nuclear energy, evident by its portrayal in popular media as well as the different kinds of discussions revolving around it. Taking into mind the great harm that can come from the misuse of nuclear energy, countries around the world have agreed upon taking preventive measures to handle it whether it be through local legislation or international law. With the modernization of technology, several countries have decided to take upon the responsibility

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of managing and utilizing nuclear energy through power plants located within their own territories. However, just like any other resource, the chances of it not being contained properly due to unforeseen circumstances such as natural disasters will always be there. One prime example of it would be what happened in Japan after the great earthquake and tsunami of 2011.

Due to the 9.1 magnitude earthquake that happened in Japan's Tōhoku region back in 2011, the country suffered a massive loss of lives as well as infrastructure as a result of it. The Fukushima Daiichi Nuclear Power Plant would prove no stranger to the earthquake and tsunami's destruction, with its emergency diesel generators being damaged due to the enormous 13-14 meter waves from the tsunami. Many regard it as the worst nuclear disaster to occur ever since the Chernobyl disaster back in 1986. One of the aftermaths of the destruction is the large amounts of contaminated nuclear water waste that has been stored in a water purification system located in the plant's complex. The water system began to gradually fill with water, and as a result, the government has plans on releasing said some of the treated water into the ocean. This was announced by the Japanese government early on in January of 2023 by Chief Cabinet Secretary of Japan, Hirokazu Matsuno. The government is working together with the Tokyo Electric Power Company (TEPCO), with their plan being overseen by the International Atomic Energy Agency (IAEA).

So far, this has resulted in generally negative reactions from various groups, primarily from the local government as well as neighboring countries, namely the Pacific-Islander communities. Many criticize Japan's actions and how this can potentially pollute the international waters more than it already is; the fishermen are worried that the government's decision will badly influence how fish consumers view their produce, while most of the Pacific-Islander nations fear that this decision will further negatively affect the cleanliness of the ocean which is tied closely to each nation's continuity. Some neighboring nations have also stated that Japan has been lacking transparency in their plans on dumping the nuclear water waste into the Pacific Ocean as another great concern of theirs. The Japanese government has tried to host campaigns to explain to the public on how their course of action is not as dangerous as how it is perceived, but the many protests that have arisen from their initial announcement have shown otherwise. Scientists have stated that despite the water being generally safe from radioactive elements, one specific element called tritium is still present as its contents as it is



difficult to remove. It also further complicates things with the fact that Japan has also signed the London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter; what Japan would be doing then would show indication that they might be going against international law.

This then would beg the question of how legal are Japan's actions in the eyes of the law, with so much being put up against the nation and its decision to dump nuclear water waste into the Pacific Ocean. The writers are eager to look more into this event's legal standings through the eyes of international maritime law, as well as gauge on whether or not Japan would be violating any existing laws, conventions, or treaties that have been established. The aim of this article is to be able to help readers understand the implications of such actions on the environment around them.

RESEARCH METHOD

The research methods used in this study are the normative juridical and the empirical juridical method. Normative juridical analysis begins with the analysis of primary legal materials, secondary, and tertiary legal materials normatively based on conceptual approaches and laws and regulations or other approaches in accordance with the formulation of the problem.³ This approach will rely on multiple sources of international law, such as convention, customary international law, and doctrines to name a few. Relevant to the research at hand, legal materials will include United Nations Convention on the Law of the Sea (UNCLOS) and the London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter.

This study will also use the empirical juridical method where the conditions on the real world will be assessed with relevance to the factual problem of the research, this research method will look into the applicability of the law towards the problem brought up, specifically if the Fukushima nuclear pollution problem conforms with the present international law obligations of Japan and it will also look into the environmental impact of the action to the environment in general and other stakeholders. This interpretation is then carried out to build a legal argument and draw conclusions on the research results.

³ Muhaimin, *Metode Penelitian Hukum*, (Mataram: Mataram University Press, 2020), 129.



1. Japan's Actions and How They Reflect on Japan's Stance on International Environmental and Maritime Law

According to the International Maritime Organization, there have been several conventions made in regards to matters regarding marine pollution.⁴ The list that has been published includes several conventions such as the International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties (INTERVENTION) in 1969; the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter in 1972 coupled with the 1996 London Protocol; the International Convention on Oil Pollution Preparedness, Response, and Co-operation (OPRC) in 1990, the Protocol on Preparedness, Response and Co-operation to pollution Incidents by Hazardous and Noxious Substances (OPRC-HNS Protocol) in 2000, the International Convention on the Control of Harmful Anti-fouling Systems on Ships (AFS) in 2001, the International Convention for the Control and Management of Ships Ballast Water and Sediments in 2004, and The Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships in 2009. Despite these conventions covering several different topics when it comes to marine pollution, it would be most appropriate to shed light on the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter in 1972, or more commonly known as the London Convention, LC '72 or the Marine Dumping convention. The London Convention of 1972 as well as the following Protocol of 1996 limits Japan and their actions for they are considered a party that has ratified it. According to a press release made by the Ministry of Foreign Affairs of Japan on October 2nd of 2007, the Protocol would have entered into force for Japan on November 1st of the same year.⁵

The London Convention of 1972 was one of the first conventions created in order to protect marine life from human actions that may potentially harm it; this is suggested in Articles

⁴'List of IMO Conventions' < <https://www.imo.org/en/about/Conventions/Pages/ListOfConventions.aspx>> accessed 29 April 2023.

⁵ 'Deposit of the Instrument of Accession to the 1998 Protocol to the London Convention' (2007) <https://www.mofa.go.jp/announce/announce/2007/10/1175645_836.html> accessed 29 April 2023.

1⁶ and 2⁷ of the convention. The convention consists of 22 articles and three annexes which classify the substances permissible to be dumped into the ocean. Article 4 of the convention would act as a baseline of what should not be done, and that would be to forbid dumping of any kinds of substances into the ocean except for what is written in the annexes.⁸ Amendments were then adopted in 1993 before a Protocol was then adopted three years later in 1996. This Protocol, which was supposed to eventually replace the 1972 Convention, had a different approach to the topic of the usage of the sea as a depository for waste materials. What caused it to majorly differ from the 1972 convention was that it prohibited dumping of all sorts of materials except for materials on the “reverse list” which is an annex in the Protocol. In the previous 1972 convention, Annex I would have consisted of black list materials, or materials which are generally not allowed to be dumped unless they only have trace contaminants (incredibly small particles or microorganisms) or can be classified as substances which have been “rapidly rendered harmless”.⁹ Annex II would have consisted of gray list materials, or materials that require special care when having to be disposed of¹⁰, while Annex III discussed provisions and technicalities that must be adhered to when issuing ocean dumping permits.¹¹ Whereas in the Protocol, the updated list of substances includes dredged material; sewage sludge; fish waste, or material resulting from industrial fish processing operations; vessels and platforms or other man-made structures at sea; inert, inorganic geological material; organic material of natural origin; bulky items primarily comprising iron, steel, concrete and similar non harmful materials for which the concern is physical impact, and limited to those circumstances where such wastes are generated at locations, such as small islands with isolated communities, having no practicable access to disposal options other than dumping; and carbon dioxide streams from carbon dioxide capture processes for sequestration.¹²

With all of this knowledge in mind, it would be crucial for Japan to adhere to what is written in the Protocol especially as it now plays an important role in preserving marine quality

⁶ Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, Art. 1.

⁷ *Ibid.*, Art 2.

⁸ *Ibid.*, Art 4.

⁹ *Ibid.*, Annex I.

¹⁰ *Ibid.*, Annex II.

¹¹ *Ibid.*, Annex III.

¹² 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, Annex I.



especially in the northern hemisphere of the Pacific Ocean. Article 4.1 of the Protocol states that “Contracting Parties shall prohibit the dumping of any wastes or other matter with the exception of those listed in Annex I”¹³, which have been listed above. This now begs the question of if Japan’s nuclear water waste can be classified as one of the substances a part of Annex I.

The water waste that has been discussed by the Japanese government has been treated to the point where it is virtually free from almost all substances except for tritium. Tritium is a radioactive isotope that is generally a weak source of beta radiation, but can be harmful and increase risks of cancer if consumed in very large quantities.¹⁴ Scientists have stated that the removal of tritium from radioactive water would result in very high costs as well as a large amount of carbon dioxide emissions, so they have stated that releasing the treated water into the ocean would be the best option as of current.¹⁵ However, there are also those who state that despite the consumption of titrate in low doses, it is still possible for the substance to impact humans negatively in the long run, especially if that consumption is done through marine produce such as fish.¹⁶ The water waste disposal plan is handled by the Tokyo Electric Power Company (hereinafter TEPCO) in cooperation with the Japanese national government, and its purification process is done through a system called the Advanced Liquid Processing System (hereinafter ALPS). A TEPCO official by the name of Hikaru Kuroda has stated that “By the time the liquid is diluted with seawater, tritium levels will be at less than 1,500 becquerels per liter, or 1/40th of the government standard for discharging water into the environment”.¹⁷ The opinions of scientists are still divided regarding the safety of the diluted nuclear water waste. However, it is very clear that several parties are against what Japan is planning to do, with opposing parties consisting of Pacific-Islander nations, fellow East Asian countries, local

¹³ Ibid., Art. 4.1.

¹⁴ ‘Facts about tritium’ (2021) <<https://nuclearsafety.gc.ca/eng/resources/fact-sheets/tritium.cfm>> accessed 29 April 2023.

¹⁵ Julian Ryell, ‘Why the worry over Japan’s Fukushima nuclear waste discharge plan? France has ‘done it for decades’ SCMP (2023)

<<https://www.scmp.com/week-asia/politics/article/3214166/why-worry-japans-fukushima-nuclear-waste-discharge-plan-france-has-done-it-decades>> accessed 29 April 2023.

¹⁶ ‘Japan’s govt could delay release of radioactive water into the Pacific’ RNZ (2023)

<<https://www.rnz.co.nz/international/pacific-news/482559/japan-s-govt-could-delay-release-of-radioactive-water-in-to-the-pacific>> accessed 29 April 2023.

¹⁷ Justin Mccurry, ‘Fukushima: Japan insists release of 1.3m tonnes of ‘treated’ water is safe’ *The Guardian* (2023)

<<https://www.theguardian.com/environment/2023/feb/15/fukushima-japan-insists-release-of-treated-water-is-safe-nu-clear-disaster>> accessed 15 May 2023.

Japanese fishermen, as well as environmental organizations. The overarching issue when it comes to these parties ties into the lack of transparency from the Japanese government despite its efforts to socialize better regarding efforts made within the proposed plan.¹⁸ If Japan continues on with their current operations with the same lack of transparency, then it will be highly possible that there will be a breach in a commitment made by the Japanese government towards the Pacific Islands Forum in 2021.¹⁹

If we turn towards the types of substances allowed within the first Annex of the Protocol, then it would be difficult to determine if the nuclear water waste would be a permissible substance to be dumped into the ocean. The waste can most certainly not be classified as fish waste, vessels and platforms or other man-made structures at sea, inert or inorganic geological material, organic material of natural origin, bulk items, nor carbon dioxide streams. The definition of dredged material is sediment excavated or otherwise removed from the bottoms of the navigable waters²⁰, and sewage sludge can be considered a mud-like residue resulting from wastewater treatment.²¹ Both of these definitions cannot be used to classify the nuclear water waste. With Japan's ratification of the 1996 Protocol as well as the press release issued by the government, then it would only be in accordance with what has been signed prior for the nation to adhere to the new legislation that they have chosen to adopt. The country's decision to dump large amounts of nuclear water waste has threatened to breach the treaty that they have chosen to sign.

2. The Environmental Impacts of Japan's Dumping Case

Taking the previous argument into account it is also plausible to look into the impacts of nuclear pollution on the general environment.

The nuclear dumping case of Japan due to the Fukushima nuclear disaster is not the first event in which a state dumped nuclear waste to the sea. Many countries in history have done the

¹⁸ 'Fukushima nuclear disaster: Japan to release radioactive water into the sea this year' (2023) <<https://www.bbc.com/news/world-asia-64259043>> accessed 29 April 2023.

¹⁹ Ibid.

²⁰ 'Ocean Disposal of Dredged Material' (2022) <<https://www.epa.gov/ocean-dumping/ocean-disposal-dredged-material>> accessed 29 April 2023.

²¹ 'Sewage sludge' <https://environment.ec.europa.eu/topics/waste-and-recycling/sewage-sludge_en> accessed 29 April 2023.

same action, for example the first sea disposal operation took place at a site in the Northeast Pacific Ocean near California in 1946. According to the International Atomic Energy Agency (IAEA) which is an intergovernmental organization that promotes the peaceful use of nuclear energy and dissuades the usage of it in any military purpose, including nuclear weapons stated that nuclear disposal events include a wide array of types of nuclear waste, such as liquid waste, solid waste, and nuclear reactor pressure vessels that includes both with and without fuel.²² One of the most common forms for liquid nuclear waste disposed at the sea are unpackaged and diluted in surface waters at designated sites, and contained but unsolidified on to the sea bottom at designated sites. While the solid form of nuclear waste disposed at the sea are low level waste, such as paper and textiles from decontamination processes, resins and filters which are solidified with cement or bitumen and packaged in metal containers and unpackaged solid radioactive waste, mainly large parts of nuclear installations such as steam generators, main circuit pumps, lids of reactor pressure vessels. The last form for nuclear waste disposed at sea is reactor vessels which are reactor vessels without nuclear fuel and reactor vessels containing damaged spent nuclear fuel which are usually filled with a polymer-based solidification agent (furfural) to provide an additional protective barrier. In most cases, these reactor pressure vessels with damaged fuel were further contained in a reactor compartment.²³

In the case of the Fukushima dumping case, the nuclear waste that is going to be dumped is in the form of radioactive water from the defunct Fukushima Daiichi Nuclear Power Plant.²⁴ These wastes could be classified as contained wastes in liquid form. Although the Japanese government plans to dilute the contaminated water with a high amount of sea water to be considered ‘safe’, it is to be noted that the level of ‘safe’ concerning radiation due to nuclear pollution is still thousands of times higher than the natural level of radiation in seawater. The dumping of nuclear wastes no matter how diluted is still a threat to the environment, especially the sea. A survey by member states of the Organisation for Economic Co-operation and Development/Nuclear Energy Agency (OECD/NEA) showed that the North-East Atlantic

²² International Atomic Energy Agency, *Inventory of Radioactive Waste Disposals at Sea* (Vienna: IAEA 1999), 8

²³ Ibid.

²⁴ Dennis Normile, ‘Despite opposition, Japan may soon dump Fukushima wastewater into the Pacific’ *Science* (Tokyo, 24 January 2023)

<<https://www.science.org/content/article/despite-opposition-japan-may-soon-dump-fukushima-wastewater-pacific>> accessed 2 April 2023.



dumping site which was a prominent spot for nuclear waste disposal had samples collected above the sea-bed of the main sites for anthropogenic radionuclides such as Carbon, Cesium, Plutonium, and Americium.²⁵ The analysis conducted showed activities at the dumping sites suggesting measurable leakages but negligible radiological impact. Although impact to the sea bed may be negligible, there are other concerns than the sea bed in regards to nuclear waste disposal.

Other than multiple other impacts, nuclear waste disposal and its impact is still relatively unstudied since there are a wide array of radioactive compounds that have been released into the ocean and the distribution of these compounds are unknown and unpredictable. Specifically on the case of the Fukushima dumping case, it is also exacerbated due to the few data points from the Japanese government and to understand the full impact, including for fisheries, extensive surveys and scientific studies are needed to effectively gauge the impact of the dumping to the environment.²⁶ Although cannot be gauged precisely through calculation and analysis, the impact of the dumping case could be predicted accurately on a general scale. One of the first impacts that could be of concern is the impact on wildlife and its habitat. One of the most affected wildlife from the Fukushima dumping case would be the fishes on the coast of Japan. It is already studied that fish can concentrate certain radioactive elements in their flesh and bone particularly, strontium and cesium.²⁷ Past events have shown that the radioactive material with strontium and cesium mostly dominate the radioactive exposure dose in this situation. A survey and sampling test was conducted by an expert during the fallout of the Fukushima disaster in 2011, the estimation of the expert showed for the foreseeable future that consumers should avoid eating fish caught near Fukushima. This data was directly during the aftermath of the Fukushima disaster so it can be easily assumed that the radiation levels during the dumping levels would be significantly lower but it does not eliminate the risk of radiation exposure towards the fishes near the coast of Japan close to the dumping site for the nuclear wastes.

²⁵ Supra, 14

²⁶ Elizabeth Grossman, 'Radioactivity in the Ocean: Diluted, But Far from Harmless' *Yale Environment 360* (7 April 2011) <https://e360.yale.edu/features/radioactivity_in_the_ocean_diluted_but_far_from_harmless> accessed 2 April 2023.

²⁷ Matthew McKinzie, 'Fukushima Radiation Risks from Eating Fish' *NRDC* (24 September 2013) <<https://www.nrdc.org/bio/matthew-mckinzie/fukushima-radiation-risks-eating-fish>> accessed 3 April 2023.



Another concern of the dumping case is that it would affect nations who are close to or trade partners with Japan. Many countries oppose the dumping plan since it would directly or indirectly impact them. Henry Puna, who is the secretary general of the Pacific Islands Forum stated that “ There should be no discharge until all parties verify through scientific means that it is safe.” Other opposition to the plan include the U.S. National Association of Marine Laboratories which stated the dumping case lacked adequate and accurate scientific data to support the safety assertions that Japan put forward. This is due to the fact that the filtration system used to clean the water of radionuclides could not filter every radioactive element. One of the most prominent ones is the level of tritium, iodine, and cesium which is above the national standard for Japan. The Tokyo Electric Power Company (TEPCO) reported that seawater containing radioactive iodine above the legal limit has been found near the power plant and according to NHK, a recent sample of the water contained radioactive cesium above the legal limit.²⁸ Although most of these radioactive elements are removed through filtration some tritium and other radioactive elements could not be removed completely. Since tritium is very difficult to remove from water and is only harmful to humans in large doses. Although some stakeholders are opposing the plan, the IAEA released a statement that the treated water has met international standards and "will not cause any harm to the environment. This is coupled with the fact the filtration site produces 100,000 liters of contaminated water daily with more than 1.32 million tonnes of treated contaminated water waste currently stored at the site which accounts for 96 % of storage capacity.²⁹ The problem with the dumping case is that it is inevitable for Japan to release the contaminated water somewhere. Nuclear contaminated materials are shown to exhibit radioactivity for a long time. This is jointly to the burden of storing and treating the water at the expense of Japan. Therefore, some stakeholders are shown to agree with the plan and continue with it even with drastic concessions to the first version of the dumping plan. Another opinion by an expert stated that there is an opportunity for bioremediation which could be done by using a species of oysters that could incorporate radionuclides into their shells. If the radionuclides are

²⁸ Supra, 18

²⁹ Charlotte Elton, ‘Fukushima: Japan prepares to release 1.3 million tonnes of treated wastewater into the sea’ *Euronews Green* (Fukushima, 20 February 2023)

<<https://www.euronews.com/green/2023/02/20/fukushima-japan-prepares-to-release-13-million-tonnes-of-treated-wastewater-into-the-sea>> accessed 3 April 2023.



removed, the contaminated water could be stored for 40 to 60 years due to the fact that tritium has a half-life of only about 12 years which means storing the water for a period of time could remove tritium through nuclear decay. Another solution would be to use the water waste to make concrete in which tritium's beta particles are unable to escape. The scale and effects to the environment of the Fukushima dumping case is complex and relatively unstudied. Therefore, it is quite difficult to make an analytical assumption based on data without relying on expert studies but studies and research by experts show that the environment will be affected by the dumping case although it can't be gauged precisely.

In conclusion, the Fukushima dumping case would very likely impact the environment although it cannot be gauged precisely. Even with no precise gauge, it could be concluded that it would lead to dangerous outcomes that could impact Japan, its population, and other countries. Another conclusion would be that many other ways to treat the contaminated water exists, although much more difficult and expensive than just simply dumping it to the sea but it would greatly reduce the risks and drawbacks of just dumping it considerably.

CONCLUSION

Based on the research that has been done, it can be concluded that regardless of the amount of tritium present in the treated nuclear water waste, Japan's actions are still against the international law that they have chosen to ratify. Pertaining to the protocol of the 1996 London, nuclear water waste is not a part of the allowed substances that are allowed to be disposed of into the ocean. This can be understood that any amount of tritium in the water will not be permissible in the portion of the water disposed of into the ocean. Due to this, it would be highly recommended that Japan listens to the parties who are against the initial plan such as other countries as well as local fishermen, as well as discuss with them to negotiate and come to a conclusion regarding the future plan for the water. If Japan were to continue on with the nuclear water waste dumping plan, then it would be recommended for them to treat the water even further to almost no tritium even if it may take a longer time with more money for the betterment of other parties as well as the future of the nation; it will also be beneficial in gaining back the public's trust since the general perception regarding nuclear energy and the water contaminated by it is still very highly negative.



From an environmental standpoint, the impact of the dumping on the environment would lead to dangerous outcomes towards Japan, its population, and other countries. The contaminated water would contaminate fish and indirectly impact Japan's fishery industry. It would also affect Japan's neighbors such as Pacific Island nations who are dependent on the sea. It could lead to international incidents where the scope of the contamination could be unmitigatable. Other solutions have been proposed to discourage dumping, such as storing the contaminated water for 12 years which would remove tritium, the radioactive material through nuclear decay. This solution may be much more expensive than simply dumping it but it would greatly reduce the risks and drawbacks of just dumping it considerably.



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Urgensi Pembentukan Peraturan Perundang-Undangan terkait *Artificial Intelligence* di Indonesia

Oleh: Angela Christina dan Nadya Fahira

Pendahuluan

Artificial Intelligence (AI) atau yang biasa disebut sebagai kecerdasan buatan merupakan bagian dari Revolusi Industri 4.0. AI sebagai teknologi yang diciptakan untuk memecahkan masalah dan membantu kegiatan serta pekerjaan manusia dengan cara penyelesaian seperti kerangka berpikir manusia. Dalam perkembangannya, AI telah banyak memberikan dampak positif dalam berbagai bidang, seperti kesehatan, transportasi, perbankan, pendidikan hingga pemerintahan. Di Indonesia sendiri, belum terdapat peraturan perundang-undangan yang mengatur terkait dengan pelanggaran maupun kejahatan yang disebabkan oleh AI secara spesifik. Peraturan yang ada hanya membahas mengenai teknologi secara umum, seperti yang tertera pada Undang-Undang Nomor 19 Tahun 2016 tentang Perubahan Atas Undang-Undang Nomor 11 Tahun 2008 tentang Informasi dan Transaksi Elektronik (UU ITE) serta Peraturan Pemerintah Nomor 71 Tahun 2019 Tentang Penyelenggaraan Sistem dan Transaksi Elektronik (PP PSTE). Dalam UU ITE tidak terdapat pasal yang mengatur AI secara khusus. Namun, AI memiliki kesamaan dengan definisi “Agen Elektronik” yang tertera pada Pasal 1 angka 8 UU ITE yaitu “*Agen elektronik adalah perangkat dari suatu sistem elektronik yang dibuat untuk melakukan suatu tindakan terhadap suatu Informasi Elektronik tertentu secara otomatis yang diselenggarakan oleh orang.*” Belum adanya peraturan yang jelas terkait dengan AI di Indonesia dikhawatirkan akan berdampak negatif dari berbagai aspek kehidupan di masyarakat.

Dengan adanya perkembangan teknologi informasi yang tumbuh secara pesat dan berguna untuk pertumbuhan sistem digital di Indonesia, maka perlu dilakukan perubahan-perubahan terhadap undang-undang serta peraturan pemerintah lainnya. Saat ini, beberapa peraturan seperti UU ITE serta PP PSTE sudah mengalami perubahan untuk mengakomodasi perkembangan teknologi. Melihat kemajuan teknologi yang dimiliki oleh AI yang dapat menjalankan pekerjaan manusia tentunya hal tersebut dapat menimbulkan beberapa permasalahan hukum yang berkaitan dengan tindakan dan atau perbuatan yang dilakukannya. Namun, Indonesia sendiri belum memiliki regulasi yang khusus dan jelas terkait dengan AI. Hal tersebut akan menjadi suatu permasalahan hukum, jika nantinya teknologi AI mengakibatkan hal yang bertentangan dengan hukum positif di Indonesia serta menimbulkan kerugian bagi masyarakat.

Kejahatan yang melibatkan penggunaan AI, seperti pencurian data, manipulasi foto atau video (*deepfake*), dan penipuan melalui telepon (*voice phishing*) menimbulkan keresahan di masyarakat. Pasal 15 ayat (1) dan (2) UU ITE menyatakan bahwa Penyelenggara Sistem Elektronik (PSE) wajib menyelenggarakan sistem elektronik secara andal dan aman serta bertanggung jawab terhadap beroperasinya sistem elektronik. Jika seorang pelaku kejahatan melakukan pencurian data dengan bantuan AI, lantas siapa yang akan bertanggung jawab? Dilematis ini muncul karena dalam UU ITE hanya memberikan pengertian AI (Pasal 8 UU ITE) tanpa adanya pengaturan yang lebih jauh. Apakah Penyelenggara Sistem Elektronik yang datanya dicuri karena tidak memenuhi kewajibannya, pelaku yang mengoperasikan AI untuk melakukan pencurian karena tidak ada batasan penggunaan, atautkah *developer* yang menciptakan AI terkait yang harus bertanggung jawab? Seperti pembahasan sebelumnya, belum adanya peraturan terkait AI menyebabkan ketidakjelasan untuk mengetahui siapa yang harus bertanggung jawab atas kejahatan yang menggunakan AI sebagai media dalam melakukan kejahatan. Dilansir dari hukumonline.com, Jaksa Agung Muda Tindak Pidana Umum, Fadil Zumhana, menyatakan bahwa ketika kecerdasan buatan itu menimbulkan tindakan pidana, perlu ditelusuri siapa yang bertanggung jawab karena asas penting dalam pidana yakni tidak ada pidana tanpa kesalahan.

Sejalan dengan hal tersebut, Uni Eropa akan mengeluarkan undang-undang pertama di dunia yang mengatur tentang AI. Dimana muatan undang-undang tersebut dapat menjadi pedoman serta pembanding bagi negara-negara lain untuk membuat undang-undang serupa. Dalam tulisan yang dimuat pada Kompas.com, Prof. Dr. Ahmad M Ramli berpendapat bahwa Indonesia perlu memiliki regulasi tentang AI yang didalamnya berfokus pada pengaturan terkait dengan kualitas data, transparansi, pengawasan manusia, dan akuntabilitas. Selanjutnya dengan adanya undang-undang AI dapat bertujuan untuk memperkuat posisi Indonesia sebagai pusat keunggulan global dalam transformasi digital dan ekonomi. Kemudian, undang-undang tersebut harus mendorong pemanfaatan potensi AI sebagai alat untuk membantu manusia dalam bidang industri, ekonomi, pendidikan, kesehatan, dan lain sebagainya. Undang-undang AI juga bisa ditujukan untuk mengatur standarisasi terkait dengan *platform* AI pada level risiko tertentu.

Terakhir, undang-undang AI nantinya harus memperhatikan undang-undang lain yang terkait agar tidak terjadi tumpang tindih dalam praktiknya.

Berdasarkan artikel yang diterbitkan oleh eftsure, terdapat beberapa data sebagai berikut:

- 76% Perusahaan menganggap bahwa potensi dan kurangnya transparansi merupakan faktor yang menghambat dalam menghadapi AI
- 56% dari teknik-teknik serangan didemonstrasikan dalam fase akses dan penetrasi artinya sebagian besar teknik serangan AI digunakan untuk mencoba mendapatkan akses ke sistem atau perangkat yang menjadi target serangan
- Dua dari tiga responden melihat penggunaan *deepfake* yang memanfaatkan AI sebagai bagian dari serangan siber yang berbahaya.
- 66% Responden meningkat 13% dari tahun 2021 menyatakan bahwa telah mengalami peniruan identitas menggunakan AI

Selain itu, di Indonesia sendiri terdapat kasus yang menggunakan AI sebagai media dalam melakukan kejahatan, yakni menggunakan aplikasi *deepfake*. Artis Indonesia Nagita Slavina menjadi korban dalam kasus ini. Beredar video asusila dengan durasi 61 detik yang disisipkan dua buah foto dari Nagita Slavina. Akibatnya, video asusila ini dilaporkan ke Polres Metro Jakarta Pusat oleh Kongres Pemuda Indonesia (KPI). Mengutip dari Liputan6.com, Kasat Reskrim Polres Metro Jakarta Pusat AKBP Wisnu Wardhana menyatakan bahwa setelah melakukan investigasi, video asusila itu merupakan palsu hasil *editing* dengan bantuan AI. Dalam laporan kepolisian, penyebar video asusila dilaporkan terkait UU Pornografi serta UU ITE. Namun, pelapor hanya melaporkan terkait penyebaran dan pendistribusian video tanpa melaporkan siapa yang mengedit video asusila tersebut. Hal ini menimbulkan penegakan hukum terkait kasus *deepfake* belum berjalan secara efektif dikarenakan belum adanya peraturan khusus terkait AI yang menyebabkan pelapor lebih memilih untuk melaporkan penyebar video asusila dibanding dengan siapa yang menggunakan aplikasi *deepfake* untuk mengedit video asusila.

Kesimpulan

Berdasarkan paparan sebelumnya, AI memainkan peran penting dalam memecahkan masalah dan memperkuat aktivitas manusia dengan kemampuan berpikir seperti manusia. Meskipun memberikan dampak positif, tantangan hukum terkait dengan kehadiran AI di Indonesia masih belum diatasi dengan baik. Indonesia sendiri belum memiliki regulasi yang spesifik mengenai AI, sedangkan kebutuhan akan kerangka hukum yang sesuai semakin mendesak.

Dari beberapa permasalahan yang dipaparkan pada infografis ini, sekiranya undang-undang AI tidak hanya memuat terkait dengan perlindungan, pencegahan, dan pertanggung jawaban, kejahatan yang disebabkan oleh AI. Lebih dari itu, undang-undang ini juga dapat dibuat untuk memberikan pedoman yang jelas dalam mengimplementasikan teknologi AI dalam berbagai bidang, seperti pendidikan, kesehatan, kekayaan intelektual, ekonomi, dan layanan publik.

Dengan demikian, undang-undang AI akan memberikan landasan hukum yang diperlukan bagi pihak-pihak yang ingin memanfaatkan teknologi AI secara produktif dan inovatif, sambil tetap memperhatikan nilai-nilai, etika, dan kepentingan masyarakat secara luas.

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