

Vietnam's Response to a Call for a Renewable Energy Revolution in the Context of Trade Integration: What Could be Learnt from the EU?

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Abstract: The use of renewable energy, for many economies around the world, is considered a key pillar in creating the foundation to pave the way to green growth and sustainable economic development, to adapt to climate change. Not only has it been affirmed recently during regional and global meetings, but renewable energy development continues to be one of the main concerns reflected in many free trade agreements, typically European Union–Vietnam Free Trade Agreement (EVFTA) concluded by the EU with Vietnam. Under this agreement, member states, including Vietnam, are required to reduce their traditional coal-fired power plants in favor of cleaner or renewable energy sources. This study aims to examine the implementation of the commitment to use renewable energy as the preferred alternative in EVFTA under the principle of *pacta sunt servanda* and the government's responsibility to comply with international treaties. Accordingly, it is necessary to implement suitable solutions to fulfil the mentioned commitment properly as a state member. By using the analysis and synthesis method, this article focuses on studying the provisions of the EVFTA, current Vietnamese law, the EU's policies, and regulations, as well as the laws of some EU countries on renewable energy development. This study, by using a comparative method, indicates compatibility between the EU's policies and regulations and the laws of some EU countries. Similarly, it compares and evaluates relevant mechanisms and policies between Vietnamese law and the laws of some EU countries. As a result, some recommendations are proposed to improve the effective implementation in encouraging the growth of renewable energy in Vietnam, towards building a green and environmentally friendly economy.

Keywords: renewable energy, EVFTA, EU, Vietnam, green growth

JEL: K32, K33, Q01, Q48, Q56

1. Introduction

Climate change, as one of the biggest challenges of our times, has been identified as endangering regional and global security as well as the major advancements made by humanity at present and in the future. Recognizing climate change and its severe impacts on human lives, countries, including Vietnam, have been working together to control this global issue by finding solutions to combat climate change in the context of current trade integration. Renewable energy development is one of the measures sought by countries. In addition to actively participating in international treaties on climate change, such as the United Nations Framework Convention on Climate Change (UNFCCC), the Kyoto Protocol, and the Paris Agreement, countries have negotiated and agreed to include provisions related to the fight against climate change as well as the development of renewable energy in free trade agreements.

In tune with the general trend, on June 30, 2019, Vietnam signed a free trade agreement with the European Union (EU). This agreement entered into force on August 1, 2020, with the desire to create a common driving force to promote economic growth as well as sustainable development. In particular, in the field of environmental protection and the fight against climate change, the EVFTA requires members, including Vietnam, to cut down on traditional coal-fired power plants and replace them with clean and renewable energy sources. The requirement for renewable energy development is getting more and more attention as Vietnam has shown its determination through strong commitments at the 26th United Nations Conference on Climate Change (COP26) and recently, COP27. However, at present, the development of renewable energy, especially solar and wind energy, still has many challenges to overcome.

This study conducted an in-depth analysis of Vietnam's response to a call for a renewable energy revolution in the context of trade integration. Accordingly, Vietnam has become a member of the EVFTA, and as a result, Vietnam has to implement commitments to develop renewable energy that are stated in the EVFTA. The primary purpose of this study was to examine the implementation of the commitment to renewable energy development in EVFTA under the principle of *pacta sunt servanda*, and the government's responsibility to comply with international treaties according to the 2013 Vietnam Constitution. Based on the obligations arising from international treaties, Vietnam must comply with all commitments agreed upon as a state member. Consequently, it is crucial to

apply suitable measures to implement these commitments properly, especially the growth of renewable energy, according to the EVFTA.

This paper comprises four parts of the main discussion. The first part presents an overview of renewable energy development under EVFTA by indicating the relation and interaction between the growth of renewable energy, trade integration, and renewable energy provisions in EVFTA. The second part examines whether the EU members, namely Germany and Spain, are doing well in renewable energy development due to being EU members as well as EVFTA's member states. The third part clarifies renewable energy development under Vietnamese law. Finally, some suggestions are provided to ensure the effective implementation of the commitment to develop renewable energy in the EVFTA based on learning from Germany and Spain.

2. Methods

This study used comparative and evaluative methods to analyze and examine the provisions for developing renewable energy in EVFTA, the EU's policies and regulations, German and Spanish legal frameworks, as well as Vietnam's legal system. The authors selected applicable laws, including international treaties and documents, focusing on EVFTA and the EU's policies and regulations, German, Spanish, and Vietnamese laws on renewable energy, and practices on the growth of renewable energy in Germany, Spain, and Vietnam in the context of trade integration, in three steps. First, studying the growth of renewable energy and trade integration. It provided a rationale for assessing the inclusion of provisions related to renewable energy in EVFTA. Second, examining the growth of renewable energy in the EU's policies and regulations as well as in the legal frameworks of some EU members, namely Germany and Spain, by using comparative and empirical methods. Third, with the analyzed method, this study identified the growth of renewable energy within the Vietnamese legal system. It contributed to proposing suggestions to improve Vietnam's legal framework on renewable energy to implement the commitment to develop renewable energy effectively.

3. Overview of Renewable Energy Development under EVFTA

3.1. The Growth of Renewable Energy and Trade Integration

Renewable energy is frequently cited as the most important step the world can take to fend off the worst consequences of climate change. Unlike conventional energy sources, also known as fossil fuels, renewable energies are clean, inexhaustible, and, most importantly, they produce neither greenhouse gases nor any kind of pollution emissions (Acciona Business as Unusual, s.a.). This kind of energy has positive impacts on public health, the environment, and the economy. In terms of public health, renewable energy can basically overcome what fossil fuels do to human health. According to the World Health Organization, more than 13 million people die around the world each year due to avoidable environmental reasons, including air pollution (United Nations, s.a.). The unhealthy level of air is mainly caused by the burning of fossil fuels, mostly coal and natural gas. In 2018, air pollution from fossil fuels caused US\$8 billion a day in health and economic costs (United Nations, s.a.). Thus, switching to renewable energy not only helps tackle the air pollution emitted by fossil fuels, but also improves the quality of human health. In other words, renewable energy is healthier. For the environment, using renewable energy is one of the most important actions to reduce its devastating effects and combat climate change. Producing no greenhouse gas emissions, which is an accelerating agent of climate change, and shifting to renewable sources could reduce the electricity sector's emissions by around 81 percent and bring down yearly greenhouse gas emissions by one-fifth (Union of Concerned Scientists, 2008). Regarding the economic benefits of using renewable energy, in addition to making economic sense by creating a system less prone to market shocks and improving resilience and energy security, more job opportunities are created. According to the International Energy Agency, the transition towards net-zero emissions will lead to an overall increase in energy sector jobs, and a total of more than 30 million jobs could be created in clean energy, efficiency, and low-emission technologies by 2030 (Cozzi and Motherway, 2021). By investing in clean energy, not only individuals but also local governments will benefit, including income taxes and other payments from project owners. In conclusion, renewable energy offers significant benefits ranging from economic to non-economic values, and it is powering a safer future for later generations.

Acknowledging the profound role of renewable energy in the fight against climate change, countries have been working together to boost renewable energy. In addition to discussing and agreeing on international agreements on climate

change that include renewable energy provisions, nations have been striving to incorporate climate change response provisions as well as provisions related to renewable energy into trade agreements. In other words, the relationship between trade and environmental protection is not new and has arisen as a result of recent trade agreements (Amaral and Martes, 2020, p. 389); rather, it has existed since 1970 (World Trade Organization, 1994). In 2009, the World Trade Organization and the United Nations Environment Program released a thorough report on trade and climate change that looked at the intersection between the two topics (World Trade Organization, 2009). This report analyzed the contribution of trade to mitigation and adaptation efforts to address climate change, the effects of trade on climate change, and vice versa (Amaral and Martes, 2021). It can be seen that trade can help fight climate change by speeding up the transmission of clean technologies and giving emerging economies the opportunity to customize these technologies for their own needs. To be more specific, in the context of trade integration, developed countries realize that developing countries desperately need trade incentives for economic development. As a result, these countries include commitments on renewable energy development or environmental protection in trade agreements as a reciprocal exchange to attract the developing countries' attention. Thus, there is a linkage, even if not a close one, between free trade and the environment in general and renewable energy development in particular, as well as an increasing number of trade agreements that incorporate provisions on these topics.

In summary, a correlation exists between the integration of trade and the growth of renewable energy resources. The explicit commitments that have been ratified in recent free trade agreements, such as the EVFTA, serve to underscore the significant interaction between the parties involved.

3.2. Renewable Energy Provisions in EVFTA

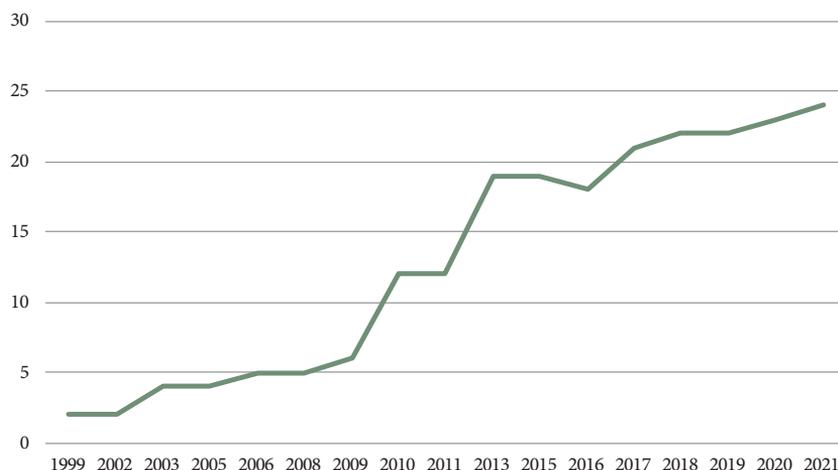
Renewable energy is distinctly mentioned in the two chapters of EVFTA, including Chapter 7 on Non-tariff barriers to trade and investment in renewable energy generation and Chapter 13 on Trade and sustainable development.

In terms of foreign investment, under Art. 7.1, the parties are committed to cooperate towards removing or reducing non-tariff barriers in the generation of energy from renewable and sustainable sources. To concretize this objective, the parties focus on non-discriminatory treatments in general, on local content in

particular, and further on the use of international standards (Delegation of the European Union to Vietnam, 2019). Accordingly, under Art. 7.4(a), a party shall refrain from adopting measures providing for local content requirements (LCRs) or any other offset affecting the other party's products, service suppliers, investors, or enterprises. In fact, LCRs are prohibited because, generally, they directly distort trade and encourage substituting imports with domestic goods, even if those domestic goods are inferior and more expensive than foreign imports, by requiring enterprises to use a minimum level of domestically manufactured goods or domestically supplied services. However, LCRs are recorded as a method that many countries apply due to their positive effects on domestic economies. According to a report published by the Organization for Economic Cooperation and Development, during the period 1999–2015, at least 21 countries planned or implemented LCRs in solar photovoltaics (PV) and wind energy, and these LCRs are commonly referred to as “green” LCRs (Hogan, 2021). Green LCRs are on the rise, as can be seen in Figure 1 below, and Germany has been on the list since 2021 based on the introduction of the Renewable Energy Act (Hogan, 2021). Germany obviously applies LCRs as of 2021, even though the obligation to refrain from adopting measures providing for LCRs officially binds the member states as of August 2020. This shows that Germany has invoked the exception to the above obligation when LCRs could be applied if there is no effect on the other party's products, service suppliers, investors, or enterprises. Thus, it can be seen that Art. 7.4(a) still opens the possibility of applying LCRs to create opportunities for member economies of the EVFTA to promote and encourage domestic production without violating these agreements' commitments.

In addition, Art. 7.4(b) EVFTA also requires that a party shall refrain from adopting measures requiring the formation of partnerships with local companies unless they are needed for technical reasons. This means requirements were establishing or operating a legal entity or partner under domestic law with a local company or entering into a contractual business partnership with a local company are not allowed. These requirements may increase the rate of return for domestic investors, maintain and strengthen control over foreign investors, or facilitate technology transfer through access to and collection of know-how from foreign investors. Moreover, under Art. 7.4(c), it is required to be objective, transparent, non-arbitrary, and non-discriminatory in any measures concerning the authorization, certification, and licensing procedures. These requirements aim to attract the attention of investors and build their trust while investing in projects related to renewable energies.

Figure 1. Number of countries that activated green LCRs during the period 1999–2021



Source: OECD, 2015.

For the effective implementation of removing or reducing non-tariff barriers to trade and investment in renewable energy generation, obligations on cooperation and information exchange are imposed. Being a provision on implementation and cooperation, nevertheless, Art. 7.7 does not set out a specific sanction for the party that violates any commitments in Chapter 7. It only transfers the obligations to the parties and sets up the supervision of the specialized committees and the Trade Committee. It can be seen that within the provisions on non-tariff barriers to trade and investment in renewable energy generation, there are no provisions referring to Chapter 15 on Dispute Settlement or Annex 15-C on Mediation Mechanism. Therefore, under EVFTA, if a party violated any provision related to non-tariff barriers to trade and investment in renewable energy generation, that party would not confront any serious legal consequences, such as the initiation of the arbitration procedure. Following this, due to not having any legal consequences in the case of violations, it is understandable when there is fear that parties may postpone implementing commitments under the EVFTA, including reducing or removing non-tariff barriers to trade and investment in renewable energy generation.

In relation to sustainable development, according to Art. 13.6, renewable energy is regulated as a measure to address the urgent threat of climate change. This kind of energy is clearly a great solution in the fight against climate change due to the fact

that it does not emit greenhouse gases, which contribute to global warming, and is not naturally replenished and does not run out. Under Art. 13.6.2(c) of EVFTA, the EU and Vietnam jointly recognize the obligation to conduct consultations as well as information and experience exchange in priority areas or areas of mutual interest, including renewable energy development. This obligation comes from the UNFCCC's membership as well as other international instruments related to climate change, such as the Kyoto Protocol and the Paris Agreement. Obviously, EVFTA does not introduce any new regulations or solutions but only reaffirms the commitments previously proposed in these international treaties. For instance, Art. 2(1)(a)(iv) of the Kyoto Protocol insists that each party, to promote sustainable development, shall implement measures including research on, promotion of, and increased use of new and renewable energy. Thus, it could be concluded that the development of renewable energy is quite generically regulated in EVFTA. In other words, in EVFTA, with its nature as a trade agreement, commercial aspects will take precedence over environmental regulations in general, or renewable energy development in particular. As a result, to obtain a comprehensive understanding of their obligations concerning renewable energy, it is crucial for the member states to refer to international treaties mentioned in Chapter 13 of the EVFTA.

Regarding monitoring mechanisms, the EVFTA provides for the establishment of domestic advisory groups (DAGs). Consisting of social partners and civil society organizations, DAGs are established to encourage the participation of the public and the different sectors of society in the promotion of sustainable development by ensuring a balanced representation from three main groups, namely employers, workers, and third sectors or non-governmental organizations (European Economic and Social Committee, s.a.). Since 2011, every free trade agreement signed by the EU with a partner country or group of countries has created an EU DAG and a DAG for the counterpart to the agreement (European Economic and Social Committee, s.a.). Thus, up to now, there are 12 EU DAGs corresponding to 12 DAGs, as can be seen in Figure 2 below.

According to the EVFTA, these groups may, on their own initiative, submit views or recommendations. This means that the DAGs, though they may not have an official supervision right, yet they are entitled to observe the implementation of Chapter 13, including renewable-energy-related provisions, putting a certain amount of pressure on the parties. Besides, Art. 13.15(3) of the EVFTA also establishes the Committee on Trade and Sustainable Development, which is entitled to review, if necessary, the implementation of Chapter 13 in general, and the renewable energy commitments in particular. These mechanisms, namely DAGs

Figure 2: Current existing DAGs in agreements signed by the EU with a partner country or group of countries

EU DAG	Total members	EESC	Permanent observers
Canada	23	6	3
Cariforum	13	3	
Central America	16	3	
Columbia Peru Ecuador	20	3	
Georgia	9	3	
Japan	14	3	
Moldova	9	3	
Singapore	14	3	
South Korea	19	3	
UK	30	6	30
Ukraine	14	3	
Vietnam	21	3	

Source: European Economic and Social Committee, s.a.

and the Committee on Trade and Sustainable Development, with the functions mentioned above, such as proposing recommendations and reviewing the implementation, are expected to put a lot of pressure on parties to effectively implement regulations on climate change, including the development of renewable energy. In other words, these mechanisms are predicted to prompt member states to prepare sufficient plans to meet the demands listed for renewable energy development.

Notably, in the event of disagreement on any matter covered under Chapter 13, the parties shall only have recourse to the procedures established under Art. 13.16 and Art. 13.17 of the EVFTA. And Chapter 15 on Dispute Settlement and its Annex 15-C on Mediation Mechanism do not apply to these situations. This means no specific sanctions can be applied, and the EVFTA pursues a separate mechanism to promote the effective implementation of renewable energy commitments. Accordingly, the parties will have recourse to the specific procedures, including government consultations and a panel of experts. In other words, similar to Chapter 7, the violation of the provisions on renewable energy does not basically cause a party to face any serious legal consequences. However, the implementation of renewable energy-related provisions can be guaranteed due to the activeness of member states. The EVFTA, like other free trade agreements, brings a lot of economic and trade benefits to the participating countries, especially enhanced trade and investment opportunities that contribute to the economic growth of developing economies. And these benefits can only be achieved if member states comply with the non-commercial commitments mentioned in

the agreements. As a result, renewable energy development will be focused on due to mutual trade interests and benefits.

4. Renewable Energy Development in the EU: Are its Members Doing Well?

4.1. The EU's Policies and Regulations on Renewable Energy

Europe has an abundance of renewable energy sources, and its member states have, in recent years, become leaders in driving the deployment of renewable technologies. Efforts to increase the sustainability of energy systems in Europe are ongoing, with a legal framework that has been built, is being implemented, and continues to be perfected. The European Commission (EC) has provided a history of renewable energy in the EU through significant events that influenced the development of renewable energy sources in this area (Figure 3).

Figure 3: Timeline for renewable energy in the EU

2023	Provisional agreement to raise 2030 target to at least 42.5%, aiming for 45%
2022	REPowerEU Plan: EC proposal to raise target for 2030 to 45%
2021	Renewable Energy Directive: EC proposal to raise target for 2030 to 40%
2019	EU power production from wind and solar surpass coal for the first time
2018	Revised Renewable Energy Directive: 32% renewables target for 2030
2014	Onshore wind is cheaper than coal, gas, and nuclear energy
2009	Renewable Energy Directive: EU target of 20% renewables by 2020 and national binding targets
2008	Olmedilla Photovoltaic park (Spain) – largest power plant (60MW) in the world – generates enough to power 40 000 homes/year
2003	Directive on biofuels and renewable fuels for transport: national targets for biofuels
2001	Directive on electricity production from renewables: national indicative targets
2000	First large-scale offshore wind farm (Denmark)
1997	Energy for the future: renewable sources of energy: indicative EU target of 12% renewables by 2010
1991	Germany introduces first feed-in-tariff for renewables

Source: European Commission, s.a.

The timeline for renewable energy in the EU's legal framework started with the event in 1991 when Germany introduced the first feed-in tariff for renewables. An Electricity Feed-in Law was introduced to assist producers of electricity from small hydro stations and wind energy installations (European Commission, s.a.). Although it was not successful in the promotion of bioenergy and geothermal energy and was replaced by the Renewable Energy Sources Act in 2000, the Electricity Feed-in Law was considered one of the first support mechanisms for renewable energy (Futurepolicy.org, 2016).

Realizing the importance of renewable energy, the EU started setting up a specific legal framework for this kind of energy. The first step in this direction was the EC's 1997 white paper on renewable sources of energy. Accordingly, Part 1.3.1 sets a target of 12 percent for the contribution of renewable sources of energy to the EU's gross inland energy consumption by 2010. This overall EU target implies that member states had to encourage the increase of renewable energy sources according to their potential, and they should define their own strategy and within it propose their own contribution to the overall 2010 target. In 2001, the EC adopted Directive 2001/77/EC on the promotion of electricity produced from renewable energy sources in the internal electricity market. The Directive established two targets for the use of renewable energy sources in the energy sector, including that by 2010, 12 percent of gross domestic energy consumption had to be satisfied by renewable energy sources, and for electricity, the goal was set at 22.1 percent. Under the Annex of this Directive, each member state received an indicative target that, combined with that of all the other member states, would have enabled the EU to reach the overall community target (Directive 2001/77/EC, 2001). Although national targets were not binding, member states were expected to provide detailed justification in the event of failure to meet them. With the 2004 enlargement, the 22.1 percent target set initially for electricity was reduced to 21 percent (EUR-Lex, 2011).

In the face of the increasing threat posed by climate change and the urgency to ensure the security of supply, the EC adopted the Renewable Energy Directive 2009/28/EC (RED I). According to Art. 3.1 of RED I, the EU-wide target of renewable energy sources sharing 20 percent of gross final energy consumption by 2020 was set. This target was then allocated to individual member states by means of binding and differentiated national targets. Art. 21.1 of RED I also set a 10 percent target for the share of biofuels in transport gasoline and diesel consumption by 2020. Nine years later, the Renewable Energy Directive 2018/2001 (RED II) was adopted after intense political negotiations, aimed at keeping the EU a global leader in renewables and, more broadly, helping it meet its emissions reduction commitments under the Paris Agreement. RED II, herein Art. 3.1 establishes a new binding renewable energy target for the EU for 2030, moving upwards to 32 percent of final energy consumption instead of the initial 27 percent. Further, Art. 25.1 sets a 14 percent minimum target for renewable energy in the final energy consumption in the transport sector by 2030.

In July 2021, the Commission proposed another revision to accelerate renewable energy adoption in the EU, and to promote achieving the 2030 energy and climate

goals with an increased 40 percent target. After that, this target of increasing to 45 percent by 2030 was proposed in May 2022. The revision of the directive also introduces new measures to complement the already existing building blocks established by the 2009 and 2018 directives to ensure that all potentials for the development of renewable energy are optimally exploited which is a necessary condition to achieve the EU's objective of climate neutrality by 2050 (European Commission, s.a.).

Recently, a provisional political agreement was concluded to raise the share of renewable energy in the EU's overall energy consumption to 42.5 percent by 2030 with an additional 2.5 percent indicative top-up that would allow it to reach 45 percent. Each member state will contribute to this common target (Council of the European Union, 2023).

As can be seen, the EU's policy includes setting time-bound goals for the proportion of renewable energy, which aids member states in pursuing appropriate orientations and strategies to support the EU's achievement of its goal. The directives released by the EU also demonstrate the sectors on which the EU wishes to concentrate in order to improve the efficiency of using renewable energy sources and decrease the usage of conventional energy sources, namely in the transportation sector. The target for the proportion of renewable energy by 2030 has been adjusted to 32 percent, 40 percent, and 45 percent in 2018, 2021, and 2022, respectively. This demonstrates that the strategies the EU is using to promote renewable energy are appropriate. In other words, the EU's policies and orientations have facilitated the member states in achieving their own targets, making progress towards achieving the predetermined targets for renewable energy development in the region.

To sum up, the promotion of renewable energy sources is a long-term strategy of the EU, and the EU has adopted a series of specific targets over the years to foster it. Achieving this goal requires the efforts of all the member states with policies and laws appropriate to their circumstances.

4.2. Some Leading Countries' Legal Frameworks in Promoting Renewable Energy

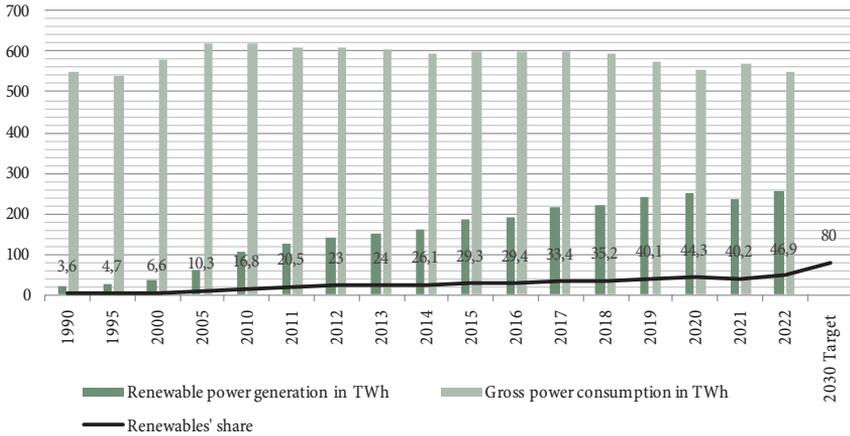
4.2.1. Germany

Germany is recorded as a world leader in its level of renewable energy deployment. Thanks to a long-term renewable energy policy that dates back to the 1970s (International Renewable Energy Agency, 2015) and the wave of protests against nuclear power in the 1980s (Appunn, 2021), this country is spearheading a transition to renewable energy. Up until now, in the energy transition with a focus on renewable energy, Germany has issued many regulations and policies to regulate and promote the development of this type of energy.

In terms of laws and regulations, some notable documents could be listed, including the Renewable Energy Sources Act (EEG), the Power Grid Expansion Act (EnLAG), the Grid Expansion Acceleration Act (NABEG), the Offshore Wind Energy Act (WindSeeG), and the Law on the reduction and termination of coal-fired power generation and the amendment of further laws (Kohleausstiegsgesetz).

Germany sets clear goals with a roadmap for each period and specifies any factors in the development of renewable energy by promulgating and amending laws mentioned above. For instance, EEG 2014, as well as EEG 2017 and 2021 stipulate that the share of electricity produced from renewable energy sources in gross electricity consumption shall increase to 40–45 percent by 2025, 55–60 percent by 2035, and at least 80 percent by 2050. However, the Easter Package, which was just released on April 7, 2022, altered the aim for the share of renewables in power consumption, requiring at least 80 percent to be reached by 2030 (Figure 4). This change is completely reasonable, and the new goal is likely to be met when, as can be seen in Figure 4, this share is 46.9 percent in 2022, rather than 40–45 percent by 2025 as stated in EEG 2021. Especially, EEG 2023 states that the use of renewable energies is of overriding public interest. This is to say that renewable energy will be given priority over other concerns of the German government until greenhouse gas neutrality is achieved.

Figure 4: Renewables' share in gross power consumption in Germany over the period 1990–2022

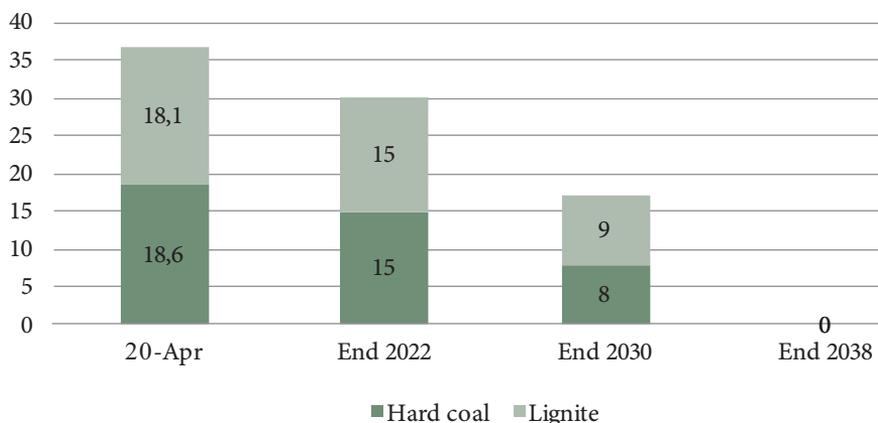


Source: Appunn, Haas, and Wettengel, 2023.

According to the Kohleausstiegsgesetz, coal-fired power plants can only produce 30 gigawatts (GW) of electricity by 2022, 17 GW by 2030, and 0 GW at the latest by 2038 (Figure 5). In other words, Germany will completely stop using coal power by 2038. This is a crucial objective to increase the amount of electricity generated from renewable energy sources, focusing on solar and wind power. To be more specific, the government wants to increase installed solar capacity worldwide from 60 GW in 2021 to 215 GW by 2030 which requires the annual deployment of 22 GW of new capacity (Ivanova, 2022). This goal represents Germany's effort to wean their country off of Russian fossil fuels (Ivanova, 2022), and according to Germany, it has been accomplished (TASS, 2022). In the matter of wind power, Germany will have approximately 115 GW of wind turbines by 2030 if onshore wind development reaches 10 GW per year (Appunn and Wettengel, 2022). Each state in Germany must reserve a minimum amount of land for the construction of wind turbines to enable the expansion of new capacity, resulting in a total of 2 percent of Germany's land area being made available for wind energy, more than twice the area authorized (Ivanova, 2022). By 2030 and 2040 the installed capacity of offshore wind energy facilities will reach 20 GW and 40 GW, respectively, under Wind SeeG (Climate Change Laws of the World, 2017). However, these goals are adjusted based on the Kohleausstiegsgesetz, namely 30 GW by 2030, 40 GW by 2035, and at least 70 GW by 2045 (Ivanova, 2022). Furthermore, EnLAG and NABEG serve as the foundation for the effective, transparent, and ecological

expansion of the transmission grid concerning interstate and international very-high-voltage lines.

Figure 5: Shutdown plan of German coal-fired power plants until 2038



Source: Göß, 2020.

Germany has demonstrated a clear emphasis on the development of renewable energy through the establishment of specific objectives and policies that have been formalized into legal regulations in various laws, all in pursuit of a green energy economy. The ongoing revisions to EEG have demonstrated Germany's efforts in the energy transition. The EEG 2014 witnessed a transition from the fixed feed-in tariff system to an auction mechanism for determining the support levels allocated to renewable energy projects. In addition to the auction mechanism, the EEG 2014 also implemented a surcharge framework aimed at financing support payments for renewable energy projects. EEG 2017 was enacted to facilitate grid connectivity and priority coordination, while EEG 2021 has eliminated the surcharge mechanism, resulting in cost savings for German citizens in their annual expenditure. Based on statistical data, it can be observed that EEG 2017 underwent 13 amendments from its enactment in 2017 up until the implementation of EEG 2021 (CMS, 2020). The Easter Package and the Kohleausstiegsgesetz exemplified the adaptability and timeliness of the German legal framework concerning renewable energy, thereby contributing to Germany's progress towards achieving carbon neutrality by 2050.

4.2.2. Spain

Spain is one of the bright spots in renewable energy. According to a report by the International Renewable Energy Agency, in 2021 Spain ranked fifth in the world and second in the EU, after Germany, in terms of the total capacity of renewable energy. This country has an advantage in energy supply as it has been promoting many other clean energy sources, including wind power and solar cells.

Spain has issued a diverse range of legal instruments, such as laws, royal decrees, royal decrees, orders, and resolutions, in relation to renewable energy. The variety in the types of legal documents pertaining to renewable energy in Spain is indicative of the Spanish government's keen focus and investment in this domain. The present text highlights several legal documents that have significantly impacted the progress of renewable energy in Spain. These documents include Law 24/2013 on the electric sector, along with two associated documents, namely Royal Decree-law 15/2018 on urgent measures for energy transition and consumer protection (Royal Decree-law 15/2018) and Royal Decree 244/2019 regulating the administrative, technical, and economic conditions of the self-consumption of electric energy (Royal Decree 244/2019); Royal Decree-law 23/2020 which approves measures in the field of energy and in other areas for economic recovery (Royal Decree-law 23/2020); Law 7/2021 on climate change and energy transition (Law 7/2021); and Royal Decree-law 6/2022 adopting urgent measures as part of the National Plan in response to the economic and social consequences of the war in Ukraine (Royal Decree-law 6/2022).

In Spain, a price regulation system was primarily used to boost the generation of electricity from renewable sources (Jimeno, M., 2019). Law 24/2013, which replaced Law 54/1997 as the sector's governing law, eventually phased out this system. The primary motivation behind Law 24/2013 was to develop a new support program in order to address the unsustainable tariff deficit in the electricity sector (Climate Change Laws of the World, 2013). As a result, traditional energy sources will be pushed to compete with renewable energy sources on the open market. Additionally, the program will help renewable energy sources recoup expenses that they would not have been able to by selling electricity on the open market. Renewable energy sources are given priority for connection and dispatch, particularly with regard to grid access and grid use, provided that they do not constitute a danger to the grid itself. It is clear that whether or not the new energy source is adopted depends on how well-guaranteed its capacity of supply and its quality of transmission are. And because of this, the Spanish government accords projects

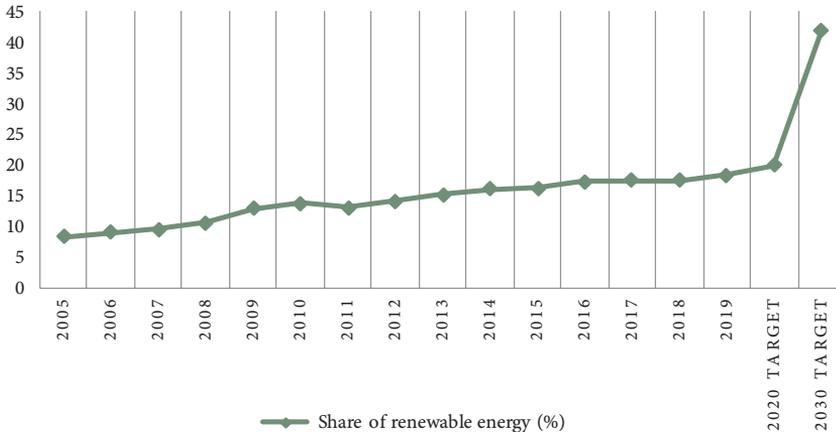
involving renewable energy a special priority in terms of licensing and priority coordination, serving as the foundational basis for the market entry of this newly developed energy source. This demonstrated that the development of renewable energy sources has been encouraging in Spain.

In addition to the introduction of renewable energy sources into the market, there were several noteworthy financial incentives implemented to promote the adoption of renewable energy and energy-saving technologies by both consumers and enterprises. Royal Decree-law 15/2018 (Climate Change Laws of the World, 2018) introduced some measures, such as tax exemptions for energy producers incorporated into the electricity system for six months, energy products used for electricity production in power stations or combined heat and power stations, and self-consumed energy of renewable origin, co-generation, or waste. Furthermore, the Spanish government also promulgated Royal Decree 244/2019 (Climate Change Laws of the World, 2019) to promote the use of energy for self-consumption, with a particular emphasis on renewable energy. Accordingly, collective self-consumption among a group of individuals beyond individual ownership is permitted, and the administrative processes for small-scale producers are simplified. The Spanish government acknowledges that the popularity of renewable energy is contingent upon the dissemination of knowledge and the prioritization of its utilization among the population. Hence, apart from encouraging production, priority is also given to the promotion of utilization. The aforementioned policies have the objective of maintaining equilibrium between the supply and demand of the national energy market, enhancing the consciousness of energy consumers in selecting a sustainable energy source, and aiding in the preservation of energy security and quantity for future generations.

The year 2020 witnessed a significant disruption in the global economy due to the outbreak of the COVID-19 pandemic which also had a profound effect on the economy of Spain and other nations. The Royal Decree-Law 23/2020 was enacted to support the energy transition in the aftermath of COVID-19. This decree-law has set a number of short- and medium-term targets related to the proportion of renewable energy in each period, including that renewable energy production must increase by 2.200 ktep in the period 2020–2022, and by about 3.300 ktep in the period 2022–2025; renewable energy sources should account for 24 percent of the energy mix by 2022, 30 percent by 2025, and 42 percent of the energy mix by 2030 (Figure 6). Furthermore, it covered several significant aspects, including provisions for the development and enhancement of renewable energy. These provisions outline the criteria for managing access to and connection with

the grid which are based on the progress and technical success of projects. To meet this, the governance requirements for licensed and implemented projects are detailed and specific. A new stable and predictable auction mechanism for renewable resources was also introduced in this decree-law, in which the bidding variable is the energy subsidy price, for a cost-effective orientation. Notably, the Royal Decree-law advocates for the promotion of fresh business models within the ambit of energy policy. To encourage new business models, this decree-law has overcome the lack of governance when stipulating methods to build a part of the power system, including storing, combining, synthesizing, and forming the renewable energy community. In addition, the Government of Spain has prescribed a number of additional measures to encourage the development of renewable energy, such as allowing lower-cost transitions for some cases of mobile grid facilities without applying for a license and approving the establishment of electric vehicle charging stations with a capacity of over 250 kW for public interest.

Figure 6: Share of renewable energy of total energy consumption in Spain

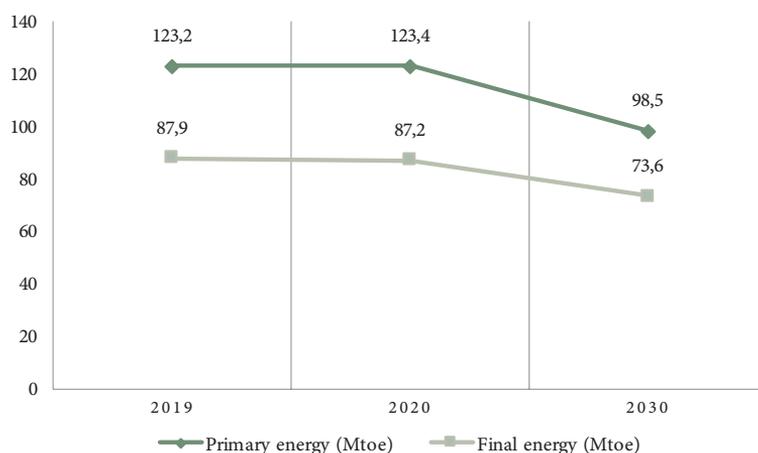


Source: European Parliament, 2021, p. 5.

The first step towards achieving Spain's commitment to climate neutrality at the global and European levels is the passage of Law 7/2021 on May 20, 2021 (Osborne Clarke, 2021). Accordingly, this law was enacted to ensure that Spain complies with the obligations set out in the Paris Agreement on climate change, and to promote Spain's decarbonizing economy by encouraging the application of a circular model, rational use of resources, adaptation to the impacts of climate change, and sustainable development. To achieve these goals, a number of medium- and

long-term targets have been set, including reducing emissions by at least 55 percent by 2030, improving energy efficiency to 39.5 percent compared to the basic level in community regulations which translates into the levels of energy consumption shown in Figure 7, and increasing the share of renewable energy to 74 percent by 2050. In particular, this law abolished new licensing for oil and gas exploration and production activities in Spain, showing the consistency in the policy of promoting and encouraging the development of renewable energy that Spain is pursuing. Similar to Germany, Spain pursues the goal of becoming carbon neutral, or 100 percent renewable energy powered, by 2050. To achieve this goal, fossil fuels, including oil and gas, should be replaced by renewable energies, and the Spanish government demonstrated its determination with the above policy.

Figure 7: Energy efficiency: primary and final energy consumption (Mtoe)



Source: European Parliament, 2021, p. 5.

Europe has historically been dependent on energy imports from Russia, particularly in the form of natural gas. However, the Russo-Ukrainian war has highlighted the vulnerabilities and risks associated with this dependency. As a result, many European countries, including Spain, have been accelerating their efforts to transition to renewable and sustainable energy sources in order to reduce their carbon footprint and enhance energy security. According to Royal Decree-Law 6/2022, some measures were applied, including revised remuneration parameters in the specific remuneration system for electricity generation facilities using renewable energy sources, co-generation, and waste, applying in 2022, and the removal of

the value of adjustment due to deviations from market prices in 2023. By revising remuneration parameters, Spain can provide clearer and more attractive financial incentives for renewable energy projects. This can encourage greater investment in renewable energy infrastructure and technologies, stimulating the growth of the sector. Meanwhile, the move towards market-based pricing for renewable energy promotes efficiency and cost-effectiveness. It allows renewable energy producers to respond to market signals and compete on a level playing field, potentially driving down costs and improving the competitiveness of renewable energy sources. In particular, this Royal Decree-law has introduced measures to accelerate the performance of renewable energy projects to quickly achieve a decarbonizing economy and reduce reliance on traditional energy sources, such as environmental impact assessments, simplifying the approval procedure for renewable energy projects, and constructing floating solar photovoltaic plants (Garrigues, 2022).

5. Renewable Energy Development under Vietnamese Law

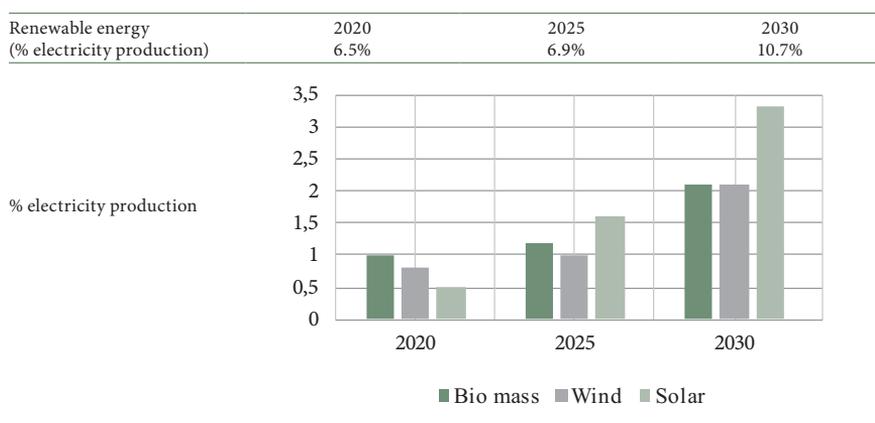
5.1. Common Strategies

The Vietnamese government clearly defines the importance of renewable energy in sustainable development, and the development of renewable energy is an inevitable trend as well as an urgent need that Vietnam shall take into account. In fact, Vietnam affirms its stance on the development of renewable energy through policies, laws, and regulations.

In the field of renewable energy, Vietnam has shown its interest in this field by issuing short-, medium-, and long-term strategies and plans. Notably, in 2007, Vietnam promulgated Vietnam's National Energy Development Strategy up to 2020 with a vision to 2050 in Decision No. 1855/QĐ-TTg, stipulating general principal issues such as perspectives, goals, and development orientation. In 2011, Decision No. 1208/QĐ-TTg, dated July 21, 2011, on the National Master Plan for Power Development in the 2011–2020 period, with considerations to 2030, was issued by the Prime Minister. This plan, also known as the Power Master Plan VII, set the target of developing renewable energy sources for electricity production, increasing the proportion of electricity produced from these sources from 3.5 percent of total electricity produced in 2010 to 4.5 percent in 2020 and 6.0 percent in 2030. This plan was adjusted and promulgated by the Prime Minister according to Decision No. 428/QĐ-TTg dated March 18, 2016. Accordingly, Vietnam continued to increase the proportion of electricity produced from renewable energy sources,

excluding large and medium-sized hydroelectricity and storage hydropower, to reach about 7 percent by 2020 and over 10 percent by 2030 (Figure 8). To further promote the development of this type of energy, Decision No. 2608/QĐ-TTg dated November 25, 2015, approved Vietnam's renewable energy development strategy up to 2030 with an outlook to 2050. This strategy provided views and strategies for renewable energy development, especially various preferential policies such as tax and land incentives or financial support for research related to renewable energy.

Figure 8: Renewables in Vietnam's energy sector



Source: British Business Group Vietnam, s.a.

From the perspective of laws and regulations, the Electricity Law stipulates that the elaboration of electricity development planning must be consistent with the development orientation of primary energy sources for power generation, including new energy sources and renewable energy. The Law on Economical and Efficient Use of Energy stipulates that those strategies, plans, and programs on energy use must raise the proportion of renewable energy use. The Law on Environmental Protection stipulates that renewable energy development is one of the state's policies on environmental protection.

It could be seen that the Vietnamese Government clearly defines the importance of renewable energy in sustainable development and the development of renewable energy is an inevitable trend as well as an urgent need that Vietnam shall take into account. Thus, Vietnam affirms its stance on the development of renewable energy through policies, laws, and regulations.

5.2. Some Specific Prominent Areas

Not only showing its interest in general strategies, but Vietnam also issued regulations in a number of specific and prominent areas.

Regarding the development of solar and wind power, the Government of Vietnam issued a mechanism to encourage the development of these types of energy in some legal documents, such as Decision No.11/2017/QĐ-TTg dated April 11, 2017, on the support mechanisms for the development of solar power projects in Vietnam, Decision No.13/2020/QĐ-TTg dated April 6, 2020, on mechanisms to promote the development of solar power projects in Vietnam, Decision No.37/2011/QĐ-TTg dated June 29, 2011, on the mechanism supporting the development of wind power project in Vietnam, Decision No.39/2018/QĐ-TTg dated September 10, 2018, amending and supplementing a number of articles of Decision No.37/2011/QĐ-TTg. These policies created a preferential mechanism to attract large investments from all economic sectors, especially the private sector involved in the development of solar and wind energy (Vy, 2021). For instance, as you can see in Figure 9, during the time frame of 2010–2019, in the year 2010, a solitary non-state enterprise was involved in the investment in wind and solar power. Nevertheless, there was a substantial rise in the number of non-state enterprises operating in these sectors, reaching 379 in 2019. The proliferation of non-state enterprises engaged in energy investment has led to a significant shift in the enterprise structure, with their share of total investment enterprises rising from 59 percent to 94.8 percent, thereby dominating the sector.

Figure 9: Quantity and proportion in the field of energy in the period 2010–2019

Year	Total		Renewable energy (Wind, solar)	
	State enterprises	Non-state enterprises	State enterprises	Non-state enterprises
I				
Quantity (number of enterprises)				
2010	48	69	-	1
2015	57	186	-	8
2019	43	777	6	379
II				
Proportion (%)				
2010	41.0	59.0	0.0	100.0
2015	23.5	76.5	0.0	100.0
2019	5.2	94.8	1.6	98.4

Source: Vy, 2021.

In particular, the total investment capital of non-state enterprises also increased steadily in the past period, especially investment in solar power and wind power, with strong growth in 2019 thanks to the feed-in tariff pricing policy. The total investment in renewable energy in 2019 amounted to 4,490 billion Vietnamese dong (€179 million), representing a 27-fold increase compared to the 166 billion Vietnamese dong (€6.6 million) invested in 2010, as can be observed in Figure 10.

Figure 10: Total investment and proportion of enterprises in the field of energy in the period 2010–2019

Year	Total	Renewable energy (Wind, solar)			
		State enterprises	Non-state enterprises	State enterprises	Non-state enterprises
I					
Total investment (billion dong)					
2010		29,527	2,332	-	166
2015		42,828	3,738	-	83
2019		62,273	17,826	214	4,490
II					
Proportion (%)					
2010		92.7	7.3	0.0	100.0
2015		92.0	8.0	0.0	100.0
2019		77.7	22.3	4.6	95.4

Source: Vy, 2021.

This preferential mechanism involves the application of the feed-in tariff price to projects whose commercial operation date meets a certain time. For instance, according to Decision No.13/2020/QĐ-TTg, the feed-in-tariff price was only applicable to projects whose commercial operation date was between July 1, 2019, and December 31, 2020. The feed-in tariff price mechanism has been applied in many countries around the world and has proven to be one of the most effective policy tools, helping to overcome cost barriers to the dissemination and commercialization of renewable energy (Pham, Nguyen, T-T., Nguyen T-C., 2022). However, the implementation and application of this policy shows that there are still many problems to be solved. Accordingly, the feed-in tariff price is only applied within two years for solar energy projects under Decision No.13/2020/QĐ-TTg and three years for wind energy projects under Decision No.39/2018/QĐ-TTg. These durations are too short for projects that need construction and operation time such as wind and solar power, especially when the feed-in tariff pricing policy took place during the COVID-19 epidemic period. For projects that had signed power purchase and sale contracts with EVN before January 1, 2021 (for solar power) and before November 1, 2021 (for wind power), but did not meet the conditions to be eligible for the application of the feed-in tariff price, the electricity generation

price range would be created under Circular 15/2022/TT-BCT dated October 3, 2022, announcing the electricity generation price range for transitional wind and solar power projects. This can be considered the beginning of solving the bottlenecks of more than one year of transitional solar and wind power projects (Editorial Board of Vietnam Energy Journal, 2022).

Furthermore, within the realm of power transmission grid expansion, the Electricity Law has granted permission for private sector involvement in power transmission grid investment. To date, there exists a lack of comprehensive guidance, particularly with regard to transmission pricing, investment cost management, and state oversight in ensuring the security of the transmission grid in instances where private sector investment is involved (An, 2022). Consequently, power generation entities have been compelled to curtail their production of sustainable energy due to constraints associated with the transmission network. Accordingly, although clean energy is urgently needed, Vietnam still has to plan to cut around 1.3 billion kWh of renewable energy in 2021 because of the lack of necessary transmission capacity (Johnson, Chau and Aramayo, 2021). In the previous year, there was a notable upsurge in the advancement of renewable energy, particularly in the rooftop segment. This resulted in a 66 percent increase in capacity, reaching a peak of 10,000 megawatts between the months of June and December. An excess of solar energy production has resulted in an oversupply, leading to overloads in the central provinces of Ninh Thuan and Binh Thuan. As a result, Vietnam Electricity was compelled to reduce solar output by 365 million kWh in 2020 (Minh, 2021).

In general, it can be seen that renewable energy has not been regulated in a specialized legal document. Additionally, the policy to encourage renewable energy development in Vietnam is still not long-term and stable which is reflected in the short duration of the feed-in tariff price application.

6. Renewable energy development in Vietnam: What could be learnt from Germany and Spain?

Most importantly, it is imperative for Vietnam to establish a comprehensive regulatory framework for renewable energy. In order to attain this objective, it is imperative to establish a hierarchy of preference for each category of sustainable energy source and to guarantee the efficient allocation of resources for each energy form in alignment with the socio-economic development circumstances of

Vietnam. In addition, it is imperative to disseminate legal instruments that regulate renewable energy undertakings at an elevated echelon, such as the Renewable Energy Law. The objective of this law is to establish a framework that guarantees the durability and sustainability of the mechanisms and policies that facilitate the promotion of renewable energy. This will engender a sense of confidence among investors and credit institutions, thereby facilitating the process of investing in and lending to renewable energy projects.

Furthermore, Vietnam needs to promulgate policies and legal documents proactively and promptly in line with the actual context. As previously stated, Germany revised a number of legal provisions on renewable energy and increased the installed solar capacity to achieve the goal of ridding their dependence on Russian gas supplies amid Russia-Ukraine tensions. Similarly, Spain also issued Royal Decree-Law 6/2022 adopting urgent measures as part of the National Plan in response to the economic and social consequences of the war in Ukraine, and Law 7/2021 on climate change and energy transition to ensure compliance with the obligations set out in the Paris Agreement, of which Spain has been a member since 2016. Meanwhile, in Vietnam, once the feed-in tariff policy to promote the development of solar and wind power expires, documents guiding new mechanisms to replace this policy have not yet been issued.

No less important, the development of power transmission network and infrastructure should be promoted to serve the activities of production and distribution of electricity generated from renewable energy. As previously noted, Vietnam has made significant strides in its capacity to produce electricity from renewable sources. However, the existing transmission infrastructure has not kept up the pace with this progress, resulting in a decrease in the overall output of renewable energy-generated electricity. This has a noteworthy influence on the prospective growth of sustainable energy.

Afterwards, it is imperative for Vietnam to establish a rationalized policy regarding electricity pricing and other prioritized policies to sustain investments in renewable energy. Developing a feed-in tariff pricing structure for grid-connected renewable energy and prioritizing renewable energy projects for connection to the national electricity system are imperative measures. Simultaneously, it is imperative to mandate that power entities assume accountability for procuring the total quantity of electricity generated from sustainable sources via a standard electricity procurement contract. The provision of incentives instills a sense of security among businesses engaged in the investment and production of renewable energy sources, thereby encouraging their continued participation in these activities.

7. Concluding Remarks

Developing renewable energy will have positive effects on the economy while minimizing harmful consequences for the environment. This is even more meaningful in the context that countries around the world have been tending to step up in signing and joining of free trade agreements regulating both commercial and non-commercial issues, including the fight against climate change. Vietnam is not outside this trend and has proven to be an active participant in these free trade agreements, notably the EVFTA. This agreement was signed between Vietnam and the EU.

The EU is an active region in the development of renewable energy to achieve its commitment to a clean energy transition. To deliver on this commitment, the EU has set binding climate and energy targets. To ensure that the EU targets are met, EU legislation requires each member state to draw up a 10-year National Energy and Climate Plan, setting out how to reach its national targets, including a binding target for reducing greenhouse gas emissions. As bright spots in the development of the energy transition, Germany and Spain are doing well in the development of renewable energy, contributing to shaping the EU's green recovery.

Vietnam is one of the Southeast Asian countries with a fast gross domestic product (GDP) growth rate. In the current context of growing industrialization and economic modernization, energy demand is predicted to increase. Following the global trend of developing renewable energy, Vietnam has carried out a gradual shift towards renewable energy alongside the conventional power generation industry due to the great potential for renewable energy. Despite investment in this sector, the current results show that it is not commensurate with the potential that Vietnam currently has. It can be seen that Vietnam is still facing a lack of policies and mechanisms to encourage the development and use of renewable energy. Consequently, to encourage the development of renewable energy and build a green and environmentally friendly economy, Vietnam needs to establish a comprehensive regulatory framework for renewable energy, promulgate policies and legal documents proactively and promptly in line with the actual context, promote the development of a power transmission network and infrastructure to serve the activities of production and distribution of electricity generated from renewable energy, and establish a rationalized policy regarding electricity pricing and other prioritized policies to sustain investments in renewable energy.

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