

Prospects of PPP Project in Bangladesh: A Study on Power Sector

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Abstract

Public-Private Partnership is nowadays regarded as a widely emerged approach for development. In this process, government agencies and private partners are key actors to operate through a contractual agreement to utilize public resources effectively. This article attempts to answer whether PPP will ensure citizens' full access to electricity in Bangladesh by 2021. In doing so, this article has reviewed secondary sources, including relevant books, articles, online journals, government websites, and reports' findings. The Study finds that power generation through the private sector was in a vacuum in 2010, but within eight years, the capacity jumped dramatically to 4357MW. It also shows that power installation capacity has risen to 15953MW due to a partnership program where the private sector contributes 44%, and the system loss starts to reduce the in the power sector that helps our government save 3000 crore takas annually.

Keywords: Public-Private Partnership, Governance, Development.

Introduction

Economic development is a prerequisite for both developing and developed countries. Rapid economic growth requires quality, sustainable infrastructure as well as sustainable investments. (Paul, 2012). Bangladesh fulfilled the selection criteria for graduation from the UN List of Least Developed Countries in 2018 and is on track to graduate in 2024 as a developing country. The country needs to focus on structural reforms, increasing female labor in the workforce, increasing productivity, and increasing investment in human capital. (World Bank, 2018).

Nonetheless, Bangladesh has significantly improved poverty reduction, supported by sustainable economic growth (World Bank, 2020). From a financial point of view, this is one of the few countries that have shown

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substantial and sustained GDP growth, on average over 6% over the past five years, despite the overall global recession. Over the same period, per capita income increased from \$ 638 in 2009 to over \$ 1,000 in 2013. (PPP Office, 2013). In 2018-19, Bangladesh scored a record 8.15% GDP and \$1,909 per capita income (Financial Express, 2019). To keep pace with recent development, Bangladesh requires about \$3-3.5 billion, which is impossible for the government within budgetary resources. Bangladesh needs an additional \$9 billion investment in major infrastructure projects annually to ensure sustainable growth at a high level. The government would require to blend with private partners through the PPP program resulting in the improvement of the infrastructure of Bangladesh (Planning Commission, 2015, pp.103).

Similarly, Likewise, the Bangladesh Government Vision 2021 focuses on increasing investment in infrastructure sectors from 2% to 6% of GDP and allowing 77% of private sector investment. (Alam, 2015). The government of Bangladesh (GoB) is now appreciating PPP projects for ensuring significant investment in multi-purpose sectorial development. In 2010, the government adopted the public-private partnership policy in National Budget Legislation (Rashed, Alam & Faisal, 2014). The story of PPP started focusing on project-based and sector-wise initiatives. The power generation policy in the private sector was adopted in 1996, and program initiatives were highlighted to implement the proposed program successfully between 2005-09 (MoF, 2009). Due to government investment-friendly policies, private companies now lead the energy sector, providing 54.35% of national electricity production. (Karim et al. 2019). By 2041, it is envisioned that Bangladesh is expected to need about \$ 35 billion in electricity 2041. (Daily Star, 2019). In 2015, the PPP act was formulated with the description of the PPP outline, area of coverage, operational procedures, etc. (PPP law, 2015). The government cannot implement various development programs and projects without the support of partners; therefore, the capabilities of the private sector must be combined with the capabilities of the public sector to implement successful programs and projects. In this regard, the public sector encourages the PPP program to attract private capital investment, to make availability of cash liquidity, and to increase the efficiency of the government project.

Having recognized the first and foremost significant role of the PPP program for ensuring the country's economic development, this paper attempts to highlight the Public-private Partnership in Bangladesh. It also extensively focuses on analyzing how the emergence of PPP as a paradigm shift in development management. Furthermore, the Study also explores to what extent PPP contributed to the development, especially in the power sector in Bangladesh.

Analytical Framework

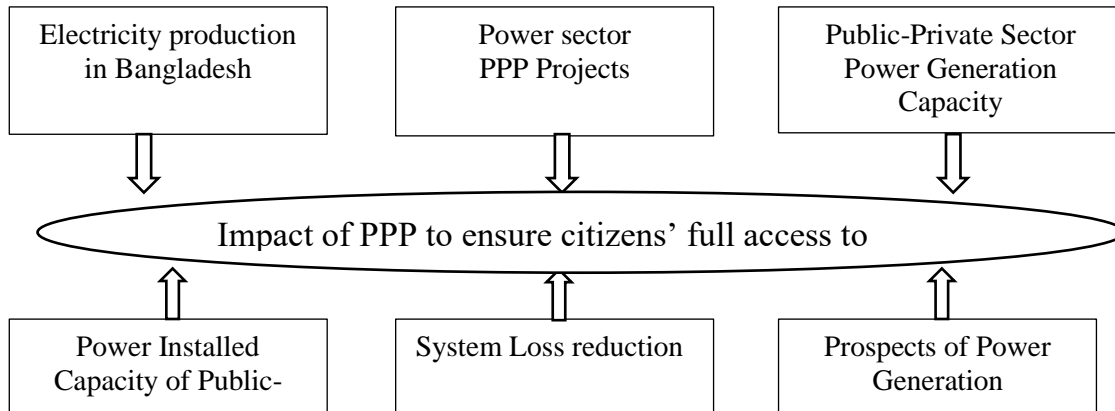


Figure 1: Authors' own work

Background of Public-Private Partnership in Bangladesh

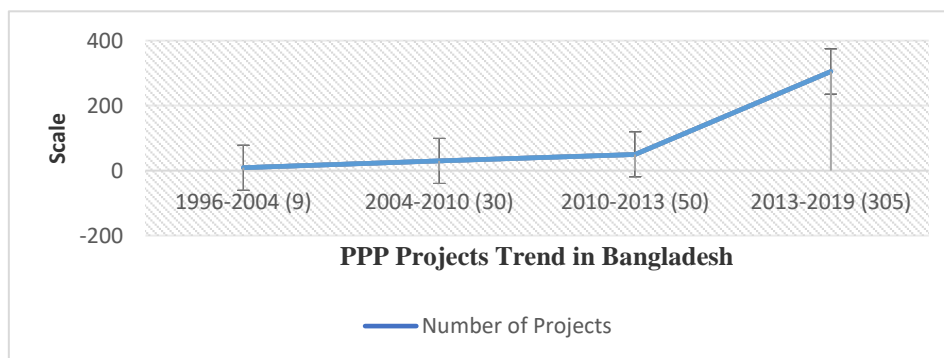
Many countries worldwide have represented remarkable progress in implementing PPP on social infrastructure because of their dynamic conditions in investment (Oktavianus et al., 2018). Southeast Asia began attracting infrastructure investment very early, receiving most of the \$ 136.6 billion in investment. East Asia and South Asia are the following areas to attract investment in the private sector. Even the Indian government welcomes 50% of investment from the private sector for infrastructural development (UNESCAP, 2015). In Bangladesh, Infrastructure Development Company Limited and BIFFL are key actors supporting the private sector to implement the PPP program successfully. The major programs are taken in transportation, energy, civilian, medical, tourism, and hospitality housing sectors, IT infrastructure, and agriculture. In Bangladesh, Infrastructure Development Company Limited and BIFFL are key actors to support the private sector in the successful implementation of the PPP program. The major programs are taken in transportation, energy, civilian, medical, tourism, and hospitality housing sectors, IT infrastructure, and agriculture (Bjornestad, 2016).

The PPP Foundation in Bangladesh covers three generations: the first generation of PPP began in 1996 with independent energy procedures following Bangladesh's electricity generation policy; the second generation began with broader dimensions covering many sectors when the government approved the private-sector infrastructure guidelines in Bangladesh in 2004. Finally, the third generation of PPPs started in 2009. And, the government of Bangladesh approved PPP Policy & Strategy-2010 as a guiding framework (Rashed et al., 2017). The PPP Policy and Strategy 2010 describes regulation and oversight of PPP projects and suggests opening a PPP office to promote PPP. Finally, in 2015, a PPP law was passed with some amendments and adjustments (ADB, 2017). The government in Bangladesh started to make a partnership with the private

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sector in myriad ways. The partnership program on project-based initiatives was continuing until 1995. After that, sectorial initiatives were taken in 1996-2004. To make the PPP program more successful, the government opted for making program initiatives. Centrally integrated program initiative was born in 2010 to bring institutional change & regulatory changes, and this approach continues till now (PPP Authority, 2016). The current trend of PPP projects (see graph 1.1) in Bangladesh is expanding so fast in the last 24 years (PPP office, 2013 & PPP Authority, 2019).

Graph 1: PPP Projects Trend in Bangladesh



Source: Data are collected from PPP Office 2013 and PPP Authority (2019) and developed by the authors

Analysis and Findings

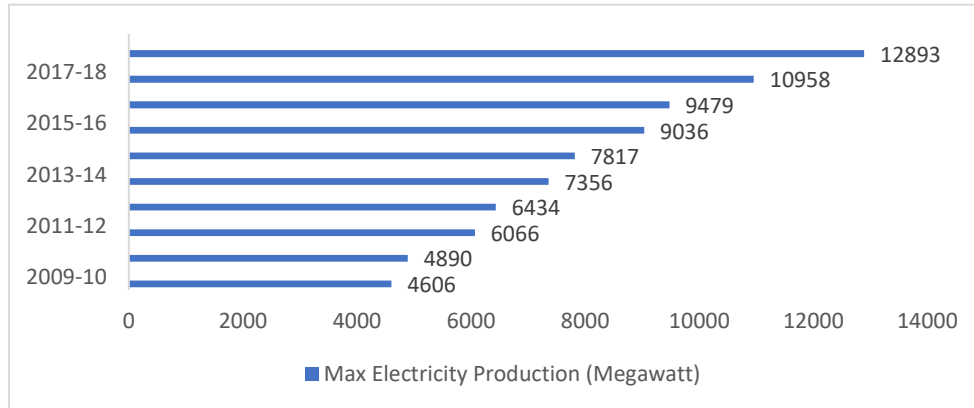
The power sector was so vulnerable in technical and financial aspects that it considered Bangladesh a deprived nation in electricity (Alam et al., 2004; Uddin & Taplin, 2008). Though Bangladesh had severe constraints in the supply of electricity that affected micro-and macro-economic progress, the PPP projects started to contribute to the development of the power sector. In contrast, private sectors generated 38% of the country's demand for electricity in 2010. So, the Bangladesh government decided to offer an additional \$9 billion in power generation within 2015, where receiving \$8 billion was the government's expectation from the private sector. As a result, the government was crying need for private partners in the power sector to ensure value for money, performance assurance, and access to financing (Khan et al., 2012). In that way, Bangladesh has a successful sculpture to attract foreign investment in electricity generation (Newbery 2006, pp.14).

Electricity production in Bangladesh

Electricity is considered an essential source of energy for the world's economic progress. Bangladesh has immense achievement in electricity production. The total megawatt production was 4,606 in FY 2009-10. The power sector of Bangladesh has a national grid with a production capacity of 12893 MW in 2019, power generation of 10958 in 2018. Compared to

2009 and 2019, power production becomes around three times higher than that of 2009, taking nine years. Within nine years (2010-2019), electricity production multiplied more than four times. In FY 2018-19, Bangladesh witnessed massive 12,893 MW electricity production.

Graph 2: Maximum Electricity Production (Megawatt)

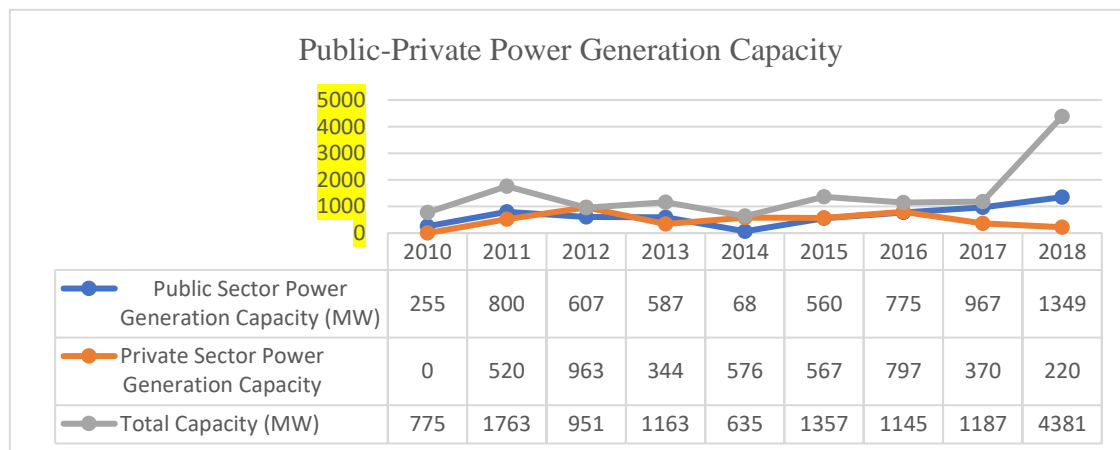


Source: Data are organized by authors based on Annual Report, FY 2018-19 of Ministry of Power, Energy and Mineral Resource.

Public-Private Sector Power Generation Capacity

Over the years, both the public and private sectors in Bangladesh have developed power generation capacity using various fuel types like Gas, HFO, HSD, FO, Diesel, Solar. In 2018, public sector power generation capacity was multiplied more than five times (1349 MW) which was 255 MW in 2010. The private sector had no power generation capacity in 2010 using Gas, HFO, HSD, FO, Diesel & Solar. The power generation capacity started in 2011 (520 MW) and reached an apex level (797 MW) which was more than that of the public sector.

Graph 3: Public-Private Power Generation Capacity



Source: Data are organized by authors based on Annual Report, FY 2018-19 of Ministry of Power, Energy and Mineral Resource

In 2010, power generation through the private sector was in a vacuum, but within eight years, the capacity jumped to 4357MW.

Power Installed Capacity of Public-Private Sector

Table 1.2 shows the public and private sectors' power installment capacity that has enhanced over the years. In 2005, the private sector's ability was 1290 MW (25.67%) to install power. After 13 years, 40% capacity was achieved by the private industry that enabled the production of 6,448 MW power. The capacity of the public sector was diminishing due to the partnership program with private partners resulting in enhanced MW in the power sector. In 2008, the power installment capacity of the public sector (28.20%) collapsed due to the fall of the water level of Kaptai Lake at the Kaptai Hydroelectric power plant. From 2015, Bangladesh starts to import power approximately (4-5%) from India.

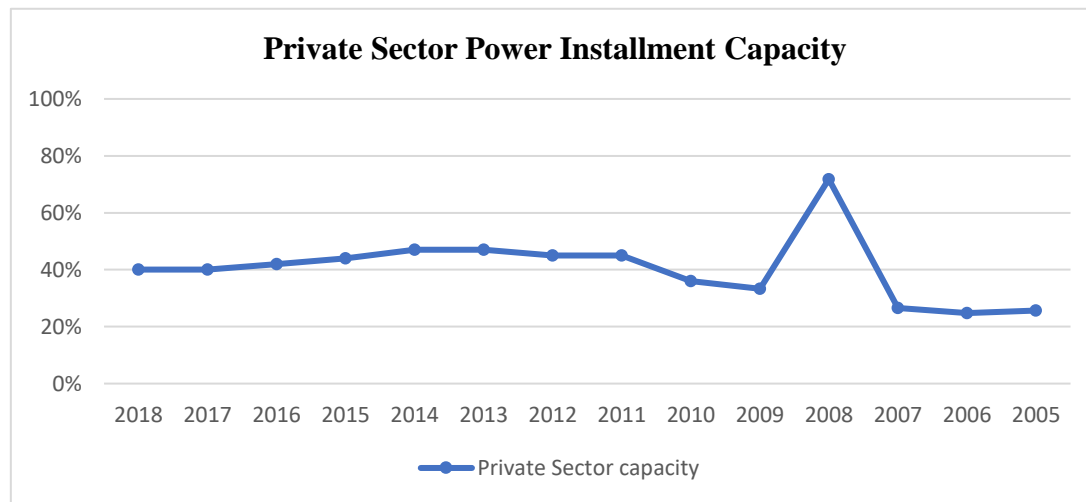
Table 1: Public-Private Power Installation Capacity

Year	Public Sector	Public Sector Installed capacity	Private Sector	Private sector Installed capacity	Power Import	MW Installed capacity
2018	56%	8,845 MW	40%	6,448 MW	4%	660 MW
2017	56%	7,582 MW	40%	5,373 MW	4%	600 MW
2016	53%	6,512 MW	42%	5,253 MW	5%	600 MW
2015	52%	6,020 MW	44%	5,012 MW	4%	500 MW
2014	53%	5,230 MW	47%	4,091 MW	00	-----
2013	53%	-----	47%	-----	00	-----
2012	55%	-----	45%	-----	00	-----
2011	55%	-----	45%	-----	00	-----
2010	64%	3,719 MW	36%	2,104 MW	00	-----
2009	66.66%	3,812 MW	33.34 %	1,907 MW	00	-----
2008	28.20%	3,809 MW	71.80 %	1,496 MW	00	-----
2007	73.49%	3,872 MW	26.51 %	1,397 MW	00	-----
2006	75.23%	3,918 MW	24.77 %	1,290 MW	00	-----
2005	74.23%	3,735 MW	25.67 %	1,290 MW	00	-----

Source: Data are collected from Bangladesh Economic Review, 2005-2018 and organized by the authors

According to table 1.6, the private sector seems a significant partner to develop the power sector in Bangladesh. The highest capacity (71.80%) of private sectors was in 2008, and then 2nd highest capacity (47%) was in 2014. Thus, the growing ability of the public-private sector is contributing to the promotion of power sector development in Bangladesh. At the same time, power installation capacity has risen to 15953MW due to a partnership program where the private sector contributes 44%.

Graph 4: Private Sector Power Installment Capacity



Source: Data are collected from Bangladesh Economic Review, 2005-2018 and organized by the authors

System Loss reduction

System loss helps to understand the performance of ongoing projects or programs. Table 1.5 shows how PPP contributed to reducing system loss (11.96% is in FY 2018-19, which was 18.45% in FY 2007-08) in the power sector in Bangladesh. Because of the reduction of systematic loss, our government has been enabled to save 3000 crore taka per year. To reduce system losses, the government has implemented initiatives with private partners, including the Implementation of AMIs and prepaid intelligent meters, metering interfaces, introduction of substations, power supplies, and switchgear, replacement of an overloaded transformer, increase in the efficiency of collection and payment of utilities, installation of underground cables and substations (ERD, 2020). Power Division of Bangladesh has taken initiatives to start a prepaid metering system to ensure a hundred percent bill payment. 12.89 lakh prepaid meters have already been installed by the power division till June 2018. For establishing prepaid meters, few projects have been taken for smart prepaid meters under the control of BREB, BPDB, DESCO, WZPDCL, and NESCO. This way, all-analog meters will be replaced within five years (Bangladesh Economic Review, 2018, pp145).

Table 2: Historical system loss data in Power Sector

FY	Total Loss (T&D)
2007-08	18.45%
2008-09	16.85%
2009-10	15.73%
2010-11	14.73%
2011-12	14.61%
2012-13	14.36%
2013-14	14.13%
2014-15	13.54%
2015-16	13.10%
2016-17	12.19%
2017-18	11.87%
2018-19	11.96%

Source: Data are collected from ERD (2020).

Prospects of Power Generation

Access to electricity will be 100% all over Bangladesh by 2021. As the electricity demand increases over the years, the government has a plan to enhance power installed capacity. By 2041, Bangladesh will have the ability to meet 52,000 MW of electricity.

Table 3: Power Sector Future Plan

SL	Description	2021	2030	2041
1	Installed capacity (MW)	24,000	40,000	60,000
2	Electricity Demand (MW)	19,000	33,000	52,000
3	Access to Electricity (%)	100	100	100

Source: Data are collected from Bangladesh Economic Review (2017-18) and modified by the authors

To fulfill the future target, 56 power projects having 14,134 MW power generation capacity is ongoing with the contribution of the public (16 projects) and private sector (40 projects) as mentioned a few in below:

No	Public Sector Projects
1.	Siddirganj 335 MW CCPP
2.	Ghorasal Repowering 4th Unit

3.	Bibiana South 383 MW CCPP
4.	Sirajganj 225 MW CCPP (3rd Unit)
5.	Bibiana number 3 CCPP
6.	Ghorasal Repowering 3rd Unit
7.	Ashuganj 400 MW CCPP (East)

Conclusion

PPP has emerged as a significant shift from development administration to management style, the mindset of public officials, and the method of work. The public sector has usually been characterized by a bureaucratic attitude and reluctance to change. So, the managerial body in PPP requires multi-skills, cooperation, and negotiation of the meta-strategy framework through a reciprocal concession between two parties. This cross-agency relation guides to bring needed change which consequently leads to the efficient allocation of public assets. As government officials inherently possess inertia to unfreeze the statuesque, they must break the ice and retain flexibility, mutual trustworthiness, non-bureaucratic behavior, cooperative risk sharing, and participatory orientation. To implement PPP projects, the degree of specialization is aligned with task distribution through an apparent agreement between partners for ensuring proper utilization of human, financial, natural, and other resources. Once, the power sector of Bangladesh had to undergo vulnerability, technical, and economic crises. Over the period, private sectors grew up as reliable government partners for power development using their skills, technical support, and resource. Progressively, the electricity production performance in Bangladesh multiplied four times (12,893 MW in FY 2018-19) compared to 4606 MW in FY 2009-10. The power generation capacity of the public sector has reached 1349 MW in 2018 that was compared to 255 MW in 2010. At the same private sector power generation reached its peak in 797 MW in 2016, which is the highest contribution of private partners in the last 8 years (2010-2018), and the power installment capacity of the public and private sector raised into 56% and 44% in FY 2017-18, but the public sector experienced a massive collapse (28.20%) in power installment capacity in 2008 due to the fall of water level at Kaptai Hydroelectric power plant. Correspondingly, the private sector as a significant partner has stretched its power generation capacity to 71.80% in 2008, 47% in 2014, and 40% in 2018. In the power sector, annual system losses are declining, saving TK 3 billion per year through private partnering initiatives, possibly smart meters, up-gradation of transmission and distribution, network modernization, payment improvement, etc.

Thus, Bangladesh had a success story in PPPs in the power sector and is looking ahead to ensure full access to electricity (Yong, 2010).

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Bangladesh faces many challenges for the foreseeable future, possibly with the distribution of risks in power. PPP programs are formulated to remove cynicism in the private sector about the creditworthiness of public partners to distribute payments (ADB 2017). Even frequent irregularities in nutrition programs and programmatic weaknesses brought the most negligible output of the partnership program (Osman, 2008). Last but not least, access to information is essential to promote governance. The Website of the PPP of GoB is not systematically organized to get the PPP project database from 1996-2020. In that case, the promotion of e-governance is helpful to ensure access to information and make more accessible the process of PPP (Rahman, 2019).

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