October 23, 2013

India HP DPL responses

Dear All,
Please find attached the responses. Apologies for the delay. I still hope we can have the deadline for approval on Friday.
Gevorg

Donor Comments	**Bank Team Response**
1. Calculation of GHG emission reductions in combination with the calculation of cost effectiveness – We appreciate the significant effort that has gone into calculating and explaining the CO2e savings of this project. As this project would increase CTF expected CO2e savings by more than 50%, we want to seek further clarification. – The answers to the UK suggest that the DPL not only brings forward the installed capacity as planned by the GoHP (i.e.10GW by 2020) but also leads to the installation of 10.83 GW of projects beyond that. I.e. total capacity by 2032 will be 20.83GW, 6.8GW of which would have been installed under business as usual. i. In para 32 in the proposal it is outlined that the state is likely to add 10.83GW until 2032. How does this paragraph relate to your answers and how can you reassure us that these 10.83 GW still additional?	Out of the total 20.8GW additions planned by 2032, CTF and DPL would accelerate capacity installation compared to a BAU scenario resulting in carbon savings (Annex I). It is anticipated that 6.8GW (including projects currently under construction, clearances and investigation) will be commissioned under BAU upto 2032 vis-à-vis 12.5GW (projects at accelerated pace) with CTF/DPL support. We looked at two scenarios. One where 7.1 GW gets commissioned between 2022 and 2032 and in the other 8.6 GW gets commissioned. These are conservative estimates based on our discussions and this should not be perceived as any additional capacity but only bringing forward the allotted capacity that is at various stages of development (under construction, clearances and investigation). The carbon saving under each scenario is reported in the Annex II. We are not considering here another 7.1GW that have been identified by GoHP to be developed beyond 2032.
ii. The original proposal focuses on bringing forward installed capacity rather than installing additional capacity, can you explain a bit more the theory of change beyond this additional	We are still referring to bringing forward installed capacity rather than installing additional capacity (see above). We will revisit the wording in the document since it seems to have caused some confusion.

capacity?	
iii. Thank you for your explanations of the BAU scenario. Unless the previous questions gives a clarification on how the 10.83GW are entirely additional, we'd propose a BAU scenario that follows the original government planning, i.e. 10 GW by 2020 and another 10.8 GW by 2032, rather than assume as a baseline the progress in hydro as before the targets were set. This is based on the assumption that the government set itself targets that it considered to be achievable without CTF intervention. As a consequence, the benefit of the DPL is to help the government meet these targets, the BAU should thus be based on an estimate of how much the installed capacity would lie below these targets in the absence of the DPL. We think it is a good idea to calculate the change in the NPV by bringing forward installed capacity/emissions savings to quantify the benefits; this would also follow the counterfactual as outlined above.	We agree. The benefit of DPL is indeed to help GoHP meet its target by 2032 of 20.8 GW. The BAU is based on an estimate of how much the installed capacity would lie below these targets in the absence of the DPL based on historical time and cost overruns identified both within HP and in the country. Further, we argue that under BAU, the target will not be reached due to various existing constraints and barriers that the DPL is trying to address. Also, for the entire country, under the XIth Five Year Plan, 54,964 MW was installed against planned additions of 76,000 MW, which is a performance of 70 % achievement. While this is not a stellar performance, is a significant improvement from the previous plans. Also as documented in the India Low Carbon Study, India's performance in meeting its plans has consistently been poor, as it achieved only about 50 percent of its generation capacity expansion targets in the previous three Five Year Plans. The average achievement of hydro projects was about 54.8%. NPV of carbon savings (BAU versus DPL) ranges from $627m to $2744m. Carbon price of $10, $20, and $30 a ton was considered in the sensitivity analysis and a discount rate of 10% (as in standard Bank projects) for a 20 year horizon. See Annex 2 for details. Switching price of carbon was $1.375.
2. Calculation of leverage (co-financing) in terms of including all downstream investment in new hydro – We'd propose that the leverage follows the same definition of BAU and additionality as explained above.	Of the overall allotted portfolio and revised capacity numbers available from GoHP, ~57% of capacity is allotted public (central and state) sector; whereas 43% is allotted to private sector. Additionality again should be seen here as bringing forth installed capacity within the timeframe of

– We understand your answers to UK questions that out of the $4157m leveraged, actually 56% are public rather than private as indicated in your summary table on the cover page. Is that right and can that be corrected? Can the public finance leveraged be split by donor/MDB and host government finance, e.g. separating out IBRD finance from DPL I?	2032. The sources of debt funding for projects will typically include Banks, Non-Banking Financial Companies (NBFC), Multilateral/Bilateral agencies including IFI's and private sector lenders or combination of these sources. In case of Equity, the sources generally include Central/State Government; public utilities, capital markets, domestic and international private investors, etc. (details can be provided for ongoing projects). Also, while there are some ongoing projects are funded by MDBs (ADB, World Bank etc.) one cannot say now about GoHP's intention of approaching MDB's for future projects. Please note that the IBRD funding from DPL I did not directly support any hydro projects. On MDB - GoHP has USD 400 million engagement on Rampur (with WB) and USD 800 million (with ADB) consisting of {Sawara Kuddu- 111MW, Sainj- 100MW, Kasang I/II/III- 105MW and Shontgtong Karcham- 402MW. KFW has also got engaged in Hydro sector in the State recently and is supporting the Shongtom Karcham plant jointly with ADB. IFC has earlier supported the 192 MW Hydro project in the State. The Co-financing has been recalculated using the following formula: 5760MW worth of power will be brought forward by DPL (versus BAU). At Rs. 8 cr per MW, this amounts to $8378 million. The NPV of co-financing from accelerated development comes to $1231 million. (Discount rate of 10% is used for 20 year time period). The project document will be revised to reflect these numbers.
3. Calculation of transformational potential	The replication potential would be high and would accelerate the hydropower development in other resource rich states like Sikkim, Uttarakhand, and Arunachal Pradesh etc; thus encouraging newer investments. Additionally, this will also serve to encourage investments in neighboring countries

	like Nepal and Bhutan (not considered in the estimation of transformation potential). For computing the impacts of replication, the capacity in the pre-construction and under construction phase have been considered in various hydro rich states of the country. The ratio between trajectories of reduced emissions that would result directly from HP model of development to be replicated throughout the targeted area, region or sector is calculated. The replication of measures supported by DPL, in other states, however, would be dependent on the level of successful implementation of the program of activities and the political capital that can be leveraged. Moreover, the issues faced in Himachal Pradesh are similar in other states as well, thus, HP model provides a roadmap for address the issues based on the proven experiences of Himachal Pradesh.
4. Wider replication benefits to be secured and lessons learnt to be shared	As mentioned above, the demonstration effects of HP model of inclusive green growth and sustainable development of the hydro sector are expected to be substantial. While, it is not possible to directly link activities with those in other states (as each state in India functions rather independently of each other), GoHP has been playing a leadership role among hill states in India through hosting conclaves, conferences, workshops and other knowledge sharing events on sustainable development. Replication potential also goes beyond the states in India with neighboring Nepal and Bhutan as potential recipients of the good practice.
5. Accompanying measures (including technical assistance) to bring forward the issue and make progress at the state level	GoI is making some resources available for other states to replicate the HP model. As discussed, a TA request for CTF funding from India allocation will be put forth in collaboration with GoHP within 12 months after approval of the project by WB board to have a more structured approach to distill and disseminate lessons shared with the objective to facilitate replication

6. Rationale for high level of concessionality (and therefore CTF intervention)	It was agreed during the preparation of investment plan that HP IGG DPL will be funded out of CTF. Both DPL 1 and DPL 2 should be therefore viewed as one programmatic package and GoI agreed to access IBRD only on the understanding that DPL 2 will be funded out of CTF. It would not have been possible to leverage transformational policy reforms without the CTF. It is important to note that harder CTF terms are only marginally better than IBRD terms
7. Breakdown of the $100 million budget.	DPLs are budget support operations and the money is directly transferred to the treasury to finance budget deficit. The specific breakdown for various activities is therefore not possible.
8. Definition of effective performance indicators.	DPL policy matrix usually has results indicators that track the outcome of the policy measures supported in the program. Their timeframe conforms to the DPL timeframe 3-5 years (they are also called end of series outcomes). The team would consider including benchmarks/milestones to track performance on various fronts.

Annex I: Comparison of BAU vs. CTF Scenarios

Commissioned (MW)	8315
Under Construction (MW)	3870
Under Investigation (MW)	6337
Obtaining Clearances (MW)	2327
Total (MW)	**20849**

	Year	**BAU Scenario**	**Remarks on BAU Scenario**	**Scenario with CTF funding**	**Remarks on CTF Funding Scenario**
A	Already Commissioned (as on 30th Sept 2013)	8315 MW	Hydro power capacity commissioned in Himachal Pradesh	8315 MW	Hydro power capacity commissioned in Himachal Pradesh.
B	Projects under construction (Up to 2022)	3870 MW	Projects under construction get commissioned as per current targets	3870 MW	Projects under construction get commissioned as per current targets (at an accelerated pace)
C	Projects allotted under clearances and under investigation (Up to 2032)	2903 MW	Due to delays and inadequacies pace of capacity addition starts getting affected resulting spiralling effect.	7199 MW	Most projects commissioned due to various measures introduced through CTF financing (at accelerated pace)
D	Projects allotted under clearances and under investigation (Up to 2032)	2903 MW	Due to delays and inadequacies pace of capacity addition starts getting affected resulting spiralling effect.	8664 MW	All allotted projects commissioned due to various measures introduced through CTF financing (at accelerated pace)
	Scenario C Total	**15,088 MW**		**19,384 MW**	
	Scenario D Total	**15,088 MW**		**20,849 MW**	
	% of Carbon Saving vis-à-vis BAU under Scenario C			**73.9%**	
	% of Carbon Saving vis-à-vis BAU under Scenario D			**93.2%**	

Annex II. NPV Analysis

	Carbon Savings (tons)
BAU Emission Reduction	232,000,000
DPL Scenario 1	403,000,000
DPL Scenario 2	447,000,000
Carbon Savings Scenario 1	171,000,000
Carbon Savings Scenario 2	215,000,000
Discount Rate	10%
Number of Years	20
NPV Scenario 1 ($20 a ton)	$1355m
NPV Scenario 2 ($20 a ton)	$1829m
NPV Scenario 1 ($10 a ton)	$627m
NPV Scenario 2 ($10 a ton)	$914m
NPV Scenario 1 ($30 a ton)	$2083m
NPV Scenario 2 ($30 a ton)	$2744m
Switching Price	$1.375 per ton