

# Law and Humanities Quarterly Reviews

**Sunny, R. I., Muhdar, M., & Kurnia, M. P. The Urgency of Regulating the Air Pollution Crime as a Crime Against Humanity. *Law and Humanities Quarterly Reviews*, 3(2), 44-59.**

ISSN 2827-9735

DOI: 10.31014/aior.1996.03.02.119

The online version of this article can be found at:  
**<https://www.asianinstituteofresearch.org/>**

Published by:  
The Asian Institute of Research

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# The Urgency of Regulating the Air Pollution Crime as a Crime Against Humanity

Randy Ismail Sunny<sup>1</sup>, Muhamad Muhdar<sup>2</sup>, Mahendra Putra Kurnia<sup>3</sup>

<sup>1</sup> Researcher of Faculty of Law, Universitas Mulawarman

<sup>2</sup> Professor of Environmental Law, Faculty of Law, Universitas Mulawarman

<sup>3</sup> Associate Professor of International Law, Faculty of Law, Universitas Mulawarman

Correspondence: Randy Ismail Sunny, Faculty of Law, Universitas Mulawarman, Samarinda, East Kalimantan, Indonesia. Tel: +62-821-4947-4077. E-mail: randyismailsunny@fh.unmul.ac.id

## Abstract

This article examines two main issues in international environmental law regarding the extensive classification of air pollution crime as a crime against humanity. Firstly, the international law regime's indecision status of air pollution crimes, especially in the form of carbon dioxide pollution, is a crime under international law, specifically under the term crime against humanity. The challenge is to extensively deconstruct the qualification of the related crimes based on their characteristics severity and nature of both crimes qualification. Secondly, there are existing problems to regulate air pollution crime as a crime against humanity including the enforcement and formulation of air pollution crime as a crime against humanity, and political considerations in the formation of international agreements that regulate air pollution crime as a crime against humanity and its enforcement. In this perspective, there's a contradictory situation where the international community is aware of global warming and carbon emissions but major industrialized countries are not fully committed to reducing carbon emissions.

**Keywords:** Air Pollution Crime, Crime Against Humanity, Deconstruct, Global Warming

## 1. Introduction

Air Pollution Crime (APC) is defined as a crime related to an emitting activity that pollutes the air, harming the natural environment and human health (CLRTAP, 1979), with various characteristics regarding the area and type of the emitter subject (Tymoshenko, et al., 2022), with general characteristics in the form of the high concentration level of Carbon Dioxide (CO<sub>2</sub>), change of the air color to a darker haze, and change in the air odor (DLH Semarang City, 2020). In terms of carbon emissions international law perspective, Bodansky characterizes that climate change, which occurs due to the release of carbon, does not only exist in a country's environmental policy, but is related to many types and categories of state policies, especially related to land use policy, energy policy, and economic policy (Bodansky, 2010) or policies that impact and cause the degradation of forest and land, known to be one of the contributors to carbon emissions (Susmiyati, 2017). So in this context, international environmental law provides a spectrum of characteristics that includes countries as carbon emitter subjects.

In the 19th century after the Industrial Revolution, the use of coal and petroleum from the production and transportation sectors increased, linear with the earth's temperature drastically increasing from year to year starting from the Industrial Revolution (NOAA Climate Change, 2024). It was recorded that the average increase in earth temperature was 1.06 Celsius from the Pre-Industrial period (NOAA Climate Change, 2024). In several studies related to pollutants that cause global warming, carbon dioxide occupies the highest position as a pollutant that causes warming of the earth's atmosphere, followed by other pollutants such as halogens, volatile organic compounds, and nitric oxide. Then the United Nations on Kyoto Protocol on Framework Convention of Climate Change (UNFCCC) was formed, which became the basis for a global commitment to reducing the carbon emissions of its countries. However, in fact, until now, excessive carbon emissions continue to occur, especially in downstream-producing countries such as the Netherlands and the European Union (Netherland's Hoge Raad, 2019).

Even an in-depth study of the relationship between air pollution and infant's health suggests that air pollution (depending on the type of pollutant) can affect the infant's health directly (if inhaled, pollutants affect the development of the infant's internal organs) or indirectly (if the influence of pollutants is through the mother of the baby when carrying the infant) so Green House Gasses possibly cause physical defects in infants, both in the womb and infants who have been born (Lin, et al., 2023). The various deleterious and damaging effects of APC on human health and the environment show that APC is not an ordinary crime, but fundamentally violates the right to life as regulated in Article 03 of the Universal Declaration of Human Rights (UDHR) and the right to a decent life as regulated in the First Principle of the Stockholm Declaration.

Crime Against Humanity (CAH) is a term that refers to a group of terms used by the pre-Tokyo Charter international agreement, which refers to the condemnation of the slave trade (Final Act of the Congress of Vienna 1815), the principles of natural justice (Treaty of Paris 1814), and the statement that the slave trade was a violation of the principles of humanity and justice (Treaty of Ghent 1814). The term CAH was first used globally in Section II, Articles 5(c) of the 1946 Tokyo Charter, which refers to acts of murder, extermination, enslavement, deportation, and other inhumane acts committed against civilians' human rights, well before and in times of war, or political persecution, and racially based executions. The Crime Against Humanity firmly gained its legitimacy within the scope of human rights, which is regulated in Article 7, Rome Statute. Arndt in Luban tries to translate the understanding of CAH as a crime that goes against the most basic human nature (crimes against the status of humans) by citing the argument of François de Menthon, Prosecutor in the Nuremberg Trials, that genocide is an attack that attacks human diversity, which is a characteristic human so that Luban tries to translate CAH in the explicitness of Menthon and Arndt's arguments as Crimes Against Humanness so that humanity (equivalent to the word "dignity") in this perspective is the "quality of being human/humanness" (Luban, 2004).

Grammatically, Luban then deconstructs the word "humanity" as a unit of humans or humankind (humankind and/or human race) so that CAH terminologically means crimes that target several human populations. Apart from the existing dissent regarding the appropriateness of the use of the term "humanity," Luban concludes that prohibiting crimes related to "humanity" is not only a problem of rhetoric and language but includes material related to humanity itself which is the most important thing (Luban, 2004). These two perspectives then become indicators that a crime can qualify as CAH. Based on the definition of CAH in Article 7 of the Rome Statute, CAH must be an act that systematically attack directed to civil population or individual(s) within a civil group, so that CAH is a crime that is categorized as a crime with the nature of collective victimization (Vollhardt, 2013) or which can be translated as a crime that targets individuals within a civil population or even the entire civil population themselves, so that the impact of these crimes is felt on a mass scale.

While global environmental pollution occurs and pollutes the human environment and damages nature, no international legal entity, neither countries nor international organizations, which can declare that carbon emitters are part of a crime. Excess carbon waste is part of a violation of fundamental human rights, which can be categorized as a CAH, so it is necessary to deconstruct the status of air pollution legal events while viewing them from the perspective of international law and human rights, and formulating the enforcing international criminal instrument related to the object of discussion.

## 2. Method

The paper will construct the relationship between legal theory, legal concepts, and regulations, and look at the reality of the regulations themselves as a basis for answering research problems related to written law analysis and applied law with a doctrinal approach, namely research that contains normative elements, analyzing legal theory, legal science and legal philosophy (Muhdar, 2019). The data used to support research analysis consists of various literature such as books, journals, scientific articles, laws and regulations, and other written sources that can support study analysis

## 3. Air pollution crime as crime against humanity concerning global climate change

### 3.1. Status quo of air pollution crime based on human rights perspective

Article 1(a) of the Convention on Long-Range Transboundary Air Pollution 1979 (CLRTAP 1979) clearly states that what is meant by air pollution is the act of releasing substances or energy into the air to harm and disrupt the function of the environmental ecosystem. Grammatically, air pollution is defined as the state of contamination of air condition, which consists of polluting element, polluter element, and polluting substance. The next element of pollution is the basic nature of the pollution itself, the deleterious or detrimental effect.

The status quo of pollution is an international event, but it is not considered a serious violation of international criminal law because there is no hard law instrument from international law that categorizes air pollution as a crime. As the principle of legality postulates: "*nullum delictum nulla poena sine praevia lege poenalli*" (Feuerbach, 1801) or there is no crime without law.

Air pollutants are classified based on their constituent materials and sources, namely as follows:

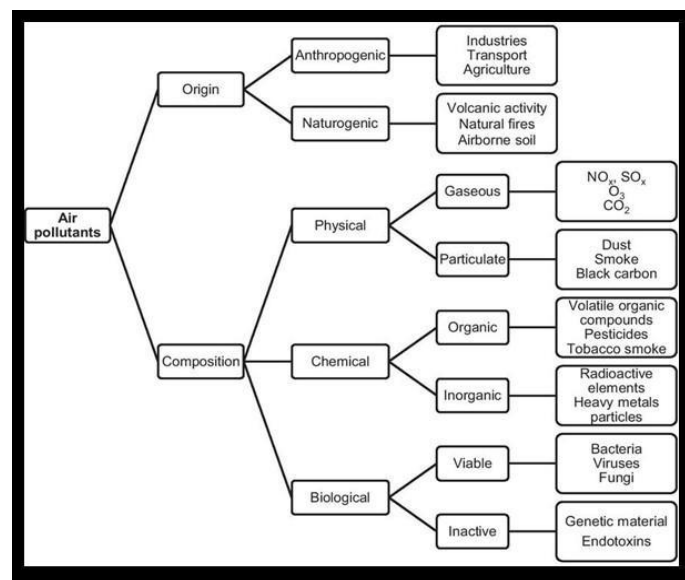


Figure 1: Air pollutant classification

Source: Hernandez-Gordillo, et.al., 2021.

Air pollutants can come from human/anthropogenic activities such as industrial, transportation, or agricultural activities. Pollutants originating from volcanic activity, natural fires, ground dust, and other pollutant materials that pollute without human intervention are called naturogenic (Hernandez-Gordillo, et al., 2021). Then, based on the composition/materials that make up it, pollutants are divided into 3 classifications; based on form/physicality, namely that it can take the form of various gases such as nitric oxide, sulfur monoxide, ozone, halocarbon class such as chlorofluorocarbon (CFC; a combination of carbon/organic material with halogen substances such as chlorine and fluorine) (Herzandez-Gordillo, et.al., 2021), or carbon dioxide and is in the form of particulates/ has a mass that is quite dense but very light so it can be carried by the wind, such as dust, smoke

particles, and black carbon/particulate matter (PM<sub><2.5</sub> μm). Then, based on the chemical properties of the constituents, it consists of organic constituents or organic preparations, such as volatile organic compounds (VOC) or organic materials that are detrimental to health (for example; fungal spores, spores of several types of poisonous plants, or dangerous pathogens), pesticides, and tobacco smoke (Kim, et.al., 2011).

Inorganic constituents come from materials obtained through extraction and processing processes, such as radioactive substances whose radiation can contaminate air particles and heavy metal particles that undergo evaporation, such as mercury. The components of air pollutants that originate from biological properties can be divided into 2 properties, viable/active, namely air pollutants which is alive and can move actively and spread in the air (such as airborne viruses, virus droplets, bacteria, and fungal spores) and which is inactive or passive; air pollutants originating from material from organisms that are harmful, but not actively alive, such as wood pulp and endotoxins or poisons found on the outside of animal skin membranes that can evaporate (Kim, et al., 2011). In general, air pollution comes from pollutants that are composed of material in a gaseous form such as carbon dioxide, sulfur monoxide, ozone, nitrogen dioxide, and particulate matter (PM 2.5 μm). However, in some cases, air pollution pollutants can be found such as radioactive exposed material/air in the case of the Chernobyl Accident (Dreicer, et al., 1996), 2,3,7,8-Tetrachlorodibenzo-dioxin in the case of the Seveso Pollution Disaster (Eskanazi, et al., 2004), and hydrogen fluoride and sulfur dioxide in the 1948 Donora Smog Pollution. Various pollutants in air pollution have various side effects on health and consequently on the environment.

Such as pollutants from organic materials which tend to degrade human health or carbon-based pollutants which have a broad spectrum that affects various environmental sectors including impacting human health. Carbon-based pollutants also affect the ozone layer and the earth's temperature due to the complexity of the carbon cycle that occurs in the atmosphere.

As this article mentioned previously, the influence and the damage of air pollutants to the air human environment or the atmosphere, specifically carbon dioxide, can be understood through the following Figure (Fig.):

### Observed warming is driven by emissions from human activities, with greenhouse gas warming partly masked by aerosol cooling

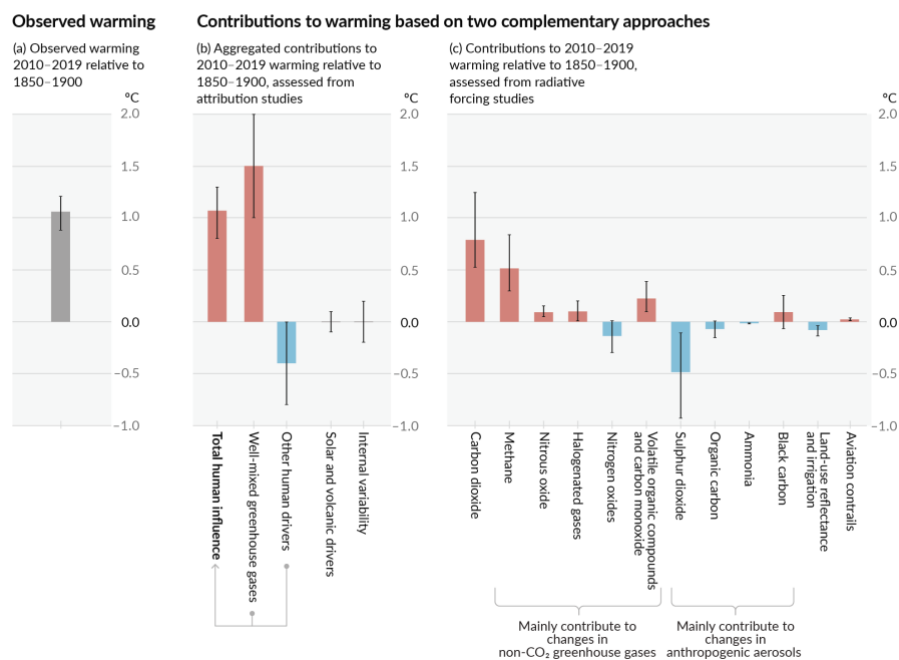


Figure 2: Substances that contribute to global warming

Source: IPCC, 2023

It is known that carbon dioxide is the biggest contributor to Earth's global warming. The natural presence of carbon dioxide in the atmosphere is not dangerous, because naturally, carbon dioxide can be found on the earth's surface as a heat absorber of cosmic radiation; which is useful for preventing the earth from freezing (NOAA, 2024). However, problems arise when there is an uncontrolled release of carbon that fills the air in the atmosphere, causing an excess build-up of carbon dioxide in the atmosphere. This excess buildup then causes the earth to experience a super-charge of cosmic radiation heat, resulting in an increase in the heat of the earth's surface, or what is known as global warming (NOAA, 2024).

The problems due to carbon emissions not only have an impact on the land and air environment but also have an impact on marine and aquatic ecosystems. In the concept of marine pollution, there is a premise that states every pollution ends up in the sea or "from or through" which is taken from Article 212 Paragraph (1) of the United Nations Convention on the Law of the Sea 1982 (UNCLOS 1982).

Scientifically, excessive absorption of carbon dioxide from the atmosphere into the sea will cause ocean acidification (NOAA, 2024), a condition where the pH of seawater becomes increasingly acidic due to the complex carbon cycle (NOAA, 2024). Increased acidity in seawater will then cause calcification or accumulation of calcium minerals on the body surface of marine biota; one of them is coral reefs (NOAA, 2024). Coral reefs that experience calcification will slowly die (Wang, et al., 2021), which will then damage fish and shellfish habitats, which will then have an impact on decreasing fishermen's income and the marine tourism sector due to this event.

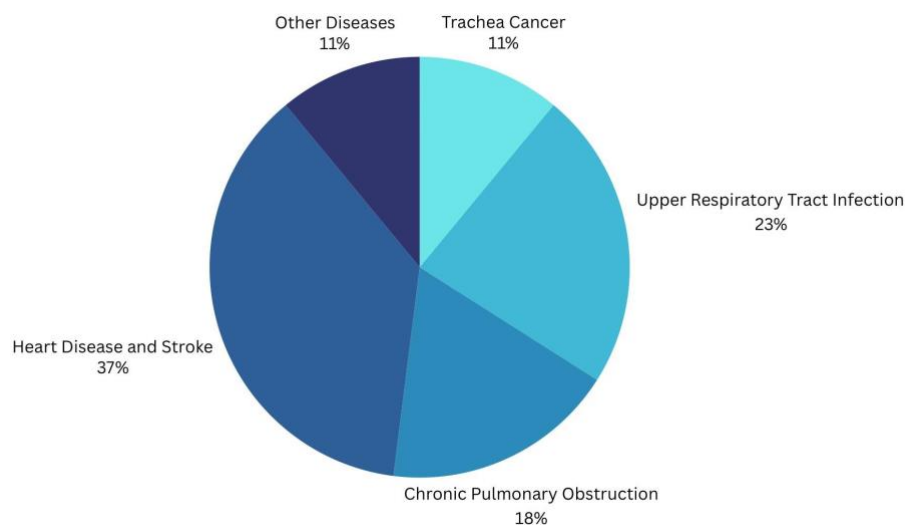


Figure 3: Premature Death Percentage caused by air pollution

Source: Processed from WHO report on Premature Death by air pollution, 2019

Air pollution not only degrades the environment but also causes a decline in the quality of health and even causes chronic diseases that cause death in humans. Based on Fig. 3, WHO reports that a certain percentage of deaths occur due to air pollution. In 2019, premature deaths due to air pollution which causes heart disease and stroke were 37%, 18% of deaths were due to chronic pulmonary obstruction, 23% of deaths were due to upper respiratory tract infections, and 11% of deaths were due to cancer of the trachea (WHO, 2023). In another study, air pollution was proven to cause a decrease in the quality of breathing and quality of life of people in Ger District, Ulaan Bataar City, Mongolia (Nakao, et.al., 2017).

From a human rights perspective, humans are guaranteed by Article 3 of the UDHR (*ius cogens*) to have the right to life. From a human rights perspective, the UDHR has not concretely placed and linked the right to life and the right to a good environment in the same legal framework. Then concretely, the right to life and the right to the environment are regulated in the First Principle of the Stockholm Declaration which states that humans have the right to live adequately and with dignity (adequate, well-being, and dignified life)(Stockholm

Declaration, 1972) and the next clause in this principle gives birth to the concept of environmental responsibility by humans.

With the occurrence of deaths due to air pollution and the decline in the quality of the environment and health, this shows that air pollution is not a normal criminal event like theft or fraud, but fundamentally violates human rights. In particular, carbon-based air pollution is not like oil pollution which is carried out specifically by certain legal subjects, for example, off-shore oil spill pollutant, hydrocarbons which cause marine pollution and responsibility which in identifying it can refer to the contractual rights holder of the upstream oil and gas business in the offshore working area (Triatmodjo, et.al, 2024), with proof through satellite imagery depicting the distribution of oil slicks and through fingerprint biomarker mapping of the oil spill (Wang and Stout, 2007); meanwhile the greenhouse gas-based pollution such as carbon dioxide is quite difficult to avoid because almost every sector of life produces carbon emissions and has a very large impact; carried out by many sectors but the causal identification of the impact and emitting subjects of air pollution is still unclear, such as the land-use change and forestry (LUCF) sector (Susmiyati, 2017), coal mining industry (Werner, et.al, 2024), household and manufacturing industry (Kim, et.al, 2020), landfills (Kweku, et.al, 2017), the agricultural and food industry (Kweku, et.al, 2017), and other industries based on fossil fuels (Kweku, et.al, 2017); cumulatively causing air pollution and global warming yet it has still unclear about the status of the air pollution, whether it is considered just as a civil violation event or it is could be considered as a serious international crime that violates the fundamental human rights.

### 3.2. Deconstruct the APC into CAH

Categorizing air pollution as a crime can be done by extensively deconstructing the current existing legal qualifications of international crimes as regulated in the Rome Statute. Extensification is the process of expanding the interpretation of the meaning contained in the rules so that the actions and the rules can be in harmony (Christianto, 2010). The European Court of Human Rights extended the interpretation of human rights within the framework of crimes against the environment, even though the Rome Statute does not explicitly regulate crimes against the environment as one of the qualifications for "most serious" crimes (Durney, 2018). Meanwhile, in the case of the Ogoni Tribe in Nigeria, it also experienced extensification in terms of deconstructing the qualifications of environmental crimes committed by the Nigerian government against the Ogoni Tribe, so that the environmental damage acts carried out by the Nigerian government were extensified so that they fulfilled the elements of "widespread/systematic attack" which fall within the authority of the ICC to try the case (Durney, 2018). With the logic of deconstruction and extensification of air pollution as an act that is detrimental to humans and the environment and following the elements of CAH, normatively, air pollution can be categorized as an international crime, hence, the APC could meet the elements of CAH and the wrongdoer be held liable for those who violate the clause.

The destruction of the environment and exploitation of natural resources carried out by Nigerian oil company in Ogoni Tribe's case cause changes in environmental conditions like soil, water, and air pollution by the extractive activities so that the company violate the basic rights of indigenous peoples in the region so that they experience what we know as ecocide or unlawful acts committed by a legal subject by unlawful exploitative methods, emitting or polluting the environment, or by using herbicides thereby destroying the ecosystem in the environment (Crook and Short, 2020). Although extensive deconstruction can be carried out in holding those responsible for air pollution, the extensification mechanism has its problems which conflict with the principle of *lex stricta* that states that law must be interpreted strictly; there should be no regulation that can be interpreted freely. However, regarding the situation and urgency of regulating APC as CAH, other principle regulate that a condition that threatens the interests and rights of many people must be punished; This principle is known as *Rei publicae interest* (Fraher, 1984).

In deconstructing the legal qualifications of air pollution as an international crime (specifically CAH), it is necessary to understand that air pollution is an act that threatens the interests of many people. Although Article 1(a) of CLRPAT 1979 textually does not accommodate air pollution as an international crime, this convention describes air pollution as an act that threatens the environment and its components. If criticized, the element of

"threatening" an act should fulfill the elements of the Principle of Material Legality so that the act of threatening the interests of many people should be substantially considered a crime.

However, even though APC is a branch of Environmental Crimes, there is a slight difference between the two, therefore the connecting elements between APC towards CAH and Environmental Crimes towards CAH cannot be equated, or simply, not as simple as Environmental Crimes extensively deconstructed towards CAH. Due to the scientific uncertainty of APC, the concepts of responsibility for Environmental Crimes and APC are different. Environmental Crimes tend to prioritize causality between acts that are considered to violate the law or rights and the elements of loss resulting from a social and ecological perspective, while APC must also link the determination of the parties' involvement in acts that cause air pollution collectively (collective origins) with the elements of loss that are *in dubio* or exists but scientifically it is difficult to prove (Adelman, 2013). What is meant by collective origins is the broad range of polluting subjects that produce carbon emissions, so the institutions or subjects that have the competence to calculate carbon emissions and impacts often experience errors in calculations and estimates (Adelman, 2013).

Scientific uncertainty is a condition where science has difficulty measuring something due to the many factors/variables that influence an event or the difficulty of tracking the relationship between variables (indetermination) (Costanza and Cornwell, 1992). For instance, it will be easier to track down the subject responsible for the source of oil leaks in the ocean by following the trail of oil slick than to track down the subject responsible for the source of global warming. Because the trail of oil slick would lead to a single (or by mechanism) legal entity responsible for the incident. But tracking down the responsible subject for the carbon emission that caused coral calcification in the ocean or caused premature death in 2019, would be impossible because air pollution has a collective origin character and is emitted by many sectors of the world.

The logic of scientific uncertainty postulates that an act cannot be categorized as being against public rights or interests (*publicae interest*) without being preceded by the existence of an act of fault so that it is against the law, the existence of a party whose rights or interests have been harmed (resulting in the legal standing of the parties), the existence of losses and violations (both in terms of public interest and individual rights), and the causal relationship between fault (*schuld*) and violation or loss. The causal relationship between fault and violation of rights and interests cannot possibly be explained if the qualifications of the parties' faults cannot be identified precisely due to the unknown determination and impacts of the actions of the legal subject of the carbon emitter. Or simply, due to the complex carbon cycle originating from various sectors, who can be held liable for the calcification of coral clusters in the Maldives? Simply put, no party can be held liable; Even though there is an element of violation of rights and losses, the causality of faults and violations with losses cannot be explained due to carbon emissions cannot be traced clearly due to the carbon cycle and the nature of the collective origin, giving rise to scientific uncertainty.

In anticipating the existence of scientific uncertainty regarding the actions of polluters, the precautionary principle exists to answer conditions of uncertainty (Costanza and Cornwell, 1992), which practically cannot be answered by the preventative principle (Trouwborst, 2009). Conceptually, the precautionary principle works by preventing every possible risk even at a very low level or even at a level of uncertainty (Trouwborst, 2009). In general, the principle of precaution is used to minimize threats to global defense and security, such as the United States carrying out attacks on Iraq even though no weapons of mass destruction were found (Trouwborst, 2009); Which contrasts with the preventative principle which requires an indication of certainty, rather than a condition of uncertainty (Trouwborst, 2009). The application of the precautionary principle was first used in the international environmental law instrument that we know as the 1992 Rio Declaration which was legitimized by the 15th Principle which requires an early response to threats to the environment, even in situations of scientific uncertainty; Therefore, this principle is equally beneficial to the environment in doubting conditions.

The application of the precautionary principle was then legitimized through the provisions of Article 3 of the Paris Agreement which regulates ambitious global efforts to commit to reducing countries' carbon emissions. This ambitious effort is known as nationally determined contributions (NDC) which contains commitments, reports, and mechanisms for countries to reduce carbon emissions as a form of climate change mitigation. NDC



is then used as a tool for monitoring a country's policies related to potential carbon emissions without any sanction mechanism for violations of carbon emission reduction, this is because the Paris Agreement is a form of soft law instrument in international law.

NDC can be a solution to characterize violations so that the problem of scientific uncertainty of APC can be answered, namely NDC as a benchmark for carbon emission violations so that APC can only occur if a country violates the NDC carbon emission quality standards. Therefore, APC has the characteristics of a formal offense, namely the point at which a criminal act is fulfilled is determined based on the provisions of the law which prohibits it so that the determination of the criminal act has been carried out based on the achievement of the redactional provisions of the law (Prastowo, 2006).

In linking Carbon-based APC with a most serious crime predicate, especially CAH, international law has the highest hierarchical principle/norm so that a crime, based on several conditions, can be categorized at that level. This principle is *ius cogens* which is a peremptory norm or principle that stands above other principles; where CAH and other very serious crime qualifications based on the Rome Statute fall into that hierarchy. *Ius cogens* come from the Latin phrase, "*ius*" which means "law" and "*cogens*" which is taken from the words "*co*" and "*ago*" which means "to drive," "lead," and "push". Meanwhile, *ius cogens* in the international legal system is a predicate/category/hierarchy of an act or crime that is considered very critical and crucial and is considered to occupy a peremptory norm position or is above other hierarchies in international law, giving rise to international legally binding or *obligatio erga omnes* among international communities (Bassiouni, 1996).

CAH was agreed by the parties in the Rome Statute to be in the hierarchy of *ius cogens* because of the long history of this crime and the anthropological considerations that underlie CAH as a fundamental crime, however, the position of APC, especially with carbon emission pollutants, is still unclear because its position is not specifically regulated regarding APC qualifications in international level.

In the same manner, APC is part of Environmental Crime, therefore, APC can be categorized as an *ius cogens* through an extensive deconstruction mechanism by extensifying the APC elements with crimes that are at the *ius cogens* level, the same way as environmental crime is deconstructed as CAH. There are several similarity variables between CAH and APC which can be seen in Fig. 4 below:

Crime Against Humanity	Air Pollution Crime
Collective victimization (Vollhardt, 2013)	Collective victimization (Skinnider, 2013)
Coordinated by the government officials or parties who have capabilities that impact many people (Rome Statute, 2002)	There are many polluting subjects, but the criminalization of acts is carried out by government officials that give them the legitimacy to carry out widespread pollution. (Durney, 2018)
Violates fundamental human rights (Rome Statute, 2002)	Violates fundamental human rights (Stockholm Declaration, 1972)
Intentionally crime (Rome Statute, 2002)	Intentionally crime (Durney, 2018)

Figure 4: Elements of CAH that met with APC

Source: Processed from various sources

Both APC and CAH have almost the same characteristics; The difference between the two is only in the legal subject matter of the perpetrator of the crime, whereas in CAH, the subject of the perpetrator is government officials or parties who have power such as the government, while in APC, the subject of the perpetrator is broader, but the perpetrator's limitations are only limited to government officials who legitimize the air pollution.

### 3.3. Formulation of an international agreement on APC as CAH

Extensive deconstruction is only temporary to deal with pollution cases that already exist, and cannot be used as a long-term solution. This is because APC has peculiarities in terms of law enforcement, especially those related to the benchmark of "pollution" so it is said to be a crime. With the characteristics of collective origins and scientific uncertainty, APC shows its uniqueness and distinction from other crimes, so the APC is a more complex form of crime than Environmental Crimes in general. Therefore, based on Trouwborst, the nature of pollution crimes can be resolved with the principle *In Dubio Pro Natura* which has the position of Precautionary Principle, in this case, precaution is defined as a precaution or prevention, which must be carried out without knowing the possible risks and real losses occur but are known to be detrimental, therefore, precaution is an answer to the nature and characteristics of scientific uncertainty which is also described as uncertainty in the APC problem. So, on the scale of proof between pollution (polluting the air) and collective losses, it is not necessary to prove the results of actions with losses, but with the belief that the emissions produced by the legal subject have exceeded the specified threshold, then the legal subject has carried out APC; then APC qualifies as a formal offense.

Such an evidentiary mechanism to determine the occurrence of APC cannot be practically accommodated through the Rome Statute, at least through current provisions; APC could only be characterized as CAH, but the instruments of APC investigation, prosecution, and trial cannot be concretely regulated through the Rome Statute. Based on the problematic enforcement of APC as CAH, the formulation of APC enforcement in the form of a new international agreement that is complementary to the existing rules (Rome Statute) regulating APC as CAH makes a lot of logic.

In building and formulating a criminalization mechanism for APC which is an international crime with CAH qualifications, 2 very "critical" legal processes need to be passed.

First, requires legal establishment or legitimacy that a crime is considered an international crime with special qualifications (Randhawa, 2022). The elements of *ius cogens* are seen based on the convention that first regulated it, namely Article 53 in the Vienna Convention on the Law of Treaties 1969 (VCLT 1969) which regulates the existence of 2 requirements for an act or issue to occupy the highest hierarchical position; Firstly, the requirement of general international agreement concept, double consent. An act or issue can only be considered to fulfill the position of *ius cogens* if it is accepted and recognized by the parties to an international agreement, either explicitly regulated in an international agreement as *ius cogens*, or explicitly regulated in various international agreements but which substantially implies this occupies the level of *ius cogens* (Luhulima, 2018). Secondly, the universality of recognition form of the parties who must as a whole agree on the position of an issue or act occupies the position of *ius cogens*, as Article 53 VCLT 1969 requires the condition "as a whole" as a form of agreement from the international community. The universality requirement can also be viewed as near-universal so that an act or issue does not have to be wholly agreed upon by all parties as *ius cogens*, but if a majority of the parties agree, the universality requirement can be considered fulfilled (Luhulima, 2018).

Second, the legal proceeding steps which consist of inquiry, prosecution, trial, and execution of international court decisions (ICC). Inquiry is part of the COP's authority in Article 4 Paragraph 8 of the Paris Agreement which regulates the obligations of the parties to provide information required by the COP. In terms of the formulation of international agreement of the APC as a CAH, the authority of the COP can be expanded, not only as a carbon emissions supervision agency but also have the authority to look for facts related to violations of the NDC. Supervision of the NDC can be regulated through the establishment of an Independent Body of COP based on Article 4 Paragraph 6 of the Paris Agreement. The prosecution mechanism is the full authority of the Office of Prosecutor, an independent body under the Rome Statute which is tasked with carrying out investigations into allegations of APC as CAH. In terms of finding facts and information that are crucial in prosecution and trial, both the Office of Prosecutor and the Independent Body of COP work in a coordinated manner because the two bodies are closely related to each other in terms of APC legal proceedings before the case is submitted for trial. The trial is a mechanism that specifically falls under the authority of the ICC to try an APC case as a CAH based on the authority granted by the Rome Statute. However, the ICC's authority does not

eliminate judicial authority at the national level; therefore, the relationship between the ICC and national courts is complementary.

Apart from the debate regarding the success of the Kyoto Protocol and the Paris Agreement in building commitments and urging countries in the world to commit to reducing their carbon emissions, violations of these commitments to reduce carbon emissions have occurred frequently and even reports of violations have been documented. For example, Indonesia, which is committed to reducing carbon emissions, reported an increase in carbon emissions from 2016 to 2019 of 0.388 GtCO<sub>2</sub> with the largest percentage of emission sources from the Land-Use Change and Forest (LUCF) sector (Indonesia. ENDC, 2022). On the other hand, the Dutch *Uitspraak Hoge Raad* in adjudicating the *Urgenda v Netherland* case is an important note that a public entity could build commitments, but without international responsibility and sanctions mechanisms, it turns out that it can have implications for violating carbon reduction commitments. The condition of voidness from the application of sanctions for violations of global commitments and the legitimacy of air pollution as a form of crime are two challenges to the international legal regime with an environmental protection perspective in drafting regulations for the application of criminal sanctions internationally.

The application of criminal sanctions internationally means imposing sanctions on actors responsible for air pollution, with limitations based on the principle of individual criminal responsibility. Reflecting on Article 25 of the Rome Statute regarding the character of individual criminal responsibility, the mechanisms that must be built by international agreements must contain the characteristics of this principle, by prioritizing and clarifying who is considered responsible for APC, by providing characteristics of those responsible for:

- a. Subjects of natural law (natural person) or perpetrator of the air directly by committing crimes of excessive pollution and destroying the environment where humans live;
- b. Subjects who orders, requests, or influences to commit or attempt a crime to pollute the environmental air space;
- c. Subjects who intentionally facilitates the commission or attempted crime of polluting the air space of the human environment by assisting and/or abetting other perpetrators;
- d. Subjects that by other means contributing to the commission or attempted commission of the crime of air pollution by another group of legal subjects, with the same aim and with the knowledge that the crime of air pollution was committed by that group.
- e. In the form of an attempt to commit a crime by the perpetrator, even though the results of the crime/action have not yet occurred or been carried out due to reasons that do not depend on the perpetrator's intention; in other words, the perpetrator had planned and had the intention, but the implementation was not carried out according to plan or had not been carried out so that the planned crime had not occurred.

With clear characteristics of legal subjects as those responsible for crimes committed, the objectivity of perpetrators of international crimes against air pollution can be fulfilled.

From the perspective of the international legal regime, the "no crime without the law" approach places the supremacy of law on the actions of subjects of international law, including what subjects of international law are permitted and prohibited to do. So in its regulation, the normatification of international crimes in the form of texts or written regulations is needed as a juridical basis for prohibiting an act, threatening a crime, and punishing individual crimes internationally.

How the condition of an act of air pollution is considered a crime of air pollution is also one of the elements of consideration for a violation or crime of air pollution. For example, murder is considered a crime if a person's actions, whether intentional or not, with or without an element of planning, take the life of another person, therefore it is considered to meet the qualifications of the crime of murder. The benchmark for an act that is considered a crime of murder is the loss of a person's life as a result of an act. Or by reflecting on CAH, the element of an act that deliberately reduces or eliminates human values or the act violates the basic rights of humans themselves, which then, with the qualifications and details of each act, is considered as a benchmark for

determining whether an act is considered CAH. The benchmark for the crime of murder and CAH is absolute based on the attainment of the impact of an act so that materially, it does not require contextual translation to state that an act is considered part of the crime. However, in contrast to APC, determining when and how an act of polluting the air is considered a crime of pollution requires a benchmark, because the nature of the crime and violation of APC is relatively dependent on the amount of pollutant that pollutes and its impact on the human population. The act of polluting the air so that it can be categorized as an international crime of pollution also requires a standard of measurement as a benchmark for when an act of polluting the air internationally is considered an international crime of air pollution along with the intention of committing the crime, this places international air pollution as an international crime with the formal offense.

Determination of this benchmark must be based on the number of air pollutants released by subjects of international law, taking into account the size of these emissions, the ability of domestic carbon stocks to absorb carbon in a country, and the environmental impact of the number of pollutants that are not able to be absorbed by domestic carbon stocks. So responsibility is no longer just about proving whether or not the emissions released by the subject of international law cause ecological harm to the civilian population because the element of proof is only on the premise that excess emissions that cannot be absorbed domestically cause damage to the environment and human population cumulatively. The formulation of this quality standard must be prepared and included in international regulations to become a benchmark for a legal subject to be declared to have committed an international pollution crime. In terms of ambient quality standards for each country, international instruments can use National Determined Contribution (NDC) or equivalent reporting documents, by the carbon emission reduction commitments in Articles 6, 7, and 8 of the Kyoto Protocol and Article 13 Paragraphs 4 and 7 of the Paris Agreement. This NDC works as a performance evaluation report or a country's plan to reduce domestic carbon emissions. This evaluation was then presented at the Conference of Parties (COP) as an implementation of the Kyoto Protocol and the Paris Agreement.

Then the carbon emission threshold mechanism for each country can adjust the existing mechanism in the Kyoto Protocol and the Paris Agreement so that in the event of a violation of the carbon emission threshold, the two conventions formally act as a basic reference for demands for APC, therefore, the previous NDC is an advisory and collaborative nature between countries and the UNFCCC COP, changing its status to an obligation for each country to be transparent and report its carbon emissions. The basis for determining pollution is based on the NDC of each member country, which is closely monitored by the COP Independent Body.

#### *3.4. Political Consideration in the Formulation of an International Agreement Concerning Air Pollution Crimes as Crimes Against Humanity*

In Punishment Theory, there are two contrasting perspectives, namely deontological ethics which is based on the moral rightness and wrongness of actions based on the rules and principles that govern them, so that the burden of taking action against an action must be considered on an ethical scale, not only based on public satisfaction in taking action against an action. actions and utilitarianism which are based on maximizing the fulfillment of happiness and usefulness (Binder, 2002). Although there are different interpretations of the justification for punishment both deontologically and utilitarianism, Guyora Binder believes that punishment must go through institutional mechanisms and be assessed based on a political rather than an ethical perspective (Binder, 2002). Likewise, the formation of international legal norms is influenced by political considerations above moral considerations.

In understanding political considerations, two important elements are understood as elements of political considerations in determining the direction of international policy. The first element is global awareness, namely the awareness of international parties regarding an issue that attracts world attention. The world's attention can only be attracted based on several issues with certain characteristics contained in a global phenomenon, such as humanitarian issues such as hunger and poverty, and economic and technological phenomena such as artificial intelligence and cryptocurrency. From the perspective of the global awareness element, the climate change framework has long been a topic of discussion, especially discussions and conventions regarding the impact of carbon emissions on the environment, as evidenced by the holding and agreement of various international

conventions related to the issue of climate change and carbon emission pollution such as the Kyoto Protocol, Paris Agreement, and several Conferences of The Parties (COP) related to climate change. Various international conventions that have been and will be implemented regarding climate change and carbon emissions are a manifestation of world awareness regarding the importance of protecting the air environment as part of the living environment.

The next element is the element of national/state interest, which is the concept that a country's attitudes and actions are based on its interests (self-interest) so that state behavior can be seen in the presence/absence of a country's interest in something (Guzman, 2010). State interest is described by Carr in Mearsheimer as "the art of concealing their selfish national interests in the guidance of the general good" (Mearsheimer, 2001). Carr's argument mentioned by Mearsheimer is based on the attitude of countries to take sides in a global issue based on the interests of each country. Mearsheimer gave an example of how the influence of the Truman Doctrine in the war between democracy and authoritarianism was part of the interests of the United States in expanding the principles of liberalism and heating ideological conflicts in Europe so that the alignment of European countries was with the United States, rather than with the Soviet Union. Or consistently, it is precisely the argument that the general interest and good as a cover for a country's national interests can be equated in the perspective of CAH, which was created not only to punish crimes that violate human values and the war crimes but also as an instrument of revenge for the countries that won the World War I and II to the countries that lost in these wars.

Cassese describes that the tendency of countries to avoid state responsibility and criminal liability is motivated by the political basis that the greater the responsibility and sanctions given to the state, the more reluctant countries are to agree to the contents of an international agreement (Cassese, 2008). For example, the 2001 ILC draft on International State Responsibility has not yet been agreed upon by the negotiating parties. An international state responsibility instrument is needed considering that a country's international responsibility has so far only been based on international customary practices. Apart from that, in the context of air pollution, it is very difficult to urge countries to create criminal liability instruments for air pollution perpetrators, because basically, air pollution is a systematic act and is spread throughout all levels of society, even involving production and civil economic factors. countries, so urging countries to agree to create criminal liability instruments for APC is the same as urging countries to limit the economic movements of countries.

Moreover, related to global power hegemony competition (simply called perpetual competition theory)(Mearsheimer, 2001), which requires developed countries to compete to become superpowers, production factors to support industrialization in a country are one of the determining factors in how strong that country is (Mearsheimer, 2001). Reflecting on Germany, which was once a superpower in the World War 1 era with various production factors supporting the war, or Japan, which was able to destroy Pearl Harbor after becoming an industrial country in the Asia Pacific, or Russia, which became a super country after increasing oil and natural gas production, then It is not surprising that the argument for power competition must be based on strong domestic industry and production. With the current status quo of upstream and downstream business patterns still based on carbon emissions, efforts to urge various parties to recognize air pollution as a crime (moreover, the criminal qualifications attributed to air pollution are equivalent to CAH) are very difficult.

APC's international legitimacy as CAH requires a clear and powerful basis for political consideration so that regardless of environmental urgency and human rights violations, international parties are willing to work together to agree on APC as CAH. In terms of measuring this political consideration, it requires the existence of several indicators that influence the success of increasing the status of Air Pollution as a crime, especially CAH. The first indicator is International Awareness or awareness of international parties regarding the issue of air pollution regarding actions that intentionally release or allow other people to release carbon pollutants into the air. This awareness indicator can be seen from the commitment of countries that have bound themselves to soft law conventions such as the Paris Agreement and the Kyoto Protocol so that measuring countries' awareness can easily only be seen from their status regarding these conventions. The second indicator is International Willingness or the willingness of international parties to comply with soft law conventions on the issue of air pollution. This willingness to comply can be seen from the process of these countries reducing carbon emissions, despite the absence of instruments for sanctions for violations in the process of reducing carbon emissions. For

example, the Dutch government is making improvements to reduce carbon emissions after the *Hogeraad* decision which stated that the Dutch government was guilty and obliged to establish pro-environmental policies. Then, the final indicator is a measurement of International Interest or the interests of international parties in international conventions. In influencing the actions of countries, interest is a crucial point in determining the actions of these countries. The interest in supporting the criminalization of air pollution must be based on the economic nature of a convention or at least the proposed convention is expected to benefit the country.

The basis of interest in political consideration in the formation of international norms regarding APC as CAH must contain or include several things, such as; Guarantee that the international legitimacy of APC as CAH does not disrupt the stability of the international community (including the economy and industrialism of countries); the legitimacy was created with good intentions and intentions (good faith) and is not a political instrument of superpower countries to control small and developing countries so that groups of small and developing countries do not need to worry about the tendency of large countries to influence and control the policies of these countries small and developing countries; and the last that the legitimacy is a strong encouragement for industrial countries to start abandoning carbon-based production and shifting upstream and downstream industrial styles to green (green production and green industrialism).

In reality, carbon-based air pollution is currently carried out by large countries in the world, because the manufacturing industry sector and downstream metal industry are production centers in developed countries; Efforts to limit or reduce carbon emissions are the same as limiting and reducing production of finished goods. Even reducing carbon emissions is already a challenge for industrialized countries, in capitalist terms, it will even be difficult to criminalize air pollution because in its development it will actually criminalize producers and even officials of industrial countries themselves. Industrial countries occupy the highest position in producing carbon emissions per capita. This is then in line with the dogma that industrialization is directly proportional to carbon emissions. The process of reducing carbon emissions cannot be done instantly, because it requires a transition between emissions-based production technology to low-emission production technology. This makes the soft law mechanism more compatible and adaptive to the carbon reduction process. However, on the other hand, the challenge of APC as CAH must still be seen as a utopian urgency, as *das sollen*, as an ideal condition for the supremacy of law and the upholding of legal ethics.

#### 4. Conclusion

Based on extensive deconstruction, APC and CAH have two characteristics in common; these two crimes are capable of targeting humans population on a massive scale (Collective Victimization) and violate human rights related to the right to a decent and healthy air environment. Based on the characteristics of the act of polluting the air and the impact of the air pollution itself, the APC itself is already at the *ius cogens* level, so the act of allowing the air to be polluted and the government exceeding the NDC itself can fulfill the CAH qualifications. Enforcement of APC can be carried out by formulating APC as CAH in an International Agreement which regulates in detail efforts for investigation, prosecution, and trial so that APC which has characteristics of scientific uncertainty can be regulated. However, the urgency of regulating air pollution events as an international crime, especially CAH, is not necessarily a humanitarian moral consideration, because countries' awareness of the issue of air pollution and climate change is not necessarily in a straight line with the interests of countries and the willingness of these countries to agreed to qualify APC as CAH. The direction of these criminal qualifications tends to inflict a financial loss to industrialized countries in the Western and Asia countries so that as a concrete step to form a hard law legal instrument to seek to reduce carbon emissions, in reality, it is much more difficult than binding carbon-emitting countries to carbon reduction conventions. Through a more flexible mechanism for monitoring carbon emissions in countries around the world, the form of soft law from an international law perspective is deemed more compatible in suppressing carbon emissions compared to forcing international criminal sanctions against parties who emit excessive amounts of carbon.

**Author Contribution:** All authors contributed to this research paper.

**Funding:** Not applicable.

**Conflict of Interest:** The authors declare no conflict of interest.

**Informed Consent Statement/Ethics Approval:** Not applicable.

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