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Report on Proposals for a Carbon Neutral Development Pathway in the EU

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Abstract

There is now a universal understanding that addressing climate change is one of the greatest challenges confronting humanity today. In light of this, the paper focuses on the process of developing an all-encompassing, cutting-edge, practical, and logical approach to carbon neutrality in the EU. It briefly discusses the establishment of carbon neutrality throughout the world within the context of the problem of the global climate, describes the state of carbon neutrality in the EU at the present time, and discusses the current issues, the EU is facing, using the energy crisis in the winter of 2021 as an example. On this foundation, the analysis is presented from various angles, and suggestions are made, such as the increasing financial investment in carbon neutrality, looking for ongoing technological breakthroughs, attempting to take social equity into account, continuing to provide funds to developing nations, and speeding up carbon trading and pricing systems. The EU's route toward carbon neutral development does need to be enhanced and optimized; if this is not done in a timely manner, it will not only have an adverse effect on the EU's development but also negatively impact global carbon neutrality.

Keywords: Carbon peaks; carbon neutrality; EU; policy framework; development pathways; recommendations.

1. Report on proposals for a carbon neutral development pathway in the EU background

With the economy and society's continued growth in recent decades, there have been an increasing number of global climate issues. Among these are high global temperatures, ocean acidification, sea level rise, extreme precipitation, and other issues that have repeatedly surfaced and raised concern around the world. Data show that compared to the years 1980 to 1999, the frequency of natural disasters, the number of persons affected, and economic losses have all grown dramatically in recent years (Reduction, 2020). The United Nations Intergovernmental Panel on Climate Change has assessed that atmospheric CO₂ concentrations will increase from 285 ppm in 1860 to 414 ppm (IPCC, The fifth assessment report of the intergovernmental panel on climate change., 2013) in 2020 and that the global

average surface temperature over land and sea will rise by 1.09°C (IPCC, The sixth assessment report of the intergovernmental panel on climate change., 2021). The 2015 Paris Agreement sets the goal of “holding the global average temperature rise to within 2°C of pre-industrial levels, and to achieve 1°C warming. “Keeping the global average temperature increase from pre-industrial levels to under 2°C and working towards a limit of 1.5°C,” reads the 2015 Paris Agreement. (UNFCCC, 2015). However, it forecasts that between 2030 and 2052, the average global surface temperature would increase to 1.5°C. (IPCC, Special Report on Global Warming of 1.5°C., 2018).

There is no question that the greenhouse effect in the atmosphere has been increased and accelerated by human activities. Three landmark international legal documents, the Kyoto Protocol, the United Nations Framework Convention on Climate Change, and the Paris Agreement, have been introduced internationally to shape the global climate governance landscape beyond 2020 in order to effectively control carbon emissions and address the numerous problems caused by global climate change. In light of this, the Paris Agreement, which has received international acceptance, sets goals for combating climate change.

With a carbon neutrality target in 2019 and the release of the European Green Deal to combat climate change by the end of 2019, the EU is one of the first economies in the world to propose a carbon neutrality plan. The EU is a steadfast supporter and implementer the Paris Agreement and is a global leader in climate governance. By the end of the previous year, more than 130 nations/regions had declared carbon neutrality goals or plans, which accounted for around 83% of the world’s CO₂ emissions, 91% of its economic output, and 80% of its population (Unit, n.d.).

2. Current status of carbon neutral development in the EU

The EU has a well-developed carbon neutral policy framework, which includes the deployment of focused measures to reduce emissions in key sectors (energy, industry, energy), science and technology first, supporting scientific and technological research and development projects, and the adoption of diversified fiscal and financial protection measures. These include promoting industrial transformation, creating new jobs, and seizing employment opportunities. Low-cost green technologies, stronger infrastructure development, global adoption of clean energy technologies, and a reduction in the price premium associated with clean technologies are also mentioned. The "dual carbon" plan is viewed as a crucial chance for post-epidemic economic recovery.

These include promoting industrial transformation, creating new jobs, and seizing employment opportunities. Low-cost green technologies, stronger infrastructure development, global adoption of clean energy technologies, and a reduction in the price premium associated with clean technologies are also mentioned. The "dual carbon" plan is viewed as a crucial chance for post-epidemic economic recovery. The vulnerability of Europe to unanticipated climate change has exposed the weakness of its energy security system, despite the fact that this is intimately related to the numerous catastrophic weather occurrences of recent years. A number of industries have been impacted, and some energy and electricity companies have even filed for bankruptcy as a result of Europe's extreme dependence on imported gas. At the same time that gas prices in Europe are expected to triple by 2021, the price of electricity and related energy sources have increased at an unprecedented rate. Despite repeated assurances that the EU's carbon neutrality targets remain unaltered, the difficulties are formidable, and there is still a long way to go before achieving them. EU countries have already broken their obligations to reduce carbon emissions in order to address the energy crisis.

3. EU carbon neutral development pathway proposal

3.1. Expanding relevant funding inputs

Achieving carbon neutrality will require significant financial investment, with the EC estimating that an additional €260 billion per year will be needed just to meet the 2030 target (European Commission, n.d.). There is a significant difference between the funds that the member states contribute to and receive from the EU because a significant portion of the EU's income, which is primarily derived from the contributions of member states based

on their national income, is used to help develop the economies of underdeveloped regions and to provide subsidies to some local industries. The European Commission said in January 2020 that it would devote 25% of its budget to environmental and climate change initiatives over the following seven years. In addition, it suggested raising €1 trillion over the following 10 years to ensure that the agreement would be carried out. The EU's long-term budget will account for about half of the entire budget of €1 trillion, of which €100 billion will come from contributions from national governments and another €300 billion from the private sector. Additionally, the EU will use €7.5 billion of its budget for 2021–2027 for seed capital and employ strategies like financial leverage to attract €100 billion of investment.

The gap between the funds needed to implement the agreement and the EU budget will be made up by matching funds from member states' projects and public and private sector contributions (Kevin, 2020). It is anticipated that the EU will invest significant financial resources in new infrastructure and research and development because achieving carbon neutrality and the technological transformation of society are challenging goals to meet in a short period of time. In addition, achieving carbon neutrality necessitates not only the widespread implementation of carbon capture and storage, but also the effective reduction of emissions from electricity systems and the electrification of transportation. All of these initiatives will necessitate significant and ongoing investment from the EU. Despite the benefits of EU membership for individual member states, taxpayers, who have long made a sizable net financial contribution to the EU, have questioned the fairness of the EU's funding rules and objected to the increase in EU funding, especially in hard economic times when EU member states have had to spend significant sums of money to combat the Newcastle pneumonia epidemic and prevent business closures and unemployment. Government spending and economic growth in the upcoming years may be impacted because of the significant economic losses and fiscal burden that arise. In light of this, it will be challenging for EU member states to avoid cutting their government budgets, which would have an impact on implementation funds.

3.2. Seeking continuous breakthroughs in key technologies

Whether it is the steel industry, the energy industry, or the automobile industry, reforming and upgrading a sector will take time. To get past the challenges that still stand in the way of the development of new nuclear power generating and CCUS technologies, even more thorough long-term, scientific and technical study is required. To achieve carbon neutrality in the new power supply system, the majority of future electricity must come from wind and solar generation, and the installed capacity of thermal power must be greatly reduced by other small stabilizing, regulating, and emergency power sources. Future "revolutionary" advancements in transmission, storage, and generation technologies will require support. Theoretically, it is simple to make the energy industry, carbon-neutral, but it is challenging to rebuild equipment and processes. Another possibility is that the cost of the finished good would increase due to the replacement or rebuild. Rebuilding and replacing therefore take time. On the other hand, since emissions from the chemical and energy sectors cannot be prevented, new nuclear power generating technologies and CCUS technology may prove to be essential for reaching carbon neutrality in industries known for having large emissions. The aforementioned technologies are still hampered by safety risks and expensive costs in a large-scale deployment, which presents a big challenge for the EU in figuring out how to advance and promote them.

3.3. Striving for social equity

Regions are projected to face considerable economic and social challenges as a result of the low carbon transition. The fact that the economies of these areas rely so heavily on industries that are anticipated to contract or require transformation presents a particular problem. It is obvious that many more places will be impacted given the industries that will need to change. Traditional businesses like the coal industry are suffering as a result of new energy sources, and the loss of many jobs will have an impact on the economy as a whole. The European Green Deal will endanger 11 million employment in the extractive, energy-intensive, and automotive industries, according to the General Confederation of Global Industries (Elisabeth, 2015). The union is particularly concerned about the risk of a social and economic split between Eastern and Western Europe that could be brought about by the green agenda (Industriall, 2020). In response, the EU launched a recovery package in July 2020 totaling more than 1.8 trillion euros, of which at least 30 percent, or around 550 billion euros, will be used to support member states that are severely

affected by the green transition. Only a small number of places are heavily dependent on declining industries, and many more on industries that must transition to low-carbon production. Low-income areas are likely to have more difficulty with this since they frequently have inadequate corporate organizations, low levels of technology, a skilled workforce, and the brain drain. Numerous middle-income regions are dealing with weak development, manufacturing unemployment, and demographic issues due to an aging population. In contrast, more dynamic regions, cities, and metropolitan areas must contend with growing population demands, increased congestion, and the need for more resource- and energy-efficient practices.

The radical plan based on decarbonization of the energy sector seeks to achieve net zero CO₂ emissions by the middle of the century through significant reductions in greenhouse gas emissions. It was unveiled by the European Commission on July 14, 2021, and commits to reducing carbon emissions to 55% of 1990 emissions by 2030 (Commission, 2021). Because the proposal would affect typical consumers, member state governments are looking for alternative ways to resist it in order to avoid upsetting people and imposing additional fees on businesses, households, and car owners. However, playing this game is not simple.

3.4. Sustained funding for developing countries

In recent years, developed nations, including the EU, have started to step up their policy efforts to support the fight against climate change based on a global vision of carbon neutrality. This has resulted in a number of encouraging developments in a short amount of time and demonstrates how the post-Paris Agreement era of global climate governance is being reshaped and innovated. A crucial determinant of whether wealthy countries are accepting international responsibility and carrying out their climate aspirations is the size of climate money. According to the Organization for Economic Co-operation and Development (OECD) in June 2020, using climate finance as an indicator, the total amount of funds provided and mobilized by developed countries for developing countries reached the US\$78.9 billion in 2018, setting a record high. Of this amount, official funds made up US\$62.2 billion, or 78.8%, of the total, representing a record high (OECD, 2020). In 2018, 70% of the cash allocated for climate change was used for mitigation, 21% for adaptation, and 9% for both. The trend in help from industrialized nations is generally on the rise, but it constantly falls short of the US\$100 billion target for 2020.

Additionally, loans make up the majority of climate funding in several affluent nations. An NGO, Oxfam, calculated external official climate finance from 13 developed nations and the European Union in 2017–2018 (\$119 billion over two years), and discovered that loans accounted for 79% of the total (\$94 billion), or \$94 billion, and that half of those loans were not made at preferential interest rates (International, 2020). Climate finance in the form of loans can increase the financial burden on developing nations at a time when many of them already have unmanageable debt loads. It can also result in an uneven distribution of funds between projects that focus on addressing immediate problems and avoiding those that are more long-term in nature.

3.5. Accelerating carbon trading systems and carbon pricing mechanisms

Although the EU ETS has been in operation for 17 years, a change of EU climate policy architecture is necessary to meet the 2030 climate target and the 2050 carbon neutrality target. It will be challenging to establish fully functional ETS (EU Carbon Emissions Trading System) given that political and regulatory reform in each Member State takes between 12 and 18 months. This is because minimizing restrictions on sectoral development while increasing carbon emission reductions, and seeking a fair and equitable transition across Member States and sectors will require a complex and time-consuming process. It will be challenging to establish a fully operational independent ETS by 2025, and it is still important to consider how to speed up the carbon trading system and carbon pricing mechanism.

4. Conclusion

The EU is actively accelerating its development and progress toward carbon neutrality in the context of this

goal, as well as actively attempting to seize control of the global development and governance landscape, furthering the organic integration of resources, the environment, and global politics. At the same time, the EU's carbon neutral pathway has a number of issues that, if not resolved, will negatively impact the global response to climate change and its collective efforts to promote carbon neutrality, deter nations from taking part in governance and bearing the costs of governance, and thwart the realization of the global carbon neutrality process.

References

- [1] A European Green Deal | European Commission (n.d.). Retrieved from https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en
- [2] Elisabeth, D., Piere Ch., Rufus P. and Jonathan G., “Where Does Europe’s Money Go? A Guide to EU Budget Data Sources”, July 14, 2015, [https://community.openspending.org/resources/eu/\[2020-04-05\]](https://community.openspending.org/resources/eu/[2020-04-05]).
- [3] Energy&Climate Intelligence Unit. Net Zero Scorecard[EB/OL]. <https://zerotracker.net>.
- [4] European Commission. Delivering the European Green Deal. (2021-07-14)[2021-09-20]. https://ec.europa.eu/clima/news/delivering-european-green-deal_en.
- [5] Industriall, “Just Transition Mechanism: off to a Good Start But Our Expectations Are High”, January 14, 2020, [https://news.industriall-europe.eu/Article/408\[2020-09-18\]](https://news.industriall-europe.eu/Article/408[2020-09-18]).
- [6] IPCC. Special Report on Global Warming of 1.5°C. Cambridge: Cambridge University Press, 2018.
- [7] IPCC. The fifth assessment report of the intergovernmental panel on climate change. Cambridge: Cambridge University Press, 2013.
- [8] IPCC. The sixth assessment report of the intergovernmental panel on climate change. Cambridge: Cambridge Press, 2021.
- [9] Kevin, K., “EU Budget 2021-2027: Europe’s Future Sacrificed to the Status Quo?”, Deutsche Bank Research, February 25, 2020, https://www.dbresearch.com/servlet/reweb2.ReWEB?rwsite=RPS_EN-PROD&rwobj=
- [10] OECD. Climate finance for developing countries rose to USD 78.9 billion in 2018[EB/OL]. (2020-11-06)[2021-08-01].
- [11] <https://www.oecd.org/newsroom/climate-finance-for-developing-countries-rose-to-usd-78-9-billion-in-2018oecd.htm>.
- [12] OXFAM International. Climate finance shadow report 2020 [R/OL]. (2020-10-20)[2021-08-01].<https://www.oxfam.org/en/research/climate-finance-shadow-report-2020/>.
- [13] ReDisplay.Start.class&document=PROD000000000505255[2020-09-26].
- [14] UNFCCC. Paris Agreement. (2015-12-12)[2022-04-22]https://unfccc.int/sites/default/files/english_paris_agreement.pdf
- [15] United Nations Office for Disaster Risk Reduction. The Human Cost of Disasters: an Overview of the Last 20 Years (2000-2019)[R]. Geneva: 2020.