Scientia Moralitas International Journal of Multidisciplinary Research
ISSN 2472-5331 (Print) | ISSN 2472-5358 (Online) | Vol. 9, No. 1, 2024
DOI: 10.5281/zenodo.12801175

Policies to Facilitate the Global Energy Transition

Alexandru Petrea
PhD Student, Doctoral School of the "Alexandru cel Bun" Military Academy, Chisinău, Republic of Moldova
pcalex71@gmail.com

ABSTRACT: The transition to a green and sustainable economy requires a combination of well-thought-out industrial policy, significant investment and a strong commitment to social justice. Recognizing these imperatives, G7 leaders have taken on these challenges and set out an ambitious plan to ensure that no one is left behind in this crucial transition for the future of our planet. As G7 policies are implemented, emerging differences will be resolved through dialogue, cooperation, coordination and collaboration with international partners to support global decarbonization efforts. At the recent Group of Seven (G7) summit, world leaders recognized that achieving the goals of the Paris Agreement requires concrete and coordinated actions to facilitate the global energy transition. They emphasized that this process will require significant incentives and innovative industrial policies, along with substantial investments from public and private sources. Moreover, the G7 decided at this meeting that together, they will develop policies and practices that promote global trade and investment designed to maximize the use of clean energy and jobs for all states. Also, at EU level, measures such as green trade agreements and international partnerships are essential to reduce emissions and prevent carbon leakage, while ensuring a fair and sustainable transition for all parties involved.

KEYWORDS: energy transition, policies and practices regarding green energy

Introduction

At the recent Group of Seven (G7) summit, world leaders stressed the importance of taking decisive action to facilitate the global energy transition. Their goals are ambitious: tripling renewable energy capacity by 2030 and achieving climate neutrality by 2050. To achieve these goals, it is essential to implement effective industrial policies and mobilize significant investment, both from public and private sources. One of the key points discussed was the importance of filling investment gaps. The G7 recognized the need to lower the cost of the global energy transition to make clean energy technologies more affordable for all nations. This will be achieved through regulations and investments that will support the development and adoption of these technologies. One of the main considerations was the need to

create incentives to make clean energy technologies more affordable. These incentives may include subsidies, tax breaks and other financial measures to encourage large-scale adoption of these technologies. It also emphasized the importance of coordination and transparency in national policies to avoid harmful competition and maximize the global impact of these efforts.

One of the main issues discussed was the need to create incentives to make clean energy technologies more affordable. These incentives may include subsidies, tax breaks and other financial measures to encourage large-scale adoption of these technologies. It also emphasized the importance of coordination and transparency in national policies to avoid harmful competition and maximize the global impact of these efforts. In addition to incentives, G7 leaders stressed the need for significant public and private investment to support the infrastructure needed for the energy transition, such as smart grids and energy storage capabilities. It is essential to create a favorable environment for attracting private capital, reducing risks for investors and promoting viable projects that attract financing.

Another crucial point was the accessibility of clean technologies. Reducing the costs associated with these technologies is vital to making them available globally. Technological innovation and economies of scale play an important role in this, facilitating the widespread adoption of renewable energy solutions. The G7 placed a special emphasis on social justice in the energy transition process. It is essential that this transition be fair and equitable, protecting jobs and creating new economic opportunities in emerging clean energy sectors. Education and reskilling of the workforce are also priorities to facilitate the transition of workers from traditional to renewable energy sectors.

G7 leaders act and improve cooperation to tackle the climate crisis and accelerate the global transition to clean energy to reach net zero emissions by 2050 at the latest, and reaffirm their unwavering commitment to the Paris Agreement at their latest meeting. I also recognize that public and private investment in the industries of the future, both at home and around the world, will be needed to achieve the proposed goals and that further cooperation is needed to fill the investment gap for the clean energy transition and to reduce the cost of the global energy transition. Furthermore, following the meeting, they decide that trade policies play a major role in achieving common goals and that these must be based on a shared commitment to strengthen the rules-based, fair and transparent multilateral trading system with the World Trade Organization (WTO).

This calls for a comprehensive reform and strengthening of the global trading system so that it can respond effectively to the most pressing issues of our time, including sustainable development and the clean energy transition. G7 leaders see these views as the cornerstone of a just transition to a clean energy economy that delivers sustainable growth and high-quality jobs. In this context, we emphasize the importance of building secure, resilient, affordable and sustainable clean energy

supply chains and strong industrial bases that reduce unjustified strategic dependencies and benefit local workers and communities around the world.

Also, clean energy technologies have a special role in achieving these goals. However, it should be noted that in order to reach the common goal of zero emissions by 2050 at the latest, there are different paths depending on the energy situation of each country, the industrial and social structures as well as the specific geographical conditions.

Research methods and tools

The scientific research methodology assumed the specification of the research purpose and objectives, both for the study of the regulations developed internally and externally, as well as for the study of the directions and ways of action for the implementation of the new policies related to green energy. As a result, the research methods used were varied and included:

- ***bibliographic documentation*** by carrying out an in-depth analysis of data and information acquired through the study of legislation in the field of climate change and the economic transition that green energy;

- ***the qualitative research method*** by which the information necessary to carry out the field research was collected using observation (participative or non-participative);

- ***the cognitive-structural method*** that provided the framework necessary to optimize the conclusions by structuring information, analyzing the semantics and terminology used in the field of energy transition.

Reduction of emissions through commercial policies

G7 leaders recognize that trade policies are critical to combating climate change and can boost sustainable growth, and are proposing trade policies that promote decarbonization and lower emissions. An important aspect is that markets take into account emissions embedded in traded goods and not lower environmental standards to gain unfair competitive advantages. Although the G7 countries share common goals, their climate policies may vary, including different carbon pricing mechanisms, regulations and incentives. As a result, intensive collaboration is needed to develop the necessary data and tools, such as information on emissions embedded in supply chains. There is a risk that differences in the level of ambition in climate policies will lead to "carbon leakage" (the transfer of production to countries with less stringent regulations) so international collaboration is essential to address this risk.

Within the European Union (EU), trade policies are essential to achieving decarbonization targets and combating climate change. Trade plays a crucial role in promoting clean technologies and sustainable practices. The EU, one of the world's biggest trading players, uses its influence to encourage high environmental standards

and avoid "carbon leakage", i.e. the transfer of production to countries with less stringent regulations.

The key measures we identify consist, first of all, in the initiation of the Carbon Border Adjustment Mechanism (CBAM) with the aim of preventing "carbon leakage" by imposing a tax on carbon emissions for goods imported from countries with better climate policies a little strict. The impact of using this tool is that imported products comply with the same emission standards as those produced in the EU, thus promoting fair competition and the reduction of global emissions.

Secondly, we mention green trade agreements by integrating environmental clauses dedicated to sustainable development and the environment, which oblige trading partners to comply with strict ecological standards. An edifying example of this is the EU-Japan Agreement, which includes commitments on the Paris Agreement and measures to promote clean technologies.

Thirdly, promoting renewable energy at EU level through the trade of renewable energy technologies and energy efficiency, facilitating the global transition to cleaner energy sources.

International Cooperation initiatives realized in partnerships with developing countries to support them in the transition to low-carbon economies, providing technical and financial assistance.

A careful analysis of the problem identifies challenges that require adapted measures. Thus, the divergence of climate policies resulting from differences in the climate ambitions of different countries can create challenges in the implementation of common trade policies. An effective solution could be intensive collaboration within international organizations, such as the WTO and OECD, to develop common standards and tools for measuring embedded emissions. Also, the resistance to change similar to each system, which manifests itself in the fact that partner countries may perceive the EU's strict trade policies as trade barriers. The solution also lies in continuous dialogue and negotiations to emphasize the long-term benefits of the green transition and for their cooperation.

The Economic Impact is an extremely important effect that derives from the increase in production costs resulting from the implementation of environmental regulations. Of course, the major benefits of developing and implementing these policies are also identified. In the long term, these measures can stimulate innovation and increased investment in clean technologies, leading to a more sustainable and competitive economy. Also, job creation in the renewable energy and green technology sectors.

We finally appreciate that at the EU level it is a proactive approach in aligning trade policies with climate objectives, using trade as a tool to promote decarbonization and sustainable development.

The impact of incentives

The G7 Clean Energy Economy Action Plan underscores the commitment of the world's largest economies to support a just global energy transition that leaves no one behind. This means that policies and investments will be geared to benefit all workers and communities, ensuring that no one is disadvantaged in this transition process (The White House 2023).

Achieving the goals of the Paris Agreement requires significant incentives, industrial policies alongside public and private investment. It is worth noting that the G7 states that the transition to clean energy will require filling investment gaps to reduce the cost of the energy transition globally and that they will ensure that the regulations and investments of the world's largest economies (G7 Clean Energy Economy Action Plan) they will make clean energy technologies more accessible to all nations and contribute to a global energy transition that is just for workers and communities and leaves no one behind.

Policy coordination is another crucial issue discussed at the G7 meeting. Leaders emphasized the need for policies to be designed to maximize the deployment of clean energy technologies and practices. This includes promoting fair and free trade and maintaining a level playing field globally. In this way, all economies can benefit from the energy transition, and the positive effects will spread evenly globally (The White House 2023).

The G7 committed to working together to achieve the goals of the Paris Agreement, recognizing that there are various paths to net zero emissions depending on each country's energy situation and socio-economic structures. It also highlighted the need for new incentives, industrial policies and significant investments to make clean energy technologies more accessible and ensure a just transition that leaves no one behind, and recognized the important role of trade policies in reducing emissions and in promoting sustainable growth, including through the use of carbon pricing mechanisms and other regulations.

Building Resilient Supply Chains focuses on increasing investment in clean energy supply chains and diversifying them to reduce strategic dependencies and ensure they are secure, resilient, affordable and sustainable.

Another hotly debated point was that the G7 pledged to promote research and widespread use of clean energy technologies and to collaborate on the development of international standards for critical minerals markets and support for global partners. In this sense the G7 reaffirmed its commitment to support countries around the world in their transition to clean economies, including through partnerships and financing for the development of clean energy infrastructure in such a way as to facilitate a global, sustainable and equitable energy transition, supporting both advanced economies, as well as those under development.

The COVID-19 pandemic and the global energy crisis have exposed significant vulnerabilities in global supply chains, significantly affecting economies

worldwide. In this context, G7 leaders reaffirmed at their last meeting their commitment to building resilient and sustainable supply chains for clean energy, recognizing the importance of investment and diversification to reduce strategic dependencies. In the implementation of this objective, the main aspects discussed consist, first of all, in increasing investments. Of course, it is essential to increase overall investment in the supply chain for clean energy production to grow at the rate proposed. Accelerating the development and deployment of relevant technologies is a major objective to address current vulnerabilities. To underline the importance of analyzing vulnerabilities and testing the resilience of these chains the International Energy Agency (IEA) will track and report on progress in the clean energy supply chain.

The diversification of supply chains consists in the fact that investments must be expanded globally for the manufacture and installation of clean energy technologies, ensuring safe, resilient, accessible and sustainable supply chains, avoiding the dependencies resulting from the geographical concentration of these chains. We appreciate the need to support the creation of local value in supply chains, but especially in the supply of critical minerals, in their processing and refining, so that they become robust, responsible and transparent.

International cooperation is crucial for aligning supply chains to recognized standards of responsible business conduct. Establishing partnerships with low- and middle-income countries is vital to building clean energy supply chains. These partnerships will catalyze public and private financing for climate and energy security investments, supporting the diversification of supply chains and achieving clean energy transition goals.

Conclusions

The transition to a more sustainable, low-carbon future is accelerating. The energy transition is driven by the progressive replacement of carbon-emitting fuels with renewable resources and clean air regulations and the direct and indirect electrification of many applications.

By nature of its uniform distribution, ***renewable energy overturns the traditional energy supply model***. Electricity no longer flows in one direction from the utility provider that generates it to those who consume it. The new energy ecosystem comprises a complex network of "prosumers": individual consumers and companies that produce their own energy locally, use what is needed and, in many cases, want to re-inject the excess into the grid. Also, the electrification of transport, residential systems and industrial processes will cause important increases in electricity demand in the coming decades. Data centers, offices, factories and similar locations can participate in this transition, through battery systems, thermal energy storage systems, but also through uninterruptible power supply systems that interact with the grid. This process will give rise to large bidirectional electricity flows, which will require a grid that has the flexibility to cope with volatility and

growing demand. For all this, the direct support of governments is necessary, through policies and regulations but also for the development of research activities to reduce the costs of new green energy sources, such as clean hydrogen.

Companies and individual consumers are getting involved in cleaner energy initiatives. Active electricity generation from renewable resources by companies reached 465 terawatt-hours (TWh), while production for individual consumption reached 165 TWh (IRENA2018). From the point of view of individual consumers, the rates for electric vehicle charging technology continue to decrease and the number of charging stations is constantly increasing.

Reducing grid dependency demonstrates that more and more households, businesses and communities are becoming independent energy producers that rely less on the utility grid. They generate, store and consume their own energy through solar systems, wind turbines, micro-grids and battery storage systems, all based on renewable sources. In addition, it creates a two-way flow that changes the energy management paradigm and reduces the impact of sudden power interruptions caused by power outages, cyber-attacks and extreme weather conditions.

Moreover, ***digital innovation*** can be used to make smarter energy management decisions among individual consumers or companies. It's about turning data from appliances, equipment or processes into actionable information that helps consumers and businesses streamline, maximize uptime and manage their energy footprint. Changing energy demand will impact infrastructure investments, and understanding this impact will be critical to choosing flexible systems that can seamlessly integrate different EV assets and infrastructure. Electric power systems, electric vehicle manufacturers and charging infrastructure providers can better understand how to use energy to maximize efficiency and reduce operational costs for beneficiaries.

References

IRENA. 2018. Cererea de surse regenerabile în rândul companiilor: Tendințele de pe piață și din industrie. [Business demand for renewables: Market and industry trends]. Available at https://irena.org/-/media/Files/IRENA/ Agency/Publication/2018/May/IRENA_Corporate_sourcing_2018.pdf.

The White House. 2023. "G7 Clean Energy Economy Action Plan." May, 20, 2023, https://www.whitehouse.gov/briefing-room/statements-releases/2023/05/20/g7-clean-energy-economy-action-plan/.