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# Green Energy Transition in Bangladesh: A Constitutional and Legal Analysis of Energy Security and Environmental Protection

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## ABSTRACT

*Bangladesh stands at a crossroads in the management of energy. Economic expansion, industrialisation, and electrification have traditionally been achieved through the rapid growth of established fossil-fuel-based sources of energy. This paradigm is no longer sustainable, however, as the nation becomes more exposed to climate change and to volatile international fuel markets. This article addresses whether the constitutional and legislative structures of Bangladesh can support a substantial transition to green energy without jeopardising energy security or environmental conservation. Although Bangladesh does not possess a constitutionally enforceable right to a healthy environment, the reading of Article 18A, Article 32, and public interest litigation together with international environmental standards can contribute to an emerging environmental constitutionalism. This article argues that the conventional opposition between energy security and green transition has become a less tenable framing within a sustainable development context. Overdependence on fossil fuels undermines long-term energy security and imposes fiscal and environmental strain. The article contends that the legal basis for a green transition in Bangladesh already exists and requires greater consistency, enforceability, and integration of constitutional values into energy governance. The transition must be understood as a legal commitment central to the pursuit of sustainable development.*

**Keywords:** *Green energy transition, Environmental constitutionalism, Renewable energy, Climate governance, Sustainable development*

a more environmentally sound and sustainable energy system.<sup>2</sup> For decades, energy policy in Bangladesh has been concerned primarily with energy security, most of which has been achieved by reliance on fossil fuels. Volatile global fuel-market dynamics have exposed Bangladesh to energy vulnerability, underscoring the need for a more robust energy system that balances economic and environmental objectives.<sup>3</sup> Article 18A constitutionalises environmental stewardship for present and future generations. While not directly enforceable, when read alongside Article 32 (the right to life) it extends constitutional protection to a safe environment. The establishment of agencies such as the Sustainable and Renewable Energy Development Authority (SREDA) is a welcome development, but national energy policy still favours fossil fuels as the principal source of energy. This misalignment between legal commitments, institutional design, and policy goals has impeded the transition to a low-carbon economy.<sup>4</sup> The stability of fossil-fuel supply is generally identified with energy security, whereas environmental protection has been treated as an ancillary concern. For Bangladesh, moving to green energy is not a luxury but a pressing necessity, mandated both by the Constitution and by the demands of sound environmental stewardship. The shift to renewable energy is not merely an economic or technical problem but a constitutional and legal necessity that cannot be realised without a thorough reconsideration of energy policy.<sup>5</sup> This article contends that the green energy transition in Bangladesh should be understood as a legal and constitutional requirement rather than a policy option. It requires not only the deployment of renewable energy technologies but also the creation of a coherent legal and institutional system capable of implementing that process. By examining the constitutional, legal, and policy framework in Bangladesh, this article contributes to the debate on the green energy transition, an initiative central to sustainable development, energy security, and constitutional obligation.

transition can be perceived not merely as an energy issue or an environmental-rights issue, but as an issue situated at the intersection of development, legality, institutional design, and constitutional obligation.<sup>7</sup>

### **A. Energy security scholarship**

Supply adequacy, affordability, reliability, and diversity have long been the principal focus of the prevailing literature on energy security. In developing-country contexts, such scholarship is generally concerned with infrastructure shortfalls, expansion of access, generation, fuel acquisition, tariff stability, and energy poverty.<sup>8</sup> In Bangladesh, and in South Asia more broadly, energy security has usually been defined as a primary developmental duty of the state: the absence of stable electricity and fuel supply jeopardises industrialisation, urbanisation, and welfare gains.<sup>9</sup>

This body of literature is valuable. It explains why centralised generation and conventional fuels were historically of great interest to Bangladesh, and it illuminates the structural problems of a developing state facing rapidly growing demand. Nevertheless, much of this scholarship operates within a relatively narrow or technocratic understanding of security. Environmental degradation, climate sensitivity, and ecological costs that extend into the future are commonly treated as externalities, incidental considerations weighed against the central objective of maintaining continuous supply.<sup>10</sup> Consequently, the literature is weak in theorising the proposition that environmental sustainability may itself be a constitutive component of energy security.<sup>11</sup>

pace of renewable development in Bangladesh cannot be explained merely by a lack of policy awareness; rather, it points to governance and institutional deficiencies.<sup>12</sup>

Most of this literature nonetheless remains within the field of energy policy, economics, and development planning. The renewable transition is frequently viewed as a managerial or technical challenge, framed in terms of market structure and viability, rather than as a constitutional question concerning the legal propriety of state energy policy.<sup>13</sup> The literature is therefore strong on diagnosis but weaker in explaining the interaction between transition and constitutional obligation, public-law responsibility, and the legal framework governing state power.<sup>14</sup>

### C. Environmental constitutionalism

A third stream of scholarship addresses environmental constitutionalism. This field has grown significantly over the past two decades and has shown that constitutions can protect environmental interests in a variety of ways: by granting specific environmental rights, by establishing directive principles, by imposing duties on the state, by guaranteeing procedural safeguards, or by interpreting broader rights such as life, health, dignity, and equality. Among its most important lessons is that constitutional environmental protection does not depend on the textual availability of an enforceable right to the environment. Environmental constitutionalism may instead take the form of interpretive practice, judicial creativity, intergenerational reasoning, and public-law principles of sustainable development and public trust.<sup>15</sup>

This literature is highly applicable to Bangladesh. Article 18A signals clearly that the constitutional order values environmental steward

#### **D. Bangladesh environmental law and public interest litigation**

A fourth thread examines environmental law jurisprudence in Bangladesh and the role of public interest litigation. The influence of the Bangladesh Environmental Lawyers Association (BELA) and of the public-law developments associated with Dr. Mohiuddin Farooque has been considerable. Scholars in this field have shown that the judiciary has relaxed conventional standing rules in cases involving collective harms, vulnerable populations, and diffuse environmental damage. They have also identified the substantive expansion of the right to life in situations concerning communal health and environmental hazards.<sup>16</sup>

This literature plays a vital role, for it demonstrates that the courts of Bangladesh have not been wholly passive in the face of ecological harm. The treatment of environmental injury as a justiciable matter has provided a means of securing environmental justice where political institutions have been inactive or remote. Nonetheless, this scholarship has focused predominantly on standing, procedural innovation, and particular environmental harms, such as pollution, unsafe goods, and development projects with harmful environmental effects. The broader question of whether fossil-fuel-dependent energy governance can generate constitutional tension of its own remains relatively unexplored.

#### **E. Climate justice and international legal commitments**

A fifth cluster of literature concerns climate justice, international climate commitments, and the particular vulnerability of Bangladesh within global climate governance. This literature tends to emphasise that

international norms, but in demonstrating how they may be applied to constitutional and statutory analysis in Bangladesh.

### **F. The analytical gap**

A deeper methodological division is revealed in the literature. Energy scholarship is usually empirical, economic, and technical, whereas legal scholarship is usually doctrinal and normative. These discourses are insufficiently connected. It is therefore possible to identify rigorous studies of the energy mix of Bangladesh, grid constraints, and renewable limitations that involve no constitutional analysis, alongside equally rigorous studies of environmental rights and public interest litigation that pay little attention to the long-term political economy of energy regulation.

It is at this juncture that this article intervenes. It argues that the green transition in Bangladesh cannot be adequately understood through siloed analysis. It must instead be treated as a constitutional balancing question in which energy security and environmental protection are assessed under the same normative standard. The principal gap in the existing literature is not the absence of discussion of any single issue, but the absence of an integrated analysis. There is insufficient scholarship on the compatibility of the constitutional framework, the statutory framework, judicial reasoning, and the transition challenge.<sup>19</sup>

This article addresses that gap in three ways. First, it treats the constitutional and statutory framework of Bangladesh as an analytical object and disaggregates the domains of environment and energy. Second, it demonstrates the capacity of non-justiciable environmental provisions to acquire enforceable meaning through judicial interpretation and comparative constitutional reasoning. Third, it argues that fossil-fuel reliance is not merely the

A clear framework is necessary because the argument of the article rests on the contention that the traditional framing of energy security and environmental protection as necessarily opposed is questionable.

### **A. Green energy transition**

The green energy transition requires a systemic shift from fossil fuels to low-carbon generation, moving beyond isolated initiatives or rhetorical policies.<sup>21</sup> A substantial transition is manifested in reforms to planning priorities, statutory design, subsidy structures, regulation, grid integration, institutional powers, market access, and state investment. In legal terms, transition refers to the idea that environmental and climate-related considerations are increasingly integrated into the framework of energy regulation, rather than treated as external costs to be addressed post hoc.<sup>22</sup>

### **B. Energy security**

The traditional understanding of energy security has been framed in terms of the availability, affordability, reliability, and diversity of supply.<sup>23</sup> Such an understanding remains important, with infrastructure shortfalls and cost considerations as central concerns in a developing state. But it is not a complete definition in present circumstances. An energy system may appear secure in the short term while generating long-term vulnerability through reliance on imports, subsidies, ecosystem destruction, and heightened exposure to climate change.<sup>24</sup> Energy security is therefore treated in this article as a broader constitutional and governance concept, encompassing resilience

participation, and an interpretive, environmentally conscious reading of rights such as life, dignity, and health. Importantly, environmental constitutionalism does not depend solely on the existence of an explicitly enforceable environmental right. It may also be expressed through directive principles, constitutional duties, or the interpretive expansion of existing rights.<sup>25</sup>

#### **D. Methodological orientation**

This article adopts a normative, doctrinal, and comparative approach. The doctrinal element involves close study of the Constitution of Bangladesh, applicable statutes, renewable energy legislation, environmental law, and judicial decisions. The aim is not merely to document legal materials, but to assess their interaction and their relevance to the present and future legality of energy regulation.

The normative element inquires how these legal materials should be understood in light of constitutional commitments, institutional realities, and ecological vulnerability. A purely descriptive account would not suffice, because most of the central questions of the article turn on tension, silence, and the underdeveloped relations between legal norms. Whether Article 18A can inform the review of energy planning cannot be answered on textual grounds alone. It requires normative reasoning about the form of constitutional obligations, how life and welfare should be understood, and whether state trade-offs that externalise environmental harm can be legitimised.

#### **E. Political economy as juridical context**

The general methodological orientation may thus be described as constitutionalised energy governance analysis. It resists both formalism and pure policy reductionism. It does not presuppose that constitutional law is inapplicable to the energy sphere because of the technicality of energy, nor that constitutional discussion of energy issues can resolve those problems on its own. Rather, it treats law as a structuring force that shapes planning decisions, institutional responsibilities, and the legitimacy of the trade-offs made on behalf of the people. This is especially apt in Bangladesh, where constitutional obligation, statutory fragmentation, judicial activism, and policy ambition coexist in unresolved tension.<sup>27</sup>

#### **IV. CONSTITUTIONAL AND STATUTORY FRAMEWORK OF THE GREEN ENERGY TRANSITION IN BANGLADESH**

The green energy transition in Bangladesh is not comprehensively governed by law. It is composed of constitutional undertakings, environmental regulations, renewable energy agencies, and policy instruments that together establish a significant yet piecemeal legal infrastructure. The question is not whether the law says anything about sustainability, but whether, taken together, these legal materials can generate coherent transition governance.

##### **A. Constitutional foundations**

Article 18A of the Constitution of Bangladesh mandates that the state protect the environment and natural resources for present and future generations. Although not directly enforceable as a standalone right, it establishes a clear constitutional

silence in the Constitution, but the ineffectiveness of legal processes in translating that duty into an operative force. Conservation of quality means preserving environmental resources in a healthy and sustainable condition so that they remain usable for future generations; conservation of access refers to ensuring fair and equitable access to natural resources and their benefits for both present and future generations.<sup>29</sup>

Article 32, which guarantees the right to life, is complementary to Article 18A. Article 32 does not directly address environmental protection, but the judiciary has construed it to embrace a broader view of the right to life that includes freedom from environmental degradation and the right to a healthy and safe environment. Judicial activism and public interest litigation have supported this interpretation and the enforcement of constitutional environmental obligations. The judiciary has directed the state to distribute the radio spectrum, a natural resource, in the capacity of a trustee.<sup>30</sup> When life is understood substantively, and not exclusively in biological terms, severe environmental harm, ecological hazard, and exposure to damaging development may fall within the scope of its protection. In the constitutional dialogue between Article 18A and Article 32, Article 18A articulates the duty, while Article 32 supplies the justiciable potential.

## **B. Energy regulatory law**

The Bangladesh Energy Regulatory Commission Act 2003 is one of the core components of the energy governance system at the statutory level. The Act established a regulatory body charged with licensing, tariff regulation, consumer protection, and general regulatory oversight of the energy sector. It was not enacted as a climate instrument, and its original structure reflects the priorities of a conventional supply-based energy model. However, regulatory law heavily

recognised that the green transition required a dedicated institutional vehicle, and it established SREDA. This was significant progress. It implied that renewable energy was not to be an adjunct of conventional energy management, but a distinct domain requiring specialised attention.<sup>32</sup>

The existence of SREDA is not, however, sufficient in itself to address the structural problems of transition. The creation of institutions that lack adequate coordination, powers, and enforcement capacity may produce symbolic progress without substantive change. Where conventional energy institutions still hold a dominant planning role, it may be difficult for a dedicated renewable authority to alter the policy stance. SREDA is therefore a significant, though minimal, legal advance.

The Renewable Energy Policy 2008 was also significant as a policy instrument. It represented state recognition that the future of energy governance would require diversification, sustainability, and renewable development. This orientation has been reaffirmed by subsequent policy and planning documents. However, policy ambition has not necessarily translated into legal obligation and practice. Renewable policy is usually aspirational and lacks enforceable targets, procurement mechanisms, and follow-through capable of converting intention into change.<sup>33</sup>

The Integrated Energy and Power Master Plan 2023 is a more advanced planning framework. It moves conceptually beyond the older assumption of the environment as a mere external constraint, recognising environmental protection as one of the central pillars of energy planning. But again, whether this reflects a legal change depends on implementation. Where environmental language is incorporated into planning discourse while fossil

design of the Act is largely reactive. It aims to regulate and reduce environmental degradation, yet imposes no prospective obligation to reorient developmental pathways towards environmental sustainability. In that respect, it can restrict environmentally harmful energy activity, but it does not create a proactive legal imperative of transition.

The Environment Court Act 2010 supplements the broader environmental regime by providing adjudicatory mechanisms. Nonetheless, it too is largely corrective in nature. It is useful in resolving disputes and breaches, but it does not generate strategic direction for national energy planning. Environment courts can remedy particular harms without reworking the rationale of a fossil-based system of governance.

The Climate Change Trust Act 2010 responds to the reality that the vulnerability posed by climate change requires an institutional response in Bangladesh. It forms a significant part of the legal landscape, particularly in a state highly exposed to climatic harm. However, climate governance, environmental law, and energy law continue to operate largely in parallel rather than within a coordinated framework. This institutional division undermines the possibility of coherent transition governance.

### **E. Structural assessment**

Taken together, these legal materials reveal an underlying paradox. The legal regime of Bangladesh contains multiple normative and institutional provisions favourable to the green transition. Environmental obligation is acknowledged in the Constitution. Institutions and policy frameworks are committed

## **V. ENERGY SECURITY, FOSSIL-FUEL DEPENDENCE, AND ENVIRONMENTAL RISK**

Fossil-fuel dependence has established a policy and legal lock-in in Bangladesh that reinforces the status quo and makes it difficult to shift to renewable energy. The legal framework, including Article 18A, has never been properly applied to, or aligned with, energy policy in a manner that would enable the green transition. On the prevailing definition, security means adequate supply, price controllability, uninterrupted generation, and fuel availability. Renewable energy may be welcomed, but usually as an adjunct or a slow, incremental supplement rather than as the guiding principle of future energy law.<sup>36</sup> This part argues that such a framework is no longer conceptually apt and is increasingly difficult to defend within a constitutional arrangement that takes environmental protection and the common good seriously.

### **A. Traditional security paradigm**

Historically, the emphasis of Bangladesh on conventional energy security was understandable. The extension of electrification, industrial growth, and rising demand in urban and rural areas required a rapid increase in generating capacity. Reliability and scale were therefore paramount for policymakers. Natural gas, imported fuels, and centralised plants appeared to offer a viable solution. The institutional framework of the sector, including legislation, was developed in accordance with these assumptions.

The assumptions underlying that model have since changed. The

This fossil-fuel reliance creates a legal and policy lock-in, in which entrenched institutional contracts, pricing systems, and administrative practices actively hinder renewable energy integration. By fixing procurement structures, licensing standards, generation planning, and investment incentives around conventional fuels, the system makes it difficult to integrate renewables not only technically but also legally. In this scenario, renewables may be legally permitted yet disadvantaged at a deeper level of governance.

### **C. Environmental protection as a constitutional constraint**

This matters because environmental constitutionalism cannot be assessed solely at the level of abstract principle. It must also be tested against the structural choices made by the state.<sup>38</sup> When the systemic biases of the energy pathways chosen by the state consistently favour options that yield predictable environmental harm and climate-related risk, one may question the state's respect for its own environmental responsibility. This is reinforced by the International Court of Justice, which held in its Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons that respect for the environment is one of the elements that go to assessing whether an action is in conformity with the principles of necessity and proportionality.<sup>39</sup> Consequently, where a state's energy strategy fails to account for severe ecological harm, it may not only fall short of domestic environmental stewardship but also fail the international legal test of proportionality. This does not mean that all conventional energy projects are unconstitutional. Bangladesh cannot rapidly escape its entire fossil-fuel reliance. The question is whether the legal order permits a mode of development that continues to externalise environmental harm and treats transition delay as beyond the reach

contaminants has been treated as a direct violation of constitutional obligations concerning public health and safety.<sup>42</sup>

#### **D. Subsidies, fiscal governance, and opportunity cost**

This tension is felt acutely in the field of public finance. Fossil-fuel-intensive systems may be supported, explicitly or implicitly, by subsidies intended to shield consumers and stabilise markets.<sup>43</sup> Where public funds continue to sustain energy-regressive decisions while renewable infrastructure remains underdeveloped, the issue is not merely one of policy choice. It is a redistribution of public support that may be incompatible with long-term communal and constitutional rationality.

The opportunity-cost dimension is central. Money devoted to sustaining fossil-fuel dependence is money not available to modernise the grid, develop storage, expand rooftop solar, pursue decentralisation, or build the infrastructure necessary for transition.<sup>44</sup> The more viable the renewable alternatives and the greater the environmental harms, the heavier the state's legal burden of justification becomes. Administrative rationality must go beyond the repetition of conventional developmental commonplaces. It must offer a reasoned justification for why economically and ecologically costly routes should remain preferred.

#### **E. Green transition as long-term energy security**

be traced to developmental necessity alone. Constitutional and statutory interpretation should keep pace. Environmental protection ceases to be an external barrier to energy security and comes to be regarded as one of its necessary requirements.<sup>47</sup>

This does not imply that energy planning should be micromanaged by the courts. Such planning will always involve technical, economic, and political decisions that fall largely within the province of the executive and legislature. Constitutional law may, however, require that such decisions be consistent, reasoned, and attentive to environmental imperatives. It may demand that the state not disregard transition alternatives without justification, not treat environmental harm in a manner that ignores its intergenerational character, and not render future generations constitutionally invisible.

Framed more precisely, the question is not whether Bangladesh must sacrifice development for the sake of environmental protection. It is whether the nation will continue to pursue development through a legal model that is fiscally unsustainable, ecologically harmful, and constitutionally unbalanced. The green transition is not an immediate and complete solution, but it offers an avenue through which energy law may orient current governance towards long-term constitutional sustainability.

## **VI. JUDICIAL ACTIVISM, INTERNATIONAL LAW, AND COMPARATIVE CONSTITUTIONALISM**

In the absence of an express declaration of a right to a healthy environment in Bangladesh, the question becomes whether constitutional practice

harm to community and environmental interests may furnish a basis for judicial review. This was noteworthy because most environmental harms are collective and diffuse, and are not readily attributable to a single victim.

The expansion of locus standi is essential to environmental constitutionalism, whether understood on constitutional or on practical grounds. Environmental values may thereby be incorporated into constitutional adjudication through public interest litigation, which supplies the procedural foundations through which those values enter constitutional reasoning.<sup>50</sup>

### **B. Right to life and environmental safety**

This jurisprudence is also of great significance. When courts have recognised environmental harm as a matter of public law, they have had to address the interaction between environment and rights. The right to life under Article 32, as developed in the case law and notably in the Radioactive Milk litigation, came to be associated with public health and environmental safety. This extended the purpose of the right to life beyond protection against direct state repression to the broader conditions of a safe and dignified existence.

This reasoning is relevant to energy governance. Energy systems that rely heavily on polluting sources, harmful infrastructure, and a slow green transition may not resemble the conventional form of rights infringement, yet they may have a cumulatively devastating impact on health and welfare. A more expansive interpretation of Article 32 would therefore permit courts

are inherent in the right to life itself.<sup>52</sup> Taken in unison, these provisions imply that the state must not regulate energy and development in a manner that irrationally disregards ecological soundness and human welfare.

#### **D. Interpretive support from international law**

This constitutional route is supported by international law. Bangladesh is a party to the principal environmental and climate regimes and has made numerous commitments to climate-resilient and low-carbon development. It is true that international law does not simply override domestic law, but it may inform the interpretation of constitutional texts where the constitutional text is open and the case law is developing.<sup>53</sup>

This is especially so in environmental law, where the principles of sustainable development, precaution, and intergenerational equity have become widely recognised.<sup>54</sup> The international recognition of a right to a clean, healthy, and sustainable environment is relevant. Although this may not by itself establish a domestic right, it reinforces the position that environmental integrity carries constitutional significance in Bangladesh.

#### **E. An emerging environmental constitutionalism**

Combined with comparative materials, these domestic sources demonstrate that the absence of an express

adequate. Article 18A and its connection with Article 32 provide important normative resources capable of supporting environmental protection. Statutory law provides institutions for the promotion of renewable energy, environmental control, and responses to climate change. Judicial activism has increased access to environmental justice and has connected ecological harm to the right to life. International and comparative developments reinforce the case for a more robust environmental constitutionalism. At the same time, the current structure remains fragmented. Energy law, environmental law, and climate regulation continue to run on parallel tracks without adequate doctrinal or institutional integration. This enables the state to speak of sustainability while continuing to practise fossil-intensive planning. The problem is not the absence of law but the absence of coherent legality. Another assumption challenged in this article is that Bangladesh has only two options: to pursue energy security or to protect the environment. Under present circumstances, reliance on fossil fuels is not a source of long-term security. It may increase import vulnerability, fiscal pressure, environmental harm, and climate risk. A more diversified and greener energy system is therefore not a luxury. It is a more rational, resilient, and constitutionally secure form of long-term energy security. Bangladesh need not await an external constitutional model to guide it in this direction. It already possesses the constitutional language, the judicial avenues, and the institutional foundations with which to construct a stronger transition process. What is required is a more coherent, enforceable, fiscally aligned, and certain constitutional adherence to environmental responsibility. The argument of this article may thus be stated simply: in a climate-vulnerable state such as Bangladesh, the transition towards green energy can no longer be regarded as a matter of discretionary policy. It is a constitutional and legal mandate of the state to balance development, energy security, and the environmental protection of present and future generations.<sup>56</sup>