

# Citizen's Agenda 2023

## Towards a Different Bangladesh



Citizen's Platform for SDGs, Bangladesh  
এসডিজি বাস্তবায়নে নাগরিক প্ল্যাটফর্ম, বাংলাদেশ

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### Ensuring Affordable and Clean Energy for All

#### The Initiative

Preparation of the Policy Briefs builds on a wide range of activities undertaken over the past two years (2022-2023) by the Citizen's Platform for SDGs, Bangladesh. These activities sought to capture the views of the country's left-behind stakeholders at the subnational level as regards Bangladesh's dominant development narrative. Citizen's Platform's engagements in this connection included stakeholder dialogues, town hall meetings, focus group discussions, perception surveys and consultation with the media. Also, a Public Hearing was organised at the national level to create opportunities for the disadvantaged people to voice their concerns and aspirations in the presence of high-level policymakers and opinion builders.

It emerged from this exercise that a significantly large number of citizens and certain communities in Bangladesh have continued to remain vulnerable to various risks, which relegated them to the "left behind" situation in the revealed process of economic development. However, the *Leave No One Behind* spirit of the Sustainable Development Goals (SDG) requires that all citizens, without exception, are ensured an equitable share in the country's development outcomes. Consequently, appropriate actions are needed to address these overarching national concerns to advance the interests of the country's vulnerable citizens and communities.

Accordingly, through country-wide interactions with spokespersons of key stakeholder groups, Citizen's Platform identified 11 themes requiring urgent attention for immediate action. As a follow up, now a series of Policy Briefs has been prepared with a set of concrete recommendations in each of the identified areas, underpinned by the specific context and contestations concerning the articulated theme. In each of these cases, the concerns and interests of the vulnerable groups have informed the suggestions for reforms and policy uptakes.

Each of the Policy Briefs in the series has been prepared by a dedicated team of experts of high national and international repute. Each Policy Brief Team had an eminent personality as the Chair to lead the process, with a recognised professional as the Penholder Expert to prepare and finalise the successive drafts with input from the team members. Each team got together several times, reviewed the notes of the sub-national discussions and the FGDs, and consulted relevant resource materials. A 22-member Advisory Committee, which included eminent professionals and leading personalities, provided guidance to the Policy Brief initiative.

The initiative was led by *Dr Debapriya Bhattacharya* and *Professor Mustafizur Rahman*, Distinguished Fellows at the Centre for Policy Dialogue (CPD). CPD, as the Secretariat of the Citizen's Platform, provided all necessary support for the smooth implementation of the initiative.

#### Disclaimer

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## 1. Background and Context

As Bangladesh moves forward, issues of energy transition are expected to assume heightened importance. Energy has emerged as a key factor for productivity enhancement, increasing competitive strength and raising quality of life and well-being of citizens. Ensuring affordable and clean energy for all has thus emerged as both a demand of the present times and a key challenge in going forward. Against this backdrop, developing a sound strategic framework for energy transition and ensuring energy security and long-term sustainability of growth have emerged as a major tasks confronting Bangladesh's policymakers and concerned stakeholders.

Historically, Bangladesh has faced formidable challenges in providing adequate electricity to its population and meeting its developmental demands. The country experienced two major difficulties in view of this. First, till 2009, electricity demand has been higher than the installed capacity. Second, the overwhelming dependence on natural gas, accounting for more than 80 per cent of the country's electricity generation, turned out to be unsustainable in the end. The growing demand and supply gap, in the backdrop of lack of attention to exploration of new gas fields, culminated in the emergence of the energy crisis experienced by Bangladesh in the early 2000s. This led Bangladesh to increasingly rely on liquid fuels to generate electricity.

To address the attendant challenges and the emerging gaps, Bangladesh initiated a number of reforms and put in place several measures. Core reform initiatives included sectoral restructuring of public utilities, encouraging private investment in the generation sector and establishment of an independent regulatory commission for the energy sector. Many of these date back to the 1990s. Significant investment in energy was made both in the public and private sectors to expand electricity supply capacities. Investment in electricity generation helped Bangladesh close the gap between the demand for and supply of electricity. Over the last decade, the number of power plants has increased significantly. Grid connectivity was also increased, which led to greater access to electricity for the broader population.

On the other hand, almost no initiative was taken to strengthen BAPEX and invest in offshore and onshore exploration of gas. Grid reliability has remained a concern. Concerns also remained in areas of quality and affordability of electricity and the emergent energy mix. As was noted above, exploration of domestic energy resources was neglected and share of renewable energy in primary and secondary energy mix was low. The cause of energy justice suffered because of the failure of the Bangladesh Energy Regulatory Commission (BERC) to take due cognisance of consumers' welfare. These concerns have been persistently overlooked over the past years. Not surprisingly, successive Energy Master Plans and the embedded inconsistencies came under severe criticism from energy experts and energy activists. Questions have been raised regarding the strategy and stance that inform the government's plans in areas of energy security and energy transition over the medium to long term.

According to the World Bank, till 2014, Bangladesh's per capita energy consumption continued to remain low compared to the South Asian averages. Energy experts in Bangladesh argued in favour of ensuring a threshold level of per capita energy consumption that corresponded to the demands of the

accelerated economic development as also the needs of high levels of human development. They have been warning against the danger of falling into an energy poverty trap that could result in paying high penalties in the form of arrested socio-economic development and undermining of citizen's well-being. They urged the policymakers to pursue the goal of energy security through the route of low carbon development.

In recent times, a number of factors have accentuated the challenges in undertaking the needed measures to ensure energy security, including the COVID pandemic, which necessitated a diversion of resources from energy-centric activities to rolling out stimulus packages and the hike in energy prices brought about by the ongoing geo-political contested environment. To note, compared to 2021, crude oil prices rose by 42 per cent in 2022. The price of LNG increased from 18.6 USD/MMBtu, on average, in 2021 to 33 USD/MMBtu in 2022 (rising to as high as 54.17 USD/MMBtu in August 2022). The average coal price in 2022 was 345 USD/MT (reaching 431 USD/MMBtu in September 2022), which was 117 USD/MT in 2021. The high primary energy prices have fuelled inflation, raised production costs and contributed to the depletion of Bangladesh's forex reserves and the ongoing balance of payments difficulties.

Against this backdrop, there is a need to critically analyse the state of Bangladesh's prevailing energy sector scenario and review the current policies for ensuring energy security through the lens of the goal of ensuring energy for all and transition to clean energy.

SDG 7, the implementation of which Bangladesh is committed to as part of its commitment to the SDGs, talk of ensuring affordable, reliable, sustainable and modern energy for all. As is known, access to affordable clean energy lies at the heart of SDG7. SDG 7.2 mentions about substantially increasing the share of renewable energy in the energy mix, and SDG 7.3 sets the target of doubling global rate of improvement in terms of energy efficiency. And in attaining the SDG 7, it is also crucial to ensure that energy is available at affordable price, and that no one is left behind in this regard.

### Key Issues and Concerns

Bangladesh has initiated various reform initiatives at different times since its independence with a view to strengthening its energy sector. However, there are a number of concerns and controversies which have informed this journey. Some of these are discussed below.

#### *Natural gas depletion and use of LNG as an alternative solution*

Bangladesh made natural gas the front-line energy source, particularly for electricity generation and industrial consumption, since the early 1970s. Though in more recent times, the fuel mix has changed with the country's increasing use of liquid fuels, the share of natural gas is still significant compared to the global average. However, the fast pace of depletion of natural gas has emerged as a significant concern in recent times.

To note, production from the country's two major natural gas fields, Bibiyana and Titas, has considerably come down over the recent past years. Bibiyana, with the original reserve of 5,755 billion cubic feet (Bcf), is left with only 250 Bcf. 70.0 per cent of the extractable natural gas has already been taken out from

the Titas gas field. It is indeed highly disquieting that natural gas production from the remaining fields will likely decline from the current 2,100 mmcf to 1,300 mmcf by 2030 and to 580 mmcf by 2040. At the same time system loss remains a persistent concern in the natural gas sector: according to official figures, this is to the tune of 10.0 per cent in Bangladesh whereas the global average is only about 2.0 per cent.

Instead of putting emphasis on natural gas exploration, the government in recent years (more precisely in late 2018) has given higher priority to the import of LNG and LNG-based electricity generation with a view to closing the demand and supply gap concerning primary fuel. As is known, the price of LNG in the global market is quite volatile, as also the prices of other primary fuels. This has added many new concerns, not to speak of putting the country on to the path of a vicious cycle of subsidy regime. Given the recent geo-political scenario and the ongoing domestic natural gas shortage, the LNG import bill is likely to increase sharply in the coming years, resulting in a rising and unsustainable fiscal burden. Distribution is also becoming an issue, given that the existing pipelines are too narrow for LNG distribution. No visible actions were taken by the government to develop the gas grid or other infrastructures. Consequently, efficiency concerns also persist.

### ***Slow Progress as Regards Renewable Energy Development***

In spite of plans to raise the share of renewable energy, the share remains low at only about 3.0 per cent of the total. As a matter of fact, its share in the electricity generation mix has declined sharply since 2001. Between 2016 and 2019, the average share of renewable energy in the electricity generation mix remained at 2.6 per cent, which was 1.6 per cent between 2009 and 2016. A review of relevant documents indicates several reasons driving the slow progress in renewable energy adoption. These include: lack of proper policy framework, low levels of allocation for renewable energy sector in the ADP, lack of investment in related infrastructure, and technical, institutional and socio-economic barriers. Adequate attention was not given to building and strengthening the national human resource capacity in view of the emergent needs of the sector. No time-bound road map was designed towards a renewable energy transition that took care of energy security, affordability and quality.

The first National Renewable Energy Policy (NREP) was adopted in 2008; regrettably, no new renewable energy strategy has been framed since. The earlier policy was not even adjusted in view of new developments. The successive Power System Master Plans (PSMPs) provided guidance for the development of renewable energy sources. However, the PSMPs lacked specificity of purpose and plan in this connection. Despite considerable scepticism regarding the viability of the propositions placed in the PSMPs, these went mostly unheeded. Also to note, the most recent Integrated Energy and Power Master Plan (IEPMP) does not include a strategy for the expansion of renewable energy sources.

According to the Ministry of Finance data, from 2015 to 2020, the average share of allocations for renewable energy in the ADP was only 5.8 per cent, while the bulk share (94.2 per cent) went to the development of fossil energy. Additionally, the government has failed to capitalise on private sector investment in the development of the renewable energy. Inappropriate policy design and regulations, lack of policy continuity and ineffective incentives were significant reasons driving this.

The Sustainable and Renewable Energy Development Authority (SREDA) has recently initiated work on revising the NREP 2008. The idea is to modernise the renewable energy strategy and integrate renewable energy-related policies in the overall energy strategy. However, the draft version of this policy raises a number of questions which need to be appropriately addressed. For instance, unlike the NREP of 2008, the draft NREP does not mention about the ideal renewable energy mix by analysing diversification possibilities in this regard. Furthermore, there is no discussion on the investment framework, financial risk reduction strategy, import duty issues and pricing mechanism including FiT (Feed in Tariff) schemes, - CAPEX and OPEX models, etc. All these are considered to have important implications for the growth of the country's renewable energy sources.

Technical factors contribute to reducing the speed of uptake of renewable energy significantly, particularly given grid-based electricity. Although the adoption of renewable energy is getting more affordable, storage system remains a major concern. For instance, solar-based electricity is not feasible for meeting the night peak demand without a good storage system. Storage system development, however, requires a large amount of investment. Recent projections indicate, however, that storage costs are expected to come down significantly by 2025. This, in turn, should reduce the cost of solar-based electricity with storage systems. The current grid infrastructure will also need to be upgraded to meet the needs of the emerging energy mix.

Apart from the above, there are also concerns as regards the adoption of off-grid renewable electricity. It is worth mentioning here that Bangladesh has achieved notable success in the dissemination of Solar Home Systems (SHS), providing access to solar-powered electricity to more than 25 million people in rural areas. Evidence suggests that the country may have averted a long-term energy poverty penalty as a result of the SHS programme's success. The programme also promoted the cause of inclusive growth and positively impacted the welfare of people in remote and difficult-to-access localities. It is plausible that the expansion of grid-based electricity has reduced the demand for SHS devices. Nonetheless, the programme's core values remain valid since the grid reliability in many rural areas remain highly wanting and questionable. Also, these areas are subject to long hours of load-shedding.

Institutional and socio-economic factors (lack of credit schemes, high prices, after-sales issues, absence of public-private collaboration, etc.), as also technical factors (low-quality materials, inefficient use of storage batteries, low technical knowledge etc.), contribute to suboptimal levels of output of the aforesaid programmes.

### ***The debate around overcapacity and various charges***

Over the last few years, surplus electricity capacity in Bangladesh has tended to be around 40 per cent. To note, the accepted global level is about 20 per cent. One of the key reasons behind the emergence of the problem of overcapacity is the mismatch between the demand-supply prediction and the weak forecasting methods used in the PSMPs. The overcapacity of electricity generation is related to the issue of capacity charge. According to a special act, the government is committed to paying a significant amount of money as a capacity charge even as Independent Power Producers (IPPs), Quick Rental (QR), and rental power plants (RPPs) lie idle to cover their losses.

To note, the capacity charge has kept increasing since 2014. Over the last 14 years, the government has paid over 90 thousand crore Taka as capacity charges to various involved players. Over the first nine months of FY 2022, the government has paid 16,785 crore Taka as capacity charges. The growing capacity charge payments are strongly associated with the upward pressure on the cost of electricity at retail levels. Needless to say, the rising price of electricity affects consumers' welfare adversely, especially the ones with low-income people belonging to disadvantaged groups. The government has raised charges for different related public utilities, adding about 8-9 Taka profit per cubic metre for gas sellers. Recently, an additional charge of 10 cents was introduced on the consumption of Titas gas by the households. All these violate what is stipulated in regulatory laws and result in an injustice in energy.

### ***Policy inconsistency and lack of integration with national policies***

Over the past years, Bangladesh has adopted several policies to deal with the energy sector and energy crisis. Nevertheless, analysis carried out by energy experts reveals that policymakers have failed to focus on planning at disaggregated levels, e.g., energy planning at divisional and district levels, to raise energy efficiency and to safeguard the interests of the marginalised population. The energy sector master plans are skewed largely towards import-based energy security. This has increased the degree of vulnerability from external shocks, as has been manifested in recent times. There is a lack of proper strategy that would provide guidance as to how the national energy transition will be initiated and sustained over the future. Also, data provided by various involved entities contradict and are at odds with each other. This is indicative of a serious lack of coordination and collaboration across the various concerned government entities.

## **2. Recommendations**

In light of the discussion above and the emergent concerns, the following policy recommendations are proposed towards Bangladesh's energy security and renewable energy transition, keeping in the purview the objectives of access affordability and quality.

### **Prioritise Development of Domestic Natural Gas**

*Put emphasis on Natural Gas Exploration:* The government should undertake renewed efforts at the exploration of gas on an urgent basis and put emphasis on the development of the natural gas sector to reverse the depleting stock of the country's natural gas. According to the 8th Five Year Plan (FYP) data, there is a large number of unexplored gas blocks (17 onshore and 22 offshore) from which a considerable amount of natural gas can be extracted for purposes of generating electricity and use in other priority sectors. Wide-ranging inefficiencies in areas of natural gas exploration, policy implementation and administrative activities associated with gas sector governance will need to be reduced systematically. Accordingly, the government should prioritise investing in strengthening the human and technical capacities of BAPEX so that it can meet the long-term needs of the country in the areas of gas and mineral exploration. Where BAPEX has in-house exploration capacities, costly contracts with foreign companies must be avoided. The government should develop a 'model central' (e.g., ownership-planning-initiative) which would guide Petrobangla/BAPEX in offering contracts to eligible companies for offshore drilling in view of lack of capacities to undertake such works as present.

*Mobilise Funds for Future Energy Investment:* The government should develop a framework to set up a dedicated fund for development and investment in the energy sector. Exploration royalties, particularly in the case of natural gas and other minerals, could be a potential source for this fund, along with appropriate budgetary contributions.

*Develop the Needed Human Resources:* Priority must be given to developing the required human resources for the country's energy sector. The needs of several areas will have to be kept in mind in this connection: exploration of new onshore and offshore wells; workover of abandoned and old wells; step-out wells in known reserves; production from fields previously considered to be expensive; development of expertise in renewal energy; management and planning of energy resources. Indeed, there should be a clear understanding that without developing human resources and raising the institutional capacity of BAPEX, it will not be possible to develop the energy sector in a sustainable way.

*Take Steps to Reduce System Loss:* As was noted, the system loss in the energy and gas sector continues to remain very high in Bangladesh. There are several aspects of system loss: at the distribution level, and the transmission level. At the distribution level, the loss is well within limits, whereas in case of transmission, it is evidently higher due to weak infrastructure. This needs to be addressed through the replacement of old infrastructure and technological upgradation (to reduce leakage in gas distribution). State of governance and management quality must be improved to enhance efficiency in the energy sector and reduce corruption. Steps will need to be taken to disconnect lines of defaulters/illegal connectors and recover unpaid bills. Indeed, estimates show that removal of illegal connections and identification of leakages could save about 200-300 million cubic feet of natural gas annually.

### **Strengthen Renewable Energy Development Initiatives**

*Undertake Mandatory Regular Revision of Policy Frameworks:* The government must put a system in place to revise the energy policies on a regular basis. A specifically designated entity may be set up for this purpose. The mandate of the concerned authority will include the following: periodic review of renewable energy plans and policies, pricing, fiscal incentives and taxation policy, identification of gaps between policies and emerging demands and how to address those; coming up with human resource needs, suggesting ways to integrate renewable energy policy into the overall national energy development strategy. To note, import taxes on renewable equipment remain very high in Bangladesh. Solar inverters and solar panels are currently subject to import duties of 37 per cent and 26 per cent, respectively. The National Board of Revenue (NBR) and SREDA need to work together to rationalise the import tariffs, keeping in perspective the demands of developing the renewable energy sector of the country, incentivising investment and enhancing consumer welfare. An integrated demand projection will need to be undertaken to finalise the country's renewable energy mix plan.

*Promote Local Renewable Energy Equipment Manufacturing:* Manufacturing of renewable energy equipment in Bangladesh is almost non-existent at present. Government should promote local entrepreneurs by implementing appropriate policies and fiscal and financial incentives with proper institutional support. There is also a role for FDI here:

*Enhance Budgetary Support:* Government's emphasis on low-carbon growth path needs to be reflected in budgetary allocations. Fiscal-budgetary policies will need to be appropriately calibrated in view of this. Additionally, new and creative green financing schemes need to be promoted. To note, these are by now common features in the financial landscape of emerging and Asian developing countries. The present SHS assistance programmes must also be strengthened through the efforts of specialised organisations such as IDCOL, Investment Financing Facility for the Private Sector (IFFP) and other similar entities. The government should extend support for attracting innovative financing schemes, e.g., grant funding and low-interest financing, for interventions targeted to make the country's current grid infrastructure smarter. In this context, innovations in decentralised storage technologies for more grid flexibility may be mentioned. Least-cost technology for bridging the gap between on-grid and off-grid renewable energy projects ought to be promoted. Along with local funding, Bangladesh should also energetically explore additional funding sources similar to the Southeast Asian countries, which are taking advantage of international funding opportunities and various partnerships.

*Revive Rooftop Solar Programme:* Although the previous attempts to maximise the use of solar rooftops were not fully effective, government should identify and rectify the attendant weaknesses and take renewed efforts to expand rooftop solar augmentation in government offices, commercial buildings, educational institutions, industrial buildings and places of worship and other facilities. Consumers should be encouraged to reduce dependence on grid electricity. This also allows consumers to benefit from net metering facilities provided by the government. The government may provide fiscal incentives to facilitate fast expansion of solar energy ecosystem. One possible option in this connection could be in the form of subsidies for rooftop solar systems similar to the ones enjoyed by the IPPs.

*Take steps to improve management of biomass energy:* A vast majority of the rural population depends on the use of biomass for fuel. However, this is very poorly managed. There is a need to take steps to improve biomass technology, i.e., biomass to biogas. China could serve as a good example here. This is important from the perspective of energy equity and energy security of disadvantaged communities, particularly in the rural areas of Bangladesh.

*Explore Wind Power Potentials:* As part of the fuel diversification plan, the government should consider the potential of offshore wind power for generating electricity. Some projections indicate that offshore wind power alone has the potential to generate up to 20 GW of electricity. The government needs to undertake a comprehensive study to assess feasibility, investment required, resource availability and financing options in setting up wind energy projects.

*Grid Infrastructure Development for Renewable Source-based Electricity:* In order to transmit solar-based electricity on a wide scale, smart grid and smart metering technologies must be put in place. This will also enhance overall grid reliability. Off-grid electricity, when grid electricity cannot be provided, may significantly reduce risks of blackouts and load shedding. The GoB should introduce innovative financing schemes for accessing grant funding and low-interest financing in support of interventions targeted at making the country's current grid infrastructure smarter. Smart grid technology will strengthen market competitiveness, raise energy efficiency, and provide

energy security. This will ensure that electricity is produced, transmitted and distributed in the near-term future by using cutting-edge technology to address the manifold problems afflicting the existing power grid systems.

*Continue Exploring Opportunities of Cross-Border Electricity Trading (CEBT):* Bangladesh is currently importing electricity from India. Potentials of cross-border electricity trading should be further explored through bilateral and multilateral initiatives, with a view to strengthening energy security of the country. Harmonised policy framework and regional energy cooperation will help the government to explore the possibility of getting access to the hydropower generated in Nepal and Bhutan by channelling the flow through India. Joint venture opportunities should be actively explored for hydroelectricity generation in Nepal and Bhutan. However, due caution must be exercised to secure Bangladesh's national interests in undertaking cross-border trading and power projects. Over dependence on a single country for import can be strategically risky venture. All such deals must be made in a transparent manner.

*Make Use of Abandoned Power Plants for Renewable Electricity Generation:* The government should actively consider retrofitting decommissioned coal power plants (such as in Moheshkhali) into solar-powered electricity production sites. Redeveloping these plants into new green renewable energy projects will help make productive use of valuable property which may otherwise remain unused. Such coal-to-solar projects will benefit local communities and businesses.

*Put Emphasis on Improving Biomass Technology:* The majority of Bangladesh's rural population relies on biomass energy; however, the management of biomass remains poor. Installing household digesters on a large scale in rural areas, similar to the ones in China, will improve the energy status of particularly the rural marginalised population in Bangladesh. The digesters will not only provide clean cooking gas but will also generate significant benefits by improving the sanitary and health conditions of rural communities through the treatment of agricultural and household wastes.

## **Reduce Fiscal Burden**

*Design Exit Strategies for QR and Rental Power Plants on An Urgent Basis:* Although QRs and other rental power plants were seen to be a promising solution to the then prevailing energy crisis, time has come to seriously think about their phase-out. These power plants are still in operation and enjoying capacity charge payments, creating significant fiscal-financial strain on the economy. The government must start decommissioning these power plants, and this should be completed over the next two years. Winding up of these power plants will also help reduce the share of liquid fuel in the electricity generation mix, which in turn will help reduce subsidies in the energy sector. This is also important from the perspective of subsidy diversification across the economy. The government should take initiatives to make adjustments to the current contracts and licenses with a view to significantly lower the fiscal burden. In case complete decommissioning at the earliest is not feasible, owing to various factors including institutional and contractual constraints, a time-bound exit plan must be put in place. In this regard, lessons should be learned from successful rental models around the world.

*Ensure Energy Justice:* The government must ensure energy justice for consumers by enacting legislation prohibiting all

types of unsolicited and uncompetitive investment in the energy sector, limiting political appointment of directors of energy utilities, repealing recent BERC-related amendments, and doing away with additional charges associated with provision of services and sale of energy utilities. Energy justice is critically important for attaining SDG 7, which talks of equity and affordability in view of energy security. Decision making concerning the country's energy sector must be carried out in an inclusive manner, with participation of all key stakeholder groups.

*Reduce Reliance on Foreign Companies:* The government must not approve energy sector master plans which rely heavily on foreign consultants, foreign borrowings and foreign companies, imported coal, nuclear energy and LNG. Since reliance on foreign exploration companies carries with it the risks of overproduction, overpricing and pressure to export, the government must design an energy sector strategic plan that prioritises national capacity building and exploration of national energy resources by deploying primarily national capacities. Involvement of foreign companies may be considered only when national capacities are not yet ready to take on the task.

### **Formulate Well Defined and Transparently Designed Policies That Meet the Demands of National Interest**

*Design Transparent and Accountable Policies:* National Energy Security Needs, National energy masterplans, policies and legislative initiatives in place must be reviewed, amended and updated in line with the long-term national interests and interests of country's energy security. All concerned decisions must be made through wide consultations, in a transparent manner. All relevant documents should be accessible to all stakeholders. By inviting scrutiny and engaging stakeholders in discussions and dialogues, policy flaws can be identified early on and addressed properly. Efficient supply-side management (production and distribution) and reliable demand side forecasting should be an integral component of energy planning. Expertise and experience of energy experts from the region may be sought to learn from best practices in managing the energy sector.

*Formulate Guidelines for Private Sector Investment in Energy:* As is known, investment in energy infrastructure is highly capital intensive. Public investment alone can hardly meet the requirements of financing needs of energy infrastructure. As is known, the private sector has played an essential role in the development of the energy industry in Bangladesh. While encouraging the private sector to come forward, the government must ensure that this is done following guidelines that secure the broader interests of the country and its people. The government will need to come up with proper guidelines to regulate the involvement of private business, investors and entrepreneurs in the energy sector from this perspective.

*Ensure Efficient Energy Data Management and Reporting:* Reliable and timely energy-related data is critically important for formulating sound energy plans, making precise projections about demand, investment and financing needs, and for taking proper decisions. However, availability of reliable data for the energy sector has remained a major concern in Bangladesh. Government should make the necessary investments to create a national energy sector data bank in a way that ensures transparency and accountability in data collection, dissemination and use. The support of modern, smart technology will be helpful in this regard. Automated software-based data management system should be put in place in this regard. The

government should also consider establishing an energy data centre, which will help it formulate appropriate policies for the energy sector on the basis of reliable data and information.

*Consider Enacting A Mineral Resource Export Ban Act:* Bangladesh's gas resources (both onshore and offshore) are one of the principal non-renewable sources of energy for the country. These resources are limited. In view of this, domestic use of these resources must receive the highest priority. Their exploration must not be subject to export-permitting contracts. If appropriate policies are taken, these resources will enable Bangladesh to ensure energy security as well as economic security. The government should consider enacting a Mineral Resource Export Ban Act to ensure that the country's mineral resources are used to meet its own needs so that these remain in the hands of the people. Exploration should be designed and sequenced in a way that extracted gas resources can be deployed towards domestic energy needs for electricity generation, household consumption and industrial use so that the question of whether to export or not does not arise.

### **Introduce Energy Efficiency Programmes and Ensure Efficient Demand Side Management (DSM)**

*Promote Energy Efficiency:* The government must promote energy efficiency initiatives which are important from the perspective of ensuring energy security. It needs to offer tax rebate incentives for energy-saving technologies and incentivise consumers to buy energy-efficient appliances. Use of high-efficiency household appliances should be encouraged. Besides, awareness-raising programmes should be launched to induce behavioural changes in people as regards energy saving. Similarly, energy producers should be provided with fiscal, financial and regulatory incentives to manufacture energy-efficient products by adopting energy-saving technologies. Raising tariffs on inefficient energy-intensive products will induce consumers to adopt green alternatives. Peak demand can be reduced by deploying peak and off-peak tariff regimes.

*Strengthening DSM Initiatives:* Efficient DSM is required for improving energy sector performance. Sound load management allows energy producers and distributors to better utilise available energy, optimise load usage patterns to bridge the gap between energy supply and demand and reduce peak load demand. This contributes to higher energy efficiency. DSM benefits both the power utilities and the consumers. It helps power utilities improve power system quality, reliability, and operational efficiency. This benefits them financially; DSM allows for adequate utilisation of liquid oil-based plants during peak hours while maintaining the continuous operation of other plants, leading to a balanced energy supply. Consumers can benefit from energy savings through changes in energy consumption patterns and reductions in peak demand, which are reflected in improvements in system load profiles. However, benefits of DSM are not being fully realised due to lack of adequate adaptable load as also lack of public awareness. Categorising loads into base, intermediate and peak components to optimise power plant production will also be worth considering.

*Undertake Regional and Sector-Specific Demand Projections:* There are differences in demand patterns for electricity, including peak demand, depending on economic, geographic, and demographic trends across different areas of Bangladesh. There is a need for undertaking region-wise forecasts for the electricity market and demand. This will help rationalise

expenditure and also reduce environmental risks. This approach can be applicable also for the special economic zones, a number of which are being established at present. It can also help reduce the costs by optimising transportation demand by ensuring proper energy distribution. The government must project reliable 5-year energy demand by considering spatial dimensions of energy demand to avoid over and under-production. Reliable demand projection will help do away with reliance on population-based estimates, resulting in a more accurate energy demand forecast. Appropriate projection of household and industrial demand is necessary for determining the level of installed capacity, energy generation and composition of different types of fuel and energy mix.

### **Strengthen BERC's Capabilities and Establish an Independent Energy Commission**

The capacity of the BERC to undertake its mandated tasks in areas of determining cost and tariffs will need to be strengthened. Its work must be carried out in a transparent manner. A system should be developed to ensure that public hearings are regularly held, the consumer's voice is given due importance and the consumer's rights are secured. BERC's authority in the area of setting energy prices must be restored. The government should also consider establishing a dedicated independent energy commission comprising of energy experts, economists, professionals, private sector representatives, financial analysts, legal experts, and representatives of civil society and consumer groups. The committee will foster multistakeholder dialogues and promote collaboration in areas of formulating energy strategy, policies and prices. The independent commission can also provide guidance as regards methods (formula) for setting energy prices and measuring the performance of the energy utilities.

### **Strengthen Cyber Security Measures**

Experience of other countries show that energy industry is highly susceptible to cyber-attacks. Protecting energy systems from cyber-attacks will become increasingly important as the risks grow. This is needed not just for the benefit of the energy sector itself but also for the purposes of economic and national security. There is a need to pay urgent attention to ensuring cyber security and enhancing cyber resilience. These issues should be given due importance in the course of energy planning and at the early phase of implementation of energy-related projects. The government must collaborate with various concerned entities along the energy sector supply chain to strengthen cyber resilience at every stage and stay ahead of the threat actors.

### **Ensure Quality and Continuity of Electricity Supply**

Maintaining a steady supply of electricity should be given the highest priority by the government. The government should also be committed to ensuring steady voltage levels to support seamless technology adoption and avoid disruptions. Utilisation of surplus electricity should come under the purview of energy planning.

### **Strengthen Transmission and Distribution Systems**

Due attention should be given to the installation of high-power transmission lines to meet growing demand and to evacuate the additional electricity produced by the new power plants. To deliver dependable and reliable energy to consumers, the

government should prioritise the task of putting in place an efficient distribution system. Government should explore avenues of large-scale investment, both local and foreign, by putting in place the needed infrastructure towards efficient transmission and distribution of power in view of the future demand of the energy sector.

### **LNG as an Alternative Transitional Fuel**

Since natural gas exploration takes time to be implemented, and has a limited success ratio, it will take time before it becomes somewhat clear what the country's long-term energy-mix is likely to be. In the backdrop of depleting national gas sources, government's lack of past initiatives as regards investment in gas exploration is a key reason in this, the government has decided to attach high priority to LNG-based power generation to bridge the demand and supply gap. Bangladesh now has two Floating Storage and Regasification Units (FSRUs), with a total capacity of 7.5 million tonnes a year. The country is also developing a land-based terminal which can handle 7.5 million tonnes per annum (MTPA) of LNG; this is expected to be in place in 5 years.

However, the existing pipeline network is considered too narrow to accommodate future natural gas delivery. Additionally, the price of imported LNG tends to be high and volatile. The operating cost of FSRUs is high also due to the high charter rates of the ships that transport LNG to Bangladesh. All these may cause market distortions, resulting in continuing high prices and an untenable subsidy requirement in future. The government should also recognise the risks of overcapacity, capacity charge issues, and expected price distortions associated with LNG. It is also worth noting that the costs of exploration and development of untapped gas resources are likely to be lower than the costs of LNG import.

In view of the above, the higher dependency on LNG as an alternative fuel option remains questionable in the medium to long term. The government should revisit the LNG expansion plan and study its fiscal-financial and macro-economic implications before allowing for large-scale investment in electricity generation based on imported LNG. The envisaged power sector master plan must take cognisance of this before finalising the energy mix strategy for the future. The plan must focus on domestic offshore and onshore exploration, as was noted earlier, as the critical strategy in designing medium to long-term energy sector development strategy.

### **Promote Research and Development (R&D) in the Energy Sector**

Because energy technology and fuel choices are significant determinants of prosperity and well-being of the people, environment quality and national economic security, the overarching importance of evidence-based energy sector policymaking cannot be overemphasised. Adequate investment in the energy sector's R&D must be seen as a key precondition for sound policymaking. Relevant institutions must receive the financial and technical support that they need. For example, the government may think of establishing an Energy Storage Lab to explore technologies and solutions to make energy storage systems competitive and marketable. Increased R&D investment will help attract more investment in wind, solar, bioenergy and geothermal energy sectors, playing an important role in ensuring energy security through a diversified energy mix.

### **Formulate an Integrated Power Plan to Drive the Energy Transition Process**

While Bangladesh has increased its electricity generation capacity over the past few decades, the country is facing many challenges going forward. A number of these have been noted earlier. Bangladesh must go for energy transition favouring the renewable energy sources, by extending all out support towards renewable energy transition process. Bangladesh's SDG commitment and stance in various global fora should inform its strategy in this connection. Such a strategy will also enable Bangladesh to attain its Vision 2041 aspirations to make the transition to an economically developed, socially inclusive and environmentally sustainable country by 2041. The government must prepare a roadmap for implementing an integrated plan encompassing generation, transmission and distribution activities in preparation for the envisaged green and renewable energy transition.

### **Reduce Dependence on Coal and Nuclear Based Power Generation**

The government must recognise the environmental risks and risks to people associated with coal and nuclear power generation. The focus must be on sustainable and clean energy alternatives, and not the high-cost and environmentally harmful power generation. The government's policy must be guided by the fact of the formidable environmental and social costs that come with fossil and nuclear fuel.

## **3. Concluding Observations**

Energy plays a critically important role in the developmental journey of any country. Bangladesh is no exception. In recent times, Bangladesh has taken several steps towards increasing the energy supply to meet the growing demands of the economy. However, the country at present is facing many challenges in attaining energy security. The discussions in the preceding sections have highlighted some of the key concerns in this backdrop. An overhaul of the energy plan and policies has become a necessity in going forward. The Policy Brief has highlighted a number of tasks in connection with the renewable energy transition, access to clean energy at affordable prices, investment in the exploration of the domestic mineral resource, moving away from LNG-centric import dependence and fossil and nuclear fuel-based electricity production, domestic capacity building in gas exploration, raising efficiency in energy sector management and evidence-based time-variant policy making. Attention was drawn to Bangladesh's SDG commitment and stance in relevant global fora. The challenge of attaining the aspiration of an environmentally friendly, economically developed and socially inclusive Bangladesh will largely hinge on whether Bangladesh is able to do the needful in view of the needs of energy security and energy transition that meets the demands of its economy and aspirations of its people.

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# Citizen's Agenda 2023 Towards a Different Bangladesh

## Policy Briefs

### Economic Cluster

1. Transforming Agriculture for an Inclusive and Diversified Economy
2. Providing Decent Employment for Youth in view of Domestic and Overseas Markets
3. Providing Public Utilities and Services in the Backdrop of Unplanned Urbanisation
4. Ensuring Affordable and Clean Energy for All

### Social Cluster

5. Triggers to Ensuring Quality Primary Education
6. Reducing Out-Of-Pocket Expenditure to Improve Universal Access to Quality Health Care
7. Promoting Universal Social Protection System and the Need for Targeting Disadvantaged Groups
8. Dealing with the Manifestation of Localised Vulnerabilities of Climate Change

### Governance Cluster

9. Effective Implementation of Laws and Judicial Process for Eradicating Gender-Based Violence and Discrimination
10. Access and Justice for Ethnic and Religious Minorities
11. Giving Voice to the 'Silent' and Establishing Democratic Accountability

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