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**Sustainable energy legislation: the cornerstone for achieving environmental
and economic sustainability**

**Legislación sobre energía sostenible: la piedra angular para lograr la
sostenibilidad medioambiental y económica**

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Abstract

The issue of energy is considered one of the most significant challenges in the current world, as the world seeks to transition towards using renewable energy sources instead of fossil fuels, due to their negative impact on the climate and the environment. Achieving this transition heavily relies on effective legislation that supports investment in renewable energy and reduces harmful emissions. However, these legislations face challenges such as diversity, conflicts, and delays in implementing appropriate environmental policies. These challenges may hinder progress towards sustainable energy use and threaten efforts to conserve the environment and achieve sustainable development. Therefore, understanding the role of legislation in promoting renewable energy is crucial to ensure a balance between economic and environmental needs and to enhance sustainability in the long term.

Keywords: Renewable energy; legislation; environmental sustainability; investment.

Resumen

La cuestión de la energía se considera uno de los retos más importantes del mundo actual, en el que se busca una transición hacia el uso de fuentes de energía renovables en lugar de combustibles fósiles, debido a su impacto negativo sobre el clima y el medio ambiente. Lograr esta transición depende en gran medida de una legislación eficaz que apoye la inversión en energías renovables y reduzca las emisiones nocivas. Sin embargo, estas legislaciones se enfrentan a retos como la diversidad, los conflictos y los retrasos en la aplicación de políticas medioambientales adecuadas. Estos retos pueden obstaculizar el avance hacia el uso sostenible de la energía y amenazar los esfuerzos por conservar el medio ambiente y lograr un desarrollo sostenible. Por lo tanto, comprender el papel de la legislación en el fomento de las energías renovables es crucial para garantizar el equilibrio entre las necesidades económicas y medioambientales y potenciar la sostenibilidad a largo plazo.

Palabras claves: Energías renovables; legislación; sostenibilidad ambiental; inversión.

Introduction

In the current era, the issue of energy is considered one of the foremost challenges facing the world, requiring urgent and sustainable solutions. With increasing awareness of the impacts of climate change and the necessity of transitioning towards sustainable energy sources, the focus on renewable energy has become vital¹. These challenges necessitate a radical shift in how energy is produced and consumed, with renewable energy such as solar, wind, and biofuels being seen as sustainable alternatives to fossil fuels. Fossil fuels, which significantly contribute to greenhouse gas emissions and climate change, require a fundamental transformation in energy production and consumption methods.

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Energy is not merely the cornerstone for the survival and advancement of human society; it is also the driving force behind social and economic processes. Given that most countries rely on various forms of fossil energy, there are a series of barriers preventing nations from achieving cleaner production. The continuous increase in energy consumption, ongoing environmental pollution, and rapid climate change have led the world to focus on environmental issues today². Due to the negative effects of global warming, there are global calls to address the issue from the standpoint of legal, national, and international responsibility. Humanity living on one planet threatened by serious risks whenever the causes of global warming increase make responsibility collective, regardless of wealth or industrial status. The damages of global warming ring alarm bells globally, prompting countries to develop legislative plans to regulate and control³ mechanisms to reduce the causes of global warming. With the growing global demand to resort to using clean green energy for development, environmental protection, and encouraging investment worldwide,

¹ Taghizadeh-Hesary, F., & Yoshino, N. (2020). Sustainable solutions for green financing and investment in renewable energy projects. *Energies*, 13(4), 788.

<https://doi.org/10.3390/en13040788>

² Cicea, C., Marinescu, C., Popa, I., & Dobrin, C. (2014). Environmental efficiency of investments in renewable energy: Comparative analysis at macroeconomic level. *Renewable and Sustainable Energy Reviews*, 30, 555-564

<https://doi.org/10.1016/j.rser.2013.10.034>

³ Gamel, J., Menrad, K., & Decker, T. (2017). Which factors influence retail investors' attitudes towards investments in renewable energies? *Sustainable Production and Consumption*, 12, 90-103.

legislation comes as a fundamental tool in supporting and promoting the transition to renewable energy. By enacting appropriate policies and laws, governments can encourage investment in the renewable energy sector and provide financial incentives for companies and individuals to invest in this field. Additionally, legislation and environmental systems can establish strict standards to reduce harmful emissions and enhance environmental sustainability⁴.

Importance: The significance of this research lies in understanding the role of legislation in the transition towards renewable energy. The presence of effective legislation can contribute to encouraging investment in renewable energy sources and stimulating technological development in this vital sector. Thanks to appropriate policies and legal measures, countries can achieve a balance between economic and environmental needs, enhancing sustainability in the long term and mitigating the impacts of climate change.

Problem: With the presence of legal and regulatory challenges, there may be obstacles hindering the full realization of the benefits of renewable energy. The sector may face diverse and conflicting legislation, as well as delays in implementing appropriate environmental policies. This can lead to impeding investment operations and slowing the pace of transition towards renewable energy, jeopardizing efforts in environmental conservation and sustainable development.

Previous Studies

Azhgaliyeva, D., Beirne, J., & Mishra, R. (2023)⁵. This paper examines private investment in renewable energy across 13 economies, particularly focusing on Asian economies, from 2008 to 2018. It analyzes various sources of financing such as asset finance, corporate R&D, public markets, and venture capital/private equity. Using a fixed effects panel model, the study evaluates the impact of government renewable energy policies on private investment. The findings reveal that

⁴ Varela, P., & Sánchez, M. (2014). The relevance of legal stability for developing renewable energies. The case of the Galician wind sector. *ECORFAN Journal*, 5-13.

⁵ Azhgaliyeva, D., Beirne, J., & Mishra, R. (2023). What matters for private investment in renewable energy?. *Climate Policy*, 23(1), 71-87.

<https://doi.org/10.1080/14693062.2022.2069664>

government R&D expenditure positively influences investment from asset finance and corporate R&D. Feed-in tariffs stimulate investment through public markets, especially in Asian economies. Tax incentives have mixed effects, while technology costs and energy prices notably affect investment from asset finance, particularly in Asian economies.

Siddik, A. B., Khan, S., Khan, U., Yong, L., & Murshed, M. (2023)⁶. This study investigates the role of renewable energy finance in achieving low-carbon growth, using contextual evidence from leading renewable energy-investing countries. It examines the impact of increased public investment in renewable energy-related research and development on carbon productivity in the top-10 renewable energy-investing countries. Employing econometric methods capable of addressing data issues, the research finds that higher public R&D investment in renewable energy enhances carbon productivity, while natural resource consumption and net exports diminish it. Additionally, public R&D investment moderates the effects of natural resource consumption and net exports, while also mediating the impact of urbanization on carbon productivity. The findings suggest governments should increase such investments to promote technological innovation and facilitate the transition to low-carbon economic growth.

Methodologies and Data

This study adopts a descriptive-analytical methodology, aiming to provide a comprehensive description and detailed analysis of the role of legislation in promoting the transition towards renewable energy. The methodology seeks to collect reliable data and analyze it systematically and logically, with the goal of better understanding the current situation and developing effective strategies to address contemporary legislative and regulatory challenges.

⁶ Siddik, A. B., Khan, S., Khan, U., Yong, L., & Murshed, M. (2023). The role of renewable energy finance in achieving low-carbon growth: contextual evidence from leading renewable energy-investing countries. *Energy*, 270, 126864. <https://doi.org/10.1016/j.energy.2023.126864>

Environmental and Economic Challenges in the Energy Sector: A Global Responsibility

The environmental and economic challenges in the energy sector represent one of the greatest challenges facing the world today,⁷ necessitating a serious and collective global response⁸ as follows:

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Energy Transition and Environmental Challenges towards Sustainability: The Urgent Need for New Energy Policies.

Given the trend of most advanced countries towards renewable energies⁹ for gradually phasing out fossil fuels in the long term, coupled with the increasing demand to mitigate greenhouse gas emissions, oil-producing countries must reconsider their energy policies. Through adaptation and mitigation policies, countries can address the phenomenon of global warming by replacing fossil fuels with green energy to protect the environment and society. Considering the ambitious political goals to reduce carbon emissions associated with the global economy, accelerating the process of carbon removal and financing it poses several challenging issues for researchers and policymakers. In reality, the sustainability transition process relies on unforeseen future circumstances¹⁰, such as market innovations and energy prices.

The energy transition has become one of the top priorities for policymakers around the world due to the environmental damages witnessed today, which could push the world towards a precipice¹¹. Alternative energy sources undoubtedly play a

⁷ Moriarty, P., & Honnery, D. (2012). What is the global potential for renewable energy?. *Renewable and Sustainable Energy Reviews*, 16(1), 244-252.

<https://doi.org/10.1016/j.rser.2011.07.151>

⁸ elbaweneR "egarotS ygrenE" ot elcatsbO yciloP dna lageL tsetaerG eht gninifeD .(3102) .P ,yelsorC⁸ *Energy Law and Policy Review*, 4(4), 268–281.

<https://www.jstor.org/stable/24324568>

⁹ Kamal, M. M., Asharaf, I., & Fernandez, E. (2022). Optimal renewable integrated rural energy planning for sustainable energy development. *Sustainable Energy Technologies and Assessments*, 53, 102581.

¹⁰ Peake, S. (2018). *Renewable energy-power for a sustainable future* (No. Ed. 4). OXFORD university press.

¹¹ Panwar, N. L., Kaushik, S. C., & Kothari, S. (2011). Role of renewable energy sources in environmental protection: A review. *Renewable and sustainable energy reviews*, 15(3), 1513-1524.

<https://doi.org/10.1016/j.rser.2010.11.037>

crucial role not only in the long-awaited process of carbon removal but also in implementing a new economic model aimed at enhancing sustainability in energy storage. The climate crisis the world has been experiencing in recent years poses a real threat to both human sustainability and the ecosystem, The increasing frequency of intense storms, heatwaves, droughts, rising sea levels, melting ice caps, and ocean warming all pose threats to the environment and the world. Addressing this crisis urgently requires reducing greenhouse gas emissions and dealing with the consequences of the threat we already face. Joint efforts by the international community are striving to combat the harmful effects of global warming.

The global energy sector is undergoing a rapid and accelerating transformation, driven by a range of factors, with addressing climate change being one of the key considerations among these drivers¹². However, policymakers and governments are faced with other priorities, including ensuring energy supplies at affordable prices, enhancing energy security, and ensuring energy access for all¹³. In this context, fossil fuels will continue to play their role in meeting the growing energy demand for a period of time, alongside the reliance on two key energy policies to achieve the goals of the Paris Agreement: energy efficiency and renewable energy.

4.2 Transitioning to Sustainable Energy: Economic Challenges and the Need for Social Justice.

Transitioning to sustainable energy represents a significant challenge faced by many countries worldwide today¹⁴. This transition involves shifting from reliance on fossil fuels to using renewable energy sources such as solar, wind, and clean

¹² Bull, S. R. (2001). Renewable energy today and tomorrow. *Proceedings of the IEEE*, 89(8), 1216-1226.

¹³

¹³Bilotskiy, S., Danylova, N., Grinenko, O., Karmaza, O., & Koucherets, D. (2017). Legal and economic challenges of renewable energy and sustainable development: a crucial review. *Renewable and sustainable energy reviews*, 4(2), 157-175. *Innovations*, 14(2), 71-78. [https://doi.org/10.1016/S1364-0321\(99\)00011-8](https://doi.org/10.1016/S1364-0321(99)00011-8)

nuclear energy. With these challenges, countries must overcome economic obstacles and ensure social justice.

The transition to sustainable energy is a massive economic challenge. It requires substantial investments in developing clean technology and improving the necessary infrastructure for generating and distributing renewable energy. Consequently, countries are required to plan for the necessary financing for these large investments¹⁵, which may lead to increased public debt or burdening companies and investors with responsibility.

Additionally, this economic transformation may jeopardize¹⁶ some traditional industries that rely on fossil fuels, leading to additional economic challenges. Therefore, governments must develop strategies to assist these industries in transitioning.

On the other hand, the transition to sustainable energy must be a fair process that includes everyone¹⁷, including the poorest sectors and remote communities. Government policies should ensure equal opportunities for access to clean and sustainable energy, providing financial support to the most vulnerable groups to bear the costs of transition.

Thus, transitioning to sustainable energy combines significant economic challenges with the need to achieve social justice. This transition requires collaboration between governments, companies, and local communities to develop

¹⁵ Aflaki, S., & Netessine, S. (2017). Strategic investment in renewable energy sources: The effect of supply intermittency. *Manufacturing & Service Operations Management*, 19(3), 489-507
<https://doi.org/10.1287/msom.2017.0621>

¹⁶ Shinwari, R., Yangjie, W., Payab, A. H., Kubiczek, J., & Dördüncü, H. (2022). What drives investment in renewable energy resources? Evaluating the role of natural resources volatility and economic performance for China. *Resources Policy*, 77, 102712.
<https://doi.org/10.1016/j.resourpol.2022.102712>

¹⁷ Walker, G. (1995). Renewable energy and the public. *Land use*.
[https://doi.org/10.1016/0264-8377\(95\)90074-C](https://doi.org/10.1016/0264-8377(95)90074-C)

effective policies that promote investment in sustainable energy¹⁸ and provide social protection for the most vulnerable segments of society.

Energy Transition: Between Ambition and Challenges in the Renewable Energy Sector

Many countries require a comprehensive and sustainable energy transition towards renewable energy sources to meet their future needs and contribute to climate change mitigation efforts on both national and global levels¹⁹. Despite some successful experiences in transitioning towards renewable energy in certain countries²⁰, there are numerous obstacles that directly and indirectly affect this idea. Renewable energies are considered key to combating climate change²¹, but they face several challenges and barriers, including:

- Lack of appropriate policies and the absence of a suitable business environment are major obstacles to promoting renewable energy initiatives. Enhancing investment in renewable energy requires clear legal and policy measures to enable the sector to grow and develop, including the presence of a clear and defined legal framework that supports the transition to renewable energy. This legal framework includes legislation and regulations that define specific policies and objectives for the energy transition and government support for renewable energy-related projects. This legal framework should be transparent and enforceable, instilling confidence in investors that the legal environment is stable and favorable for investment.

¹⁸ Rahmani, A., Mashayekh, J., Aboojafari, R., & Naeini, A. B. (2023). Determinants of households' intention for investment in renewable energy projects. *Renewable Energy*, 205, 823-837.

¹⁹ Lund, H. (2007). Renewable energy strategies for sustainable development. *energy*, 32(6), 912-919

<https://doi.org/10.1016/j.energy.2006.10.017>

²⁰ Moriarty, P., & Honnery, D. (2016). Can renewable energy power the future? *Energy policy*, 93, 3-7

<https://doi.org/10.1016/j.enpol.2016.02.051>

²¹Harjanne, A., & Korhonen, J. M. (2019). Abandoning the concept of renewable energy. *Energy policy*, 127, 330-340.

<https://doi.org/10.1016/j.enpol.2018.12.029>

- There should be a conducive business environment that encourages investment in renewable energy²² by simplifying administrative procedures to facilitate licensing and permitting processes, and reducing bureaucracy that hinders project progress. Additionally, financial support and funding should be provided for new projects in this field, whether through soft loans, direct government financing, or tax incentives.
- Ensuring investment security and return on investment is a crucial factor in attracting investors to invest in renewable energy²³. If investors are unsure about the safety of their investments and their ability to achieve the desired financial return, they may hesitate to invest in this sector. Therefore, governments should streamline administrative procedures related to the establishment and operation of renewable energy projects, improve the regulatory environment for the renewable energy sector, and provide financial incentives for investors in this field, thus enhancing investor confidence and investment attractiveness.

Legislative Challenges in Promoting Investment in Renewable Energy: Towards a Sustainable Future

Legislative efforts to promote investment in renewable energy face numerous challenges that hinder the achievement of a sustainable future, both environmentally and economically²⁴. This field is highly vital in light of the growing interest in environmental preservation and achieving ecological sustainability, in addition to the urgent need to transition towards clean energy sources²⁵. The legislative challenges

²² Ogunrinde, O., Shittu, E., & Dhanda, K. K. (2018). Investing in renewable energy: Reconciling regional policy with renewable energy growth. *IEEE Engineering Management Review*, 46(4), 103-111

²³ Stamopoulos, D., Dimas, P., Sebos, I., & Tsakanikas, A. (2021). Does investing in renewable energy sources contribute to growth? A preliminary study on Greece's National Energy and Climate Plan. *Energies*, 14(24), 8537.

²⁴ Gatzert, N., & Vogl, N. (2016). Evaluating investments in renewable energy under policy risks. *Energy Policy*, 95, 238-252.

<https://doi.org/10.1016/j.enpol.2016.04.027>

²⁵ Wisner, R. H., & Pickle, S. J. (1998). Financing investments in renewable energy: the impacts of policy design. *Renewable and Sustainable Energy Reviews*, 2(4), 361-386.

[https://doi.org/10.1016/S1364-0321\(98\)00007-0](https://doi.org/10.1016/S1364-0321(98)00007-0)

in this context are among the most significant factors impeding the enhancement of investment in renewable energy²⁶. Among these challenges are:

Inadequate Legislation

Inadequate legislation constitutes a major barrier to promoting investment in renewable energy. Such legislation may impose restrictions on the development and use of renewable energy technology, hindering construction and operation processes. Additionally, stringent requirements for obtaining environmental permits or licenses may increase project costs and prolong waiting times²⁷.

Legislation may lack sufficient incentive mechanisms to attract investors to the renewable energy sector. At times²⁸, it may fail to provide tax benefits or financial support for environmental projects, making it less attractive to investors. Moreover, legislation may be subject to frequent changes or uncertainty, creating an unstable investment environment and making it difficult for investors to plan and execute their projects efficiently. Legislation may also be conflicting or inconsistent across different sectors, resulting in variations in objectives and standards and hindering collective efforts to promote investment in renewable energy.

The financial and tax

Challenges pose significant obstacles to companies interested in investing in renewable energy. Building renewable energy projects often requires massive investments in construction and maintenance operations²⁹, increasing the need for

²⁶ Murombo, T. (2016). Legal and policy barriers to renewable and sustainable energy sources in South Africa. *The Journal of World Energy Law & Business*, 9(2), 142-165

<https://doi.org/10.1093/jwelb/jww001>

²⁷ Karim, M. E., Karim, R., Islam, M. T., Muhammad-Sukki, F., Bani, N. A., & Muhtazaruddin, M. N. (2019). Renewable energy for sustainable growth and development: An evaluation of law and policy of Bangladesh. *Sustainability*, 11(20), 5774.

<https://doi.org/10.3390/su11205774>

²⁸ Liu, J., Zhang, D., Cai, J., & Davenport, J. (2021). Legal systems, national governance and renewable energy investment: evidence from around the world. *British Journal of Management*, 32(3), 579-610.

<https://doi.org/10.1111/1467-8551.12377>

²⁹ Khan, A., Chenggang, Y., Hussain, J., & Kui, Z. (2021). Impact of technological innovation, financial development and foreign direct investment on renewable energy, non-renewable energy and the environment in belt & Road Initiative countries. *Renewable Energy*, 171, 479-491.

<https://doi.org/10.1016/j.renene.2021.02.075>

external financing and elevating financial risks. Government financial incentives may not be sufficient to attract investors³⁰. While many countries offer some incentives such as direct financial support or tax incentives, these may not be enough to achieve the required financial viability for projects. Taxes imposed on renewable energy companies can impose additional financial burdens³¹, increasing production costs and reducing profitability. These challenges include income taxes, value-added taxes, environmental fees, land use fees, and various other taxes and fees.

Legislative instability

Legislative instability significantly impacts investors in the renewable energy sector as it leads to economic uncertainty³². Investors find it challenging to determine the costs and expected returns of their projects, hindering financial and strategic planning and reducing³³ the attractiveness of investing in renewable energy projects. Additionally, legislative instability in countries can affect the global energy market, increasing fluctuations in energy prices and resources, affecting market stability, and impacting investors' ability to predict market trends³⁴.

Results and discussion

- Inadequate legislation poses a major obstacle to promoting investment in renewable energy, hindering costs and negatively impacting operations.

³⁰ Hymel, M. (2006). United States' Experience with Energy-Based Tax Incentives: The Evidence Supporting Tax Incentives for Renewable Energy, *Loy. U. Chi. LJ*, 38, 43

³¹ Ghiollarnath, C. N. (2011). Renewable energy tax incentives and WTO law: irreconcilably incompatible?: an examination of the WTO-consistency of direct corporate tax incentives for the development of renewable energy.

<https://doi.org/10.26481/dis.20110114cn>

³² Fabrizio, K. R. (2013). The effect of regulatory uncertainty on investment: evidence from renewable energy generation. *The Journal of Law, Economics, & Organization*, 29(4), 765-798.

<https://doi.org/10.1093/jleo/ews007>

³³ Simões, F. D. (2017). *Blusun SA and others v Italy: Legal (in) stability and renewable energy investments*. *Review of European, Comparative & International Environmental Law*, 26(3), 298-304

<https://doi.org/10.1111/reel.12218>

³⁴ Żuk, P., & Żuk, P. (2023). The role of trust, information and legal stability in the development of renewable energy: the analysis of non-economic factors affecting entrepreneurs' investments in green energy in Poland. *Environment, Development and Sustainability*, 1-36.

- Financial challenges include substantial investments and inadequate financial incentives, compounded by exacerbating tax burdens on companies in the sector.
- Legislative instability affects investors' ability to predict market trends and hampers investment overall.
- Successful transformation requires collaboration between governments, companies, and local communities to develop effective policies and enhance investment in sustainable energy, ensuring social protection and equal access for all to clean energy.

Discussion

These results confirm the urgent need for a robust legislative framework to drive investment in renewable energy. Financial challenges, such as the substantial investments required and insufficient financial incentives, along with burdensome tax obligations, further complicate matters. Additionally, legislative stability adds an element of ambiguity, hindering investor confidence and overall investment momentum. Successful transition requires cohesive partnerships between governments, companies, and communities to develop effective policies and promote investment in sustainable energy. This collective collaboration is necessary to ensure equal access to clean energy for all and to enhance social and environmental resilience.

Conclusion

Sustainable energy legislation is crucial for long-term environmental and economic sustainability. It promotes the shift to renewable energy, reduces emissions, and enhances air, water, and soil quality. Additionally, it boosts energy independence, reduces reliance on fossil fuels, and stabilizes economies against energy price fluctuations. By encouraging investment, it creates jobs and fosters economic growth. Effective implementation leads to greater resource sustainability

and balances current and future needs, making it a vital investment for sustainable development and environmental preservation for future generations.

References

- Aflaki, S., & Netessine, S. (2017). Strategic investment in renewable energy sources: The effect of supply intermittency. *Manufacturing & Service Operations Management*, 19(3), 489-507. [DOI: 10.1287/msom.2017.0621]
- Azhgaliyeva, D., Beirne, J., & Mishra, R. (2023). What matters for private investment in renewable energy?. *Climate Policy*, 23(1), 71-87. [DOI: 10.1080/14693062.2022.2069664]
- Bilotskiy, S., Danylova, N., Grinenko, O., Karmaza, O., & Koucherets, D. (2017). Legal and economic aspects of Ukrainian enterprises activity at the European renewable energy market. *Investment Management and Financial Innovations*, 14(2), 71-78.
- Bull, S. R. (2001). Renewable energy today and tomorrow. *Proceedings of the IEEE*, 89(8), 1216-1226.
- Cicea, C., Marinescu, C., Popa, I., & Dobrin, C. (2014). Environmental efficiency of investments in renewable energy: Comparative analysis at macroeconomic level. *Renewable and Sustainable Energy Reviews*, 30, 555-564. [DOI: 10.1016/j.rser.2013.10.034]
- Crossley, P. (2013). Defining the Greatest Legal and Policy Obstacle to “Energy Storage.” *Renewable Energy Law and Policy Review*, 4(4), 268–281.
- Dincer, I. (2000). Renewable energy and sustainable development: a crucial review. *Renewable and sustainable energy reviews*, 4(2), 157-175. [DOI: 10.1016/S1364-0321(99)00011-8]

- Fabrizio, K. R. (2013). The effect of regulatory uncertainty on investment: evidence from renewable energy generation. *The Journal of Law, Economics, & Organization*, 29(4), 765-798. [DOI: 10.1093/jleo/ews007]
- Gamel, J., Menrad, K., & Decker, T. (2017). Which factors influence retail investors' attitudes towards investments in renewable energies?. *Sustainable Production and Consumption*, 12, 90-103.
- Gatzert, N., & Vogl, N. (2016). Evaluating investments in renewable energy under policy risks. *Energy Policy*, 95, 238-252. [DOI: 10.1016/j.enpol.2016.04.027]
- Ghiollarnath, C. N. (2011). Renewable energy tax incentives and WTO law: irreconcilably incompatible?: an examination of the WTO-consistency of direct corporate tax incentives for the development of renewable energy.
- Harjanne, A., & Korhonen, J. M. (2019). Abandoning the concept of renewable energy. *Energy policy*, 127, 330-340. [DOI: 10.1016/j.enpol.2018.12.029]
- Hymel, M. (2006). United States' Experience with Energy-Based Tax Incentives: The Evidence Supporting Tax Incentives for Renewable Energy, *the. Loy. U. Chi. LJ*, 38, 43.
- Kamal, M. M., Asharaf, I., & Fernandez, E. (2022). Optimal renewable integrated rural energy planning for sustainable energy development. *Sustainable Energy Technologies and Assessments*, 53, 102581.
- Karim, M. E., Karim, R., Islam, M. T., Muhammad-Sukki, F., Bani, N. A., & Muhtazaruddin, M. N. (2019). Renewable energy for sustainable growth and development: An evaluation of law and policy of Bangladesh. *Sustainability*, 11(20), 5774. [DOI: 10.3390/su11205774]
- Khan, A., Chenggang, Y., Hussain, J., & Kui, Z. (2021). Impact of technological innovation, financial development and foreign direct investment on renewable energy, non-renewable energy and the environment in belt & Road Initiative

countries. *Renewable Energy*, 171, 479-491. [DOI: 10.1016/j.renene.2021.02.075]

Liu, J., Zhang, D., Cai, J., & Davenport, J. (2021). Legal systems, national governance and renewable energy investment: evidence from around the world. *British Journal of Management*, 32(3), 579-610. <https://doi.org/10.1111/1467-8551.12377>

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Lund, H. (2007). Renewable energy strategies for sustainable development. *energy*, 32(6), 912-919. [DOI: 10.1016/j.energy.2006.10.017]

Moriarty, P., & Honnery, D. (2012). What is the global potential for renewable energy?. *Renewable and Sustainable Energy Reviews*, 16(1), 244-252. [DOI: 10.1016/j.rser.2011.07.151]

Moriarty, P., & Honnery, D. (2016). Can renewable energy power the future? *Energy policy*, 93, 3-7. [DOI: 10.1016/j.enpol.2016.02.051]

Murombo, T. (2016). Legal and policy barriers to renewable and sustainable energy sources in South Africa. *The Journal of World Energy Law & Business*, 9(2), 142-165. [DOI: 10.1093/jwelb/jww001]

Ogunrinde, O., Shittu, E., & Dhanda, K. K. (2018). Investing in renewable energy: Reconciling regional policy with renewable energy growth. *IEEE Engineering Management Review*, 46(4), 103-111.

Panwar, N. L., Kaushik, S. C., & Kothari, S. (2011). Role of renewable energy sources in environmental protection: A review. *Renewable and sustainable energy reviews*, 15(3), 1513-1524. [DOI: 10.1016/j.rser.2010.11.037]

Peake, S. (2018). *Renewable energy-power for a sustainable future* (No. Ed. 4). OXFORD university press.

- Rahmani, A., Mashayekh, J., Aboojafari, R., & Naeini, A. B. (2023). Determinants of households' intention for investment in renewable energy projects. *Renewable Energy*, 205, 823-837.
- Shinwari, R., Yangjie, W., Payab, A. H., Kubiczek, J., & Dördüncü, H. (2022). What drives investment in renewable energy resources? Evaluating the role of natural resources volatility and economic performance.
- Siddik, A. B., Khan, S., Khan, U., Yong, L., & Murshed, M. (2023). The role of renewable energy finance in achieving low-carbon growth: contextual evidence from leading renewable energy-investing countries. *Energy*, 270, 126864. <https://doi.org/10.1016/j.energy.2023.126864>
- Simões, F. D. (2017). *Blusun SA and others v Italy: Legal (in) stability and renewable energy investments*. *Review of European, Comparative & International Environmental Law*, 26(3), 298-304. <https://doi.org/10.1111/reel.12218>
- Stamopoulos, D., Dimas, P., Sebos, I., & Tsakanikas, A. (2021). Does investing in renewable energy sources contribute to growth? A preliminary study on Greece's National Energy and Climate Plan. *Energies*, 14(24), 8537.
- Taghizadeh-Hesary, F., & Yoshino, N. (2020). Sustainable solutions for green financing and investment in renewable energy projects. *Energies*, 13(4), 788. <https://doi.org/10.3390/en13040788>
- Varela, P., & Sánchez, M. (2014). The relevance of legal stability for developing renewable energies. The case of the Galician wind sector. *ECORFAN Journal*, 5-13.
- Walker, G. (1995). *Renewable energy and the public. Land use*.
- Wiser, R. H., & Pickle, S. J. (1998). Financing investments in renewable energy: the impacts of policy design. *Renewable and Sustainable Energy Reviews*, 2(4), 361-386. [https://doi.org/10.1016/S1364-0321\(98\)00007-0](https://doi.org/10.1016/S1364-0321(98)00007-0)

Žuk, P., & Žuk, P. (2023). The role of trust, information and legal stability in the development of renewable energy: the analysis of non-economic factors affecting entrepreneurs' investments in green energy in Poland. *Environment, Development and Sustainability*, 1-36.