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ENHANCING ENERGY SECURITY IN AFGHANISTAN THROUGH DEREGULATION AND RENEWABLE INTEGRATION: AN OVERVIEW

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Abstract

This article explores Afghanistan's centralized and monopolistic energy sector, managed by Da Afghanistan Breshna Sherkat (DABS), and highlights the urgent need for reforms to enhance energy security. With approximately 77.4% of its energy imported and high domestic generation costs, Afghanistan faces energy vulnerabilities that limit economic growth and electrification, particularly in rural areas. The article proposes deregulation and renewable energy integration to address these challenges. Deregulation could open the energy market to private-sector competition, potentially lowering costs and fostering innovation. Additionally, leveraging Afghanistan's abundant solar and wind resources could reduce import dependence and promote energy self-sufficiency. Drawing on international case studies, this study underscores how deregulation, combined with renewable energy, could drive Afghanistan toward a resilient, sustainable energy future. A comprehensive policy framework is recommended to support this transition, focusing on investment incentives, regulatory clarity, and infrastructure modernization.

Keywords: Afghanistan energy security, Energy deregulation, Renewable integration, Sustainable transition, Energy Policy, Energy Security, DABS

1. Introduction

Afghanistan's energy sector is highly centralized and monopolistic, primarily managed by the state-owned utility, Da Afghanistan Breshna Sherkat (DABS), which controls all electricity generation, transmission, and distribution throughout the country [1]. The country’s power supply remains insufficient, with energy demand projected to rise sharply from 2,800 GWh in 2012 to 15,909 GWh by 2032 Approximately 85% of the rural population lacks reliable electricity, and only 30% of the overall population has access to electricity. It heavily relies on energy imports, which constitute 77.4% of the supply, while domestic generation is dominated by costly diesel and fuel oil, averaging 35-40 cents per kWh [2]. Despite the critical need for electricity, only around 30% of the population has access to power, with electrification rates particularly low in rural areas, where just 15% of residents have reliable access [3]. The reliance on imports, combined with high domestic production costs, poses considerable risks to energy security, leaving the country vulnerable to supply disruptions and fluctuating import prices [4].

The energy infrastructure in Afghanistan also suffers from a lack of sufficient transmission capacity and outdated technology, leading to frequent power outages and technical losses that further constrain reliable electricity distribution [3]. In addition, political and economic instability following the recent change in government has led to a contraction in foreign aid and international assistance, which previously supported much-needed energy infrastructure projects [4]

Security concerns also pose a significant barrier to the energy sector’s expansion, as infrastructure is vulnerable to attacks and damage, particularly in conflict zones [3]. These factors collectively hinder Afghanistan’s ability to provide sustainable and affordable electricity to its population, highlighting the urgent need for a diversified and more resilient approach to energy supply [5].

Currently, Afghanistan's limited energy access, with only about 30% of the population connected to the grid, has stunted its industrial and economic growth, leaving most rural areas without electricity and contributing to widespread poverty [2]. The availability of energy not only improves living standards but also strengthens health, education, and overall welfare by providing essential services that stabilize communities [6].

To overcome these challenges, there is a need to shift towards developing Indigenous energy resources, such as hydro, wind, and solar energy, which offer sustainable alternatives to imported energy and can contribute to long-term stability [7]. Moreover, Afghanistan’s geographical location positions it as a potential energy bridge between Central and South Asia, offering transit routes for regional energy projects like CASA-1000 and TAPI, which could generate transit revenue and improve diplomatic relations [6]. However, for Afghanistan to fully harness these opportunities, it must develop a stable, diversified energy sector that reduces reliance on foreign energy imports. By investing in renewable energy and fostering a resilient, self-sufficient power system, Afghanistan can lay the foundation for economic independence and greater political stability in the region [2]. Deregulation and renewable energy integration offer promising pathways to address Afghanistan's energy challenges by fostering competition, enhancing energy access, and promoting sustainability. Deregulation refers to the reduction or elimination of government controls over the energy sector, allowing private entities to participate in energy generation, transmission, and distribution. This approach, widely adopted in countries seeking to liberalize their markets, can lead to increased competition, which often results in lower energy prices, improved service quality, and enhanced innovation. By introducing market-based pricing and competition, deregulation empowers consumers with choice and motivates providers to optimize their services and adopt more efficient, sustainable technologies [8].

In a deregulated framework, renewable energy sources (RES) such as solar, wind, and hydropower can play a pivotal role in creating a resilient, decentralized power system. Integrating renewables into deregulated markets aligns with global trends in energy sustainability, as renewable resources offer lower carbon emissions and reduce dependency on imported fuels [9]. The use of decentralized energy resources, particularly in the form of microgrids and smart grids, further enhances the benefits of deregulation. These systems enable localized energy generation and storage, offering reliable power to communities even in isolated regions, where conventional grid access may be challenging [10].

In Afghanistan, the integration of renewables under a deregulated model could be transformative. By allowing private entities to invest in and manage renewable projects, the country can reduce its dependency on imported energy and address supply shortages. Such integration could drive Afghanistan toward energy self-sufficiency, leveraging its abundant solar and wind resources to support rural electrification and sustainable growth [9]. Ultimately, the dual approach of deregulation and renewable energy integration offers Afghanistan a pathway toward a modernized, reliable energy system. It aligns with the broader global movement towards sustainable energy systems, where deregulated markets and renewables collaboratively drive efficiency, affordability, and resilience [10].

This study aims to explore strategies to enhance Afghanistan's energy security by examining the potential benefits of deregulation and renewable energy integration within its energy sector. Given Afghanistan’s heavy reliance on imported electricity, limited domestic generation, and outdated infrastructure, this

study seeks to address how a transition towards a deregulated, diversified energy market could reduce dependency, foster economic stability, and meet rising energy demands sustainably.

2. Methodology

The study employs a qualitative analysis approach, using a comprehensive literature review to examine existing research on deregulation in energy sectors globally and its impacts on energy security and sustainability. Case studies from countries that have successfully implemented deregulation and renewable integration serve as benchmarks to identify feasible strategies for Afghanistan. Additionally, an assessment of Afghanistan's renewable energy potential and regulatory challenges provides contextual insights, while policy recommendations are developed through a synthesis of best practices and lessons from comparative studies.

3. Literature Review

3.1. The Current State of Afghanistan’s Energy Sector

Afghanistan's energy sector faces numerous challenges stemming from inadequate infrastructure, limited domestic generation capacity, and a heavy reliance on imported power. Only about 30% of the Afghan population has access to electricity, with access dropping to approximately 15% in rural areas, which make up the majority of the country’s demographics [3]. The country's energy demands have been rising, and they are expected to increase from a peak load of 1,500 MW today to an estimated 3,502 MW by 2032 [11].

The energy imports from neighboring countries are highly seasonal and often unreliable due to regional conflicts and political dependencies [7]. Only 22.6% of Afghanistan's power is generated domestically, largely through outdated thermal and hydropower stations that lack sufficient capacity and are increasingly costly to maintain [3]. Despite having substantial renewable energy potential—estimated at 318 GW, dominated by solar and wind—Afghanistan has not yet leveraged these resources due to a lack of infrastructure and investment [4] [12].

Furthermore, the country’s transmission and distribution systems are limited and outdated, with frequent outages and significant technical losses. This unreliable infrastructure is compounded by security issues, which deter investment and complicate maintenance efforts [13]. Afghanistan's power infrastructure initially focused on import-dependent projects like the North-East Power System (NEPS), has largely bypassed the expansion of internal transmission lines, leaving domestic renewable energy resources underdeveloped [14].

Expanding the transmission grid, enhancing domestic renewable generation, and reducing dependency on imports are vital steps toward securing a stable and sustainable energy future for Afghanistan [13] [11].

3.2. Challenges to Energy Security in Afghanistan

Afghanistan's energy security faces numerous obstacles, including overwhelming reliance on imports, insufficient domestic generation, outdated infrastructure, and persistent security challenges. Currently, the nation imports approximately 78% of its electricity from neighboring countries—primarily Uzbekistan, Tajikistan, Iran, and Turkmenistan. This dependency exposes Afghanistan to the risks of regional political instability, pricing fluctuations, and supply chain disruptions. For instance, after the political shifts in Afghanistan in 2021, power suppliers in Central Asia continued to provide electricity despite outstanding payments, though negotiations on pricing and repayment remain challenging given

Afghanistan's economic constraints [6]. The heavy reliance on imported energy also limits the country's control over its energy supply, making it vulnerable to diplomatic or trade disputes that could threaten its access to power [2].

In addition to the reliance on imports, Afghanistan's domestic generation capacity is severely constrained. The country produces only 22% of its required energy, primarily through hydropower and diesel generators. These sources are not only costly—with diesel-generated electricity reaching 35-40 cents per kWh compared to much lower costs for imported power—but also environmentally unsustainable and insufficient to meet growing demand [15]. The lack of diverse and sustainable domestic energy sources hampers Afghanistan's ability to address energy needs independently and sustainably.

Afghanistan's national grid is fragmented, with limited connectivity between regional networks like the Northeast Power System (NEPS) and the Southeast Power System (SEPS), which serves the southern provinces. These grid limitations result in frequent outages and technical losses, affecting both urban and rural areas. In rural regions, which house most of Afghanistan's population, electrification rates are critically low—only about 15% of rural households have reliable electricity access. This lack of infrastructure is largely due to Afghanistan's mountainous terrain, which increases the complexity and cost of expanding transmission networks to remote areas. Building and maintaining infrastructure in these regions is not only expensive but also logistically challenging, making comprehensive coverage a difficult goal to achieve [2]. Security issues significantly impact Afghanistan's energy landscape, as ongoing conflict and political instability discourage investment and disrupt development projects. The Taliban's takeover in 2021 halted several international funding initiatives, reducing the availability of financial resources crucial for energy infrastructure projects and repairs. Energy infrastructure, including transmission lines and substations, is frequently targeted by insurgent groups, leading to service disruptions and increased repair costs. These security risks deter private and international investors from pursuing long-term energy projects in the country, limiting opportunities for development and diversification [16].

Regulatory and institutional challenges further complicate the energy security landscape in Afghanistan. The lack of a cohesive regulatory framework makes it difficult to attract private investment, especially in renewable energy. Issues such as unclear land rights, tariff instability, and bureaucratic inefficiencies create an unfavorable environment for private entities seeking to enter the energy market. Without clear policies to support renewable energy development, Afghanistan risks missing out on the opportunity to harness its substantial solar, wind, and hydropower potential, which could offer more sustainable, affordable solutions to its energy needs [2].

3.3. Deregulation as a Path to Energy Security: Insights from International Case Studies

Deregulation in Afghanistan's energy sector presents a promising approach to enhance energy security by dismantling state-controlled monopolies and introducing competition, which can attract private investments, drive efficiency, and foster renewable energy integration. Deregulation, broadly defined, involves removing or relaxing government restrictions in the energy market, allowing private companies to participate in generation, transmission, and distribution activities traditionally controlled by state-owned utilities [8]. By enabling market forces to play a larger role, deregulation can create a competitive environment that incentivizes investment and innovation, particularly in the renewable energy sector, which Afghanistan desperately needs for sustainable growth [17].

Globally, countries that have embraced deregulation have witnessed positive outcomes, particularly in terms of efficiency, pricing, and investment in renewable technologies. For instance, Argentina implemented deregulation in the 1990s, which introduced competitive practices into its electricity

market. This transition allowed Independent Power Producers (IPPs) to participate and led to increased generation capacity. Over time, this shift significantly reduced electricity costs, improved service reliability, and enhanced technological advancement in the sector [17]. For Afghanistan, allowing IPPs could reduce the dependency on imported electricity and expand its generation capacity through private investments in solar and wind energy, resources abundant across the country.

Nigeria offers another valuable example, as it too has worked to deregulate its energy sector to address its energy security challenges. By encouraging private sector involvement, Nigeria was able to attract substantial investment into the renewable energy market. The country saw significant growth in off-grid solar solutions and mini-grid developments, which helped bring power to remote areas previously underserved by the national grid. These efforts illustrate how a deregulated framework can be particularly effective for rural electrification, something critical to Afghanistan given its limited central grid coverage and the geographic isolation of many communities [18].

Incorporating renewable energy into deregulated markets also requires advanced systems such as microgrids and smart grids to manage distributed generation efficiently. The experience of the United States in integrating renewables within a deregulated market has shown that technologies like microgrids provide an adaptable solution for managing renewable resources. Microgrids allow for localized generation that can operate independently or alongside the main grid, making them ideal for rural and remote areas. Afghanistan's rugged terrain and remote communities could greatly benefit from this model, as microgrids would provide a reliable power source without the high cost of extending central grid infrastructure [9].

Deregulated markets also improve customer choice and drive service providers to optimize costs and technology. For example, in parts of Europe, deregulation has led to reduced electricity prices, increased investment in clean energy, and overall improved grid reliability. The UK's energy market reform, for instance, allowed private entities to compete, leading to investments in renewable energy that reduced reliance on fossil fuels, thus supporting both energy security and sustainability [19].

However, deregulation's success depends on a strong regulatory framework that ensures fair competition while managing issues such as grid stability. Lessons from South Africa's deregulation journey highlight the importance of having robust policies and institutions to regulate market dynamics effectively. South Africa's introduction of IPPs contributed to a diversified energy mix, but challenges remain due to regulatory constraints that sometimes delay project implementation. Afghanistan could learn from this by implementing clear policies to foster private sector confidence and avoid delays that could stall critical energy projects [8].

3.4. Leveraging Renewable Energy for a Sustainable Energy Future

Afghanistan's renewable energy potential offers substantial opportunities to address its energy security needs, reduce reliance on imports, and improve access to electricity, especially in remote areas. The country has an estimated renewable resource potential of over 300 GW, primarily in solar (220 GW) and wind (66 GW), making these sources the most promising for large-scale power generation [12]. Given that Afghanistan receives high solar irradiance year-round, solar photovoltaic (PV) installations are particularly viable for rural and urban areas alike. Regions with high sunlight exposure could support rooftop solar projects, like the Kabul rooftop solar initiative, which demonstrates how solar energy can alleviate grid dependency and provide affordable power directly to consumers [13].

In addition to solar, Afghanistan's wind energy potential—especially in the western and southern regions—presents significant opportunities for energy diversification. The Afghan government, with support from international donors, is exploring wind power installations that could benefit from these high-wind areas, particularly for hybrid systems combining wind and solar. Hybrid systems are ideal for Afghanistan's geography, as they reduce dependency on single energy sources, increase system reliability, and are less vulnerable to seasonal fluctuations [2]. Mini-grids and off-grid solutions, especially in remote and mountainous regions, provide another important avenue for renewable energy development. Afghanistan's low population density and challenging terrain make extending the central grid costly and logistically difficult. Mini-grids and stand-alone systems are more feasible for bringing reliable electricity to these isolated areas. Projects like the Daikundi mini-grid and the Farah hybrid PV-wind-diesel systems serve as examples, showing how decentralized renewable energy solutions can support local communities and drive rural electrification [13].

Hydropower, primarily through small and micro-hydro projects, also holds significant potential for Afghanistan's renewable energy strategy. Afghanistan has about 23 GW of hydropower potential, especially in its northern and central regions. Small-scale hydro installations have already been successfully implemented in several provinces, providing power for local agriculture and village electrification. However, the seasonal variability of water resources and the impact of climate change necessitate careful planning and management to ensure sustainable hydropower use [16] [12].

The international community, including the Asian Development Bank (ADB) and USAID, continues to support Afghanistan in developing its renewable energy sector. For instance, the ADB's Renewable Energy Development in Afghanistan project offers technical and financial assistance to advance the deployment of renewable projects across the country. These partnerships are crucial in building technical expertise, securing financing, and establishing policy frameworks that support renewable integration [12].

Regional energy cooperation initiatives also enhance Afghanistan's renewable energy integration. Projects like the CASA-1000 (Central Asia-South Asia) aim to transfer surplus hydroelectric power from Central Asia to Afghanistan and Pakistan, fostering cross-border energy trade and creating avenues for Afghanistan to develop its renewable resources in parallel. Such partnerships can also provide Afghanistan with valuable experience in managing and operating renewable energy infrastructure [14].

4. Data Analysis

4.1. Key Factors Considerations for Implementing Deregulation and Renewable Integration

Afghanistan's renewable energy sector has the potential to significantly bolster the country's energy security, reduce dependency on imports, and drive sustainable economic development. Below, we analyze key data supporting renewable integration and market deregulation.

4.2. Renewable Energy Potential by Source

Afghanistan possesses substantial renewable resources, with the potential to generate up to 318 GW across various sources. The bar chart below highlights the relative contribution of each renewable source, underscoring the vast potential for solar and wind energy.

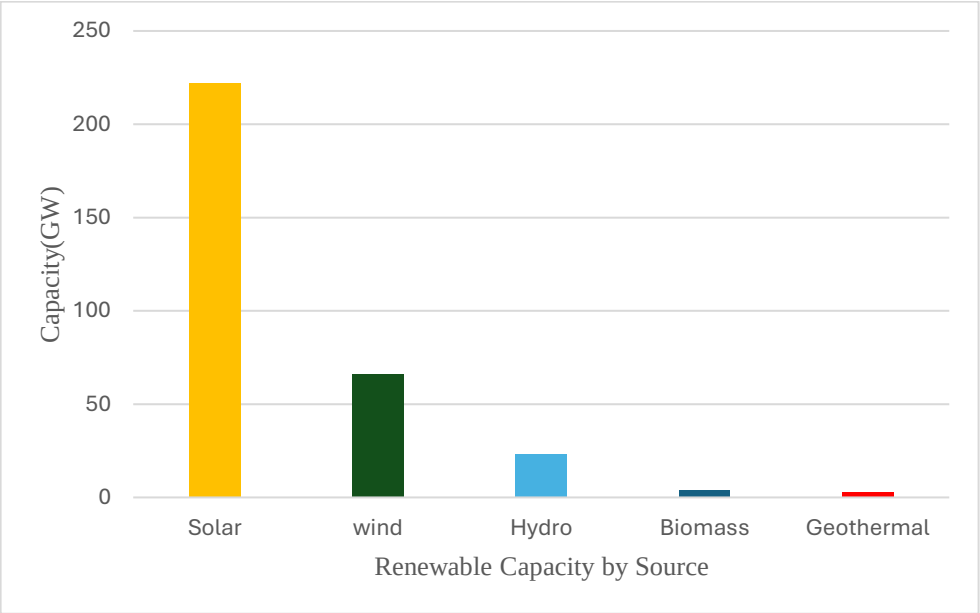

Figure 1 - Afghanistan's Renewable Energy Capacity Potential by Source.

4.3. Current Energy Production vs. Potential Renewable Capacity

Currently, Afghanistan's total energy production, including imports, is approximately 1.5 GW—far below the potential capacity available from renewable sources. This significant gap emphasizes the urgency and opportunity for expanding renewable energy infrastructure. The pie chart below shows the stark contrast between current energy production and potential renewable capacity, with solar and wind representing the largest untapped resources.

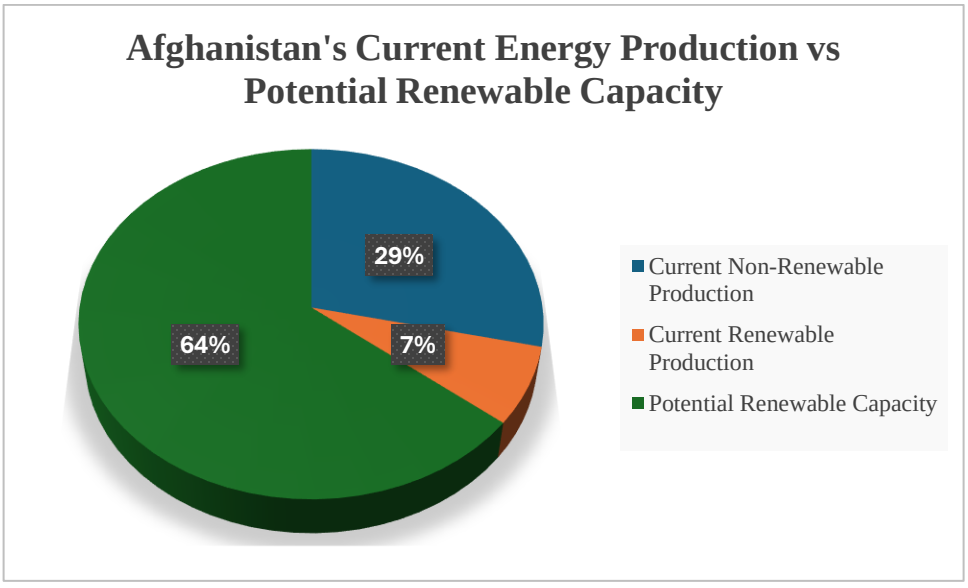

Figure 2 - Afghanistan's Current Energy Production vs Potential Renewable Capacity

4.4. Stakeholder Roles and Policy Recommendations

Achieving successful integration of renewable energy and deregulation will require coordinated efforts across multiple stakeholders. The table below outlines each stakeholder's role and key policy recommendations to support this transition.

Table 1 - Roles and Policy Recommendations for Key Stakeholders in Afghanistan's Energy Transition

Stakeholders	Roles	Policy Recommendations
Government Institutions	Regulate and provide policy framework, incentivize investments, ensure market transparency	Establish investment incentives, simplify licensing, and ensure competitive PPAs
Private Sector and Independent Power Producers (IPPs)	Invest in renewable projects, generate and distribute power, drive technological innovations	Create favorable PPAs, provide clear grid access protocols, and reduce tax burdens
International Donors and Development Partners	Fund renewable projects, offer technical support, help establish regulatory frameworks	Offer financing and technical support, encourage capacity building and institutional support
Civil Society and Local Communities	Support community engagement, promote acceptance, and assist with local project management	Promote workforce development, ensure social benefits of projects, engage in local advocacy

4.5. Challenges to Renewable Integration and Deregulation

Transitioning to a deregulated and renewable-focused energy market involves certain risks including Regulatory and Institutional Challenges, Economic and Political Factors, and Infrastructure Compatibility.

Table 2. Key Challenges to Renewable Integration and Deregulation in Afghanistan

Challenge	Likelihood of Occurrence	Impact Level	Description
Regulatory and Institutional Challenges	High	Critical	Lack of clear regulatory frameworks, potential monopolistic practices, and institutional limitations.
Economic and Political Factors	Critical	High	Political instability and economic constraints deter investment and disrupt long-term project planning.

Infrastructure Compatibility	High	High	Difficulty in integrating new infrastructure with existing systems, requiring grid stability adjustments.
Security and Investment Risks	Critical	Critical	Security issues and political instability discourage foreign and domestic investment, impacting project viability.

4..6. Projected Energy Demand and Strategic Goals for Renewable Integration

The comparative table summarizes the experiences of Afghanistan alongside key case study countries—Argentina, Nigeria, USA, UK, and South Africa. It highlights the timeline for deregulation and its outcomes, including increased participation of Independent Power Producers (IPPs), investment growth in renewables, and impact on electricity costs. For instance, Argentina and the UK experienced significant cost reductions post-deregulation, while Nigeria saw high growth in renewable investment, particularly in off-grid solutions. The USA leveraged deregulation to enhance grid reliability and rural electrification through technologies like microgrids. These insights provide a framework for Afghanistan to consider, demonstrating how deregulation could attract investment, enhance efficiency, and foster renewable integration to meet energy security goals.

Table 3.Deregulation Outcomes in Energy Sectors: A Comparative Analysis of Case Study Countries

Country	Deregulation Start	IPP Participation	Electricity Cost Impact	Renewable Growth	Rural Electrification Impact
Argentina	1990s	Increased	Reduced	Moderate	Limited
Nigeria	2000s	High	Mixed	High	Significant
USA	1990s	High	Reduced	High	Significant for isolated areas
UK	1990s	High	Reduced	High	Moderate
South Africa	2000s	Moderate	Mixed	High	Limited

4.7 Policy Recommendations

Based the on findings from this study and insights from international case studies, the following policy actions are recommended to strengthen Afghanistan's energy security and promote sustainable development:

1. Establishing clear guidelines for private sector entry, transparent licensing, and an independent regulatory body to oversee fair competition.
2. Offering tax breaks, subsidies, and favorable Power Purchase Agreements (PPAs) to attract investments in solar and wind energy.

3. Upgrading transmission networks and promoting decentralized systems like microgrids to increase rural electrification.
4. Encouraging small-scale solar and wind projects for rural areas and pilot hybrid systems to reduce import dependency.
5. Creating a Renewable Energy Development Fund and offering low-interest loans for renewable projects.
6. Establishing Partnerships with international organizations for technical training and workforce development in renewable energy.

5. Conclusion

Afghanistan's path toward energy security through renewable integration and deregulation represents a critical opportunity to harness its substantial solar, wind, and hydro resources. The study highlights Afghanistan's considerable renewable potential—particularly in solar and wind energy—alongside the challenges that must be addressed to make this transition viable. Current reliance on imported electricity, limited infrastructure, and security concerns pose significant obstacles to achieving sustainable energy independence. However, with a well-structured, phased approach that includes supportive regulatory frameworks, investment incentives, and capacity-building initiatives, Afghanistan can make steady progress toward a resilient energy system.

Key stakeholders, including government entities, the private sector, international donors, and local communities, must collaborate effectively to implement the recommended policies. These include investment-friendly regulations, streamlined licensing processes, and Power Purchase Agreements (PPAs) to encourage private sector participation. Moreover, addressing the specific challenges of regulatory gaps, political instability, and infrastructure limitations will be crucial in ensuring that renewable projects are sustainable and well-integrated with Afghanistan's existing energy infrastructure.

Looking ahead, a successful transition to renewable energy will not only reduce Afghanistan's reliance on imports but also stimulate economic growth, improve rural electrification, and create a cleaner environment. With a strategic focus on renewable integration, supported by international partnerships and a commitment to regulatory reform, Afghanistan has the potential to achieve a secure, independent, and sustainable energy future. This pathway not only aligns with global trends in sustainable energy development but also holds promises for greater economic stability and resilience against external supply disruptions.

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РЕЗЮМЕ

ПОВЫШЕНИЕ ЭНЕРГЕТИЧЕСКОЙ БЕЗОПАСНОСТИ В АФГАНИСТАНЕ ПУТЕМ ДЕРЕГУЛИРОВАНИЯ И ИНТЕГРАЦИИ ВОЗОБНОВЛЯЕМЫХ ИСТОЧНИКОВ ЭНЕРГИИ: ОБЗОР

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В этой статье рассматривается централизованный и монополистический энергетический сектор Афганистана, управляемый Da Afghanistan Breshna Sherkat (DABS), и подчеркивается настоятельная необходимость реформ для повышения энергетической безопасности. При импорте примерно 77,4% энергии и высоких внутренних затратах на производство Афганистан сталкивается с энергетической уязвимостью, которая ограничивает экономический рост и электрификацию, особенно в сельской местности. В статье предлагается дерегулирование и интеграция возобновляемых источников энергии для решения этих проблем. Дерегулирование может открыть энергетический рынок для конкуренции частного сектора, потенциально снижая затраты и способствуя инновациям. Кроме того, использование обильных солнечных и ветровых ресурсов Афганистана может снизить зависимость от импорта и способствовать энергетической самодостаточности. Опираясь на международные тематические исследования, в этом исследовании подчеркивается, как дерегулирование в сочетании с возобновляемыми источниками энергии может привести Афганистан к устойчивому, устойчивому энергетическому будущему. Для поддержки этого перехода рекомендуется комплексная политическая структура, сосредоточенная на инвестиционных стимулах, нормативной ясности и модернизации инфраструктуры.

Ключевые слова: энергетическая безопасность Афганистана, дерегулирование энергетики, интеграция возобновляемых источников энергии, устойчивый переход, энергетическая политика, энергетическая безопасность, DABS

ТҮЙІНДЕМЕ

АУҒАНСТАННЫҢ ЭНЕРГЕТИКАЛЫҚ ҚАУІПСІЗДІГІН РЕТТЕУ ЖӘНЕ ЖАҢАРТЫЛАТЫН ИНТЕГРАЦИЯ АРҚЫЛЫ АРТТЫРУ: ШОЛУ

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Бұл мақала Ауғанстанның Да Ауғанстан Брешна Шеркат (DABS) басқаратын орталықтандырылған және монополистік энергетика секторын зерттейді және энергетикалық қауіпсіздікті арттыру үшін реформалардың шұғыл қажеттілігін көрсетеді. Энергиясының шамамен 77,4%-ы импортталатын және отандық өндіруге жоғары шығындармен Ауғанстан әсіресе ауылдық жерлерде экономикалық өсуді және электрлендіруді шектейтін энергетикалық осал жағдайлармен бетпе-бет келеді. Мақалада осы проблемаларды шешу үшін реттеуді жою және жаңартылатын энергия көздерін біріктіру ұсынылады. Дерегуляция энергия нарығын жеке сектордағы бәсекелестікке ашып, шығындарды төмендетуі және инновацияны ынталандыруы мүмкін. Бұған қоса, Ауғанстанның күн мен желдің мол ресурстарын пайдалану импортқа тәуелділікті азайтып, энергиямен өзін-өзі қамтамасыз етуге ықпал етуі мүмкін. Халықаралық тәжірибелік зерттеулерге сүйене отырып, бұл зерттеу жаңартылатын энергиямен біріктірілген реттеуді жою Ауғанстанды тұрақты, тұрақты энергетикалық болашаққа қалай жетелейтінін көрсетеді. Инвестицияларды ынталандыруға, реттеудің анықтығына және инфрақұрылымды жаңғыртуға баса назар аудара отырып, осы өткелді қолдау үшін кешенді саясат құрылымы ұсынылады.

Түйін сөздер: Ауғанстанның энергетикалық қауіпсіздігі, Энергияны реттеу, Жаңғыртылатын интеграция, Тұрақты көшу, Энергетикалық саясат, Энергетикалық қауіпсіздік, DABS