DEBT SUSTAINABILITY ASSESSMENT

A. Background

1. **Objective.** The government of Bhutan has followed an investment driven approach for inclusive economic growth. Most of the investment requirements have been funded through external borrowings. The purpose of debt sustainability analysis (DSA) is to analyse whether the beneficial effects of existing and pipeline loan-funded investments outweigh the increase in financial stress on account of higher debt servicing obligations in the future. The DSA is in accordance with the debt sustainability framework of the International Monetary Fund (IMF) and the International Development Association (IDA) for low-income countries.

2. IMF has conducted debt sustainability analysis for Bhutan as part of its Article IV consultations in 2014 (IMF 2014).[1] Bhutan's risk of external debt distress has been assessed as "moderate". This assessment is unchanged from the DSA conducted during Article IV consultations in 2011 and 2007. In the present study, the DSA is revisited to cover recent updates including the impact of the Second Green Power Development Project for the Nikachhu hydropower development on the overall debt sustainability.

3. **Current debt situation.** At the fiscal year (FY) end of June 2013, Bhutan's total public and publicly guaranteed (PPG) debt is estimated at Nu104,043 million, or about 99.6% of the gross domestic product (GDP), higher than the ratio of 70% to GDP in June 2008. In the same period, total debt service as percent of GDP has declined from 7.3% to 6.4%, except for a jump in 2011–12 when the ratio increased to 10.6% on account of repayment of domestic debt. To improve the fiscal situation, the government of Bhutan is strengthening macro-financial management under the Asian Development Bank (ADB) program loan.[2]

4. A major portion of the government's borrowing requirements is met from external sources. At the close of FY2013, external PPG debt constituted almost all of the total PPG debt at 91.3%. The government of India has been the main source of grant aid and loans, contributing the maximum (64%) of the Bhutanese government's external PPG debt. Convertible currency loans constituted the balance (i.e., 36%). Of other sources of borrowing in convertible currency, ADB contributed the most, about 14% of the outstanding external PPG debt followed by the IDA, which contributed about 11%. Overall, the main sources of external borrowing were from the governments of Austria and India, ADB, IDA, the International Fund for Agricultural Development, and the Japan International Cooperation Agency.

5. **Utilization of loans.** The Public Finance Act (amended in 2012) in Bhutan mandates that recurrent expenditure requirements have to be met from the country's internal resources. This implies that borrowings are directed entirely towards investments. The government has steadfastly met this condition except for minor own-revenue deficits in FY2004 and FY2005. The total revenue balance, however, has always been positive implying that investment requirement is being met through surplus own resources, external grants and borrowings. Any fiscal stress or deterioration in ratios, therefore, is entirely on the account of the growth-oriented investment expenditure. The largest portion of the government's external borrowing (about 55% of the outstanding balance as of June 2013) has been directed to investments in the rapidly expanding power sector.

[1] IMF. 2014. *2014 Article IV Consultation—Staff Report; Press Release; and Statement by the Executive Director For Bhutan*. Washington DC.
[2] ADB. 2013. *Report and Recommendation of the President to the Board of Directors: Proposed policy-Based Loan and Grant to the Kingdom of Bhutan for strengthening economic Management Program*. Manila.

6. Bhutan is now reaping the benefits of past investments particularly in Chukha and Tala hydro power projects (HPPs). During the period FY2009 until FY2013, hydropower contributed about 30% of the total government revenue (including grants) and about 47% of government own revenue (excluding grants). During the same period, energy exports contributed about 35% of total exports of goods and services from Bhutan. Considering the direct impact of the energy sector on GDP through exports and construction spending (less project imports) during the same period, the hydropower sector has contributed about 20% of GDP. Thus, in the absence of an equally beneficial alternative to hydropower, it would be difficult to maintain a positive fiscal balance, without continued investment in this sector. The fiscal situation is likely to deteriorate and there would be a risk to debt sustainability.

7. The government of India (GoI) is supporting most of the hydropower development in Bhutan for 10,000 MW by 2020 under the bilateral assistance plan. Nikacchu, Basochhu and Dagachhu HPPs are the only projects with other sources from multilateral and/or bilateral funding.[3] The relationship with India in the context of hydropower development has to be seen in the light of its strategic, financial and economic impacts. It is expected that the strategic focus on hydropower development, with adequate risk coverage from the GoI,[4] will yield surpluses in future that can be reinvested for development in other areas.

8. **Hydropower projects.** Out of the 10 projects under the 10,000 megawatt (MW) plan, six are intergovernmental projects while four are to be developed under joint-venture with identified Indian central public sector undertaking (CPSU). Hereinafter in this document, we have referred to the former as the intergovernmental projects and the latter as the joint-venture projects.

9. As per the intergovernmental agreement for the intergovernmental projects, the entire cost of construction (including additional costs) is to be funded by the GoI in the proportion 30% equity and 70% loan. Equity portion is funded by the GoI grant. Loan repayments will begin one year after the mean date of commercial operations and therefore there will be no risks due to delays in construction. The loan terms provide sufficient comfort for debt servicing from the project revenue after commercial operations begin. Tariff determination is on a cost-plus mechanism (covering actual costs plus certain equity returns) on project completion after factoring in financing costs apart from other costs. Moreover, the GoI has committed to purchase surplus power above domestic consumption. The revenue risk and debt service risk are thus mitigated. There is also an automatic currency risk hedging arrangement since debt service outgo and energy exports to India are both denominated in Indian rupees. Revenue assurance from the GoI also provides countercyclical macroeconomic and fiscal comfort to the government. In the event of a slowdown in Bhutan economy and decrease in domestic demand, the surplus power will be exported to India as per the GoI commitment, thus providing additional resources to the government to tide over the slowdown. Taking the above factors into consideration, the intergovernmental projects can be treated as “enclave projects” with a strong case for their exclusion from PPG debt for the purpose of debt sustainability analysis.[5] In the

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[3] The Basochhu HPP was funded by the government of Austria and its export credit agency. The Dagachhu HPP was supported by the government of Austria and its export credit agency, ADB, and a local financial institution. The Nikachhu HPP is proposed to be financed by ADB and Indian commercial banks.

[4] The first loan repayment are only when the project commissions regardless of the delays, to mitigate construction risk. India’s grant will transferred to Bhutan with its full ownership. The power export tariff will set on a cost plus basis to cover debt services and equity return to minimize the Bhutan’s debt service risks.

[5] 2003. IMF. *Debt Sustainability in Low Income Countries-Towards a Forward-Looking Strategy.* Washington DC. IMF has recognized such commercially viable projects, which are expected to become self-financing, as “Enclave Projects” that can be excluded from borrowing limits.

2014 Article IV Consultation with IMF/IDA, the report discusses the exclusion of all hydropower loans from the DSA by treating these loans as foreign direct investment.

10. As per the intergovernmental agreement for the joint-venture projects, Druk Green Power Corporation (DGPC) and respective Indian CPSU will be joint owners with 50:50 shares in equity. Furthermore, the equity contribution by DGPC is also expected to come from an equivalent grant support from the GoI. If there is a cost escalation, the additional equity requirement shall also be provided by the GoI as grant. The projects shall be financed under debt-equity ratio of 70:30. The responsibility of raising loans for the joint-venture company shall lie with the Indian CPSU. Project assets can be mortgaged for this purpose. Since the Indian CPSU will raise loans, it is highly likely that Indian commercial banks will advance loans. In that case, the foreign exchange position will also be hedged. It is expected that 70% of the energy is to be sold through long term PPAs and the balance through market mechanism. Taking these factors into account, these projects are expected to be commercially viable with no explicit stress on the budget and it would be reasonable to treat the joint-venture projects as "enclave projects" and exclude them from DSA.

11. While there is a strong case for exclusion of all hydro loans from consideration for DSA, we have taken a conservative approach and have conducted the analysis based on the following three case scenarios:

Case Scenario 1: Considering all PPG debt
Case Scenario 2: Excluding loans from the GoI for the intergovernmental projects
Case Scenario 3: Excluding loans for both the intergovernmental projects and the joint-venture projects

12. All of the above scenarios include Basochhu, Dagachhu and Nikachhu HPPs with other other sources from multilateral and/or bilateral funding. The specific benefits of Nikachhu HPP under the Second Green Power Development Project were further analyzed separately.

B. Methodology

13. **Technical justification and selection criteria.** The DSA methodology focuses on five key ratios: (i) present value of PPG external debt to GDP; (ii) present value of PPG external debt to exports, (iii) debt service to exports, (iv) present value of PPG external debt to revenue, and (v) debt service to revenue. In addition, the latest debt sustainability framework update in 2013 also prescribes a benchmark for present value of total public sector debt as ratio of GDP.

14. Under the debt sustainability framework, the magnitude of each ratio is compared with respective indicative thresholds defined for the ratio. The thresholds, in turn, depend on the classification of the country as a strong, medium, or weak policy nation. An indicator, called Country Policy and Institutional Assessment (CPIA) by the World Bank is used for this categorization. With a CPIA rating of 3.85, Bhutan has been categorized as a 'Strong Policy' nation with stronger scores on parameters such as economic management and public sector management and institutions as compared to the averages for IDA borrowers. Applicable indicative thresholds for the prescribed ratios have been shown in **Table1**.

Table 1: Indicative Thresholds for Debt Ratios in Bhutan

Ratio	Indicative Threshold (%)
PV (PPG External Debt)/Exports	200
PV (PPG External Debt)/GDP	50
PV (PPG External Debt)/Revenues	300
Debt Service/Exports	25
Debt Service/Revenue	22
Benchmark for PV of Total Public Debt/GDP	74

GDP = gross domestic product, PPG = public and publicly guaranteed, PV = present value

15. **Stress Tests:** DSA is based on projections of the specified ratios over a period of 20 years. For this purpose, a baseline scenario has been prepared that represents the path of a country's debt that is deemed to be the most likely, derived from a series of assumptions and projections of key macroeconomic variables. The baseline scenario is then subjected to stress tests that fall in two major categories:

(i) Alternative scenarios that subject the underlying variables to permanent shocks over the entire projection period; and
(ii) Bound tests that assess the impact of temporary shocks to the underlying variables.

16. **Assessment of Risk Rating.** The evolution of debt burden indicators in the baseline scenario and under stress tests is then assessed against the relevant thresholds in the external DSA, and the relevant benchmark in the public DSA, to determine the external risk rating and the overall risk of debt distress. The risk ratings are as follows:

(i) **Low risk.** All debt indicators are below their relevant thresholds, including under stress tests.
(ii) **Moderate risk:** Although the baseline scenario does not lead to breaches of thresholds, stress tests result in one or more breaches.
(iii) **High risk:** The baseline scenario results in a breach of one or more thresholds, but the country does not currently face any payment difficulties.
(iv) **In debt distress:** Current debt and debt service ratios are in significant or sustained breach of thresholds. Actual or impending debt restructuring negotiations, or the existence of arrears, would generally suggest that a country is in debt distress.

C. Analysis

17. **Under Case Scenario 1:** All borrowings including hydropower loans from the GoI. External debt thresholds are breached under baseline and all stressed scenarios for all ratios except external debt service to exports ratio, which shows a minor breach under extreme stress scenario. This observation is on expected lines due to accumulation of debt on hydropower loans. However, the rapid decline in ratios reflects the beneficial impacts of hydro projects in the long run. Nevertheless, IMF concluded that Bhutan's risk of external debt distress is moderate, listing the following reasons of mitigation factors: (i) explicit guarantees from India that cover financial and construction risks for hydropower projects, thus allowing for the exceptional treatment of hydropower loans from India as similar to foreign direct investment (FDI)–i.e., non-debt creating; (ii) Bhutan's strong track record of project implementation; (iii) rapid growth in energy demand from India; (iv) committed donor support; and (v) Bhutan's high level of international reserve.

18. **Under Case Scenario 2:** Excluding the intergovernmental project loans, debt burden indicators remain much below the indicative thresholds for all ratios under baseline scenarios. Stress tests also show that the ratios are within thresholds except for minor breaches under extreme stress scenarios by present value (external debt) to GDP ratio and debt service to revenue ratio. This observation falls under the moderate risk rating.

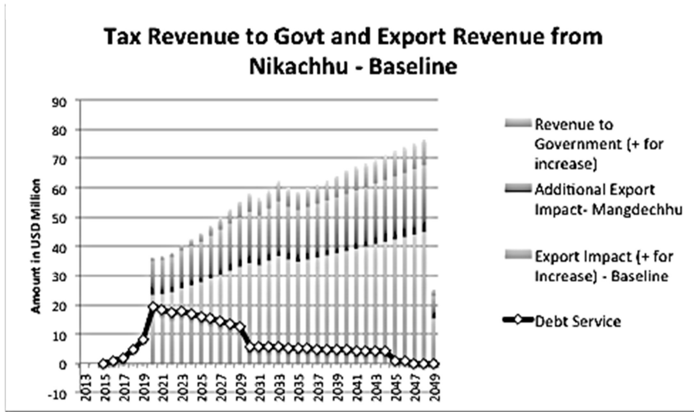
19. **Under Case Scenario 3:** Excluding the intergovernmental project loans and the joint-venture project loans, debt burden indicators remain much below the indicative thresholds for all ratios under baseline scenarios and stress tests, except for minor breach in debt service to revenue ratio under extreme stress scenario. This observation falls under the moderate risk rating.

20. Analysis of total public debt shows that the ratio of present value of total public debt to GDP is above the benchmark when all loans are considered (Case Scenario 1). Under both Case Scenarios 2 and 3, the ratio remains below the benchmark of 74% for baseline and extreme stress scenario. Historical scenarios of present value (PPG external debt) to GDP, revenue and exports are at significant variance from other scenarios, showing that the standard deviation in underlying variables is quite high and historical averages are not reliable for projections.

21. An important consideration for external borrowing for the Second Green Power Development Project is its impact on the country's economy. **Figure 1** compares export revenues from the project with the corresponding debt service obligations under baseline assumptions. It observes that after the project is commissioned, exports from the Nikachhu HPP will be sufficient to service its debt on a stand-alone basis. Taking into account the project's net income for Bhutan (including the government and DGPC) over 25 years for power export, the country would generate more than $600 million in the form of taxes, dividends, and energy royalty, with an internal rate of return of 35%. Additional generation from Mangdechhu HPP in the downstream main river, which will be contributed by the Nikachhu HPP, would provide more export benefits to the economy. In the risk perspective, about half of the estimated debt is from Indian commercial banks, which can provide currency hedge to this debt service component against power exports to India. Even under the DSA standard stress test of 30% depreciation shock in currency, the export revenues are observed to be sufficient to meet debt service obligations. To further assess the residual risks of the project's foreign currency debt exposure against the revenue currency (Indian rupees), the currency risk assessment indicated that the project can fully meet the debt service requirements even under an extreme scenario of continued annual 7% depreciation of Indian rupees over the debt repayment period.[6] This substantiates the project's self-sustaining viability. The financial analysis also demonstrate that the Nikachhu HPP will be self-sustaining, given a number of risk mitigation measures.[7]

[6] Currency Risk Assessment (accessible from the list of linked documents in Appendix 2).
[7] Financial Analysis (accessible from the list of linked documents in Appendix 2).

Figure 1: Tax Revenue and Export Impact of Nikachhu



D. Conclusion

22. The conclusion is in line with the IMF Article IV consultations in 2014, which concluded that Bhutan's risk of debt distress was moderate, taking into account the overall structure of hydropower development and its ensuing benefits to the economy. IMF suggested that most external debt ratios would rise over the medium term until FY2018 driven by large hydropower projects financed by the GoI, but the ratios would subsequently improve as foreign exchange revenues start flowing in from 2017 onwards with a beneficial impact on GDP, exports and fiscal revenues.

23. The initial deterioration in the debt ratios is on expected lines because hydropower development is capital intensive. While debt thresholds are breached in the baseline when all hydropower project loans are included (Case Scenario 1), none of the ratios will exceed the threshold under baseline for Case Scenarios 2 and 3 excluding the GoI financed hydropower projects, but including other parties financed hydropower projects of Basochhu, Dagachhu and Nikachhu HPP. Based on the risk neutral nature of the GoI funded projects on the government of Bhutan, only Case Scenarios 2 and 3 are substantially relevant to Bhutan. Under these case scenarios, ADB loans and cofinancing for Nikachhu and Dagachhu HPP would make no breach of thresholds under baseline. Other collective financial and currency risk analyses also demonstrates that the project would be self-sustaining and positive in the medium and long-term impacts on the economy and debt sustainability rather than affecting the government fiscal position.