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STRENGTHENING THE ECONOMIC FOUNDATION: STRATEGIES FOR DEVELOPMENT OF INFRASTRUCTURE

The Government's Vision 2021 defines several economic and social outcomes for Bangladesh to be achieved by 2021. To convert this Vision into long-term development targets, a Perspective Plan 2010-2021 was prepared. The targets of Vision 2021 and the associated Perspective Plan 2010-2021 were to be realized through the implementation of two five-year plans- the Sixth Five Year Plan (2011-15) and the Seventh Five Year Plan (2016-2020). The 6th FYP ended in June 2015 and made solid progress in increasing per capita income and reducing poverty through a strategy of pro-poor economic growth.

Without deviating from the main thrust of the 6th FYP, the 7th FYP articulates new strategies, institutions and policies, while strengthening existing ones, to complete the remaining agenda of achieving the social and economic outcomes of the Vision 2021 and the Perspective Plan 2010-2021. The 7th FYP, spanning fiscal years 2016-2020, begins with the country having entered the ranks of middle income countries. The first year of the 7th Plan also coincides with the launch of the UN post-2015 Sustainable Development Goals (SDGs). Though in a market economy like Bangladesh, where the bulk of the economy is privately owned and managed, the role of planning is essentially indicative and strategic in nature, aimed at stimulating the private sector. Nevertheless, there is an important complementary role for public investment programmes particularly in areas where private investment will not happen or very slow such as Power & Energy and Infrastructure sectors.

PROGRESS WITH INFRASTRUCTURE DEVELOPMENT DURING FIVE YEAR PLANS:

Power and Primary Energy

During the 6th Five Year Plan the economy of Bangladesh has been consistently growing over 6.5%. Bangladesh has achieved significant macroeconomic stability. There is a thumb rule that 1% GDP growth creates demand for 1.5% electricity growth. However, it has been observed during the 6th Five Year Plan that the demand for electricity has been growing over 12% to 15%. There was a serious gap of electricity demand and generation of power before 2009. Against this backdrop, the Awami League Government led by Hon'ble Prime Minister Sheikh Hasina adopted an aggressive plan to generate power to meet the huge demand for electricity in Bangladesh. The Government of Bangladesh adopted a strong and well-rounded reform programme to increase the supply of electricity involving substantial investment, sector reforms and regional trade. The implementation review suggests that the most impressive performance has been the expansion of installed grid-based power generation capacity to 13,540 MW (including captive power) of generation by FY2015, out of this grid based total generation

capacity is 11,532 MW. This success with the expansion of generation capacity along with expansion of transmission and distribution networks helped achieve considerable progress for power sector. The population's access to electricity increased from the FY2010 baseline of 48% to 72% in FY2015. The other target indicator, per capita electricity generation, also increased from 220 kWh to 371 kWh. On the whole, these numbers suggest an impressive performance in electricity production, distribution and consumption during the Sixth Five Year Plan. Progress was also made in engaging on energy trade. Some 500MW of power was added to the national grid based on purchase from India.

Notwithstanding this progress, there are two major areas of concern in the power and primary energy sector. First, there is a huge increase in the marginal cost of electricity. Much of the additional liquid fuel based power plants has added to the national grid. The liquid fuel based power generation cost is much higher than other fuel sources like gas and coal. Second, the Sixth Plan's target of diversifying sources of primary fuel by boosting domestic production of gas and coal did not materialize. Indeed, owing to gas shortage, the share of gas in power production fell from 84% in FY2010 to 63% in FY2015, while there was a commensurate increase in the reliance on liquid fuel from 8% to 29%. This has also added to the marginal cost of electricity production. Higher cost of production has continued to require budget support for the power sector even though average electricity prices have been raised a number of times.

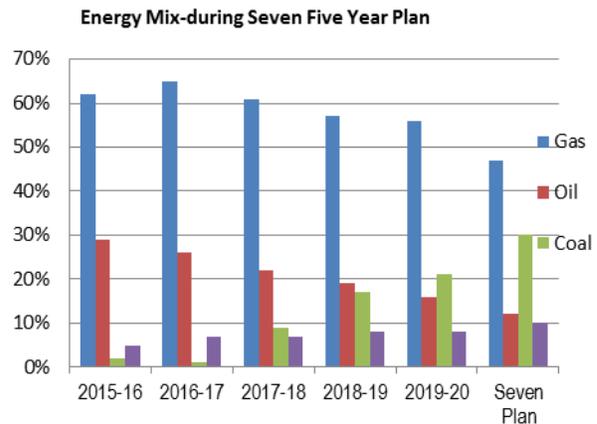
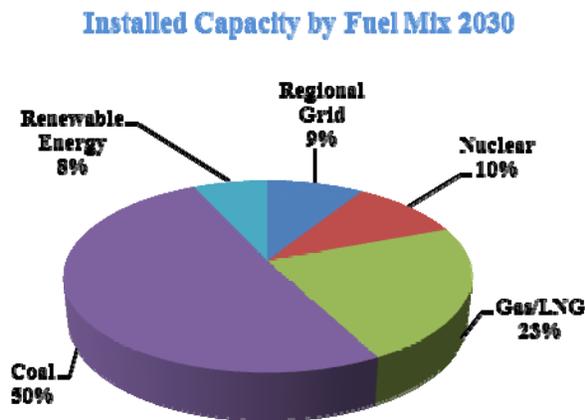
There is an important need to address the fuel diversification challenge to restore the financial sustainability of the power sector. The recent decline in international oil prices has provided an important break in the economics of power production and supply during 2015. Yet future oil price trends are uncertain and the Seventh Five Year Plan will have to put considerable emphasis on coal, possibility of new gas exploration, nuclear power and imports from India, Nepal and Bhutan. The future power expansion Programme must also be based on least-cost expansion path.

The 7th Five Year Plan Strategy: The 7th FYP reflects a continuation of the major goals articulated in the 6th FYP. Based on a more realistic assessment of the energy supply prospects and last five year's successes, the Government has developed a revised mid-term 5 year plan for 2016-2020. In this revised scenario, total generation during the 7th Five Year Plan period will increase by 12,584 MW, which is larger than the target that was in the Sixth Five Year Plan. Some 61% (7682 MW) will be provided by the public sector and 39% (4902) MW by the private sector. Much of the private investment in power generation will be relatively large scale with no additional rental power contracts. This will ensure the efficiency of power generation.

The most important strategic issue relating to energy in the 7th Five Year Plan is the strategy for supply of primary energy. A judicious combination of choices relating to domestic supply options and import options will need to be made to ensure the efficient and cost-effective supply of primary energy. Specifically, the strategy during the 7th Five Year Plan will be to meet the shortfall in domestic gas with coal and LNG. Further increases are planned for imported power and some small increments are expected from renewable energy (solar and wind power). Under

this strategy for primary supply of energy for power generation, the coal (indigenous or imported), imported power from neighbouring countries, the limited gas, will be used for the base load power plants, and LNG will be used to supplement the gas shortage. Limited gas, liquid fuel and LNG will be used for the peak load power plants. There is a programme for power generation from solar and wind. Government took a plan to implement 4000 MW of Nuclear power in phases. Under this plan, Rooppur Nuclear Power Project's first plant (1000 MW) will be commissioned immediately after 2020.

It can be mentioned that the Government of Bangladesh with Japan International Cooperation Agency (JICA) prepared and approved Power System Master Plan 2010- PSMP2010 in 2011. The main objective of the Plan was attainment of stable power supply in the country up to year 2030. The master plan considered issues of diversification of fuel resources, including an optimum power development plan, power system plan, and identification of the potential power plant sites based on the fuel diversification study. It reveals that domestic gas supply will be expected to decrease in the near future, while domestic coal supply will increase. In the event that fuel diversification advances during the later years, the Master Plan aims to acquire a 25% share of domestic coal and a 20 percent share of domestic natural gas, and a 5% share of national hydropower and renewable energy, thus ensuring the self-sufficiency of the primary energy resource to be over 50 percent by Year 2030. Fuel composition ratio as of 2030: coal 50%, natural gas 25%, others 25%.



The core targets of Energy set in accordance with the vision and goals of the Perspective Plan under the 7th FYP include:

- Installed Generation Capacity of electricity to be increased to 23,000 MW by 2020.
- Increase per capita energy consumption from 371 kWh to 514 kWh.
- Electricity coverage to be increased to 96 percent.
- Reduce system loss from 13% to 9%

INFRASTRUCTURE

Transport Sector

The transport sector strategy in Sixth FYP was built around achieving an overall target of 7.5 percent annual GDP growth in the transport sector to help achieve the Plan's desired average growth target. On average the transport sector value-added has grown by 6.2 percent during the Sixth Plan, which is lower than projected. Given the importance of transport sector in improving competitiveness and growth the Government has been allocating significant resources through the ADP. More broadly, in terms of service to the formal economy, there has been significant improvement through some visible addition of new infrastructure in Dhaka and Chittagong. Even so, the overall performance is lagging behind demand.

During the five years of the Sixth Five Year Plan, construction of 923 km of new roads was completed, 5355 km road was improved/ rehabilitated, 60253 m bridges and culverts was constructed /reconstructed under Roads and Highways Department. A total of 80 RHD projects have been completed under Annual Development Programmes during the period. Bangladesh Road Transport Corporation (BRTC) and Bangladesh Road Transport Authority (BRTA) have been shifted partially from traditional to digital system. BRTC has introduced e-ticketing, SPASS card and Wi-Fi in buses partially. BRTC has also contributed in increasing passenger mobility throughout the country. BRTA has introduced collection of motor vehicle tax and fee through on-line banking system, retro-reflective vehicle registration number plate, radio-frequency identification (RFID) tag along with 12 RFID reader stations in Dhaka Metropolitan Areas. Digital registration certificate, high security smart card driving license, modern taxicab services etc.

The performance of the railway sector is also lagging with respect to Sixth Plan targets. As of FY2015 there was 2877 kms of railway track, which is 164 kms more than the benchmark figure of FY2010. On the whole, while some progress has been made, there are major capacity and institutional constraints that need to be addressed if the full development potential of the railways is to be realized. The Bangladesh Railway suffers from major operational constraints including rail network shortage, mismatch of broad and meter gauge systems, shortage of rolling stock and safety equipment and financial deficits. The railway modernization challenge is a long-term challenge that will require considerable new investments, pricing and institutional reforms. Renewed focus on modernizing railways will be necessary for the Seventh Plan.

Under the Sixth Five Year Plan the main focus of Inland Water Transport was to revive the navigability of all dead and dying rivers. Accordingly, the Bangladesh Inland Water Transport Authority (BIWTA) implemented more dredging related projects under this plan. To revive the dead and dying waterways, BIWTA undertook several projects with varying time duration (short, medium and long term). Whereas a midterm project entitled, "Development of navigability of 12 important river routes" is under implementation and a long term project captioned, "Capital dredging of 53 river routes (1st Phase: 23 river routes)" has been started.

Ports are lifelines for international trade and the Chittagong Port handles 95% of the country's sea borne export and import trade. The ports' cargo handling increased from 44.11 million tons in FY2010 to 48.13 million tons in FY2015. Commensurate with this, the container handling increased from 1.34 million TEUs in FY2010 to 1.67 million TEUs in FY2015. The cargo volume exceeds the Sixth Plan's target, although there is a small shortfall in container handling. There has been improvement in the turnaround time of vessels, which is 5.15 days in FY2010 to 4.45 days in FY2015. Throughout per ship day for both container and bulk cargo also increased significantly.

THE SEVENTH FIVE YEAR PLAN

The 7th FYP recognizes importance of modern transportation and communication for achieving the target growth of 8% at the end of plan period. The key elements of the transport sector strategy for the Seventh Plan are as follows:

- Timely completion of all ongoing roads and bridges projects especially related to inter-city highways;
- A top priority is to focus on fast tracking a number *transformational infrastructure investment*. These include the Padma Bridge, Deep Sea Port Project, MRT-6 project, LNG terminal project, Payra Port Project, Rooppur Nuclear Power Project, Rampal Coal Power Project and Matarbari Coal Power Project;
- Another priority will be to address the new strategic considerations regarding the Government's commitment to promote regional connectivity and support for the Trans-Asian Highway Project;
- Address the anticipated Chittagong port capacity constraints owing to growing income and international trade;
- Significantly expand the capacity of the civil aviation to handle growing international and domestic air traffic through investments in new airports and other supportive infrastructure;
- Address the major institutional constraints that have hampered implementation of infrastructure projects in the Sixth Plan;
- Reform the PPP strategy with a view to achieving stronger progress under this approach in the 7th Plan;
- Address the urban transportation challenge of increasing traffic congestion;
- Strengthen the use of river and rail transport to provide a low-cost and more environment-friendly alternative to road transport;
- Coordinate the Roads, Railway and inland water cargo linkages to strengthen the performance of Chittagong Port and the competitiveness of the manufacturing sector; and xi) Address the broader governance and institutional challenges of the sector.

The core targets for Infrastructure set in accordance with the vision and goals of the Perspective Plan under the 7th FYP include:

- Construction of 6.15km. long Padma Multipurpose Bridge at Mawa-Janjira;
- Construction of about 26 km. long Dhaka Elevated Expressway.
- Improve the multimodal transport network with a significant increase in the share of rail and waterways traffic.
- Reduce urban traffic congestion with focus on Dhaka and Chittagong Metropolitan areas
- Reduce the incidence of road accidents.

DIGITAL BANGLADESH AND ICT

Digital Bangladesh is an integral part of the government's *Vision 2021*. In FY 2010, the then Prime Minister outlined the Digital Bangladesh initiative consisting of four key priorities- Developing human resources ready for the 21st century; connecting citizens in ways most meaningful to them; taking services to citizens' doorsteps and making the private sector and market more productive and competitive through the use of digital technology.

This initiative was incorporated in the Perspective Plan and the first phase of implementation started with the Sixth Plan. Bangladesh made important strides during the Sixth Plan in utilizing technology to bring in tangible transformation in all four areas emphasized by the Prime Minister. Progress made in bringing government services to the doorsteps of citizen is probably the area where Bangladesh registered most significant progress.

A number of acts, policies and guidelines such as ICT Policy 2009, now updated to ICT Policy 2015, Right to Information Act 2009, Perspective Plan, ICT Act 2013 (amended), Strategic Priorities of Digital Bangladesh, Cyber Security Policy 2010, Rural Connectivity Policy Guideline 2010, Broadband Policy, Mobile Keypad Standardization Policy, Guidelines for Utility Bill Payment, e-Krishi Policy, National e-Governance Architecture, Mobile Banking Policy Guideline, National Telecom Policy 2010, Guidelines on Mobile Financial Services (MFS) for the Bank, Secretariat Instructions 2014 (amended), Proactive Information Disclosure Guidelines 2014, Innovation Team gazette and National Portal management gazette etc. are in place to guide the nation towards the realization of Digital Bangladesh.

Vertical (with government ministries and agencies) and horizontal (i.e., with citizens) policy advocacy and development interventions have resulted in a number of citizen-centric e-initiatives and services such as multimedia classroom and teacher-led education content development in public schools, mobile phone based health service from Upazila Health Complex, agricultural and other livelihood information and services (e-Tathyakosh) online through grassroots outlets.

The Sixth Plan called for establishment of tele-Centre/community e-centres with internet facilities across all unions and increasing tele density to 70 per cent by 2015. Both targets have been met and Bangladesh is on-track to achieve 90 per cent tele density by 2021- a key long-term strategic goal of the Perspective Plan. Nevertheless, low broadband penetration both in terms of access and availability is prevailing in the country.

With regard to widening internet connectivity, although there are challenges, significant strides have been made. A regional information highway network was established among 4 South Asian nations, Bangladesh, Nepal, Bhutan and India through South Asian Sub Regional Economic Cooperation (SASEC) in order to ensure broadband information communication, exchange information related knowledge and offer access to ICT in inaccessible areas. With an outlay of BDT 294 million, establishment of 55 km fibre optic cable from Panchagar to Banglabandha, and 30 upazila community information centres, was completed by June 2014.

The second phase of SASEC is underway. High-speed fibre optic cable network is expected to become ubiquitous by 2017, after the project “Installation of Wireless Broadband network for Digital Bangladesh (4G, LTE)” ends. This project will cut across all 64 districts, 300 upazilas and an approximately 19,000 km optical fibre cable will be established. In 2014, Bangladesh officially joined the submarine cable SEA-ME-WE-5 – its second – and hopes to get connected to it by the first quarter of 2016. This will help to further add 1,300 GBps bandwidth.

ICT Development- 7th Five Year Plan Target

- Spending on Research and Development to constitute 1% of GDP.
- Increase proportion of primary government schools with a computer laboratory.
- Improve tele density to 100%
- Expansion of Broad Band Coverage to 35%.
- Increase earnings from ICT, travel and tourism from \$1.5 billion to \$6 billion.

The ADP allocations for Transport & ICT and Power & Energy sectors are shown below. It can be seen that commensurate with the priority and in line with the proposed development strategy, the ADP allocations for the infrastructure (Transport & ICT) and energy (Power & Energy) sectors are proposed to increase for the Seventh Five Year Plan as compared with the actual utilization during the Sixth Five Year Plan.

