China's Policy Developments in The Implementation of The Paris Agreement: Strategies And Challenges in Addressing The 2020-2024 Carbon Emission Problem

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ABSTRACT

China became the first country to be the largest source of emissions, with 27% in 2019. This is proved by the 2.8 million industries that exist in a wide range of sectors, so China can be categorized as one of the countries contributing to air pollution, especially in large amounts of carbon emissions. The issue has become a major concern for China and other countries after agreeing to the Paris Agreement as a platform for reducing carbon emissions. Moreover, China's declared plan to become a carbon-neutral country by 2060 requires progressive efforts. China's consistency in implementing the Paris Agreement as a real action needs to be reviewed further to demonstrate its commitment to maintaining a balance between environmental and economic aspects. So this study seeks to analyze further the development of China's policy in the implementation of the Paris Agreement as well as its strategy and challenges in addressing the carbon issue in 2020–2024. The research methodology used by the author is the qualitative descriptive method. The author can assume that in the process, China maintains its consistency in implementing policies that can reduce carbon pollution rates. The argument can be put forward by the author because there are several programs that are being pursued, such as the Five-Year Plan program, which is believed to have a significant impact on reducing the pollution generated in China.

Keywords : *Paris Agreement, Carbon Emissions, Environment, China*

INTRODUCTION

Rising global temperatures have become an issue among countries around the world. To overcome the global challenge of climate change, countries must come together to make it happen. The Paris Agreement is one of the measures proposed by the United Nations Framework Convention on Climate Change (UNFCCC), the aim of which is to limit the rise in global temperature and keep it at an optimal rate. The Paris Agreement is an international treaty that legally addresses climate change. It was adopted by 196 parties at the United Nations Climate Change Conference (COP 21) in Paris, France. The UNFCCC through the Paris Agreement has a series of normative frameworks pledged by

each country to address challenges related to global climate change. One of them is the Nationally Determined Contributions (NDC), which contains careful planning at the national scale to reduce carbon emissions. The NDC is a global commitment that has been agreed by 196 parties in the world, the goal of which is to ensure that countries move forward to limit global carbon emissions. NDCs focus not only on reducing emissions but also on adapting to the impacts of climate change. Therefore, all parties must implement policies to achieve global temperatures well below 2°C at pre-industrial levels and limit the increase to 1.5°C above pre-industrial levels (UNFCCC, 2015). To fulfill the Paris Agreement, each party is required to implement its own NDC. As a result, the global temperature will decrease by 43% and will reach 1.5°C.

Given the excessive targets of the Paris Agreement, we must look at which countries are the biggest carbon emitters. With a total of 14,093 metric tonnes of carbon emissions in 2019, 27% was contributed by China (Larsen et al., 2021). On the other hand, China is also one of the countries that signed the Paris Agreement. Since 2011, China has realized that their carbon emissions would be bad for their own country, so China started efforts to tackle the problem of carbon emissions. This is evidenced in the draft programme of the 12th Five-year Plan (FYP). In the FYP, there are policies to reduce carbon emissions. Subsequently after the Paris Agreement, China increased its focus on addressing the carbon emission problem in accordance with the agreement that had been formulated. The first step taken by China is to make a target within a few years that aims to reduce the number of carbon emission figures. The target plan in this agreement is called INDC. INDC is a draft target given by China to UNFCCC for review, after the draft has been approved, INDC turns into NDC that must be implemented by China. The implementation process will certainly not be left unattended, the UNFCCC will certainly monitor and request reports from China to see how the implementation of the NDC is going. The UNFCCC also calls on China or any country that ratifies the Paris Agreement to increase their ambition towards environmental awareness, so that the target can be achieved.

The author has several literature reviews to support research so that it does not have similarities with previous researchers, and has a renewal. First, the article entitled 'Analysis of China's Interest in Compliance with the Paris Agreement UNFCCC 2015-2020' explains the formation of negotiations from the Paris Agreement which will be used as a real implementation to prove China's compliance to deal with climate change problems in the world. China is being urged to fully commit to the Paris Agreement to help reduce global gas emissions by 2030. The author focuses on the Chinese government's interest in remaining committed to the Paris Agreement programme at a time when domestic economic interests are on the rise. This paper also has research results, namely there are Chinese self-interest factors in achieving compliance with the Paris Agreement Policy seen from outputs, outcomes, and impacts (Fariza & Indraswari, 2022). In addition, a study entitled 'Ratification of the Paris Agreement Treaty as a Form of Implementation of Indonesia's Commitment to Climate Change Mitigation and Adaptation Efforts' written by Ni Putu Rai Yuliartini with a discussion of Indonesia ratifying the Paris Agreement which regulates the limit of global temperature increase

below 2 ° C above pre-industrial levels. This is evidence of how Indonesia is making full efforts to realize a healthy environment for the future sustainability of Indonesian society. This journal also discusses Indonesia's Nationally Determined Contribution (NDC) in several sectors such as agriculture, energy reform and forestry (Yuliartini & Suwatno, 2022).

Then the article from Swastiratu 2019 which discusses the Xi Jinping administration with the United States, China decided to ratify the Paris agreement, where through the Paris agreement the relevant countries are required to put forward their efforts in Nationally Determined Contributions (NDC). China has had long-term proposals on climate change issues, in addition to its commitments in the Paris Agreement, and laws passed on the environment since the 1970s, such as in 1979 in the Kyoto Protocol. The paper also mentions that China's involvement in the Paris Agreement has been beneficial for solar PV, as China has been able to strengthen its cooperation with the European Union in order to promote policies and practices in realizing the transition to clean energy through the global forum The Clean Energy Ministerial. This author also argues that if China does not ratify the Paris agreement, there is a possibility that China will receive international sanctions which will automatically damage its international reputation considering that China is one of the largest emitters (Swastiratu, 2019). Finally, there is a paper entitled 'China's 13th Five Year Plan Policy as the Implementation of the Paris Agreement 2016-2020.' This paper discusses China's efforts as a country in the ratification of the Paris Agreement in reducing the amount of carbon emissions by implementing the 13th Five Year Plan policy. This research uses a qualitative descriptive approach where the sources obtained come from literature studies. This study also found that China has shown its commitment to addressing climate change by reducing carbon gas emissions in accordance with the objectives, namely by pursuing various strategies that have been written in the 13th Five-Year Plan policy to reduce carbon gas emissions in the domestic sphere. This can be seen from the values and objectives in pro-environmental policies by implementing the 'Environmental Protection' policy (Majid et al., 2022).

From some of the research above, the author gets points that have not been discussed. These points are the reason for the author to research the lack of explanation from several existing studies. This research will focus on how the Chinese government's strategy to create and implement a policy that must be in line with China's targets in the Paris Agreement. With a range of years between 2020-2024, the author can also assess the impact that has been felt from the implementation of these policies. This research examines the supporting and inhibiting factors that China has in implementing their policies. Thus, through this research the author can bridge between previous research and the latest information and can provide a new perspective for readers about the alignment between the policies implemented by China and its targets in the Paris Agreement, especially in the period 2020-2024.

METHODS

In this research, the author uses descriptive qualitative research to analyze and examine the data in accordance with the problem formulation. Qualitative description research is a research method that moves in a simple qualitative field with inductive flow. Inductive flow is a qualitative descriptive research that begins with an explanatory event, then a conclusion can be drawn from the event (Yuliani, 2018). The author uses descriptive qualitative methods from the data obtained regarding the analysis of green theory in the case study that the author will research. Through the literature collected, the author will find conclusions regarding China's policy development in the Paris agreement to analyze its strategies and challenges in addressing the carbon emission problem in 2020-2024. The author provides a limitation of discussion for this research, namely in 2020-2024. This restriction is done to prevent the discussion from being too broad and to clarify the purpose of this research.

In this research, the author uses primary data collection techniques and secondary data. Primary data collection is obtained from the official China's Policy website and websites of other official international organizations. Meanwhile, secondary data is obtained from scientific journals and a review of supporting and relevant literature on the internet. This data collection technique goes through a systematic process from various reliable and relevant literature sources in order to provide the author with an overview that can help the research.

RESULT AND DISCUSSION

As a result of human nature that is never satisfied in fulfilling its own interests, it encourages the excessive and irresponsible use of natural resources. So in the 1990s, environmental issues were given more attention by international relations researchers to create a theoretical framework as a basis for analyzing global environmental phenomena. This theory emphasizes that solving global environmental problems requires a globally comprehensive solution. At the international level, the UNFCCC was formed with various framework agreements to address the challenges of environmental issues (Dyer, 2018). One of the global treaty frameworks approved by most UN member states is the Paris Agreement, which regulates the limitation of global warming by reducing global carbon emissions. In implementing the framework of the agreement, the largest global carbon emitting countries, one of which is China, certainly play an important role in contributing to solving this global problem. China's journey to commit to the Paris Agreement also requires strategies and challenges that China must face.

STRATEGY

Climate change is an issue that should be considered more by the world because it can have an extreme impact on our lives in the future. Global warming and the greenhouse effect are causing severe damage in various countries, such as melting ice caps in the North and South poles, forest fires, and heat waves. One of the causes of climate change

is carbon emissions from the greenhouse effect, industrialization and fossil-based vehicle fumes. Being one of the biggest carbon emitters in the world with 2.8 million factories, China has started to implement various programs to reduce carbon emissions. On April 23, 2016, China and 194 other countries signed an agreement to reduce the production of carbon emissions, this agreement was organized by the United Nations (UN) through the United Nations Framework Convention of Climate Change (UNFCCC) in Paris, France and finally named the Paris Agreement. Through the Zero Emission Program, China proposed their 14th Five-Year Policy, one of which is to increase the renewable energy target to 33% of electricity consumption by 2025 (and 18% for non-hydro renewable energy) (Mutiara, 2023). This program focuses on reducing the use of fossil fuels by replacing them with new energy materials such as batteries. Plans call for half of vehicles to be electric or fuel-cell powered, and the other half hybrid by 2035. China's environmental and technology goals are mutually reinforcing; the 14th FYP environmental policies could bolster China's efforts to upgrade manufacturing and require foreign technology transfer to meet new standards (Congressional Research Service, 2021).

China also issued a reforestation policy not only to reduce carbon emission but also to reduce poverty and increase household income called the Grain for Green (GFG) policy. This policy began in the late 1990s where China focused on their reforestation programs in western areas due to severe environmental damage and soil erosion (Can & Bin, 2010, 3). The Grain for Green program runs in two phases, the first phase was in 1999 - 2012 which focused on severe soil erosion in mountainous regions, especially in watersheds such as the Yangtze River and prohibits logging in the upper reaches of the river to protect the ecosystem, then the second phase in 2014 - 2020 focuses on the integration between environmental rehabilitation and socio-economic welfare improvement, with the long-term goal of achieving ecosystem sustainability while supporting rural communities in China (Chenghua & Masahiro, 2024, 355). Before it was finally updated, as a form of its contribution to addressing climate change, the Chinese government submitted its first Nationally Determined Changes (NDC) in February 2016. The first NDC was submitted with four target formulations containing; peak carbon dioxide emissions "around 2030 and efforts made to peak earlier", reduce carbon intensity by 60-65% by 2030 from 2005 levels, increase the share of non-fossil fuel consumption as primary energy to around 20% by 2030, and increase the volume of forest stocks by 4.5 billion cubic from 2005 levels by 2030. The scope of targets achieved in this first NDC is non-emission targets; forest stock, carbon intensity, and share of non-fossil fuels. China also took actions to improve capacity and mechanisms as an effective form of defending against climate change risks, in addition, China also proposed 15 categories of policies and measures to increase efforts to address climate change. Since then China has at least made significant progress in fulfilling its commitments.

However, in October 2021, China added one target to the four targets submitted in 2016 with the aim of increasing renewable capacity. Whereas the five updated targets of the NDC are a form of ambition to reduce emission levels, the level of targets is lower than the first NDC. The formulation of the five updated targets are; peak carbon dioxide

emissions "before 2030" and achieve carbon neutrality before 2060, reduce carbon intensity to "more than 65%" of 2005 levels by 2030, increase the share of non-fossil fuels as primary energy to about 25% by 2030, increase forest volume by about 6 billion cubic meters by 2030, and increase solar and wind power capacity to more than 1,200 GW by 2030. Through this target update, China expects to peak emissions before 2030, and expand its non-emission targets with an additional target for total installed solar and wind capacity (Climate Action Tracker, 2024). Based on these targets, China is taking the issue of climate change seriously. The various policies that have been implemented are indeed considered in line with the initial targets written in its NDC. This can be seen in the results that can be seen from 2020 to 2024. In 2020, China managed to reduce the intensity of their carbon emissions by 48.4% when compared to 2005, although it has not reached the target but the policies implemented have been going well and continue to approach their target which is at 60-65% by 2030. In terms of non-fossil fuel use, China has reached 16% for non-fossil fuel use as primary energy. This figure is very close to their initial target of 20% by 2030. China continues to make large-scale investments to increase the use of renewable energy such as solar, wind and nuclear power to continue to pursue the target in 2030. Furthermore, on the forest stock target itself, China has reached most of their targets in 2020. Through its Grain for Green programme, China managed to increase the volume of forests and increase their contribution to carbon waste absorption (Mobility Transition in China, 2021).

However, China still has a dependence on coal because it is the majority of the main source of energy in China. This is still being sought to be reduced with a strategy where China stops funding projects that still use coal as their main energy source. However, it does experience obstacles due to the large demand for electrical energy which continues to increase every year (International Energy Agency, 2020). This achievement was not obtained by China only thanks to the policies they implemented but there are several supporting factors that can lead to the effectiveness and efficiency of all these policies. Such as massive investment in the renewable energy energy sector. Then coupled with the existence of new industrial industries that also dare to move in the field of renewable energy such as solar cells, lithium batteries and electric vehicles. The three industrial sectors managed to increase the export figure by 30% in 2023 compared to the previous year (International Energy Agency, 2024). Then coupled with public awareness of the dangers of climate change and global warming, which makes the Chinese government easier to apply the various policies they have designed before. And most importantly China opened their doors wide to the outside world. China opens opportunities for cooperation with other countries to be together in overcoming this global problem, which also certainly helps China to continue to innovate and achieve their target targets in 2030.

Challenges

During China's policy development in implementing the Paris Agreement, there have been challenges. In this case, the author has analyzed some of the challenges faced by China during the implementation process of the Paris Agreement on the issue of

addressing carbon emissions. These challenges reflect the complexity of the economic transition from relying on fossil fuels to reducing carbon emissions. The following challenges can be in the form of resistance to change in the industrial sector, especially in the coal sector, as we know that China is one of the countries with the largest coal producer in the world recorded in 2023 China's coal production reached 4,710,000 tonnes mn, this record increase was recorded before China only produced 4,558,553 tonnes mn in 2022 (CEIC Data, 2023). This increase in coal production is also followed by an increase in carbon emissions because China's energy sector still relies on coal for power generation. The resistance is due to the transition from coal to renewable energy sources due to the high investment costs. In addition, there is some industrial pressure on other sectors such as the chemical, steel, and cement industries as large contributors to carbon emissions in China. These industries are considered influential and important in China's economic sustainability and export value, so the regulation of carbon emission reduction causes resistance in these industries.

Many economic sectors in China are considered to be still dependent on fossil energy. Therefore, the carbon emission reduction policy could slow down the country's economic growth. Coupled with the covid-19 outbreak in 2020-2021, which could delay efforts to reduce emissions, the Chinese government's focus is split from initially paying attention to the energy sector for recovery to the health sector. The widespread nature of China's economy creates significant instability in the distribution of the economy, with some regions quickly reducing their carbon emissions needs and others finding it difficult to reduce carbon emissions. For example, coastal areas are able to adopt clean and environmentally friendly technologies compared to those living in urban industrial areas that rely more on coal as their biggest energy contributor to daily life.

CONCLUSION

In implementing green theory, there are various efforts made by countries in providing long-term solutions for environmental harmony and various aspects such as economic, political, and social. as well as China, which is one of the economic driving countries, certainly has very complex challenges in solving environmental problems. China must maintain its economy but also carry out various steps to deal with carbon emissions. In its efforts, China certainly has crucial strategies to deal with and also anticipate this. One of the policies is the Zero Emission Programme, which is designed to reduce the use of fossil fuels as the main energy and convert them into renewable energy, such as electricity. This programme has transformed the industry in China, so that 33% of the industry uses renewable energy. The programme also encourages Chinese citizens to use electric or hybrid vehicles. Not only that, China is making full efforts in reforestation which is included in the implementation of the Grain for Green (GFG) policy through two stages. The first stage focuses on soil erosion that is getting worse in some areas of China, and the next stage is focused on improving socio-economic welfare. With some of these strategies, it proves how China fulfils the NDC foundation that China has submitted to the UNFCCC as a form of its contribution to the Paris Agreement. In implementing China's strategy to reduce carbon emissions in 2020-2024, of course there

will be challenges that must be faced. One of these challenges is in the economic sector, which is notorious for its dependence on coal as an energy source. And also the use of coal as the main energy source is considered the most cost efficient method, because switching from a technology is a challenge because it will cut costs again. While companies always prioritize profits above all else. So the challenge of China itself, it must sacrifice the improvement of the economic sector to become a country that promotes carbon neutrality and green industry. Finally, the author suggests future researchers to conduct further analyses plus conduct direct research in China to find out the ins and outs of China's efforts to reduce carbon emissions.

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