Board of Executive Directors
No-Objection Procedure
Expires on 28 November 2018

PR-4642
14 November 2018
Original: Spanish
Public
Simultaneous Disclosure

To: The Executive Directors

From: The Secretary

Subject: Regional. Proposal for a loan for the project "Modernization of the Salto Grande Binational Hydropower Complex"

Basic Information:

Loan type ..... Specific Investment Loan (ESP)

Borrower ..... Argentine Republic
Amount ..... up to US$40,000,000
Source .....Ordinary Capital
Borrower ..... Eastern Republic of Uruguay
Amount ..... up to US$40,000,000
Source .....Ordinary Capital

Inquiries to: Edwin Malagón (telephone Country Office in Argentina 5411-4320-1821) or Roberto Aiello (telephone Country Office in Paraguay 595-21616-2283)

Remarks: The Executive Directors are requested to inform the Secretary, in writing, no later than **28 November 2018**, if they wish to interrupt this procedure. If no such communication is received by that date, the attached resolution will be considered adopted by the Board of Executive Directors, and a record to that effect will be made in the minutes of a forthcoming meeting.

Management has determined that this loan proposal meets the requirements for presentation by No-Objection Procedure, in accordance with Part III, Section 2 (paragraph 3.29 (b)) of the Regulations of the Board of Executive Directors and Part III, paragraph 3.5 of document GN-1838-3.

Reference: GN-1838-3(6/18), DR-398-18(8/18), GN-2915(2/18), GN-2915-2(8/18)

PUBLIC
SIMULTANEOUS DISCLOSURE

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

REGIONAL

MODERNIZATION OF THE SALTO GRANDE BINATIONAL HYDROPOWER COMPLEX

(RG-L1124)

LOAN PROPOSAL

This document was prepared by the project team consisting of: Edwin Malagón (ENE/CAR), Project Team Leader; Roberto Aiello (ENE/CPR), Alternate Project Team Leader; Arturo Alarcón (ENE/CBR); Emilio Sawada, Virginia Snyder, Cecilia Correa, Maria Julia Molina, and Cecilia Seminario (INE/ENE); Victoria Zicari (CSC/CUR); Denise Obara (CSC/CAR); Jennifer Doherty (CSD/CCS); Ana Niubo, Brenda Álvarez (VPC/FMP); Abel Cuba; Emilie Chapuis (FMP/CUR); Ady Beitler (INT/TIN); Cristina Marzo (LEG/SGO); and Zachary Hurwitz (VPS/ESG).

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Annex II	Results Matrix
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LINKS

REQUIRED

1. Multiyear execution plan and annual work plan
2. Monitoring and evaluation plan
3. Environmental and social management report
4. Procurement plan

OPTIONAL

1. Economic and financial analysis
2. Diagnostic assessment studies for Salto Grande Hydropower Complex (SGHC) modernization
3. Technical datasheets for the interventions
4. Compliance with the Public Utilities Policy (document GN-2716-6)
5. Climate change annex
6. Regional integration annex
7. Dam safety analysis
8. Program operating regulations
9. Environmental and social study
10. hydroAMP indices
11. Safeguard policy filter and Safeguard screening form

ABBREVIATIONS

ADME	Administración del Mercado Eléctrico [Electricity Market Administration]
CAMMESA	Compañía Administradora del Mercado Mayorista Eléctrico [wholesale electricity market administrator]
CTM	Comisión Técnica Mixta de Salto Grande [Salto Grande Joint Technical Commission]
EDENOR	Empresa Distribuidora y Comercializadora Norte Sociedad Anónima
EDESUR	Empresa Distribuidora Sur Sociedad Anónima
EIRR	Economic internal rate of return
ENPV	Economic net present value
ENRE	Ente Nacional Regulador de la Electricidad [National Electricity Regulatory Agency]
ERP	Enterprise resource planning
GHG	Greenhouse gas(es)
GWh	Gigawatt-hour
ICAS	Institutional capacity assessment system
ICB	International competitive bidding
kV	Kilovolt
MEF	Ministry of Economy and Finance
MIEM	Ministry of Industry, Energy, and Mining
MW	Megawatt
NCB	National competitive bidding
NCRE	Nonconventional renewable energy
NDC	Nationally determined contribution
QCBS	Quality- and cost-based selection
SADI	Sistema Argentino de Interconexión [Argentina's national interconnection system]
SGHC	Salto Grande Hydropower Complex
SIN	Sistema Interconectado Nacional [Uruguay's national interconnection system]
UTE	Administración Nacional de Usinas y Transmisiones Eléctricas [National Electricity Generation and Transmission Authority]

PROJECT SUMMARY

REGIONAL
MODERNIZATION OF THE SALTO GRANDE BINATIONAL HYDROPOWER COMPLEX
(RG-L1124)

<table>
<tr><th colspan="6">Financial Terms and Conditions</th></tr>
<tr><td colspan="3" rowspan="3">Borrowers: Argentine Republic and Eastern Republic of Uruguay</td><td colspan="3">Flexible Financing Facility[a]</td></tr>
<tr><td></td><td>Argentina</td><td>Uruguay</td></tr>
<tr><td>Amortization period:</td><td>25 years</td><td>25 years</td></tr>
<tr><td colspan="3" rowspan="2">Executing agency:
Argentina loan: The Department of Energy, acting through the Salto Grande Joint Technical Commission (CTM)
Uruguay loan: CTM</td><td>Disbursement period:</td><td>5 years</td><td>5 years</td></tr>
<tr><td>Grace period:</td><td>5.5 years [b]</td><td>5.5 years [b]</td></tr>
<tr><td>Source</td><td>Amount (US$)</td><td>%</td><td>Interest rate:</td><td colspan="2">LIBOR-based</td></tr>
<tr><td>IDB (Ordinary Capital) Argentina:</td><td>40,000,000</td><td>50</td><td>Credit fee:</td><td colspan="2">[c]</td></tr>
<tr><td rowspan="2">IDB (Ordinary Capital) Uruguay:</td><td rowspan="2">40,000,000</td><td rowspan="2">50</td><td>Inspection and supervision fee:</td><td colspan="2">[c]</td></tr>
<tr><td>Weighted average life:</td><td>15.25 years [d]</td><td>15.25 years [d]</td></tr>
<tr><td>Total:</td><td>80,000,000</td><td>100</td><td>Approval currency:</td><td colspan="2">United States dollars (US$)</td></tr>
<tr><th colspan="6">Project at a Glance</th></tr>
<tr><td colspan="6">Project objective/description: The overall objective is to help ensure the availability of the Salto Grande Hydropower Complex (SGHC), enhancing the reliability and efficiency of the interconnection between Argentina and Uruguay. The specific objective is to assist in extending the useful life of the SGHC by modernizing its infrastructure and equipment.</td></tr>
<tr><td colspan="6">Special contractual conditions precedent to the first disbursement of each loan: (i) creation of a project team within the CTM organizational structure and appointment of key staff; (ii) approval and entry into force of the program Operating Regulations in accordance with the terms agreed upon with the Bank; and (iii) signing and entry into force of the agreements between the CTM and each country regarding the transfer of the proceeds of each loan to the CTM (execution agreements with Argentina's Department of Energy and a subsidiary agreement with Uruguay's Ministry of Economy and Finance) in accordance with the terms agreed upon with the Bank (paragraph 3.3). In addition, see Annex B of the environmental and social management report for the environmental contractual condition precedent to the first disbursement of the proceeds of each loan.
Special contractual conditions of execution of each loan: See special environmental and social conditions of execution in Annex B of the environmental and social management report.</td></tr>
<tr><td colspan="6">Exceptions to Bank policy: None.</td></tr>
<tr><th colspan="6">Strategic Alignment</th></tr>
<tr><td colspan="2">Challenges:[e]</td><td colspan="4">SI ☐ PI ☑ EI ☑</td></tr>
<tr><td colspan="2">Crosscutting themes:[f]</td><td colspan="4">GD ☑ CC ☑ IC ☑</td></tr>
</table>

[a] Under the terms of the Flexible Financing Facility (document FN-655-1), the borrower has the option of requesting changes to the amortization schedule as well as currency and interest rate conversions. The Bank will take operational and risk management considerations into account when reviewing such requests.

[b] Under the flexible repayment options of the Flexible Financing Facility, changes to the grace period are permitted provided that they do not entail any extension of the original weighted average life of the loan or the last payment date as documented in the loan contract.

[c] The credit fee and inspection and supervision fee will be established periodically by the Board of Executive Directors as part of its review of the Bank's lending charges, in accordance with applicable policies.

[d] The original weighted average life of the loan may be shorter, depending on the date the loan contract is signed.

[e] SI (Social Inclusion and Equality); PI (Productivity and Innovation); and EI (Economic Integration).

[f] GD (Gender Equality and Diversity); CC (Climate Change and Environmental Sustainability); and IC (Institutional Capacity and Rule of Law).

I. PROJECT DESCRIPTION AND RESULTS MONITORING

A. Background, problem addressed, and rationale

1.1 **Argentina's electricity sector**. Argentina's national interconnection system (SADI) has an installed electric energy generation capacity of 36,150 megawatts (MW).[1] From 2013 to 2017, demand for energy grew at an annual average rate of 1.8%, reaching 132,426 gigawatts-hour (GWh) with a maximum output of 25,628 MW in 2017. A total of 136,466 GWh of electricity was generated in 2017: 64.9% thermal power (primarily from natural gas [55%]), 30.3% hydraulic power, 4.2% nuclear power, 0.5% windpower, and 0.01% solar photovoltaic power.[2] Energy is transported to consumer centers through 34,313 kilometers (km) of transmission lines ranging from 33 kilovolts (kV) to 500 kV. The SADI supplies power to nearly 15.8 million users.[3] Of this total, 42% are residential users, 29% are medium-sized nonresidential users, and 29% are large users.[4]

1.2 The Department of Energy is responsible for formulating, proposing, and implementing national energy policy.[5] The National Electricity Regulatory Agency (ENRE) is in charge of regulating distribution and transmission activities, which are designated as natural monopolies,[6] and generation activities, which are carried out in a competitive environment by operators participating in the wholesale electricity market managed by Compañía Administradora del Mercado Mayorista Eléctrico (CAMMESA). Public and private companies take part in all three activities, while the Yacyretá[7] and Salto Grande binational power plants also participate in power generation.

1.3 **Uruguay's electricity sector.** Uruguay's national interconnection system (SIN) has an installed electric energy generation capacity of 4,244 MW.[8] From 2013 to 2017, demand for energy grew at an annual average rate of 1.3%, reaching 10,784 GWh in 2017, with a maximum output of 1,916 MW. In 2017, electricity generation totaled 12,295 GWh, primarily from renewable energy sources (58% hydraulic, 31% wind, 2% solar, and 7% biomass), with thermal energy

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1 22,896 MW from thermal generation, 10,746 MW from hydraulic generation, 1,755 MW from nuclear generation, and 753 MW from nonconventional renewable energy (NCRE) sources (496 MW hydroelectric, 227 MW wind, 22 MW biomass, and 8 MW solar photovoltaic). 12-2017 Monthly Report, CAMMESA.

2 69 GWh were exported, 401 GWh were pumped, 4,427 GWh were accounted for by losses and consumption, and 734 GWh were imported. 12-2017 Monthly Report, CAMMESA.

3 Informe Estadístico del Sector Eléctrico 2016, Distribución de Energía Eléctrica Facturada y Cantidad de Usuarios por tipo y por jurisdicción provincial, Ministerio de Energía y Minería [Ministry of Energy and Mining]

4 Demand by user type, 2017 Annual Report, CAMMESA.

5 Law 24,065 of 1992 regulates Argentina's electricity sector and has supplemented the legal framework created by Law 15,336 of 1960.

6 ENRE is responsible for regulating Empresa Distribuidora Sur Sociedad Anónima (EDESUR) and Empresa Distribuidora y Comercializadora Norte Sociedad Anónima (EDENOR) in the Buenos Aires area. The country's other distributors are regulated by provincial regulatory agencies.

7 The Yacyretá Hydroelectric Complex is a power plant located on the Paraná River between Argentina and Paraguay.

8 1,538 MW hydraulic, 1,437 MW wind, 627 MW thermal, 229 MW solar photovoltaic, and 413 MW biomass. 2017 Annual Report, Electricity Market Administration (ADME).

accounting for the balance.[9] The SIN supplies power to nearly 1.5 million users. Of this total, 42% are residential users, 22% are industrial users, and the balance are in other sectors. Energy is transported through 5,073 km of 63-kV, 150-kV, and 500-kV transmission lines.[10]

1.4 The Ministry of Industry, Energy, and Mining (MIEM) is responsible for formulating energy policy, setting rates, authorizing the installation of new generation facilities, and importing and exporting energy.[11] The Energy and Water Services Regulatory Unit monitors regulatory compliance, imposes penalties for violations, issues regulations, and advises the MIEM. The Electricity Market Administration (ADME) operates and manages the National Load Dispatch Center and the wholesale electricity market. The State-owned National Electricity Generation and Transmission Authority (UTE) is responsible for electricity generation, transmission, distribution, and sale. Private-sector operators and the Salto Grande binational power plant also participate in power generation activities.

1.5 **Salto Grande Hydropower Complex (SGHC)**. The SGHC is located on the Uruguay River, along the Argentina-Uruguay border, at a distance of 470 km from Buenos Aires and 520 km from Montevideo. It has an installed capacity of 1,890 MW and annual average output of 8,730 GWh.[12] The SGHC is comprised of 14 135-MW units with Kaplan turbines. The first unit became operational in 1979 and the last in 1983. The complex also has a 500-kV ring transmission system with 345 km of lines, 4 transformer stations (2 in each country), and a transmission capacity of 2,000 megavolt-amperes, enabling interconnection between the two countries. The reservoir has a volume of 5,000 cubic hectometers and covers a 783-km^2 area. The complex's civil infrastructure includes a central concrete dam, two lateral earth dams, and a spillway with 19 gates. When operated in conjunction with a bottom outlet, the gates can release up to 65,000 cubic meters per second. The SGHC also has a network of 60 hydrometeorology stations that provide necessary information for energy planning and plant operation.

1.6 **Salto Grande Joint Technical Commission (CTM).**[13] The CTM is a binational entity created on 30 December 1946 by means of an agreement between the Argentine Republic and the Eastern Republic of Uruguay. Its priorities are exploiting the waters of the Uruguay River for irrigation and power generation in the Salto Grande area,[14] improving navigability, and facilitating ground communications between the two countries. The CTM has legal capacity to act publicly and privately, is responsible for managing SGHC operations, and is

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9 Exports totaled 1,462 GWh and domestically generated consumption totaled 49 GWh. 2017 Annual Report, ADME.

10 UTE data.

11 Law 16,832 of 1997, together with decrees 276/002, 277/002, 278/002, and 360/002 of 2012, provides the legal and regulatory framework for operation of the electricity system.

12 SGHC Institutional Brochure, 2016.

13 The CTM is a subject of international law and is afforded special treatment. It has jurisdictional immunity, which is implemented through and complemented by a specific judicial entity (the Salto Grande international arbitration tribunal) that has exclusive competent jurisdiction over matters to which the CTM is a party.

14 In 1974, the Argentine Republic and the Eastern Republic of Uruguay approved an agreement to govern the 1946 agreement creating the CTM.

comprised of delegates from both countries, to whom the commission's technical and administrative teams report. The CTM receives funding from each country for operational, maintenance, and investment purposes.[15]

1.7 **Importance of the SGHC for Argentina's and Uruguay's interconnected power systems.** The energy generated at the SGHC is shared equitably between the two countries and delivered to their respective operators: CAMMESA and ADME. From 2013 to 2017, energy from the SGHC supplied 4% of electricity demand in Argentina and 45% of demand in Uruguay, making it one of the main sources of firm renewable energy in the interconnection system. Given the reservoir's capacity and flexibility, the SGHC provides other, ancillary services to the interconnection system. These services include secondary frequency regulation, which entails absorbing demand fluctuations to maintain steady nominal frequency values and thereby ensures reliable system operation. The SGHC was responsible for 64% of the interconnection system's secondary frequency regulation in 2016 and 50% in 2017, and was the most important power plant in this regard.[16] The fast, low-cost black-start and shutdown capacity of its power generation units can shorten the time taken to restore electricity service after a total system failure. The flexibility of large hydropower plants such as SGHC allows them to compensate for fluctuations in variable nonconventional renewable energy (NCRE) sources such as solar and wind power more economically and efficiently than thermal plants as penetration rates increase, thereby raising the value of the NCRE sources.[17] Reliable operation of the SGHC is even more crucial considering Uruguay's high NCRE penetration rates (paragraph 1.3) and Argentina's target of attaining 20% NCRE penetration by 2025 (paragraph 1.19), which will require ensuring the system's operational flexibility and regulation capacity.

1.8 The 500-kV ring transmission system (paragraph 1.5), in addition to connecting the power generated by the SGHC to Argentina's SADI and Uruguay's SIN, is the nexus of electric interconnection between the two countries. It allows these systems to behave as a single unit from an electrical standpoint, boosting their robustness and reliability. The ring circulates: (i) energy generated and injected by the SGHC; (ii) energy imported and exported between the two countries; and (iii) each country's own energy flows originating in other generating plants and bound for various demand centers. In 2017, a total of 18,259 GWh of energy was circulating through the ring, 55.6% of which was generated at the SGHC.

1.9 **Importance of the SGHC for regional integration.** The CTM's mission is to exploit the Uruguay River to produce and supply electric energy and effectively manage the SGHC, preserving the environment and furthering the socioeconomic development and integration of Argentina and Uruguay. As the first binational

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[15] The CTM is governed by the following supplementary, regulatory, and related sets of provisions: (i) the regulatory agreement approved by the Governments of Argentina and Uruguay in 1973; (ii) administrative technical regulations; (iii) the headquarters agreement between the CTM and Argentina (confirmed by Law 21,756); (iv) the privileges and immunities agreement between the CTM and Uruguay (confirmed by Decree Law 14,896); and (v) other specific or general decisions issued by the CTM within its purview in the exercise of its regulatory authority.

[16] The 1,890-MW physical interconnection allows the two systems to behave as a single unit from an electrical standpoint.

[17] Hirth, Lion (2016). The benefits of flexibility: The value of wind energy with hydropower.

project of its kind in the region, the SGHC launched the process of electricity system integration in the Southern Cone. This process was consolidated when the Itaipú (Brazil/Paraguay, 1984) and Yacyretá (Argentina/Paraguay, 1994) binational projects on the Paraná River entered into operation. The SIN and SADI also have international interconnections with the region's other countries: the SADI with Brazil, Chile, and Paraguay, and the SIN with Brazil. In 2017, 474 GWh were exported from Uruguay to Argentina through the SGHC's 500-kV ring. That same year, Argentina imported 153.6 GWh from Brazil, 35.9 GWh from Chile, and 70.3 GWh from Paraguay, and exported 69.1 GWh to Brazil; while Uruguay exported 988 GWh to Brazil and imported 3 GWh from Brazil.[18] Aside from energy generation and transmission, the SGHC provides other services to the Salto Grande Binational Region.[19] The dam crest is an international bridge that links the cities of Concordia (Argentina) and Salto (Uruguay), enabling a continuous movement of passengers and freight between the two countries. In 2017, 1,441,058 people crossed the border, an 82% increase from 2009.[20] Seventy-five percent of the trucks that use the crossing originate in or are bound for Paraguay.[21]

1.10 **Diagnostic assessment of the SGHC's current status.** The SGHC performs satisfactorily in operating terms, with an annual availability index of more than 93%[22] and an average forced unavailability index of 0.41%.[23] However, as hydropower plants age, the risk of individual component failure increases due to the natural wear and tear of the equipment, diminishing their availability, reliability, and efficiency and reducing the amount of renewable energy delivered to the electricity system.[24] Between 2013 and 2016, the technical cooperation operation Diagnostic Assessment and Modernization Studies for the SGHC (ATN/OC-13872-RG) provided Bank support to the CTM for the purposes of determining the condition of the SGHC. The operation included: (i) a comprehensive diagnostic assessment of the operating condition of the facilities and equipment as well as a short-, medium-, and long-term strategic investment plan; (ii) hydrological studies of the Uruguay River basin; and (iii) a proposal for modernizing environmental management (see Estudios para el Diagnóstico de Modernización del CHSG). The comprehensive diagnostic assessment was performed using the hydroAMP (Hydro Asset Management Partnership) process

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18 UTE en cifras, 2017.

19 The Salto Grande Binational Region encompasses the departments of Concordia and Federación in the province of Entre Ríos, Argentina and the cities of Salto, Santa Ana, Belén, and Villa Constitución in the department of Salto, Uruguay.

20 Dirección Nacional de Migraciones [National Migration Office] - Argentina. Statistics.

21 Programa de Inversiones para la Mejora de la Integración Territorial entre Argentina y Uruguay. Development Bank of Latin America (CAF), 2015.

22 The availability index is computed as the number of hours in the period minus the number of hours of scheduled and forced outages over the number of hours in the period. A factor of more than 80% is considered acceptable. Goldberg, Joseph; Espeseth Lier, Oeyvind. 2011. Rehabilitation of Hydropower: An Introduction to Economic and Technical Issues. Water papers; World Bank, Washington, D.C.

23 The forced unavailability index is computed as the number of unscheduled outage hours over the number of hours in the period.

24 Guía de Acción- Rehabilitación de Fuentes Renovables de Energía (Hidroeléctricas).

for hydropower equipment condition assessments,[25] which establishes a rating scale from 0 to 10 based on parameters such as equipment age, physical condition, and maintenance history, as well as specific measurements, inspections, and tests for each piece of equipment. The results indicated that the SGHC was generally in good operating condition, since the main electromechanical equipment, such as turbines and generators, was in fair condition despite time in service. In addition to indicating good maintenance, this showed that this equipment could be replaced gradually over the medium and long term.

1.11 However, hydroAMP scales indicate that the several components are in "marginal" operating condition after nearly 40 years in service: step-up transformers (units 13 and 14), gantry cranes and bridge cranes, excitation transformers, communications systems, teleprotection and telecontrol systems, and substation transformers and reactors. Their condition increases the risk of failures in the short term, and, if such failures occur, required maintenance times may be longer. The scales also indicate that a number of components are in close to marginal condition: spillway gates, intake chamber racks, ventilation facilities, the tailrace channel, the firefighting system, and the emergency generator. These components should be upgraded or repaired. The speed governors, despite being in fair condition, are obsolete. Therefore, introducing digital technology for this function could enhance the efficiency of the SGHC.

1.12 Considering the years that the SGHC has been in service since its construction (paragraph 1.5) and the results of the diagnostic assessment, the risk of an increased number of failures and longer maintenance times in the absence of a modernization process would lead to a decline in the availability and reliability[26] of the SGHC in the short term. This would, in turn, have a significant impact on the Argentine and Uruguayan electricity systems (paragraph 1.7): the renewable energy not being produced by the SGHC would have to be supplied from fossil fuel sources, entailing a higher cost and a rise in greenhouse gas (GHG) emissions, and the system would have less flexibility for regulating NCRE variability (see Climate Change Annex).

1.13 With regard to CTM management, an institutional capacity assessment was conducted in July and August 2018. This assessment identifies, quantifies, and gauges weaknesses and areas for improvement at the CTM, including the need to: (i) systematize a risk analysis process; (ii) update administrative manuals and procurement procedures; and (iii) establish roles for, provide training to, and expand the financial management and procurement staff. The CTM also requested Bank support in several areas, including management, risk, and communications.

1.14 **Description of the SGHC modernization project**. Rehabilitating and modernizing hydroelectric power plants can extend their useful life, restore them to their original operating condition, and maintain that condition, ensuring their availability and

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[25] Developed by the Bureau of Reclamation; Hydro-Québec; the Army Corps of Engineers' Hydroelectric Design Center; and Bonneville Power Administration. The operating condition scale ranges from "good," between 8 and 10; to "fair," between 6 and 8, denoting average reliability; "marginal," between 3 and 6, denoting low reliability; and "poor," less than 3, denoting the need for immediate replacement.

[26] Reliability: the likelihood that a system will perform properly over the expected period of time in the expected operating condition.

reliability.[27, 28] The introduction of new technology during this process enhances equipment efficiency[29] and can help generate more energy while reducing operating and maintenance costs. The planned modernization of the SGHC would be guided by a strategic investment plan implemented over a 25-year period at an estimated total cost of US$960 million. The results of the diagnostic assessment (paragraph 1.10) were used to outline two implementation stages according to the relative priority of the identified investment needs. The first stage will invest US$80 million in short-term needs (over a five-year period), including the replacement of equipment in marginal condition, such as the step-up transformers; equipment in close to marginal condition, such as the spillway gates; and equipment that would benefit from a technological upgrade, such as the speed governors. The second stage will gradually replace the turbines and generators in all 14 units. Implementing this strategic investment plan should make it possible to maintain targets in terms of the SGHC's availability and reliability indicators (paragraph 1.10).

1.15 The modernization project includes a major effort to innovate and digitalize the SGHC as a way of improving decision-making in the operation and maintenance processes. This process will be accompanied by an institutional strengthening plan (paragraph 1.28) aimed at helping the CTM develop the capabilities it needs to define and manage the technology that will be introduced.[30] The digital technology to be introduced includes: a control, automation, and metering system, transmission ring protection systems, real-time monitoring systems for the generator and transformers, fiber optic wiring along the transmission lines, and a digital control for the speed governors, which is expected to maximize turbine operation and increase generation.

1.16 Modernization also creates an opportunity for the SGHC in terms of nontechnical issues and the power plant's relationship to its environment.[31] Worldwide, women account for only 20% of the hydroelectric industry workforce. Similarly, the SGHC has a low percentage of women workers, engineers, and/or in middle and senior management (25% of management positions and 19% of nonmanagement positions are held by women).[32] The modernization project is an opportunity to bolster the CTM's social responsibility efforts and add the design of a gender policy to its work agenda. Such a policy could then be implemented as a complement to the commission's actions, which would align with the CTM's values and make its

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27 Goldberg, Joseph; Espeseth Lier, Oeyvind. 2011. Rehabilitation of Hydropower: An Introduction to Economic and Technical Issues. Water papers; World Bank, Washington, D.C.

28 Investment unit costs are lower for rehabilitation than for a new plant (500-1,000 US$/kW compared to >US$1,300/kW), due to sunk costs in civil works as well as already mitigated environmental and social impacts. Normally, rehabilitation investments have positive economic returns that exceed 20%.

29 Rehabilitation and Upgrading Hydro Plants: A Hydropower Technology Round-Up Report, Volume 2, EPRI, Palo Alto, CA: 1999. TR-113584-V2.

30 International workshop on digitalization in the hydroelectric sector, 28 and 29 August at the SGHC, as part of the digitalization plan.

31 A 2015 report by the McKinsey Global Institute indicated that reducing the gender gap in the workplace could generate an additional US$28 billion in worldwide GDP by 2025, equivalent to the combined economies of the United States and China.

32 Data reported by the CTM, September 2018.

management and operations more efficient. Diversity enriches institutions and enhances their quality, and it is essential in the development and performance of modern, innovative organizations. Promoting gender equality in the institutional and business context strengthens human capital, enhances management processes, and boosts financial performance, helping to improve the lives of men, women, and families throughout the region.[33] These efforts would be aligned with the policies of both Argentina[34] and Uruguay.[35]

1.17 Under the existing social responsibility plan, the SGHC can become a regional champion in encouraging more boys and girls to develop an interest in science and technology. Worldwide, girls begin to withdraw from science and technology courses as early as in primary and secondary school. Social attitudes and prejudices hinder their participation, as science and technology tends to be considered a masculine domain. One of the CTM's most important activities is its Plan Escuelas [Schools Plan], which organizes visits to schools in the communities to address production issues, responsible energy use, and environmental stewardship. The program's activities include giving talks at primary schools, holding competitions to consolidate knowledge, and hosting visits to SGHC facilities.

1.18 **The two countries' strategies in the sector**. In Argentina, the government has included the recovery of a reliable supply and efficient use of energy and the long-term sustainability of the sector among its priorities and objectives.[36] Notable measures that have been implemented include a comprehensive rate review process, aimed at a gradual reduction of power generation subsidies; the introduction of a low-income rate for the most vulnerable users; a review of transmission and distribution costs;[37] and a call for bids to increase installed generation capacity.[38]

1.19 In the context of its nationally determined contributions (NDCs), Argentina has proposed GHG reduction targets that include a National Energy and Climate Change Plan[39] with specific energy efficiency and renewable energy measures.[40, 41] The objective is to reach a 20% NCRE share in electricity generation before 2025.

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33 Ernst & Young, Women in Power and Utilities. 2016.

34 The objective of the Program to Support Gender Equality Policies (4622/OC-AR), is to help reduce gender inequality in Argentina by fostering the effective and timely implementation of policies to enhance equality of opportunity and promote the rights of women and girls.

35 Programa Género y Energía

36 Presidencia de La Nación [Office of the President of Argentina].

37 In distribution in the areas under concession to EDESUR and EDENOR.

38 These measures have helped improve the quality of service delivery and bring the electricity emergency declared in 2015 to an end in 2017.

39 Argentina.gob.ar - Planes Sectoriales del CC.

40 NDC Argentina: 15% unconditional and 30% conditional GHG reduction in 2030 with respect to business as usual (BAU) emissions for that year.

41 Law 27,191 of 2015 establishes a national system to encourage the use of renewable energy sources for electric energy production and sets short-, medium-, and long-term targets for the renewable energy share in the energy mix.

1.20 The Uruguayan government's objective is to maintain energy source diversification and continue to take action in favor of energy efficiency, and it has also set targets in its NDCs.[42] As part of the Energy Policy for 2005-2030, the government is supporting energy mix diversification. In 2017, 85% of installed capacity was obtained from renewable energy sources, and 39% from variable NCRE sources.[43]

1.21 **The IDB strategy in the sector and in regional integration projects.** The Bank has extensive knowledge of the electricity sector in Argentina and Uruguay and expertise in regional integration projects. The Bank has experience in supporting countries in the design and implementation of hydroelectric projects that have driven regional energy market integration.[44] Specifically, the Bank financed construction of the original SGHC project (240/OC-AR[45] and 275/OC-RG[46]). The Bank also funded construction of the Yacyretá binational hydroelectric plant through several loans (346/OC-RG, 555/OC-RG, 583/OC-RG, and 760/OC-RG), including design and engineering, civil works, and a resettlement and environment program. In Argentina, the Bank financed an expansion of the transmission network by means of the Norte Grande Electricity Transmission Program (1764/OC-AR, 1764/OC-AR-1) and the Program to Supply Electricity to the Country's Various Regions under the Federal Electricity Transmission Plan (2514/OC-AR). In Uruguay, the Bank is financing the Punta del Tigre "B" Combined-cycle Project (2894/OC-UR) and is funding an NCRE expansion in both countries through IDB Invest.[47]

1.22 **The Bank's experience in hydroelectric plant modernization projects and lessons learned.** The Bank has experience in rehabilitating other hydroelectric power plants in the region, notably the Furnas and Luis Carlos Barreto plants (2549/OC-BR)[48] in Brazil; the Passo Real and Itauba plants (2813/OC-BR), also in Brazil; the Simón Bolivar – Guri plant (2429/OC-VE) in Venezuela; the Peligre plant in Haiti;[49] the Rio Macho plant in Costa Rica;[50] the Carlos Fonseca and Centroamérica plants in Nicaragua[51] and with the Rehabilitation and Modernization of the Acaray Hydroelectric Plant (PR-L1156). Through these operations and related studies,[52] the Bank has identified lessons learned that are applicable to projects of this type, including: (i) perform an expert diagnostic assessment to

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42 NDC Uruguay: unconditional reduction of GHG emission intensity per unit of GDP with respect to 1990: 24% carbon dioxide (CO_2), 57% methane, 48% nitrous oxide.

43 34% wind and 5% solar. 2017 Annual Report, ADME.

44 El sector hidroeléctrico en Latinoamérica: Desarrollo, potencial y perspectivas.

45 Includes dam works, the hydropower plant, and the locks for water navigation.

46 Includes the delivery and installation of the electrical systems and transformers for the power plant, as well as construction of the transmission lines and substations.

47 Recently, the Bank began to carry out regional operations, such as the Agua Negra Pass International Tunnel Construction Program (Argentina/Chile) (4338/OC-RG; 4339/OC-RG).

48 Project Completion Report de Furnas and Análisis Económico Ex Post de Furnas.

49 Operations 1296/OP-HA and 1681/OP-HA.

50 Operations 1908/OC-CR, 1908/OC-CR-1, 1908/OC-CR-2, 1908/OC-CR-3, 1908/OC-CR-4, 2747/OC-CR, 2747/OC-CR-1, and 2747/OC-CR-2.

51 Operations 1933/BL-NI-1, 1933/BL-NI-3, 1933/BL-NI-4, and 1933/BL-NI-5.

52 Implementation Completion Report Review - Hydropower Rehabilitation and System Control.

determine the specific rehabilitation needs and reduce risks and uncertainties during execution; (ii) in the planning and evaluation stages, consider the outage time needed to carry out rehabilitation work and the cost of obtaining energy from more expensive sources; and (iii) create a specific project execution management team that is independent from the power plant's operation and maintenance structure.[53] A study conducted by the Bank presented evidence of the effectiveness and convenience of this type of intervention as one of the most cost-efficient alternatives for providing renewable energy without causing environmental or social impacts, compared to alternatives such as the construction of new power plants.[54] The study concludes that rehabilitation is an opportunity to introduce more modern and efficient digital control and operation technologies, making better use of water resources and boosting generation capacity.

1.23 **The Bank's strategies with the countries.** This project is aligned with the IDB Group country strategy with Argentina (2016-2019) (document GN-2870-1) in terms of the strategic objective of improving infrastructure for investment and inclusion, in that the modernization of the SGHC's generation and transmission infrastructure will help maintain the quality of electricity supply for the country's residential and nonresidential users. The project is aligned with the IDB Group country strategy with Uruguay (2016-2020) (document GN-2836) in terms of the strategic objective of developing installed power generation capacity, because it will preserve the country's most important source of renewable energy and support NCRE penetration. The project is included in the Update to Annex III of the 2018 Operational Program Report (document GN-2915-2).

1.24 **Strategic alignment.** The project is consistent with the Update to the Institutional Strategy 2010-2020 (document AB-3008), and particularly aligned with the development challenges of: (i) productivity and innovation, by promoting modernization of the power generation infrastructure and fostering the use of digital technologies to modernize and enhance the performance of the complex; and (ii) economic integration, by promoting preservation of regional infrastructure. It is also aligned with the crosscutting areas of: (i) gender and diversity, by seeking to promote greater participation by women in the electricity industry; (ii) climate change and environmental sustainability, by preserving a source of renewable energy and helping reduce GHG emissions; and (iii) institutional capacity, by strengthening the management capacities of the executing agency. The program is aligned with the Sustainable Infrastructure for Competitiveness and Inclusive Growth Strategy (document GN-2710-5) by supporting infrastructure modernization to meet energy demand in sustainable fashion; with the Sector Strategy to Support Competitive Global and Regional Integration (document GN-2565-4) by furthering a multinational approach and providing continuity to regional cooperation; and with the Integrated Strategy for Climate Change Adaptation and Mitigation, and Sustainable and Renewable Energy (document GN-2609-1). In accordance with the Joint Methodology for

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53 Renovation, Modernization & Uprating of Hydro Power Plants- Guidelines for Residual Life Assessment & Life Extension, Er. Amrik Singh and Er. Ashok Thapar; IEA Technical Guidelines for Upgrades of Existing Hydropower Plants. and IEEE -1991; IEEE Guide for the Rehabilitation of Hydroelectric Power Plants, Energy Development and Power Generation Committee of the IEEE Power Engineering Society.

54 Guía de Acción- Rehabilitación de Fuentes Renovables de Energía (Hidroeléctricas).

Tracking Climate Mitigation Finance, 100% of loan proceeds are invested in climate change mitigation activities. This contributes to the IDB Group's target of increasing financing for climate-related projects to 30% of all operations approved by year-end 2020. The program will contribute to the Corporate Results Framework 2016-2019 (document GN-2727-6) through the indicator for installed power generation from renewable energy sources. The operation is consistent with the Energy Sector Framework Document (document GN-2830-5) in the energy security and the energy sustainability and energy efficiency priority areas; with the Integration and Trade Sector Framework Document (document GN-2715-6); with the Climate Change Sector Framework Document (document GN-2835-5) by promoting renewable energy; and with the Gender and Diversity Sector Framework Document (document GN-2800-8) by promoting gender activities in the sector.

1.25 **Compliance with the Public Utilities Policy (document GN-2716-6).** As shown by the analyses performed for Argentina and Uruguay, this project fulfills the financial sustainability and economic evaluation conditions set forth in the policy, because hydropower generation at the SGHC reduces the operating costs of both countries' electricity systems by cutting the use of more expensive technologies (paragraph 1.7). The two countries allocate and provide the CTM with an adequate budget for covering maintenance and operating costs and carrying out its multiyear investment plans.[55] The project also complies with the pillar of environmental sustainability, in that it does not produce significant environmental impacts. Instead, it helps reduce GHG by preserving an important source of renewable energy and enabling intermittent NCRE penetration in the electricity systems. Furthermore, the project complies with the pillar of social sustainability by furthering the delivery of an efficient, reliable, and affordable energy service to users in both countries. Both countries also have adequate institutional frameworks, a clear separation of roles, and private-sector participation (paragraphs 1.8 and 1.10), all of which promote transparency in the delivery of electricity service.

B. Objectives, components, and cost

1.26 **Objectives**. The overall objective is to help ensure the availability of the SGHC, enhancing the reliability and efficiency of the interconnection between Argentina and Uruguay. The specific objective is to assist in extending the useful life of the SGHC by modernizing its infrastructure and equipment. The program will consist of two components:

1.27 **Component I. Investments for SGHC modernization (Argentina: US$38 million; Uruguay: US$38 million).** The investments financed by this component will include: (i) the modernization of the turbine speed governors; (ii) the renewal of the hydromechanical systems in the spillway and powerhouse: gates, intake racks, and structural reinforcement of the spillway gates; (iii) the renewal of the complex's hoisting systems; (iv) the modernization of the ancillary

[55] In Argentina, the budget is based on Department of Energy Resolution 1392/10, in effect since 1 March 2010. In Uruguay, the annual budget allocation is specified in the National Budget Act for five-year periods with annual adjustments.

mechanical systems; (v) the modernization of the ancillary electrical systems; (vi) the modernization of the control systems; (vii) the replacement of the main transformers; (viii) the replacement of the communication, control, protection, and reactive power compensation systems in the 500-kV transmission ring; (ix) the modernization of the plant's civil infrastructure, including the dam's sensor and monitoring systems; (x) the modernization of environmental and social management systems; (xi) studies to develop conceptual engineering and technical specifications for equipment, including turbines and generators; and (xii) the implementation of an asset management plan.

1.28 **Component II. Institutional strengthening and program supervision and management (Argentina: US$2 million; Uruguay: US$2 million).** The investments financed by this component will include: (i) action plans for institutional strengthening of the CTM in terms of managerial capabilities, communications and gender,[56] digitalization, and risk management; (ii) consulting services for technical supervision of the work and specialized technical support for program execution; (iii) program financial audits; and (iv) program evaluation.

Table 1: Program costs (in U.S. dollars)

Investment category	Argentina IDB	Uruguay IDB	Total
Component I. Investments for SGHC modernization	**38,000,000**	**38,000,000**	**76,000,000**
Investments for SGHC modernization	38,000,000	38,000,000	76,000,000
Component II. Institutional strengthening and program supervision and management	**2,000,000**	**2,000,000**	**4,000,000**
Institutional strengthening	100,000	100,000	200,000
Supervision, audits, and evaluation	1,900,000	1,900,000	3,800,000
Total	**40,000,000**	**40,000,000**	**80,000,000**

C. Key results indicators

1.29 **Expected outcomes.** The expected outcomes of the investments include: (i) maintained availability and reliability of energy generation and transmission at the SGHC; (ii) an extension of the useful life of the SGHC; and (iii) strengthened regional integration and infrastructure. The program will have an impact on the renewable energy share in the energy mixes of both countries by keeping the SGHC's average generation level steady and supporting variable NCRE penetration in both electricity systems, thereby preventing GHG emissions.

1.30 **Program beneficiaries.** The program will enable continued operation of the SGHC at adequate availability and reliability indices, benefiting the 17.26 million[57] users of the Argentine and Uruguayan electricity systems with renewable energy, which is a quality, cost-efficient service. The CTM will benefit from the strengthening of the infrastructure under its responsibility and of its staff through

[56] As part of this program, the Bank will support the CTM through a gender diagnostic assessment and an action plan aimed at promoting gender inclusion in the energy sector (ATN/OC-16266-RG; ATN/OC-16267-RG).

[57] 15.8 million users connected to the SADI (Argentina) and 1.46 million connected to the SIN (Uruguay).

the development of new management capabilities for infrastructure and investment projects.

1.31 **Technical viability and sustainability.** A comprehensive diagnostic assessment of the SGHC was performed to determine the technical viability of the investments (paragraph 1.10). The investments are sustainable in the medium and long term. The modernized equipment and facilities will be included in the enterprise asset management (EAM) system, which contains the predictive, preventive, and corrective maintenance schedule and a record of interventions performed by the SGHC technical team. This is part of the infrastructure management process set out in the plant's quality management system, in which the generation, transmission, operation, and engineering and planning departments participate.

1.32 **Economic and financial viability.** An economic and financial analysis was performed, comparing the results of the short-term plan's investments financed by the program with a base scenario in which these investments are not made and the SGHC's availability and reliability decline along with energy generation. It considered the benefits derived from: (i) the larger amount of energy generated and delivered to the Argentine and Uruguayan systems or exported to Brazil with respect to the base scenario, primarily resulting from the modernization of the speed governors, cleanup of the intake racks, replacement of the step-up transformers, and modernization of the equipment in the 500-kV transmission system; (ii) the reduction in costs due to better flood control; and (iii) the reduction in costs associated with carbon dioxide (CO_2) emissions due to the avoidance of thermal generation. Based on the foregoing, the analysis yielded an economic internal rate of return (EIRR) of 26% and an economic net present value (ENPV) of US$45.5 million, discounting at 12%. Considering that the program funds the short-term plan but includes investments associated with the medium- and long-term plans for full modernization of the SGHC, a cost-benefit analysis of the entire investment plan was also performed, yielding an EIRR of 16.5% and an ENPV of US$156.1 million, discounting at 12%. These figures remain positive after the sensitivity analysis, showing the robustness of the results.

II. Financing Structure and Main Risks

A. Financing instruments

2.1 The modernization of the SGHC will be financed by means of two specific investment loans, one to the Argentine Republic and the other to the Eastern Republic of Uruguay. Each loan will be in the amount of US$40 million for a total of US$80 million, with no local counterpart. The disbursement period will be five years from the signature and entry into force of each loan contract, pursuant to the following tentative disbursement schedule:

Table 2. Disbursement schedule (in thousands of U.S. dollars)

Source	Year 1	Year 2	Year 3	Year 4	Year 5	Total
IDB - Argentina	3,768	8,404	10,281	9,452	8,095	40,000
IDB - Uruguay	3,768	8,404	10,281	9,452	8,095	40,000
Total	**7,536**	**16,808**	**20,562**	**18,904**	**16,190**	**80,000**
	9%	**21%**	**26%**	**24%**	**20%**	**100%**

B. Environmental and social risks

2.2 In accordance with the Bank's Environment and Safeguards Compliance Policy (Operational Policy OP-703), the operation was classified as a category "B" operation. The environmental and social impacts of program interventions are expected to be limited and easily mitigated, since they relate to the replacement of equipment and the repair of existing infrastructure within the current premises of the CTM and do not include new works or access roads. There are no indigenous communities in the area of influence, the operation will not require resettlement, and the current maximum operating level of the reservoir will not be altered.

2.3 The risks are associated with: (i) noise and dust generation; (ii) soil and water pollution from potential spills of liquid waste; (iii) occupational health and safety hazards; (iv) solid waste generation during transformer dismantlement, possibly including asbestos; and (v) the increased vulnerability of workers and downstream local communities to floods caused by potential flaws in the structural safety of the existing infrastructure. This last risk is moderate because the existing infrastructure's age makes it an environmental liability, even though the operation's activities in themselves do not increase the level of vulnerability to natural disasters. On the contrary, the interventions will improve the safety of the SGHC.

2.4 To mitigate these impacts and risks and as part of program preparation, an environmental and social analysis was performed to formulate environmental and social mitigation programs, including waste management and occupational health and safety plans. Dam safety studies following best international practices were conducted.[58] To this end, a dam safety analysis was performed and plans for supervising dam-related work, updating operation and maintenance plans, improving dam instruments, and reviewing the emergency action plan were developed. The reports were published and two public consultations were carried out, one in each country, in compliance with Bank policies.[59]

C. Fiduciary risks

2.5 The main risk, identified as medium-high, is the CTM's lack of knowledge of and experience with the Bank's procurement and financial management policies and procedures,[60] which could lead to delays in bidding processes. To mitigate this risk, the Bank will train the CTM in its policies and procedures. Training on the transaction record-keeping system required by the Ministry of Finance will be provided as well.[61] The procedures manual will be updated. The Bank will also closely monitor preparation of the first set of bidding documents for each type of

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58 These studies used the World Bank's Safety of Dams Policy as a reference.

59 In Uruguay, the public consultation was held on 3 September 2018, and 88 persons participated. In Argentina, the consultation was held on 4 September 2018, and 65 persons attended. Both meetings' attendees included private individuals who had business in the areas of direct or indirect program influence, neighborhood associations, productive sector organizations, and representatives from local public institutions and civic entities. Those who participated in the consultations expressed favorable opinions about the project and the proposed mitigation measures.

60 A risk management workshop was conducted to identify potential risks and mitigating measures.

61 External Loan Execution Unit management system.

procurement. Lastly, the ad-hoc flow of execution of needs and pace of program execution will be specified in the program Operating Regulations.

D. Other risks

2.6 **Development risk (medium-high).** Potential delays in output delivery affecting the expected SGHC availability and reliability outcomes, due a lack of technical staff to prepare procurement documents, monitor contracts, and provide adequate quality control over the outputs. To mitigate this risk, the CTM will create a project team within its own organizational structure and will hire a consulting firm to provide technical supervision and support program management.

2.7 **Public management and governance risk (medium-high).** Potential delays in physical and financial execution stemming from the difficulty in coordinating decision-making within the CTM and with the authorities of the two countries due to the project's binational nature. This risk will be mitigated by agreeing on clear execution procedures and setting them out in the program Operating Regulations, and by setting out clear procedures for relations with the two countries in their respective agreements, which will indicate the CTM's powers and obligations as the program executing agency.

2.8 **Fiscal sustainability risk (medium-high).** In Argentina, there are elevated macroeconomic risks associated with high public and external financing needs, the existence of liquidity surpluses due to the high inventory of short-term Central Bank debt, and a high current account deficit. These factors render the country vulnerable to a potentially further hardening of global financial and trade conditions. The national government has taken significant steps to mitigate these risks, starting with a standby arrangement with the International Monetary Fund (IMF) that covers short-term public and external financing needs. As part of this arrangement, an agreement was made to significantly accelerate fiscal consolidation and stop monetary financing of the Treasury. This will help attain the objective of disinflation and reduced financial vulnerability. In the short term, the combination of restrictive fiscal and monetary policies is expected to have a contractionary effect on the level of economic activity. In Uruguay, there are also macroeconomic risks, in this case arising from the new regional circumstances, which threaten to affect growth in the coming year, the inflation rate, and the public accounts. However, liquidity problems are not expected in view of the government's savings and access to contingent credit lines. These conditions and the fiscal adjustments and restrictions in the two countries could affect the availability of resources for investment and the annual disbursement levels required for satisfactory execution of the program. At the program level, this risk will be mitigated by making timely arrangements in each country for the budgetary credit needed for execution in each fiscal year.

III. Implementation and Management Plan

A. Summary of implementation arrangements

3.1 **Execution and implementation mechanism**. The borrowers will be the Argentine Republic and the Eastern Republic of Uruguay, and the executing agency will be the CTM (for the Argentina loan, the executing agency will be the Department of Energy acting through the CTM). The CTM will be responsible for

program execution, management, monitoring, and evaluation. To ensure adequate program compliance in technical, administrative, procurement, financial, and socioenvironmental matters, the CTM will formally create a project team. At a minimum, this team will have the following key staff: a project manager, a monitoring and evaluation manager, a technical manager, a procurement manager, a financial manager, a social and environmental manager, and a legal manager. The details of the project team's composition will be included in the program Operating Regulations.

3.2 The project team will be responsible for administrative and operating management of the program, including the following activities: (i) coordinating the procurement of works, goods, and services; (ii) requesting the disbursements of each loan; (iii) preparing annual work plans, the procurement plan, and other plans; (iv) presenting program management reports; (v) assisting in supervising and monitoring works and service contracts; and (vi) acting as the Bank's interlocutor. The project team will rely on the CTM's current accounting, procurement, and technical departments, as the CTM will be responsible for carrying out all procurement processes during the program disbursement period. Project team members will be trained by the Bank in its current procurement policies, procedures, and documents.

3.3 **The following will be special contractual conditions precedent to the first disbursement of each loan: (i) creation of a project team within the CTM organizational structure and appointment of key staff; (ii) approval and entry into force of the program Operating Regulations in accordance with the terms agreed upon with the Bank; and (iii) signing and entry into force of the agreements between the CTM and each country for the transfer of the proceeds of each loan to the CTM (execution agreements with Argentina's Department of Energy and a subsidiary agreement with Uruguay's Ministry of Economy and Finance) in accordance with the terms agreed upon with the Bank.** The first condition is considered essential to assure the Bank that the CTM will have an adequate team to begin program execution. The second condition is necessary to ensure proper program execution, considering that the Bank's experience in the region indicates that approval of the program Operating Regulations prior to the first disbursement helps the executing agency prepare organizationally for the operation's implementation. The third condition is justified in view of the importance of formalizing the legal and institutional arrangements for the transfer of each loan's proceeds to the CTM. This entails formally establishing the CTM's execution-related powers and obligations in the context of the program.

3.4 **Operation and maintenance.** The CTM will: (i) ensure that the program works and equipment are properly maintained in accordance with generally accepted maintenance standards; and (ii) present an annual maintenance report on the condition of the works and equipment to the Bank during the first quarter of each calendar year up to the fifth year after the completion of the first works under the program.

3.5 **Program Operating Regulations.** Program execution will be governed by the provisions of the loan contract and the program Operating Regulations, which will include: (i) arrangements for coordination between the CTM and stakeholders in program execution, including the CTM's exisiting conflict resolution mechanisms;

(ii) procedures for the procurement of works, goods, and consulting services; (iii) guidelines for the use of program resources and program financial management; (iv) disbursement procedures; (v) a detailed description of program activities; (vi) a description of the structure of the project team, including the definition of the responsibilities of key staff, links with other areas of the CTM, and coordination arrangements; and (vii) a chapter on the environmental and social management framework.

3.6 **Procurement plan and policies.** Procurement of goods, works, and consulting services will be undertaken in accordance with the Policies for the Procurement of Goods and Works Financed by the IDB (document GN-2349-9) and the Policies for the Selection and Contracting of Consultants Financed by the IDB (document GN-2350-9). All procurement will be included in the program procurement plan approved by the Bank through the Procurement Plan Execution System, and the methods and ranges established therein, as described in Annex III. The resolution of any potential conflicts between the CTM and contractors regarding program procurement matters will be subject to the exclusive jurisdiction of the Salto Grande international arbitration tribunal (paragraph 1.6). Contracts signed between the CTM and contractors and suppliers will include the standard CTM conflict resolution statement, which establishes the exclusive jurisdiction of the Salto Grande international arbitration tribunal.

3.7 **Retroactive financing.** As stipulated in the Bank Policy on Recognition of Expenditures, Retroactive Financing, and Advance Procurement (document GN-2259-1, Operational Policy OP-507), the Bank may retroactively finance, as a charge against the proceeds of each loan, up to US$16,000,000 (equivalent to 20% of the amount of each proposed loan) in eligible expenditures incurred by the borrower prior to the approval date of each loan in the categories of goods, works, and/or consulting services, provided that requirements substantially similar to those established in the loan contract have been met. Such expenditures will have been incurred on or after 23 July 2018,[62] but under no circumstances may they include expenditures incurred more than 18 months prior to the approval date of each loan by the Bank's Board of Executive Directors.

3.8 **Audit.** During the disbursement period, the CTM will submit the program's annual audited financial statements to the Bank within 120 days after the close of each fiscal year. The audit will be conducted by an independent audit firm acceptable to the Bank, to be selected in accordance with Bank policies and procedures. Determination of scope and other related issues will be governed by the Financial Management Guidelines for IDB-financed Projects (document OP-273-6) and the Guidelines for Financial Reports and External Audits. Auditing costs will be financed with the proceeds of each loan and the CTM will be responsible for contracting the audit firm.

B. Summary of arrangements for monitoring results

3.9 **Monitoring**. Monitoring arrangements include management missions, inspection visits, semiannual status reports, and annual external audits. The CTM, acting through the project team, will carry out overall monitoring of the program based

[62] Date of Bank approval of the project profile.

on the targets set out in the Results Matrix and using the annual work plan, which will be updated annually. The multiyear execution plan will describe the progress achieved through the performed activities and include an execution timetable for the years remaining in the loan disbursement period. The CTM will be responsible for preparing the semiannual reports and presenting them in March and September of each year. The Bank will hold meetings with the CTM to assess program progress and will supervise program execution through the sector specialist.

3.10 **Evaluation**. Program evaluation includes a midterm and a final evaluation, financed with proceeds from each loan. The midterm evaluation will be performed 36 months from the effective date of the loan contract or when 50% of loan proceeds have been disbursed, whichever occurs first. The final evaluation and the ex post economic evaluation will be performed 90 days after the final disbursement (see monitoring and evaluation plan).

Development Effectiveness Matrix		
Summary	RG-L1124	
I. Corporate and Country Priorities		
1. IDB Development Objectives	Yes	
Development Challenges & Cross-cutting Themes	-Productivity and Innovation -Economic Integration -Gender Equality and Diversity -Climate Change and Environmental Sustainability -Institutional Capacity and the Rule of Law	
Country Development Results Indicators	-Regional, sub-regional and extra-regional integration agreements and cooperation initiatives supported (#)* -Electricity transmission and distribution lines installed or upgraded (km)*	
2. Country Development Objectives	Yes	
Country Strategy Results Matrix	GN-2870-1; GN-2836	AR: Development of capacities and regulatory frameworks that allow: (a) expanding the capacity of electricity generation, especially with RE; (b) strengthen the electric transmission system, especially to facilitate the development of ER projects and optimize the SADI; (c) improve EE in line with the sustainable development objectives; and (d) energy integration projects. UR: Support actions that contribute to the diversification of energy sources with emphasis on RE projects, EE measures and minimization of environmental impact, as well as in the cross-cutting area of CC that includes investment in climate resilient infrastructure in transportation, energy and housing, promotion of RE and reduction of the vulnerability of sectors affected by climate.
Country Program Results Matrix	GN-2915-2	The intervention is included in the 2018 Operational Program.
Relevance of this project to country development challenges (If not aligned to country strategy or country program)		
II. Development Outcomes - Evaluability		Evaluable
3. Evidence-based Assessment & Solution		10.0
3.1 Program Diagnosis		3.0
3.2 Proposed Interventions or Solutions		4.0
3.3 Results Matrix Quality		3.0
4. Ex ante Economic Analysis		10.0
4.1 Program has an ERR/NPV, or key outcomes identified for CEA		3.0
4.2 Identified and Quantified Benefits and Costs		3.0
4.3 Reasonable Assumptions		1.0
4.4 Sensitivity Analysis		2.0
4.5 Consistency with results matrix		1.0
5. Monitoring and Evaluation		8.5
5.1 Monitoring Mechanisms		2.5
5.2 Evaluation Plan		6.0
III. Risks & Mitigation Monitoring Matrix		
Overall risks rate = magnitude of risks*likelihood		Medium
Identified risks have been rated for magnitude and likelihood		Yes
Mitigation measures have been identified for major risks		Yes
Mitigation measures have indicators for tracking their implementation		Yes
Environmental & social risk classification		B
IV. IDB´s Role - Additionality		
The project relies on the use of country systems		
Fiduciary (VPC/FMP Criteria)	Yes	Financial Management: Budget, Accounting and Reporting. Procurement: Information System.
Non-Fiduciary		
The IDB's involvement promotes additional improvements of the intended beneficiaries and/or public sector entity in the following dimensions:		
Additional (to project preparation) technical assistance was provided to the public sector entity prior to approval to increase the likelihood of success of the project	Yes	RG-T2256 y RG-T2923.

Note: (*) Indicates contribution to the corresponding CRF's Country Development Results Indicator.

The general objective of the project is to contribute to guarantee the availability of the Salto Grande Hydroelectric Complex (CHSG), providing reliability and efficiency to the interconnection between Argentina and Uruguay. The specific objective is to contribute to extending the useful life of the CHSG, by modernizing its infrastructure and equipment.

The documentation is solid—a summary of the Argentine and Uruguayan electricity sector is provided, of the main characteristics of the CHSG, and the role of the Mixed Technical Commission of Salto Grande (CTM), which is a binational body in charge of the management and operation of the CHSG. The importance of the CHSG for the interconnected electrical systems of both countries and for regional integration is highlighted. Based on a comprehensive diagnostic of the CHSG and an analysis of the institutional capacity of the CTM, the deficiencies of key components of the complex and the weaknesses and areas for improvement of the CTM were identified and quantified. The comprehensive diagnosis concludes that the replacement of equipment can be carried out gradually in the medium and long term.

This operation supports the first phase of modernization of the CHSG. The proposed solution is clearly linked to the problems identified. The results matrix (RM) reflects the objectives of the project and shows a clear vertical logic for each of the two components. The lower level indicators reflect the design of the components. The RM includes SMART indicators at the level of outputs, outcomes, and impacts, with their respective baseline values, targets, and means to collect the information.

A cost-benefit analysis is carried out. The costs and benefits are identified and quantified in an appropriate manner. Assumptions made are reasonable and supported with historical administrative data or relevant literature. The analysis yields an internal economic rate of return (EIRR) of 26% and a net economic present value (NEPV) of US $45.5 million. A sensitivity analysis is performed under alternative scenarios modifying 14 key variables that can affect costs and benefits. The conservative scenario finds an EIRR of 15% with a NEPV of US$11 million.

The monitoring and evaluation plan proposes an evaluation using an ex-post cost-benefit analysis, which is complemented with a Before-and-After evaluation.

The risks identified in the risk matrix seem reasonable and are classified as Low (6) and Medium-High (5). The risks classified as Medium-High include mitigation activities, responsible parties, and trigger milestones.

RESULTS MATRIX

Program objective:	The overall program objective is to help ensure the availability of the Salto Grande Hydropower Complex (SGHC), enhancing the reliability and efficiency of the interconnection between Argentina and Uruguay. The specific objective is to assist in extending the useful life of the SGHC by modernizing its infrastructure and equipment.

EXPECTED IMPACT

Indicators	Unit of measurement	Baseline		Midterm		Target		Means of verification	Comments
		Value	Year	Value	Year	Value	Year		
IMPACT 1: Increase in the renewable energy share in the Argentine and Uruguayan energy matrices									
Renewable energy generation in Argentina	%	31	2017	41	2021	45	2023	CAMMESA report	The program will help achieve renewable energy share targets
Renewable energy generation in Uruguay	%	98	2017	98	2021	98	2023	ADME report	The program will help maintain the renewable energy share (considering the required backup thermal generation) in line with government forecasts.
IMPACT 2: Reduction in greenhouse gas (GHG) emissions in both countries									
CO^2 equivalent emissions avoided[1]	Tons of CO^2eq	0	2018	76,219	2021	199,416	2023	SGHC operations report	

[1] Ensuring firm renewable energy generation at the SGHC reduces the need to use thermal plants for power generation.

EXPECTED OUTCOMES

Indicators	Unit of measurement	Baseline		Midterm		Target		Means of verification	Comments
		Value	Year	Value	Year	Value	Year		
OUTCOME 1: Maintain the availability and reliability of energy generation and transmission at the SGHC									
1.1 Operating availability - generation[2]	%	93.4	Historical average	91.05	2021	91.05	2023	SGHC operations report	The program is expected to help maintain SGHC availability and reliability levels, which would decline if the modernization were not to be implemented.
1.2 Forced unavailability - generation	%	0.41	Historical average	0.41	2021	0.41	2023		
1.3 Transmission availability - 500-kV ring system transformers	%	99.08	Historical average	99.6	2021	99.6	2023		
1.4 Forced unavailability - transmission - 500-kV ring system transformers	%	0.001	Historical average	0.001	2021	0.001	2023		
OUTCOME 2: Extend the useful life of the SGHC									
2.1 hydroAMP condition index	Number	7.2	2018	7.2	2021	9.4	2023	CTM annual report	hydroAMP methodology. M&E.
OUTCOME 3: Strengthen regional integration									
3.1 Regional integration initiatives supported – strengthening the CTM as a binational entity	Number	0	2018	1	2021	1	2023	Midterm evaluation	

[2] Generation operating availability will temporarily decline during execution due to program interventions, which will require additional scheduled outages of the generation units. The plant should return to historical generation levels one year after program end.

OUTPUTS

Outputs	Unit of measurement	Baseline	Baseline year	Year 1	Year 2	Year 3	Year 4	Year 5	Final target	Means of verification	Comments
Component I. Investments for modernization of the SGHC											
Output 1: Speed governors modernized	Number of units	0	2018	-	-	5	4	5	14	Semiannual report	
Output 2: Hydromechanical systems in the spillway and powerhouses modernized	Number of systems	0	2018	-	-	-	-	2	2		
Output 3: Hoisting systems renewed	Number of systems	0	2018	-	-	-	1	1	2		
Output 4: Ancillary mechanical systems modernized	Number of systems	0	2018	-	-	1	2	-	3		
Output 5: Ancillary electrical systems modernized	Number of systems	0	2018	-	-	-	1	-	1		
Output 6: Control systems modernized	Number of systems	0	2018	-	-	-	2	-	2		
Output 7: Main transformer banks replaced	Number of banks	0	2018	-	-	-	1	-	1		
Output 8: Communication, control, protection, and compensation systems in the 500-kV transmission ring renewed	Number of systems	0	2018	-	-	-	-	5	5		
Output 9: Civil infrastructure systems at the plant upgraded	Number of systems	0	2018	-	-	-	4	-	4		
Output 10: Environmental and social management improvement actions implemented	Number of actions	0	2018	-	-	-	3	-	3		
Output 11: Studies for rehabilitation of the turbine-generator group completed	Number of studies	0	2018		-	-	2	-	2		
Output 12: Asset management plan implemented	Number of plans	0	2018	-	1	-	-	-	1		

Outputs	Unit of measurement	Baseline	Baseline year	Year 1	Year 2	Year 3	Year 4	Year 5	Final target	Means of verification	Comments
Component II. Institutional strengthening and program supervision and management											
Output 13: Institutional strengthening plans implemented (1. Management; 2. Communications and gender; 3. Digitalization; 4. Risk)	Number of plans	0	2018	2	2	-	-	-	4	Semiannual report	Pro-gender

FIDUCIARY AGREEMENTS AND REQUIREMENTS

Country:	Eastern Republic of Uruguay and Argentine Republic
Program:	Modernization of the Salto Grande Binational Hydroelectric Complex
Executing agency:	**Argentina loan:** Department of Energy acting through the Salto Grande Joint Technical Commission (CTM). **Uruguay loan:** The CTM
Prepared by:	Ana Niubó, Brenda Alvarez (FMP/CAR); Emilie Chapuis, and Abel Cuba (FMP/CUR).

I. EXECUTIVE SUMMARY

1.1 The Salto Grande Hydroelectric Complex (SGHC) is operated by the Joint Technical Commission (CTM), a binational agency created by the governments of Argentina and Uruguay. The CTM manages the SGHC's operations and is comprised of delegates of both countries, to whom the commission's technical and administrative team members report. It is an international agency with legal status and management authority to fulfill its mission. In its capacity as the executing agency of this loan, the CTM will create a project team within its own organizational structure.

1.2 The CTM formulated a US$960-million investment plan for the next 25 years. For the next five years, the Bank will contribute to this amount through a US$80-million loan; no local counterpart resources or other multilateral financing are envisaged. The Bank used the Institutional Capacity Assessment System (ICAS) to assess the executing agency's capacity to plan, execute, and implement control of the resources, and determined that the executing agency has sufficient operating, technical, and administrative capacity to execute the program satisfactorily.

1.3 The CTM has no experience in managing IDB-financed sovereign-guaranteed operations.[1]

II. THE EXECUTING AGENCY'S FIDUCIARY CONTEXT

2.1 For the Argentine Republic, the executing agency of the program will be the Department of Energy acting through the CTM, and for the Eastern Republic of Uruguay, it will be the CTM. The CTM is made up of delegations from Argentina and Uruguay comprising the plenary commission and serving as the executing agency, specifically as the body that manages the areas that directly support the Plenary Commission as well as the areas responsible for power production and

[1] The CTM had experience with the IDB more than 30 years ago (240/OC-RG and 275/OC-RG) under Bank policies and procedures substantially different from those currently in effect.

transmission and those responsible for administering and executing the Plenary Commission's policy and administrative decisions.

2.2 The CTM's operating budget is divided into shared and non-shared expenditures financed by each government. The shared expenditures are financed symmetrically (50% from Argentina and 50% from Uruguay). The non-shared expenditures are financed on an as-needed basis, as agreed independently with each national government. This program falls under the shared expenditures budget.

2.3 The CTM's accounting department is responsible for budgetary and financial management, while its resources department is responsible for procurement management. All processes are supported by an enterprise resource planning (ERP) system, which is monitored through a system of electronic files.

2.4 The ERP system, whose modules are fully customizable, can be adapted as needed to manage the Bank's requirements, set out as part of this agreement, specifically those concerning procurement, budgeting, accounting, and disbursement requests.

2.5 The institutional capacity assessment established that the CTM has well-defined and formalized fiduciary policies, procedures, and processes supported by automated systems. The assessment also established that CTM staff associated with those functions have experience in these areas.

III. Fiduciary Risk Evaluation and Mitigation Actions

3.1 The institutional capacity assessment found that the CTM has a satisfactory capacity for fiduciary management of the operation. The fiduciary risk is low.

3.2 However, based on the risk management exercise, the CTM's (financial and procurement) fiduciary capacity has been classified as entailing a medium risk due to the CTM's lack of experience with Bank policies and procedures and with the execution of programs financed by international agencies and because it will need to manage the program with the proceeds of both loans.

Table 1. Summary of risks

Institutional capacity and fiduciary risk			
Institutional capacity	Satisfactory	**Tool:**	ICAS
Fiduciary risk	Low	**Tool:**	ICAS
Fiduciary risk	Medium	**Tool:**	PRM and CTM opinion

Risk type[2]	Risk	Rating	Mitigation actions
Fiduciary	If the CTM lacks knowledge of and experience with Bank procurement and financial management policies and procedures, bidding processes could be delayed.	Medium-high	• Training in Bank procurement and financial management policies • Training in the transaction record-keeping system required by the Ministry of Finance[3] • Update to the procedures manual • Close monitoring during the preparation of the first set of bidding documents for each type of procurement • Specification of the ad hoc flow of execution of needs and pace of program execution in the program Operating Regulations.

IV. Considerations for the Special Provisions of Contracts

4.1 The agreements and requirements detailed below are included for the purposes of streamlining the project team's negotiation of the contract and its legal aspects in particular. These agreements and requirements will be addressed in either the special provisions or the Sole Annex, as applicable, and they may be updated or amended during program execution upon documentation and authorization from the Bank:

4.2 Execution conditions: (i) the exchange rate applicable for account rendering purposes will be the rate stipulated in Article 4.10(b)(ii) of the loan contract; and (ii) during the disbursement period, audited program financial statements will be submitted to the Bank within 120 days after the end of each CTM fiscal year. The statements will be duly audited by an independent audit firm acceptable to the Bank based on terms of reference agreed upon with the Bank. The final audit report will be submitted to the Bank within 120 days after the date stipulated for the final disbursement under each loan.

V. Procurement Execution

5.1 **Procurement execution.** The Policies for the Procurement of Goods and Works Financed by the IDB (document GN-2349-9) and the Policies for the Selection and Contracting of Consultants Financed by the IDB (document GN-2350-9) will apply. Of the country subsystems approved by the Bank, the reporting system will be used. All procurement processes will be internationally advertised. For the purposes of this program, the CTM will be able to use its procurement system or subsystem.

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[2] Public management and governance; financial management; procurement.

[3] External Loan Execution Unit (UEPEX) management system.

5.2 **Procurement of works, goods, and nonconsulting services:** Contracts for works, goods, and nonconsulting services under the program that are subject to international competitive bidding (ICB) will be executed using the standard bidding documents issued by the Bank. Those subject to national competitive bidding (NCB) will be executed using country bidding documents agreed upon with the Bank. The project sector specialist is responsible for reviewing the technical specifications of procurements during the preparation of the selection processes. No direct contracting is envisaged.

5.3 **Selection and contracting of consulting services:** Consulting services contracts generated under the program will be executed using the standard request for proposals issued by the Bank. The project sector specialist will be responsible for reviewing the terms of reference for the contracting of consulting services. No direct contracting is envisaged.

5.4 **Selection of individual consultants:** Individual consultants will be selected based on their qualifications to perform the job, and a comparison of at least three candidates will be required. The program sector specialist will be responsible for reviewing the terms of reference for the contracting of consulting services.

5.5 **Advance procurement (document GN-2259-1/OP-507):** The Bank may retroactively finance, as a charge against the proceeds of each loan, up to US$16,000,000 (equivalent to 20% of the amount of each proposed loan) in eligible expenditures incurred by the borrower prior to the approval date of each loan in the categories of goods, works, and/or consulting services, provided that requirements substantially similar to those established in the loan contract have been met. Such expenditures will have been incurred on or after 23 July 2018 (the project profile approvement date),[4] but under no circumstances may they include expenditures incurred more than 18 months prior to the approval date of each loan by the Bank's Board of Executive Directors.

5.6 **Retroactive financing.** In accordance with the Bank Policy on Retroactive Financing and Advance Procurement (GN-2259-1/OP-507), the Bank may retroactively finance, as a charge against the proceeds of each loan, up to US$16,000,000 (equivalent to 20% of the amount of each proposed loan) in eligible expenditures incurred by the borrower prior to the approval date of each loan in the categories of goods, works, and/or consulting services, provided that requirements substantially similar to those established in the loan contract have been met. Such expenditures will have been incurred on or after 23 July 2018, but under no circumstances may they include expenditures incurred more than 18 months prior to the approval date of each loan by the Bank's Board of Executive Directors.

5.7 **Thresholds for international bidding and international shortlist (US$ thousands):** These amounts were set to ensure the efficient and satisfactory execution of the operation, bearing in mind the binational nature of the operation, the technical complexity of the procurement envisaged for this project, and the CTM's execution capacity.

[4] Date of Bank approval of the project profile.

Table 2. Thresholds for international bidding and international shortlist

Works			Goods			Consulting services	
ICB	NCB	Shopping	ICB	NCB	Shopping	International advertising for consultants	100% National shortlist
≥ 25,000,000	< 25,000,000 ≥ 350,000	< 350,000	≥ 1,500,000	< 1,500,000 ≥ 100,000	< 100,000	> 200,000	≤ 1,000,000

Table 3. Main procurement items

Activity	Selection method	Estimated date of call for bids/ invitation	Estimated amount US$
Works			
Speed governor modernization design, delivery, assembly, and start-up	ICB	April 2019	12,600,000.00
Replacement of the mobile cranes and equipment for moving and handling SGHC outputs	ICB	April 2019	1,950,000.00
Supply and start-up of the new SGHC automation and control system as defined in consulting engagement PROY0091	ICB	November 2020	6,300,000.00
Renewal of the control, protection, and metering system for the four stations of the ring and for the output system of the SGA and SGU substations' medium-voltage network	ICB	November 2020	8,800,000.00
Installation, assembly, and start-up of 100-MVAr inductors for switching stations	ICB	April 2019	4,500,000.00
Design and construction of an oil spill containment system in plant transformer enclosures and switching station transformers and reactors	NCB	June 2019	1,540,000.00
Nonconsulting services			
Overhaul of radial spillway gates	ICB	May 2021	7,710,000.00
Installation of optical ground wire in 500-kV lines using the live-line working method	ICB	November 2019	2,900,000.00
Consulting firms			
Consulting services to develop the technological integration plan for the power plant's automation, control, protection, metering, and communication system	QCBS	March 2019	480,000.00
Consulting services to support the execution unit with overall intervention coordination, specialized technical assistance, and intervention inspections at the factory and the work site	QCBS	April 2019	3,500,000.00
Follow up studies to identify the alternative to turbine-generator group rehabilitation to be implemented and preparation of the terms of reference for the procurement of the first turbine	QCBS	July 2020	2,000,000.00

Note: Will be processed through the procurement plan execution system under a single procurement plan.

5.8 **Procurement supervision.** Procurement processes will be subject to ex ante supervision, with the exception of those processes that involve shopping or individual consultants, which will be subject to ex post supervision. The ex post review visits will be carried out every 12 months. The ex post review reports will include at least one physical inspection visit chosen from the procurement processes subject to ex post review. At least 10% of reviewed contracts will be physically inspected during the program.

Table 4. Thresholds for ex post review

Shopping	Individual consultants
< 100,000	< 50,000

5.9 **Special provisions. Measures to prevent prohibited practices:** The borrowers and the executing agency will promptly inform the Bank of any allegation or suspicion of prohibited practices related to the program, as provided in the Bank's Policies for the Procurement of Goods and Wroks Financed by the IDB (document GN-2349-9) and its Policies for the Selection and Contracting of Consultants Financed by the IDB (document GN-2350-9).

5.10 **Records and files.** Documentation of procurement processes will be kept in the offices of the CTM, as the entity responsible for program procurement. For ex post reviews, records and files of all documentation generated in procurement processes will be kept duly collated, classified, and updated.

5.11 **Conflict resolution.** The CTM operates under international law. Therefore, it is afforded special treatment, including jurisdictional immunity implemented through and complemented by the existence of a specific judicial authority, which is the only judicial entity with competent jurisdiction to act on matters to which the CTM is party: the Salto Grande international arbitration tribunal. The exclusive jurisdiction of the Salto Grande international arbitration tribunal will be enforced during the resolution of any potential dispute between the CTM and contractors in the context of program procurement financed by the two IDB loans. Any contracts that the CTM enters into with contractors or suppliers will include the standard dispute resolution clause used by the CTM, which provides that the exclusive jurisdiction of the Salto Grande international arbitration tribunal will necessarily apply for dispute resolution purposes.

VI. FINANCIAL MANAGEMENT

6.1 **Programming and budget.** The CTM's annual budget is allocated through each country's budget law.

6.2 The CTM carries out a yearly and multiyear planning process based on the requirements of each of its technical areas: generation, operations, transmission, engineering, resource management, and accounting and finance. The process is implemented on the basis of a budget manual that establishes the procedures and activities to be conducted during the second half of each year leading to the approval of the budget.

6.3 The annual plan is based on the CTM's general strategic plan, which in recent years has focused primarily on the maintenance of the power plant's operations.

6.4 The annual plan is reflected in the CTM budget approved by the CTM board of directors and internally allocated on an autonomous basis, given the commission's status as an international entity that is legally and operationally independent from the two countries.

6.5 An exemption to the value-added tax on procurement carried out by the CTM in Argentina is currently being requested. However, should the request be unsuccessful, the CTM will provide a sufficient budgetary allocation to cover the expenditures associated with this tax.

6.6 **Accounting and information systems.** The economic and financial process that encompasses the budgetary, financial, and accounting subsystems used by the CTM is supported by the relevant procedures manual.

6.7 The information system that supports the aforementioned processes is K2B Future Proof, which is an ERP system. It covers most of the software functions associated with the following processes:

(i) Supply of goods and services (request, procurement, taking of delivery and storage of goods).

(ii) Economic and financial processes (payments, collections, accounting, budget, wages).

6.8 Its operational modules are: requests, procurement, contracts, storage, accounts payable, accounts receivable, accounting, budget, cash management, fixed assets, reporting, and indicators. All transactions and registrations completed through the ERP system are integrated and follow a process-based design.

6.9 The general manager's office is responsible for ERP system operations, ensuring proper integration of the system's functions and resolving conflicts of interest.

6.10 Program transactions will be included in CTM financial statements under specifically assigned accounts. The accounts that will be assigned for program execution and entries will need to be determined to ensure that the information entered is clear and easily identifiable.

6.11 The CTM accounting department will be responsible for program accounting. Due to the requirements of Argentina's Ministry of Finance, the External Loan Execution Unit (UEPEX) system will be used to record transactions.

6.12 The CTM's financial statements are prepared in accordance with International Financial Reporting Standards. The program's special-purpose financial statements will be prepared on a cash basis in accordance with the Financial Management Guidelines for IDB-financed Projects (document OP-273-6) and the Guidelines for Financial Reports and External Audits. The following financial statements will be required: (i) statement of cash received and disbursements made; and (ii) statement of cumulative investments.

6.13 **Disbursements and cash flow**. Disbursements will be made primarily in the form of advances, based on actual liquidity needs and supported by adequate financial and disbursement projections. These advances will preferably be made every six months, once reporting has been filed for at least 80% of the amount advanced.

The submission of accounting forms and the financial planning spreadsheet will be required. The CTM may make direct payment to vendors, provided they are domiciled outside of Argentina and Uruguay and the payments are in amounts previously agreed upon with the Bank. The eDisbursements system will be used to process disbursement requests. The exchange rate for the conversion of local currency payments into the currency used for the loan will be the prevailing rate on the date of payment.

6.14 Uruguay loan: The following accounts will be opened: (i) the Ministry of Economy and Finance (MEF) will open an account in U.S. dollars in the name of the program at the Central Bank of Uruguay, which will receive disbursements from the Bank, will be used exclusively for the program, and will be of a type from which payments cannot be made; and (ii) the CTM will open two specific program accounts at Banco de la República Oriental del Uruguay [a State-owned commercial bank], one in U.S. dollars and the other in Uruguayan pesos; these will be paying accounts, and the CTM may request transfers from the Central Bank account to either one of these accounts based on its liquidity needs. To process the disbursements, the CTM will submit the respective requests to the Bank through the MEF. The MEF will make the relevant record entry and channel the request as expeditiously as possible. Participation by the MEF is not equivalent to a prior review or oversight of program execution.

6.15 Argentina loan: The following accounts will be opened: (i) The Ministry of Finance will open an account in U.S. dollars in the name of the program to receive the loan proceeds and to be used exclusively for the program; and (ii) the CTM will open two accounts to be used exclusively for the program: (1) an account in U.S. dollars into which the CTM will receive the loan proceeds that were previously credited in the Ministry of Finance account; and (2) an account in Argentine pesos where the CTM may, if necessary, convert the funds into local currency.

6.16 **Internal control.** As part of its organizational structure, the CTM has an internal audit unit, known as the administrative and financial audit unit, which reports to the general manager. It is responsible for administrative and accounting oversight of all matters related to the CTM's economic, financial, and equity performance. The unit's work method and the structure of its reports reflect the internal audit standards of the Instituto de Auditores Internos de Argentina [Internal Auditors' Institute of Argentina]. Coordination arrangements will be made with this unit to ensure that its work plan includes a review of the program during the life of the project.

6.17 **External control and reports**. External control of the program will be entrusted to an independent external audit firm acceptable to the Bank. The CTM will be responsible for contracting this firm, which may be the same firm that audits the CTM's financial statements to ensure a comprehensive oversight vision of the CTM and its management of the program. The contracting process will follow the guidelines of operational policy OP-273-6, which establishes that the terms of reference will have been previously agreed upon with the Bank and that both the terms of reference and the proposal request will require the Bank's prior no objection. To ensure the effectiveness of the audit work, a firm will be hired no later than in September of the execution period's fiscal year to be audited.

6.18 During the disbursement stage, annual financial audit reports and the respective evaluation of internal controls will be submitted for each fiscal year by 30 April of

the following year. The financial audit report for the end of the program will be submitted within 120 days following the final disbursement. The audit costs will be financed with the proceeds from the Bank's loan.

6.19 **Supervision**. The following table shows the fiduciary supervision plan.

Table 5. Fiduciary supervision plan

Supervision activity	Nature and scope	Frequency	Responsibility	
			Bank	Other
Operational	Review of status report	Semiannual	Fiduciary and sector team	Argentina's Ministry of Finance
	Portfolio review with the executing agency	According to the schedule agreed upon by Argentina's Ministry of Finance and the Bank and by the MEF and the Bank	Chief of operations; fiduciary and sector team	CTM/IDB/ Argentina's Ministry of Finance/ Uruguay's MEF/ Argentina's Cabinet Chief
Financial	Update to the cash flow and disbursement schedule	With each request for an advance when program circumstances so require	Fiduciary and operational specialists	CTM
	Supervision visits	Annual	Fiduciary specialist	CTM project team
	Financial audit	Annual	Fiduciary specialist	CTM/external auditor
Compliance	Fulfillment of conditions precedent	One-time	Fiduciary and sector team / operations analyst	CTM / IDB
	Pro forma budget and budget allocation	Annual	Fiduciary specialist	CTM
	Presentation of audited financial statements	Annual	Fiduciary specialist	CTM/auditor

6.20 **Execution arrangements**. The program Operating Regulations will provide a detailed description of program execution.

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-__/18

Regional. Loan ____/OC-RG to the Argentine Republic
Modernization of the Salto Grande Binational Hydropower Complex

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with the Argentine Republic, as borrower, for the purpose of granting it a financing aimed at cooperating in the execution of the program “Modernization of the Salto Grande Binational Hydropower Complex.” Such financing will be for an amount of up to US$40,000,000 from the resources of the Bank’s Ordinary Capital, and will be subject to the Financial Terms and Conditions and the Special Contractual Conditions of the Project Summary of the Loan Proposal.

(Adopted on ___ _____ 2018)

LEG/SGO/CSC/EZSHARE-456533210-51163
Pipeline No.: RG-L1124

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-__/18

Regional. Loan ____/OC-RG to the Eastern Republic of Uruguay
Modernization of the Salto Grande Binational Hydropower Complex

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with the Eastern Republic of Uruguay, as borrower, for the purpose of granting it a financing aimed at cooperating in the execution of the program “Modernization of the Salto Grande Binational Hydropower Complex.” Such financing will be for an amount of up to US$40,000,000 from the resources of the Bank’s Ordinary Capital, and will be subject to the Financial Terms and Conditions and the Special Contractual Conditions of the Project Summary of the Loan Proposal.

(Adopted on ___ _____ 2018)

LEG/SGO/CSC/EZSHARE-456533210-51160
Pipeline No.: RG-L1124