



# Policy and legal framework on renewable energy of the Federal Republic of Germany and implications for Vietnam

LÊ THỊ PHƯƠNG THOA

*Institute of State and Law, Vietnam Academy of Social Sciences*

At COP26, Vietnam committed to developing and implementing strong greenhouse gas (GHG) emission reduction measures using its own resources, along with the cooperation and support of the international community in both finance and technology transfer, including implementing mechanisms under the Paris Agreement to achieve net-zero emissions by 2050. To achieve this goal, Vietnam has identified one of effective solutions that needs to be implemented is to develop renewable energy (RE), gradually reduce traditional fossil energy, aiming to reduce CO<sub>2</sub> emissions. Over the past time, Vietnam has gradually improved the system of mechanisms and policies for RE development. However, the policy and legal framework only includes directional regulations and principles, and is still scattered in many different legal documents, without a legal corridor strong enough to exploit the potential of Vietnam's RE development, promoting effective implementation in practice. In the above context, studying and improving the policy and legal framework on RE in Vietnam based on international experience is necessary in the current period, contributing to developing an appropriate legal system on RE, ensuring national energy security. This article introduces and analyses the legal framework for RE development of the Federal Republic of Germany, thereby proposing some suggestive solutions for Vietnam.

## LEGISLATIONS ON RE OF THE FEDERAL REPUBLIC OF GERMANY

The Federal Republic of Germany is known as one of successful countries in developing RE in the world today. RE is considered by the German Government to be the core of the country's energy transition process. The RE proportion in Germany's total electricity output in 2021 is 41.1%, of which onshore wind power accounts for 15.7%; solar power accounts for 8.8%; biomass power accounts for 6.8%; offshore wind power accounts for 4.3%; and hydropower accounts for 3.4%. In recent years, wind energy has become the main source of growth in RE production in Germany. In 2021, onshore

and offshore wind energy contributed 48.8% of Germany's electricity output [7]. Policies and legislations on RE in Germany are mainly governed by the Energy Industry Act (EnWG) [10] and the Renewable Energy Sources Act (EEG) [9] regulated by the Federal Government.

According to the Energy Industry Act (EnWG), developing RE in the Federal Republic of Germany has three purposes: (1) Ensure the safe, cheap, consumer-friendly, and most effective supply of electricity, gas, and hydrogen, environmentally compatible and GHG neutral for the public; (2) Regulations on electricity and gas supply networks must serve the goal of ensuring competition, effective and reliable operation in the long term; (3) Transform and implement the European Community Law in the field of grid-connected energy supply.

Directly regulating RE and introducing policies to promote RE development is the Renewable Energy Sources Act (EEG). This Act has three main purposes: (1) Especially for the benefit of climate and environmental protection, transition to a sustainable and GHG neutral electricity supply entirely based on RE; (2) To achieve the above goal, the proportion of electricity generated from RE in total electricity consumption on the territory of the Federal Republic of Germany, including its exclusive economic zone (Federal territory), will be increased to at least 80% by 2030; (3) The expansion of RE necessary to achieve the goal of 80% of total electricity consumption across the entire territory must be stable, cost-effective, environmentally friendly and compatible with the power grid (Article 1 of the EEG).

*Policies to encourage, provide incentives for investment in RE development*

The Federal Government plays an active role in developing RE projects in Germany and seeks to encourage the production of electricity from RE sources. Specifically, EEG is the main tool to promote investment in and sale of electricity from renewable sources. In particular, the EEG stipulates a payment system for electricity generated from RE, specified in Articles 19 to 27 of the EEG, which clearly stipulates the forms of subsidies (Right to payment, market premium) and regulations guiding payments to electricity suppliers.

*RE storage*

Due to the characteristic of RE being unstable because of its dependence on the weather, there are times during the day when RE provides excess electricity or there are times when there is not enough electricity to meet the market demand. Therefore, electricity storage activities are of great interest to the German Government. The operation of an energy storage establishment is governed by energy regulations, most notably the Energy Industry Act (EnWG). Construction



of a battery storage establishment requires a building permit, depending on the storage technology used, such as battery storage, energy-to-gas storage, compressed gas storage, and pump storage that licensing conditions are different. For example, energy-to-gas storage establishments or hydrogen plants require a permit under the Act on the Prevention of Harmful Effects on the Environment Caused by Air Pollution, Noise, Vibration and Similar Phenomena. Compressed gas storage establishments may require a permit under the Federal Mining Act (BbergG) and pumped storage establishments typically require a plan approval process under the Federal Water Act (WHG) that includes an environmental impact assessment.

Another way to store electricity from RE is to convert it into gas (power-to-gas), especially hydrogen, is flexible in its use in terms of time and location. The specific legal framework for the production, transportation and storage of “green hydrogen” comes into effect in 2021. The first amended Energy Industry Act regulates the construction of hydrogen infrastructure, including pipelines and storage establishments as well as non-discriminatory access to such establishments.

The analysis of the legal framework on RE development of the Federal Republic of Germany shows that RE is a key issue of concern to the German Government, demonstrated in the promulgation of a separate act on RE, in addition to the act on energy in general. The promulgation of a separate act on RE has created a unified body of views, policies, and legal norms governing investment, exploitation, and use of RE towards the goal of developing RE in the coming time. These regulations include a system of regulations on contractor selection, preferential policies to encourage investment and use of RE, electricity selling prices, electricity storage... Some lessons can be drawn from experience of Germany in the process of promulgating legislations on RE as follows:

*Firstly*, promulgating a separate act on RE, in addition to acts on energy or electricity in general, and having a separate policy mechanism to encourage and promote the development of this type of energy is really necessary. Because RE is an environmentally friendly energy source, it depends significantly on weather conditions and requires a large financial resource to invest... therefore, a separate policy mechanism is needed to regulate production, investment and business activities and use of this special type of energy.

*Secondly*, clearly defining the purpose of the act on RE will be the guideline and orientation for all provisions in this act.

*Thirdly*, the Government’s direct price support policy on electricity purchase prices (FIT price) is only meaningful in the early stage to accelerate the transition to RE. However, in the long term, developing electricity price policy according to market mechanisms, aiming to promote investment in RE development, creating incentives for investors and energy producers to produce and use energy economically and effectively is necessary in the future.

*Fourthly*, developing a mechanism to encourage and motivate investors to have a plan to store electricity in case of excess RE and supply it back to the grid in case of shortage of RE, gradually reducing dependence on traditional energy sources are important and core contents, contributing to stabilizing RE in the Federal Republic of Germany, contributing to achieving the country’s goal of gradually replacing traditional energy in the Renewable Energy Sources Act (EEG).

## POLICY IMPLICATIONS FOR VIETNAM

Prioritizing the RE development is the consistent viewpoint of the Party and Government. The Power Development Plan VIII has set a goal of achieving the RE proportion for electricity generation from 30.9 - 39.2% by 2030 and increasing to 67.5 - 71.5% by 2050... Targets in the Power Development Plan VIII meet the green growth targets set in the Resolution No. 55-NQ/TW of the Politburo on the orientation of Vietnam’s National Energy Development Strategy to 2030 with a vision to 2045; meet Vietnam’s commitments at COP26 and international agreements to achieve the net-zero goal by 2050 as well as the National Strategy on Climate Change to 2050 in Decision No. 896/QĐ-TTg; and are in accordance with the Political Declaration on establishing the Just Energy Transition Partnership (JETP) with Vietnam by international partners.

To realize the clean energy/RE development strategy, in recent times the Party and the Government have paid attention to developing and gradually improving the system of mechanisms and policies for RE development. Vietnam’s legal system on RE development is regulated in many different documents such as: Law on Economical and Efficient Use of Energy 2010, Electricity Law 2004 and 2012, Law on Investment 2020, Law on Environmental Protection 2020... In addition to above legal documents, there are also implementation instructions from the Government such as: Decree No. 137/2013/NĐ-CP detailing the implementation of a number of articles of the Electricity Law and the Law on amending and supplementing a number of articles of the Electricity Law, Decree No. 08/2018/NĐ-CP amending a number of Decrees concerning business investment conditions under the state management of the Ministry of Industry and Trade. The Prime Minister also issued many Decisions to orient and develop RE, including: Decision No. 37/2011/QĐ-TTg on mechanism supporting the development of wind power projects in Vietnam, Decision No. 39/ 2018/QĐ-TTg on amending and supplementing a number of articles of Decision No. 37/2011/QĐ-TTg on the mechanism supporting the development of wind power projects in Vietnam, Decision No. 2068/QĐ-TTg approving Vietnam’s Renewable Energy Development Strategy



to 2030, with a vision to 2050, Decision No. 428/QĐ-TTg approving adjustments to the National Power Development Plan for the 2011-2020 period, taking into account 2030 and other policy mechanisms to encourage RE...

As the Ministry in charge and management of energy, the Ministry of Industry and Trade has also issued many documents to promote RE development such as: Circular No. 32/2014/TT-BCT of the Minister of Industry and Trade on procedures for establishment and application of avoidable cost tariff schedule and promulgation of model power purchase agreement to small hydropower plants, Circular No. 32/2015/TT-BCT of the Minister of Industry and Trade on project development and model power purchase agreement to power projects using solid wastes, Circular No. 44/2015/TT-BCT of the Minister of Industry and Trade on project development, avoidable cost tariff schedule and model power purchase agreement to biomass power projects, Circular No. 54/2018/TT-BCT of the Minister of Industry and Trade abolishing Article 7 of Circular No. 44/2015/TT-BCT on project development, avoidable cost tariff schedule and model power purchase agreement to biomass power projects, Circular No. 02/2019/TT-BCT of the Minister of Industry and Trade on the implementation of wind power project development and model power purchase agreement to wind power projects, Circular No. 18/2020/TT-BCT of the Minister of Industry and Trade on project development and model power purchase agreement to solar power projects...

In addition, the mechanism to encourage RE development is expressed in many legal documents such as: Electricity Law, Law on Economical and Efficient Use of Energy, Law on Environmental Protection, Law on Investment, specifically:

Clause 4, Article 4; Point c, Clause 1, Article 13; Clause 1, Article 29; Article 60, Clause 4 of the Electricity Law stipulate that the electricity development policy is to promote the exploitation and use of new energy and RE sources to generate electricity; have preferential policies for investment projects to develop power plants using new energy and RE sources. The State supports and encourages electricity saving through policies for investment projects to develop power plants using new energy and RE sources, enjoying investment incentives, electricity prices and taxes according to the guidance of the Ministry of Finance. Regarding electricity price policy, create favourable conditions for economic sectors to invest in electricity development with reasonable profits, saving energy resources, using new forms of energy and RE that do not pollute the environment in electricity activities, contributing to promoting socio-economic development, especially in rural, mountainous and island areas. Encourage organizations and individuals to invest in building power grids or power generating stations using on-site energy, new energy, and RE to provide electricity to rural, mountainous, border, and island areas [3].

The Law on Economical and Efficient Use of Energy 2010 stipulates that develop RE in accordance with Vietnam's potential and conditions to contribute to ensuring energy security and environmental protection (Clause 3, Article 5); promote economical and efficient use of energy, prioritize

the reasonable development of clean energy technology, and increase the proportion of RE use (Clause 1c, Article 6); encourage the production and use of local energy sources such as water, wind, sunlight, biogas, agricultural by-products and other RE sources (Clause 2, Article 24); the State encourages households to implement the following measures to use energy economically and effectively: use insulation materials and household appliances that are energy-saving products; increase the use of vehicles and equipment using RE (Clause 2, Article 27) [4].

Clause 3, Article 5 of the Law on Environmental Protection 2020 stipulates the exploitation, reasonable and economical use of natural resources; development of clean energy and RE; development of technical infrastructure to protect the environment. In addition, Clause 2, Article 64 clearly states that the planning of urban areas and concentrated residential areas must aim to develop ecological urban areas, save energy, and use RE. Activities to respond to climate change; develop and use clean energy and RE; minimize GHG emissions that deplete the ozone layer; producing, importing and using machinery, equipment, and vehicles using RE are among environmental protection activities encouraged by the State. The Government promulgates preferential policies to support and encourage the development of public transport, vehicles using RE, having low fuel consumption, low emissions or no emissions; roadmap for converting and eliminating vehicles that use fossil fuels and vehicles that pollute the environment (Clause 7, Article 65). Investment and business activities related to environmental protection that receive incentives and supports include: Enterprises that produce and provide technology, equipment, products and services to serve environmental protection requirements, including waste treatment technology combined with energy recovery; energy saving technology; centralized domestic wastewater treatment services; ambient environment monitoring services; public transport services using electric energy and renewable fuels; clean energy, RE production (Clause 2b, Article 141). Encourage organizations and individuals to participate in providing environmental services in the following fields: Consulting, transferring environmentally friendly production technology, environmental technology; Energy saving technology, clean energy, RE production; Consulting, training, providing information about the environment, clean energy, RE, energy saving (Clause 3 (d) and (đ) Article 144) [1].



Clause 1b, Article 16 of the Law on Investment 2020 also stipulates, that production of new materials, new energy, clean energy and RE; production of products with added value of 30% or more, energy-saving products in sectors and occupations enjoy investment incentives [2].

In addition to above legal documents, the mechanism to encourage RE development is also recognized in many documents issued by the Prime Minister to support the development of wind power projects, biomass power projects, power generation projects using solid wastes, and encourage the development of solar power.

Thus, Vietnam has had a system of legal documents regulating investment, production and use of RE. These regulations are recognized in legal documents as well as decisions of the Prime Minister, circulars of the Ministry of Industry and Trade and other relevant ministries and agencies. However, because legal regulations on RE are still scattered in many different legal documents (Electricity Law, Law on Investment, Law on Environmental Protection, Law on Economical and Efficient Use of Energy), they have not created a unified policy system in regulating related activities to develop RE. Therefore, it is necessary to study and develop a suitable document system to ensure consistency in investment, exploitation and effective use of RE. Some following suggestions will help Vietnam study and improve legislations on RE in the coming time.

*Firstly*, lessons learned from analysing the legal framework on RE development of the Federal Republic of Germany show that, in order to ensure uniformity and improve the management effectiveness and efficiency of the current legal framework, a specific legal document should be developed to manage investment, exploitation, management and use of RE. Based on the inheritance of current legal documents on mechanisms and policies for RE development currently recognized in legal documents, decisions of the Prime Minister and guiding decrees and circulars of relevant ministries, sectors as analysed above, it is necessary to supplement and rearrange the contents to include in the draft Law on Renewable Energy regarding: (1) Objectives, strategies, principles,

and planning for RE development; (2) Policies to encourage, incentivize, and support investment, exploitation, and use of RE; (3) Pricing policies for RE sources; (4) Regulations on investor selection and investment procedures for RE power projects; (5) Model power purchase agreement and risk sharing mechanism for relevant parties; (6) Regulations on power grid development and electricity connection; (7) Regulations on RE storage; (8) Regulations on information technology application in RE development; (9) Regulations on responsibilities of state management agencies in RE development.

*Secondly*, it is necessary to study and develop financial policies to increase the mobilization of investment capital for RE development from private and self-accumulated financial sources of enterprises in the power sector through solutions such as increasing attraction of foreign direct investment capital for development of RE projects; increase attraction of capital sources from abroad (including concessional official development aid, non-concessional official development aid, foreign commercial loans); mobilize capital through domestic and foreign bond issuance to invest in RE power projects; improve the efficiency and performance of enterprises in the power sector, ensure accumulation, and ensure the ratio of equity capital for development investment according to the requirements of domestic and international financial institutions.

*Thirdly*, supplement and improve the system of legal regulations on smart power development, including smart grid and information technology application in the electric energy sector, energy efficiency in the economy; invest in energy storage systems in accordance with the market development situation... ■

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