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Report No: ICR00005196

IMPLEMENTATION COMPLETION AND RESULTS REPORT

Credit Number 5338-NP and Grant Number H900-NP

ON A

INTERNATIONAL DEVELOPMENT ASSOCIATION CREDIT
IN THE AMOUNT OF SDR 26.1 MILLION (US$40.0 MILLION EQUIVALENT)

AND

A GRANT
IN THE AMOUNT OF SDR 4.0 MILLION (US$6.0 MILLION EQUIVALENT)

AND

A CANADA CLIMATE CHANGE PROGRAM (CCCP) SENIOR LOAN IN THE AMOUNT
OF UP TO US$19.3 MILLION WITH INTERNATIONAL FINANCE CORPORATION
ACTING AS IMPLEMENTING ENTITY OF THE CCCP

TO

KABELI ENERGY LIMITED

FOR THE

KABELI-A HYDRO ELECTRIC PROJECT
May 13, 2021

Energy & Extractives Global Practice
South Asia Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective May 27, 2021)

Currency Unit:	Nepalese Rupee (NPR)
NPR. 116.74=	US$1
US$1.44 =	SDR 1

GOVERNMENT FISCAL YEAR
July 16 – July 15

Regional Vice President:	Hartwig Schafer
Country Director:	Faris H. Hadad-Zervos
Regional Director:	Guangzhe Chen
Practice Manager:	Simon J. Stolp
Task Team Leader(s):	Pravin Karki, Subodh Adhikari
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ABBREVIATIONS AND ACRONYMS

BOOT	Build, Own, Operate, and Transfer
BPC	Butwal Power Company Limited
CCCP	Canada Climate Change Program
CHM	Civil and Hydro Mechanical
CIA	Cumulative Impact Assessment
CEO	Chief Executive Officer
CPF	Country Partnership Framework
DOED	Department of Electricity Development
EMP	Environmental Management Plan
GRM	Grievance Redress Mechanism
HIDCL	Hydroelectricity Investment and Development
IBN	Investment Board of Nepal
IFC	International Finance Corporation
InfraCo Asia	InfraCo Asia Himalayan Hydro Pte. Ltd
IPP	Independent Power Producer
IT	Information Technology
KAECDU	Kabeli-A Environment and Community Development Unit
KAHEP	Kabeli-A Hydro Electric Project
KEL	Kabeli Energy Limited
LD	Liquidated Damage
LE	Lender's Engineer
MoE	Ministry of Energy
MoEWRI	Ministry of Energy, Water Resources, and Irrigation
MoF	Ministry of Finance
NEA	Nepal Electricity Authority
NRB	Nepal Rastra Bank
OE	Owner's Engineer
PDA	Project Development Agreement
PDO	Project Development Objective
PDP	Power Development Project
POEs	Panel of Experts
PPA	Power Purchase Agreement
SA	Social Assessment
SAP	Social Action Plan
WECS	Water and Energy Commission Secretariat

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DATA SHEET

BASIC INFORMATION

Product Information

Project ID	Project Name
P122406	Kabeli-A Hydro Electric Project
Country	**Financing Instrument**
Nepal	Investment Project Financing
Original EA Category	**Revised EA Category**
Full Assessment (A)	Full Assessment (A)

Organizations

Borrower	Implementing Agency
Nepal	Kabeli Energy Limited, Investment Board of Nepal, Ministry of Energy, Water Resources and Irrigation, Water and Energy Commission Secretariat

Project Development Objective (PDO)

Original PDO

The project development objective is to increase hydropower generation capacity to supply NEA grid through public private investment.

PDO as stated in the legal agreement

The project development objective is to add hydropower generation capacity to supply the NEA grid through public private investment.

FINANCING

	Original Amount (US$)	Revised Amount (US$)	Actual Disbursed (US$)
World Bank Financing			
IDA-53380	40,000,000	13,630,249	9,792,581
IDA-H9000	6,000,000	3,610,409	3,129,287
Total	**46,000,000**	**17,240,658**	**12,921,868**
Non-World Bank Financing			
Borrower/Recipient	22,960,000	0	0
Local Sources of Borrowing Country	1,000,000	0	0
Total	**23,960,000**	**0**	**0**
Total Project Cost	**69,960,000**	**17,240,658**	**12,921,868**

KEY DATES

Approval	Effectiveness	MTR Review	Original Closing	Actual Closing
01-Jul-2014	20-Jun-2016	27-Oct-2017	30-Dec-2019	30-Dec-2019

RESTRUCTURING AND/OR ADDITIONAL FINANCING

Date(s)	Amount Disbursed (US$M)	Key Revisions
09-Jul-2018	7.66	Change in Institutional Arrangements Other Change(s)
03-Nov-2019	10.69	Change in Implementing Agency Change in Results Framework Change in Components and Cost Reallocation between Disbursement Categories Change in Institutional Arrangements

KEY RATINGS

Outcome	Bank Performance	M&E Quality
Highly Unsatisfactory	Moderately Satisfactory	Substantial

RATINGS OF PROJECT PERFORMANCE IN ISRs

No.	Date ISR Archived	DO Rating	IP Rating	Actual Disbursements (US$M)
01	06-Jan-2015	Moderately Satisfactory	Satisfactory	0
02	14-Aug-2015	Moderately Satisfactory	Moderately Unsatisfactory	0
03	17-May-2016	Moderately Unsatisfactory	Moderately Unsatisfactory	0
04	28-Dec-2016	Moderately Unsatisfactory	Moderately Unsatisfactory	0
05	28-Jun-2017	Moderately Satisfactory	Moderately Satisfactory	.20
06	21-Dec-2017	Moderately Satisfactory	Moderately Unsatisfactory	2.75
07	05-Jun-2018	Moderately Satisfactory	Moderately Unsatisfactory	7.66
08	17-Sep-2018	Moderately Unsatisfactory	Moderately Unsatisfactory	7.66
09	06-Apr-2019	Unsatisfactory	Moderately Unsatisfactory	9.73

SECTORS AND THEMES

Sectors

Major Sector/Sector	(%)
Energy and Extractives	**100**
Renewable Energy Hydro	100

Themes

Major Theme/ Theme (Level 2)/ Theme (Level 3)	(%)
Private Sector Development	**33**
Jobs	33
Job Creation	33

Urban and Rural Development	**66**
Urban Development	33
Urban Infrastructure and Service Delivery	33
Rural Development	33
Rural Infrastructure and service delivery	33

ADM STAFF

Role	At Approval	At ICR
Regional Vice President:	Philippe H. Le Houerou	Hartwig Schafer
Country Director:	Johannes C.M. Zutt	Faris H. Hadad-Zervos
Director:	John Henry Stein	Guangzhe Chen
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Task Team Leader(s):	Jie Tang	Pravin Karki, Subodh Adhikari
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I. PROJECT CONTEXT AND DEVELOPMENT OBJECTIVES

A. CONTEXT AT APPRAISAL

Context

1. The high share of rural population, high incidence of poverty, and lack of necessary infrastructure contributed to extremely low utilization of modern energy services in Nepal. According to the 2013 census, 75% of the population had access to electricity, but the average annual consumption was low at about 70 kWh per capita. At the same time, however, the demand for electricity was increasing at an annual rate of about 10%. In spite of the huge energy generation potential by using the hydro resources, Nepal's electricity generation capacity to fulfill the demand remained limited. In 2012, the installed generation capacity in the country was 746 MW, while during the same year the peak demand reached to 1,095 MW. Import of electricity from India through limited cross-border transmission infrastructures helped fulfill some of these demands; however, in many instances—particularly during the dry months[1]—when the river flows were diminished, the gap between the demand and supply was significant. As a result, the country suffered load shedding of up to 18 hours a day.

2. During that time, protracted conflict[2] and lack of or poor physical infrastructures (access roads, transmission lines, and distribution systems) had discouraged investments and hampered efforts to augment the power generation capacity in the country. In addition, other factors such as limited progress in preparing/streamlining the policy and procedures for regulatory improvements and structural reform;[3] protracted regulatory processes related to foreign direct investments, complex land acquisition and forest clearance mechanisms, and environmental and social safeguard mechanisms; and community involvement/benefit-sharing process further discouraged investment prospects. As a result, the power sector suffered from chronic underinvestment for a long time. No new generation capacity had been added since the commissioning of the 70 MW Middle Marsyangdi power plant in 2008. The private sector had a strong interest in investing in the generation sector. However, due to difficult investment climate in the country, most of the independent power producers (IPPs) were struggling to raise the finances. Although the Government had issued survey licenses for new hydropower projects—totaling about 13,000 MW—to IPPs to initiate the project development process, only a fraction (about 1,205 MW) [4] had been able to conclude the long-term power purchase agreements (PPAs) needed for financial closure.

3. The Kabeli-A Hydro Electric Project (KAHEP), located in the northeastern part of Nepal in the Kabeli river, was a peaking run-of-river hydropower project with an installed capacity of 37.6 MW and annual average energy output of 205 GWh. The project was one of the short-listed projects selected on the basis of a screening and ranking exercise carried out in the late 1990s by the GoN. Originally, KAHEP was proposed to be developed as the first private sector project to be financed through the defunct Power Development Fund under the World Bank-financed Power Development Project (PDP). It was also part of the Nepal Hydropower

[1] Approximately from January to April.
[2] The country had suffered a decade-long Maoist insurgency from 1996 to 2006.
[3] The preparation of acts, rules, and regulations to legislate the provision of hydropower development policy in 2001 had been stalled in the parliament and other Government of Nepal (GoN) institutions for a long time.
[4] Nepal Electricity Authority (NEA). *Annual Report 2014*.

Transformational Engagement [5] Program (see annex 6 for details) and proposed for development within the medium term with the private sector's support to alleviate the power crisis in the country. When the PDP was restructured in 2008, activities related to KAHEP were organized under a stand-alone project and appraised as such. In the same year, the GoN offered a contract on build, own, operate, and transfer (BOOT) terms to develop this project through an international competitive bidding exercise to a consortium led by the Butwal Power Company (BPC).[6] Kabeli Energy Limited (KEL)—a special purpose vehicle company—was established to develop KAHEP. The generated electricity would have been sold to NEA[7] based on the long-term PPA, signed on September 24, 2015.

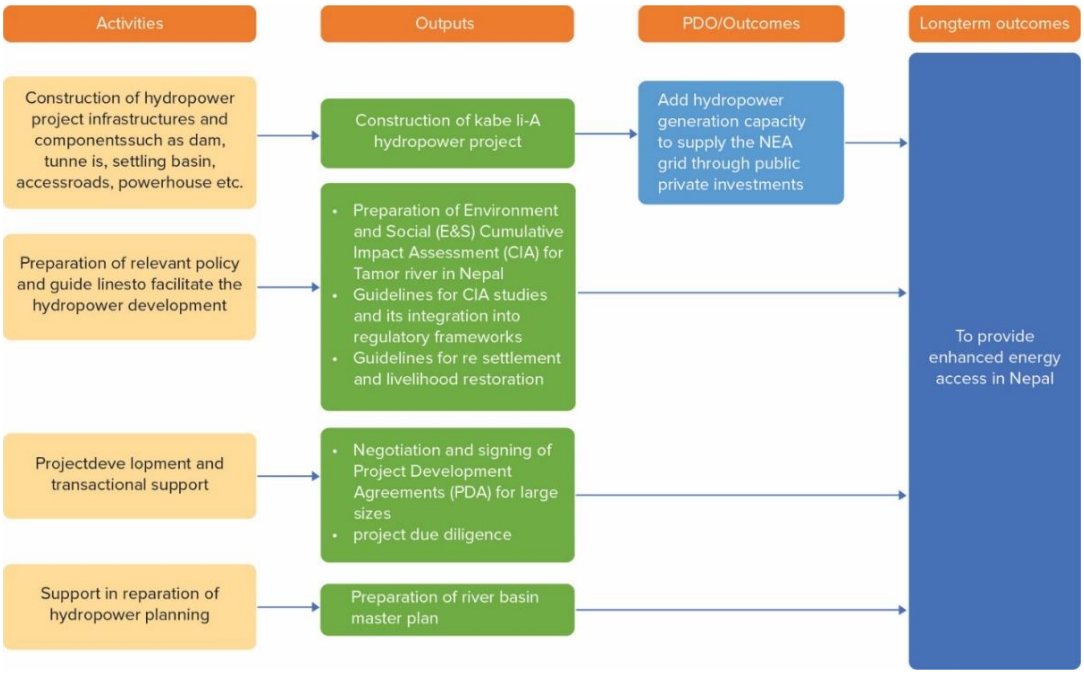
4. The World Bank had been supporting the power sector development in Nepal through a series of grants and credits. Due to significant supply deficit, increasing electricity supply in the country was critical. Support to KAHEP—which was in the advanced stage of preparation and could be taken up for development in a short time—was consistent with the joint IDA/International Finance Corporation (IFC)/Multilateral Investment Guarantee Agency (MIGA) Country Partnership Strategy for Nepal (FY14– FY18),[8] which, among others, stressed the importance of increased supply of reliable and affordable electricity through public and private participation to enhance economic growth and competitiveness. The World Bank, with the partnership from IFC,[9] decided to support the project.

Theory of Change (Results Chain)

5. The limited availability of electricity supply was one of the major contributing factors in inadequate economic development in Nepal.[10] It has also been recognized that the private sector could play a key role in augmenting electricity supply by harnessing the country's vast hydropower potential. However, inadequate access to long-term finance and inadequate supporting policy, administrative, and regulatory frameworks were the major bottlenecks in hydropower development and provision of increased energy access in the country. This project was designed to address some of these bottlenecks. Specifically, this project was designed to (a) provide access to finances to support private sector participation; (b) develop policy guidance for the preparation of key environmental and social safeguard instruments; (c) support preparation of planning and feasibility studies; and (d) develop institutional capacity in planning, designing, and monitoring for hydropower development in Nepal. The Theory of Change of this project based on the original Results Framework is as shown in figure 1. However, the Theory of Change was not developed during preparation.

[5] In discussion with the GoN during the early 2010s, the World Bank identified several short-, medium-, and long-term initiatives to develop the power sector in the country. KAHEP was identified to support the medium-term initiatives with the objective of expanding access to modern energy services and reaching a supply-demand balance.
[6] BPC—established in 1966—is a leading private sector hydropower power developer in Nepal.
[7] NEA is a vertically integrated utility responsible for transmission and distribution of electricity throughout Nepal. It also owns about 50% of the total generation capacity in Nepal.
[8] Report No. 83148-NP: International Development Association, International Finance Corporation, Multilateral Investment Guarantee Agency Country Partnership Strategy for Nepal FY14–FY18; May 1, 2014.
[9] IFC support included the support from the Canada Climate Change Program (CCCP).
[10] According to the latest World Bank Ease of Doing Business report (2020), Nepal still ranks 135 out of 190 countries in ease of getting electricity supply—one of the lowest in South Asia.

Figure 1. Theory of Change



Project Development Objective (PDO)

6. The PDO of the project, as mentioned in the Financing Agreement, was "to increase hydropower generation capacity to supply NEA grid through public private investment." The PDO was not changed during project implementation.

Key Expected Outcomes and Outcome Indicators

7. The achievement of the PDO was measured by the following PDO indicator: generation capacity commissioned under the Project - (Baseline 0 MW; Target 37.6 MW). This indicator was expected to be achieved by implementing the Kabeli-A Hydro Electric Project (under the KAHEP component).

8. However, over the longer term, the project's key expected outcome—as evidenced from the project design—would be to provide increased energy access in Nepal.

Components

9. The project initially had three components.

10. **The KAHEP component (estimated IDA: US$40 million, actual: US$9.8 million).** This component supported the construction of KAHEP and its related structures, which among others, included construction of a diversion dam, intake, settling basins, a headrace tunnel, a semi-underground powerhouse, and a tailrace canal. This component was implemented by KEL.

11. **The Ministry of Energy, Water Resources, and Irrigation (MoEWRI) component—formerly the Ministry of Energy (MoE) component—(estimated - US$2 million IDA grant, actual: US$1.3 million).**This

component supported the Department of Electricity Development (DOED)[11] in (a) supervising implementation of KAHEP to ensure compliance with the Project Development Agreement (PDA), Environment Management Plan (EMP), and Social Action Plan (SAP); (b) building technical, environmental, and social safeguards' capacity in integrated river basin management and cumulative impact management for sustainable hydropower development, including development and adoption of guidelines for a CIA and involuntary resettlement and livelihood restoration; and (c) covering incremental operating costs for project implementation. This component was implemented by DOED.

12. **The Investment Board of Nepal (IBN) component (estimated US$2 million IDA grant, actual US$0.41 million).** This component provided technical assistance to the IBN[12] in improving its ability to carry out its responsibilities of facilitating the development of large hydropower projects across the country in line with applicable international performance and technical, environmental, and social standards equivalent to relevant World Bank Group safeguards policies and performance standards. Specifically, this component supported the IBN in (a) conducting additional due diligence and PDA negotiations of large hydropower projects (four projects, totaling 3,050 MW) proposed by private investors; (b) supervising the construction of the abovementioned projects to ensure compliance with the terms and conditions of the PDAs and sustainability of such projects; (c) building up its procurement, financial management, environmental and social safeguards, and technical capacities; and (d) covering incremental operating costs for project implementation. This component was implemented by IBN.

13. One more component was added when the project was restructured on November 3, 2019.

14. **The Water and Energy Commission Secretariat (WECS) component (estimated US$2 million, actual US$1.5 million).** This component provided technical assistance to WECS[13] to enable it to (a) implement integrated water resource planning and management to guide sustainable hydropower development in selected river basins using a basin-wide approach and (b) conduct a strategic environmental and social assessment to support a basin-wide approach for hydropower development planning.

B. SIGNIFICANT CHANGES DURING IMPLEMENTATION (IF APPLICABLE)

Revised PDO and Outcome Targets

15. There was no revision to the PDO and outcome targets.

Revised PDO Indicators

16. Not applicable.

[11] DOED—established on July 16, 1993, under the then Ministry of Water Resources—is responsible for assisting the ministry in implementation of overall government policies related to power/electricity sector. The major functions of DOED are to ensure transparency of the regulatory framework and accommodate, promote, and facilitate the private sector's participation in the power sector by providing 'One Window' service and license to power projects.

[12] The IBN is mandated to facilitate economic development in Nepal by creating an investment-friendly environment and mobilizing and managing domestic and foreign investments. In the hydropower sector, it is responsible for attracting and facilitating investment in the projects above 500 MW.

[13] WECS is responsible for assisting the GoN and different ministries relating to water resources and other related agencies in the formulation of policies and planning of projects in the water and energy resources sectors.

Revised Components

17. In the second restructuring on November 3, 2019, 'Part 4: Technical Assistance and Capacity Building for Water and Energy Commission Secretariat (WECS)' was added as the new project component (WECS component). This was done by reallocating US$2 million (out of US$4 million) from the IBN component.

Other Changes

18. The project was restructured twice: first on July 9, 2018, and second on November 3, 2019.In the first restructuring on July 9, 2018, the following changes were made in the Financing Agreement:

(a) The provision for supervision of construction of large hydropower projects by the IBN was removed from the IBN component. Instead, the provision to conduct appropriate assessment, investigation, and feasibility studies on the design of hydropower projects for further development was added.

(b) The provisions for incremental operating costs were updated for both the MoEWRI and IBN components, to allow for training and procurement of goods and equipment and capacity development/training activities.

19. In the second restructuring, US$2 million was reallocated from the IBN component to support WECS in preparing the river basin master plan.

Rationale for Changes and Their Implication on the Original Theory of Change

20. **First restructuring**. Two large hydropower projects (900 MW Arun 3 and 900 MW Upper Karnali),[14] located in eastern and western Nepal, respectively—with which the IBN had signed a PDA—were under implementation. The IBN wanted to use the project funds for the supervision activities for these two projects, according to its obligation under the PDAs. However, as the World Bank was not involved in the preparation and financing of these projects, during the project implementation phase, it was realized that using the World Bank funds to supervise the projects would constitute significant safeguard risk to the World Bank, as there could be potential uncertainties in safeguard instruments which would be implemented for these projects. As such, the World Bank discussed with the IBN and Ministry of Finance (MoF) and explained the need for restructuring to remove this financing obligation. It was agreed that the funds would be used instead, for the preparation of feasibility studies of other hydropower projects that the IBN had identified and for relevant transactional support to the IBN to be able to sign for a PDA with the prospective developers. Similarly, the procurement of trainings and goods was not allowed in the original version of the Financing Agreement for both the MoEWRI and IBN components. However, the training and goods (such as vehicles and information technology [IT] systems) were necessary to equip these institutions with the relevant capacity and tools to perform their activities. As such, the restructuring on July 9, 2018, was completed to include these changes.

21. **Second restructuring.** In this restructuring, a new component 'Part 4: Technical Assistance and Capacity Building for WECS' was created and US$2 million from the IBN component was reallocated. The river basin master plan study, with the objective of optimizing the water resource development, including the hydropower project identification and development in Nepal, was proposed to be jointly financed by the GoN and the World Bank. Originally, the World Bank had set aside US$2.5 million from the World Bank-managed

[14] These projects were competitively bid out and were being implemented mainly for export of electricity.

trust fund for this purpose. However, the trust fund had a limited time frame for resource drawdown. As such, due to delays in the initiation of studies—primarily due to delay in the consultant selection—only about US$0.5 million was available from the trust fund. The GoN signed the contract with the consultant with the commitment to cover the rest of the fund for the study from its own resources. As a significant part of the IBN funds were expected to remain unused, the GoN requested the World Bank to cover part of cost with this fund.

22. **Project closure.** An implementation support review carried out by the World Bank from February 11 to 27, 2019, assessed that only US$9.73 million (about 23.1% of the committed amount) was disbursed, and the rating against the achievement of PDO was unsatisfactory. The Bank team was concerned with serious delays with the KAHEP component and the IBN component of the project. Having demonstrated unsatisfactory performance for a long time, and without clarity on when it could be completed, the Project subsequently closed on December 31, 2019.

II. OUTCOME

A. RELEVANCE OF PDO

Assessment of Relevance of PDO and Rating

Rating: High

23. The PDO remains relevant for the World Bank's assistance strategy as proposed in the Country Partnership Framework (CPF)[15] for FY2019–FY2023 for Nepal. The CPF emphasized, among others, that the increased supply—through both public and private sector participation—and improved access to reliable and affordable electricity was essential for increasing economic growth and competitiveness in the country. The PDO was also relevant to the GoN's objectives and priorities for reducing load shedding in the country, as articulated in the concept note 'National Energy Crisis Mitigation and Electricity Development Decade,' published in 2016 by the GoN. This note emphasized, among others, the addition of new generation capacity to alleviate the power crisis in the country.

B. ACHIEVEMENT OF PDO (EFFICACY)

Assessment of Achievement of Each Objective/Outcome

Rating: Negligible

24. The activities under this project were designed to construct a 37.6 MW hydropower plant through public-private investment (KAHEP component) and prepare/develop environmental and social policy notes/guidance, feasibility studies, planning documents, and institutional capacity for increased investment in hydropower (MoEWRI, IBN, and WECS components) that would lead to sustainable power sector development and enhance energy access in the country. There was only one PDO-level indicator, generation capacity commissioned under the project, as mentioned in the Project Appraisal Document. The achievement of this indicator could mainly be attributed to the KAHEP component. However, at project closure, except for a few activities, the major construction works for KAHEP remained incomplete and the stated PDO could not be achieved.

[15] Report No: 121029, Country Partnership Framework for Nepal for the period FY2019–FY2023, July 10, 2018.

25. Under the KAHEP component, except for the access road to the powerhouse and dam sites, all the major project activities remained incomplete. About 400 m of the access tunnel,[16] 800 m of the headrace tunnel from the inlet end, and about 150 m from the outlet (powerhouse) [17] were completed. In addition, limited excavation works on the powerhouse and surge shafts were carried out. However, the works on other major activities such as main dam, river diversions, and tailrace tunnels were not initiated. Overall, only about 12% of the construction works were completed. As such, the project was not able to produce the targeted amount of electricity by the closing date.

26. Under the MoEWRI component, the preparation of the following documents was completed that supported the planned activities under this component: (a) the guidelines for environmental and social CIAs for Tamor basin (which includes Kabeli river), (b) the guidelines for CIA studies in Nepal and its integration into regulatory frameworks, (c) guidelines for involuntary resettlement and livelihood restoration process for hydroelectric project starting with KAHEP, and (d) guidelines for benefit sharing for hydroelectric projects. In addition, capacity development of DOED in the procurement through out-of-country training was organized. Besides, limited supervision works by DOED on Kabeli-A during the initial construction stage to ensure its compliance with the PDA, EMP, and SAP was conducted. This component also supported the procurement of vehicles and IT tools to enhance DOED's capability in project monitoring.

27. Under the IBN component, limited activities such as procurement of goods (including vehicles and computers) and hiring of financial management and procurement specialists were completed. However, other planned activities under this component could not be initiated.

28. Under the WECS component, the resources were used to partially cover the cost for the preparation of the river basin master plan report.

Justification of Overall Efficacy Rating

29. At the end of the project, except for the preparation of policy notes/guidance (related to environmental and social safeguards) and planning documents—under the MoEWRI and WECS components—major activities for KAHEP construction remained incomplete. As such, the PDO could not be achieved. Thus, the overall efficacy rating is judged to be 'Negligible'.

C. EFFICIENCY

Assessment of Efficiency and Rating

Rating: Negligible

30. As most of the activities could not be accomplished and KAHEP remained incomplete, the full economic and financial contribution by the project could not be realized. As such, the efficiency rating is judged to be 'Negligible'.

[16] The access tunnel provided access to the construction of underground structures such as headrace tunnels and desilting basins.

[17] According to the plan, headrace tunnels were planned to be dug from the water intake end and powerhouse end simultaneously. However, the works on the tunnel from the powerhouse end were not started.

D. JUSTIFICATION OF OVERALL OUTCOME RATING

31. Based on the abovementioned ratings, the overall outcome rating is judged as 'Highly Unsatisfactory'.

Table 1. Overall Ratings

Relevance	Efficacy	Efficiency	Overall Outcome Rating
High	Negligible	Negligible	Highly Unsatisfactory

E. OTHER OUTCOMES AND IMPACTS (IF ANY)

Gender

32. The impact on gender by this project at the closing was not analyzed. Several community-level activities were identified through community consultations after project launch, though only a few activities could be implemented. KEL conducted health camps and house wiring training in the project-affected areas. KEL also provided financial support to community electrification initiatives in all affected areas. Electrification of the affected community is almost complete. Existing literature from around the globe provides enough empirical evidence to validate the positive impact of access to adequate and reliable modern energy including electricity, on people's lives, especially on women (GSI 2016; Practical Action 2010; Winther 2008). While some of these evidences highlight the contribution of access to electricity in improving overall public services such as water supply, health, education, and access to information and communication (IUCN 2017; Winther 2008), many other evidences suggest its role in improving the overall well-being of women through reduced drudgery, increased income, and reduction in poverty (Dinkelman 2011; Grogan and Sadanand 2013; Standal and Winther 2016).[18] As such, even though all the planned activities could not be completed and gender impacts of these three project activities upon its closing were not analyzed, it is envisaged that it had beneficial impacts and it improved women's living conditions to some extent.

Institutional Strengthening

33. The partnership between the BPC and InfraCo Asia[19] helped BPC gain additional experience in project and contract management, especially in relation to foreign project financing. In addition, capacity development training and procurement of vehicles and computers and other IT services strengthened both the IBN's and DOED's institutional capacity in project monitoring and supervision.

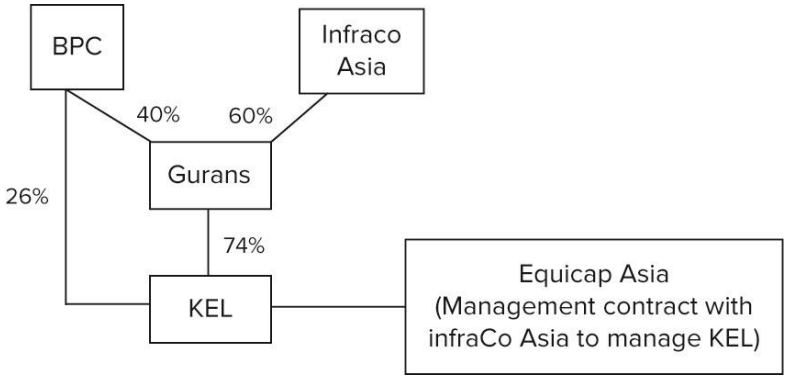
Mobilizing Private Sector Financing

34. The GoN awarded the project to the consortium led by BPC in 2008. The initial consortium comprised BPC, its subsidiaries, and Chinese and Canadian companies. InfraCo Asia became a shareholder in KEL in 2012, initially with management support from Nexif (InfraCo) Management and later, from 2016, was replaced by Equicap Asia in providing management support to InfraCo Asia. The total estimated project cost was US$102.6 million. Of these, IDA funds (US$40 million) were on lent to KEL through the Hydroelectricity Investment and

[18] Cited in Govindan, M., D. Palit. R. Murali, and D. Sankar. 2020. "Gender in Electricity Policymaking in India, Nepal, and Kenya." In *Energy Justice Across Borders*, 111–135. Springer, Cham.
[19] InfraCo Asia - InfraCo Asia Himalayan Hydro Pte. Ltd.

Development Company Ltd. (HIDCL),[20] which acted as the financial intermediary for mobilizing the IDA resources. The remaining funds were mobilized from the private sector including the IFC financing. The overall loan structure included (a) HIDCL loan (IDA funds) of US$40 million (39%); (b) IFC loan of US$38.6 million (38%, including a loan of US$19.3 million from the CCCP); and (c) local commercial bank—NIC Asia—loan of US$1.0 million (1.0%). Besides, KEL invested US$23 million (22%) in the project as equity. A consortium of lenders led by a local bank (NIC Asia) was formed to mobilize the loan for the project. The HIDCL loan (IDA funds) was subordinated to the IFC and NIC Asia loans. The overall ownership of KEL is shown in figure 2.

Figure 2. Ownership Structure of KEL



Poverty Reduction and Shared Prosperity

35. The relationship between the project activities and poverty reduction impact was also not analyzed at completion. Previous research has shown that access to electrification empowers women in myriad ways, first and foremost through improved lighting in rural areas, which increases rural household's income, business income, and wages.[21] But given the lack of study in the project area, it is difficult to state whether electrification and training activities conducted by KEL have had a beneficial impact on poor households in terms of improving their livelihoods and income generation.

Other Unintended Outcomes and Impacts

Not applicable.

III. KEY FACTORS THAT AFFECTED IMPLEMENTATION AND OUTCOME

A. KEY FACTORS DURING PREPARATION

36. During preparation, the project was influenced by the following factors:

[20] The HIDCL is a GoN-owned entity established in 2011 to mobilize funds for investment in generating, transmitting, and distributing hydroelectricity in the country.
[21] Chakravorty, U., M. Pelli, and B. U. Marchand. 2014. "Does the Quality of Electricity Matter? Evidence from Rural India." *Journal of Economic Behavior and Organization* 107: 228–247.

Favorable Influence

(a) The PDP (P043311), approved by the Board in May 2003, was aimed at increasing private investments in small and medium hydropower plants. One of the objectives of the PDP was to promote private participation in the power sector to improve sector efficiency and mobilize financing for the sector's investment requirements. This was proposed to be accomplished by providing long-term concessional financing to the investors for aggregate capacity of 25 MW of small hydropower projects and one 30 MW medium-size hydro schemes. Overall, the support to the private sector hydro developers was aimed at (i) overcoming the lack of sufficient debt financing or private sector hydropower projects, (ii) providing adequate maturity for the available debt financing, and (iii) providing comfort for private developers wishing to invest in what was perceived as a risky venture. At that time, Kabeli A was identified as one of the mid-size candidates for development on a competitive basis. After restructuring of the PDP in 2008, KAHEP would be developed on a stand-alone basis. This was the first project in Nepal selected competitively (under tariff-based selection) for development under BOOT terms. The project finances were greatly enhanced due to the availability of concessional loans from IDA and IFC/CCCP with longer maturity periods. This was considered as the transformative engagement as the success of this project would have set the stage for similar ventures in Nepal, thereby benefitting developers, utilities, and consumers.

(b) The project was built on the cumulative experience and long-term engagement of the World Bank in Nepal's power sector. The KAHEP design review was carried out by a reputed international consulting firm.22 The additional studies on the preparation of the Geotechnical Baseline Report and a Risk Register were carried out and were incorporated as part of the bidding documents to minimize the construction risks and facilitate dispute resolutions during the construction phase. In addition, verification of key design concepts of the headworks and water conveyance systems was done through a physical model study.

(c) To strengthen the project supervision process, the following arrangements were made: (i) the provision of owner's engineer[23](OE) was made for construction supervision and construction management; (ii) the members of the panel of experts (POE)[24] were retained to provide independent guidance to KEL and World Bank on the issues related to dam safety, tunnels, and environmental and social instruments during the finalization of design and for construction; (iii) the provision of lender's engineer (LE)[25] was included to provide technical advisory and supervision services for the lenders; and (iv) an independent environmental and social team was retained to provide environmental and social advisory and supervision services to the lenders.

(d) While the majority of the project resources were used for construction of the Kabeli-A hydropower plant, the project also included activities to prepare policy guidance (specifically related to environment and social), develop institutional capacity on project supervision and monitoring, prepare project feasibility studies, and formulate sustainable hydropower planning that would contribute to the increased energy access in the longer term.

Unfavorable Influence

(a) Even though the project was bid out in mid-2008, the PDA with the developers was only signed in January 2010. Furthermore, there were delays in achievement of project financial closure due to (i) delay in

[22] The design review was carried out by Mott McDonald.
[23] TATA Consulting Engineers was appointed as the OE.
[24] The POE consists of dam safety experts, tunneling experts, environment experts, and social experts.
[25] Fichtner was appointed as the LE.

finalizing the on lending mechanism[26] to channel IDA funding to KEL through HIDCL; (ii) delay in finalizing the loan agreement among the consortium of lenders due to, among others, delays in land ownership requirements[27] for loan securitization; (iii) delay in clearance and approval from the Nepalese Central Bank (Nepal Rastra Bank, NRB) to the suite of loan agreement[28] signed among the consortium of lenders; and (iv) approval of the PPA by NEA board (in May 2016). Financial closure was only achieved on June 16, 2017. These delays affected the timeline for the construction commencement and contractor mobilization.[29] As a result, the first IDA drawdown could only be achieved on July 12, 2017—about 2.7 years after project approval.

(b) The two major construction contracts—CHM package and the Electromechanical package—were fixed price lump-sum contracts. However, the long delay in project commencement increased project cost and disincentivized the contractors to perform according to the contractual requirement. Besides, the project's financial return was already low during preparation.[30] The deferred revenue and possibility of liquidated damage (LD) payment to NEA due to the delay in achievement of project completion and commercial operation, further affected KAHEP's return.

(c) Activities under the IBN component were not properly thought through. The safeguard risk related to allowing the IBN to supervise the project in which the World Bank was not involved in financing was realized only during the middle of project implementation. At that time, the IBN was ready to move ahead with the supervision plan for both Arun 3 and Upper Karnali hydropower projects.

(d) Besides the KAHEP component, the remaining three components did not have any direct impact on the PDO indicator. The project design would have been a lot stronger and effective if the impact of all the components in the project outcome was properly thought through and the PDO and indicators were articulated as such.

B. KEY FACTORS DURING IMPLEMENTATION

37. The following major issues affected project implementation:

(a) Because the KAHEP component was a private sector-led activity, implemented under the World Bank's financial intermediary mechanism, the World Bank did not have the same level of oversight in procurement and contracts management as in public sector projects. At that time, the procurement guidelines were effective and in public private investment operations, if the private party was

[26] The subsidiary agreement between the GoN and HIDCL and between HIDCL and KEL to transfer IDA funds were only signed on March 16, 2016, more than two years after project approval by the World Bank Board.
[27] According to the prevailing legal provisions, the GoN only allows 3.8 ha of land to be owned by any entity, including the hydropower projects. However, KAHEP required more land area and the GoN had to waive the land ceiling ownership limit.
[28] The NRB provided its approval to NIC Asia for debt financing under consortium and NIC Asia as consortium lead only on April 12, 2017; the final loan agreement which constituted, Master Security Agreement, Account Agreement, and Intercreditor Agreement, was signed among the consortium of lenders on June 16, 2017.
[29] KEL had signed the Civil and Hydro Mechanical (CHM) contract with Zhejiang Hydropower Construction and Installation Co. Ltd. based in Hangzhou, China in October 2015 and the Electromechanical contract with Chongqing Water and Turbine Works based in Chonqing, China in September 2016.
[30] The financial internal rate of return at the time of preparation was 10.4%.

competitively procured, downstream procurement could be based on industry practices by the private party (without the need for World Bank's clearance).

The CHM contractor was expected to be mobilized soon after the signing of the contract in October 2015. However, the contractor could not be mobilized to the site as expected as there was delay in achievement of financial closure. To keep the contractor engaged, the CHM contract then had to be amended on September 8, 2016, to allow for partial mobilization for the construction of access roads, camps, and temporary housings; initiation of detailed designs of project structures; and preliminary works on project civil structures, such as tunnels, surge shafts, and power houses. The separation of contracting activities under the 'partial' and 'full' mobilization was not quite straightforward as there were many overlapping tasks. Besides, there were delays in fulfilling some of the conditions preceding the CHM contracts. These include the delay by the contractor in submitting the performance bonds. As such, the notice for full contractor mobilization of the CHM contactor could only be given on January 1, 2018, approximately 2.25 years after the signing of the contract.

The working relationship between the CHM contractor and the OE was not cordial. It was reported (as reported by the LE in its several reports) that both the OE and CHM contractor had a different understanding of the contractual requirements and were not abiding by the contractual terms. The LE also highlighted the lack of coordination and arguments between the OE and CHM contractor in its report submitted to both the lenders and KEL. Besides, the World Bank team, during regular missions and meetings, noted continuous arguments regarding the approval process of the required drawings and documents for construction. The World Bank team encouraged KEL to coordinate the work between the contractor and OE. The contractor was blaming the OE for not approving the required documents and drawings on time. Similarly, the OE was blaming the contractor for not submitting the proper documents for approval. In many instances, the contractor-initiated construction of major project structures works without properly coordinating with the OE and, in many cases, without document/drawing approvals. Similarly, on many occasions, the OE was not allowed to have proper access to the critical work sites, such as tunnels, by the contractor to supervise the works. This led to a question on safety, quality, and workmanship of the construction sites and works. The OE changed its site team twice and brought in more experienced personnel. However, the disagreement continued. All the site-based activities have been halted since late January 2019.

(b) The KEL team was led by a chief executive officer (CEO) based in Kathmandu. However, KEL's presence at the site was limited. Such project management approach by the off-site team was observed to be ineffective in this context. KEL was not able to provide timely and proactive intervention and guidance to the disagreements between the CHM contractors and OE and ensure that both abided by the contractual terms. KEL eventually realized the need for an experienced site-based team, led by an experienced site manager. However, there were delays in the selection process and eventually the identified site manager declined to come on board, and by that time, the project activities had already slowed down. To address the project's and contractual issues, KEL had a series of meetings with the OE and contractor—at the highest level; however, this did not change the situation at the site. As such, KEL decided to terminate the contracts of both the OE and CHM and start afresh. The CHM contract termination process was initiated by submitting a 'notice to correct' to the contractor on November 16, 2018. The termination was a long-drawn-out process, and the eventual termination notice was given only on March 26, 2019. The OE contract was partly retained to settle the technical issues post the termination of the CHM contracts.

According to the PPA with NEA, KEL was liable to pay LDs to NEA if it failed to achieve the required commercial operation date by February 15, 2020. KEL had requested for reprieve from LDs until October 2020—KEL's initial estimate of delay because of the GoN's action. However, no formal response from NEA and the GoN was received by KEL in this regard. As the project was expected to be delayed further beyond the newly proposed commercial operation date, the additional LDs and lost revenues were expected to deteriorate Kabeli-A's returns[31] further. Without concessional financing from IDA, the project's feasibility would decline more.

(c) On August 20, 2018, KEL, in its letter to the HIDCL, cited the delay in signing the subsidiary agreement between the HIDCL and KEL as a major reason for the underperformance of the project. On February 11–27, 2019, the World Bank carried out an implementation support review and reported that only US$9.73 million (about 23.1% of the committed amount) was disbursed and downgraded the rating of the KAHEP component to Unsatisfactory. Accordingly, the World Bank, in its letter dated April 1, 2019, gave an indication that KEL funds would be cancelled as the project was unlikely to be completed on the original proposed date. On April 3, 2019, the MoF received recommendations from the MoEWRI for extension of the loan disbursement period for one year, from December 30, 2019, to December 30, 2020. After receiving the request from the MoEWRI for extension, the MoF held consultations with the concerned authorities to evaluate the actual position of the project. In this regard, it was decided to ask KEL for a detailed plan of action in the proposed extension period. The MoF, as a signatory on behalf of the Government, wanted to be sure that the project would move ahead in the extended period. The MoF, through the MoEWRI, received an action plan from KEL only on July 7, 2019. In its action plan, KEL cited the following as the major problems of the project: noncompliance with the CHM contract requirements by the present contractor, Zhejiang Hydropower Construction and Installation Co. underperformance by the present OE, Tata Consulting Engineers; and inadequate project management capability of the project company, KEL. On November 15, 2019, the MoF forwarded the extension request received from the MoEWRI to the World Bank. Having demonstrated unsatisfactory performance for a long time, and without clarity on when it could be completed, the Project subsequently closed on December 31, 2019.

(d) For the IBN component, the advice from the World Bank to the IBN regarding its inability to fund the project supervision works was unexpected. At that time, the IBN was readying itself to initiate the construction supervision works of Arun 3 and review of the Upper Karnali hydropower projects. After the first project restructuring, when the scope of the World Bank's involvement changed, the IBN was unable to decide on which projects it had in its roster to take up for study and transactional support. As such, no substantial work under this component could be carried out.

(e) During the implementation of KAHEP, the discussions were also ongoing within the GoN departments about development of the 756 MW Tamor storage[32] project, located in the downstream of Kabeli-A. This project was included as one of the storage projects in the GoN's energy crisis mitigation plan[33] and is expected to be developed by 2025. The reservoir of this project at the proposed capacity would inundate part of the Kabeli-A structures and couple of other IPP-financed hydropower project in the vicinity. The GoN approached the developers of Kabeli-A and other affected IPPs to provide their consent to conduct the survey works on this project. The GoN had maintained that all the developers

[31] Based on KEL's revised estimate that was shared with the World Bank team, the return on equity was 7.74%.
[32] Recent feasibility study by the GoN had optimized this project capacity from 300 MW to 756 MW.
[33] Concept Paper on National Energy Crisis Mitigation Plan and Electricity Development Decade prepared by the GoN in 2016.

affected by the proposed Tamor project—if it was decided to move forward—would be paid due compensation, and the ongoing works on the existing projects should not be halted. KEL management's decision-making in Kabeli-A was affected by the Tamor issue.

IV. BANK PERFORMANCE, COMPLIANCE ISSUES, AND RISK TO DEVELOPMENT OUTCOME

A. QUALITY OF MONITORING AND EVALUATION (M&E)

M&E Design

38. The M&E design was straightforward. There were two types of reporting. KEL submitted monthly reports on environment, health and safety, social and public relations, construction progress, finance, claims, and risk management. Fichtner Germany, as the LE, submitted quarterly reports to the lenders. AECOM was appointed as the independent environmental and social consultant for third-party monitoring.

M&E Implementation

39. KEL's project management team formally reported through the CEO's office on a regular basis. The LE checked on the status of the construction activities. Detailed reports on the project implementation status were submitted to the lenders with a copy to the World Bank. These reports covered performance on the compliance with fiduciary and safeguards requirements and achievements of the project indicators. Besides, the reports from DOED and IBN were also received on regular basis.

M&E Utilization

40. The achievement of activities, indicators, and progress was assessed by both KEL and the World Bank task team during the biannual Implementation Status and Results Report (ISR) missions. The reports were also used as the basis for discussion and consultation between the World Bank team and the KEL team to determine the project status and progress and formed the basis for remedial actions.

Justification of Overall Rating of Quality of M&E

41. Based on the abovementioned justification, the overall rating of the quality of M&E is 'Substantial'.

B. ENVIRONMENTAL, SOCIAL, AND FIDUCIARY COMPLIANCE

42. **Environment and Social.** KAHEP was classified as Category 'A' according to the World Bank safeguard policy on Environment Assessment (OP/BP 4.01) and also triggered other safeguard policies, that is, Involuntary Resettlement (OP/BP 4.12), Indigenous Peoples (OP/BP 4.10), Forests (OP/BP 4.36), Safety of Dams (OP/BP 4.37), and Projects on International Waterways (OP/BP 7.50). Given this, the Environmental Impact Assessment, Social Assessment (SA), EMP, and SAP were prepared. The SA and development of the SAP followed a participatory planning process that enabled a free and transparent environment for meaningful consultations with the community, specifically the indigenous people's groups. Through participatory consultation, broad community support was achieved for the project and on proposed mitigation measures and benefit-sharing opportunities such as rural electrification. The SAP included (a) a policy framework, (b) a resettlement compensation and livelihood assistance plan, (c) an indigenous people and vulnerable community

development plan, (d) health and safety measures, (e) benefit-sharing measures, (f) a public consultation and communication strategy, and (g) grievance redress mechanisms (GRMs). The executive summaries of these were translated into Nepali and local languages (Limbu, Bantawa Rai, Khaling Rai, and Tamang) and were disclosed on the project's public website and the World Bank's InfoShop. Hard copies of the executive summaries in local language were also made available at the project site. The Kabeli-A Environment and Community Development Unit (KAECDU) was established, and the team comprised a full-time environment social health and safety manager, an environmental officer, a social officer, and public relation officers. There was no physical displacement, and all 15 affected households were compensated for permanent loss of land. All households (titleholders) affected because of temporary crop loss along the access road were compensated. Additionally, for non-titleholders, the local road users committee and project established a process to verify the affected households, and 20 affected non-titleholders who put forth their requests according to the agreed process were also compensated.

43. **GRM**. A functioning three-tiered GRM system, where grievances could be filed through phone call, letters, or in person, was in place. Wide dissemination of project GRM was also carried out. A total of 40 out of 41 grievances registered were resolved. Grievances received were related to the need for road drainage, use of community drinking water source without consulting the community, dust management, and so on. One case related to sand mining could not be resolved as the complainant was not able to furnish the necessary evidence from local authorities. The SAP workplan was also prepared in consultation with the affected community. Among the SAP activities, financial support for household electrification was provided to the community from two rural municipalities in the directly affected areas.[34] Likewise, the KAECDU initiated a compensatory afforestation program according to the project EMP. The construction environment, social, health, and safety management plan was also prepared by the contractor. But its implementation in terms of community safety, environment, social, and health management; wastewater disposals; solid waste management; slope stabilization; and dust control was not satisfactory during the construction period. Because the contract was terminated before the river diversion, impacts on natural habitat, particularly aquatic life and other ecological water uses, were not observed. Similarly, disposal of construction wastes and stabilization of slopes were mitigated, although not satisfactorily. Upon suspension of the contract, the KAECDU ensured clear demarcation of both the sites (head works and powerhouse) and other critical locations by fencing according to the request of the World Bank and deployed security guards and signages in these locations.

44. The following studies were initiated and completed under the DOED component to improve environmental and social risk management in the energy sector: (a) CIA of Tamor River Basin, (b) benefit-sharing guidelines, (c) CIA guidelines, and (d) involuntary resettlement guidelines. Similarly, the IBN component supported the ongoing river basin study including strategic environmental and social assessment according to the Environmental and Social Management Framework and terms of reference prepared for Power Sector Reform and Sustainable Hydropower Development Project (PSRSHDP).

45. Though the safeguard performance remained Moderately Unsatisfactory during most part of the project implementation period, the implementing agency (KAECDU) has implemented the World Bank-suggested measures to bring the performance to Moderately Satisfactory at the time of project closure.

[34] Nyangkolchyang and Thechambu VDCs (now Yangbara Rural municipality), Amarpur and Panchami VDCs (now Hilihang rural municipality).

46. **Financial management.** The overall financial management performance was maintained at Moderately Satisfactory over most of the project period while it turned Moderately Unsatisfactory toward the latter part of the project. Timeliness of the financial reports was a challenge for all the implementing agencies. For the HIDCL, thorough review of the supporting documents submitted by KEL was lacking. For the IBN, inadequate budget on government source for operating expenses resulted in operating costs unrelated to the project being charged, which later had to be reversed according to the World Bank's advice. The budgeting constraints resulting in required budget transfers were also noted in DOED. Based on overall performance, the key lesson learned was in terms of lack of dedicated qualified financial management personnel for the project.

47. **Procurement.** The World Bank did not have oversight on the procurement of the KAHEP component. For the MoEWRI component, the selection of an international consulting firm to support DOED in preparing environmental and social safeguards-related documents took longer than expected due to the long decision-making process. DOED has relatively experienced procurement staff, and DOED's top management was supportive of the activities under this component. However, the consulting service agreement signing was delayed. Despite this, the consultant was able to deliver the final reports; however, the works had to be rushed through toward the end of the project to meet the deadline. For the IBN component, a separate procurement specialist was hired to support the IBN, but the works under this component could not be initiated.

C. BANK PERFORMANCE

Quality at Entry

48. The project was strong in strategic relevance. KAHEP was bid out competitively to KEL. Implementation of the project through KEL also helped streamline its implementation and monitoring process. Besides, lessons from other similar World Bank-funded projects were incorporated into the project design. However, the quality at entry could have been stronger if,

(a) The risks and impacts that the project was expected to face during preparation and implementation due to the long decision-making process by the GoN and delay in financial closure had been evaluated in more rigorous ways (this was especially the case as KAHEP was a US dollar-funded project comprising a partial US dollar tariff component);

(b) Effectiveness of the proposed project management structures by KEL and its impact on the performance of the contractor and OE had been analyzed in more detail.

(c) Appropriate analysis and discussions about the risks to the World Bank on supervising the projects under the IBN component that it did not fund or had oversight of had been carried out; and

(d) Suitability of the PDO and its indicators to capture the impact of all the project components and activities had been properly articulated.

Quality of Supervision

49. The project's implementation progress was regularly reviewed through formal World Bank implementation support and other informal interactions with KEL, DOED, HIDCL, and IBN. The core project team was retained throughout the project's duration. Likewise, support and guidance to the implementing agencies on project implementation, financial management, procurement, and environment and social

safeguards was provided by the World Bank's team as needed, on a regular basis. In addition, to support the client, the World Bank retained the services of an international hydropower/project management specialist who provided regular feedback to both the World Bank and KEL teams on project implementation issues.

Justification of Overall Rating of Bank Performance

50. Based on the above, the overall rating of the World Bank's performance is Moderately Satisfactory.

D. RISK TO DEVELOPMENT OUTCOME

51. KAHEP is only partially complete. In the absence of IDA funding, which provided the low-cost financing, due to possible cost escalations and because of potential penalties to the project in the form of PPA LDs, the return and feasibility on KAHEP are expected to deteriorate further. It cannot be said with confidence when and how the remaining works will be completed. Thus, the risk to the development outcome is significant. Similarly, there has not been any meaningful action from the IBN to initiate or take up the pending activities. As such, the progress of activities under this component is uncertain.

V. LESSONS AND RECOMMENDATIONS

(a) **Sufficient time should be allocated to preparatory works in hydropower projects.** Many issues such as land acquisition; financial intermediary; and the identification, allocation, and mitigation of project risks should be solved as much as possible during the preparation stage. Hydropower projects especially require a complex set of permit clearances for land, forestry and tree cutting, import of construction material, visas for foreign workers, and so on, and the time it takes for obtaining these permits should never be underestimated.

(b) **Project should be part of the national power system planning.** There is a need for substantial strengthening of the planning function in the energy sector and using it to inform decisions. The Government needs to undertake systematic studies and prepare master plans for each of the river basins for optimal development of the basin for energy production. In the absence of such basin planning process and allocation of licenses for development of hydropower projects, sustainable development of hydropower may be undermined. In many countries, the Government undertakes a systematic study for each of the basins, develops the master plan and pre-feasibility studies, and then auctions projects on a competitive basis. In an ideal case, it would be advisable for the Government to complete and regularly update the river basin plan and the generation, transmission, and distribution master plans. There is a need to strengthen the hydropower licensing process by moving from a developer-driven approach to an open, transparent, and efficient licensing process based on basin-wide hydropower development planning.

(c) **Planning and implementation of hydropower projects require specialized skills.** There is a need for specialized skills for contractor capacity, technical and managerial expertise, project appraisal and risk management expertise, and trained workers who are necessary to successfully undertake a large infrastructure program in the electricity sector. For foreign direct investment projects, partnerships between local developers and experienced international developers can enable development of this local capacity in project management, technology transfer, contract management, and construction methods. There is a need to address the capacity constraints faced by local commercial banks and project

management skills of private companies, enable nonrecourse project finance, and strengthen the capacity of the private companies. The private sector should be better prepared to put in its own resources to fulfil its contractual obligations.

(d) **Areas of the World Bank's involvement need to be clarified at an early stage.** The World Bank needs to clearly communicate to the client on what can be implemented with World Bank finances. For example, the World Bank resources cannot be used to supervise projects that are not financed by the World Bank. The World Bank policy regarding what could be implemented with World Bank financing needs to be clearly analyzed and communicated to the GoN and implementing agency during the project design.

Chronology

Table 2. Project Timeline

Date	Event
1983–1985	Project identified during the Koshi River Basin Master Plan Study
1998	First feasibility study of the project completed
2007	BPC was awarded the project after a competitive bidding.
January 30, 2010	PDA signed between KEL and GoN
July 6, 2011	GoN established HIDCL as a public investment company, 80% equity belonging to GoN
July 1, 2014	World Bank Board approval
July 23, 2014	Signing of loan agreement between KEL and IFC, and IFC as implementing agency for the CCCP
November 24, 2014	Signing of project agreement between World Bank and KEL, Financing Agreement between World Bank and GoN
September 24, 2015	Signed PPA with NEA
November 25, 2015	KEL submitted application to the NRB for approval of IFC loan agreement
March 16, 2016	Signing of HIDCL Subsidiary Agreement between GoN and HIDCL, and Subsidiary Agreement between KEL and HIDCL
June 20, 2016	IDA Project became effective.
September 8, 2016	Limited notice to proceed signed with the civil works contractor
January 10, 2017	Approval of IFC loan agreement by NRB
April 12,2017	Approval by NRB of NIC Asia for debt financing under consortium and NIC Asia as consortium lead
June 16, 2017	Signing of the Master Security Agreement, Inter Creditors Agreement, and Accounts Agreement and signing of loan agreements between KEL, HIDCL, IFC, and NIC Asia
July 12, 2017	First IDA disbursement as reimbursement of eligible expenses by KEL
July21, 2017	Issuance of notice of readiness by KEL to CHM contractor
November 5, 2017	Contractor submission of advance payment guarantee
January 1, 2018	Formal notice to proceed made effective for the CHM works contract
December 30, 2019	IDA project closure
February 15, 2020	Targeted commissioning date for Kabeli-A (according to the PPA)

ANNEX 1. RESULTS FRAMEWORK AND KEY OUTPUTS

A. RESULTS INDICATORS

A.1 PDO Indicators

Objective/Outcome: To increase hydropower generation capacity to supply NEA grid through public private investment

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Generation Capacity of Hydropower constructed or rehabilitated under the project	Megawatt	0.00 23-Sep-2013	37.60 07-Sep-2020	37.90 30-Jun-2020	0.00 07-Sep-2020
Generation Capacity of Hydropower constructed under the project	Megawatt	0.00 23-Sep-2013	37.60 07-Sep-2020	37.90 30-Jun-2020	0.00 07-Sep-2020

Comments (achievements against targets):
The target is not acheived .

A.2 Intermediate Results Indicators

Component: Kabeli-A Hydroelectric Project Component

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Public-private financing mobilized	Amount(USD)	0.00 01-Jul-2014	102.00 07-Sep-2020		17.70 11-Sep-2018
Comments (achievements against targets):					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Progress in construction of dam, tunnel and powerhouse	Percentage	0.00 01-Jul-2014	100.00 07-Sep-2020		12.00 11-Sep-2018
Comments (achievements against targets):					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Signing of HIDCL consortium agreement	Text	Financing agreements 01-Jul-2014	Effective 07-Sep-2020		The financing agreements to be signed between HIDCL, KEL, NIC Asia and IFC 29-May-2017

Comments (achievements against targets):

Component: Ministry of Energy Component

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Guidelines for CIA	Text	No guidelines 01-Jul-2014	Adopted by GoN 08-Sep-2020		No guidelines 11-Sep-2018
Comments (achievements against targets):					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Guidelines for Resettlement	Text	No guidelines 01-Jul-2014	adopted by GoN 08-Sep-2020		No guidelines 11-Sep-2018
Comments (achievements against targets):					

Component: Investment Board of Nepal

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion

Number of PDA signed with private hydropower developers	Number	0.00 01-Jul-2014	3.00 08-Sep-2020		2.00 11-Sep-2018
Comments (achievements against targets):					

B. KEY OUTPUTS BY COMPONENT

Objective/Outcome 1	
Outcome Indicators	1. Generation Capacity of Hydropower constructed or rehabilitated under the project. 2. Generation Capacity of Hydropower constructed under the project.
Intermediate Results Indicators	1. Public-private financing mobilized. 2. Progress in construction of dam, tunnel and powerhouse. 3. Signing of HIDCL consortium agreement. 4. Guidelines for CIA. 5. Guidelines for Resettlement. 6. Number of PDA signed with private hydropower developers.
Key Outputs by Component (linked to the achievement of the Objective/Outcome 1)	**Component: Kabeli-A Hydroelectric Project Component** 1. Total 17.70 MUSD was mobilized through public private financing. 2. About 400 m of the access tunnel,35 800 m of the headrace tunnel from the inlet end, and about 150 m from the outlet (powerhouse) were completed. Overall only 12% of the construction work was completed by 11 Sep, 2018. 3. The financing agreements signed between HIDCL, KEL, NIC Asia and IFC. **Component: Ministry of Energy, Water Resource and Irrigation (MoEWRI)** 1. Preparation of guideline for benefit sharing for hydroelectric projects completed.

[35] The access tunnel provided access to the construction of underground structures such as headrace tunnels and desilting basins.

	2. Preparation of guidelines for environmental and social cumulative impacts assessment (CIA) for Tamor basin (which includes Kabeli river) completed. 3. Preparation of the guidelines for CIA studies in Nepal and its integration into regulatory frameworks completed. 4. Preparation of guidelines for involuntary resettlement and livelihood restoration process for hydroelectric project starting with KAHEP completed. **Component: Investment Board of Nepal (IBN)** 1. Limited activities such as procurement of goods (including vehicles and computers) and hiring of financial management and procurement specialists were completed under this component. 2. Two Project Development Agreement were signed with the private hydropower developers. **Component: Water and Energy Commission Secretariat (WECS)** 1. The resources were used to partially cover the cost for the preparation of the river basin master plan report.

ANNEX 2. BANK LENDING AND IMPLEMENTATION SUPPORT/SUPERVISION

A. TASK TEAM MEMBERS

Name	Role
Preparation	
Jie Tang	Task Team Leader(s)
Shambhu Prasad Uprety	Procurement Specialist(s)
Bigyan Pradhan	Sr. Financial Management Specialist
Panneerselvam Lakshminarayanan	Social Specialist
Chaohua Zhang	Social Specialist
Drona Raj Ghimire	Social Specialist
Pablo Cardinale	Social Specialist
Supervision/ICR	
Pravin Karki, Subodh Adhikari	Task Team Leader(s)
Chandra Kishor Mishra, Shambhu Prasad Uprety	Procurement Specialist(s)
Timila Shrestha	Financial Management Specialist
Sanam Shanker	Team Member
Barsha Pandey	Team Member
Annu Rajbhandari	Environmental Specialist
Ramesh Raj Bista	Team Member
Alina Thapa	Procurement Team
Rupa Shrestha	Procurement Team
Rekha Shreesh	Social Specialist
Rabin Shrestha	Team Member
Yanqin Song	Team Member
Jun Zeng	Social Specialist
Leanne Farrell	Environmental Specialist

Qingtao Yang	Team Member
Caroline Mary Sage	Social Specialist
Tara Shrestha	Team Member
Neena Shrestha	Procurement Team

B. STAFF TIME AND COST

Stage of Project Cycle	Staff Time and Cost	
	No. of staff weeks	US$ (including travel and consultant costs)
Preparation		
FY11	48.555	160,665.39
FY12	47.840	225,983.05
FY13	34.800	139,280.67
FY14	43.854	199,797.00
FY15	21.456	68,370.44
FY16	2.200	2,844.31
Total	**198.71**	**796,940.86**
Supervision/ICR		
FY13	0	0.00
FY14	1.550	8,679.84
FY15	10.942	102,761.68
FY16	25.768	113,521.50
FY17	57.636	270,157.91
FY18	56.997	290,241.70
FY19	50.754	294,514.51
FY20	51.016	167,226.02
Total	**254.66**	**1,247,103.16**

ANNEX 3. PROJECT COST BY COMPONENT

Components	Amount at Approval (US$M)	Actual at Project Closing (US$M)	Percentage of Approval (US$M)
Water and Energy Commission Secretariat (WECS)	2.00	1.50	70.0
Kabeli-A Hydroelectric Project (KAHEP) Component	40.00	9.80	24.5
Ministry of Energy (MOE) Component	2.00	1.30	65.0
Investment Board of Nepal (IBN)	2.000	0.41	20.5
Total	**46.00**	**13.01**	**32.3**

ANNEX 4. EFFICIENCY ANALYSIS

As the KAHEP was not completed, the efficiency gain was not realized. No economic and financial analysis was done at the end of the project.

ANNEX 5. BORROWER, CO-FINANCIER AND OTHER PARTNER/STAKEHOLDER COMMENTS

1. The project was bid out in mid-2008 and the PDA was signed with developers in January 2010. On November 24, 2014, the Government entered into a Financing Agreement with IDA for a loan (US$40 million) and a Grant (US$6 million) (Credit No 5338-NP, Grant Number H900-NP) for the construction of KAHEP. According to the provision of the Financing Agreement (Article 2.01) and Schedule 2 Section I B 1 (a), a Subsidiary Agreement between the GoN and HIDCL was signed on November 24, 2014 (the HIDCL Subsidiary Agreement).

2. Even though the CHM contract was signed in October 2015, the contractor could only be given the notice for full mobilization in early 2018 due to several delays, including in achieving the project financial closure.

3. The CHM contract termination process was initiated by submitting 'Notice to Correct' on November 16, 2018 and ended up with eventual termination of the contract only on March 26, 2019. All these issues further resulted in the slow progress of the project.

4. According to PPA with NEA, KEL was liable to pay LDs to NEA if it failed to achieve the required commercial operation date by February 15, 2020.

ANNEX 6. SUPPORTING DOCUMENTS (IF ANY)

1. In early 2010, to alleviate the power crisis by implementing small/medium/large size projects and developing the administrative, regulatory, and policy infrastructures, the GoN, in consultation with the development partners, developed a Hydropower Transformational Engagement Program. The details of this program are presented in table 6.1.

Table 6.1. World Bank-Supported and Transformational Hydropower Engagement Program

GoN Strategy	World Bank Support
Short term: Reduce load shedding	**Expand access to energy and improve grid electricity supply and efficiency** • Off-grid: micro hydro, solar home systems, biogas; improved cookstoves • Generation: Kali Gandaki-A Hydropower Rehabilitation (144 MW), Grid Solar (25 MW) • Transmission: critical cross-border and domestic high voltage transmission lines • Distribution: NEA distribution system loss reduction and rehabilitation and expansion **Prepare rural electrification master plan and power system expansion master plan** • River basin planning in an integrated water resources management approach • Generation, transmission, and distribution master plans • Rural electrification master plan **Prepare the Hydropower Transformational Engagement Program for long-term sustainability** • Prepare policy and reform actions and enhance capacity through the proposed project. • Prepare critical hydropower and transmission project to solicit investment. • Prepare a renewable energy policy to guide off-grid planning and interventions.
Medium term: Expand access to modern energy services and reach supply-demand balance	**Improve supply, transmission, and distribution and expand access to electricity** • Import power from India: up to 500 MW. • Expand the east-west backbone 220/400 kV transmission lines. • Rehabilitate/expand distribution system. • Commission 1,077 MW hydropower - by IPPs/NEA. **Implement the Hydropower Transformational Engagement Program for long-term sustainability** • Sector level: Development Policy Credit series to support policy and reformations • Project level: Prepare projects and facilitate investments ▪ Complete KAHEP (37.6 MW). ▪ Commence large hydropower (about 4,000 MW hydropower). ▪ Commence new domestic and cross-border high-voltage transmission lines. ▪ Continue rural electrification to expand access to electricity (grid and off-grid).
Long term: Ensure reliable, affordable, and sustainable supply to domestic demand, and make revenues from hydro export	**Establish an efficient and sustainable power sector and achieve GoN objectives** • Universal access to reliable and affordable electricity services in Nepal • More than 5,000 MW operational, through adding around 4,000 MW into the system • Robust domestic transmission and distribution system to deliver electricity to demands • Sustainable water resource management and hydropower development • Sufficient cross-border transmission capacity operational for power import/export • Efficient sector institutions, at benchmark efficiency in energy service delivery • A financially robust power sector • Full integration into South Asia regional power market.