

Hydropower Sustainability Environmental, Social and Governance Gap Analysis Tool

May 2020

Operation Stage Assessment: São Simão HPP, Brazil
July 2021



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Hydropower Sustainability Environmental, Social and Governance Gap Analysis Tool



About the HESG	The Hydropower Sustainability Environmental, Social and Governance Gap Analysis Tool (HESG) enables hydropower project proponents and investors to identify and address gaps against good international industry practice. The HESG is based on the assessment framework of the Hydropower Sustainability Assessment Protocol (HSAP) and draws from the definitions of good international industry practice of the Hydropower Sustainability Guidelines on Good International Industry Practice (HGIIP).
Intended users and uses	<p>The HESG includes three separate stage tools: Preparation, Implementation and Operation. These reflect the different stages of hydropower development and have been designed to be used as standalone documents. Each tool provides an action plan to help project teams address any gaps against good practice.</p> <p>Official HESG assessments are carried out by accredited assessors, who take an evidence-based approach. All findings are supported by objective evidence, which is factual, reproducible, objective and verifiable. The HESG is most effective when operators and developers commit to implement the recommendations provided and resolve identified significant gaps. In addition, the tool is aligned with the safeguards and standards of international financial institutions and can be used to attract climate-aligned investment.</p> <p>Hydropower development and operation may involve public entities, private companies or combined partnerships, and responsibilities may change as the project progresses through its life cycle. It is intended that the organisation with the primary responsibility for a project at its particular life-cycle stage will have a central role in any HESG assessment.</p>
Structure of the tool	The HESG comprises 12 sections that cover the environmental, social, governance and climate change topics of the HSAP and HGIIP. A summary at the beginning of the report presents any significant gaps against basic good practice and outlines an action plan for improved performance. Within each section, requirements for good international industry practice are presented and project findings are provided. For each finding, a key indicates whether the requirement is met. A summary section analyses significant gaps and identifies each one with the symbol ●.
Supporting resources	Additional guidance on the structure, content and history of the HESG can be found online at: www.hydrosustainability.org
Version date	May 2020

Operation

A. Assessment Details

Project sponsor	UHE São Simão Energia S.A. / SPIC Brazil
Assessor(s)	Margaret Trias (Accredited Assessor), Antonio Fonseca (Provisionally Accredited Assessor)
Assessment objective	Compare the São Simão HPP against good international industry practice as described in the sustainability tools and the Hydropower Sustainability Guidelines on Good International Industry Practice (HGIIP).
Assessment dates	28 th June – 9 th July 2021 with a site visit between July 6 th and July 9 th
Assessment report date	30 July 2021
Prepared for	UHE São Simão Energia S.A. / SPIC Brazil
Executive Summary	<p>Since SPIC Brazil started operating the São Simão HPP, community engagement and activities have intensified. Interviews with external stakeholders consistently revealed that the relationship with community has greatly improved under the new management, highlighting openness and transparency in communications and an increase in the number of community-based benefits and activities, community training, capacity building and awareness campaigns and a collaborative approach to the development and implementation of the Emergency Action Plan required by the National Dam Safety Plan legislation. With the advent of the COVID-19 pandemic, the municipalities surrounding the project and reservoir asked the company for support to the pandemic, and were promptly assisted with resources, supplies and support in infrastructure, among other actions taken by the company in this regard. Interviews were carried out with municipal representatives from São Simão, Santa Vitória, Chaveslândia district, residents of São Simão and Paranaiguara and employees of the Fishermen's Association. Most agree that that with the start of operations under SPIC Brazil, the plant's ties with communities have improved, and the company's relationship with its neighbours is much better than at the time of the former operator.</p> <p>In 2018, SPIC Brazil team took over the operation of the São Simão HPP that was constructed in the 1970's without any environmental impact assessment or baseline information. In 2018, limited environmental and social management information from the previous owner was available and therefore environmental and social policies and procedures had to be developed practically from scratch. A highly engaged and empowered E&S team under the supervision of flexible and encouraging management has shown a high level of commitment to ESG issues and quality, implementing an integrated management system in line with ISO certification standards.</p>
Limitations of the assessment	This assessment was carried out during the global COVID-19 pandemic when international travel was limited by a team of two assessors. Antonio Fonseca, based in Brazil, was able to travel to the project site and to neighbouring communities following COVID-19 protocols and procedures. Both assessors participated in remote interviews following the site visit.

B. Project Details

Project name	São Simão HPP (UHE São Simão)
Country	Brazil
Location	Municipality of São Simão, State of Goiás
Purpose	Power Generation
Developer / Owner	Developer: CEMIG (State-owned power utility of Minas Gerais) Owner (since 2018): SPIC Brazil (30-yr concession up to 2048)
Financer(s)	Not known
Installed capacity (MW)	1,710 MW
Construction start date (planned or actual)	August 1973
Commercial Operations Date (planned or actual)	June 1978 (last turbine generator unit commissioned in June 1979)
Annual average generation (GWh / year)	10,538 GWh
Associated infrastructure: road(s) (length)	Not known
Transmission lines and sub-stations (names, lengths and capacities)	A 500 m 550 kV transmission line from the crosses the São Simão powerhouse crosses the Paranaíba River and connects to the substation belonging to the electricity transmission company CTEEP (Companhia de Transmissão de Energia Elétrica Paulista), located on the left bank of the river, just downstream from the dam.
Total cost (USD m)	Not known
Annual operating costs (USD m)	Operating costs (without income tax and financial costs) for 2020: 561 million Reais (approx. USD 109 million). The hydropower plant's annual financial statements are publicly available on SPIC Brazil's website.
Project development cost not including transmission (USD m)	Not known
Transmission costs for project development (USD m)	Not known
Specific investment cost (USD m / MW)	Not known
Levelized energy cost (USD / kWh)	Not known
Dam type	Compacted earth fill, Compacted Rockfill and Concrete Gravity section
Dam height (m)	127 m
Dam length at crest (m)	3,600 m
Units (number, type, MW)	6 Francis turbines, 285 MW each
Reservoir area at Full Supply Level (FSL) (km ²)	677.57 km ² (normal water level)
Average net head at FSL (m)	72 m
Average flow (m ³ / s)	2,380.70 m ³ /s
Design flow (m ³ / s)	Turbine design flow 425 m ³ /s each. Total 6 turbines: 2,550 m ³ /s
Load factor	75%

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Number of physically displaced households	Not known
Power density (MW / m ²)	2.8 W/m ²
Emissions intensity (gCO ₂ e / kWh)	Not estimated
Contacts / website	https://www.spicbrasil.com.br/geracao-de-energia/

São Simão HPP

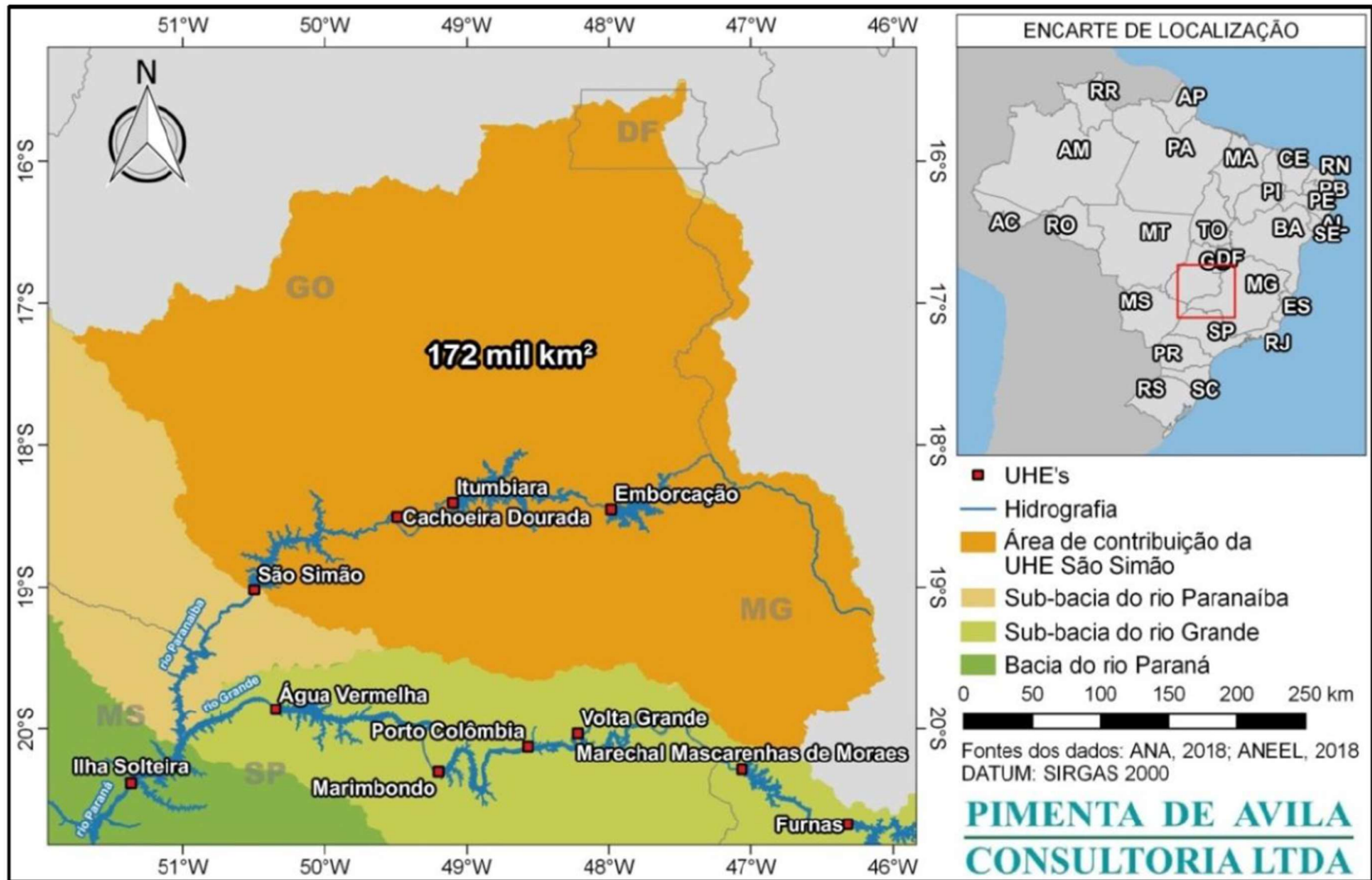


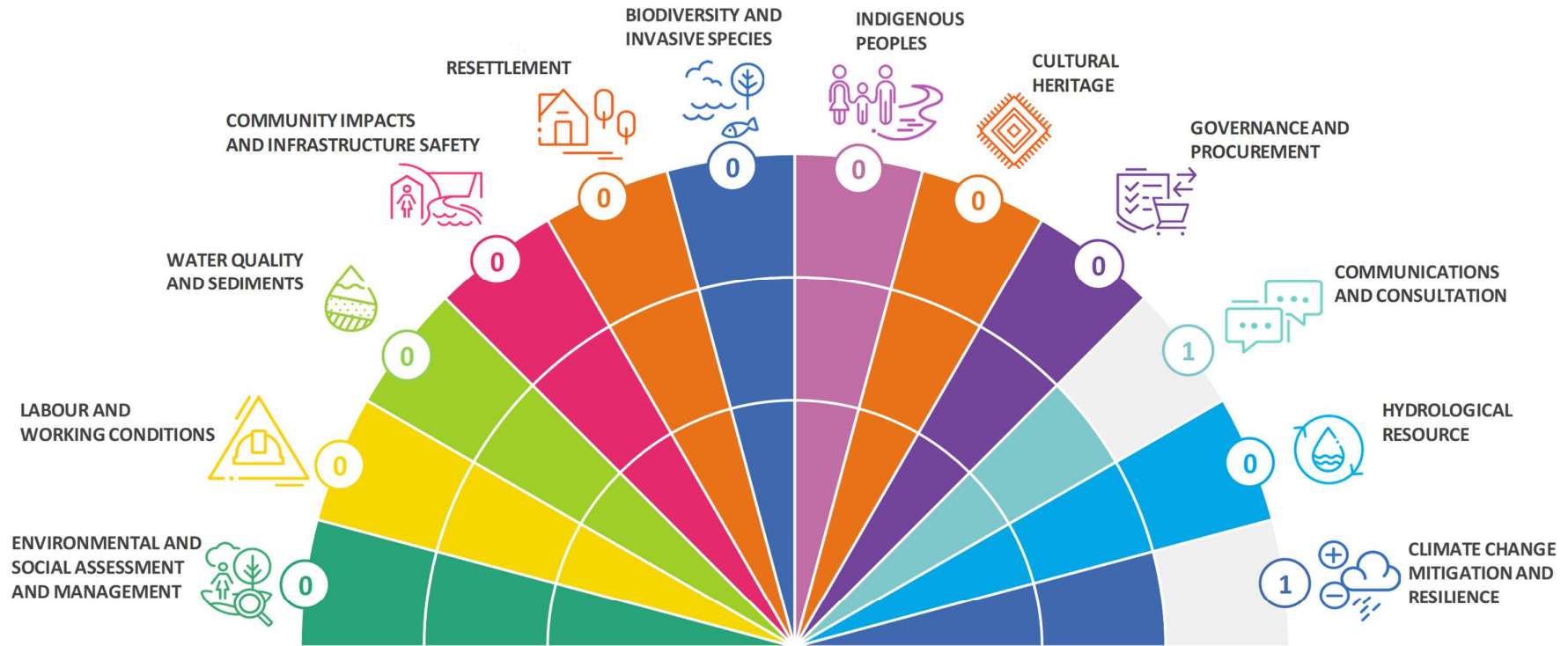
Figure 1 – Location Map of dam site

São Simão HPP



Figure 2 – Aerial views of the São Simão HPP: during a period of high flow (on the right) with all 9 spillway gates open, the flip bucket/ski jump dissipator discharging flows downstream in the Paranaíba River, and left: view of the tailrace area where flow is being discharged downstream.

C. HESG Gap Analysis Diagram



Operation

D. Significant gaps

List of significant gaps:		Sections										
		1. Environmental and Social Assessment and Management	2. Labour and Working Conditions	3. Water Quality and Sediments	4. Community Impacts and Infrastructure Safety	5. Resettlement	6. Biodiversity and Invasive Species	7. Indigenous Peoples	8. Cultural Heritage	9. Governance and Procurement	10. Communications and Consultation	11. Hydrological Resource
1.	GHG emissions have not been publicly disclosed.									X		
2.	GHG emissions have not been estimated for the project.											X
3.												
4.												
5.												
6.												
7.												
8.												
9.												
10.												
11.												
12.												
13.												
14.												
15.												
NUMBER OF SIGNIFICANT GAPS BY SECTION:										1		1
TOTAL NUMBER OF SIGNIFICANT GAPS:		2										

E. Environmental and Social Action Plan (ESAP)

The following actions are recommended to address and resolve the significant gaps.							
Section	Significant gaps	Action(s)	Responsibility	Indicator of achievement	Timeframe		
					<12 months	12-24 months	>24 months
10.	GHG emissions have not been publicly disclosed.	Once GHG are estimated and validated, disclose to the public (e.g. include in annual sustainability reporting)	São Simão/SPIC Brazil E&S team	<ul style="list-style-type: none"> Inclusion in Annual Sustainability Report or posting on website 	X		
12.	GHG emissions have not been estimated for the project.	Estimate GHG Emissions (e.g. using G-res tool)	External consultant with validation of results by IHA	<ul style="list-style-type: none"> GHG emissions report GHG Validation Report 	X	X	

1 Environmental and Social Assessment and Management



Scope and Intent	
<p>This section addresses the plans and processes for environmental and social issues management. The intent is that negative environmental and social impacts associated with the hydropower facility are managed; avoidance, minimisation, mitigation, compensation and enhancement measures are implemented; and environmental and social commitments are fulfilled.</p>	
Background	
Identify the main environmental and social issues during operation	<p>Due to the recent tailings (mining) dam accidents including dam failure in Brazil, and the legal obligation through the National Dam Safety Plan legislation to implement an Emergency Action Plan (EAP), the São Simão HPP began to develop and implement an EAP in 2018 dedicating significant resources to stakeholder engagement and the emergency planning process. Chaveslândia, a small town of around 2,000 people is located on the left bank (i.e. on the State of Minas Gerais riverbank) of the Paranaíba River, downstream from the São Simão powerplant in the district of Santa Vitória Municipality.</p> <p>Other important downstream features and stakeholders include the São Simão Industrial district with its important fluvial harbour where the Paranaíba River’s navigation routes begin, and which depend on the flows being released from the upstream hydropower stations on the river. Brazil is currently experiencing a water crisis due to the prolonged drought, causing low flows and reservoir levels in the Paranaíba River system which has led the country to rely more heavily on thermal power generation.</p> <p>The invasive species Golden Mussel (<i>Limnoperma fortunei</i>) is another issue that has impacted the Paranaíba River system in Brazil. This invasive mussel species was introduced to South America through seawater from the ballast water of cargo ships coming from Asia. With no natural predator, the species has multiplied and has reached the upstream Prata River watershed and the Paranaíba River, affecting several hydropower plants, including the São Simão HPP.</p>
Identify the environmental regulator	<p>As the plant is located on a river that forms the boundary between the states of Goiás and of Minas Gerais, licensing for this facility is the responsibility of the Federal environmental agency – IBAMA (Instituto Brasileiro de Meio Ambiente e dos Recursos Naturais Renováveis).</p>
Identify other regulators (e.g. on land, water use, Indigenous Peoples)	<ul style="list-style-type: none"> • ANA (Brazil’s National Water Agency) grants water rights: current grant (“outorga”) for the São Simão Energia S.A. Energia S.A. Nº 448 is valid until May 10th, 2048.

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	<ul style="list-style-type: none"> • Minas Gerais State Forest Institute: grants vegetation clearing-suppression authorizations to clear vegetation under the transmission line (IEF Nº 06020000061/19, Nº 06020000060/19) and for vegetation clearing related to the modernization works (Nº 06020000716/19), these are valid until October 22nd, 2023. • Minas Gerais State Fire Department: conduct regular inspections. Inspection Nº 20190349232 is valid until December 13th, 2024. • Instituto Chico Mendes ICMbio/IBAMA: grants authorization for capture and release and transportation of fish, for monitoring, evaluation and assessment purposes. Authorization Nº 10306 is valid until December 6th, 2022. In addition, a new authorization for capture and collection of biological material (fish, terrestrial fauna and flora) was received on June 10th 2021 and is valid for four years until June 10th, 2025. • Goiás State Environmental Agency (SEMAD) and the Goiás State Water Agency (SEMARH) grant rights to use groundwater (well water used for potable water at the hydropower plant): SEMAD Nº 30433/2006 – 11103 and SEMARH Nº 170011792/06-11.103 currently under renewal process since August 22nd, 2019. • Minas Gerais State Water Agency URG Triângulo Mineiro e Alto Paranaíba: grants the of the right to use well water: Nº 44724/2016 valid until June 5th, 2024.
Summarise the ESIA regulatory requirements	<p>The São Simão HPP was built in the 70's and began operating in 1979, a period when there was no environmental licensing process. After the enactment of the new constitution in 1988 and the regulation requiring environmental licensing for potentially polluting activities, projects constructed prior to 2000 are required to go through a regularization environmental licensing process to obtain an Operating License and be in compliance with the legislation.</p> <p>The São Simão HPP went through this process and obtained an Environmental Operating License, which has since been renewed. The facility's current Environmental Operation License (<i>Licença Ambiental de Operação</i>) was granted by IBAMA, the environmental agency (IBAMA Nº 569/2006 2nd renewal and 2nd ratification) and is valid until January 2023.</p> <p>The São Simão Power Plant is going through a Modernization Process, for this reason the federal environmental agency – Instituto Brasileiro de Meio Ambiente e dos Recursos Naturais Renováveis/IBAMA, issued the Official Communication IBAMA Nº 7337671/2020 – GABIN on April 2nd 2020, authorizing the modernization activities under the mandate of the Environmental Operation License as well as general activities that must be maintained during the pandemic.</p>
Describe the non-physical cultural heritage in the project area	
Other relevant information	The São Simão Hydroelectric Power Project (HPP) was developed and built by the Electric Energy Company of the State of Minas Gerais (CEMIG) and began construction in 1973 and

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	<p>commercial operation in 1978. At the time there were no environmental regulations or environmental licensing processes applicable to the project in Brazil, therefore an environmental impact assessment was not carried out. After the implementation of the Brazilian environmental legislation in 1986 and with the new constitution in 1988, all energy projects have required prior environmental licensing. Projects built before the enactment of the legislation were required to go through an environmental licensing regularization process to comply with the new legislation. This process took place while the operator of the HPP was still CEMIG. At the end of CEMIG's concession period, SPIC bid on and was awarded a 30-year concession by the Federal Government. All responsibilities arising from environmental licensing and regulation must continue to be fulfilled by SPIC in accordance with the existing Operating License.</p> <p>The modernization programme is a 10-year programme that includes rehabilitation of the turbine generator units, replacement or rehabilitation of equipment (transformers, gates, etc.) and is being implemented in phases (contract packages). In 2020, SPIC Brazil started Package Three pertaining to the modernization of the spillway, hydraulic intake and tailrace system. Fieldwork started in March 2021, and, by the end of 2021, SPIC will already have the first spillway chute and the first hydraulic unit rehabilitated. Modernization Project Package Five, focused on the complex technology of the generating units, auxiliary equipment, supervision and control system protection, speed regulators and tension was planned for 2020 and was postponed due to pandemic conditions. It will be started during the second quarter of 2021.</p>
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Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
1.1 Assessment		
Systematic processes are in place to identify any ongoing or emerging environmental and social issues associated with the operating hydropower facility	✓	<ul style="list-style-type: none"> The São Simão HPP was built in the 70's and began operating in 1979, when there was no environmental licensing process. After the enactment of the new constitution in 1988, the power plant went through an environmental licensing regularization process to obtain an Operating License and be in compliance with legislation. In 2006, to obtain the Regularization Environmental Operation License, CEMIG carried out an environmental assessment and prepared an Environmental Basic Plan for Regularization, which was subsequently approved by IBAMA. This environmental plan defined several environmental monitoring programs that needed to be

Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
		<p>implemented continuously during operations as stipulated in the license conditions. These monitoring programs included:</p> <ul style="list-style-type: none"> ○ Erosion Monitoring Program ○ Water Quality Monitoring Program ○ Ichthyofauna Monitoring Program ○ Terrestrial Fauna Monitoring Program ○ Limnological Monitoring Program <ul style="list-style-type: none"> • Annual reports are prepared and submitted to IBAMA with the results of all environmental and social monitoring reports implemented during the operation, disclosing any environmental and social issues identified during the reporting period. • The process that was implemented by the previous operator (CEMIG) and described in the points above provides the basis for ongoing environmental and social management at the plant with some changes in licensing requirements that took place over the years.
The processes utilise appropriate expertise	✓	<ul style="list-style-type: none"> • Specialized environmental consultants, accredited by IBAMA are hired to implement most of the monitoring programs such as: Brandt Meio Ambiente (most of the monitoring programs); SGS Geosol Laboratórios LTDA and BiotAquática Consultoria Ambiental. Écologique Ambiental has been retained to carry out an inventory of vegetation and trees to be cleared as part of the modernization works. • At the São Simão Plant power plant there is a team of environmental and management analysts who manage and supervise the implementation of environmental and social programs. • They also supervise the activities of the contractors working in the powerplant in the modernization, operation and maintenance jobs to assure that all companies work in compliance with the environmental and social guidelines defined by the company's integrated management system. • The annual reports summarizing the project's environmental and social obligations are prepared and compiled by Brandt Meio Ambiente using the information from other consultants that is gathered and compiled by SPIC Brazil's E&S team.
Monitoring programs are in place for identified issues	✓	Annual reporting is submitted to IBAMA, the environmental agency, with the results of all the environmental and social monitoring activities that are implemented during the operation, which include the following:

Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
		<ul style="list-style-type: none"> • Erosion Monitoring Program • Water Quality Monitoring Program • Ichthyofauna Monitoring Program • Limnological Monitoring Program • Invasive Species Monitoring Program: There is a plan in place for the use of molluscicide to combat the invasive Golden mussel infestation, which has been approved by the environmental agency. The monitoring of the results must be submitted annually to IBAMA. • Environmental education programme (for communities) • Communications related to the reforestation activities. <p>SPIC Brazil is in discussions with IBAMA to review and update the monitoring programmes under their operating license (refer to section 6 for more details on proposed modification to ichthyofauna and a new terrestrial fauna monitoring programme).</p>
1.2 Management		
Environmental and social management system is in place to manage measures to address identified environmental and social issues	✓	<ul style="list-style-type: none"> • Specialized environmental consultants, accredited by IBAMA are hired to implement the environmental management plan that is required to be implemented by SPIC under the Operational License and its conditions. • SPIC environmental team and the consultants elaborate the annual reporting that must be submitted to IBAMA. • There is an integrated Environmental, Health & Safety and Quality Management system in place with systematic processes and procedures to identify and cope with any ongoing environmental and social issue associated with all of their facilities including São Simão HPP the operating hydropower facility. • The system is being prepared to be certificated in the ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 and ISO 55001:2014, and according to the schedule presented by the Company the certification process will be concluded by December of 2021.
This management system is implemented utilising appropriate expertise (internal and external)	✓	<ul style="list-style-type: none"> • At the São Simão Plant there is a team of environmental and management analysts who manage and supervise the implementation of environmental and social programs. • They also supervise the activities of the contractors working in the powerplant in the modernization, operation and maintenance jobs to assure that all companies work

Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
		<p>in compliance with the environmental and social guidelines defined by the company integrated management system.</p> <ul style="list-style-type: none"> • They are responsible for collecting information to prepare annual reports on compliance with environmental and social obligations. • This team is supported by specialized environmental consultant companies who are responsible for the operational part of the implementation of environmental and monitoring programs.
Measures in place to guide generation operations are based on social and environmental considerations	✓	<ul style="list-style-type: none"> • The power plant is located in a highly regulated watershed with several major hydropower plants and reservoirs from the upstream most Itumbiara HPP (upstream on the Paranaíba River) all the way down to the Itaipu HPP on the Paraná River. Hydropower generation along these rivers is controlled on a daily basis by the National System Operator (ONS), a governmental agency that plans and dispatches all major hydropower plants in the country on a watershed basis. • Although ONS controls the generation output from the hydropower plants, they must be operated within the constraints defined in their Environmental Licenses. • An Emergency Action Plan - PAE has been prepared by Pimenta de Ávila Consultoria (consultant that also carries out the periodic dam safety reviews), to attend the National Plan for Dam Safety, and is in implementation by SPIC.
1.3 Conformance and Compliance		
Processes and objectives in environmental and social management plans have been and are on track to be met with:		
<ul style="list-style-type: none"> • no major non-compliances 	✓	<p>No major non-compliances have identified, as observed and documented in the Environmental Monitoring Annual Reports that are submitted to the environmental agency. Usually, IBAMA carries out complete audits with site visits only for license renewal processes (each 4 or 10 years depending on the projects), or in case of any identification of a major issue or non-compliance is reported in the annual environmental monitoring reports, or by public complains to the agency.</p> <p>Only very few non-compliance events occur in the water quality monitoring program, where one of the sampling stations is located close to the Ituiutaba municipal sewage treatment plant outfall, and where some parameters are slightly higher than the maximum allowable limits (a few times during dry season). As the water quality reports do not show any non-compliance at other monitoring stations, even the ones located downstream from the sites</p>

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Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
		with problems, IBAMA understands that this is not an issue related to the powerplant but related with the operation of the municipal treatment plant.
• no major non-conformances	✓	No major non-conformances have been identified during the gap analysis.
Environmental and social commitments have been or are on track to be met	✓	Voluntary and contractual commitments in the project area have been met and continue to be met by SPIC Brazil. Some of the voluntary commitments are listed in the next section.
Environmental and social funding commitments have been or are on track to be met	✓	<p>Commitments which have been made and have been funded to date by the project following the acquisition include:</p> <ul style="list-style-type: none"> • Ilha da Imagem Project (social project); • Technical support for landowners to reforest the areas along the reservoir banks, including training and capacity building and annual follow-up and site visits by consultant (Brandt Meio Ambiente); • Financial support for improvements and remodeling of part of the local hospital to help São Simão municipality cope with the COVID-19 pandemic; • Donation of masks and alcohol gel. <p>Some commitments that have been made by SPIC Brazil, were done voluntarily after the company started operating the facility (such as Ilha da Imagem Project), and these were mentioned in interviews with external stakeholders during the site visit.</p> <p>SPIC Brazil also has a Community Fund allowing members of the public to propose social projects to be implemented in communities close to the areas where the company operates, mainly in the northeast region of Brazil where the company has projects. Procedures are included in document SPIC.FCS.001. The SPIC Brazil Community Fund is a voluntary instrument that the company uses to promote local development with a focus on capacity building, training and improving standards of living, adding value to and strengthening the communities where SPIC projects are located by providing non-refundable funds.</p>
1.4 Outcomes		
Negative environmental and social impacts associated with hydropower facility operations are avoided, minimised and mitigated with no significant gaps	✓	It was verified during the site visit and during interviews with external local stakeholders and as reported in the annual environmental monitoring reports, the negative environmental and social impacts associated with the operation of the hydroelectric plant are avoided, minimized, and mitigated with no significant gaps.

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Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
		<p>SPIC Brazil has developed a PAE (Emergency Action Plan) and activities related to its implementation are ongoing: all institutional and local stakeholders have been identified; local committees have been formed and trained; the development of an emergency management App for cell phones has been developed; meetings for training of local leadership have taken place; handbooks for distribution for the community have been printed and are ready to be distributed during the upcoming community training meetings; and a complete simulation exercise is scheduled for the end of the year (depending on the COVID-19 pandemic situation).</p> <p>The plan currently in place to combat the Golden mussel infestation, that has been approved by the environmental agency (IBAMA), is minimizing and mitigating the effects of the invasive species infestation.</p>
Land disturbance associated with development of the hydropower project is rehabilitated or mitigated	✓	<p>As the São Simão HPP has been in operation for over 40 years, the areas that were impacted during the implementation of the project have been completely recovered.</p> <p>According to information received during the site visit, several species of fauna common in the Cerrado forest were spotted over the past year, such as a giant anteater (Tamandua Bandeira), a protected species in Brazil.</p>
The operating hydropower facility or the corporate entity to which it belongs can pay for social and environmental commitments	✓	Annual budgets have been set aside for environmental and social commitments and the company is complying with all of them, as approved by the holding corporation (SPIC Global).

Summary of Findings

Summary and other notable issues	List of significant gaps
<ul style="list-style-type: none"> An integrated Environmental, Health & Safety and Quality Management system that is in place includes systematic processes and procedures to identify and cope with any ongoing environmental and social issues associated with the operating hydropower facility. Specialized external environmental consultants are responsible for the implementation of environmental and monitoring programs and a competent team of 	No gaps have been identified.

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<p>environmental, social and management analysts manage and supervise the activities.</p> <ul style="list-style-type: none">• SPIC Brazil has developed a PAE (Emergency Action Plan) and the activities for its implementation are ongoing (refer to Section 9 for more details on the PAE).	
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2 Labour and Working Conditions

Scope and Intent	
This section addresses labour and working conditions, including employee and contractor opportunity, equity, diversity, health and safety. The intent is that workers are treated fairly and protected.	
Background	
Labour requirements during operation (full-time equivalent)	The team at the power plant is composed of 3 safety technicians, 1 safety engineer, 1 safety coordinator and a safety manager. In the corporate office in São Paulo, the HR team includes 1 director, 2 managers, 1 coordinator and a staff with 11 direct employees. The corporate HSEQ department with 1 manager and 2 coordinators also supports São Simão HPP's activities.
Applicable key human resources regulations	Brazil has a comprehensive set of labour legislation consolidated in one set of regulation called Consolidação das Leis Trabalhistas – CLT, or Labour Law Consolidated Regulations. Every regular employee must be hired in accordance with these regulations.
Applicable key occupational health and safety (OH&S) regulations	<p>Brazil has a standard for OHS regulations inside CLT with a set of standards defined by the Labour Ministry, called Normas Regulamentadoras de Segurança e Saúde no Trabalho – NR (Brazilian Standards for Work Health and Safety).</p> <p>The Regulatory Standard - NR, relating to occupational health and safety (37 regulations), are mandatory for private and public companies and by public bodies of direct and indirect administration, as well as by the bodies of the Legislative and Judiciary Powers, which have employees governed by CLT.</p> <p>This set of regulations and standards are aligned with OHSAS.</p>
Identify the regulator for labour law and OH&S	Ministry of Labour and Employment – Ministério do Trabalho e Emprego
Other relevant information	<p>The project has an integrated Environmental, Health & Safety and Quality Management system in place with systematic processes and procedures to identify and cop with any ongoing environmental and social issue associated with the operating hydropower facility. This Integrated system is fully aligned with OHSAS 18000 and the company is planning to certificate the system in the OHSAS 18001 standard.</p> <p>SCI Brazil has a Be Healthy Program to incentivize employees to adopt healthy habits such as practicing sports, combating stress and anxiety and promote healthy eating habits with</p>

	the services of psychologists, doctors, partnerships with gyms and nutritionists to support employees' wellbeing.
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Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
2.1 Assessment		
A periodically updated assessment has been undertaken of human resource and labour management requirements for the operating facility	✓	<ul style="list-style-type: none"> • Every year, during the preparation of the budget for the following year, the different areas of the company carry out a survey of the needs for hiring. • This year alone, two safety technicians, a specialist in community relations, an environmental analyst, among others, were hired for São Simão HPP. • An Annual Employee Training Plan is also drawn up annually. This plan (which has a single budget at SPIC) is prepared through a survey of training needs, which is carried out by the managers of the different areas of the company, responsible for identifying the gaps. • There is also an Individual Development Plan (PDI in Portuguese), outside the Annual Training Plan, which is carried out for specific employees. There can be mentoring and coaching actions and this is usually for employees in technical areas who are promoted and/or transferred to management positions. • The company carries out an internal survey in order to monitor the opinion of employees and seek to identify improvements, but there is no structured talent retention program. • This survey also aims to monitor the issue of extra salary and benefits. Interviews with several employees during the visit to the plant indicated that the vast majority are very satisfied with the benefits offered by the company. • A performance monitoring and evaluation process, which supports the PDI of each employee is carried out as necessary by your supervisor. This year, for the first time, a 360°-evaluation program will be carried out by the HR management area (e.g. employees can evaluate their supervisors).
The assessment included project occupational health and safety issues, risks, and management measures	✓	There is a corporate procedure in place (SPIC.CORP.005 Competência, Treinamento e Conscientização, or Competence, Training and Awareness) aimed at identifying the skills needed for each position that performs activities that impact on the health, safety, environment and quality management systems. It establishes pre-requisites for recruitment, improvements of personal performance, and identifies training associated with the dangers and risks of each activity and promotes a culture of health and safety, environment and

Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
		quality within the organization. This procedure is complementary to SPIC Brazil’s Training and Development Policy.
Monitoring is being undertaken to assess if management measures are effective	✓	<ul style="list-style-type: none"> • The internal work environment survey which monitors the situation and opinion of employees and seeks to identify improvements is used to verify if the management measures are effective. • The Corporate Procedure SPIC.CORP.005 <i>Competência, Treinamento e Conscientização</i>, (or Competence, Training and Awareness) with the objective of identify the necessary skills, establishes standards or pre-requisites for admission, improvements of performance and identification of training includes monitoring to assess if management measures are effective.
Ongoing or emerging labour management issues have been identified	✓	<ul style="list-style-type: none"> • The internal work environment survey which monitors the situation and opinion of employees and seek to identify improvements is used to verify if labour management issues have been identified. • Also, the internal grievance mechanism, part of the “engagement plan” which is accessible for all power plant workers, SPIC employees or third-party contractors, is used to verify if any emerging labour management issues have been identified. • No emerging labour management issues have been identified.
2.2 Management		
Human resource and labour management policies, plans and processes are in place to address all labour management planning components	✓	<ul style="list-style-type: none"> • SPIC offers good working conditions to attract and retain committed staff. In interviews conducted with employees at the plant, all were unanimous in pointing out the benefits that the company delivers to its employees. • For those who come to work to São Simão and are not local residents, accommodation is offered for a reasonable period of time until the worker can find permanent housing. • In addition to this, there are two other plans: the Educational Plan, which supports specialization courses, master's, etc. and the Language Plan to train employees in learning and improving English. There are criteria for employees to participate in these plans. • Training and up-skilling are significant commitments made by SPIC. Individual development plans – PDI are agreed for all staff and training needs are identified. • An Annual Employee Training Plan is also drawn up annually. This plan (which has a single budget at SPIC) is prepared through a survey of training needs, which is carried

Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
		<p>out with the managers of the different areas of the company, responsible for identifying the gaps.</p> <ul style="list-style-type: none"> • There is also an Individual Development Plan – PDI, outside the Annual Training Plan, which is carried out for specific employees. It can include mentoring and coaching and is usually for employees in the technical areas who are promoted and/or transferred to management positions. • There is an integrated Environmental, Health & Safety and Quality Management system in place with systematic processes and procedures and this Integrated system is fully aligned with OHSAS 18000 and the company is planning to certify the system according to the ISO 45001 standard.
Human resource and labour management policies, plans and processes of contractors, subcontractors, and intermediaries, are in place	✓	<ul style="list-style-type: none"> • SPIC has implemented a Procurement Standard and Procedures document. This document applies to all procurement activities performed by the Company and must be followed by all staff whether permanent, temporary or under contract, and are aligned with SPIC Global’s Procurement Standard and Procedures. • SPIC has a Corporate Procedure specifically for contractors: SPIC.CORP.014 – <i>Diretrizes para Contratadas</i> – Guidelines for Contractors. It establishes requirements and responsibilities for the process of approval and monitoring of companies hired by SPIC Brazil, related to Health, Occupational Safety, the Environment, and Quality. The instructions in this document serve as guidelines and are disciplinary and preventive. They have been defined based on legislation applicable to the business, including Legal Regulatory Standards (known in Brazil as NRs), and other requirements of Regulatory and/or Supervisory bodies, as well as internal rules applicable to SPIC Brazil and its partners. The procedure applies to all SPIC Brazil Business Units, including offices, direct or third-party employees, and all partner companies supplying products and/or services and their subcontractors. Also, this procedure applies only to acquisitions that require the mobilization of human or material resources in our facilities.
2.3 Conformance and Compliance		
Processes and objectives relating to human resource and labour management have been and are on track to be met with:		
• no major non-compliances	✓	There is no evidence of any non-compliances. No official labour inspections have taken place, which also indicates that there are no reports of unfair labour relations or other non-compliance.
• no major non-conformances	✓	There is no evidence of any non-conformances.

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Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
Any labour related commitments have been or are on track to be met	✓	There is no evidence of any commitments that have not been met. Staff reported a high level of work satisfaction. There have been no labour disputes, strikes or any similar incidents during operation under SPIC ownership.
2.4 Outcomes		
There are no identified inconsistencies of labour management policies, plans and practices with internationally recognised labour rights	✓	<p>Brazil has ratified all fundamental and most other ILO international labour conventions, and many labour rights are included in the Consolidação das Leis Trabalhistas – CLT, or Labour Law Consolidated Regulations. Every regular employee must be hired through these regulations.</p> <p>There are no indications that the labour practices at São Simão are not consistent with internationally recognised labour rights.</p>

Summary of Findings

Summary and other notable issues	List of significant gaps
<p>SPIC is a company with good labour relations and labour management practices. The staff reported a high level of work satisfaction. There have been no labour disputes, strikes or any similar incidents during operation under SPIC.</p> <p>São Simão has an integrated Environmental, Health & Safety and Quality Management system in place with systematic processes and procedures that is fully aligned with OHSAS 18000. The company is planning to obtain ISO 45001 certification.</p> <p>On the day of the site visit, the power plant had been operating without any health & safety incidents for more than 440 days.</p>	<p>No gaps were identified.</p>

3 Water Quality and Sediments



Scope and Intent	
<p>This section addresses the management of water quality, erosion and sedimentation issues associated with the operating hydropower facility. The intent is that water quality in the vicinity of the operating hydropower facility is not adversely impacted by activities of the operator, that erosion and sedimentation caused by the project are managed responsibly and do not present problems with respect to other social, environmental and economic objectives, and that commitments to address water quality, erosion and sedimentation issues are fulfilled.</p>	
Background	
Sedimentology	
Key sediment issues	São Simão HPP is classified as being within a catchment with a moderate potential of sediment production (sediment yield between 25 and 100 tonnes/km ² /year), which is based on the specific degradation (soil loss).
Sediment load (tonnes/year)	The sediment yield in this area of the Paranaíba River basin is 45 tonnes/km ² /year.
Catchment area at the dam	Total catchment area: 171 370 km ² The incremental drainage area from the São Simão dam to the upstream Cachoeira Dourada HPP is 65 824 km ²
Water Quality	
Description of water quality	In general, the water quality can be considered good with some exceptions as presented below.
Key water quality issues	The Ituiutaba municipal water treatment plant outfall is located in the reservoir and the water quality analyses from the sampling station located near the wastewater treatment plant outfall consistently indicate coliform levels above maximum permissible levels, whereas other sampling locations are in line with Brazilian water quality standards. The environmental regulator is aware of the issue and recognises that wastewater treatment plant effluent quality is not the responsibility of São Simão HPP.
Main influences on water quality	Water quality in the reservoir is influenced by surrounding agricultural activities such as plantations, pasture for livestock, and the use of phosphorus-based fertilizers especially after rainfall events; and near one of the sampling areas near the Ituiutaba municipal water treatment plant outfall.
Other information	

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Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
3.1 Assessment		
Ongoing or emerging issues have been identified, in the following areas:		
<ul style="list-style-type: none"> erosion and sedimentation 	✓	<p>São Simão’s Operating Licence (Licença de Operação) granted by IBAMA requires that SPIC Brazil carry out monitoring of active erosive areas around the reservoir, and the facility. Erosion occurs around the reservoir slopes as a result of operations and wave action and also other activities carried out in the surrounding areas (fishing, farming, livestock etc.).</p> <p>In 2008, 128 erosion prone areas were identified and measures to stabilise the most severely affected areas are implemented. As areas become stabilised over the years, they are taken off the list of sites to monitor and other emerging erosion foci are added. Monitoring includes existing features within the permanent conservation area or APP (Área de Preservação Permanente) affected by water level fluctuation dynamics and wave action. The monitoring is carried out by a consultant (Brandt Meio Ambiente Ltda.). Areas identified at very severe are then rehabilitated.</p>
<ul style="list-style-type: none"> water quality 	✓	<p>São Simão HPP has a water quality monitoring programme that covers the identification of potential sources of water pollution from both anthropic activities and natural processes; the monitoring of physical, chemical and biological parameters, aquatic communities (phytoplankton, zooplankton and benthic communities). The related monitoring programmes for ichthyofauna and limnology allow the calculation of different water quality indices such as trophic state index (TSI), species diversity and equitability index and other statistical analyses. In addition, São Simão HPP has a monitoring program for the invasive Golden mussel (<i>Limnoperna fortunei</i>) – see Section 6 for more on invasive species and biodiversity.</p> <p>Monitoring and sampling stations for these programmes are located throughout the reservoir and in its tributaries and in the Paranaíba River upstream from the reservoir and downstream from the dam and powerhouse</p>
In these areas, if management measures are required then monitoring is being undertaken to assess if management measures are effective for:		
<ul style="list-style-type: none"> erosion and sedimentation 	✓	Monitoring is carried out to assess the effectiveness of the stabilisation measures that have been implemented.
<ul style="list-style-type: none"> water quality 	✓	Measures are in place at the hydropower plant to avoid and minimise impacts from operations on water quality and the water quality monitoring program includes water

Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
		quality sampling stations downstream to ensure operation do not have a negative impact water quality. Extensive water quality sampling is carried out throughout the reservoir, in its tributaries and downstream from the dam as part of the water quality monitoring programme.
3.2 Management		
Measures are in place to manage the following identified issues:		
<ul style="list-style-type: none"> erosion and sedimentation 	✓	The objective of the Erosion Monitoring Programme is to observe and understand erosive processes affecting the shoreline of the reservoir in order to impede their progression and rehabilitate affected areas such that soil loss is reduced, sediment loading of the reservoir is minimized, thereby maximising its lifespan. Identified erosive foci are monitored twice a year and very severe areas are identified to be rehabilitated. In 2020, SPIC Brazil retained an engineering firm to propose solutions for these areas and they are currently evaluation the recommendations of the study which include hydroseeding, infilling and other measures
<ul style="list-style-type: none"> water quality 	✓	Potential water quality issues associated with the operations of the plant are well managed within the São Simão HPP, for example, an internal wastewater treatment plant located on the generator floor pre-treats wastewater before pumping it to an external wastewater treatment facility adjacent to the powerhouse where it undergoes secondary treatment before treated water is discharged to the river when it meets effluent quality requirements. In addition, drainage channels throughout the powerhouse convey seepage and oily waters/oil spills to an oil/water separator. Transformers are installed over secondary containment basins that are connected to an oil/water separator and these facilities meet local regulatory requirements.
3.3 Conformance and Compliance		
Processes and objectives in place to manage each of the following have been and are on track to be met:		
<ul style="list-style-type: none"> erosion and sedimentation, with no major non-compliances 	✓	There are no indications of non-compliances related to erosion and sedimentation were noted during the assessment.
<ul style="list-style-type: none"> erosion and sedimentation, with no major non-conformances 	✓	There are no indications of non-conformances related to erosion and sedimentation were noted during the assessment.
<ul style="list-style-type: none"> water quality, with no major non-compliances 	✓	There are no major non-compliances with respect to water quality.

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Requirement	Requirement is met: yes (✓) or no (X)	Findings and Observations
• water quality, with no major non-conformances	✓	There are no indications off non-conformances with respect to water quality.
Commitments related to the following have been or are on track to be met:		
• erosion and sedimentation	✓	All commitments related to erosion and sedimentation issues are being met through the ongoing Erosion Monitoring Programme and Reforestation Programme.
• water quality	✓	All commitments related to water quality (water quality monitoring, Golden mussel, mitigation measures in HPP) are being met.
3.4 Outcomes		
Erosion and sedimentation issues are avoided, minimised and mitigated with no significant gaps	✓	The review of available documentation indicates that the company acts proactively and uses new technologies and solutions to erosion and sedimentation issues. As a result, these issues are minimised, mitigated with no significant gaps.
Negative water quality impacts arising from activities of the operating hydropower facility are avoided, minimised and mitigated with no significant gaps	✓	Potential negative water quality impacts from the operating hydropower facility are avoided, minimised and mitigated with no significant gaps.

Summary of Findings

Summary and other notable issues	List of significant gaps
Through well planned and effective monitoring programmes, São Simão HPP continuously monitors and assesses erosion and water quality in the project’s area of influence and reports hydrometric data on inflows and discharges from the facility to ensure downstream navigation and flow needs are met and that erosion and water quality impacts are avoided, minimised and/or mitigated.	There are no significant gaps in this section.



4 Community Impacts and Infrastructure Safety

Scope and Intent	
<p>This section addresses how impacts of development of the hydropower facility on project-affected communities have been addressed, in cases where these commitments are well-documented against a pre-project baseline. These impacts include economic displacement, impacts on livelihoods and living standards, public health impacts, impacts to rights, risks and opportunities of those affected by the project, infrastructure safety risks and additional benefits that can arise from a hydropower facility. The intent is that livelihoods and living standards impacted by the project have been improved relative to pre-project conditions for project-affected communities, that commitments to project-affected communities have been fulfilled, and that life, property and community assets and resources are protected from the consequences of dam failure and other infrastructure safety risks. This section does not address particular subsets of the community, which are addressed in Sections 5 and 7. Other interested parties and groups are addressed in Section 10.</p>	
Background	
<p>In the case of older projects, are there well-documented commitments in relation to project-affected communities and/or projects benefits made at the time of project approval and/or data on the pre-project baseline against which to compare post-project?</p>	
Yes, all scoring statements are relevant	n/a
No, scoring statements on project affected communities and/or project benefits are not relevant (in this case, issues in relation to these topics should be taken into consideration under Section 1 – Environmental and Social Issues Management)	There is an absence of documented commitments to project-affected communities made at the time of project development and implementation in the 1970’s. There is no available data on the pre-project baseline against which to compare the present situation. Scoring statements on project affected communities and project benefits are considered Not Relevant to the assessment. Any relevant aspects will be taken into consideration under Section 1.
Project-affected communities	
Description of project-affected communities and how they are affected (distinguish between directly affected vs economically displaced vs other affected communities and include number of people and households)	Not relevant
Description of key public health issues	Not relevant
Agencies relevant to land acquisition	Not relevant
Agencies relevant to livelihood restoration and project benefits	Not relevant
Agencies relevant to public health	Not relevant
Infrastructure safety	
Type of dam	Compacted earth fill, Compacted Rockfill and Concrete Gravity section

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Dam height (m)	127 m
Probable maximum flood (m ³ / s)	Not available
Design flood (expressed as estimated flood with return period)	17 530 m ³ /s
Spillway capacity (m ³ / s)	17 530 m ³ /s
Spillway crest elevation (masl)	404 masl
Headrace length (m)	n/a
Headrace width (m)	n/a
Headrace capacity (m ³ / s)	n/a
Seismicity	Minas Gerais and Goiás are considered very low seismic or earthquake hazard regions.
Geology	The intracratonic Paraná Basin consists of sedimentary deposits spanning in age from the Paleozoic to the Cenozoic and is covered by extensive basaltic flows of Jurassic-Cretaceous age related to the opening of the South Atlantic Ocean. This is a Gondwanan basin in which sedimentary and volcanic records are also found in Africa.
Dam safety regulatory authorities	ANEEL (National electrical energy agency) and ANA (Water regulating agency)
Local presence/capacity of emergency services	São Simão HPP has carried out significant stakeholder engagement with local emergency services in the context of developing their PAE (Emergency Action Plan)
Potential safety risks in this context	Potential safety risks during the operation of São Simão HPP include dam failure and inundation downstream from the dam, in particular in the Town of Chaveslândia, sudden discharge from the spillway or powerhouse units, public safety risks around the reservoir, electrical equipment or transmission lines, forest fires around the reservoir,
Degree of risk of dam failure and in what way	The Emergency Action Plan (PAE) that is part of the Dam Safety Plan (PSB) is based on the following hypothetical dam failure mode: internal erosion or piping failure on a dry day of an embankment section of the dam. The PAE indicates that it has not considered inundation scenarios that would result from an upstream cascade dam failure. The PAE does not indicate the degree of risk of dam failure.
Population at risk of dam break (locations, numbers)	Population in Chaveslândia and in the Industrial district of São Simão. The population at risk was estimated to be approximately 1700 people of which 7% are under 10 years of age and 9% are over 60. The detailed demographic survey of the area indicated that 17% of the population at risk have reduced mobility.
Dam safety standards followed	Brazilian dam safety policy and regulations (Brazil Federal Law No. 12 334 of 20th September 2010, and related resolutions).
Agencies relevant to dam safety	ANEEL and ANA
Other infrastructure safety issues	

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Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
4.1 Assessment		
Monitoring is being undertaken to assess if the following commitments have been delivered and if management measures are effective:		
• commitments to project-affected communities	Choose an item.	n/a
• commitments to project benefits	Choose an item.	n/a
Ongoing or emerging issues relating to the following have been identified:		
• issues that affect project-affected communities	Choose an item.	n/a
• delivery of project benefits	Choose an item.	n/a
• public health issues associated with the operating hydropower facility	✓	No public issues have been identified. The project has a good relationship with the public health system in São Simão and Santa Vitória.
• dam and other infrastructure safety	✓	<p>São Simão has a Dam Safety Plan (“Plan de Segurança de Barragens” or PSB) which describes dam surveillance, monitoring and inspection activities and their frequency. São Simão HPP is a highly instrumentalised hydropower plant with more than 1200 dam monitoring and control instruments. SYSDAM software is used to control, monitor and assess instrument readings, parameters and indicators.</p> <p>Dam safety legislation requires dam safety inspections be carried out once a year. São Simão conducts internal dam safety inspections every three months and an annual inspection. Reports are prepared for all inspections. Independent dam safety reviews are carried out by external specialists and legislation requires they be carried out every 5 years. The last assessment carried out by Pimenta de Avila was carried out in 2019 and the next one is scheduled for 2021.</p> <p>São Simão HPP has carried out significant stakeholder engagement related to the development of the facility’s PAE or Emergency Action Plan in the event of dam failure. Meetings with emergency response entities and members of the community were held to explain transparently and openly the purpose of the PAE and the new dam safety regulations. São Simão HPP has also completed the survey of the population residing within the self-rescue zone (or ZAS) in order to map evacuation routes and identify higher elevation meeting points in the event of a dam emergency that could lead to dam failure.</p>

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Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
If public health issues require management measures then monitoring is being undertaken to assess if management measures are effective	✓	Not applicable. No health issues have been identified
Routine monitoring of dam and infrastructure safety is being undertaken to identify risks and assess the effectiveness of management measures	✓	<p>The Dam Safety Plan (“Plan de Segurança de Barragens” or PSB) describes routine dam surveillance, monitoring and inspection activities and their frequency to identify risks and monitor dam condition.</p> <p>Dam safety legislation requires dam safety inspections be carried out once a year. São Simão conducts internal dam safety inspections every three months and an annual inspection. Reports are prepared for all inspections. Independent dam safety reviews are carried out by external specialists and legislation requires they be carried out every 5 years. The last assessment carried out by Pimenta de Avila was carried out in 2019 and the next one is scheduled for 2021.</p>
4.2 Management		
Measures are in place to deliver commitments:		
• to project-affected communities	Choose an item.	n/a
• to project benefits	Choose an item.	n/a
Measures are in place to manage any identified issues relating to these commitments:		
• to project-affected communities	Choose an item.	n/a
• to project benefits	Choose an item.	n/a
• to public health	Choose an item.	n/a
If there are any formal agreements with project-affected communities, these are publicly disclosed	Choose an item.	n/a
Commitments to project benefits are publicly disclosed	Choose an item.	n/a
Dam and other infrastructure safety management plans and processes have been developed in conjunction with relevant regulatory and local authorities	✓	A Dam Safety Plan (PSB) was prepared by Pimenta de Avila for SPIC Brazil, the plan must follow the National Dam Safety Plan legislation. The Project’s Dam Safety Plan includes: Surveillance and monitoring actions, regular inspections and periodic dam safety reviews and an Emergency Action Plan (Plan de Atendimento a Emergências) in the event of a dam emergency/dam failure. This PAE (which part of the PSB) has been developed in conjunction

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Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
		<p>with relevant local authorities and emergency response entities. This PAE must be submitted to ANEEL, the dam safety regulator.</p> <p>Annual inspections are carried out by internal dam safety engineers and independent Dam Safety Reviews need to be carried out every 5 years according to the regulatory requirements. The last dam safety review (DSR) was carried out in 2019 by Pimenta de Avila and the next DSR will be scheduled for 2021.</p> <p>São Simão HPP has received an inspection certificate from the Military Fire Department of Minas Gerais stating that the HPP complies with Fire Safety legislation (valid until 2024).</p>
These plans and processes provide for communication of public safety measures	✓	The development and implementation of the PAE have provided for significant engagement and communication with external stakeholders related to public safety measures and these have continued but less frequently during the COVID-19 pandemic. During the site visit, community members have expressed that the process has been very open and transparent.
Emergency response plans and processes include awareness and training programs and emergency response simulations	✓	<p>The activities associated with the implementation of the PAE are ongoing, but stakeholder engagement and community meetings have been paused during the COVID-19 pandemic, with some meetings continuing on-line. Prior to the pause, all institutional and local stakeholders had been identified and local committees have been formed and trained in emergency management and the PAE.</p> <p>São Simão HPP has developed a cell phone app for communities that includes the ZAS mapping and identifies the nearest meeting point location and will give directions on how to get there. The app is functional and works perfectly and was tested during the site visit, however it has not yet been shared with the communities. While engagement and progress were paused during the pandemic (some meetings proceeded on-line), São Simão HPP had also commissioned signage related to the PAE including signs identifying meeting points. As is the case for the phone app, São Simão HPP is waiting to hold the next training sessions with community leaders prior to deployment of the app. Handbooks for distribution for the community have been printed and are ready to be distributed during the upcoming community training meetings; and a complete simulation exercise is scheduled for the end of 2021 (depending on the COVID-19 pandemic situation).</p>
4.3 Conformance and Compliance		

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Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
Processes and objectives in place to manage the following have been and are on track to be met:		
• delivery of commitments to project-affected communities, with no major non-compliances	Choose an item.	n/a
• delivery of commitments to project-affected communities, with no major non-conformances	Choose an item.	n/a
• project benefits, with no major non-compliances	Choose an item.	n/a
• project benefits, with no major non-conformances	Choose an item.	n/a
• public health issues, with no major non-compliances	Choose an item.	There are no non-compliances related to public health
• public health issues, with no major non-conformances	Choose an item.	There are no non-conformances related to public health.
• dam and other infrastructure safety, with no major non-compliances	Choose an item.	SPIC Brazil has submitted the PAE to ANEEL and is in compliance with regulatory requirements.
• dam and other infrastructure safety, with no major non-conformances	✓	There are no indications of any non-conformances
Commitments have been or are on track to be met in relation to:		
• project-affected communities	Choose an item.	n/a
• project benefits	Choose an item.	n/a
• public health	✓	São Simão continues to engage with the public health departments of the nearby municipalities related to the PAE.
• dam and other infrastructure safety	✓	With the exception of the delay due to the pandemic, all safety commitments related to the PAE are on track to be met by the end of 2021, depending on how the pandemic situation evolves.
4.4 Outcomes		

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Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
Livelihoods and living standards impacted by the project have been or are on track to be improved	Choose an item.	n/a
Economic displacement has been fairly compensated, preferably through provision of comparable goods, property or services	Choose an item.	n/a
Communities directly affected by the development of the hydropower facility and any other identified beneficiary of the facility have received or are on track to receive benefits	Choose an item.	n/a
Negative public health impacts arising from activities of the operating hydropower facility are avoided, minimised and mitigated with no significant gaps	✓	There are no negative public health impacts arising from project activities.
Safety risks have been avoided, minimised and mitigated with no significant gaps	✓	Municipal representatives indicated during interviews that SPIC Brazil acted with complete transparency during the development and implementation of the PAE, and that SPIC explained the National Dam Safety Plan (PSB), informing the community of the new legislation on the subject and the need for everyone's participation in the process. Interviewees reported that these meetings were very important to the communities because they were the basis of information that led to communities being highly engaged in the ZAS demographic survey and to the process being supported by the community. The community training also helped to avoid generating panic among the residents, as the surveys were carried out shortly after the failure of the Brumadinho dam.

Summary of Findings

Summary and other notable issues	List of significant gaps
Municipal representatives indicated during interviews that SPIC Brazil acted with complete transparency during the development and implementation of the PAE, and that SPIC explained the National Dam Safety Plan (PSB), informing the community of the new legislation on the subject and the need for everyone's participation	No significant gaps have been identified.

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<p>in the process. Interviewees reported that these meetings were very important to the communities because they were the basis of information that led to communities being highly engaged in the ZAS demographic survey and to the process being supported by the community. The community training also helped to avoid generating panic among the residents, as the surveys were carried out shortly after the failure of the Brumadinho dam.</p> <p>A Dam Safety Plan is in place for the project and includes routine inspections and monitoring activities and independent periodic dam safety reviews by external experts.</p>	
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5 Resettlement



Scope and Intent	
<p>This section addresses how the physical displacement arising from development of the hydropower facility has been addressed, in cases where resettlement occurred and commitments are well-documented against a pre-project baseline. The intent is that the dignity and human rights of those physically displaced have been respected; that these matters have been dealt with in a fair and equitable manner; that livelihoods and standards of living for resettles and host communities have been improved; and that commitments made to resettles and host communities have been fully fulfilled. This section does not address those that are only economically displaced, who are addressed in Section 4.</p>	

Background	
<p>Did the project require or result in any physical displacement of people? Please state the evidence on which this determination is made.</p>	
<p>Yes, this section is relevant (for older projects, move on to the next question)</p>	
<p>No, this section is not relevant</p>	<p>There is a lack of documentation regarding any resettlement from the time of project development and approval and a lack of data on the pre-project baseline to compare with the present situation. This topic is considered Not Relevant to the assessment and will not be assessed. Any relevant aspects will be taken into consideration under Section 1.</p>
<p>In the case of older projects, are there well-documented commitments in relation to resettlement made at the time of project approval and/or data on the pre-project baseline against which to compare post-project?</p>	
<p>Yes, this section is relevant</p>	
<p>No, this section is not relevant (in this case, issues in relation to resettlement should be taken into consideration under Section 1 – Environmental and Social Issues Management)</p>	<p>There is a lack of documentation regarding any resettlement from the time of project development and approval and a lack of data on the pre-project baseline to compare with the present situation. This topic is considered Not Relevant to the assessment and will not be assessed. Any relevant aspects will be taken into consideration under Section 1.</p>

6 Biodiversity and Invasive Species



Scope and Intent	
<p>This section addresses ecosystem values, habitat and specific issues such as threatened species and fish passage in the catchment, reservoir and downstream areas, as well as potential impacts arising from pest and invasive species associated with the operating hydropower facility. The intent is that there are healthy, functional and viable aquatic and terrestrial ecosystems in the area that are sustainable over the long-term; that biodiversity impacts arising from the operating hydropower facility are managed responsibly; that ongoing or emerging biodiversity issues are identified and addressed as required; and that commitments to implement biodiversity and invasive species measures are fulfilled.</p>	

Background	
Short description of the ecological region in the project area	<p>The margins of the Paranaíba River around São Simão HPP are located within the Upper Paraná Atlantic Forest ecoregion of Brazil (“selva paranaense”), also known as the Alto Paraná-Paranaíba interior forests and consists of tropical semi-deciduous forest. The margins of the river are in turn surrounded by Brazilian “Cerrado” which is a savanna and the second largest biome in Latin America and one of the world’s most diverse tropical ecosystems, extending over more than 200 million hectares. The Cerrado is subject to the most intensive agricultural activities for grain and beef production in the world. The Upper Paraná Atlantic Forest areas where the project is located is also one of the most biologically diverse ecosystems of the world, one of the most endangered rain forests with very high endemism.</p>
Protected areas (national parks and reserves etc) and their distance from the project	<p>There are no protected areas in the vicinity of the project. The closest protected area is the EMAS National Park which is approximately 250 km northwest from the São Simão HPP in the Brazilian central plateau in the State of Goiás, which contains key habitats, flora and fauna that characterise the “Cerrado” ecoregion. The Park is also an Important Bird Area (IBA).</p> <p>Other protected areas within 250 km include smaller State parks such as the Parque Estadual Pau Furado (~200 km away), the Parque Estadual de Parauná (~200 km away) and the Parque Estadual da Serra da Caldas (~ 150 km away).</p>
Critical habitats in the project area, including important bird areas, hotspots of endemism etc.	<p>There are no Key Biodiversity Areas (KBAs) or IBAs near the Project Area. The closest IBA is EMAS National Park, located approximately 250 km from the site.</p>
# threatened species in the directly affected area: terrestrial	<p>Interviews have revealed that there have been sightings of <i>Myrmecophaga tridactyla</i>, the giant ant eater in and around the São Simão HPP land. This species is considered vulnerable (VU) at the national level and in Minas Gerais, but in some Brazilian States it is considered</p>

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	<p>probably extinct (Rio de Janeiro) or critically endangered (CR) (Paraná, Rio Grande do Sul) (Livre Vermelho, Ed. 2018). The IUCN Red List categorizes the species as VU. This species is also listed in Appendix II of CITES (The Convention on International Trade in Endangered Species of Wild Fauna and Flora).</p> <p>A terrestrial fauna monitoring programme was in place between 2014 and 2016, and carried out by the previous owner, as required under the project's Operating Licence at the time.</p>
# threatened species: aquatic	<p>Since 2018, when SPIC Brazil acquired the São Simão HPP, the aquatic fauna monitoring campaigns have identified the following species at risk:</p> <ul style="list-style-type: none"> • <i>Brycon nattereri</i>: Categorised as vulnerable (VU) in Brazil's National Red Book (Livre Vermelho, Ed. 2018 (IUCN Red List Status: not evaluated). This species was only identified in one of the sampling campaigns. The species is a target species of two national conservation action plans. • <i>Mileus tiete</i> (or <i>Myloplus tiete</i>): Categorised as endangered (EN) in Brazil's National Red Book (Livre Vermelho, Ed. 2018 (IUCN Red List Status: not evaluated), is a target species of one national conservation action plan. This species is fished commercially widely consumed in Brazil.
Any other species of conservation importance	None identified/no available documentation.
Migratory pathways	Many fish species in the Paranaíba River (within the Upper Paraná River Basin) migrate moderate distances to spawn and migration may be linked to the flood pulse of the rivers.
Invasive species: terrestrial	None identified.
Invasive species: aquatic	The Golden mussel, <i>Limnoperna fortunei</i> , is an invasive mollusc native to Asia that was introduced to South America in 1991 through ballast water in ships arriving from Asia. Without local predators and given optimal conditions for proliferation, this species has been spreading in Brazilian rivers causing losses to biodiversity and has been clogging water intakes, outfalls and colonising on freshwater infrastructure. Golden mussel larvae were first observed at the Emborcação HPP, located upstream from the São Simão HPP in July 2016.
Key threats to biodiversity	Key threats to biodiversity in the Upper Paraná Atlantic Forest ecoregion include forest clearing and fractionation for agriculture, livestock and roads and forest fires. The current water crisis and prolonged drought has decreased precipitation, reservoir levels and flows in the Paranaíba River (and the Paraná River system as well).
Agencies involved in biodiversity conservation	IBAMA's Instituto Chico Mendes (ICMbio)
Other relevant information	-

Requirement	Requirement is met: yes (✓) or no (X)	Findings and Observations
6.1 Assessment		
Ongoing or emerging biodiversity issues have been identified	✓	<p>An aquatic monitoring programme are in place and carried out by specialised consultants, under the supervision of the environmental management staff of SPIC Brazil and annual monitoring reports are submitted to IBAMA. Monitoring reports indicate the occurrence of species at risk (EN and VU).</p> <p>One of the specific conditions of São Simão HPP ´s Operating License includes continuing studies related to the feasibility of a fish passage structure or mechanism to ensure all necessary data is collected to be able to assess the feasibility of such systems at the facility. There is limited knowledge on the ecology of some migratory (potamodromous) fish species and the effectiveness of fish passages for particular species. São Simão HPP is located between two hydropower plants that do not have fish passage structures and the São Simão dam is 127 m high, which is a significant elevation difference and can pose significant challenges for fish passage design. São Simão HPP is currently waiting for clear direction from IBAMA on the required studies.</p> <p>Golden mussel larvae were detected for the first time during the São Simão’s water quality monitoring in October 2016. In January 2020, larvae were detected at three of the water sampling stations and in October 2020 at five stations.</p> <p>SPIC Brazil is in discussions with IBAMA to review and update the monitoring programmes under their operating license. This includes updating the ichthyology and fishing monitoring programmes as well as re-initiating a terrestrial fauna monitoring programme. SPIC Brazil has developed the terms of reference to hire an ichthyology specialist to carry out these studies as well as assess the feasibility of a fish passage structure or mechanism, as well as develop an ichthyofauna conservation programme.</p> <p>SPIC Brazil has already engaged an environmental consultant (Brandt Meio Ambiente) to assess and review all of the historical terrestrial fauna monitoring data and reports from CEMIG, the previous operator, with the objective of developing a new terrestrial fauna monitoring programme that will include anteaters, primates and birds. IBAMA has requested the project monitor <i>Cypseloides senex</i> (Great Dusky Swift), locally known as Taperuçu Velho,</p>

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Requirement	Requirement is met: yes (✓) or no (X)	Findings and Observations
		<p>a bird that lives near waterfalls and rapids. This species is not listed in the National Red Book (Livro Vermelho) and according to the IUCN RedList, is stable.</p> <p>SPIC Brazil plans on providing relevant data from current and historical monitoring campaigns to biodiversity data systems and conservation programmes that track specific species.</p>
<p>If management measures are required, then monitoring is being undertaken to assess if management measures are effective</p>	<p>✓</p>	<p>A comprehensive aquatic monitoring programme is in place and carried out by specialised consultants, under the supervision of the environmental management staff of SPIC Brazil and annual monitoring reports are submitted to IBAMA. Current discussions with IBAMA are aimed at modifying the scope of the ichthyofauna monitoring programme and monitoring of fishing activities in the reservoir and around the project.</p> <p>A terrestrial fauna monitoring campaign was in place as part of the HPP’s Operating License over the period 2009-2016, when CEMIG was operating the plant. SPIC Brazil is in discussions with IBAMA to initiate a new terrestrial fauna monitoring programme that will be developed following the detailed review of data and results from the CEMIG monitoring campaigns. The new monitoring programme will include monitoring of anteaters, primates and birds.</p>
<p>6.2 Management</p>		
<p>Measures are in place to manage identified biodiversity issues</p>	<p>✓</p>	<p>The aquatic monitoring programme is comprehensive and allows São Simão HPP to identify and manage aquatic biodiversity issues. The Ichthyofauna monitoring campaign for 2020 included a total of 22 sampling stations located in the reservoir, in tributaries and downstream from the dam which included egg and larval sampling during spawning periods (up to 6 times per year) and fish sampling (up to 4 times per year). In 2020, fish sampling was carried out 3 times per year due to restrictions imposed during the COVID-19 pandemic.</p> <p>To deal with the Golden mussel issue, the company has implemented an R&D project that will develop a genetically modified organism that, when reproduced with wild Golden mussels will rapidly transmit infertility to the next generations, causing the collapse of the populations of the species in Brazil.</p> <p>São Simão HPP has a number of initiatives, procedures and plans in place to manage biodiversity impacts during operations, there include the following:</p> <ul style="list-style-type: none"> • Feasibility study for fish passage

Requirement	Requirement is met: yes (✓) or no (X)	Findings and Observations
		<ul style="list-style-type: none"> • Ichthyofauna monitoring Programme • Reforestation programme • Operational procedure for downstream ichthyofauna monitoring prior to operating procedures which may impact fish. • Operational procedure for bimonthly downstream ichthyofauna monitoring to monitor seasonal changes. <p>Other related monitoring programmes include water quality monitoring programme.</p> <p>São Simão HPP has retained Brandt Meio Ambiente to review historical terrestrial fauna monitoring data to develop a new terrestrial monitoring programme in collaboration with IBAMA. SPIC Brazil is also on track to hire a specialist to review current and historical ichthyology monitoring data to update the current monitoring programme and implement conservation measures. SPIC Brazil intends on sharing results and relevant data (historical, current and future) in scientific journals, with biodiversity data systems and conservation programmes as well as report them to IBAMA in annual monitoring reports.</p> <p>Both monitoring programmes have established implementation schedules that SPCI is on track to meet and that are realistic.</p>
6.3 Conformance and Compliance		
Processes and objectives in place to manage biodiversity issues have been and are on track to be met with:		
• no major non-compliances	✓	There are no indications of any non-compliances.
• no major non-conformances	✓	There are no indications of any non-conformances.
Biodiversity related commitments have been or are on track to be met	✓	All biodiversity related commitments are being met (ichthyology monitoring programme, fishing activity monitoring).
6.4 Outcomes		
Negative biodiversity impacts arising from activities of the operating facility are avoided, minimised, mitigated, and compensated with no significant gaps	✓	The affected areas that were rehabilitated following the implementation of the project in the 70's are now reforested and were subject to monitoring of terrestrial fauna over the period 2015-2016 by the previous operator as a condition of their Operating License. The project currently maintains terrestrial fauna overpasses at and around the São Simão HPP site. These continue to be functional and anecdotal information indicates that these fauna passages are being used by local wildlife. As mentioned above, SPIC Brazil will be

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Requirement	Requirement is met: yes (✓) or no (X)	Findings and Observations
		<p>implementing a new terrestrial monitoring programme and will be better able to measure the effectiveness of the fauna overpasses and which species use them.</p> <p>Threatened fauna species are sometimes observed in the area (e.g Giant anteater and threatened fish species during aquatic monitoring). SPIC Brazil’s analysis of historical data, updated ichthyology monitoring programme and new terrestrial monitoring programme will inform conservation activities that target specific threatened and other species to ensure impacts to these species are avoided, minimised, mitigated, and compensated.</p>

Summary of Findings

Summary and other notable issues	List of significant gaps
<p>São Simão HPP continues to carry out comprehensive and periodic aquatic fauna monitoring in the project’s area of influence that describes fish population dynamics allowing the HPP to detect any changes in the reservoir that may be impacting ichthyofauna, in addition the company has a set of operating procedures that allow them to monitor aquatic fauna during unit maintenance activities and downstream from the spillway.</p> <p>In addition, SPIC Brazil is in discussions with IBAMA to update the ichthyofauna monitoring programme and reinstate a terrestrial fauna monitoring programme and implement conservation measures that target threatened and other species. SPIC Brazil intends on sharing historical, current and future biodiversity data in publications and with relevant conservation programmes and biodiversity databases.</p>	<p>No gaps have been identified.</p>

7 Indigenous Peoples



Scope and Intent
<p>This section addresses the rights at risk and opportunities of Indigenous Peoples with respect to the hydropower facility, recognising that as social groups with identities distinct from dominant groups in national societies, they are often the most marginalized and vulnerable segments of the population. The intent is that the operating facility respects the dignity, human rights, aspirations, culture, lands, knowledge, practices and natural resource-based livelihoods of Indigenous Peoples in an ongoing manner throughout the project life.</p>

Background	
Are any of the affected people Indigenous Peoples? Please state the evidence on which this determination is made.	
Yes, this section is relevant	
No, this section is not relevant	There are no Indigenous communities within x km of the São Simão facility, nor are there any Indigenous Peoples issues related to the facility, therefore this section is not relevant.

8 Cultural Heritage



Scope and Intent
This section addresses cultural heritage, with specific reference to physical cultural resources, associated with the hydropower facility. The intent is that physical cultural resources are identified, their importance is understood, and measures are in place to address those identified to be of high importance. This section does not address non-physical cultural resources, which are addressed in Section 1 and/or in Sections 5 and 7 when relevant.

Background	
Does the project affect any physical cultural resources? Please state the evidence on which this determination is made.	
Yes, this section is relevant	
No, this section is not relevant	No, this section is not relevant. There is a lack of documentation regarding pre-project physical cultural baseline and there are no ongoing cultural-heritage issues associated with the São Simão project. This topic is, therefore, considered Not Relevant to the assessment and will not be assessed.

9 Governance and Procurement



Scope and Intent

This section addresses corporate and external governance considerations for the operating hydropower facility. The intent is that the owner/operator has sound corporate business structures, policies and practices; addresses transparency, integrity and accountability issues; can manage external governance issues (e.g. institutional capacity shortfalls, political risks including transboundary issues, public sector corruption risks); and can ensure compliance.

Background

Key information on political context and public sector risks

Brazil is a presidential democracy. It is ranked 124th out of 190 countries on the World Bank’s Doing Business Index, and 94th out of 179 countries on Transparency International’s Corruption Perceptions Index, indicating a complex environment for private businesses, particularly for those interacting with public entities (e.g. for contracting and permitting). In spite of this, the Brazilian electricity sector is highly regulated, and the main agency that regulates the entire system is the National Electric Energy Agency (ANEEL).

The Brazilian energy sector is made up of public sector companies and institutions, such as ANEEL, Eletrobras and the Energy Research Company (EPE), and the private sector, which operates on different fronts, from generation to distribution, including sector regulation. The restructuring and privatization of the electricity sector began during the first government of President Fernando Henrique Cardoso (1995-1998), through the concession law (nº 8.987/95). This restructuring changed the profile of electricity companies, dividing them according to the segments in which they operate: generation, transmission and distribution.

Other institutions operating in the Brazilian electricity sector include the National Energy Policy Council (CNPE), the Ministry of Mines and Energy (MME), the Electric Sector Monitoring Committee (CMSE), the National Electricity System Operator (ONS) and the Electric Energy Trading Chamber (CCEE).

There are also traders, companies authorized to buy and sell energy to independent consumers (generally consumers who need more energy).

The Brazilian electrical system allows for the exchange of energy produced in all regions through the National Interconnected Energy Transmission Grid (SIN), except in the case of isolated grid systems that are located mainly in the North region of the country

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<p>Key information on corporate ownership and governance</p>	<p>The São Simão HPP is owned and operated by the Subsidiary of State Power Investment Corporation of China (SPIC) through a 30-yr concession, valid until 2048. SPIC Brazil also owns and operates wind, hydro and, recently, natural gas thermoelectric assets in Brazil. Created in 2015, SPIC Corporation is present in 64 countries (including Japan, Australia, Malta, India, Turkey, South Africa, Pakistan and Brazil).</p> <p>Operating globally with more than 130 thousand employees and more than 176 GW of installed capacity, SPIC Global supplies millions of homes, mainly through of energy from renewable sources, which comprises over 56% of its portfolio. SPIC Global is the biggest world generator of photovoltaic energy.</p> <p>In 2020, the management of international assets of SPIC Global, including SPIC Brazil, fell under the responsibility of China Power International Development Limited (CPID). The company is listed on the Hong Kong Stock Exchange and has extensive experience in the market bringing a level of demand compatible with international publicly traded companies.</p> <p>SPIC Brazil operates the São Simão Hydroelectric Power Plant, located on the border between the states of Minas Gerais and Goiás. The Vale dos Ventos Wind Farm and Park Millennium Wind Farm, are located in Paraíba, and the company participates in the ownership and operation of a natural gas powered plant, Gas Natural Açú (GNA) located in Porto do Açú in São João da Barra (RJ).</p>
<p>Details of the concession, if applicable</p>	<p>The concession agreement regulates the concession of electricity generation at the São Simão HPP, under the allocation of quotas of physical and power guarantees to public distribution service concessionaires in the National Interconnected System – SIN.</p> <p>The concession agreement is for a period of 30 (thirty) years starting May 10, 2018, with no extensions allowed.</p> <p>The Hydroelectric Plant must be operated in accordance with safety criteria and according to specific technical standards, under the terms of the current legislation, subject to the conditions of operation of reservoir(s) defined by the National Water Agency (ANA) in conjunction with the National Electricity System Operator (ONS) and its dispatch instructions, according to the mode of operation, and observing the Grid Procedures as approved by ANEEL.</p>
<p>Key licenses or permits</p>	<ul style="list-style-type: none"> • Concession Contract N° 001/2017 – ANEEL São Simão HPP valid until May 10th, 2048.

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	<ul style="list-style-type: none"> • Environmental Operation License (Licença Ambiental de Operação) IBAMA Nº 569/2006 2nd renewal and 2nd ratification, valid until January 2023. • Granting of the right to use water resources by the Water National Agency (ANA), Authorization Nº 448 valid until May 10th, 2048
Other relevant information	

Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
9.1 Assessment		
Ongoing or emerging political and public sector governance issues have been identified	✓	The regulatory department of the company has registered the HPP São Simão Energia S.A. in the main associations of hydroelectric generators in the country. As a member of these associations, SPIC Brazil monitors all events in the electricity sector that may generate some political and/institutional risk for the company. This monitoring allows the company to act, individually or via association, even prior to the publication of new rules/standards relating to the electricity sector, that is, even in the phase of elaboration of these rules/standards both with the regulatory agency (ANEEL) and with the National Congress. SPIC Brazil has contracted Dominion, a consultant that tracks legislation changes and ensures the company is up to date with any of their regulatory compliance requirements.
Corporate governance requirements and issues have been identified	✓	The regulatory department at SPIC Brazil is responsible for mapping all regulatory and governance obligations related to the São Simão HPP, this is carried out through a specialised consulting firm (Dominium).
Monitoring is being undertaken to assess if corporate governance measures are effective	✓	Monthly review of regulatory and governance issues to include or exclude any regulatory obligation as a result of the publication of a new rule and/or standard for the electricity sector is carried out by SPIC Brazil's regulatory team.
9.2 Management		
Processes are in place to manage the following:		
<ul style="list-style-type: none"> • corporate, political and public sector risks 	✓	Internally, the regulatory department is responsible for the daily monitoring of the publication of rules/standards that may affect the operation of the São Simão HPP or generate any financial impact on revenue, immediately informing other areas of the company so that they can act together and avoid any loss. SPIC Brazil uses a consultancy specialized in the electricity sector (Dominium) that also provides the company with daily relevant information on the main activities of each institution (MME, ANEEL, EPE, ONS and CCEE), as well as an analysis of political aspects related to the sector.

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Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
<ul style="list-style-type: none"> compliance 	<p>✓</p>	<p>The regulatory department is responsible for mapping all regulatory obligations related to the São Simão HPP. This mapping is presented to other departments within the company that are directly involved in the fulfilment of these obligations. The deadlines and forms/documentation required for compliance with these obligations have been presented to other internal company departments and included information such as: which documents should be prepared, how they should be filed, for how long they should be kept for inspection purposes, etc.</p> <p>This mapping is reviewed monthly to include or exclude any regulatory obligation as a result of the publication of a new rule and/or standard for the electricity sector. For obligations relating to the payment of regulatory charges, specific procedures were drawn up that detail the responsibilities of each area of the company involved in this activity to avoid any delay in the payment process that could generate penalties such as fines.</p>
<ul style="list-style-type: none"> social and environmental responsibility 	<p>✓</p>	<p>There is an integrated Environmental, Health & Safety and Quality Management system in place with systematic processes and procedures, with clearly defined social and environmental responsibilities.</p> <p>At the São Simão HPP there is a team of environmental and management analysts who manage and supervise the implementation of environmental and social programs and are responsible for collecting information to prepare annual reports on compliance with environmental and social obligations.</p> <p>The Sustainability Coordination team is responsible for preparing the annual report that must be submitted to IBAMA with the results of all the environmental and social monitoring activities implemented during the year, disclosing any environmental and social issue identified during the period.</p>
<ul style="list-style-type: none"> procurement of goods and services 	<p>✓</p>	<p>SPIC has developed and implemented a Procurement Standard and Procedures document. This document applies to all procurement activities performed by the Company and must be followed by all staff whether permanent, temporary or under contract, and are aligned with SPIC Global’s Procurement Standard and Procedures.</p>
<ul style="list-style-type: none"> grievance mechanisms 	<p>✓</p>	<p>The internal grievance mechanism is part of the “engagement plan” and is accessible for all power plant workers, SPIC employees or third-party contractors, through e-mail, suggestion boxes or meetings. There is a specific procedure in the management system (SPIC.COP.004).</p>

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Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
		The external grievance mechanism is part of the “Portas Abertas” Program that is accessible for any external stakeholder through the company website, dedicated e-mail, dedicated toll-free number, and periodical events with the communities. The management and operation of this specific program is outsourced to an external company to ensure the responses and feedback can be done in a timely manner.
<ul style="list-style-type: none"> • ethical business practices 	✓	SPIC Brazil has implemented Code of Conduct establishing ethics and safety in the work environment as fundamental principles of the business and drivers of all activities. The Code is an integral part of the Corporate Governance System and expresses, in a clear and objective way, the principles and rules that must guide the actions of all professionals at SPIC Brazil/ São Simão HPP.
<ul style="list-style-type: none"> • transparency 	✓	SPIC Brazil’s Code of Conduct and Ethics is based on the principles of ethics and transparency. Transparency extends to communications with shareholders and investors, company collaborators (employees, contractors), clients and all company activities and is a key element of the company’s business strategy.
Policies and processes are communicated internally and externally as appropriate	✓	<p>As mentioned previously, there is an internal communication plan in place (“engagement plan”) accessible to all power plant workers, SPIC employees or third-party contractors, through e-mail, meetings and internal communication campaigns.</p> <p>As mentioned previously, there is an external communication plan in place (“Portas Abertas” Program) accessible for any external stakeholder through the company website, dedicated e-mail, dedicated toll-free number, and periodical events with the communities.</p> <p>The Corporate Procedure (SPIC.CORP.004 Communication, Participation and Consultation) establishes the procedures for the communication, participation and consultation of employees, suppliers, subcontractors and other interested parties in relation to the hazards, risks and environmental impacts arising from the activities related to SPIC Brazil.</p>
In case of capacity shortfalls, appropriate external expertise is contracted for additional support	✓	In the event of capacity shortfalls, the company secures the required experts through external agencies. A consultancy specialized in the electricity sector (Dominium) has the expertise to support the company in governance, compliance and regulatory matters, beyond providing daily relevant information as well as analysis of political aspects related to the sector.
9.3 Conformance and Compliance		

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Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
The project has no major non-compliances	✓	<ul style="list-style-type: none"> • According to the information from the regulatory team, there are no non-compliances under the terms of the Concession Contract Nº 001/2017 – ANEEL São Simão HPP valid until May 10th, 2048. • According to the report submitted to the federal environmental agency (IBAMA), there is no non-compliance under the terms of the Environmental Operation License (Licença Ambiental de Operação) IBAMA Nº 569/2006 2nd renewal and 2nd ratification, valid until January 2023. • According to the information from SPIC Brazil’s regulatory team there is no non-compliance under the terms of the right to use water resources granted by the Water National Agency – ANA, Nº 448 valid until May 10th, 2048.
9.4 Outcomes		
There are no significant unresolved corporate and external governance issues identified	✓	There are currently no significant unresolved external governance issues.

Summary of Findings

Summary and other notable issues	List of significant gaps
<p>Brazil presents some governance challenges for private businesses, but as the Brazilian Electric Sector is highly regulated and São Simão HPP is under a strong concession agreement and therefore the project has been able to avoid and mitigate major risks. In addition, The State Power Investment Corporation of China (SPIC) has well-developed corporate governance structures and processes.</p> <p>Since 2020, the management of international assets of SPIC Global, including SPIC Brazil, are under the responsibility of China Power International Development Limited (CPID).</p> <p>As the company is listed on the Hong Kong Stock Exchange, a level of demand compatible with international publicly traded companies must be in place for corporate governance.</p>	<p>No gaps have been identified.</p>

10 Communications and Consultation



Scope and Intent	
<p>This section addresses ongoing engagement with project stakeholders, both within the company as well as between the company and external stakeholders (e.g. affected communities, governments, key institutions, partners, contractors, catchment residents, etc). The intent is that stakeholders are identified and engaged in the issues of interest to them, and communication and consultation processes maintain good stakeholder relations throughout the project life. Communications and consultation requirements unique to physically displaced communities and Indigenous Peoples are found in Sections 5 and 7, respectively.</p>	
Background	
Directly affected community-level stakeholders	<p>Directly affected stakeholders include:</p> <ul style="list-style-type: none"> • The São Simão Municipality: the urban area of this small town is very close to the dam and powerhouse. • District of Chaveslândia: the urban area of this administrative district in the municipality of Santa Vitória is located just downstream from the dam. • Neighbouring farmers of the municipalities of Bom Jesus de Goiás, Cachoeira Dourada de Goiás, Gouvelândia, Inaciolândia, Paranaiguara and Quirinópolis in Goiás State, and Capinópolis, Cachoeira Dourada de Minas Gerais, Gurinhatã, Ipiaçú, Ituiutaba and Santa Vitória in Minas Gerais State. • Municipal authorities of the municipalities of Bom Jesus de Goiás, Cachoeira Dourada de Goiás, Gouvelândia, Inaciolândia, Paranaiguara, Quirinópolis and São Simão in Goiás State, and Capinópolis, Cachoeira Dourada de Minas Gerais, Gurinhatã, Ipiaçú, Ituiutaba and Santa Vitória in Minas Gerais State.
Directly affected institutional-level stakeholders	<ul style="list-style-type: none"> • ANEEL – <i>Agência Nacional de Energia Elétrica</i> – Electric Energy Federal Regulator. • IBAMA – <i>Instituto Brasileiro de Meio Ambiente e Recursos Naturais</i> – Federal Environmental Agency. • ONS – <i>Operador Nacional do Sistema</i> – Brazilian National Electric System Operator. • ANA – <i>Agência Nacional da Água</i> – Water Resources Federal Regulator. • ICMBio – <i>Instituto Chico Mendes de Conservação da Biodiversidade</i> – Biodiversity Conservation Federal Regulator. • SEMAD – <i>Secretaria de Meio Ambiente e Desenvolvimento Sustentável do Estado de Goiás</i> – Goiás State Environmental and Water Resources Agency. • IEF – <i>Instituto Estadual de Florestas</i> – Minas Gerais State Forest Agency. • IGAM – <i>Instituto Mineiro de Gestão de Águas</i> – Minas Gerais Water Resources Agency. • Secretary of Civil Defense and Emergency of Minas Gerais State.

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	<ul style="list-style-type: none"> • Fire Department of Goiás State.
Other relevant information	<p>The São Simão Power Plant was built in the 70's and began operating in 1979, a period in which there was no previous regulated environmental licensing. After the publication of the new constitution in 1988 and the regulation on environmental licensing of potentially polluting activities, projects built prior to the year 2000 had to go through a regularization environmental licensing process to obtain an Operating License and be in compliance with the legislation. For this reason, no EIA was prepared for the project and there is no environmental and social baseline information regarding directly affected communities.</p> <p>The impoundment of the São Simão reservoir flooded areas in 13 municipalities in the states of Goiás (Bom Jesus de Goiás, Cachoeira Dourada, Gouvelândia, Inaciolândia, Paranaiguara, Quirinópolis and São Simão) and Minas Gerais (Capinópolis, Gurinhatã, Ipiaçu, Ituiutaba e Santa Vitória) in the South-eastern Brazilian Region. The reservoir also flooded 4 small towns and villages (São Simão, Paranaiguara, Chaveslândia and Gouvelândia). These urban areas were relocated at the time of the construction of the powerplant, to sites close to their original location. CEMIG (the owner and operator at that time) constructed new urban infrastructure for the resettlement. After the end of CEMIG's concession, SPIC was awarded the concession to operate the project with a 30-year concession from the Federal Government through a bidding process. No information regarding a baseline study or stakeholder mapping was provided by the previous owner. All responsibilities arising from the environmental licensing process and related regulations must continue to be fulfilled by SPIC Brazil in accordance with the existing Operating License.</p>

Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
10.1 Assessment		
Ongoing or emerging issues relating to hydropower facility communications and consultation have been identified	✓	Within the Integrated Management System, the Company has prepared a prepared a matrix that identifies stakeholders (employees, senior management, temporary and permanent service providers, material suppliers, corporate headquarters, shareholders, sustainable community funds, customers, communities, regulatory bodies, press, land lessors; NGOs, institutions financiers and visitors) ("Management and Communication to Stakeholders" - UHESS.FOP.053, spreadsheet). This matrix also defines each stakeholder's influence on the system, expectations and needs; legal requirements, control and monitoring requirements, the purpose of communication actions, the tools/means of communication, the

Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
		periodicity/frequency of communication, who is responsible for communication and how the communication is recorded.
Requirements and approaches are determined through a periodically updated assessment process involving stakeholder mapping	✓	The company carried out a survey of the main stakeholders, using secondary data and office information. In addition, the company carried out a complete demographic survey of the areas close to the dam for the preparation of the Emergency Action Plan (PAE of the PSB (Dam Safety Plan)), as required under the National Dam Safety Plan legislation. The company hired a specialist in community relations, who is based at the plant. One of this person's main functions is to consolidate and update the mapping of stakeholders on a regular basis. The company's next communication event will include more than 200 participants identified through stakeholder mapping.
Effectiveness is monitored	✓	Outsourced agencies operate and control communication channels such as the website and dedicated toll-free telephone line. Reports are sent by these agencies to the responsible departments (communications and compliance departments etc.) and to senior management.
10.2 Management		
Communications and consultation plans and processes are in place to manage communications and engagement with stakeholders	✓	<p>An internal communication plan (the company's internal "engagement plan") is in place and accessible for all power plant workers, SPIC employees or third-party contractors, through e-mail, suggestion boxes, meetings and internal communication campaigns.</p> <p>External communications are managed through the "Portas Abertas" (or "open doors") Program or communication plan, that is accessible to any external stakeholder through the company website, dedicated e-mail, dedicated toll-free number, and periodic events with the communities. The operation and control of this specific program is carried out by an external company, to ensure the responses and feedback can be done in a timely manner.</p> <p>The Corporate Procedure SPIC.CORP.004 Communication, Participation and Consultation establish the procedures for the communication, participation and consultation of employees, suppliers, subcontractors, and other interested parties in relation to the hazards, risks and environmental impacts arising from the activities related to SPIC Brazil.</p>
These plans and process include an appropriate grievance mechanism	✓	As mentioned above, there are internal and external grievance mechanisms in place. The internal grievance mechanism is part of the "engagement plan" and is accessible for all power plant workers, SPIC employees or third-party contractors. The external grievance

Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
		mechanism is part of the “Portas Abertas” Program that is accessible to any external stakeholders.
These plans and processes outline communication and consultation needs and approaches for various stakeholder groups and topics	✓	Within the Integrated Management System, a "Management and Communication to Stakeholders" spreadsheet matrix identifies stakeholders (employees, senior management, temporary and permanent service providers, material suppliers, corporate headquarters, shareholders, sustainable community funds, customers, communities, regulatory bodies, press, land lessors, NGOs, financial institutions and visitors), and defines each stakeholder's level of influence, expectations and needs, legal requirements, control and monitoring requirements, purpose of communication actions, tools/means of communication, frequency of communication, who is responsible for communications and how communications are recorded.
10.3 Stakeholder Engagement		
The project operation stage involves engagement with directly affected stakeholders	✓	As mentioned above and throughout the report, SPIC Brazil has been very active in Stakeholder engagement since they started operating the facility in 2018. This is not limited to regulatory requirements (such as the development of the PAE as part of the national Dam Safety plan legislation) with the objective of implementing social projects in the project’s area of influence but includes many other activities, as described in this report.
Engagement is:		
<ul style="list-style-type: none"> appropriately timed and scoped 	✓	Stakeholders have confirmed that they have had access to information when they have requested it and that SPIC Brazil operates and communicates with complete transparency. External communications are outsourced to ensure feedback is timely.
<ul style="list-style-type: none"> often two-way 	✓	Stakeholders understand that they have the opportunity to communicate with the company through the “Portas Abertas” Program, the external communications are outsourced to ensure feedback is timely.
<ul style="list-style-type: none"> undertaken in good faith 	✓	Stakeholders interviewed during the HESG Assessment have expressed that they have confidence in the company, their honesty and transparency.
The business interacts with a range of directly affected stakeholders to understand issues of interest to them	✓	According to the “Management and Communication to Stakeholders” matrix, the company interacts with a broad range of stakeholders to understand issues of importance and interest to them.
Ongoing processes are in place for stakeholders to raise issues and get feedback:		
<ul style="list-style-type: none"> in general 	✓	Processes are in place for internal and external stakeholders to raise general issues and get feedback.

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Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
<ul style="list-style-type: none"> environmental and social issues 	✓	Processes are in place for stakeholder to raise environmental and social issues and concerns and get feedback.
<ul style="list-style-type: none"> project-affected communities 	✓	Processes are in place for communities within the project's area of influence.
<ul style="list-style-type: none"> resettlees and host communities 	Choose an item.	Not relevant
<ul style="list-style-type: none"> Indigenous Peoples 	Choose an item.	Not relevant
<ul style="list-style-type: none"> employees and contractors on human resources and labour management issues 	✓	Processes are in place for employees to raise issues and get feedback.
<ul style="list-style-type: none"> management of climate risks 	✓	Stakeholders can use the processes in place to raise issues related to climate change.
Public disclosure:		
<ul style="list-style-type: none"> the business makes significant project reports publicly available 	✓	<p>Through the "open doors" program, the Company holds an annual event with the main identified stakeholders, where the company's main programs are presented (this year SPIC expects at least 200 people in the event that will be held online in August).</p> <p>The company publishes a newsletter "De Portas Abertas" with the main social actions and progress, reporting on the activities and showing the status of the commitments made by the company to the community. The newsletter is distributed to the communities in the area of influence of the HPP.</p> <p>SPIC Brazil has also published a handbook with instruction for the communities as part of the Emergency Action Plan. The handbook has not been distributed yet because of the COVID-19 pandemic: the company wants to hold workshops with the community to build capacity within the communities and promote the use of the handbook in preparation for the emergency simulations and full-scale exercises.</p>
<ul style="list-style-type: none"> the business publicly reports on project performance, in some sustainability areas 	✓	SPIC Brazil publishes an Annual Sustainability Report, in alignment with GRI (Global Reporting Initiatives) standards. In the third consecutive year of publication, the report presents highlights of SPIC Brazil's performance in 2020 and includes results, projects, the company's vision and how value is generated in addition to a reaffirmation of the Company's commitment to sustainable, transparent and safe operations.
<ul style="list-style-type: none"> power density calculations, estimated GHG emissions, and / or the results of a site-specific assessment are publicly disclosed 	✗	GHG emissions have not been estimated for the project and a site-specific assessment has not been carried out. SPIC Brazil reports on GHG emissions of and GHG emissions avoided by their wind projects in their Annual Sustainability Report.
10.4 Conformance and Compliance		
Processes and objectives relating to communications and consultation have been and are on track to be met with:		

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Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
• no major non-compliances	✓	The project is in compliance with all communications and consultation requirements.
• no major non-conformances	✓	There are no major non-conformances related to communications and consultation.
Communications related commitments have been or are on track to be met	✓	No voluntary communications commitments that have not been met have been identified.

Summary of Findings

Summary and other notable issues	List of significant gaps
<p>The company enjoys a good relationship with stakeholders in the project’s area of influence where they have carried out a survey of the main stakeholders and carried out a complete demographic survey of the areas near the dam for the preparation of the Emergency Action Plan, in accordance with the National Dam Safety Plan requirements. In interviews, communities expressed they have confidence in the company, their honesty and transparency and have been impressed with the degree of communication compared to the previous owner that comparatively did not engage with them as much.</p> <p>Stakeholder mapping is updated regularly, and internal and external communication plans are accessible by all stakeholders by various channels. There are effective internal and external grievance mechanism in place. The Company publishes an annual sustainability report which presents highlights of SPIC Brazil's performance and reaffirms the Company’s commitment to sustainable, transparent and safe operations.</p>	<ul style="list-style-type: none"> • 1. GHG emissions have not been publicly disclosed.

11 Hydrological Resource



Scope and Intent	
<p>This section addresses the hydrological resource availability and reliability to the operating facility, reservoir planning and downstream flow regimes in relation to operating hydropower facility. The intent is that power generation planning and operations take into account hydrological resource availability and reliability in the short- and long-term, that issues with respect to downstream flow regimes are identified and addressed, and that the reservoir is well managed taking into account power generation operations, environmental and social management requirements, and multi-purpose uses where relevant.</p>	

Background	
Hydrology and flows	
Average flow at dam (m ³ / s)	2 380.70 m ³ /s
Minimum monthly average flow (m ³ / s)	September average monthly flow (1931-2017): 964 m ³ /s
Maximum monthly average flow (m ³ / s)	February average monthly flow (1931-2017): 4 188 m ³ /s
Lowest observed flow (m ³ / s)	Lowest recorded monthly average flow (1931-2017): 362 m ³ /s - September 2017
Highest observed flow (m ³ / s)	Highest recorded monthly average flow (1931-2017): 9 931 m ³ /s – February 1982
Design flow (m ³ / s)	
Affected river reaches (start/end and how affected)	Paranaíba River: the reservoir is approximately 140 km-long and has therefore affected a 140 km reach of the river including a stretch that was known as the São Simão Channel, a narrow gorge, 35 m wide and 23 km long. The Paranaíba River and its tributaries are highly regulated and fragmented by hydropower facilities. The São Simão HPP does not have a dewatered or reduced flow reach as the powerhouse is located at the foot of the dam and discharges flow directly to the river.
Proposed downstream flow regimes for environmental or social objectives	There are no required environmental flows downstream from the facility, however, minimum flows must be maintained downstream at all times to meet the navigation requirements. A dry dock is located approximately 3 to 5 km downstream from the dam where barges load agricultural products destined for the Tiete River and eventually for the Port of Santos. The ONS (the national system operator) dispatches all hydropower stations in the catchment such that flows are available for downstream hydropower facilities and for navigation purposes.
Reservoir	
Reservoir length (km)	Approx. 140 km
Minimum operating level MOL (masl)	390.5 masl
Normal operating level (masl)	401.0 masl
Full supply level FSL (masl)	401.8 masl (“máximo <i>maximorum</i> ”)

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Reservoir area at NOL (km ²)	677.57 km ² (and 703.21 km ² at FSL)
Reservoir area at MOL (km ²)	419.19 km ²
Volume at NOL (million m ³)	12 540 million m ³ of which 5 540 million m ³ is live storage
Volume at MOL (million m ³)	Not available
Average retention time in days	The HPP is a run-of-river facility (retention time is approximately 0.6 day based on volume at NOL and average flow).
Number of days for filling	Not available
Other relevant information	

Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
11.1 Assessment		
Ongoing or emerging issues have been identified, in the following areas:		
• hydrological resource availability and reliability	✓	Due to the prolonged drought and water crisis affecting the country, the ONS is implementing a policy to try and recover reservoir water levels. Currently, reservoirs in the southeast of the country are at ~ 24% capacity and ONS is targeting achieving 35% by the end of July).
• reservoir management	✓	<p>Operations of the São Simão HPP and other hydropower facilities in the river system are managed and dispatched by the national system operator (ONS) on a daily basis within the constraints of the HPP's Operating License. Daily production plans are prepared by the ONS for the hydropower plants in the river system based on hydrometric data provided to the ONS by the various Hydropower plant owners.</p> <p>Under its Operating License, São Simão HPP disposes of natural flows in the Paranaíba River for generation purposes minus any upstream consumptive water uses as indicated in Annex 2 of the license. For example, for 2020, the upstream consumptive water withdrawal by neighbouring communities is estimated to be 79.7 m³/s, and in 2030, 122.4 m³/s. ANA reserves the right to update the consumptive withdrawals at any time).</p> <p>Golden mussel larvae were detected for the first time during the São Simão's water quality monitoring in October 2016. In January 2020, larvae were detected at three of the water sampling stations and in October 2020 at five stations. Golden mussels have affected intakes and piping, heat exchangers and water filters at the plant. São Simão HPP retained a consultant to develop a plan to use a molluscicide to prevent the adherence of Golden</p>

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Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
		<p>mussel larvae in the water-cooling system of the plant (the plan was approved by IBAMA in November 2020).</p> <p>Other than water quality monitoring and erosion monitoring (mentioned in other sections) required under the conditions of the facility's Operating License, São Simão HP is also required to monitor fishing activity regularly for a period of three years to understand the fishing dynamics in the HPP's area of influence.</p>
<ul style="list-style-type: none"> • downstream flow regimes 	<p>✓</p>	<p>Under its Operating License, São Simão HPP must also take into account any future flows destined for fish passage and ensure that minimum flows are discharged to downstream reaches and for navigation purposes. The São Simão HPP does not have a dewatered or reduced flow reach as the powerhouse is located at the foot of the dam and discharges flows directly to the river and the national system operator (ONS) is responsible for dispatching the plant and ensure the downstream hydropower plants receive flows they require to operate within their respective operating license constraints. Navigable reaches of the Paranaíba River are located approx. 3 km downstream from the São Simão HPP at the Port of "Porto Seco do Distrito Industrial de São Simão".</p>
<p>In these areas, if management measures are required then monitoring is being undertaken to assess if management measures are effective:</p>		
<ul style="list-style-type: none"> • reservoir management 	<p>✓</p>	<p>Operations have an impact on shoreline erosion and sediment transport as well as other factors beyond the control of the São Simão HPP (such as wave action, agricultural activities in the surrounding areas). The erosion monitoring programme and the reforestation programme surrounding the reservoir contribute to the prevention of erosion and the reduction of ecological fragmentation.</p> <p>Management measures implemented in 2020/2021 (and reported in the plant's annual report to IBAMA), to combat the Golden mussel infestation has included alterations and modifications to water intakes and piping systems, painting of debris racks with anti-adherent coating, the installation of a chlorine injection systems, the cleaning of encrusted water intake filters and heat exchangers ect. A monitoring plan is in place to ensure these measures remain effective. In addition, São Simão HPP is implementing a Plan to use a molluscicide to prevent the adherence of Golden mussel larvae in the water-cooling system of the plant (the plan was approved by IBAMA in November 2020).</p>
<ul style="list-style-type: none"> • downstream flow regimes 	<p>✓</p>	<p>The São Simão HPP monitors inflows and outflows and water levels upstream and downstream to ensure downstream flow requirements are met and shares hydrometric</p>

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Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
		data with the ONS (national electricity system operator) so that they can dispatch the hydropower stations along the river accordingly.
Monitoring is being undertaken of hydrological resource availability and reliability	✓	São Simão HPP has hydrometric stations located upstream and downstream from the dam site and records water levels and flows.
Inputs include:		
<ul style="list-style-type: none"> field measurements 	✓	São Simão HPP has flow data and water level data that they use to describe hydrologic trends and to conduct statistical analysis. Data is shared with the national electrical system operator, that dispatches all HPPs in the river basin.
<ul style="list-style-type: none"> appropriate statistical indicators 	✓	The engineers at the plant conduct statistical analysis and use appropriate statistical indicators to inform operations and forecast performance.
<ul style="list-style-type: none"> issues which may impact on water availability or reliability 	✓	São Simão HPP recognises that the prolonged droughts which have affected this region of Brazil over the past 20 years are likely to increase due to climate change and that generation is likely to be affected in the long term.
<ul style="list-style-type: none"> a hydrological model 	✓	São Simão HPP works with a renowned dam safety consultant in Brazil that carries out independent dam safety reviews and developed hydrological models for the facility.
11.2 Management		
Measures are in place to manage identified reservoir management issues	✓	<p>Due to the prolonged drought and water crisis affecting the country, the ONS is implementing a policy to try and recover reservoir water levels. Currently, reservoirs in the southeast of the country are at ~ 24% capacity and ONS is targeting achieving 35% by the end of July). São Simão HPP has developed a Contingency Plan (emergency plan) specifically for the 2021 water crisis period and formed a Water Crisis committee to centralise all the relevant information to respond to emergencies and reservoir and downstream flow issues during this period.</p> <p>Three bioboxes are being used to monitor the effectiveness of the molluscicide injection at the plant.</p> <p>São Simão HPP has been monitoring fishing activities within the reservoir for 3 years now 6 to 7 times a year</p>
In the case of a need to address downstream flow regimes, measures are in place to address identified downstream flow issues	✓	There are currently no identified downstream flow issues that need to be addressed since the ONS dispatches the hydropower plants within the river basin and takes downstream navigation requirements into consideration .

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Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
Where formal commitments have been made to downstream flow regimes, these are publicly disclosed	n/a	There are no formal commitments made related to downstream flow regimes, however the facility is one of many on the river system that must ensure downstream flows are sufficient for navigation purposes and for community consumptive uses of reservoir water.
Measures are in place to guide generation operations that are based on:		
<ul style="list-style-type: none"> analysis of the hydrological resource availability 	✓	São Simão HPP shares hydrometric data with the ONS that is responsible for dispatching the plants on the river system. Analysis of the hydrological resource and trends allows SPIC Brazil to guide operations and forecast performance.
<ul style="list-style-type: none"> a range of technical considerations 	✓	Operations are based on a range of technical considerations, including the current modernization programme which involves rehabilitation of the main electro-mechanical equipment at the plant.
<ul style="list-style-type: none"> an understanding of power system opportunities and constraints 	✓	São Simão HPP understands the constraints of operating a hydropower facility in a highly regulated river basin under the constraints of a national electricity system operator (ONS) that dictates the dispatching of the facility and under the current prolonged drought conditions in which the ONS is implementing a reservoir water level recovery plan which limits generation at HPP facilities in the region, favouring the dispatch of thermal power plants to conserve water.
<ul style="list-style-type: none"> social, environmental and economic considerations 	✓	Operations must take into account community consumptive use of water in the reservoirs, as stipulated in the water use authorization from ANA and navigation requirements downstream. Currently, the ONS is implementing a policy to try and recover reservoir water levels. Currently, reservoirs in the southeast of Brazil are at approximately 24% capacity and the ONS is targeting achieving 35% by the end of July.
11.3 Conformance and Compliance		
Processes and objectives in place to manage each of the following have been and are on track to be met:		
<ul style="list-style-type: none"> reservoir management, with no major non-compliances 	✓	There are no indications of non-compliances related to reservoir management.
<ul style="list-style-type: none"> reservoir management, with no major non-conformances 	✓	There are no indications of non-conformances related to reservoir management.
<ul style="list-style-type: none"> in the case of a need to address downstream flow regimes, with no major non-compliances 	✓	There are no indications of non-compliances related to downstream flows.
<ul style="list-style-type: none"> in the case of a need to address downstream flow regimes, with no major non-conformances 	✓	There are no indications of non-conformances related to downstream flows.

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Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
Commitments related to the following have been or are on track to be met:		
• reservoir management	✓	All commitments related to reservoir management are being met.
• downstream flow regimes	✓	All commitments related to downstream flow regimes management are being met.
11.4 Outcomes		
In the case of a need to address downstream flow regimes and commitments to downstream flow regimes have been made, these take into account environmental, social and economic objectives	✓	The facility is one of many on the river system that must ensure downstream flows are sufficient for navigation purposes. As required by the water rights granted by ANA, hydropower plants must take into account community consumptive uses of reservoir water. ONS dispatches the HPPs in accordance with their operating licenses and water rights.
Downstream flow regimes take agreed transboundary objectives into account, where relevant	✓	The Paranaíba River is one of the principal tributaries of the Paraná River, which is a transboundary river system running through Brazil, Paraguay and Argentina. The ONS operates the system to ensure availability of flows for downstream hydropower plants, including the large transboundary hydropower plants and for navigation purposes. The Itaipu International Treaty is in place to operate the system

Summary of Findings

Summary and other notable issues	List of significant gaps
Through well planned and effective monitoring programmes, São Simão HPP continuously monitors flows and water levels to assess hydrologic trends that will influence operations and plant performance. São Simão HPP shares hydrometric data on inflows and discharges from the facility and water levels with the ONS that dispatches the plants of the river system to ensure downstream navigation needs are met.	There are no significant gaps in this section.

12 Climate Change Mitigation and Resilience



Scope and Intent	
<p>This section addresses the estimation and management of the project’s greenhouse gas (GHG) emissions, analysis and management of the risks of climate change for the project, and the project’s role in climate change adaptation. The intent is that the project’s GHG emissions are consistent with low carbon power generation, the project is resilient to the effects of climate change, and the project contributes to wider adaptation to climate change.</p>	
Background	
Climate Change Mitigation	
Capacity (MW) (or additional capacity in case of expansion/ rehabilitation projects)	1 710 MW
Average reservoir area (representing area of flooded land, net of pre-impoundment water body) (km ²) (or additional reservoir area if any, for expansion/rehabilitation projects)	The average reservoir area n.et of the pre-impounded river area is assumed to approximately 612 km ² .
Power density (W / m ²)	Not calculated but would be in the order of 2.8 W / m ²
Emissions intensity (gCO ₂ e / kWh)	GHG emissions intensity has not been estimated for the facility.
National and regional policies, plans and commitments relevant to mitigation	Law 12.187 (December 2009) establishes the National Policy of Climate Change (PNMC) which was meant to lead to sectoral mitigation plans. Brazil produces low carbon electricity, made up of approximately 65% hydropower and 15% other renewables such as wind, solar and biomass. Mitigation commitments include reducing deforestation in the Amazon and the Cerrado, reducing the transportation sector emissions, Brazil is the second largest biofuels producer in the world and has committed to reduce the carbon intensity of gasoline by 10% by 2028 (by increasing the share of biofuels in the fuel supply from 20 to 30%).
Climate Change Resilience	
Hydrological data available for the project site and the basin, and observed climate trends	Hydrometric data including hydrology data is being measured by São Simão HPP and the hydrological series of monthly average flows for the period of record 1931-2017 is included in the facility’s Water Rights grant from ANA. SPIC Brazil shared information on recent periods of prolonged droughts and how these have affected generation from hydropower plants in the country. The ONS (national system operator) is implementing a plan to try and recover reservoir water levels that have been low for the past decade.
Regional and basin-level climate models relevant to the project location, if any	Regional climate models predict that mean annual temperature will rise and annual precipitation will decrease and that the dry season will get longer. (https://climateknowledgeportal.worldbank.org/)

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Any climate change predictions for the project location, and degree of consistency	Regional climate models for the watershed indicate the same trends as mentioned above, with a decrease in monthly rain of up to 30 mm and an increase in temperature of 3 to 4 °C for 2080-2099.
National policies, plans and commitments relevant to adaptation and resilience	Brazil has developed a National Drought Policy and Regional drought policies to increase “drought preparedness” and increase resilience to future droughts and climate change.
Other relevant information	

Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
12.1 Assessment		
Climate Change Mitigation		
If power density is below 5 W/m ² , net GHG emissions (gCO ₂ e) of electricity generation are calculated, independently verified and periodically updated	✗	Power density is below 5 W/m ² . The net GHG emissions estimates have not been calculated, however, the company is planning to estimate GHG emissions from the project as part of their sustainability strategy by 2022.
If power density is below 5 W/m ² and estimated emissions are above 100 gCO ₂ e/kWh, a site-specific assessment of GHG emissions is undertaken and periodically updated	✗	A site-specific assessment of GHG emissions has not been undertaken.
Climate Change Resilience		
An assessment of the project’s resilience to climate change is undertaken and periodically updated	✓	An assessment of how prolonged droughts are affecting the facility has been undertaken with the knowledge that climate change scenarios in the region indicate a trend towards less precipitation and a dryer climate
The assessment:		
<ul style="list-style-type: none"> incorporates an assessment of plausible climate change at the project site 	✓	Operations at the hydropower plant will need to adapt to a dryer climate, it is anticipated that no structural changes will be required.
<ul style="list-style-type: none"> identifies a range of climatological and hydrological conditions at the project site 	✓	A long period of record of hydrology data is available for the HPP (1931-2021) together including data from three recent multi-year periods of prolonged drought that have occurred over the past 20 years provide a range of climatological and hydrological conditions for the assessment of various scenarios. The current prolonged drought period has lasted for eight years.

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Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
<ul style="list-style-type: none"> applies these conditions in a documented risk assessment or stress test 	✓	São Simão HPP applies a risk assessment framework to assess the performance of the facility during prolonged periods of drought and has documented this process. Documents and reports were shared with the assessors during interviews.
The risk assessment or stress test encompasses:		
<ul style="list-style-type: none"> dam safety 	✓	With lower inflows and lower water levels in the reservoir, it is assumed that the dam is resilient to the predicted climate change trends.
<ul style="list-style-type: none"> other infrastructural resilience 	✓	The resilience of other components (transmission line) is not expected to be significantly affected by climate change.
<ul style="list-style-type: none"> environmental and social risks 	✓	With lower precipitation and higher temperatures, it is expected that climate change may lead to water stress and impact terrestrial habitats and potentially lower groundwater levels.
<ul style="list-style-type: none"> power generation availability 	✓	The assessment of how prolonged period of droughts impact generation at São Simão HPP has been carried out.
12.2 Management		
Climate Change Mitigation		
If GHG emissions estimates assume design and management measures, these measures are in place	✓	<p>GHG emissions have not been calculated for the São Simão HPP, however, SPIC Global is the largest solar PV generator in the world. In Brazil, SPIC also owns two operating wind farms located in the northeast region of Brazil. Avoided CO₂ emissions are calculated for both projects (over 56 000 tonnes CO₂), as well as emissions from their wind projects (62 tonnes CO₂) and both are reported in the company’s annual sustainability report.</p> <p>The company currently has an R&D project focussed on including hybrid projects into SPIC’s asset portfolio. The main line of research and investigation is to establish a conceptual foundation and propose regulatory alternatives that allow for the use of synergistic gains from the implementation of hybrid projects and evaluate the potential of electric energy storage projects in this context.</p> <p>Other mitigation programmes in place at São Simão HPP and SPIC Brazil plants include energy efficiency (usage of LED lighting), vehicle emissions testing, campaigns against forest fires, etc. In addition, the modernization programme at São Simão HPP is aimed at improving and increasing the efficiency of the hydropower plant.</p>
Climate Change Resilience		

Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
Measures are in place to avoid or reduce identified climate risks	✓	<p>One of the company’s R&D projects is an Integrated Decision Support System/optimization tool to define optimal marketing strategies based on advanced market intelligence concepts. The project proposes to capture variables of bilateral contract pricing and expectations regarding the evolution of energy tariffs in a regulated market environment with the objective of reducing financial risk. This optimization tool may contribute to reducing climate change risk on project’s long-term performance (generation and reliability).</p> <p>The company’s sustainability programme is planning to implement climate change resilience measures between 2022 and 2030.</p>
12.3 Conformance and Compliance		
Climate Change Mitigation		
Processes and objectives relating to mitigation have been and are on track to be met with:		
• no major non-compliances	✓	There are no identified non-compliances related to climate change mitigation
• no major non-conformances	✓	There are no identified non-conformances related to climate change mitigation
Mitigation-related commitments have been or are on track to be met	✓	SPIC Brazil is implementing a number of climate change mitigation measures and has committed to include climate change mitigation and resilience measures in their sustainability programme between 2022 and 2030.
Climate Change Resilience		
Processes and objectives relating to resilience have been and are on track to be met with:		
• no major non-compliances	✓	There are no identified non-compliances related to climate change resilience.
• no major non-conformances	✓	There are no identified non-conformances related to climate change resilience.
Resilience-related commitments have been or are on track to be met	✓	SPIC Brazil is implementing a number of climate change resilience measures and has committed to include climate change mitigation and resilience measures in their sustainability programme between 2022 and 2030.
12.4 Outcomes		
Climate Change Mitigation		
The project’s GHG emissions are demonstrated to be consistent with low carbon power generation	✗	GHG emission have not been estimated for the project.
Climate Change Resilience		

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Requirement	Requirement is met: yes (✓) or no (✗)	Findings and Observations
Findings of the climate change assessment indicate that the project is resilient to climate change	✓	The project infrastructure is likely to be resilient to climate change because climate change scenarios indicate a trend of warmer dryer weather with a decrease in precipitation and longer dry seasons or periods of drought, however, the HPP may not be able to generate long term average energy estimates that were based on historic hydrology series, however, the optimization tool and decision support system that is under development (R&D project) may contribute to climate change resilience.

Summary of Findings

Summary and other notable issues	List of significant gaps
GHG emissions have not been estimated for São Simão HPP, however SPIC Brazil calculates emission factors as well as emissions reductions generated by their wind projects, and these are publicly disclosed in the annual sustainability reports posted on their website.	<ul style="list-style-type: none"> ● 1. GHG emissions have not been estimated for the project.

Appendix 1 – Interviews

Ref	Interviewee/s, Position	Organisation	Date	Location
1	Robert Williams/ Internal security at the power plant's entrance.	Colabore Security Company	July 6 th	São Simão Powerplant
2	Wesley Silva/ HSE Technician	SPIC Brazil	July 6 th	São Simão Powerplant
3	Wagner de Souza Lima/ Environmental Management Technician	SPIC Brazil	July 6 th	São Simão Powerplant
4	Douglas/ Civil contractor supervisor	MG Construction Company	July 6 th	São Simão Powerplant
5	Gilbert Quirino de Souza Souto/ Chaveslândia District Administrator	Santa Vitória Municipality	July 7 th	Chaveslândia Administrative Office
6	Welitânia Assis Tente/ Chaveslândia District Assistant Administrator	Santa Vitória Municipality	July 7 th	Chaveslândia Administrative Office
7	José Guedes Bernardis, Rúbia Pereira Barra and Mateus Barra Bernardis/ landowners	Constelação Farm	July 7 th	Constelação Farm main house in Paranaiguara
8	Marisa de Lucca/ Manager	Ilha da Imaginação Project	July 7 th	Ilha da Imaginação Headquarters in São Simão.
9	Sérgio Martinelli: Pedagogical Coordinator	Ilha da Imaginação Project	July 7 th	Ilha da Imaginação Headquarters in São Simão.
10	Laise/ Health Secretary of São Simão Municipality	São Simão Municipality	July 7 th	São Simão Health Secretary Headquarters
11	Daniela/ São Simão head attorney	São Simão Municipality	July 7 th	São Simão Health Secretary Headquarters
12	Juliano Melo/ Forest Engineer	Brandt Environmental Consultant	July 7 th	Brandt Consultant Office in São Simão
13	Keslem Soares/ head of the Department of Inspection, Works and Postures of the Municipality of São Simão	Municipality of São Simão	July 8 th	São Simão City Hall
14	Alexandre Pereira/ HSEQ Coordinator	SPIC Brazil	July 8 th	São Simão Powerplant
15	Nilson Arrais Neto/ Dam Safety Engineer	SPIC Brazil	July 8 th	Interview online
16	Sabrina Tenello/ Community Relations Specialist	SPIC Brazil	July 8 th	São Simão Powerplant
17	Talita Prado/ Environmental Management Technician	SPIC Brazil	July 8 th	São Simão Powerplant
18	Thais Coradini/ Human Resources Analyst	SPIC Brazil	July 12 th	Interview online
19	Thais Ribeiro/ Human Resources Analyst	SPIC Brazil	July 12 th	Interview online
20	Claudia Bottozzo/ Procurement Manager	SPIC Brazil	July 13 th	Interview online
21	Pamela Cristina Mendes/ Communication Manager	SPIC Brazil	July 13 th	Interview online
22	Paulo Afonso Tripode/ Powerplant Operation Manager	SPIC Brazil	July 14 th	Interview online

Appendix 2 – Documents

Ref	Author	Year	Title	Notes / links / language
1	SPIC BRAZIL	2019	Política de Saúde, Segurança, Meio Ambiente e Qualidade (HSEQ)	Portuguese
2	SPIC BRAZIL	2019	Código de Conduta e Ética – Programa de Integridade	Portuguese
3	SPIC BRAZIL	2020	Organizational Chart	English
4	SPIC BRAZIL	2020	UHE São Simão Procurement Standard and Procedures	English
5	SPIC BRAZIL	2020	Relatório Anual Sustentabilidade 2019	Portuguese
6	SPIC BRAZIL	2021	Relatório Anual Sustentabilidade 2020	Portuguese
7	SPIC BRAZIL	2019	Relatório Anual 2018	Portuguese
8	SPIC BRAZIL	2019	Procedimento Corporativo SPIC.CORP.002 Gestão de Perigos e Riscos de SST	Portuguese
9	SPIC BRAZIL	2019	Procedimento Corporativo SPIC.CORP.003 Requisitos Legais e Outros	Portuguese
10	SPIC BRAZIL	2020	Procedimento Corporativo SPIC.CORP.004 Comunicação, Participação e Consulta	Portuguese
11	SPIC BRAZIL	2020	Procedimento Corporativo Anexo SPIC.CORP.006 Guia Corporativo Práticas para o Atendimento à Pandemia Covid-19	Portuguese
12	SPIC BRAZIL	2019	Procedimento Corporativo SPIC.CORP.006 Gestão de Crise, Risco e Emergência	Portuguese
13	SPIC BRAZIL	2019	Procedimento Corporativo SPIC.CORP.012 Gestão de Saúde Ocupacional	Portuguese
14	SPIC BRAZIL	2020	Procedimento Corporativo SPIC.CORP.014 Diretrizes de HSEQ para Contratadas/Corporate Procedure HSEQ Guidelines for Contractors	Portuguese/English
15	SPIC BRAZIL	2019	Procedimento Corporativo SPIC.CORP.015 Guia Levantamento de Aspectos e Impactos Ambientais	Portuguese
16	SPIC BRAZIL	2020	PHB.FCS.007 VII Chamada Pública Fundo Comunitário SPIC Brasil	Portuguese
17	SPIC BRAZIL	2020	Sistema de Gestão Integrada Anexo SPICMAN.001 Escopo do Sistema de Gestão Integrada em HSEQ	Portuguese
18	SPIC BRAZIL	2019	Sistema de Gestão Integrada SPICMAN.001 Manual do Sistema de Gestão Integrada em HSEQ	Portuguese
19	SPIC BRAZIL	2019	Formulário Operacional de HSEQ UHESS.FOP.053 Gerenciamento e Comunicação às Partes Interessadas (Stakeholders)	Portuguese
20	SPIC BRAZIL	2019	Procedimento Operacional UHESS.POP.002 Análise Preliminar de Risco e Permissão de Trabalho	Portuguese
21	SPIC BRAZIL	2019	Procedimento Operacional UHESS.POP.003 Manutenção Preventiva de Aparelhos Condicionadores de Ar	Portuguese
22	SPIC BRAZIL	2019	Procedimento Operacional UHESS.POP.004 Armazenamento de Produtos Químicos	Portuguese
23	SPIC BRAZIL	2019	Procedimento Operacional UHESS.POP.005 Trabalho em Altura	Portuguese
24	SPIC BRAZIL	2019	Procedimento Operacional UHESS.POP.006 Trabalho em Instalações Elétricas e Áreas Classificadas	Portuguese
25	SPIC BRAZIL	2021	Procedimento Operacional UHESS.POP.009 Plano de Atendimento à Emergência – Usina Hidrelétrica São Simão	Portuguese

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26	SPIC BRAZIL	2021	Procedimento Operacional UHESS.POP.009 Plano de Atendimento à Emergência – Anexo I Composição da Brigada de Emergência e Incêndio	Portuguese
27	SPIC BRAZIL	2021	Procedimento Operacional UHESS.POP.009 Plano de Atendimento à Emergência – Anexo II Kits de Emergência Ambiental	Portuguese
28	SPIC BRAZIL	2021	Procedimento Operacional UHESS.POP.009 Plano de Atendimento à Emergência – Anexo III Telefones Externos Úteis	Portuguese
29	SPIC BRAZIL	2021	Procedimento Operacional UHESS.POP.009 Plano de Atendimento à Emergência – Anexo IV Localização dos Extintores	Portuguese
30	SPIC BRAZIL	2021	Procedimento Operacional UHESS.POP.009 Plano de Atendimento à Emergência – Anexo V Recursos Primeiros Socorros	Portuguese
31	SPIC BRAZIL	2021	Procedimento Operacional UHESS.POP.009 Plano de Atendimento à Emergência – Anexo VI Localização dos Hidrantes	Portuguese
32	SPIC BRAZIL	2021	Procedimento Operacional UHESS.POP.009 Plano de Atendimento à Emergência – Anexo VII Lista de Pessoas Relacionadas ao PAE	Portuguese
33	SPIC BRAZIL	2021	Procedimento Operacional UHESS.POP.009 Plano de Atendimento à Emergência – Anexo VIII Fichas de Resposta a Emergências	Portuguese
34	SPIC BRAZIL	2020	Procedimento Corporativo SPIC.CORP.005 Competência, Treinamento e Conscientização	Portuguese
35	SPIC BRAZIL	2020	Procedimento Corporativo SPIC.CORP.007 Auditoria	Portuguese
36	SPIC BRAZIL	2019	Procedimento Corporativo SPIC.CORP.008 Medição, Monitoramento e Análise de Desempenho	Portuguese
37	SPIC BRAZIL	2019	Procedimento Corporativo SPIC.CORP.009 Não Conformidades e Ações Corretivas	Portuguese
38	SPIC BRAZIL	2019	Procedimento Corporativo SPIC.CORP.010 Investigação de Incidentes	Portuguese
39	SPIC BRAZIL	2020	Procedimento Corporativo SPIC.CORP.011 Análise Crítica	Portuguese
40	SPIC BRAZIL	2019	Procedimento Corporativo SPIC.CORP.016 Gerenciamento de Mudanças	Portuguese
41	SPIC BRAZIL	2021	Procedimento Corporativo SPIC.SGQ.CORP.001 Controle de Documentos e Registros	Portuguese
42	SPIC BRAZIL	2020	Formulário Operacional de HSEQ UHESS.FOP.001 Controle de Documentos e Registros	Portuguese
43	SPIC BRAZIL	2019	Formulário Operacional de HSEQ UHESS.FOP.004 Matriz de Perigos e Riscos	Portuguese
44	SPIC BRAZIL	2019	Formulário Operacional de HSEQ UHESS.FOP.009 Matriz de Treinamento	Portuguese
45	SPIC BRAZIL	2019	Formulário Operacional de HSEQ UHESS.FOP.021 RNC-RAC Registro de Não Conformidades e Ação Corretiva	Portuguese
46	SPIC BRAZIL	2019	Formulário Operacional de HSEQ UHESS.FOP.023 Relatório de Medição e Monitoramento	Portuguese
47	SPIC BRAZIL	2019	Formulário Operacional de HSEQ UHESS.FOP.035 Plano de Engajamento	Portuguese
48	SPIC BRAZIL	2019	Formulário Operacional de HSEQ UHESS.FOP.039 Planilha de Aspectos e Impactos Ambientais	Portuguese
49	SPIC BRAZIL	2019	Formulário Operacional de HSEQ UHESS.FOP.043 Relatório de Conformidade Legal	Portuguese
50	SPIC BRAZIL	2019	Procedimento Operacional UHESS.POP.001 Competências e Responsabilidades	Portuguese
51	SPIC BRAZIL	2019	Procedimento Operacional UHESS.POP.007 Gestão de Equipamentos de Proteção	Portuguese

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52	SPIC BRAZIL	2019	Procedimento Operacional UHESS.POP.008 Diálogo Diário de Segurança, Meio Ambiente e Sustentabilidade	Portuguese
53	SPIC BRAZIL	2019	Procedimento Operacional UHESS.POP.010 Trabalho em Espaço Confinado	Portuguese
54	SPIC BRAZIL	2019	Procedimento Operacional UHESS.POP.011 Trabalho com Movimentação de Cargas	Portuguese
55	SPIC BRAZIL	2020	Procedimento Operacional UHESS.POP.012 Plano de Comissionamento de Unidades Geradoras	Portuguese
56	SPIC BRAZIL	2021	Operating Procedure UHESS.POP.016 Residue Management Plan	English
57	SPIC BRAZIL	2021	Procedimento Operacional UHESS.POP.016 Plano de Gerenciamento de Resíduos	Portuguese
58	SPIC BRAZIL	2021	Operating Procedure UHESS.POP.016 Residue Management Plan	English
59	SPIC BRAZIL	2018	Procedimento Operacional UHESS.POP.019 Inspeção Ambiental no Canal de Fuga e Embarcada à Jusante	Portuguese
60	SPIC BRAZIL	2018	Procedimento Operacional UHESS.POP.020 Monitoramento do Nível de Oxigênio da Água	Portuguese
61	SPIC BRAZIL	2018	Procedimento Operacional UHESS.POP.021 Monitoramento Prévio da Ictiofauna à Jusante	Portuguese
62	SPIC BRAZIL	2018	Procedimento Operacional UHESS.POP.022 Monitoramento Periódico da Ictiofauna à Jusante	Portuguese
63	SPIC BRAZIL	2018	Procedimento Operacional UHESS.POP.023 Resgate de Peixes na Área de Descarga do Vertedouro	Portuguese
64	SPIC BRAZIL	2019	Procedimento Operacional UHESS.POP.024 Acompanhamento de Manobra em Unidade Geradora com Drenagem Total	Portuguese
65	GESTÃO ORIGAMI	2021	SPIC – Plano Estratégico de Sustentabilidade – Estudo Setorial	Portuguese
66	GESTÃO ORIGAMI	2021	SPIC – Plano Estratégico de Sustentabilidade – Estudo da Empresa – Roteiro de Entrevistas	Portuguese
67	GESTÃO ORIGAMI	2021	SPIC – Plano Estratégico de Sustentabilidade – Estudo do Mercado	Portuguese
68	GESTÃO ORIGAMI	2021	SPIC – Plano Estratégico de Sustentabilidade – Estudo da Empresa – Diagnóstico Interno	Portuguese
69	SPIC BRAZIL	2020	Jornal Portas Abertas SPIC Brasil – Edição 02 – Dezembro 2020	Portuguese
70	SPIC BRAZIL	2020	Planilha de Acompanhamento de: Autorização de Supressão de Vegetação (ASV) DAIA - Linha de Transmissão e Modernização	Portuguese
71	INSTITUTO ESTADUAL DE FLORESTAS DE MINAS GERAIS	2020	Autorização de Exploração – Corte de Árvore Isolada Nº 2031.4.2020.27935	Portuguese
72	INSTITUTO ESTADUAL DE FLORESTAS DE MINAS GERAIS	2020	Autorização de Exploração – Uso Alternativo do Solo Nº 2031.5.2020.34032	Portuguese
73	INSTITUTO ESTADUAL DE FLORESTAS DE MINAS GERAIS	2020	Autorização de Exploração – Autorização de Supressão de Vegetação Nº 2031.9.2020.12061	Portuguese
74	IBAMA - MMA	2016	Autorização de Captura, Coleta e Transporte de Material Biológico Nº 008/2016	Portuguese
75	ICMBio - MMA	2016	Licença Permanente para coleta de Material Zoológico Nº 8109-1	Portuguese
76	SPIC BRAZIL	2020	Planilha de Orçamento Corporativo 2021 da UHE São Simão	Portuguese
77	SPIC BRAZIL	2021	Planilha de Orçamento de Sustentabilidade 2021 a 2025 da UHE São Simão	Portuguese

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78	CREA – GO	2020	Anotação Responsabilidade Técnica – Estudo e Ensaio Hidro geológico Chaveslândia – poço artesiano	Portuguese
79	HIDROLICENÇAS MEIO AMBIENTE E GEOLOGIA	N/D	Declaração de inexistência de perfil geológico e construtivo em poço artesiano	Portuguese
80	HIDROLICENÇAS MEIO AMBIENTE E GEOLOGIA	2020	Estudo Geológico e Hidro geológico da Usina Hidrelétrica São Simão para outorga de uso de água.	Potuguese
81	HIDROLICENÇAS MEIO AMBIENTE E GEOLOGIA	2020	Perfil Esquemático de Poço Tubular Profundo – UHE São Simão Energia S.A.	Portuguese
82	SECRETARIA DO MEIO AMBIENTE E DOS RECURSOS HÍDRICOS DE GOIÁS	2007	Portaria Nº 899/2007-GABI – Outorga de uso da água de poço tubular profundo – 104 m por 12 anos.	Portuguese
83	SECRETARIA DE MEIO AMBIENTE, RECURSOS HÍDRICOS, INFRAESTRUTURA, CIDADES E ASSUNTOS METROPOLITANOS	2018	Portaria Nº 1421/2018-SRH – Outorga de uso da água de poço tubular profundo – 104 m por mais 12 anos, e mudança de titularidade.	Portuguese
84	HIDROLICENÇAS MEIO AMBIENTE E GEOLOGIA	2020	Relatório Fotográfico de Poço Tubular Profundo	Portuguese
85	HIDROLICENÇAS MEIO AMBIENTE E GEOLOGIA	2020	Testes de Bombeamento Poço Tubular Profundo	Portuguese
86	INSTITUTO MINEIRO DE GESTÃO DE ÁGUAS	2019	Certificado de Outorga Portaria Nº 1903957/2019 de 07/06/2019	Portuguese
87	INSTITUTO MINEIRO DE GESTÃO DE ÁGUAS	2019	Extrato Técnico do Certificado de Outorga Portaria Nº 1903957/2019 de 07/06/2019	Portuguese
88	INSTITUTO MINEIRO DE GESTÃO DE ÁGUAS	2018	Parecer Técnico Renovação de Portaria processo Nº 44724/2016	Portuguese
89	INSTITUTO MINEIRO DE GESTÃO DE ÁGUAS	2019	Portaria Nº 1903957/2019 com dados técnicos e informações gerais.	Portuguese
90	BRANDT MEIO AMBIENTE	2017	Plano Ambiental de Conservação e Uso do Entorno do Reservatório Artificial PACUERA – UHE São Simão.	Portuguese
91	BSI GROUP AMERICA INC.	2018	Certificado de Auditor Interno do Sistema de Gestão Integrado ISO 9001:2015, ISO 14001:2015 e ISO 45001:2018.	Portuguese
92	BRANDT MEIO AMBIENTE	2016	Relatório PACUERA UHE São Simão – ANEXO I.	Portuguese
93	BRANDT MEIO AMBIENTE	2016	Relatório PACUERA UHE São Simão – ANEXO II.	Portuguese

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94	BRANDT MEIO AMBIENTE	2016	Relatório PACUERA UHE São Simão – ANEXO III.	Portuguese
95	BRANDT MEIO AMBIENTE	2016	Relatório PACUERA UHE São Simão – ANEXO IV.	Portuguese
96	SPIC BRAZIL	2019	PAE Externo Fluxograma Unificado.	Portuguese
97	SPIC BRAZIL	2019	PAE Externo – Fluxograma de Notificações para Situações Adversas Nível de Resposta 0 e Nível de Resposta 1.	Portuguese
98	SPIC BRAZIL	2019	PAE Externo – Fluxograma de Notificações para Situações de Emergência Nível de Resposta 2.	Portuguese
99	SPIC BRAZIL	2019	PAE Externo – Fluxograma de Notificações para Situações de Emergência Nível de Resposta 3.	Portuguese
100	PIMENTA DE ÁVILA CONSULTORIA LTDA	2019	PAE Externo – Mapa de Inundação 1 de 5 Cenário de Ruptura Isolada.	Portuguese
101	PIMENTA DE ÁVILA CONSULTORIA LTDA	2019	PAE Externo – Mapa de Inundação 2 de 5 Cenário de Ruptura Isolada.	Portuguese
102	PIMENTA DE ÁVILA CONSULTORIA LTDA	2019	PAE Externo – Mapa de Inundação 3 de 5 Cenário de Ruptura Isolada.	Portuguese
103	PIMENTA DE ÁVILA CONSULTORIA LTDA	2019	PAE Externo – Mapa de Inundação 4 de 5 Cenário de Ruptura Isolada.	Portuguese
104	PIMENTA DE ÁVILA CONSULTORIA LTDA	2019	PAE Externo – Mapa de Inundação 5 de 5 Cenário de Ruptura Isolada.	Portuguese
105	SPIC BRAZIL	2019	Plano de Ação de Emergência (PAE) da Barragem da UHE São Simão.	Portuguese
106	SPIC BRAZIL	2021	SIGOM – Management System and Operation and Maintenance Flow.	English
107	IBAMA	2020	Anexo 01: Comunicado Nº 7337671/2020 – GABIN.	Portuguese
108	BRANDT MEIO AMBIENTE	2020	Anexo02: UHE São Simão – Relatório do Programa de Monitoramento dos Focos Erosivos.	Portuguese
109	SPIC BRAZIL	2021	Anexo 03: UHE São Simão – Programa de Gestão Patrimonial.	Portuguese
110	SPIC BRAZIL	2020	Anexo 04: UHE São Simão – Programa de Atendimento a Emergências Ambientais.	Portuguese
111	SPIC BRAZIL	2021	Anexo 05: UHE São Simão – Programa de Educação Ambiental.	Portuguese
112	SPIC BRAZIL	2020	Anexo 06: UHE São Simão – Monitoramento da Qualidade das Águas.	Portuguese
113	SPIC BRAZIL	2021	Anexo 07: UHE São Simão – Monitoramento da Ictiofauna.	Portuguese
114	SPIC BRAZIL	2021	Anexo 08: UHE São Simão – Programa de Comunicação Social – Jornal Portas Abertas 1.	Portuguese
115	BIOT AQUÁTICA CONSULTORIA AMBIENTAL	2020	Anexo 09: UHE São Simão – Relatório Anual de Monitoramento da Ictiofauna a Jusante da UHE São Simão e Acompanhamento de Manobras Operativas com Potencial de Afetação à Ictiofauna.	Portuguese
116	BIOT AQUÁTICA CONSULTORIA AMBIENTAL	2020	Anexo 10: UHE São Simão – Estudo da Viabilidade de Implantação do Mecanismo de Transposição de Peixes.	Portuguese
117	BRANDT MEIO AMBIENTE	2020	Anexo 11: UHE São Simão – Relatório de Acompanhamento da Manutenção e Implantação do Reflorestamento Ciliar no Entorno do Reservatório.	Portuguese

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118	ÉCOLOGIQUE AMBIENTAL	2020	Anexo 12: UHE São Simão – Supressão Vegetal de Indivíduos Arbóreos Isolados do Canteiro de Obras d Modernização.	Portuguese
119	CONSELHO FEDERAL DE BIOLOGIA - 4ª REGIÃO	2021	Anotação de Responsabilidade Técnica de Relatório Anula de Atendimento à Condicionantes Ambientais.	
120	BRANDT MEIO AMBIENTE	2021	Relatório Anula de Atendimento às Condicionantes da Licença de Operação – Síntese Executiva dos Relatórios Parciais e Consolidados.	Portuguese
121	ANA – AGÊNCIA NACIONAL DE ÁGUAS	2020	Declaração de Regularidade de Usos da Água que Independem de Outorga da ANA – Captação Nº 643/2020/SER.	Portuguese
122	ANA – AGÊNCIA NACIONAL DE ÁGUAS	2020	Declaração de Regularidade de Usos da Água que Independem de Outorga da ANA – Captação Nº 787/2020/SRE	Portuguese
123	PREFEITURA MUNICIPAL DE SANTA VITÓRIA	2021	Alvará de Licença para Funcionamento Nº 000221.	Portuguese
124	CORPO DE BOMBEIROS MILITAR DE MINAS GERAIS	2019	Auto de Vistoria do Corpo de Bombeiros – AVCB Nº 20190349232.	Portuguese
125	AGÊNCIA NACIONAL DE ENERGIA ELÉTRICA ANEEL	2017	Contrato de Concessão Nº001/2017 – ANEEL UHE São Simão.	Portuguese
126	SPIC BRAZIL	2021	Planilha de Contratos Ativos de Sustentabilidade do ano de 2021.	Portuguese
127	SPIC BRAZIL	2021	Planilha de Controle de Licenças e Autorizações – UHE São Simão.	Portuguese
128	IBAMA	2021	Certificado de Regularidade no Cadastro Técnico Federal de Atividades Potencialmente Poluidoras e Utilizadoras de Recursos Ambientais – CTF/APP UHE São Simão.	Portuguese
129	IBAMA	2018	Licença de Operação Nº 569/2006 - 2ª Renovação - 2ª Retificação.	Portuguese
130	IBAMA	2021	Ofício Nº 116/2021/CGLIN/DILIC – relativo à operação da Estação Compacta de Tratamento de Efluentes da UHE São Simão.	Portuguese
131	AGÊNCIA NACIONAL DE ÁGUAS – ANA	2021	Outorga de Direito de Uso de Recursos Hídrico – Outorga Nº 448 de 31 de janeiro de 2020 com validade até 10 de maio de 2048	Portuguese
132	PIMENTA DE ÁVILA CONSULTORIA LTDA	2021	PAE PD 200 MP 50519-02 – Mapa de Ponto de Encontro e Rota de Fuga, Mobilidade Reduzida e Sinalização Instalações UHE São Simão	Portuguese
133	PIMENTA DE ÁVILA CONSULTORIA LTDA	2021	PAE PD 200 MP 50521-02 – Mapa de Ponto de Encontro e Rota de Fuga, Chaveslândia	Portuguese
134	PIMENTA DE ÁVILA CONSULTORIA LTDA	2021	PAE PD 200 MP 50522-01 – Mapa de Sinalização Chaveslândia	Portuguese
135	PIMENTA DE ÁVILA CONSULTORIA LTDA	2021	PAE PD 200 MP 50523-02 – Mapa de Ponto de Encontro e Rota de Fuga, Mobilidade Reduzida e Sinalização Fazendas – Folha 01/04	Portuguese
136	PIMENTA DE ÁVILA CONSULTORIA LTDA	2021	PAE PD 200 MP 50524-02 – Mapa de Ponto de Encontro e Rota de Fuga, Mobilidade Reduzida e Sinalização Fazendas – Folha 02/04	Portuguese

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137	PIMENTA DE ÁVILA CONSULTORIA LTDA	2021	PAE PD 200 MP 50646-02 – Mapa de Ponto de Encontro e Rota de Fuga, Mobilidade Reduzida e Sinalização Fazendas – Folha 03/04	Portuguese
138	PIMENTA DE ÁVILA CONSULTORIA LTDA	2021	PAE PD 200 MP 50525-02 – Mapa de Ponto de Encontro e Rota de Fuga, Mobilidade Reduzida e Sinalização Fazendas – Folha 04/04	Portuguese
139	PIMENTA DE ÁVILA CONSULTORIA LTDA	2019	PAE PD – RL – 50488 – 00 – Projeto de Sinalização Coordenadas de Instalação das Placas	Portuguese
140	PIMENTA DE ÁVILA CONSULTORIA LTDA	2021	Operacionalização do PAE – Projeto de Sinalização e Sistema de Alerta a ser Implantado na Zona de Auto salvamento	Portuguese
141	PIMENTA DE ÁVILA CONSULTORIA LTDA	2021	Localização das Sirenes	Portuguese
142	PIMENTA DE ÁVILA CONSULTORIA LTDA	2021	PAE PD 200 MP 50526-02 – Mapa de Ponto de Encontro e Rota de Fuga, Mobilidade Reduzida e Sinalização Distrito Industrial – Folha 01/02	Portuguese
143	PIMENTA DE ÁVILA CONSULTORIA LTDA	2021	PAE PD 200 MP 50527-02 – Mapa de Ponto de Encontro e Rota de Fuga, Mobilidade Reduzida e Sinalização Distrito Industrial – Folha 02/02	Portuguese
144	PIMENTA DE ÁVILA CONSULTORIA LTDA	2021	PAE PD 200 MP 50528-02 – Mapa de Ponto de Encontro e Rota de Fuga, Mobilidade Reduzida e Sinalização Chácaras	Portuguese
145	ANEEL	2017	Anexo II – Características Técnicas e Informações Básicas para a Exploração da Usina Hidrelétrica Integrante do Lote A	Portuguese
146	RURAL TECH	2016	Comparação das Curvas Cota x Área e Cota x Volume Originais e Atualizadas	Portuguese
147	SPIC BRAZIL	2021	Corporate Projects 2021 HSE	English
148	SPIC BRAZIL	2021	Cronograma de Projeto – Sistema Integrado de Gestã – SGI – ISO 9001:2015/14001:2015/45001:2018/55001:2014	Portuguese
149	SPIC BRAZIL	2021	Plano de Ação de Emergência (PAE) da Barragem da UHE São Simão	Portuguese
150	SPIC BRAZIL	2020	SPIC & ‘Ilha da Imaginação’ Program Quantitative Assessment (2ª Wave)	English
151	SPIC BRAZIL	2020	Ilha da Imaginação – Qualitative research report based on individual interviews	English
152	SPIC BRAZIL	2020	SPIC Reputation & ‘Ilha da Imaginação’ program evaluation – Quantitative Study	English
153	CEMIG	1979	Dados Técnicos da Usina de São Simão – DT 00	Portuguese
154	SPIC BRAZIL	2021	Results Presentation – May 21 – HSE	English
155	RURAL TECH	2016	Atualização das Curvas Cota x Área x Volume	Portuguese
156	SPIC BRAZIL	2020	Roadmap ESG – SPIC Brasil	Portuguese
157	IBAMA	2021	Relação de Equipe Técnica RET Nº 1/2021 – ABIO Nº 59/2021	Portuguese
158	IBAMA	2021	Licença de Operação (LO) Nº 569/2006 – Validade de 1 ano e 9 meses a partir da assinatura em 27.04.2021	Portuguese
159	IBAMA	2021	Autorização de Captura, Coleta e Transporte de Material Biológico ABIO Nº 59/2021 validade 4 anos.	Portuguese

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160	SPIC BRAZIL	2021	Especificação Técnica de Serviços – UHESS.ET.060 – Contratação de Assessoria Especializada para Análise dos Resultados dos Programas de Ictiofauna e Proposição de Continuidade	Portuguese
161	SPIC BRAZIL	2021	Contrato Nº COM-1060 Termo de Prestação de Serviços – Elaboração de Relatório Consolidado e Conclusivo dos Resultados Obtidos no Monitoramento de Fauna no período entre 2009 e 2016.	Portuguese
162	SPIC BRAZIL	2021	Ofício Nº 033/2021/HSE – UHE São Simão para CEMIG relativo à disponibilização de Relatórios e dados brutos de Programas Socioambientais da UHE São Simão.	Portuguese
163	CEMIG	2021	DEA/GA – 01097/2021:EGT – Envio de informações referentes aos relatórios e dados brutos dos Programas Socioambientais da UHE São Simão.	Portuguese
164	SPIC BRAZIL	2021	Ofício Nº 034/2021/HSE – UHE São Simão – Resposta Técnica ao IBAMA referente Parecer Técnico 9563243/2021-NLA-MG/DITEC-MG/SUPES-MG.	Portuguese

Appendix 3 - Photographs



Photo 1: COVID-19 Security Protocol: disinfection of Assessor's car before entering São Simão HPP



Photo 2: COVID-19 Internal Awareness Campaign Poster



Photo 3: Safety statistics at main entrance showing days without labour incident

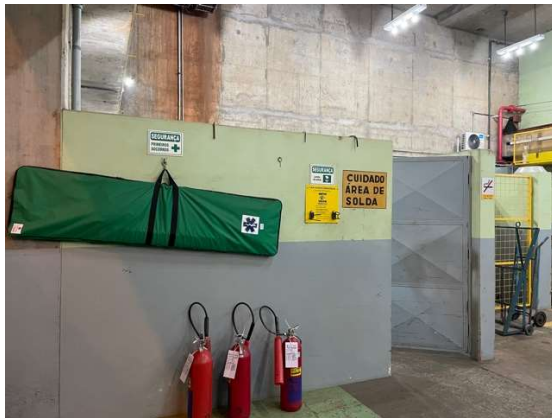


Photo 4: Health and Safety equipment and signage inside the powerhouse



Photo 5: Evacuation Plan signalling inside the powerhouse



Photo 6: Environment, Health and Safety Risk Map in panel inside the powerhouse

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Photo 7: Environmental Emergency Kit Station (one of many) inside the powerhouse



Photo 7: storage room for unused environmental emergency material (not used)



Photo 8: Waste separation station inside the powerhouse



Photo 9: São Simão HPP central recycling Unit



Photo 10: São Simão HPP hazardous waste deposit



Photo 11: Oil, fuel, non-hazardous residue and scrap deposit

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Photo 12: Secondary containment equipment for oil leakage and spill inside the powerhouse



Photo 13: Transformer installed over a containment structure



Photo 14: Truck used for the transformer oil change operation completely inside secondary containment equipment developed by SPC Brazil



Photo 15: Truck used for the transformer oil change operation completely inside secondary containment equipment developed by SPC Brazil



Photo 16: Internal Sewage Treatment Station inside the powerhouse



Photo 17: External Sewage Treatment Station adjacent to the powerhouse

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Photo 18: Transmission line from São Simão powerhouse to CTEEP Substation



Photo 19: One of the artesian wells that supply water for the powerplant



Photo 20: Equipment that prepares and injects chlorine solution to combat to the Golden mussel



Photo 21: Biobox that monitors the Golden mussel's presence and residual chlorine levels in the water




Photo 22: Right bank of the reservoir upstream view from the dam crest



Photo 23: Left bank of the reservoir upstream view from dam crest

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<p>Photo 24: Dam Spillway intake</p>	<p>Photo 25: Safety boom in front of the water intake</p>	<p>Photo 26: Former construction site area now fully recovered with Cerrado Native Vegetation</p>
		
<p>Photo 27: Environmental Preservation Area Sign</p>	<p>Photo 28: Firebreak protection road</p>	<p>Photo 29: Cerrado vegetation at the location of a former construction site not fully recovered</p>

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Photo 30: Animal overpass structure at a former construction site, now completely restored

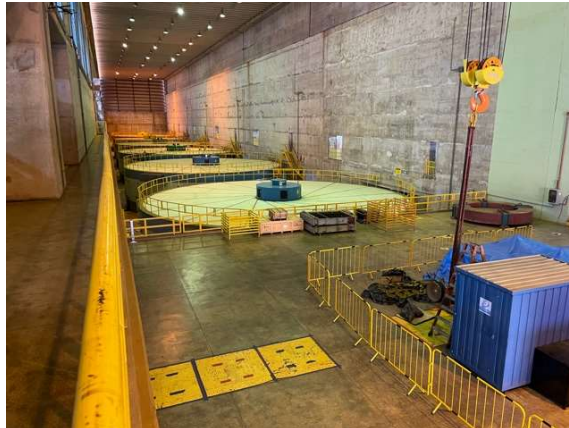


Photo 31: Powerplant Modernization Project Contractor's activities inside the powerhouse



Photo 32: Powerplant Modernization Project Contractor's activities inside the powerhouse



Photo 33: Modernization Project activities at dam crest



Photo 34: SPIC Modernization Project Headquarters Offices at the powerplant



Photo 35: Construction of new gate to access São Simão HPP: activity being implemented by a third party under SPIC's supervision

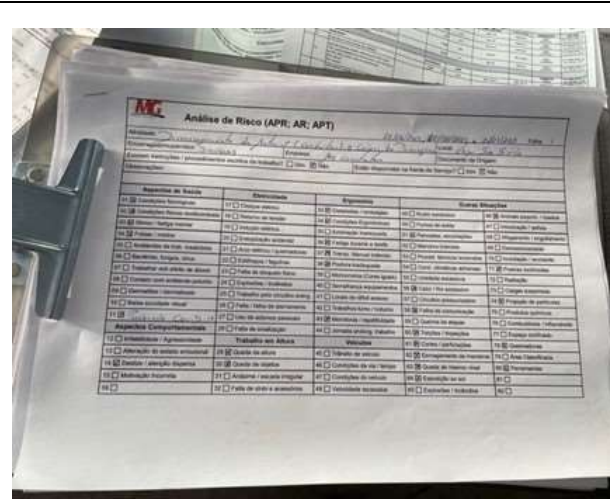


Photo 36: Risk Analysis for the construction activities



Photo 37: Training and capacity building for third party employees



Photo 38: Meeting point in the District of Chaveslândia, municipality of Santa Vitória, identified and reached using the Emergency Action Plan (PAE) app

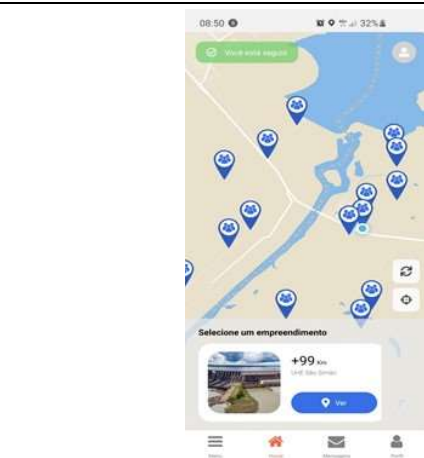


Photo 39: APP screenshot used to reach the Emergency Action Plan meeting point.




Photo 40: Chaveslândia District Administrative Office



Photo 41: Interview with Chaveslândia District Administrator

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<p>Photo 42: Fishermen Association visited located in Chaveslândia District</p>	<p>Photo 43: Bridge over Paranaíba River around 1 km downstream São Simão dam</p>	<p>Photo 44: View of São Simão dam from the bridge</p>
		
<p>Photo 45: São Simão Harbor around 3 Km downstream São Simão dam</p>	<p>Photo 46: Paranaíba River downstream São Simão (Ilha Solteira HPP Reservoir)</p>	<p>Photo 47: Riparian reforestation program around São Simão Reservoir with sign indicating preservation area</p>

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Photo 48: Cattle passage implemented through reforestation zone according to Reservoir Surroundings Zoning Plan (PACUERA)



Photo 49: Reservoir at 20% capacity, riparian vegetation far from current shoreline in the Paranaiguara rural area and in São Simão urban area.



Photo 50: Ilha da Imagem: one of SPIC's social projects in the São Simão Municipality



Photo 51: Ilha da Imagem project



Photo 52: Ilha da Imagem project



Photo 53: Ethic Channel grievance mechanism



Photo 54: Integrity and Ethics Program information notices can be found in several places in the power plan)



Photo 55: Firefighters and Municipal Licenses displayed at the entrance of the powerplant office