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CPD Power and Energy Study
Towards Carbon Neutral Economy

Presentation on
Political Party Perceptions - Election Manifesto - Citizen's Manifesto
Case of Energy Transition in Bangladesh

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14 February 2024

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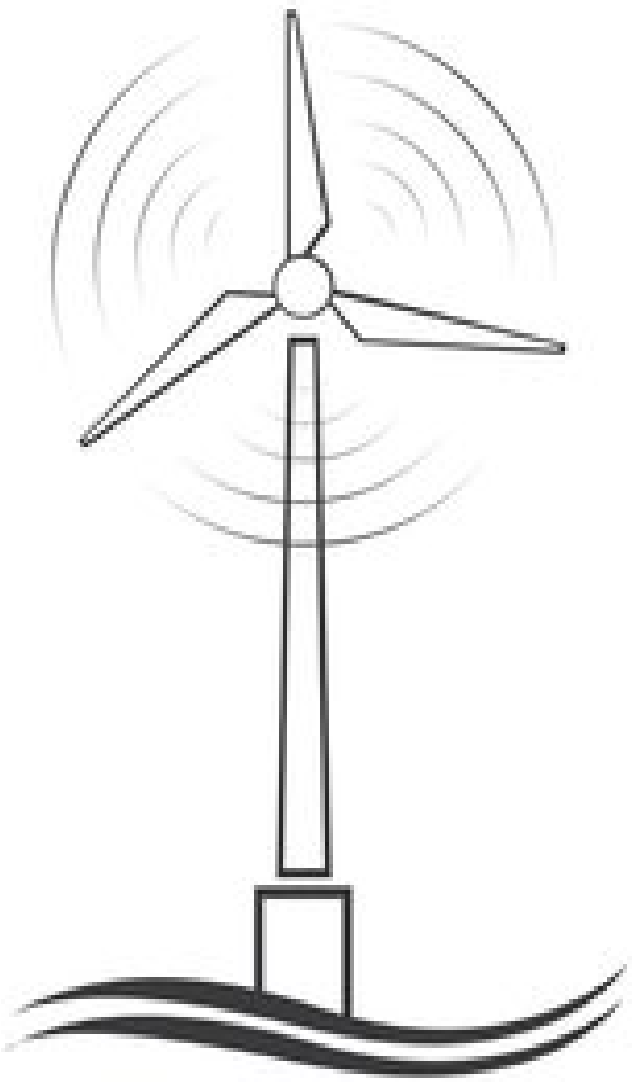

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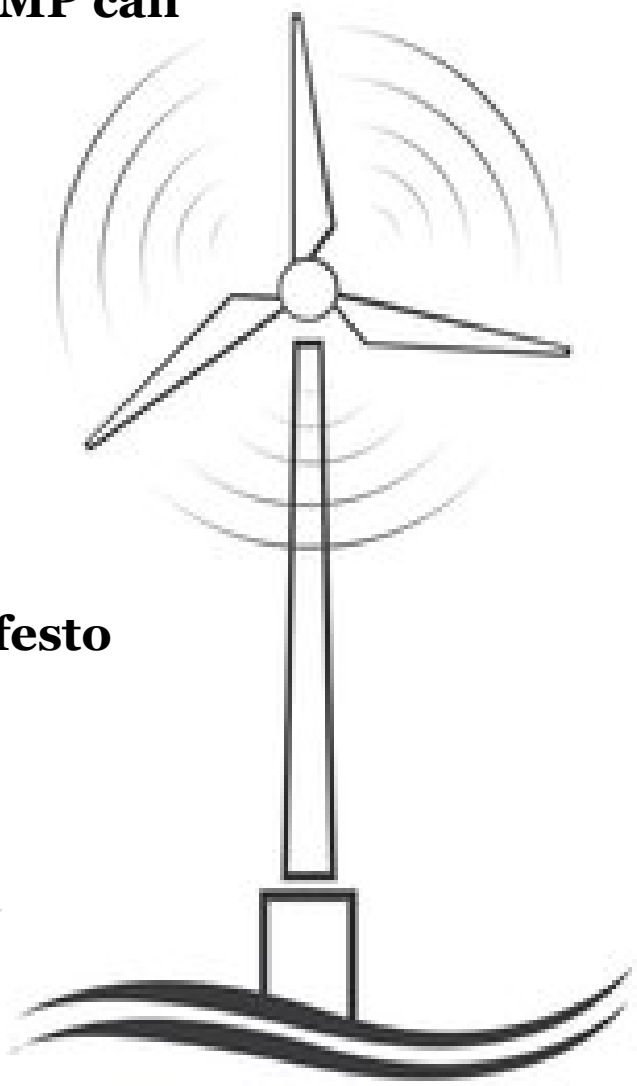

1. Introduction

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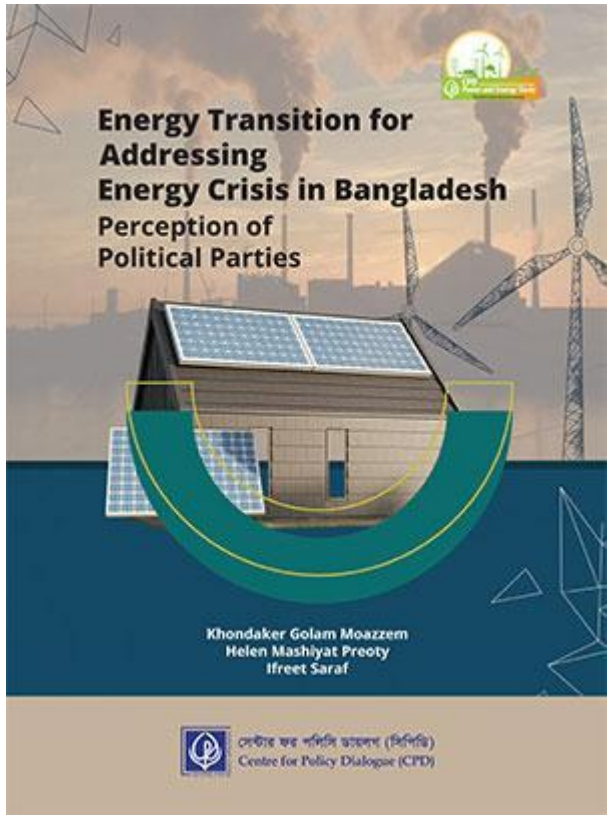
- **Power and energy** is one of the important **political issue** both for the party in power and for the opposition parties
  - Political parties in the **successive national elections** highlighted the successes and failures of the incumbent government in achieving the goal
- The **newly elected government and opposition parties**, during their election campaign put **emphasis on** power and energy related targets
- Given the importance of the power and energy sector, the **government** of Bangladesh has undertaken various policies, plans, and initiatives
  - **It is expected** that the current government will address and will prioritise the **energy transition** goal by accelerating renewable energy initiatives in the coming years
- **Civil society organisations** have been undertaking various initiatives **to sensitise/aware** policymakers, bureaucrats, private sector, workers and development partners regarding the energy transition in Bangladesh
- It is expected that the **new government will announce** a plan of action to address those challenges and to move for energy transition in the country

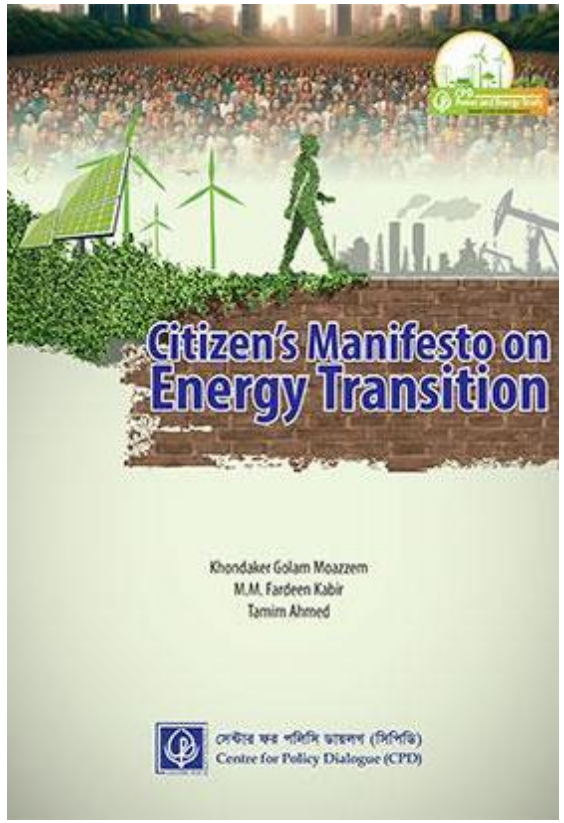
1. Introduction

- Since last October 2023 CPD has carried out a number of studies **to understand the perception** of the political parties, **aspiration of the civil society** with regard to the following
  - Energy transition, renewable energy deployment
  - Fuel mix, overgeneration capacity and load shedding
  - Capacity payment and subsidy management
  - Transmission and distribution system
- **CPD publications are available** at: https://cpd.org.bd/publications/
- The purpose of the dialogue is to **share CPD's research findings** and **recommendations with policymakers** and relevant stakeholders so that Bangladesh achieves its energy transition goals

1. Introduction

Recent CPD Publications on Power and Energy Sector





2. Election Manifesto of Political Parties

2. Election Manifesto of Political Parties

2.1 Reflection of Power and Energy Sector in the Election Manifestos of Political Parties (2008, 2014 and 2018)

- The power and energy sector has always been perceived as **one of the key components of the political party manifestos** to connect with the mass people
    - However, **fossil fuel has an overwhelming presence** in the manifestos along with the expansion of power generation capacity
- **Power import** from the neighbouring countries are also a prime focus in the **manifestoes of AL, BNP and JP**
- The **import of LNG and fuel** oil was also emphasised in the **AL manifesto**
- Unfortunately, the **strengthening and upgradation** of the transmission and distribution system **is hardly mentioned** in any of the manifestos of any political parties
- Also, **major political parties in their manifestos** made pledges **on renewable or clean energy but not as one of the major energy-mix**

Table 1: Summary of the reflection of power and energy sector in election manifesto (2008, 2014 and 2018)

Issues	AL			BNP			JP		
	2008	**2014**	**2018**	**2008**	**2014**	**2018**	**2008**	**2014**	**2018**
Installation of power generation capacity	**Yes**	**Yes**	**Yes**	No	DNP	No	NA	NA	No
Existing fossil-fuel based energy systems, energy mix and diversification	**Yes**	**Yes**	**Yes**	No	DNP	**Yes**	NA	NA	**Yes**
Grid transmission mechanism	No	No	Yes	No	DNP	No	NA	NA	No
Private sector participation	No	No	No	No	DNP	**Yes**	NA	NA	No
Subsidies/incentives	No	No	No	No	DNP		NA	NA	No
The urgency of renewable energy transition	No	**Yes**	No	No	DNP	**Yes**	NA	NA	No
Mitigative measures	No	No	No	No	DNP	**Yes**	NA	NA	No
Regulatory policies	**Yes**	No	No	No	DNP		NA	NA	**Yes**
Power import	**Yes**	**Yes**	**Yes**	No	DNP	No	NA	NA	No

Source: "Energy Transition for Addressing Energy Crisis in Bangladesh: Perception of Political Parties"

2. Election Manifesto of Political Parties

2.2 Pledges in the AL Election Manifesto 2024

- The ruling government Awami League **unveiled the manifesto** for the 12th parliamentary elections on 27 December 2023
- **Historically the expansion** of the electricity generation capacity has been considered as a key indicator in the manifesto (Table 2)
- The **major drawback** in the recent election manifesto is recent occurring attention **to exploration and extraction of coal** and mineral resources
- This is the **first time** ever that the **ruling party** has emphasised on the RE as an important energy-mix and mentioned a specific target that will be achieved with a specific timeline

Table 2: Summary of the reflection of power and energy sector in AL election manifesto

Issues	Pledges
Electricity Production, Supply, and Distribution	• Uninterrupted and quality power and energy supply will be ensured
	• Increasing the power generation capacity to **40 GW by 2030 and 60 GW by 2041**
	• The number of **transmission lines** will be increased to 24000 circuit kilometres
	• Construction and operation of transmission lines under **Public Private Partnership (PPP)** will be undertaken
Fuel Production, Import, and Supply	• **Gas and LPG supply** will be ensured in the **northern and western** regions of the country. For this purpose, the state institutions will be made more efficient
	• The **fuel oil refinery capacity** of the Eastern Refinery will be increased from 1.5 lakh MT to 4.5 lakh MT
Renewable Energy Production, Supply, and Distribution	• **10 GW of electricity** will be generated from **clean energy sources**. The **grid will be made suitable for transmission** of electricity generated by RE and nuclear power plants
	• **Import of hydropower** from Nepal and Bhutan will be accelerated
Policies and Planning	• **Retirement of rental and inefficient power plants will** be done in phases
	• Based on the coal policy, **special importance will be given to exploration** and extraction of coal and mineral resources

2.3 Pledges in the JP Election Manifesto 2024

- The main opposition party **Jatiyo Party also unveiled its manifest**o along with the AL
- Similarly, the **goal to reduce load shedding** is also mentioned in the JP manifesto (Table 3)
- **Regional power trade** has been emphasised as well in the opposition party manifesto
- **Initiative to deploy renewable energy** has been mentioned

Table 3: Summary of the reflection of power and energy sector in JP election manifesto

Issues	Pledges
Electricity Production, Supply, and Distribution	• **Uninterrupted and quality power** supply will be ensured by stopping load shedding
Fuel Production, Import, and Supply	• **Tariff of gas and electricity** will be increased at a steady pace
	• The **country wide supply of** gas will be ensured
Renewable Energy Production, Supply, and Distribution	• Effective **initiative to deploy renewable energy** will be taken
	• Through **regional cooperation, renewable energy trading** will be initiated from neighbouring country (Nepal, India, Bhutan)

2.4 What are the missing elements in Political Parties Election Manifesto 2024?

- Despite the critical importance, some key issues have been left out from the election manifesto

Awami League

- Issues such as **subsidy and capacity payments** of the power sector are absent in the manifesto
- The manifesto did not mention any **plan to expedite domestic gas exploration**
- **Import of RE** from neighboring countries needs a concrete **intra-regional framework**, which has not been addressed in the manifesto
- The manifesto **failed to mention** the pathway to achieve energy transition goal
- There is no mention of **approving RE policy 2022** in the manifesto

Jatiya Party

- The manifesto is incomplete and **doesn't include** many key issues such as **transmission and distribution** system, energy transition targeting, national plan and policy
- **No definite target and plan** to achieve the clean energy transition has been mentioned in the document

3. Views of the Political Parties on Energy Transition

3. Views of the Political Parties on Energy Transition

- It is **important to understand** the perspective of not only the ruling and main opposition party but also other political party representatives
- Even though, not all the parties has presented their election manifesto, their **understanding has been summarized** in Table 4
- It is only fair to say that **political party representatives explicitly acknowledg**e the urgency and importance of **energy transition** while ensuring **energy security** in Bangladesh

Table 4: Summary of the political party perspective regarding different issues

Understanding of the particular issues -	AL	BNP	JP	BSD	CPB
• **Reflection of energy transition** in national plans and policies	✓	✗	✗	✗	✗
• Ending **over dominance** of Existing Fossil-fuel based Energy System, Energy-mix, and Diversification	✗	✓	✓	✓	✓
• Reduction of **overgeneration power** capacity	✗	✓	✓	✓	✓
• **Grid transmission** and distribution Mechanism	✓	✓	✓	✓	✓
• **Urgency of renewable** Energy transition from fossil fuel in Bangladesh	✓	✓	✓	✓	✓
• **Phasing out** rental and QRRs	✓	✓	✓	✓	✓
• Urgency of **rationalising subsidy**	✗	✗	✓	✗	✗
• Burden of **capacity payment**	✗	✓	✓	✓	✓
• Measures for **better governance,** transparency and accountability **in public procurement**	✓	✓	✓	✓	✓

4. Citizen's Manifesto on Energy Transition

4. Citizen's Manifesto on Power and Energy: Pledges and Expectations

- The summary outcomes of the KIIs from the CSOs have been meticulously organised **into five distinct clusters**, each addressing a unique aspect of the sector. The **five clusters** are:
    1. Policies and Planning
    2. Fuel Production, Import and Supply
    3. Electricity Production, Supply and Distribution
    4. Renewable Energy Production, Supply and Distribution
    5. Power and Energy Policies of Tomorrow
- Within each cluster, **several key issues** have been explored which present a **series of pledges** that are proposed by the CSOs to address these issues
- These pledges represent the **collective vision of the CSOs** for the future of Bangladesh's power and energy sector, **providing a roadmap** for sustainable and equitable development

4. Citizen's Manifesto on Power and Energy: Pledges and Expectations

Broad Pledges by the CSOs

- Table 1 shows some **broad pledges** made by the KII participant CSOs.
- It can be seen from the table that all the participants have individually emphasised on some major broad issues regarding the power and energy sector, such as **reducing import dependency through renewables, institutional reform, rural energy sector development** and so on.

Table 5: Broad Pledges

Broad Pledges	Frequency [in%]
• Import dependency reduction through renewables	**Agreed across the board**
• Facilitating **FDI** in **renewables**	Mostly agreed
• More **funding allocation** for power and energy **research**	Mostly agreed
• Energy sector **institutional reform**	**Agreed across the board**
• **Grid modernisation**	Majority agreed
• Rural energy sector oversight and reform	**Agreed across the board**
• **Capacity charge phase-out**	Majority agreed
• Unified renewable energy target	**Agreed across the board**
• Beneficiary **cross border** energy **deals**	Partially agreed

4. Citizen's Manifesto on Power and Energy: Pledges and Expectations

Table 6: Pledges from Policies and Planning

Specific Policy Pledge	Description
• **Complete phase-out** of capacity payments	Use international **climate funds** to facilitate phase-outs and compensations
• Payments in **local currency**	Avoid depleting foreign reserves
• Incorporate renewable energy at policy core	Reform energy policy
• Conduct **demand forecasting** and planning	**Avoid** future potential of overgeneration
• Introduce **competitive bidding** for power plants	**Repeal** 'Speedy Power Supply Act' for fair energy pricing
• **Phase-out inefficient** power plants	Efficiently manage financial and distributional resources
• **Promote demand** side management	Devise **long-term power generation** plans
• Adopt **single integrated energy** policy	Consolidate energy targets across plans
• Define **political commitments** and roadmaps	Achieve renewable energy targets

4. Citizen's Manifesto on Power and Energy: Pledges and Expectations

Table 6: Pledges from Policies and Planning (cont.)

Specific Policy Pledge	Description
• Introduce national **campaign**	Influence **public behaviour** towards renewable energy
• Launch national **training** programmes	Train engineers in renewable energy sector
• Promote women's involvement in **leadership** roles	Achieve growth and participation
• **Repeal 'Quick Enhancement of Electricity** and Energy Supply (Special Provision) Act 2010'	Address **overgeneration** and capacity charge issue Address **corruption** and regulatory failure
• Introduce **legislative reforms**	Promote **competition, transparency**, and sustainability in the energy sector
• **Lift or lower tariffs** on solar panels and inverters	**Promote renewable** energy implementation
• Provide **incentives for integrating** large-scale solar panels	Encourage businesses to adopt renewable energy

4. Citizen's Manifesto on Power and Energy: Pledges and Expectations

Table 7: Pledges from Fuel Production, Import and Supply

Specific Policy Pledge	Description
• Utilise government **non-agricultural *Khas* lands**	Implement solar power plant projects on government *Khas* lands
• Conduct countrywide land **mapping**	Identify potential sites for future renewable energy projects
• Provide commercial-level incentives	Create a level playing field for renewable energy
• Introduce **virtual power purchase agreements**	**Simplify procurement** and reduce corruption for small renewable power plants
• Streamline **land acquisition**	Expedite land acquisition for renewable power plants
• Offer **household-level incentives**	Encourage **renewable energy adoption** at the household level
• **Explore new g**as fields	Secure access to new gas sources, including trans-border fields
• Set an **import cap**	**Limit reliance** on imported energy to promote domestic power generation
• **Transition to hedge** fund purchases	Stabilise fuel prices by buying fuel **at fixed prices**
• **Eliminate spot market** commissions	Discourage spot market buying and reduce incentives for fossil fuel purchases

4. Citizen's Manifesto on Power and Energy: Pledges and Expectations

Table 8: Pledges from Electricity Production, Import and Supply

Specific Policy Pledge	Description
• Implement **modern transmission** facilities	Improve energy distribution efficiency
• Enforce **environmental safety standards** for solar projects	Protect the environment and natural habitats
• Provide nationwide **post-service support** for solar projects	Ensure **long-term sustainability** of solar energy adoption
• Conduct **regular audits** for power plant efficiency	**Enhance transparency** and accountability in the energy sector
• Implement demand response programmes	Optimise consumer energy consumption based on data insights
• Introduce **net metering**	Facilitate efficient energy resource allocation and promote renewable energy
• Implement a **multi-buyer model** for BPDB	**Streamline energy procurement** and reduce administrative burdens
• Establish an **auction market** for renewable energy	Promote **competitive pricing** for renewable energy
• Grant **Polli Biddyut jurisdiction over** renewable energy purchases	Expand renewable energy access in rural areas
• Develop rural sector **solar with post-service facilities**	Ensure **long-term viability** of solar energy adoption in rural areas

4. Citizen's Manifesto on Power and Energy: Pledges and Expectations

Table 8: Pledges from Electricity Production, Import and Supply (cont.)

Specific Policy Pledge	Description
• Provide **post-servicing for solar irrigation**	Sustain the transition to solar-powered irrigation in rural areas
• Implement **mini-grid and micro-grid** technology	Provide reliable electricity access to remote rural communities
• Utilise **biomass and biogas** technology at the household level	Promote **environmentally and economically** feasible renewable energy solutions
• Streamline **land acquisition** for **rural power plants**	Expedite project implementation in rural areas
• Enhance rural power infrastructure	Improve energy reliability and availability in rural areas
• Introduce **integrated household renewable** energy models	Promote household energy independence **and reduce power sector subsidies**
• Secure **international climate funds**	Strengthen **rural renewable energy infrastructure** and access
• **Engage vulnerable groups** in energy project planning	**Achieve climate justice** by considering the needs of marginalised communities
• Develop viable **household-level renewable energy finance** plans	Facilitate **household-level adoption** of renewable energy

4. Citizen's Manifesto on Power and Energy: Pledges and Expectations

Table 9: Pledges from Renewable Energy Production, Supply, and Distribution

Specific Policy Pledge	Description
• Empower renewable power plants to **manage transmission facilities**	Streamline project implementation and **reduce administrative burdens**
• **Partner with renewable energy companie**s like Tesla	Expedite the development of **large-scale solar panel projects**
• Electrify the public transportation system	Reduce environmental pollution and improve public health
• **Expand EV charging** infrastructure	Set up planned charging stations, license existing petrol pumps, and incentivise EV charging station adoption
• **Foster technology transfer** and multilateral cooperation	Facilitate the development of renewable energy infrastructure projects
• Promote **biogas facilities** for rural households and irrigation	Explore alternative renewable energy sources
• Implement **participatory planning**	Collaborate with ministries to develop a location-based renewable energy-focused **integrated FDI plan**
• Seek support and **funding from major carbon-emitting countries**	Secure financial assistance for renewable energy transition
• Establish a **one-stop service** for investors	**Streamline bureaucratic processes** and enhance investor access

4. Citizen's Manifesto on Power and Energy: Pledges and Expectations

Table 10: Pledges from Renewable Energy Production, Supply, and Distribution

Specific Policy Pledge	Description
• Strengthen the **negotiation skills** of bureaucrats	Effectively secure **international climate funds**
• Negotiate **agreements with EU** and **USA**	Access proprietary renewable energy technology at a **discounted rate**
• Prioritise **university energy research projects**	**Develop domestic solutions** based on feasible local ideas
• Increase collaborative **research funding**	Enhance **university-level rese**arch through joint investment among **ministries and UGC**
• Implement **phased investment** for energy research	Support solution-based energy research through a phased investment approach
• Encourage **private tech company investment**	Promote innovation and solutions through private sector engagement
• Allocate **dedicated government funds**	Establish a separate **funding mechanism for renewable** energy research

4. Citizen's Manifesto on Power and Energy: Pledges and Expectations

Table 11: Pledges from Power and Energy Policies of Tomorrow

Specific Policy Pledge	Description
• **Redefine the energy model**	**Integrate environmental conservation, renewable energy**, and sustainability into the core of energy policy
• **Shift from profit-driven** to sustainability-focused models	Prioritise resource efficiency, transparency, and household-level energy needs
• **Align power** plant projects with people's needs	Prioritise electricity accessibility and demand-driven power generation
• Implement **differentiated models** for urban and rural electricity access	Optimise resource allocation and energy distribution based on specific needs
• Incorporate **climate justice principles**	Address the needs of environment and climate-affected populations in renewable energy infrastructure development
• Set climate justice-focused renewable energy targets	Prioritise impact over arbitrary generation numbers
• Prioritise renewable energy	Emphasise renewable energy development as the primary focus
• Expand **domestic gas exploration**	Reduce reliance on imported fuel
• Establish a **separate renewable energy cell**	Enhance coordination and accelerate project implementation
• **Empower SREDA**	Allocate adequate budget, remove bureaucratic barriers, and promote independent operations

4. Citizen's Manifesto on Power and Energy: Pledges and Expectations

Table 11: Pledges from Power and Energy Policies of Tomorrow (cont.)

Specific Policy Pledge	Description
• Create a **dedicated renewable energy** division	Establish a separate renewable energy ministry to avoid conflicts of interest
• **Transfer BERC's jurisdiction** to the Supreme Court	Ensure independence and regulatory power
• Allocate an **independent budget** for BERC	Empower BERC to invest in energy-related research projects
• Provide **training** for BPDB staff	Enhance skills and knowledge to improve energy sector management
• **Mandate** regular **financial reports** and audits	Increase transparency and accountability in energy institutions
• Prioritise capacity building and ministerial cooperation	Develop long-term, people-focused power plans
• Formulate a **long-term action plan** for human resource development	Align energy sector personnel with long-term energy targets

5. Reflection of Energy Transition in the National Plans and Policies

5. Reflection of Energy Transition in the National Policies

5.1 Energy and Climate Policies and Planning

- Currently, there are **three** social and economic policies effective in Bangladesh
  - However, the energy mix aimed at in these policy texts is becoming outdated
- Besides, there are other national policies as well concerning energy which addresses the climate issues as well.

Year	Policy	Comments
2016	Energy Efficiency and Conservation Master Plan	Outlines strategies aimed at decreasing the energy intensity (primary energy per GDP) by 20% by 2030
2017	Gas Sector Master Plan Bangladesh	Covers gas demand forecast, infrastructure planning for gas transportation
2018	Bangladesh Delta Plan	Very long-term socio-economic policy
2020	Perspective Plan of Bangladesh 2021-2041	Long term socio-economic policy
2020	8th Five Year Plan July 2020-June 2025	Short to medium term socio-economic policy

Source: Authors' illustration

5. Reflection of Energy Transition in the National Policies

5.1 Energy and Climate Policies and Planning

- Since 2008, **many plans and guidelines** have been formulated in Bangladesh on promotion of renewable energy which are shown below:

Year	Policy
2008	• Bangladesh Renewable Energy Policy
2013	• Guideline for the Implementation for Solar Power Development Program
2015	• Renewable Energy Development Target, 2015-2021
2016	• Power System Master Plan 2016 (PSMP2016)
2018	• Bangladesh Delta Plan 2100
2020	• Perspective Plan of Bangladesh 2021-2041
	• 8th Five Year Plan July 2020-June 2025
2021	• Nationally Determined Contributions
2022	• Renewable Energy Policy (Draft)

Source: IEPMP

5. Reflection of Energy Transition in the National Policies

5.2 Nationally Determined Contribution (NDC)

- In response to rising concern on climate change, Bangladesh submitted an updated Nationally Determined Contribution (NDC) to the UNFCCC Secretariat on 26 August 2021

- Bangladesh's NDC presently states:
  - In the unconditional scenario, GHG emissions would be reduced by 6.73% below BAU (409.4 $MtCO_2e$) in 2030
  - In the conditional scenario, GHG emissions would be reduced by 21.85% below BAU in 2030
- The mitigation actions concerning power sector in NDC is as followed:

Table 12: Targets set under the NDC 2021

Unconditional Contribution	Conditional Contribution
• Implementation of renewable energy projects of **911.8 MW**	• Implementation of renewable energy projects of **4,114.3 MW**
• Installation of new Combined Cycle Gas based power plant (**3,208 MW**)	• Coal power plant with Ultra super critical technology- **12,147 MW**
• Efficiency improvement of Existing Gas Turbine power plant (**570 MW**)	• Installation of new Combined Cycle Gas based power plant (**5,613 MW**)
• Installation of **prepaid meters**	• Efficiency improvement of Existing Gas Turbine power plant (570 MW)
	• Installation of prepaid meters
	• Bring down total **T&D loss** to a single digit by 2030

Source: NDC 2021

5. Reflection of Energy Transition in the National Policies

5.2 Nationally Determined Contribution (NDC)

- However, INDC (2015) **proposed** 12 MtCO2e (5%) reduction in unconditional and a further 24 MtCO2e (10%) reduction in conditional scenario

- It is noteworthy that CO2 emission **must be reduced** mostly in the **power and industrial** energy sector

Table 13: Targets set under the NDC 2021

UNFCCC Sector	Sub-sector	GHG Emission Scenario		GHG Reduction by Mitigation (2030)							
		BAU 2030		Unconditional			Conditional			Combined	
		$MtCO_2e$	In %	$MtCO_2e$	Reduction $MtCO_2e$	In %	$MtCO_2e$	Reduction $MtCO_2e$	In %	Reduction $MtCO_2e$	In %
Energy	Power	95.14	23.24	87.13	8.01	29.06	51.4	35.73	57.72	43.74	48.9
	Transport	36.28	8.86	32.89	3.39	12.30	26.56	6.33	10.23	9.72	10.86
	Industry (energy)	101.99	24.91	95.33	6.66	24.17	94.31	1.02	1.65	7.68	8.58
	Other energy sub sectors:										
	Households	30.41	7.43	28.78	1.63	5.91	24.77	4.01	6.46	5.64	6.3
	Commercial	3.35	0.82	2.94	0.41	1.49	2.51	0.43	0.69	0.84	0.94
	Agriculture	10.16	2.48	9.37	0.79	2.87	10.13	0.03	0.05	0.82	0.92
	Brick Kilns	23.98	5.86	20.7	3.28	11.90	12.82	7.88	12.73	11.16	12.47
	Fugitive	8.31	2.03	8.31			4.03	4.28	6.91	4.28	4.78
	F Gases	2.92	0.71	0.78	2.14	7.76	0.03	0.75	1.21	2.89	3.23
Total Energy		312.54	76.34	286.23	26.31	95.46	226.56	59.71	96.46	85.98	96.1
IPPU	Cement and Fertilizer	10.97	2.68	10.97			10.97				
AFOLU	Agriculture and Livestock	54.64	13.35	54	0.64	2.32	53.6	0.4	0.65	1.04	1.16
	Forestry	0.37	0.09	0.37			0.37				
Total AFOLU		55.01	13.44	54.37	0.64	2.32	53.97	0.4	0.65	1.68	1.16
Waste	MSW and wastewater	30.89	7.55	30.28	0.61	2.21	28.44	1.84	2.97	2.45	2.74
Total Emission		**409.41**		**381.85**			**319.94**				
Total Reduction					**27.56**	**6.73**		**61.9**	**15.12**	**89.47**	**21.85**

Source: NDC 2021

5. Reflection of Energy Transition in the National Policies

5.3 Mujib Climate Prosperity Plan

- The Mujib Climate Prosperity Plan incorporates **four scenarios** as described below, in which shares of renewable energy is assumed as shown
- MCPP has identified **only solar, wind and biogas** as the sources of renewable energy

Table 14: Targets set under the MCPP

	Scenario	2025	2030	2041
RE share in energy mix	**Business-As-Usual (BAU):** Uses the reference scenario in Vision 2041	3%	6%	
	Mujib Climate Prosperity Plan (MCPP): Realistic climate prosperity scenario based on current and expected prospective access to resources and support	5%	10%	
	Mujib Climate Prosperity Plan Maximized (MCPP-M): Maximized climate prosperity scenario based on a **significant increase in resources** made available both from international support and private sector (**domestic, regional, and international**).	7%	30%	40%
Lower energy intensity	**MCPP-M**		20%	

Source: IEPMP

5. Reflection of Energy Transition in the National Policies

5.4 IEPMP: Generation

- The ratio of public to private sector capacity will **maintain balance, with** the public sector **exceeding 70%** by 2041 and then potentially dropping to around **40% by 2050**
  - It is imperative that the **PPAs are transparent** and made publicly available if this initiative of privatisation takes place
- The geographical **distribution of power plants** will shift towards **coastal regions advantageous for importing fuels**
  - This geographical decision is appreciated since the power plants will receive the fuel in the shortest time
  - However, it is advisable that the financial costs of building new fossil-fuel based power plants in those regions could **be sanctioned for renewable energy-based power plants** due to the abundance of renewable resources in those region

5. Reflection of Energy Transition in the National Policies

5.5 IEPMP: Reserve Margin

- Targets for **reserve capacity rate** set in PSMP2016 and PP2041 range from 25% through 2025 to 10-15% by 2050
  - Achieving these targets **requires significant reduction** in unplanned outage rates of power generation facilities
  - IEPMP failed to address how the unplanned outages could be reduced
- Proposals for target reserve capacity rates by 2030, 2040, and 2050 are 30%, 25%, and 20% respectively, with corresponding LOLE targets and unplanned outage rate reductions
  - Provided the current reserve capacity rate is around 40-50%, it seems **unrealistic to achieve the target of 30% by 2030**

Table 15: Necessary reserve capacity rate

Target year	Target LOLE	Necessary reserve capacity rate
Present-2030	24 hours/year	Approx. 42% or more
2031-2041	12 hours/year	Approx. 44% or more
2041-2050	6 hours/year	Approx. 46% or more

Source: IEPMP

Table 16: Target of Reserve Capacity Rate

	2030	2040	2050
Reserve capacity rate	30%	25%	**20%**
LOLE target (hours/year)	24	24	24
Unplanned outage rate	12% or less	11% or less	10% or less

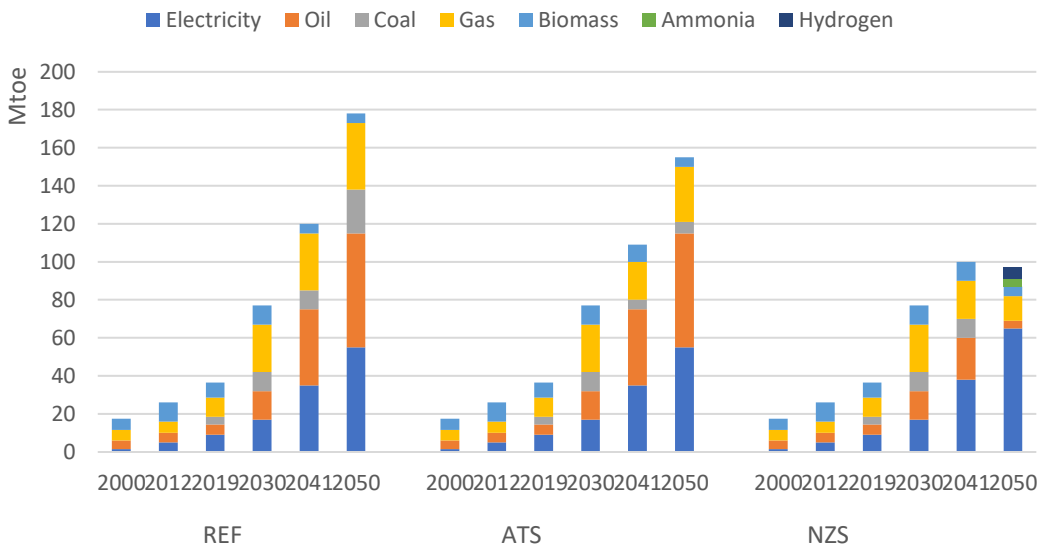
Source: IEPMP

5. Reflection of Energy Transition in the National Policies

5.6 IEPMP: Fuel Mix

- It is evident that in REF and ATS scenario, there are still the dominance of the use of fossil fuel
  - Even in the NZS scenario, the use of fossil fuel has been sugar coated with the use of Ammonia, Hydrogen as alternatives for coal
- The REF scenario depicts the projected 2050 based on Coal, Oil and Gas while ATS slightly changed the mix for coal
  - The increase of use of coal as primary fuel is not advisable at all since it pushes the energy transition in the opposite direction
- The NZS includes Amonia, Hydrozen as alternatives for coal
- JICA opined that NZS scenario is mostly impossible for Bangladesh and suggested to not opt for it
  - Since NZS scenario depicts the use of ammonia and hydrogen and the scenario is unrealistic for Bangladesh, no further actions or plans must be taken concerning these so called “clean” solutions

Figure 1:Fuel Mix Scenario based on IEPMP



Source: IEPMP

5. Reflection of Energy Transition in the National Policies

5.7 IEPMP: Transmission

- Key issues of Transmission System Planning includes:
  - Increasing power flow **from south to north** due to large-scale power plants located in coastal zones
  - **Reliability improvement** of supply network to Capital Dhaka
  - **Interconnection with neighboring** countries to enhance security and reliability of power supply
- There are plans for constructing **400 kV** and potentially **765 kV** lines to accommodate future power flow need for increasing South to North power flow
  - **Local demand increase** in Barishal & Chattogram Zones will reduce the required capacity for transmission lines to Dhaka
  - **Gas pipeline plans are essential** for locating power sources outside these zones to ensure fuel transportation
- Construction of a **230 kV underground system** in Dhaka will be made for higher reliability
  - **Underground cables** have lower transmission capacity but are less prone to environmental faults
- Voltage operation issues involve managing low voltage during peak hours and overvoltage due to sudden demand drops will be looked after
- Promoting the use and automation of **Energy Management Systems (EMS)** will be made
- Implementation of **Under-Frequency Load Shedding (UFLS)** and **Special Protection Schemes (SPS)** to mitigate impacts of large unit losses and prevent wide-area blackouts will be made

5. Reflection of Energy Transition in the National Policies

5.8 IEPMP: Distribution

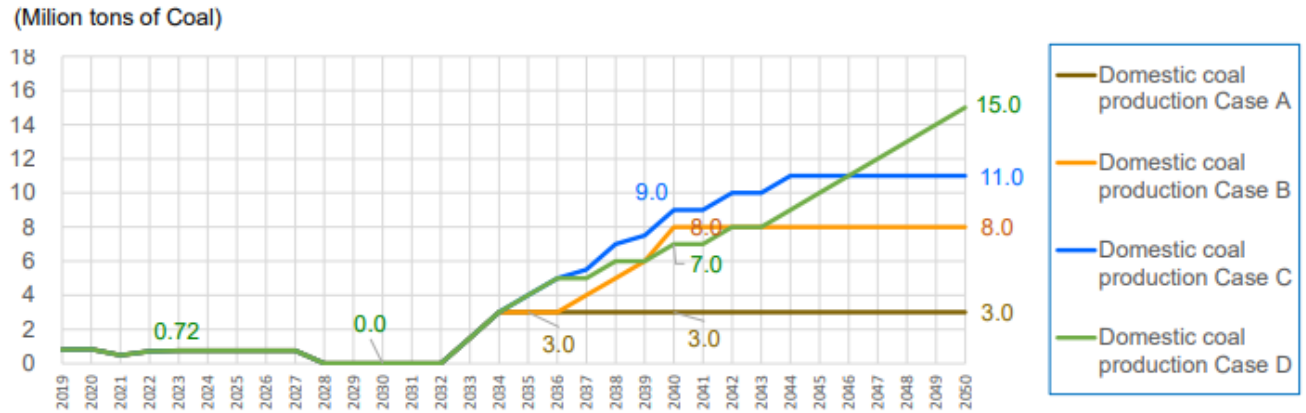
- **High demand growth** rates across all utilities, with urban areas like Dhaka expecting substantial increases
- Rural areas see average annual demand growth of about **10%,** expected to continue growing
- Currently, distribution networks consist of 33kV or 11kV medium-voltage lines and 230/400V low-voltage lines
  - **Distribution losses range** from 5.6% to 10.5%, **higher in rural areas** due to longer distribution line lengths
- **Demand forecasting, operational** efficiency, and cybersecurity are key challenges
  - Rural areas focus on improving supply reliability and addressing long-lasting power outages due to natural disasters
- **Grid connection guidelines and reliability improvements** are necessary for expanding renewable energy supply connections
- For Dhaka area, reliability improvements through insulated wires, lightning protection, and Distribution Automation System (DAS) should be made
  - **Operational efficiency measures** such as smart meters, GIS, and underground technology improvement needs to be implemented
- For areas outside Dhaka, **mini-grids or stand-alone grids should** be considered in short term
- Long term plans include upgrading distribution systems to manage impacts from increasing mini-grids

5. Reflection of Energy Transition in the National Policies

5.9 Scenario Analysis of Coal in IEPMP

- **Assumes coal production continue** until 2050 in both existing and new mines
- **4 Coal production scenarios**
  - Case-A and -B are stagnant scenarios that new coal mines will be relatively limited
  - Case-C and -D consider more utilization of domestic coal
- This seems like more of a **Coal Transition** from Imported to Domestic coal
- The policy must **adhere to the global "Just Transition** " coal phasing out momentum to have a sustainable and clean energy supply
- The early **retirement plans for Operational Coal Based Power plants** can be expeditated through an abandonment policy including a compensation package for both public and privately owned power plants

	Project	Case-A	Case-B	Case-C	Case-D	Production start
1	Barapukuria U/G	Production	⇨ Same	⇨ Same	⇨ Same	Producing
2	Dighipara U/G	Feasible >> Production	⇨ Same	⇨ Same	⇨ Same	2033
3	Khalashpir U/G	FS >> Not Feasible	FS >> Feasible >> Production	⇨ Same		2037
4	Jamalganj U/G	FS >> Not Feasible	FS >> Feasible >> Production			
5	Barapukuria O/C	FS >> Not Feasible	⇨ Same	FS >> Feasible >> Production	⇨ Same	2035
6	Phulbari O/C				FS >> Feasible >> Production	2045
Outpot (mt)	2019	0.8	0.8	0.8	0.8	
	2022	0.7	0.7	0.7	0.7	
	2030	0.0	0.0	0.0	0.0	
	2041	3.0	8.0	9.0	7.0	
	2050	3.0	8.0	11.0	15.0	



Source: IEPMP 2023

5. Reflection of Energy Transition in the National Policies

5.10 Domestic Natural Gas Production as Projected in the IEPMP

- IEPMP focuses on the demand for natural gas
  - The Gas Demand for 2050 has been projected **at 8142 mmcfd** according to PP2041 and **4545** mmcfd according to the In-between scenario.
  - Based on the demand, the projected **low-risk potential** (On-shore) production will be 470 mmcfd in 2050.
  - The projected production from **high-risk potential** (Off-shore) is 1230 mmcfd which totals **1700 mmcfd.**
- Onshore and offshore production from new sources is anticipated to increase existing production.
  - The production attained by the current drilling program is one of these new sources.
- Exploration efforts have **not yet established** offshore potential.
- There is tendency to **depend on imported gas (LNG)**.

Figure 2: Forecast of Domestic Natural Gas Production

	2020-21	2030-31	2040-41	2050-51
	MMcfd	MMcfd	MMcfd	MMcfd
Existing Well	2,415	701	188	40
Well Workover	25	301	135	140
Appraisal and Development Wells (Existing)	0	311	258	160
Onshore Exploration	0	377	156	100
Onshore Unconventional Potential	0	90	30	30
Onshore Total	2,440	1,779	768	470
Offshore: Shallow Water	0	200	250	250
Offshore: Deepwater	0	0	680	980
Offshore Total	0	200	930	1,230
Total	2,440	1,979	1,698	1,700

Source: IEPMP 2023

5. Reflection of Energy Transition in the National Policies

5.11 LNG Import as Projected in the IEPMP

- As mentioned previously, **IEPMP promotes LNG** through emphasising demand projections and the necessity of LNG in Bangladesh
- This tendency to further promote LNG **import is not appreciated at all**
- Rather the focus should be on domestic gas exploration

	2030	2035	2040	2045	2050
Gas Demand	mmcfd	mmcfd	mmcfd	mmcfd	mmcfd
Petrobangla (Scenario-3)	6,240	6,941	7,675	-	-
PP2041	3,384	4,008	4,985	5,823	8,142
In-Between	2,879	3,213	3,717	3,982	4,545
Production					
Low Risk Potential	1,779	1,221	768	580	470
High Risk Potential	200	900	930	1,080	1,230
Total	1,979	2,121	1,698	1,660	1,700
LNG Demand (mmscfd)	mmscfd	mmscfd	mmscfd	mmscfd	mmscfd
Petrobangla: Base	4,261	4,820	5,977		
Without High Risk Potential	4,461	5,720	6,907		
PP2041: Base	1,405	1,887	3,287	4,163	6,442
Without High Risk Potential	1,605	2,787	4,217	5,243	7,672
In-Between: Base	900	1,092	2,019	2,322	2,845
Without High Risk Potential	1,100	1,992	2,949	3,402	4,075
LNG Demand (million tonnes)	Mt	Mt	Mt	Mt	Mt
Petrobangla: Base	32.7	36.9	45.8		
Without High Risk Potential	34.2	43.8	52.9		
PP2041: Base	10.8	14.5	25.2	31.9	49.4
Without High Risk Potential	12.3	21.4	32.3	40.2	58.8
In-Between: Base	6.9	8.4	15.5	17.8	21.8
Without High Risk Potential	8.4	15.3	22.6	26.1	31.2

Source: JICA-IEPMP Focused Group Meeting

- IEPMP mentions the preparation is being made to introduce two more **FSRUs**
- As per a proposal, the Excelerate Energy Bangladesh Ltd, and Summit Oil & Shipping Co Ltd, a subsidiary of the Summit Group will establish 2 new FSRU
- LNG-based energy development **needs to be substituted** by domestic gas
- **A huge investment** is required to establish the LNG based infrastructure

Location	Terminal	Capacity/Expansion	Start-up
		MMcfd	
Moheskhali	#1 FSRU (Operating)	500 → 630	Expnasion to be discussed
	#2 FSRU (Operating)	500 → 630	Expnasion to be discussed
	#3 FSRU	500-750	2026
Payra	#4 FSRU	630-1,000	2028
Matarbari	Land-based	1,000	2030
Total	3,430~4,010 MMcfd (24.0~30.7 million tonnes)		

Source: IEPMP 2023

5. Reflection of Energy Transition in the National Policies

5.12 Petroleum Oil in IEPMP

- Major planned projects include- **Distillation unit 2 at the ERL U2, New SPM, One LPG import terminal**
  - Petroleum products **import pipeline from India**
  - IEPMP assumes the following additional supply capacity projects until 2050: **Additional crude distillation unit, New SPM, Additional LPG terminals**
- The total **liquid fuel** demand is projected to be **43.1 million tons per year in FY2050.**
  - **Oil is heavily used** based on imports which need to be replaced by clean energy sources
  - The supply capacity projects need to have a proper monitoring and evaluation module
  - Feasibility studies of renewable energy replacing oil should be constructed in terms of efficiency, affordability, and sustainability
  - **A huge investment is required** for setting up relevant infrastructure

Table 17: Petroleum Supply Plan according to the IEPMP

Unit: million tons per year	2021FY	2030FY	2041FY	2050FY
Total Liquid Fuel Demand	12.3	17.5	30.4	43.1
Refinery Production	2.0	5.0	10.0	8.5
ERL-1	1.5	1.5	1.5	
ERL-2		3.0	3.0	3.0
ERL-3 (replace ERL-1)			5.0	5.0
Other Small Refineries	0.5	0.5	0.5	0.5
Product Import (excl LPG)	8.9	10.0	15.4	24.6
BPC@Chittagong	4.5	5.0	5.0	5.0
IBFPL		1.0	1.3	1.3
SPM-1@Chittagong		3.0	9.0	9.0
New SPM@TBD (excl crude oil)			0.1	9.3
HSD/FO for IPP	4.4	1.0	0.0	0.0
LPG	1.4	2.5	5.0	10.0
Existing LPG Terminal	1.4	1.5	2.0	2.0
ERL	0.0	0.1	0.3	0.2
New LPG Terminals @ TBD		0.9	2.7	7.8

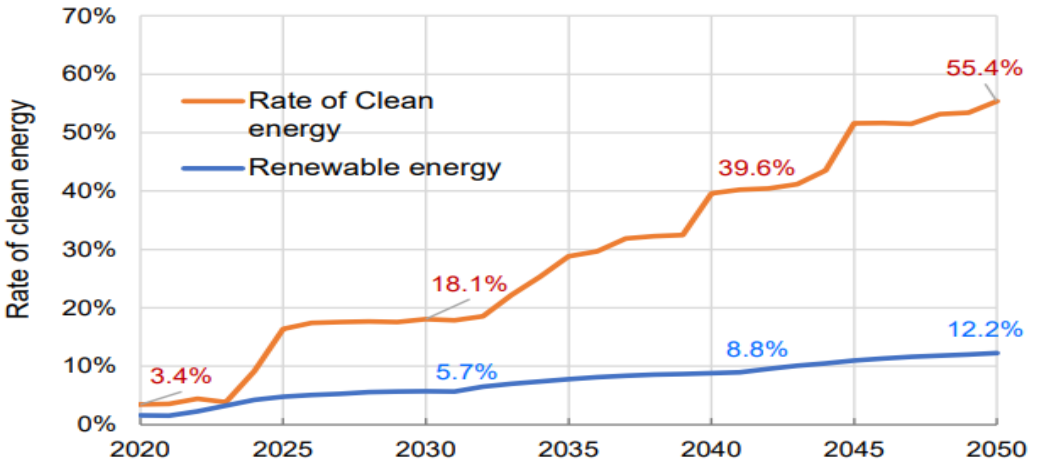
Source: IEPMP Report

5. Reflection of Energy Transition in the National Policies

5.13 IEPMP: Clean Energy vs Renewable Energy

- Although the renewable energy target is set at 40% by 2041 (24,000 MW), total installed renewable energy-based generation capacity **at present is only 1183.63 MW** which is only 4.3% of total installed capacity of electricity
- No major effort is taken to **address the renewable energy-based** power sector development
- The new Master Plan (**IEPMP**) has set to undermine the potentials of renewable energy target set by the Prime Minister
  - The target is faultily revised to cleaner energy (including CCS, Hydrogen, nuclear) by 2041
  - Such a shift in narratives weakens the government's stance and creates confusion among the masses regarding renewable energy
  - The cleaner energy includes non-tested technologies such as ammonia, hydrogen, critical and super critical carbon capture unit
- IEPMP shows that **only 8.8% of total electricity (5280MW) to** be generated from renewable energy sources
- PM's directives to convert all irrigation pumps into solar-based irrigation pumps – is highly appreciated.

Figure 3: IEPMP on RE Clean Energy



Item (Unit: MW)	Availability	Advanced Technology Scenario		
		2030	2041	2050
Solar PV	-	5,061	9,500	18,000
→Solar-park solar PV	20%	3,061	3,500	6,000
→Rooftop solar PV	18%	2,000	6,000	12,000
Wind Power	-	750	7,575	20,000
→On-shore wind	25%	750	1,575	5,000
→Off-shore wind	30%	0	6,000	15,000
Traditional biomass	80%	10	15	20
Modern biomass (Waste to Energy)	80%	93.5	150	230
Hydropower	By 2030: 49.6%	230	230	230

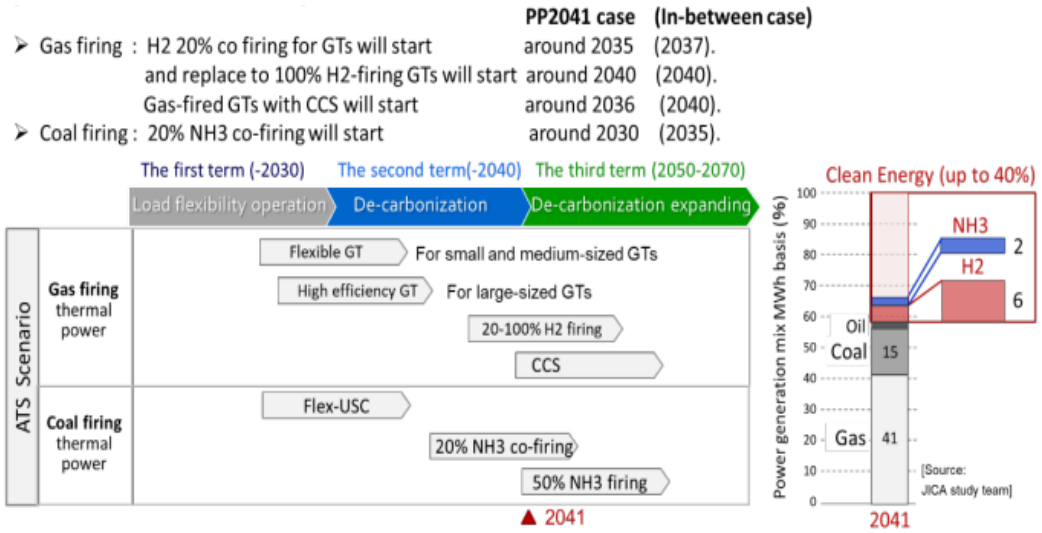
5. Reflection of Energy Transition in the National Policies

5.13 IEPMP: Clean Energy vs Renewable Energy

- The IEPMP states that in order to achieve the goal of 40% of electricity generated from clean energy sources it will be necessary to introduce **H2 at 6% and NH3 at 2%.**
- Gas fired with hydrogen: Gas-fired power plants with **20% hydrogen co-firing** starting in 2037
  - Upgraded to 50% in 2045
  - **100% hydrogen firing** starting in 2040

- **Coal fired with Ammonia:** Coal-fired power plants with **20% NH3 co-firing** starting in 2035
  - Upgraded to **50% in 2040**
- According to a recent study by Bloomberg, the **cost of electricity generation** from renewable sources tends to fall by **2025 and 2030**.
- The levelized cost of electricity (LCOE) for a new utility-scale solar project in Bangladesh ranges from **$97-135/MWh today, compared to $88-116/MWh for a combined cycle gas turbine (CCGT) and $110-150/MWh for a coal power plant.**
- By 2030, solar with batteries will also **achieve a cheaper LCOE** than new thermal power plants.

Figure 4: Coal fired with Ammonia



5. Reflection of Energy Transition in the National Policies

5.14 Priority Projects of IEPMP: Profile and Investment

- Over **USD 175 billion** investment is required for low-carbon infrastructure through 2050, mainly in the power sector for adopting new technologies
- Transmission sector requires around **USD 2 billion by 2030** for new infrastructure, with an estimated **USD 0.6 to USD 0.8 billion** annually needed from 2030 to 2050
- Of the total incremental capacities, about 21% of the plan will be installed during the period from 2022 to 2030, 34% from 2031 to 2041, and the remaining 45% from 2042 to 2050

Table 18: Power Generation Capacity Additions and Required Investment

	Capacity Addition (GW)				Required Investmentt (US$ billion)			
	2023-2030	2031-2041	2042-2050	Total	2023-2030	2031-2041	2042-2050	Total
Gas	13.2	26.5	31.6	71.2	9.7	19.5	23.3	52.6
Gas+CCS	0.0	4.3	8.8	13.1	0.0	8.3	15.7	24.0
Coal	7.6	2.3	0.0	10.0	11.3	3.4	0.0	14.7
Oil	0.5	0.8	0.7	2.0	0.3	0.5	0.5	1.4
Fossil Fuel Total	21.3	33.9	41.1	96.3	21.3	31.8	39.5	92.6
Nuclear	2.4	2.2	2.2	6.8	7.0	6.6	6.6	20.1
Hydrogen	0.0	1.6	1.6	3.2	0.0	1.3	1.3	2.6
Ammonia	1.3	1.3	0.0	2.6	2.1	2.1	0.0	4.3
New Fuel Total	1.3	2.9	1.6	5.8	2.1	3.4	1.3	6.9
PV (Solar park)	3.1	0.4	2.5	6.0	1.2	0.2	0.7	2.1
PV (rooftop)	1.6	4.0	6.0	11.6	0.9	1.9	2.3	5.1
On-shore wind	0.8	0.8	3.4	5.0	0.8	0.9	3.6	5.3
Off-shore wind	0.0	6.0	9.0	15.0	0.0	10.8	13.7	24.4
Biomass	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.5
RE Total	5.5	11.3	21.0	37.8	3.1	13.8	20.5	37.4
Total	30.5	50.4	65.9	146.8	33.6	55.6	67.9	157.0

Source: IEPMP

5. Reflection of Energy Transition in the National Policies

5.14 Priority Projects of IEPMP: Profile and Investment

- **USD 4.0 bi**llion will be invested for natural gas and **LNG infrastructure** development by 2050
- Several floating regasification and storage units (FSRUs) and an onshore receiving terminal are planned, mostly around the Matarbari/Moheskhali area
- The construction of four major trunk pipelines and the development of a virtual pipeline system will be crucial for domestic networks
- The existing **Eastern Refinery Limited** refinery in Chittagong is planned for expansion to meet growing demands (currently **1.5 million tons** per year)
- **Two Single Point Mooring for oil products** import and additional LPG import terminals are major projects aimed at enhancing import capacity
- Support from institutions like the World Bank and Asia Development Bank, along with export credit agencies, is vital for infrastructure development
- Establishment of **"Market-Based Pricing Principle"** is important for creating a resilient energy system that can adapt to international price fluctuations and reduce the financial burden on the national treasury

5. Reflection of Energy Transition in the National Policies

5.15 Ruling Party's Manifesto Vs National Plans on Energy Transition

Issues	NDC, 2021	IEPMP, 2023	MCPP, 2023	REP, 2023
Generation of Electricity				
Strengthening Supply Chain				
Country-wide proper Distribution				
Abstinence from Coal Use				
Exploration of Domestic Gas				
Deprioritising LNG USE				
Setting fixed RE & Clean Energy targets				
Planning of RE Generation				
Designing the Distribution channels of RE				
Setting up Policies and Plans				
Encouragement of Public Private Partnership (PPP)				
Pathways for Energy Transition and Sustainability				

Addressed

Not Applicable

Partially Addressed

6. Challenges in Energy Transition: How Far the Manifesto and IEPMP can Address These?

6. Challenges in Energy Transition: How Far the Manifesto and IEPMP can Address These?

6.1 Burden of over generation capacity

- Both the IEPMP and Election Manifesto **aims to increase the power** generation capacity to 60 GW
- This will further increase the share of unutilized generation capacity in future
- In 2023, **41% of the installed** generation capacity (on- grid) was unutilized

6.2 Phasing out capacity payment of the rental and QRRs

- The consequence of the overgeneration capacity has yield the fiscal burden of this sector in the form of capacity payment
- The new IEPMP, has **purposively avoided the discussion** and did not lay out any plan to address the capacity payment issue
- The manifesto has **partially mentioned the plan to phase out** rental and quick rental power plants in phase-by-phase approach
- But only mentioning will not be enough

6. Challenges in Energy Transition: How Far the Manifesto and IEPMP can Address These?

6.3 Insufficient planning of transmission and distribution system

- The IEPMP emphasises on the expansion of TnD system in Dhaka and from south to north northern part of the country
- This will help reducing the power outage in the Sylhet and Mymensingh as they suffered from the highest level of load shedding
- However, the RE based power plants are mainly in the **Costal part of the country and IEPMP doesn't specify the expansion plan of the TnD system and smart grid** in those areas
- No specific plan to reduce the **distribution loss in the rural areas** have been highlighted in IEPMP and Manifesto

6.4 Uncertainty in fuel import mechanism

- Since last year a persistent **energy crisis** has been hampering not only power generation but also effecting other major sectors
- The uncertainty seem to continue in the ongoing year as well due to the underlying importance given to the imported fuel in IEPMP
- Additionally, **enough attention has not been** given to the exploration of domestic gas rather import of LNG has been highlighted

6. Challenges in Energy Transition: How Far the Manifesto and IEPMP can Address These?

6.5 Dollar crisis making it difficult to import fossil fuels

- BPC and PetroBangla have been failing to settle the import bills of LNG and fuel oil
- An outstanding bill of **$700 million to global suppliers** is yet to be paid by BPC and PetroBangla
- Recently The Department of Energy and Mineral Resources has signed a $2.1 billion loan agreement with the ITFC to import fuel oil and LNG
  - Bangladesh Bank will provide 76% of the money mentioned in the loan agreement with ITFC.
- **If the sector further follows** the IEPMP fuel mix target depending on the imported LNG, the debt burden will continue to increase

6.6 Newly found interest in domestic coal transition

- **$4.8 billion investment** has been allocated to the coal consumption by 2050 while prioritising the local coal consumption
- **Focusing on local coal consumption** rather than importing is taking steps on the **opposite direction** of energy transition
- This will cause Bangladesh to digress further from the trajectory of achieving energy transition goals

6. Challenges in Energy Transition: How Far the Manifesto and IEPMP can Address These?

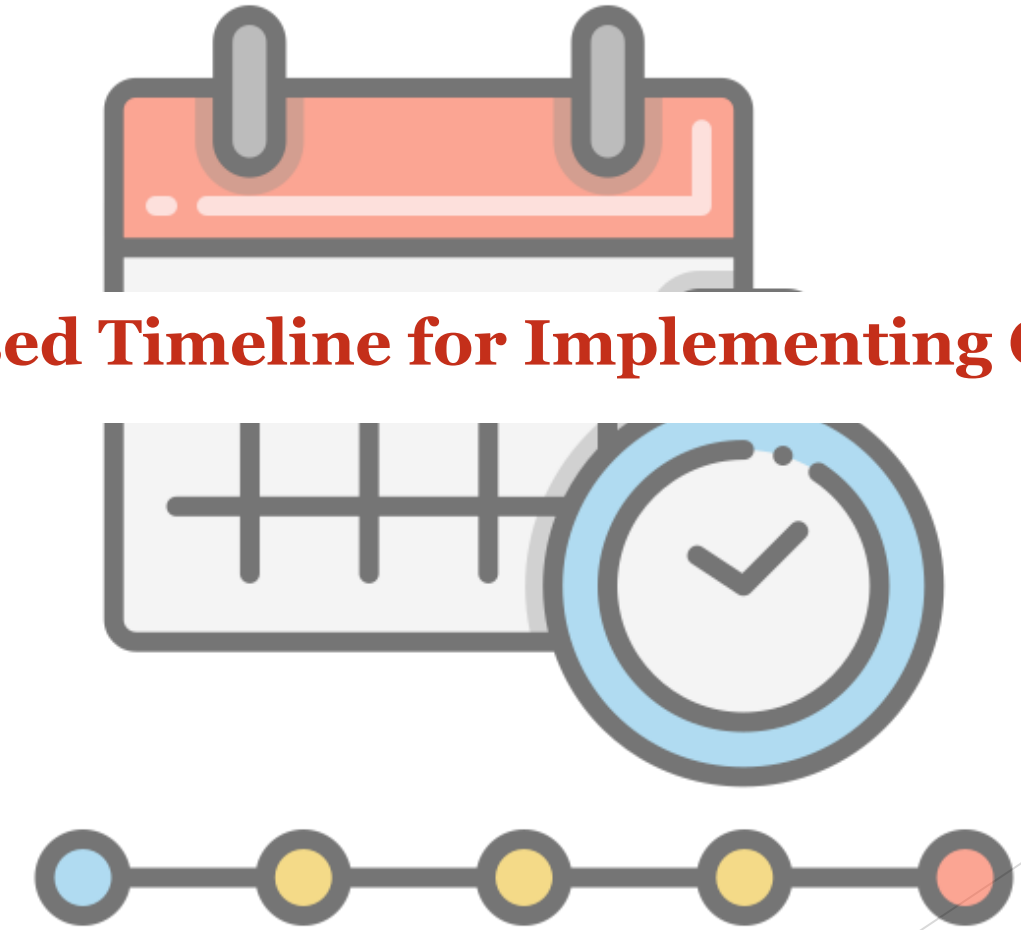
6.7 Imported fuel price adjustment under IMF Conditionalities

- **Neither of the document** discusses the imported fuel pricing mechanism and system under the IMF conditionality
- However, it is one of the key issue that the new government will have to address
- The government is to **adapt the new market-based pricing** system for imported fuel price
- The objective of such adjustment is to reduce subsidy, however, if not done properly it can shift the burden to the consumers

6.8 Dubious target setting of Renewable Energy

- Both the documents mentioned clean energy instead of focusing on the renewable energy to achieve the **40% clean energy target**
- However**, only 9% of the 40% is from traditional renewable** energy sources
- **Such shift in jargon makes** government's stance on renewable energy more ambiguous
- This **poses the question that where does renewable energy** stand in government's energy transition priority

7. Conclusion: Proposed Timeline for Implementing Citizen's Manifesto



7. Conclusion: Proposed Timeline for Implementing Citizen's Manifesto

Short term targets (should be implemented within June 2024)

Policies and Planning
• Demand forecasting should be revised
• The payments for fuel should be in local currency
• Competitive bidding for power plants should be introduced
• Regular financial reports from the energy related institutions should be mandated.

Electricity production, import and supply
• Regular audits should be done for power plant efficiency
• Demand response programmes should be implemented using nationally representative data
• Tariffs on solar panels should be lowered

Fuel production, import and supply
• Fuel purchases should be done through hedge funds and at a long-term fixed price
• Spot market commissions from fuel purchases should be eliminated

Renewable energy production, import and supply
• Promoting biogas facilities for rural households and irrigation
• National campaign for promoting renewable energy
• Introduction of net metering

7. Conclusion: Proposed Timeline for Implementing Citizen's Manifesto

Mid term targets (should be implemented within December 2025)

Policies and Planning
• The quick rental and inefficient power plants that are not yet in existing 'phase-out' list should be phased-out without delay.
• Renewable energy should be incorporated at the core of power and energy plan
• Integrated energy policy with unified targets should be adopted
• National training programmes on renewable energy should be launched for engineers
• Promoting women's role should be one of the primary objectives in energy policy
• The Power Plant Indemnity Act should be abolished
• BPDB staffs should be given technical training for their capacity enhancement
• Countrywide renewable energy mapping for potential sites
• Streamlining land acquisition process

7. Conclusion: Proposed Timeline for Implementing Citizen's Manifesto

Mid term targets (should be implemented within December 2025)

Fuel production, import and supply
• Incentives should be provided for integrating large-scale solar panels
• Virtual power purchase agreements should be introduced for small power plants
• Setting an import cap on fossil fuels
• Establishing a one-stop service for investors

Electricity production, import and supply
• Environmental safety standards should be enforced for solar projects
• Nationwide post-service support should be provided for solar projects
• BPDB staffs should be given technical training for their capacity enhancement
• Polli Biddyut should be granted jurisdiction over renewable energy purchases
• Post-servicing should be provided for solar irrigation
• Mini-grid and micro-grid technology should be introduced at the rural level
• Modernisation transmission facilities

Policies of Tomorrow
• A separate renewable energy cell should be established that will eventually be formed into a separate ministry
• Independent budget for BERC should be allocated to enable them to invest in renewable energy projects
• Private tech company investment should be encouraged
• Allocate adequate budget, remove bureaucratic barriers, and promote independent operations for SREDA
• Ministerial capacity building and cooperation

7. Conclusion: Proposed Timeline for Implementing Citizen's Manifesto

Long term targets (To be implemented in the next five years)

Policies and Planning
• Political commitments and roadmaps should be clearly defined
• Government non-agricultural Khas lands should be used for renewable energy projects
• Rural power infrastructure should be enhanced from the ground up
• Long-term action plan for human resource development
• Integrating environmental conservation, renewable energy, and sustainability into the core of energy policy

Energy production, supply and distribution
• Long-term fuel supply agreements should be established with fuel exporting countries
• Integrated household renewable energy models should be introduced
• Public transportation system should be transitioned towards electric power
• Empower renewable power plants to manage transmission facilities

Thank You!