

Rethinking About the Environment Issue: Why the Carbon Pricing is Not a Panacea?

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ABSTRACT

At the background of the urgency of climate change, decreasing the emission of carbon is gaining the focus of academics and the populace. As the tool of carbon policy, carbon pricing, including a carbon tax and cap and trade, does not meet the expected achieving significant reduction in carbon emission, sparking a hot debate on the feasibility of current policy or regulations. By giving a rough sketch of carbon pricing, this article summarizes the rationales behind the failures of controlling carbon emission from political perspectives. It discusses the plights faced by the industries, the populace, and the industries, as well as mentions the discourse analysis of climate governance. After that, the article attempts to provide a new standpoint from criticism, hypothesizing the worship of data as a hinder to developing global carbon governance. At last, Kuhn's theory is implemented to predict the future of carbon pricing, showing a perspective development of carbon pricing.

Keywords: *Carbon pricing, scientism, paradigm model, market*

1. INTRODUCTION

Facing the higher speed of rising temperatures, more states and the public realize the red code urgency of the climate catastrophe. They have been devoted to protecting the environment in many ways. Decreasing the emission of carbon is an essential part of the climate issue. After the rigorous regulations of carbon emission, there is a shift toward ecological modernism of climate policy happening after the Kyoto Protocol. Carbon pricing, including a carbon tax and cap-and-trade system, is a representative product as one of Kyoto mechanisms in this stream [1]. With the construction of China's Carbon Emission System, a big carbon pricing system has been set up in four big areas: Europe (EU-ETS), California (California CAT), New Zealand (NZ-ETS), China (CN-ETS). Policymakers believe the flexible market-oriented measure would achieve the target of net-zero. While according to IPCC, global warming is 1.5°C above the pre-industrial levels indicating the measures of remediation in greenhouse gases are not effective as public imaging [2]. To some extent, controlling CO₂ emission is failing. In a more optimistic way to say, carbon pricing has a success in decarbonization while the speed of decreasing the emission is too slow to save the environment.

As a result, policymakers and scientists contribute to finding the reason why carbon pricing is not so striking as it is supposed to decrease carbon emission. Most scientists are finding the reason from interior design. Since there are some victories in some specific areas, researchers would like to compare the successful example and the failure example, turning out the different systems adopted in the different areas. Thus, the debate between the two camps is heating up, which one is better. More and more fancy models are created to fight for the argument. Nevertheless, if thinking from the other perspectives, the research of carbon pricing is missing some significant pieces, lacking the perspective from humanities. The environmental issue seems like a pure science problem. It involves different roles, the governments, the companies, the public, and so on. The interaction between those parts could be learned through the lens from humanities, which is helpful to analyze the temporary failure in climate policy.

This article would introduce carbon pricing first, then give a summary about the major trend of analyzing carbon pricing failure from politics. After that, through the criticized lens of scientism, provide an alternative explanation about the provincial failure in the global carbon market. It would provide a hypothesis about the trend of scientism being harmful to the development of researching carbon emission policy. The worship of data

is the excuse for policymakers avoiding global cooperation. Afterward, based on Kuhn's theory, there might be a bright future for inconsistent carbon pricing.

2. CARBON PRICING

The core of carbon pricing is designed around the conception of environmental externalities. As public goods, the environment is hardly allocated by the market. The externality solves the problem, which indicates a cost or benefit caused by a producer that is not financially incurred or received by that producer [3]. The environment externality is always the negative externality. Economists devote themselves to internalizing the externality so that label the environment as a resource, thus managing the resource through the market. Carbon pricing is the brainchild after turning the environment into a resource.

Carbon pricing is widely agreed by countries to reduce the emission of carbon dioxide, including a cap-and-trade system and carbon tax. These two components are designed from the classic economic path - price and quality. The cap-and-trade system is based on a quantity-based approach, turning the externality into a property right. To be specific, the government set a "cap" about the resources like CO₂ to limit aggregate emission. Under the cap, companies can have the discretion about whether to decrease the emission then sell the surplus quota or to trade with other companies buying more quota. Gearing to price way is the carbon taxing, formed in the Pigou Club. By setting a carbon tax, recovering the whole resources is easier. These two paths in carbon pricing carry the decarbonization dream.

The whole carbon pricing internalizing the externalities indicates the tendency of neoliberalism. The transformation happening in climate policy from the old command-and-control regulations to the invisible market indicates the trend. Compared to the old supervision, the invisible market hand does narrow the duties of the government and the time lag of the legislation. The models around tax and cap-and-trade systems are abundant. However, the market is not always the panacea. The carbon price is too low to have effective supervising power. The progress achieved could not keep the pace of climate warming. Carbon pricing can abate the carbon emission, not the full decarbonization.

3. SOME PLIGHTS IN CARBON PRICING

Even though carbon pricing does achieve some decarbonization effect, there is still a long way to achieve the long-term object, net-zero. There are some major reasons analyzed by the academic: the rift of carbon pricing system, technology paradox, and the lacking public engagement. These issues could be discussed by the different roles standpoints from a classical political perspective. In this big carbon game, the majority of roles

are played by states, industries, and the public. Hence, the plights faced in carbon pricing would be discussed from different roles, the implementation of the classical politic lens.

As the producer in the market, the industry or the company plays a role not to be underestimated in the carbon pricing gallery, even the whole environmental issue. It is quite interesting to find that the inconsistent identities owned by the company are the emitters and the protectors, which might be found in the same entity. On the one hand, industries, especially the large traditional enterprises, could hardly not avoid the pollution emission during the process. On the other hand, those with enormous financial firepower are seen as a power to invest the new technology, which explains the role of protector. The critical point is to find stimuli to push the role change, reducing the CO₂. Carbon pricing serves as the stimulus in theory lay. The basic logic is based on the market. Companies have to seek the best way to decrease the cost no matter through paying the tax or inventing new technology. While the scenario might not so positive in reality. For one thing, the low carbon pricing in the fragmented market is not strong enough to threaten the businesses, which could lead to carbon leaks. Even though there might be a solution like a border carbon adjustments policy to release the pressure on domestic companies, the inequity between the domestic producers facing carbon cost and foreign producers facing very few are still hard to short [4]. For the other thing, the innovation of technology is in dilemma, which could harm the investors themselves and benefit others. The rationale behind the technology predicament is the spill-out problem. The early investment in technology is giant for a company, while, to some extent, the benefit from the new technology is not the private property to the investor. Even with the potent protection, the free-ride problem occurs later not disappeared [5].

The other side of the market is the consumer, which adapted to carbon pricing. Nowadays, most carbon pricing is not involved by the public. For one thing, except for the gasoline tax, there are lots of items that contain carbon emissions. The appeal for Tradable Energy Quotas (TEQs) is on the table, which covers the whole sector in the national economy including households [6]. Though the pressure from the public hinders the practice, it is a possibility of construction in the future. For the other thing, the awareness of the public is lacking environmental perspective. To be specific, the time lag always exists for general recognizing the urgency of this issue. Realizing the passive ramification of carbon emission happened much earlier than the waking populace. The hysteresis of changing opinion is a factor not neglected. Like the consumer choice, the research shows that the consumer predilection in energy vehicles does not change as fast as most people imagine [7]. Such a slow shift may be ascribed to the downplay

of a problem by a credible authority and distracted by other occurring issues [8].

There is another power not to be overlooked, the government. Looking from the interior, during the process of policy, the instrument is needed and costly for a government [9]. Maintaining carbon pricing as a system, the governments are supposed to serve as a cohesive between the industries and the public, as well as the monitor to regulate the unexpected failure. Looking outside the states, cooperation between different states is the key to forming the whole system. The United Nations Framework Convention on Climate Change was passed as a signal of international cooperation on climate policy. The discussion on global governmentality about the discourse of green governmentality is focused to show some unjust in climate policy [10]. Whereas the concept of “common but differentiated responsibilities” is still struggled in climate policy, which depends on the government of the state. Therefore, carbon pricing is not just for producers and consumers, as much as the government.

These are the plights faced by major roles playing in the carbon game, from the perspectives how the difference between reality and political theories. While there is also a field where trying to endow less power to politics. For one thing, It is a novel thinking about taking the “politics” as a variable in the analysis of market-based strategies, which consoles the dichotomy between market and political to a degree [11]. For the other thing, some researchers focus on Michel Foucault’s s global governmentality thesis perspective. The failure of carbon pricing is interpreted as a successful case of depoliticization, shedding light on the ‘groveshedding distance’ [12].

4. REVISITING CARBON PRICING FROM SOCIOLOGY OF SCIENCE

The flaws behind carbon pricing do not specially belong to the economy and politics. It is a hodgepodge of humanities and natural science. Except for the possible reasons of failure mentioned before, there might be another explanation for the failure of carbon pricing which is based on the critical perspective. Therefore, the inconsistency behind carbon pricing could be explained by the perspective of the sociology of science. Considering the trend of scientism, the overemphasizing of models and data is affinity to the collapse of carbon pricing. The original thinking about the environmental externalities shows the significance of the theory. With the development of tools for quantity research, natural science is overweight humanities in the climate area. In this part, it provides a hypothesis trying to explain the tendency of the atomized phenomenon in carbon pricing. The high speed of economic model development is a vision, which might be a hinder for the policymaker to cooperating with others. However, there might be a

relatively stable period waiting for carbon pricing according to Kuhn’s theory.

4.1 The trend of scientism might be one of the hinders the global carbon pricing

Scientism has a long history as a philosophy thought ascribed to the people’s admiration of rationality. It gradually became mature from Comte’s positivism to logical positivism. Then with the development of practice, the realities provoked scientists to begin introspection. The factors like historicism, relativism, and postmodernism enter scientists’ vision. The criticize about scientism is presented, like Paul Karl Feyerabend. Albeit the rethink about scientism is relatively taken seriously in the academy, the echo of the criticize about scientism is still slim in other fields like politics, the public, and so on. This phenomenon might be attributed to the visual powerful influence of scientism, the convenient functions brought from the science veiling the disadvantages. Thus, the alert about absolute scientism is yet necessary. Scanning the carbon pricing through the criticize tool gives a new explanation; there emerges a kind of affinity with the worship of scientism. After all, the quantity analyzing methods bring about the practical study; accordingly, the achievements of carbon pricing are associated with the development of models. However, there is a paradox that most people are stuck in called rational thinking. It is hard to find the truth because each attempt is closer to the truth. The model works do not mean proving right. It is better to describe as the proposition has not been falsified [13].

Today’s trend is more likely to research in quantity; though empirical research does necessary in solving the practical problem. This worship of data to some extent contributes to the failure of carbon pricing since policymakers might overlook the political issue and find the sanctuary of science. This is one of the reasons for the phenomenon mentioned before. The uncertainty about science causes people to try to find security. When politics are facing expectations from the public, they need to find a kind of authority. Science seems objective and precise, which would be a perfect tool to ameliorate the nervous mood. The science researches are never known enough [6], leading the fan for chasing the data. It is a possibility that a threshold presents the state representing the normal function. However, the policymakers and others want to find the security by the perfect numbers. The involution begins. More and more fancy models appear, at the same time, people forget about the truth that well-operated models could be alive only by cooperation around the world. Thus, the rift in the carbon price reflects the split in the world, which is always the political topic discussed by realism and liberalism.

4.2 A positive attitude towards the rifts considering from Kuhn's paradigm theory.

To see how Kuhn's theory shows the history of carbon pricing, the process of revolution behind science-based would be discussed first. Kuhn regards the job of scientists as like solving puzzles. They are exploring each part at the same time finding the anomaly. Those anomalies would be examined then push scientists to lose the previous boundary of their theories. If the anomaly still exists and is problematic, scientists would spare no effort to solving it cooperatively to reinforce the commitment they shared. When scientists face incontestability, the diversity based on the different ontological commitments is formed. Then a revolutionary will occur when one of the parts replaced the other. After that, a new way of seeing would play a role. This process is in Kuhn's *The Structure of Scientific Revolutions*, explaining the shifts behind scientific research. To summary, there are three phases in Kuhn's model. The first phase is an immature time, which is short of the norm criteria, like research methods, models, or practices. Then the second phase, normal science, begins a puzzle-solving period, formed by a hero ushering a paradigm. Then during the extraordinary science period, the anomalies examined by scientists produce a revolution as a result of the crisis, which brings to a new period with a new paradigm [14].

Tracing back to the development of internalizing the environmental externalities, the pattern is fit with Kuhn's theory even though he thought it only applied to 'hard science'. Borrowing from Pigou's work in 1920, the concept of externality is fully used in environmental economics issues. The evaluation of the cost and benefits considering the human willingness to pay was established in the nineteenth century. Then analysis using welfare economics was developed to satisfy the long-established Pareto criterion that benefits the whole interests. There was also the theory exploring the energy consumption and the accumulation of the pollution, the mathematical model about the growth theory. On the other side of the map, the anti-growth movement was hot, lots of conceptions around the absolute limits were brought out. Then a sensation was caused by Boulding's idea about a spaceship that the society is a type of sustainable society with a limited supply of sources, which induced the theory that externalities are pervasive since the capacity of the society receiving the pollute is limited. The last important piece of map was Coase's "Problem of Social Cost" which constructed the cap-and-trade system. Those are the historical theories behind carbon pricing, which is similar to puzzle solving [15].

According to the historical development of the basic thoughts in carbon pricing, the unstable characteristic could be understandable through Kuhn's theory. The progress achieved in science always needs competition and changes. There would be a point in achieving a

relatively stable state. This spiral progress shed the light on the future of carbon pricing. This field is in a juvenile state, thus the inconsistency is common. Carbon pricing might be in the second phase, waiting for a new global paradigm. To attain the revolution, it desires a hero. This hero might not just emerge from the scientists, while the governments serve as the powerful force by shorting the delay of regulation. Thus, even though the progress achieved by the carbon pricing policy is not significantly in the global size, there is still a stable future waiting for carbon policy if using Kuhn's paradigm theory to predict. Kuhn's theory lifts the veil from the image of science: scientific revolution, anomalies, normal science, the concept of a diagram. Among those, the change of diagram is used to illustrate the development of carbon pricing, the unstable period waiting for a revolution.

5. CONCLUSION

Since the first spark in the carbon cycle in climate change is provided by Swedish chemist Svante Arrhenius, it is fascinating to have a unified measure in resources, environment, and ecology called carbon, which sheds light on the solution to the global climate issue. But the progress is achieved much slower than people imagined. This article discusses the rationales behind the failure of carbon policy. With the help of the classic political perspective, it shows the plights faced by the different parts of the carbon game. At the same time, it concludes some of the other perspectives on the failure, reconsidering the politic, the discourse of governance. Then it strives to illustrate the rifts in carbon pricing in a logic of criticizing the trend of scientism. At last, using the theory of Kuhn's paradigm to predict a possible future of carbon pricing, trying to use a new perspective to scan the policy.

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