A. Energy in Nepal

1. Nepal’s level of development with respect to energy is low by global and South Asia regional standards. An estimated 88% of the country’s total primary energy demand is met by traditional forms of energy, reflecting the overwhelmingly rural distribution of population in Nepal and the virtual absence of clean, commercialized forms of energy outside of urban areas. This heavy reliance on traditional energy sources brings with it the well-known problems of limited opportunities for rural economic development and education; environmental degradation; inefficiency; and health impacts.

2. An estimated 27% of the rural population and 87% of the urban population have access to electricity through off-grid applications or through the national grid. However, actual consumption of electricity remains very low, even for urban Nepalis, because Nepal’s supply capacity is highly constrained and has not kept up with the sharp rise in demand of recent years. Nepal’s total grid-connected generation capacity amounts to a meager 683 MW, and the actual available capacity at any point in time is generally considerably lower.

3. Exacerbating this low level of development is an energy crisis of unprecedented severity that erupted in the winter of 2008/09. Load-shedding (rationing of electricity to grid-connected consumers) has long been a facet of the hydro-dependent power system in Nepal, where protracted conflict and weak institutions and finances have discouraged investment and hampered the addition of power generation capacity. The supply-demand gap has grown sharply in recent years, with the result that in the winter 2008/09, grid-connected consumers received electricity only eight hours a day. In the current dry season, it is expected that load-shedding...
will reach at least 12 hours a day, and possibly more. Because Nepal’s storage capacity is extremely limited, most of the excess water that is available during the monsoon period, which could be used to augment the naturally low river flows of the dry season, is not stored.

4. In December 2008, the Government declared a “national energy crisis” and approved an Energy Crisis Management Action Plan which includes demand- and supply-side investments and policy reforms aimed at alleviating the crisis. More recently, the Government of Nepal and the Government of India have accelerated efforts to expand the cross-border transmission linkages between the two countries which could allow Nepal to import sufficient capacity to end load-shedding within three to four years (in the best-case scenario) and, eventually, as new hydropower projects are developed in Nepal, to export surplus power capacity. In the foreseeable future, however, power shortages will continue to hamper economic and human development in Nepal.

5. While the Government of Nepal has issued survey licenses for hydropower development that total to more than 10,000 MW, the absence of the considerable investment funds required for the associated transmission has served a fundamental obstacle to hydropower development in Nepal. NEA has prepared feasibility studies for five transmission corridors where the Ministry of Energy issued large number of survey licenses. One of these five priority corridors is the Kabeli River corridor.

B. Project Background

6. Over 1996-97 the Government of Nepal carried out a comprehensive screening and ranking process of 138 candidate projects that ultimately identified seven projects, including Kabeli “A” HEP, for detailed feasibility study. The feasibility study and environmental impact assessment were prepared in 1998. The project was eventually offered to the public for competitive tender on the basis of tariff. On January 31, 2010, GON and the project company, Kabeli Energy Limited (majority-owned by Butwal Power Company, a private Nepali company), signed the Project Development Agreement on January 31, 2010.

7. In addition to the Kabeli “A” HEP, several other hydro generation projects are under development in the Kabeli River basin. These projects require transmission capacity to evacuate the power they will generate. In total, it is anticipated that the project will eventually make possible the evacuation of approximately 170 MW, which will be a significant contribution to a power system that is currently based on less than 700 MW installed capacity.

C. Rationale for Bank involvement

8. The current investment climate for hydropower development in Nepal is highly constrained. At the same time, the country is suffering a severe energy crisis that is crippling the economy. IDA funding will add sorely needed basic economic infrastructure and provide debt finance that will allow the developer of the generation project to leverage the balance of the financing required by the project. NEA’s finances do not allow it to borrow commercially; however, new transmission capacity is essential in order to bring new generation capacity to the grid. The project is included in the joint IDA/IFC Interim Strategy Note for Nepal (FY10-11).
2. Proposed objective(s)

9. The project development objectives of the proposed adaptable program loan (APL) are to support the addition of new transmission capacity to evacuate an estimated 170 MW in the Kabeli River corridor in Phase 1 and 30 MW of new generation capacity in Phase 2. Depending on the availability of funds and the need (to be determined), the project include provision of access to electricity to residents of the project area who presently do not have access to electricity, which would be reflected as a development objective.

3. Preliminary description

10. The project will be implemented in the Kabeli River Basin in Panchthar District in the Eastern Development Region of Nepal (the Kabeli River is the border of Panchthar and Taplejung districts).

11. The project location constitutes one of its major advantages: while the most significant center of industrial demand for electricity is in the east of the country, few generation projects are located in this part of Nepal. Consequently, the industrial demand in the east is served largely by power generated in the middle and western regions of the country, resulting in relatively high transmission losses. This project will help reduce these transmission losses.

12. The project as presently envisioned consists of two components and could possibly include a third component, as described below.

13. **Phase 1.** Transmission (USD 25 million). The funds for this component will be lent to GON, which will on-lend them to NEA. The Kabeli River corridor at present has distribution lines only at the 33kV level. This component will fund the construction of a 132 kV double circuit transmission line of around 90 km from the Kabeli “A “ HEP to the Damak substation, picking up power from substations at Phidim and Ilam which will be upgraded.

14. **Phase 2.** Kabeli “A” Hydro Electric Plant (USD 25 million). The funds for this component will be lent to GON which will on-lend them to the Kabeli Energy Limited (KEL), a Special Purpose Vehicle that is majority-owned (54%) by BPC). The on-lent funds will represent half of the debt component required for the 30 MW Kabeli “A” Hydro Electric Plant, equivalent to 40% of project costs or about USD 25 million. (The revision of the feasibility study will consider a re-optimization of the project to 36 MW which would have implications for the project cost and financing requirements.)

15. Kabeli “A” was selected as a preferred project for development based on its good technoeconomic characteristics and low level of anticipated negative environmental and social impacts. The 1998 EIA identified a total of 46 households that would be impacted by the project, of whom five households would be relocated (this estimate will be re-assessed in the updating of the EIA). According to the original EIA, no land to be used by the project falls within areas considered to unique or ecologically sensitive; this, too, will be re-assessed in the course of project preparation.
16. **Phase 3.** Distribution/rural electrification (depending on need and availability of financing; tentatively, USD 10 million). Large parts of the project area, in particular along the proposed transmission corridor, are presently unelectrified. It is proposed to finance some level of access to electricity (either grid or off-grid) to households living in the vicinity of the transmission line (Kabeli Energy Limited will provide access to electricity to households in the vicinity of the generation project). The per-household connection costs are likely to be very high, given the sparseness of the population and the likely very low demand of households in this area; these factors will limit the scope of the electrification that can be carried out with IDA funding.

4. **Safeguard policies that might apply**

17. Based on information currently available on the proposed project, the following safeguards policies are believed to apply: Environmental Assessment (OP 4.01); Involuntary Resettlement (OP 4.12); and Safety of Dams (OP 4.37). The applicability of all safeguards policies will be considered and determined in the course of project preparation.

5. **Tentative financing**

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<th>Source:</th>
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<td>International Development Association (IDA)</td>
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<td>Kabeli Energy Limited</td>
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6. **Contact point**

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