

HSAP SECTION II PROJECT PREPARATION

OVERVIEW OF SECTION II ASPECTS

Demonstrated Need & Strategic Fit (II-1): This aspect addresses the justification of the project towards meeting water and energy service requirements; local, regional and national development objectives; and regional and national policies and plans, including transboundary plans. The intent is that the need for the project can be demonstrated, and there is a strategic fit with regional and national policies and plans.

River Basin & Transboundary Issues (II-2): This aspect addresses the degree of involvement and influence of the project in seeking efficiency and sustainability of water resource utilization within the large river basin in which it the project is located, which may cross jurisdictional boundaries. The intent is that water resource utilization at the river basin scale is planned and optimized with respect to social and environmental values, and conflicts are avoided.

Hydrological Resource Availability & Management (II-3): This aspect addresses the level of understanding of the hydrological resource availability and reliability to the project, and the planning for short- and long-term management of this resource. The intent is that hydrological resource availability and reliability to the project are understood and optimally planned for in the short- and long-term, taking into account climate change and taking into account existing and likely future demands on the hydrological resource that could directly affect the project.

Project Siting & Design Optimisation (II-4): This aspect addresses the evaluation and determination of hydropower project siting and design options. The intent is that the project site selection and design is optimized as a result of an iterative and consultative process that has taken into account emerging information about technical, economic, financial, environmental and social considerations.

Additional Benefits & Economic Viability (II-5): This aspect addresses the additional benefits that can arise from a hydropower project, and the net economic viability of the project from a regional perspective. The intent is that there is a net benefit from the project once all economic, social and environmental costs and benefits are factored in, and that opportunities for additional benefits are recognised and pursued where practicable.

Financial Viability (II-6): This aspect addresses both access to finance, and the ability of a project to generate the required financial returns to meet project funding requirements, including funding of measures aimed at ensuring project sustainability. The intent is that projects proceed with a sound financial basis that supports financing, covers all project costs and enables a return to shareholders/investors the required cash flow to meet project funding requirements and fund the obligations pertaining to profit and shareholders' return and sustainability.

Public Sector Governance (II-7): This aspect addresses the capacity of the legal, judicial and institutional structures important to hydropower project development, and the potential for political and public sector corruption risks. The intent is that governance capacity shortfalls can be compensated for and managed, and that political and public sector corruption risks are avoided.

Corporate Governance (II-8): This aspect addresses corporate governance of the developer with respect to ethical business practices, risk management, corruption risks, business administration, policies and processes, corporate social responsibility, stakeholder relations, and compliance. The intent is that the developer has sound business structures, policies and practices, and addresses transparency, integrity and accountability issues.

Regulatory Approval (II-9): This aspect addresses the preparation for obtaining all relevant project approvals. The intent is that all regulatory approvals are obtained in as efficient a manner as possible and following due process.

Integrated Programme Management & Communications (II-10): This aspect addresses the developer's capacity to coordinate and manage all project streams within the overall hydropower development programme, including construction, environmental, social, resettlement, finance and procurement, and utilize communications effectively towards this end. The intent is that the developer manages the interfaces and feedback loops across the various project streams so that one does not progress at the expense of another, and that internal and external programme communications support the efficiency of managing the intercomplexities of the overall programme.

Construction Management (II-11): This aspect addresses the construction planning requirements for all construction activities associated with the project development (i.e. temporary and permanent works including dam, diversion and power house works, roads, transmission lines and housing), including the environmental, social and safety aspects of construction. The intent is that construction of the project proceeds in a well-planned, coordinated, transparent and cost-effective manner, including management of the environmental, social and safety aspects of construction.

Procurement (II-12): This aspect addresses the procurement of civil works, goods and services. The intent is that procurement processes are equitable, transparent and accountable; support successful achievement of project timeline, quality and budgetary milestones; support developer and contractor environmental, social and ethical performance; and promote opportunities for local industries.

Social Impact Assessment & Management (II-13): This aspect addresses the assessment and planning for management of social impacts associated with the planned hydropower project implementation and operation. The intent is that social impacts are identified and assessed such that avoidance, minimisation, mitigation, compensation and enhancement measures can be designed and implemented for the various stages of the project.

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Project Affect Community (II-14): This aspect addresses the relationships between the project developer / owner / operator and the project affected community, and the acceptance by the project affected community groups for the hydropower project. The intent is that human rights are respected, and that the project affected community is accepting of the project and confident in the project avoidance, mitigation, compensation and management plans.

Indigenous Peoples (II-15): This aspect addresses the issues, risks and opportunities of the project with respect to indigenous peoples, recognising that as social groups with identities distinct from dominant groups in national societies that they are often the most marginalized and vulnerable segments of the population. The intent is that the project respects the dignity, human rights, aspirations, culture, knowledge, practices and natural resource-based livelihoods of indigenous peoples.

Resettlement (II-16): This aspect addresses resettlement, the displacement of populations, in relation to hydropower project development. The intent is that project resettlement is dealt with in a fair and equitable manner reflecting the priority of approaches being avoidance, followed by where avoidance is not possible, minimization, mitigation or compensation, and standards of living for displaced persons and host communities are improved.

Benefit Sharing (II-17): This aspect addresses the sharing of project benefits amongst project affected communities. The intent is that there are opportunities for provision of regional benefits through the project are explored, and a benefit sharing strategy is designed so that project affected people are amongst the first to benefit from the project.

Labour & Working Conditions (II-18): This aspect addresses labour and working conditions, including employee opportunity, equity, diversity, health and safety. The intent is that workers are treated fairly and protected, and equal opportunities provided, in accordance with national and international standards and expectations on labour and working conditions.

Cultural Heritage (II-19): This aspect addresses the level of impact and planning for protection and conservation of cultural heritage that can be damaged or lost through the physical landscape changes brought about by hydropower project construction and operation, as well as through associated infrastructure impacts (e.g. new roads, transmission lines). The intent is that cultural heritage is identified, recorded, and high value artefacts protected.

Public Health (II-20): This aspect addresses public health risks and opportunities associated with the hydropower project. The intent is that public health risks are avoided, and enhancement opportunities are identified and implemented where practicable.

Asset & Community Safety (II-21): This aspect addresses planning for asset and community safety through project preparation, implementation and operation periods. The intent is that life, property and the environment are protected from the consequences of dam failure and other safety risks.

Environmental Impact Assessment & Management (II-22): This aspect addresses the assessment and planning for management of environmental impacts associated with the planned hydropower project implementation and operation. The intent is that environmental impacts are identified and assessed such that avoidance, minimisation, mitigation, compensation and enhancement measures can be designed and implemented for the various stages of the project.

Catchment Management (II-23): This aspect addresses the health of the project catchment and the present and future catchment land uses which may have implications for hydropower operations (e.g. water quality, land clearing, erosion, future water abstraction activities), as well as management actions of the developer that can affect environmental, social and economic values in the catchment (e.g. creating biodiversity reserves, land access rights, educational facilities). The intent is that project catchment management measures promote positive environmental, social and economic outcomes, taking into consideration the specific role and responsibility of the proponent.

Reservoir Management (II-24): This aspect addresses the planning for management of environmental, social and economic issues within and around the reservoir area during project implementation and operation. The intent is that the reservoir is designed, prepared and managed to achieve a balance among biodiversity, habitat and ecosystem services and social and economic objectives, including power and other multi-purpose outcomes of the hydropower facility.

Environmental Flows & Downstream Sustainability (II-25): This aspect addresses the design of environmental flows in relation to environmental, social and economic impacts and benefits downstream of the planned hydropower development and operation. The intent is that downstream flow regimes are designed to achieve a good fit between biodiversity, habitat, ecosystem services, social and economic objectives, including power and other multi-purpose outcomes of the hydropower facility, taking into account regional and system-wide plans for hydropower and water resources development.

Biodiversity & Invasive Species (II-26): This aspect 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 planned hydropower project. The intent is that biodiversity and high conservation value areas are addressed with the priority of approaches being avoidance, followed by where avoidance is not possible, minimisation, mitigation or compensation, and opportunities for enhancement are identified.

Erosion & Sedimentation (II-27): This aspect addresses the management of potential impacts arising from sedimentation and erosion associated with the planned hydropower development. The intent is that reservoir and downstream impacts related to sedimentation and erosion are addressed with the priority of approaches being avoidance, followed by where avoidance is not possible, minimisation, mitigation or compensation.

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Water Quality (II-28): This aspect addresses how water quality issues are addressed during the preparation stage of a project. The intent is that water quality issues are understood and addressed.

SECTION II ASPECT RELEVANCE GUIDE:

CRITERIA	ASPECTS THAT DO NOT NEED TO BE ASSESSED
Project on a small tributary stream with no transboundary issues	River Basin & Transboundary Issues
No reservoir storage	Reservoir Management
Another project immediately upstream	Catchment Management
Another project reservoir immediately downstream	Environmental Flows (provided that there are only short dewatered reaches downstream of diversion dams with no particular values)
SIA shows no cultural heritage issues	Cultural Heritage
SIA shows no project affected community	Project Affected Community, Indigenous Peoples, Resettlement, Benefit Sharing
SIA shows no indigenous peoples	Indigenous Peoples
No resettlement	Resettlement

II-1 DEMONSTRATED NEED & STRATEGIC FIT - SECTION II PROJECT PREPARATION

This aspect addresses the justification of the project towards meeting water and energy service requirements; local, regional and national development objectives; and regional and national policies and plans, including transboundary plans. The intent is that the need for the project can be demonstrated, and there is a strategic fit with regional and national policies and plans.

CRITERIA FOR ASPECT TO BE CONSIDERED NOT RELEVANT: This aspect is always relevant.

CONSIDERATIONS RELEVANT TO PROJECT CONTEXT OR SCALE: For very small hydropower projects it may be difficult to directly link them to development objectives; however it should be possible to link them to the need for energy services and regional and national policies and plans.

Process Attributes	5	4	3	2	1
Assessment	• Understanding of local, regional and national need for water and energy services ¹				
	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of local, regional and national development objectives				
	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of relevant regional and national policies and plans ²				
	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of project strategic fit with development objectives and regional and national policies and plans				
	Excellent	Very Good	Good	Poor	Very Poor
Management Planning	Not relevant at project preparation stage				
Consultation	• Transparency in the analysis of project need and strategic fit				
	Full	Very High	Good	Some	None
Performance Attributes	5	4	3	2	1
Stakeholder Support	• Stakeholder support for the analysis of project need and strategic fit [see Stakeholder Support guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Conformance with Plans	Not relevant at project preparation stage				
Compliance	Not relevant at project preparation stage				
Effectiveness	• Contribution of project to need for water and energy services				
	Clearly evident with no gaps	Evident with very few non-critical gaps	Evident with a number of non-critical gaps	Evident but with some critical gaps	Not evident due to a number of critical gaps
	• Contribution of project to local, regional and/or national development objectives				
	Clearly evident with no gaps	Evident with very few non-critical gaps	Evident with a number of non-critical gaps	Evident but with some critical gaps	Not evident due to a number of critical gaps
	• Consistency of project with regional and national policies and plans				
	Clearly evident with no gaps	Evident with very few non-critical gaps	Evident with a number of non-critical gaps	Evident but with some critical gaps	Not evident due to a number of critical gaps

AUDITING GUIDANCE NOTES:

1. Water services may include water for energy generation, water storage capacity, drinking water supply, sanitation, water for business and industry, irrigation water supply, flood management, navigation, recreation and tourist opportunities, etc. Energy services may include provision of electricity to meet local, regional, national and/or international demand or opportunities; provision of peak load; provision of ancillary benefits such as spinning reserve, system regulation and improved thermal efficiency.
2. Regional and national policies and plans may relate to development, energy, water, biodiversity, conservation, and transboundary.

EXAMPLES OF EVIDENCE: - Energy Master planning, - Water Development Plan, - Country Development Report

II-2 RIVER BASIN & TRANSBOUNDARY ISSUES - SECTION II PROJECT PREPARATION

This aspect addresses the degree of involvement and influence of the project in seeking efficiency and sustainability of water resource utilization within the large river basin in which it the project is located, which may cross jurisdictional boundaries. The intent is that water resource utilization at the river basin scale is planned and optimized with respect to social and environmental values, and conflicts are avoided.

CRITERIA FOR ASPECT TO BE CONSIDERED NOT RELEVANT: This aspect is not relevant for small projects on tributary streams, or for which the catchment, project-related activities, and downstream effects do not cross jurisdictional borders.

CONSIDERATIONS RELEVANT TO PROJECT CONTEXT OR SCALE: The smaller the project, the more unlikely that it will have the resources to contribute to integrated river basin development planning. However, multiple small projects are very problematic from an integrated river basin management perspective, and so this aspect should not be discounted for small projects.

Process Attributes	5	4	3	2	1
Assessment	<ul style="list-style-type: none"> Understanding of delineation of the river basin, and the jurisdictional and transboundary arrangements within that basin 				
	Excellent	Very Good	Good	Poor	Very Poor
Assessment	<ul style="list-style-type: none"> Understanding of existing and likely future water resource uses and services at the river basin scale, and the potential for efficiencies, strategic planning and conflicts¹ 				
	Excellent	Very Good	Good	Poor	Very Poor
Management	<ul style="list-style-type: none"> Contribution of developer to integrated river basin development planning 				
	Pro-active and highly involved	Highly involved	Involved	Minimal involvement	No involvement
	<ul style="list-style-type: none"> Planning for development of transboundary agreements where relevant 				
	Highly advanced	Advancing	Commencing	Planned, but no progress yet	No plans
Consultation	<ul style="list-style-type: none"> Involvement in consultation with stakeholders on river basin development and integrated water resource management planning 				
	Early stage, pro-active, highly involved, highly inclusive	Early stage, highly engaged	Involved	Minimal involvement	No involvement
Performance Attributes	5	4	3	2	1
Stakeholder Support	<ul style="list-style-type: none"> Stakeholder support for river basin and transboundary agreements where relevant 				
	Excellent	Very Good	Good	Poor	Very Poor
Compliance	Not relevant at project preparation stage				
Conformance with Plans	Not relevant at project preparation stage				
Effectiveness	<ul style="list-style-type: none"> Likelihood of improvements in strategic river basin development and integrated water resource management 				
	Very High	High	Good	Minimal	None
	<ul style="list-style-type: none"> Likelihood of transboundary cooperation in project development 				
	Very high, agreements in place based on good faith amongst riparian states with no gaps	High, agreements in place based on good faith amongst riparian states with some non-critical gaps	Good, agreements in place but with a number of gaps	Minimal, agreements not yet in place or in place with many critical gaps	None, no agreements in place

AUDITING GUIDANCE NOTES:

1. Strategic planning of water resources at the river basin scale is considered here with respect to multiple objectives, not only maximizing the potential for hydropower generation but also preserving social and environmental values. Objectives would include to protect high value areas, promote strategic development and to optimize water resource utilization at the river basin scale.

EXAMPLES OF EVIDENCE: - River basin level analyses, - Interviews with relevant water resource organizations, - Transboundary agreements, - Records of meetings

II-3 HYDROLOGICAL RESOURCE AVAILABILITY & MANAGEMENT - SECTION II PROJECT PREPARATION

This aspect addresses the level of understanding of the hydrological resource availability and reliability to the project, and the planning for short- and long-term management of this resource. The intent is that hydrological resource availability and reliability to the project are understood and optimally planned for in the short- and long-term, taking into account climate change and taking into account existing and likely future demands on the hydrological resource that could directly affect the project.

CRITERIA FOR ASPECT TO BE CONSIDERED NOT RELEVANT: This aspect is always relevant.

CONSIDERATIONS RELEVANT TO PROJECT CONTEXT OR SCALE: Understanding of climate change risks will depend on the quality of local scale climate modeling, which may not be very well developed for the region. Projects without reservoir storage will have little capacity to “manage” the hydrological resource. Projects within a cascade system need to liaise with other projects in that cascade to optimally utilize the hydrological resource.

Process Attributes	5	4	3	2	1
Assessment	<ul style="list-style-type: none"> Understanding of the hydrological resource availability to the project¹ including climate change risks [see Assessment guidance note] 				
	Excellent, good understanding of climate change risks	Very good, good understanding of climate change risks	Good, some understanding of climate change risks	Poor, little understanding of climate change risks	Very poor, no understanding of climate change risks
	<ul style="list-style-type: none"> Understanding of the existing and likely future demands on the water resource to the project², including assessment of risk 				
	Excellent	Very Good	Good	Poor	Very Poor
Management	<ul style="list-style-type: none"> Understanding of the opportunities and constraints of the power system³ and markets in relation to management of the hydrological resource 				
	Excellent	Very Good	Good	Poor	Very Poor
	<ul style="list-style-type: none"> Quality of the short- and long-term hydrological management planning for the project, including management of risks [see Management guidance note] 				
	Excellent	Very Good	Good	Poor	Very Poor
Consultation	<ul style="list-style-type: none"> Planning for water utilization efficiencies through simulation and optimisation⁴ 				
	Excellent	Very Good	Good	Poor	Very Poor
Performance Attributes	<ul style="list-style-type: none"> Quality of the consultation process with respect to hydrological resource management planning [see Consultation guidance note] 				
	Excellent	Very Good	Good	Poor	Very Poor
Stakeholder Support	Not relevant at project preparation stage				
Compliance	Not relevant at project preparation stage				
Conformance with Plans	Not relevant at project preparation stage				
Effectiveness	<ul style="list-style-type: none"> Optimal use by the project of the hydrological resource 				
	Highly likely over the short- and long-term	Likely over the short- and long-term	Likely over the short-term	Unlikely	Highly unlikely
	<ul style="list-style-type: none"> Likelihood of the project to adapt to identified risks of changes in the hydrological availability over the short- and long-term 				
	Very High	High	Good	Minimal	None

AUDITING GUIDANCE NOTES:

1. A good hydrological analysis would show that:

- All available data has been analysed using appropriate statistical indicators (e.g. precipitation, temperature, evaporation, flow rates, flood flows on a range of time steps such as daily, monthly, seasonal, annual);
- Data includes actual field measurements over at least 3 years capturing seasonality and spatial variability over the project catchment area;
- The quality of the data has been assessed and factored into the analysis;
- Modelling has been utilized to extend data sets and enable forecasting;

II-3 HYDROLOGICAL RESOURCE AVAILABILITY & MANAGEMENT - SECTION II PROJECT PREPARATION

- There is some understanding of the levels of uncertainty in the data; and
- Analysis is updated taking into account emerging information.

Hydrological analyses can be improved through means such as more lengthy data sets, more detailed coverage of the catchment, more extensive analyses of the data, more extensive use of modeling, sophisticated methodologies to address levels of uncertainty, and use of short-and long-term scenario-based modeling.

2. Demands on water use could include other water resource project developments, development of water-reliant land uses e.g. agriculture or industrial, population growth, and likely requirements for environmental flow releases to the downstream environment (See aspect II-23 Environmental Flows & Downstream Sustainability).
3. Power system opportunities and constraints will relate to patterns of demand for energy (e.g. base vs. peak load), influence of power prices and competition, and transmission issues.
4. Optimal means best fit within the constraints relating to social and environmental issues and multiple users. Simulation and optimisation models allow an understanding of the interaction of inflows with other considerations, and can also be used to evaluate opportunities to improve efficiency in the system(s). In systems where a project is in a cascade, models can ensure efficiency in water utilization. Where hydro interacts with other generation sources (e.g. thermal, nuclear, wind), the use of such models can minimise the use of other more costly generation and can be used to better manage and operate the other generation sources in the system.

EXAMPLES OF EVIDENCE: - Hydrological analyses, - Analyses of water resource demands affecting the project, - Analyses of power system and market opportunities and constraints, - Simulation and optimization model scenarios and outputs, - Hydrological management plan for the project, - Interviews with hydrologists

II-4 PROJECT SITING & DESIGN OPTIMISATION - SECTION II PROJECT PREPARATION

This aspect addresses the evaluation and determination of hydropower project siting and design options. The intent is that the project site selection and design is optimized as a result of an iterative and consultative process that has taken into account emerging information about technical, economic, financial, environmental and social considerations.

CRITERIA FOR ASPECT TO BE CONSIDERED NOT RELEVANT: This aspect is always relevant.

CONSIDERATIONS RELEVANT TO PROJECT CONTEXT OR SCALE: The simpler the project (e.g. the fewer options for siting and design, the fewer number of relevant social and environmental issues), the less likely is the need for sophisticated multi-criteria methodologies for optimising siting and design. Projects sited on tributaries rather than mainstem rivers may have fewer or less complicated environmental and social issues to address.

Process Attributes	5	4	3	2	1
Assessment	<ul style="list-style-type: none"> Access to information on technical, economic, financial, environmental and social issues, risks and opportunities by project designers 				
	Good and timely access to all types of information	Good access to all types of information, some delays	Good access to most types of information, some delays	Access to some types of information, some delays	Minimal access, many delays
	<ul style="list-style-type: none"> Use of multi-criteria methodologies for optimising siting and design 				
	Sophisticated methodologies, highly iterative	Recognised methodologies, highly iterative	Recognised methodologies, somewhat iterative	Limited ability to handle multi-criteria analysis, low level of iteration	Very limited ability to handle multi-criteria analysis, low level of iteration
Management	<ul style="list-style-type: none"> Integration of information on technical, economic, financial, environmental and social issues, risks and opportunities into siting and design options for the major project components¹ 				
	Comprehensive integration for all components	Good integration for most components	Some integration for most components	Minimal integration for some components	No integration
	<ul style="list-style-type: none"> Focus on siting and design planning to avoid or minimize negative impacts and maximize positive impacts 				
	Excellent	Very Good	Good	Poor	Very Poor
	<ul style="list-style-type: none"> Review and revision of the siting and design options based on emerging information 				
	Closely monitored, continuously reviewed and updated	Periodic and frequent	Periodic but infrequent	Irregular	None
Consultation	<ul style="list-style-type: none"> Consultation process in relation to project siting and design [see Consultation guidance note] 				
	Excellent	Very Good	Good	Poor	Very Poor
	<ul style="list-style-type: none"> Availability of information on site selection and design options to the consultations on various technical, economic, financial, environmental and social consultations 				
	Fully available, in a form readily understandable to all stakeholders	Mostly available, in a form understandable to most stakeholders	Partially available, in a form understanding to most stakeholders	Partially available, form difficult to understand for many stakeholders	Low level of availability, difficult to understand for most stakeholders
Performance Attributes	5	4	3	2	1
Stakeholder Support	<ul style="list-style-type: none"> Support for the siting and design [see Stakeholder Support guidance note] 				
	Excellent	Very Good	Good	Poor	Very Poor
Compliance	<ul style="list-style-type: none"> Siting and design compliance with relevant legislation and standards [see Compliance guidance note] 				
	Excellent	Very Good	Good	Poor	Very Poor
Conformance with Plans	Not Relevant at project preparation stage				
Effectiveness	<ul style="list-style-type: none"> Optimisation² of project siting and design with respect to technical, economic, financial, environmental and social considerations 				
	Fully optimized with no gaps	Close to fully optimized with very few non-critical gaps	Well-optimized with a number of non-critical gaps	Somewhat optimized with critical gaps	Not optimised
	<ul style="list-style-type: none"> Avoidance of impacts to high value sites³ 				
	Full avoidance	Nearly full avoidance	Most high value sites avoided	Some high value sites avoided	Minimal avoidance of high value sites

II-4 PROJECT SITING & DESIGN OPTIMISATION - SECTION II PROJECT PREPARATION

<ul style="list-style-type: none"> Minimisation⁴ of negative impacts and disturbances delivered by final project siting and design 				
Fully minimized with no gaps	Close to minimized with very few non-critical gaps	Significantly minimized with a number of non-critical gaps	Somewhat minimized with critical gaps	Not minimised
<ul style="list-style-type: none"> Potential benefits delivered by final project siting and design 				
Fully maximized ⁵ with no gaps	Close to maximized with very few non-critical gaps	Significantly maximized with a number of non-critical gaps	Somewhat maximized with critical gaps	Not maximised

AUDITING GUIDANCE NOTES:

1. Major hydropower project components are the reservoir, dams, power station housing, power generation assets, roads, construction villages, water conduits and transmission infrastructure.
2. Fully optimised means a best fit has been found across all considerations, based on a consultative process.
3. High value sites could be sites of high ecological value, for example national parks, World Heritage sites, Ramsar wetlands).
4. Fully maximised is achieved to as great an extent practicable, taking into account all constraints.
5. Fully minimized is achieved to as little an extent practicable, taking into account all constraints.

EXAMPLES OF EVIDENCE: - Site selection criteria and assessment, - Design criteria, planning process, verification, and reviews, - Records of design change to avoid or minimise disturbance and/or maximise opportunities

II-5 ADDITIONAL BENEFITS & ECONOMIC VIABILITY - SECTION II PROJECT PREPARATION

This aspect addresses the additional benefits that can arise from a hydropower project, and the net economic viability of the project from a regional perspective. The intent is that there is a net benefit from the project once all economic, social and environmental costs and benefits are factored in, and that opportunities for additional benefits are recognised and pursued where practicable.

CRITERIA FOR ASPECT TO BE CONSIDERED NOT RELEVANT: This aspect is always relevant.

CONSIDERATIONS RELEVANT TO PROJECT CONTEXT OR SCALE: The opportunities to leverage regional development through the project are likely to diminish in relation to project scale and if the project is hydropower only versus multi-purpose hydropower.

Process Attributes	5	4	3	2	1
Assessment	<ul style="list-style-type: none"> Understanding of the existing regional socio-economic baseline, regional economic activity and infrastructure, and related constraints and opportunities 				
	Excellent	Very Good	Good	Poor	Very Poor
	<ul style="list-style-type: none"> Understanding of the opportunities to leverage regional development through the project to support broader economic development objectives¹ 				
	Excellent	Very Good	Good	Poor	Very Poor
	<ul style="list-style-type: none"> Analysis of alternatives for project siting and design with respect to delivery of additional project benefits 				
	Excellent	Very Good	Good	Poor	Very Poor
Management Planning	<ul style="list-style-type: none"> Analysis of economic viability of the project through cost-benefit analysis which includes social, environmental and economic aspects 				
	Excellent	Very Good	Good	Poor	Very Poor
Management Planning	<ul style="list-style-type: none"> Planning to optimize delivery of project benefits [see Management guidance note] 				
	Excellent	Very Good	Good	Poor	Very Poor
Consultation Process	<ul style="list-style-type: none"> Quality of the consultation process [see Consultation guidance note] 				
	Excellent	Very Good	Good	Poor	Very Poor
Performance Attributes	5	4	3	2	1
Stakeholder Support	<ul style="list-style-type: none"> Level of stakeholder support for analysis and planning for additional benefits [see Stakeholder Support guidance note] 				
	Excellent	Very Good	Good	Poor	Very Poor
Compliance	Not relevant at project preparation stage				
Conformance with Plans	Not relevant at project preparation stage				
Effectiveness	<ul style="list-style-type: none"> Optimisation of opportunities to deliver additional benefits to directly affected stakeholders and the broader community 				
	Fully optimised ² with no gaps	Close to fully optimised with very few non-critical gaps	Well-optimised with a number of non-critical gaps	Somewhat optimised with critical gaps	Not optimised
	<ul style="list-style-type: none"> Likelihood of net project benefits based on cost-benefit analysis, factoring in social and environmental considerations 				
	Very High	High	Good	Minimal	None

AUDITING GUIDANCE NOTES:

- Regional development can be leveraged by the following aspects:
 - capacity building, training and specific clauses for local employment opportunities
 - additional infrastructure (e.g. bridges, access roads, boat ramps)
 - additional services (improved health and education services thanks to electrification)
 - supporting other water usages such as irrigation, navigation, flood/drought control, integrated water resource management, aquaculture, leisure industry (i.e. outfitters, camping), increased water availability for industrial and municipal water supply, ground water protection.
- Fully optimised means a best fit has been found across all considerations based on a consultative process.

EXAMPLES OF EVIDENCE: - Cost/benefit analysis, - Independent analysis, - Interviews with stakeholders, - Independent assessments of poverty, living standards, food security, access to electricity and access to resources, - Stakeholder interviews

II-6 FINANCIAL VIABILITY - SECTION II PROJECT PREPARATION

This aspect addresses both access to finance, and the ability of a project to generate the required financial returns to meet project funding requirements, including funding of measures aimed at ensuring project sustainability. The intent is that projects proceed with a sound financial basis that supports financing, covers all project costs and enables a return to shareholders/investors the required cash flow to meet project funding requirements and fund the obligations pertaining to profit and shareholders' return and sustainability.

CRITERIA FOR ASPECT TO BE CONSIDERED NOT RELEVANT: This aspect is always relevant.

CONSIDERATIONS RELEVANT TO PROJECT CONTEXT OR SCALE: There are many different approaches to project finance, depending on whether the project is private or public sector or a combination, and to what degree and from what sources loans are required. For hydropower projects that are undertaken by publicly owned utilities, the focus is usually on the financial viability of the utility (rather than on the project per se), including meeting benchmarked financial performance indicators.

Process Attributes	5	4	3	2	1
Assessment	• Use of financial modelling ¹				
	Sophisticated models with extensive scenario testing	Recognised models with extensive scenario testing	Recognised models with some scenario testing	Models with limited capabilities, some of scenario testing	Models with limited capabilities, little scenario testing
	• Understanding of project costs with respect to obligations, trends, uncertainties, risks and opportunities ²				
	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of project revenue streams with respect to obligations, trends, uncertainties, risks and opportunities ³				
	Excellent	Very Good	Good	Poor	Very Poor
Management Planning	• Understanding of project financing opportunities and risks				
	Excellent	Very Good	Good	Poor	Very Poor
	• Short- and long-term financial management planning for the project, including management of risks [see Management guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Consultation	• Planning to produce financial reports				
	To be posted on website within 6 months of end of financial year, annually audited by leading audit company	To be posted on website within 6 months of end of financial year, annually audited	To be publicly available on request, annually audited	To be produced annually, not publicly available, not audited	No plans to produce
	• Consultation with directly relevant stakeholders in relation to conditions and risks for project costs, revenue streams and financing				
	Frequent for all components	Regular for all components	Some for all components	Minimal	None
Performance Attributes	5	4	3	2	1
Stakeholder Support	Not relevant at project preparation stage				
Compliance	• Level of compliance [see Compliance guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Conformance with Plans	• Conformance with financial management planning [see Conformance with Plans guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Effectiveness	• Likelihood of meeting financial targets including in relation to sustainability measures				
	Very high for all targets	High for all targets	High for most targets	Minimal	No likelihood
	• Availability of equity for construction sufficient to support risks of cost overruns ⁴				
	Excellent	Very Good	Good	Poor	Very Poor
	• Debt Service Coverage Ratio ⁵				
Very robust	Robust	Commercially viable	Marginal viability	Not commercially viable	

II-6 FINANCIAL VIABILITY - SECTION II PROJECT PREPARATION

AUDITING GUIDANCE NOTES:

1. Financial modeling at the most minimum has as inputs the project costs and revenue streams, and as outputs the financial returns. It can be used to examine the implications of various market conditions, trends and risks on the financial viability of the project. It can also be used to test the implications of various financing arrangements.
2. Considerations relating to project costs include equipment, supplies, labour, tax, land/water resource rights, and social and environmental issue mitigation and management costs. Associated risks may include inflation, supply chain disruptions, contractual arrangements, life of resource concessions, project delays, and uncertainties in relation to social and environmental issues and mitigation/management requirements. Opportunities relate to cost-savings, for example which may arise due to siting and design choices.
3. Considerations relating to resource streams include understanding of the electricity market, the investment drivers for new market entrants e.g. access to carbon finance, and the Power Purchase Agreement. Associated risks may include long-term viability of the market; security of revenue lines e.g. with respect to transmission, other competitors, or industry trends; and security of the project inflows (see Aspect II-3 Hydrological Resource Availability & Management). Opportunities relate to electricity sales strategies (trading, base vs peak load delivery, ancillary services), and non-energy services such as irrigation, water supply, flood control and navigation.
4. Indicators could include the debt-equity ratio, financial ratings, credit guarantees, or the financial strength of the sponsor
5. Debt Service Coverage Ratio measures the developer's ability to produce enough cash to cover its debt

EXAMPLES OF EVIDENCE: - Financial modeling reports, - Finance risk analysis, - Assessment of favorability of long and short-term conditions of finance

II-7 PUBLIC SECTOR GOVERNANCE - SECTION II PROJECT PREPARATION

This aspect addresses the capacity of the legal, judicial and institutional structures important to hydropower project development, and the potential for political and public sector corruption risks. The intent is that governance capacity shortfalls can be compensated for and managed, and that political and public sector corruption risks are avoided.

CRITERIA FOR ASPECT TO BE CONSIDERED NOT RELEVANT: This aspect is always relevant.

CONSIDERATIONS RELEVANT TO PROJECT CONTEXT OR SCALE: This aspect applies to both public and private sector projects. Private sector projects may require a much higher level of regulatory scrutiny. Small projects may have limited capacity to address public sector capacity shortfalls, but still need to be aware of the issues and have management strategies.

Process Attributes	5	4	3	2	1
Assessment	• Understanding of legal, judicial and institutional structures and capacity ¹				
	Excellent	Very Good	Good	Poor	Very Poor
Assessment	• Understanding of political risks ¹ and public sector corruption risks ²				
	Excellent	Very Good	Good	Poor	Very Poor
Management	• Planning to compensate for public sector capacity shortfalls [see Management guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
	• Planning to manage political and public sector corruption risks [see Management guidance note]				
Consultation	• Engagement with relevant public sector representatives across technical, economic, social and environmental considerations				
	Frequent for all components	Regular for all components	Some for all components	Minimal	None
Performance Attributes	5	4	3	2	1
Stakeholder Support	• Support for management of public sector capacity shortfalls and political and public sector corruption risks [see Stakeholder Support guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Compliance	Not Relevant				
Conformance with Plans	• Conformance with plans to compensate for public sector capacity shortfalls [see Conformance with Plans guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
	• Conformance with plans to manage political risks and public sector corruption risks [see Conformance with Plans guidance note]				
Effectiveness	• Likelihood of compensation and management of public sector capacity shortfalls				
	Very High	High	Good	Minimal	None
	• Likelihood of mitigation of public sector corruption risks				
	Very High	High	Good	Minimal	None
	• Likelihood of mitigation of political risks				
	Very High	High	Good	Minimal	None

AUDITING GUIDANCE NOTES:

1. There may be available for the country a National Integrity Systems Study or equivalent that analyses the following 'pillars' from the points of view of strengths, weaknesses and plans to compensate for shortfalls, as appropriate: the executive, the legislature, political parties, anticorruption organizations, judiciary, grievance addressing mechanisms (e.g. the Ombudsman), civil service/public sector agencies, law enforcement agencies, Freedom of Information, media, local and regional government, civil society, private sector, international institutions (e.g. some provide peer review of anti-corruption efforts), audit/oversight institutions, public contracting system.
2. Political risk is a risk of financial loss or inability to conduct business faced by investors, corporations, and governments due to government policy changes, government action preventing entry of goods, expropriation or confiscation, currency inconvertibility, politically-motivated interference, government instability, or war.
3. Public sector corruption risks include, at the different project stages:

II-7 PUBLIC SECTOR GOVERNANCE - SECTION II PROJECT PREPARATION

- Project Preparation – limited options considered, short-cutting of assessment / preparation requirements, non-transparent approvals;
- Project Implementation and Operation – a blind eye to licence and permit violations.

EXAMPLES OF EVIDENCE: - Evaluation of institutional capacities, National Integrity Systems studies, - Political risk analysis, - Corruption Risk Assessment or equivalent, - Management plans and planning related documents, - Minutes of meetings, - Interviews with regulators, - Independent analyses of corruption and political risk

II-8 CORPORATE GOVERNANCE - SECTION II PROJECT PREPARATION

This aspect addresses corporate governance of the developer with respect to ethical business practices, risk management, corruption risks, business administration, policies and processes, corporate social responsibility, stakeholder relations, and compliance. The intent is that the developer has sound business structures, policies and practices, and addresses transparency, integrity and accountability issues.

CRITERIA FOR ASPECT TO BE CONSIDERED NOT RELEVANT: This aspect is always relevant.

CONSIDERATIONS RELEVANT TO PROJECT CONTEXT OR SCALE: This aspect applies to both private and public sector projects, on the assumption that government business enterprises have similar governance requirements to corporations, but with more emphasis on stakeholders than shareholders. Small projects with small companies may have simple business structures but should still have all of the elements addressed in this aspect.

Process Attributes	5	4	3	2	1
Assessment	<ul style="list-style-type: none"> Understanding of important elements of corporate governance¹ 				
	Excellent	Very Good	Good	Poor	Very Poor
Assessment	<ul style="list-style-type: none"> Understanding of project risks including corruption risks² 				
	Excellent	Very Good	Good	Poor	Very Poor
Management	<ul style="list-style-type: none"> Comprehensiveness of vision, values, policies, systems and business structures with respect to the important elements of corporate governance, including code of ethics³ 				
	Comprehensive, no gaps	Very few minor gaps	Some minor gaps	Some major gaps	Many major gaps
	<ul style="list-style-type: none"> Review of vision, values, policies, systems and business structures⁴ 				
	Closely monitored, and continuously reviewed and updated	Periodic and frequent	Periodic but infrequent	Irregular	None
	<ul style="list-style-type: none"> Quality of management planning for compliance [see Management guidance note] 				
	Excellent, Compliance Plan prepared, subject to independent transparent review	Very Good, Compliance Plan prepared	Good	Poor	Very Poor
	<ul style="list-style-type: none"> Quality of management planning for project risk including corruption risks [see Management guidance note] 				
Consultation	<ul style="list-style-type: none"> Consultation with internal and external stakeholders in the development and review of vision, values, policies, systems and business structures [see Consultation guidance note] 				
	Excellent	Very Good	Good	Poor	Very Poor
	<ul style="list-style-type: none"> Transparency with respect to compliance reporting 				
	Very high	High	Some	Minimal	None
Performance Attributes	5	4	3	2	1
Stakeholder Support	<ul style="list-style-type: none"> Support for vision, values, policies, systems and business structures [see Stakeholder Support guidance note] 				
	Excellent	Very Good	Good	Poor	Very Poor
	<ul style="list-style-type: none"> Level of public credibility in terms of sustainable and ethical business practices 				
	Very high	High	Some	Minimal	None
Compliance	<ul style="list-style-type: none"> Compliance with regulations [see Compliance guidance note] 				
	Excellent	Very Good	Good	Poor	Very Poor
Conformance with Plans	<ul style="list-style-type: none"> Conformance with vision, values, policies and systems [see Conformance with Plans guidance note] 				
	Excellent	Very Good	Good	Poor	Very Poor
	<ul style="list-style-type: none"> Conformance with risk management planning [see Conformance with Plans guidance note] 				
	Excellent	Very Good	Good	Poor	Very Poor
Effectiveness	<ul style="list-style-type: none"> Robustness of business systems and structures 				
	Very High	High	Good	Minimal	None
	<ul style="list-style-type: none"> Likelihood of mitigation of corruption risk 				

II-8 CORPORATE GOVERNANCE - SECTION II PROJECT PREPARATION

	Very High	High	Good	Minimal	None
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AUDITING GUIDANCE NOTES:

1. Commonly accepted principles of corporate governance include the following elements:
 - o Rights and equitable treatment of shareholders - the developer should respect the rights of shareholders and help shareholders to exercise those rights;
 - o Interests of other stakeholders – the project developer should recognize their legal and other obligations to stakeholders;
 - o Role and responsibilities of the developer – the project developer's Board needs a range of skills and understanding to be able to deal with various business issues and have the ability to review and challenge management performance;
 - o Integrity and ethical behavior – ethical and responsible decision-making is not only important for public relations, but it is also a necessary element in risk management and avoiding lawsuits;
 - o Disclosure and transparency – relates to basic facts and figures as well as the mechanisms and processes.
2. Project corruption risks include, at the different project stages:
 - o Project Preparation – biased studies, technical specifications biased to a particular technology, over or underdesign, poor EIA, limited options considered, non-transparent selections;
 - o Contracting / Bid Evaluation - non-transparent prequalification, confusing tender documents, non-transparent or non-objective selection procedures, bid clarifications not shared with other bidders, award decisions not made public, or not justified, deception and collusion, agents' fees;
 - o Project Implementation - concealing sub-standard work, agreeing to unwarranted contract variations, creating artificial claims, biased project supervision, bribery to avoid project delay penalties, corruption in resettlement and compensation, a blind eye to construction environment violations;
 - o Project Operation - commitments not kept, under-funding of environment and social mitigation obligations (no money plea), corruption in O&M procurements, insurance fraud on equipment and performance guarantees.
3. A business code of ethics or code of conduct should specify the business commitments to disclosure of political and philanthropic contributions, rejection of facilitation payments, and clear guidelines for giving and receiving gifts, hospitality and expenses.
4. In some cases, businesses will develop a Governance Improvement Plan, to identify areas of focus for the Board in order to develop and sustain strong governance.

EXAMPLES OF EVIDENCE: - Corporate vision and values, - Corporate policies, - Business structure and board of directors, - Board committees, - Business risk management processes, - Corporate ethics policy or code of conduct, - Document setting out the developer's policy to address bribery and other corrupt practices, including relationships with external partners, - Corporate annual reporting, - Project corruption risk assessment, - Independent review of corporate governance, - Project Compliance Plan, - Governance Improvement Plan

II-9 REGULATORY APPROVALS - SECTION II PROJECT PREPARATION

This aspect addresses the preparation for obtaining all relevant project approvals. The intent is that all regulatory approvals are obtained in as efficient a manner as possible and following due process.

CRITERIA FOR ASPECT TO BE CONSIDERED NOT RELEVANT: This aspect is always relevant.

CONSIDERATIONS RELEVANT TO PROJECT CONTEXT OR SCALE: Regulatory approval requirements vary considerably depending on the country and jurisdiction. For large complex hydropower projects, the requirements for regulatory approvals/permits can be extensive and are often from different ministries with different requirements. This aspect applies to both public and private sector projects. Public sector projects still have to work with legal, judicial and institutional structures and go through a regulatory approval process.

Process Attributes	5	4	3	2	1
Assessment	• Understanding of regulatory approval processes, requirements and risks ¹				
	Excellent	Very Good	Good	Poor	Very Poor
Management	• Efforts on the part of the developer to ensure as efficient a regulatory approvals process as possible				
	Excellent	Very Good	Good	Poor	Very Poor
	• Planning to obtain regulatory approvals [see Management guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Consultation	• Engagement with relevant public sector representatives in relation to regulatory approvals				
	Frequent for all components	Regular for all components	Some for all components	Minimal	None
Performance Attributes	5	4	3	2	1
Stakeholder Support	Not Relevant				
Compliance	• Compliance with regulatory approvals process requirements [see Compliance guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Conformance with Plans	• Conformance with plans to obtain regulatory approvals [see Conformance with Plans guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Effectiveness	• Likelihood of obtaining regulatory approvals				
	Very High	High	Good	Minimal	None

AUDITING GUIDANCE NOTES:

- Regulatory approval requirements are country or jurisdiction specific, and may require approval / licenses for:
 - project design, including dam, powerhouse, transmission lines, substations;
 - power purchase agreement;
 - Environmental / Social Impact Assessments and management plans for all project components;
 - planning permits;
 - water licence;
 - land tenure change approvals;
 - operating licence;
 - Resettlement Action Plan; and
 - permits for various project components such as for disposal of wastes, use of roads by heavy vehicles, etc.

Risks relate to multiple assessment and permitting processes creating considerable inefficiencies; transboundary issues causing considerable complications and needing major agreements to be developed before regulatory processes can be defined; corruption; misunderstandings of requirements on the part of the developer; delays on the part of the developer in working towards meeting approvals; or approvals given at different times creating a risk that interfaces are not well managed.

To increase efficiencies, in cases the project assessment process can be designed to consolidate the assessment process and issuing of permits into a single process.

EXAMPLES OF EVIDENCE: - Regulatory approval requirements, - Plans to obtain regulatory approvals, - Minutes from meetings, - Interviews with regulators

II-9 REGULATORY APPROVALS - SECTION II PROJECT PREPARATION

II-10 INTEGRATED PROGRAMME MANAGEMENT & COMMUNICATIONS - SECTION II PROJECT PREPARATION

This aspect addresses the developer's capacity to coordinate and manage all project streams within the overall hydropower development programme, including construction, environmental, social, resettlement, finance and procurement, and utilize communications effectively towards this end. The intent is that the developer manages the interfaces and feedback loops across the various project streams so that one does not progress at the expense of another, and that internal and external programme communications support the efficiency of managing the intercomplexities of the overall programme.

CRITERIA FOR ASPECT TO BE CONSIDERED NOT RELEVANT: This aspect is always relevant.

CONSIDERATIONS RELEVANT TO PROJECT CONTEXT OR SCALE: Internal and external communication requirements may not be as complex with small hydropower projects, but the assessment requirements in this aspect all still apply. Scale of the project, number and degree of distance between construction sites, time period over which construction takes place, different language issues, and requirements of different lenders and partners will considerably influence the complexity of the programme management.

<i>Process Attributes</i>	5	4	3	2	1
Assessment	<ul style="list-style-type: none"> Understanding of project streams within the overall programme including scheduling critical paths, interfaces and feedback loops, and capacity needs and gaps 				
	Excellent	Very Good	Good	Poor	Very Poor
Assessment	<ul style="list-style-type: none"> Understanding of communications needs and strategies to support the overall programme. 				
	Excellent	Very Good	Good	Poor	Very Poor
Management	<ul style="list-style-type: none"> Integrated programme management planning [see Management guidance note] 				
	Excellent	Very Good	Good	Poor	Very Poor
	<ul style="list-style-type: none"> Relevant experience of the programme manager 				
	>15 years	>10 years	>5 years	<5 years	None
Management	<ul style="list-style-type: none"> Management of internal and external communications [see Management guidance note] 				
	Excellent	Very Good	Good	Poor	Very Poor
Consultation	<ul style="list-style-type: none"> Management team interface meetings across project streams 				
	Very high frequency across all project streams	Periodic and frequent across most project streams	Periodic but infrequent across most project streams	Irregular	None
	<ul style="list-style-type: none"> External communications on hydropower development programme [see Consultation guidance note] 				
Consultation	Excellent	Very Good	Good	Poor	Very Poor
Performance Attributes	5	4	3	2	1
Stakeholder Support	<ul style="list-style-type: none"> Support for external communications [see Stakeholder Support guidance note] 				
	Excellent	Very Good	Good	Poor	Very Poor
Compliance	Not relevant at project preparation stage				
Conformance with Plans	<ul style="list-style-type: none"> Conformance with integrated programme management plans [see Conformance with Plans guidance note] 				
	Excellent	Very Good	Good	Poor	Very Poor
Conformance with Plans	<ul style="list-style-type: none"> Conformance with internal and external communications management plans [see Conformance with Plans guidance note] 				
	Excellent	Very Good	Good	Poor	Very Poor
Effectiveness	<ul style="list-style-type: none"> Interface problems across project streams 				
	Anticipated, and avoided or mitigated	Mitigated or managed	Managed	Partially managed	Not managed

AUDITING GUIDANCE NOTES:

EXAMPLES OF EVIDENCE: - Integrated programme management plan, - Programme management reports, - Records of meetings, - Project communication plans and strategies, - Independent surveys, - Records of stakeholder input and feedback

II-11 CONSTRUCTION MANAGEMENT - SECTION II PROJECT PREPARATION

This aspect addresses the construction planning requirements for all construction activities associated with the project development (i.e. temporary and permanent works including dam, diversion and power house works, roads, transmission lines and housing), including the environmental, social and safety aspects of construction. The intent is that construction of the project proceeds in a well-planned, coordinated, transparent and cost-effective manner, including management of the environmental, social and safety aspects of construction.

CRITERIA FOR ASPECT TO BE CONSIDERED NOT RELEVANT: This aspect is always relevant.

CONSIDERATIONS RELEVANT TO PROJECT CONTEXT OR SCALE: Scale of the project, number and degree of distance between construction sites, time period over which construction takes place, and different language issues will considerably influence the complexity of the construction.

<i>Process Attributes</i>	5	4	3	2	1
Assessment	<ul style="list-style-type: none"> Understanding of environmental, social, safety and workforce considerations relating to construction at all construction sites¹ 				
	Excellent	Very Good	Good	Poor	Very Poor
Management Planning	<ul style="list-style-type: none"> Quality of the construction management planning process [see Management guidance note] 				
	Excellent	Very Good	Good	Poor	Very Poor
	<ul style="list-style-type: none"> Comprehensiveness of construction management planning with respect to environmental, social, safety and workforce considerations at all construction sites² 				
	Comprehensively addresses all components	Somewhat addresses all components	Addresses most components	Addresses some components	Addresses few or no components
Consultation	<ul style="list-style-type: none"> Consultation about the construction management planning [see Consultation guidance note] 				
	Excellent	Very Good	Good	Poor	Very Poor
<i>Performance Attributes</i>	5	4	3	2	1
Stakeholder Support	<ul style="list-style-type: none"> Stakeholder support for the construction management planning [see Stakeholder Support guidance note] 				
	Excellent	Very Good	Good	Poor	Very Poor
Compliance	Not relevant at project preparation stage				
Conformance with Plans	Not relevant at project preparation stage				
Effectiveness	Not relevant at project preparation stage				

AUDITING GUIDANCE NOTES:

- The range of potential construction-related issues include:
 - Road safety; noise; chemical, oil and fuel spills; site run-off and drainage issues; siltation; water quality; erosion and sediment liberation due to earthmoving, clearing, quarrying and road-making; long-term scars on the landscape due to vegetation and earth removal or disturbance; materials sourcing; waste management; long-term site contamination risks; disturbance of animal and plant communities; introduced species; air quality especially dust; and water diversion issues.
 - Social issues can be associated with the above impacts, but can also arise in their own right. Loss of community cohesion and values may be at risk with the introduction of migratory workforces, and competition for local resources. Noise and dust may also be issues where the development is close to human habitation, and health issues have been known to arise when local communities are exposed to outside influences.
 - The construction phase, with its high level of intensity, large local workforce and influence on the local economy, can take a number of years, and the cessation of this phase can cause its own social and economic impacts.
- A Construction Management Plan would include details and outline processes that contractors and others are required to follow to manage specific issues. For example:
 - stockpiling of topsoil for later re-use in rehabilitation, with a site designated for ease of material recovery and ready access;
 - timing of collection of seed material from native botanical resources, so that areas can be rehabilitated following construction with plant materials that are endemic to the area;
 - new roads, temporary access tracks, works storage areas and quarry sites can be located below minimum water levels so that they are unobtrusive following inundation of the impoundment. Similarly, excess road spoil can also be disposed of in locations that will be below the minimum water level;

II-11 CONSTRUCTION MANAGEMENT - SECTION II PROJECT PREPARATION

- processes for the storage and handling of chemicals as well a waste disposal of used containers and other materials;
- measures to avoid and address human health and other social problems.

EXAMPLES OF EVIDENCE: - Construction management plan, - Protocols and agreements regarding construction workforce, - Social and environmental plans relating to construction impacts, including associated infrastructure, - Minutes of meetings, - Evidence of consultation, - Evidence of stakeholder support

II-12 PROCUREMENT - SECTION II PROJECT PREPARATION

This aspect addresses the procurement of civil works, good and services. The intent is that procurement processes are equitable, transparent and accountable; support successful achievement of project timeline, quality and budgetary milestones; support developer and contractor environmental, social and ethical performance; and promote opportunities for local industries.

CRITERIA FOR ASPECT TO BE CONSIDERED NOT RELEVANT: This aspect is always relevant.

CONSIDERATIONS RELEVANT TO PROJECT CONTEXT OR SCALE: Scale of the project, and the degree to which contractors are used, will considerably influence the complexity of the procurement aspect. Some lenders may have different procurement requirements depending on whether it is a public or private sector project.

Process Attributes	5	4	3	2	1
Assessment	• Understanding of the major supply needs for civil works, goods and services ¹				
	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of local supply sources and capacity relevant to all project streams, and the potential for capacity utilization and development				
	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of relevant legislation and standards relating to procurement, including those of financing agencies				
	Excellent	Very Good	Good	Poor	Very Poor
Management	• Understanding of supply chain and corruption risks ²				
	Excellent	Very Good	Good	Poor	Very Poor
	• Quality of the procurement management process [see Management guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
	• Comprehensiveness of the procurement management measures ³				
	All components included in detail	All components included	Most components included	Some components included	Very few components included
Consultation	• Use of sustainability criteria in the procurement screening / prequalification process ⁴				
	Fully based on sustainability criteria	Partially based on sustainability criteria	Based on some sustainability criteria	Based on minimum considerations not including sustainability criteria	No procurement screening process
	• Transparency and competitiveness of the bidding process and in awarding of contracts				
	Very High	High	Medium	Low	Very Low
	• Encouragement of contractors to have their own human rights and ethics policies and procedures				
	Excellent	Very Good	Good	Poor	Very Poor
Performance Attributes	• Designated points of communication for potential bidders and contractors with project managers				
	Clearly designated across all project streams	Clearly designated across most project streams	Some designation across some project streams	Little designation across some project streams	No designation
Stakeholder Support	• Support of stakeholders for procurement processes [see Stakeholder Support guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Compliance	• Compliance with legal requirements [see Compliance guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Conformance with Plans	• Conformance with procurement management plans [see Conformance with Plans guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
	• Effectiveness of procurement process				
	Fair, transparent and timely across all project streams	Fair, transparent and timely across most project streams	Fair, transparent and timely across some project streams	Fair, transparent and timely across few project streams	Fair, transparent and timely across no project streams
	• Likelihood of mitigation of supply chain risks				

II-12 PROCUREMENT - SECTION II PROJECT PREPARATION

Effectiveness	Very High	High	Good	Minimal	None
	<ul style="list-style-type: none"> Opportunities for local suppliers 				
	Active and extensive development of opportunities for local suppliers	Some development of opportunities for local suppliers	Where appropriate, preference given to local suppliers but no development of opportunities	Little opportunity for local suppliers	No opportunities for local suppliers

AUDITING GUIDANCE NOTES:

- Major supply needs relate to economic, financial, technical, environmental and social consultancies; contractors for project construction works; and supply of major goods and complex control equipment for project construction.
- Supply chain risks relate to inability to meet the contract provisions with respect to cost, time, quality, specifications and anti-corruption
- Comprehensive procurement management measures encompass the following range of considerations:
 - Prequalification process to screen potential bidders.
 - Bidding process - open competitive bidding (clearly stated reasons if this is not the case); transparent and equitably available information about tender opportunities; bidding documentation states selection criteria, evaluation and award decision process; bidders have sufficient time for bid preparation and for pre-qualification requirements when these apply.
 - Awarding of contracts – transparency on the award decision and its justification; opportunity for aggrieved competitors to challenge award decisions.
 - Contract specifications – clarity on terms and conditions of the contract, management of variations, penalty clauses, contract implementation, role of intermediaries and agents, dispute-settlement mechanisms and procedures.
 - Management responsibilities - responsibility for demand assessment, preparation, selection, contracting, supervision and control of a project assigned to separate bodies; safeguards such as committees at decision-making points and rotation of staff in sensitive positions; well trained and adequately remunerated staff responsible for procurement.
 - Monitoring - internal and external control and auditing bodies; independent audits; publicly accessible reports; high level monitoring of contract 'change' orders that alter the price or description of work beyond a cumulative threshold (e.g. 15 % of contract value); triggers for additional control activities if there are unreasonable delays in project execution; participation of civil society organisations promoted as independent monitors of both the tender and execution of projects.
 - Anti-corruption measures - ensuring contracts are above a low threshold, requiring the contracting authority and its employees to commit to a strict anti-corruption policy, development of a project integrity pact, providing mechanisms to report corruption and protect whistleblowers. Confidentiality should be limited to legally protected information.
- Screening criteria might encompass at a minimum quality, reputation, cost, and contractor prior performance on meeting contractual obligations to time, cost and specifications. Screening based on sustainability criteria would also encompass social, environmental, ethics, human rights, health and safety performance, and take into account giving preference and support to local suppliers where they meet other criteria. Screening to address anti-corruption would specify that companies tendering must have a code of conduct addressing anti-corruption.

EXAMPLES OF EVIDENCE: - Project Procurement Plan, - Tender requirements / specifications, - Bidding documents, - Supplier screening criteria, - Evaluation of supplier performance, - Purchasing policy / procedures

II-13 SOCIAL IMPACT ASSESSMENT & MANAGEMENT - SECTION II PROJECT PREPARATION

This aspect addresses the assessment and planning for management of social impacts associated with the planned hydropower project implementation and operation. The intent is that social impacts are identified and assessed such that avoidance, minimisation, mitigation, compensation and enhancement measures can be designed and implemented for the various stages of the project.

CRITERIA FOR ASPECT TO BE CONSIDERED NOT RELEVANT: This aspect is always relevant.

CONSIDERATIONS RELEVANT TO PROJECT CONTEXT OR SCALE: Requirements for a social impact assessment may be stipulated in national legislation, or project assessment requirements as set out by government. Social impacts may in some cases be assessed as part of the environmental impact assessment.

Process Attributes	5	4	3	2	1
Assessment	• Quality of the social impact assessment (SIA) process ¹ [see Assessment guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of the social baseline for the project ²				
	Excellent	Very Good	Good	Poor	Very Poor
	• Integration of local and traditional knowledge				
	Excellent	Very Good	Good	Poor	Very Poor
Management	• Consideration of cumulative impacts and legacy issues				
	In depth consideration of both components	Good consideration of both components	Some consideration of both components	Minimal consideration of either component	No consideration of either component
	• Quality of the social management planning (SMP) process [see Management guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
	Consultation				
	• Quality of the social impact assessment and management planning consultation process [see Consultation guidance note]				
• Excellent					
• Very Good					
• Good					
• Poor					
• Very Poor					
Performance Attributes	5	4	3	2	1
Stakeholder Support	• Level of stakeholder support the social impact assessment and management planning [see Stakeholder Support guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Compliance	• Level of compliance of the social impact assessment and management planning [see Compliance guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Conformance with Plans	Not relevant at project preparation stage				
Effectiveness	• Input provided by the SIA/SMP to site selection, design optimisation, and integrated programme management planning				
	SIA / SMP are inputs and also respond	SIA / SMP are inputs and also respond	SIA / SMP are inputs	SIA / SMP provide limited input	SIA / SMP are not utilized as inputs
	• Degree to which negative project social impacts are identified, avoided, mitigated and/or compensated				
	All major and minor negative impacts with no gaps	All major and minor negative impacts with very few non-critical gaps	Major negative impacts with a number of non-critical gaps	Major negative impacts with some critical gaps	Major negative impacts with many critical gaps
	• Likelihood of positive project social impacts				
	Very High	High	Good	Minimal	None

AUDITING GUIDANCE NOTES:

- The International Association of Impact Assessment identifies social impacts as changes to one or more of the following:
 - people's way of life – that is, how they live, work, play and interact with one another on a day-to-day basis;
 - their culture – that is, their shared beliefs, customs, values and language or dialect;
 - their community – its cohesion, stability, character, services and facilities;

II-13 SOCIAL IMPACT ASSESSMENT & MANAGEMENT - SECTION II PROJECT PREPARATION

- their political systems – the extent to which people are able to participate in decisions that affect their lives, the level of democratisation that is taking place, and the resources provided for this purpose;
- their environment – the quality of the air and water people use; the availability and quality of the food they eat; the level of hazard or risk, dust and noise they are exposed to; the adequacy of sanitation, their physical safety, and their access to and control over resources;
- their health and wellbeing – health is a state of complete physical, mental, social and spiritual wellbeing and not merely the absence of disease or infirmity;
- their personal and property rights – particularly whether people are economically affected, or experience personal disadvantage which may include a violation of their civil liberties; and
- their fears and aspirations – their perceptions about their safety, their fears about the future of their community, and their aspirations for their future and the future of their children.

2. A good social baseline would show that:

- data is collected early in the project preparation stage;
- data has been collected for the project catchment, all construction sites, downstream areas and project associated infrastructure (e.g. roads, transmissions lines, housing);
- data is analysed to enable a good understanding of community groups, with particular attention to gender and vulnerable social groups;
- data is analysed to show trends.

The baseline can be improved through the level of detail of data collection, the level of detail of analysis, and the updating of the social data set moving through the project preparation stage.

EXAMPLES OF EVIDENCE: - Regulatory requirements for SIA, - SIA and associated reports, - Social management plan, - Records of consultation in association with the SIA/SMP, - independent reviews

II-14 PROJECT AFFECTED COMMUNITY - SECTION II PROJECT PREPARATION

This aspect addresses the relationships between the project developer / owner / operator and the project affected community¹, and the acceptance by the project affected community groups² for the hydropower project. The intent is that human rights are respected, and that the project affected community is accepting of the project and confident in the project avoidance, mitigation, compensation and management plans.

CRITERIA FOR ASPECT TO BE CONSIDERED NOT RELEVANT: This aspect is not relevant if the Social Impact Assessment shows that there is no project affected community.

CONSIDERATIONS RELEVANT TO PROJECT CONTEXT OR SCALE: Definition of community groups will be influenced by the project context, relevant policies, and any issues that emerge in the Social Impact Assessment.

<i>Process Attributes</i>	5	4	3	2	1
Assessment	• Understanding of the project affected community and community groups				
	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of relevant human rights issues				
	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of the consultation engagement mechanisms that may be most suitable for different community groups				
	Excellent	Very Good	Good	Poor	Very Poor
Management	• Understanding of any special needs or assistance ³ that may be required for community groups through project preparation, implementation and operation				
	Excellent	Very Good	Good	Poor	Very Poor
	• Quality of the community engagement planning process including community groups with special needs [see Management guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
	• Quality of planning to address human rights issues [see Management guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Consultation	• Developer / owner / operator community relations staff				
	Continuous with very low turnover	Continuous with some turnover	Mostly continuous with some time gaps and some turnover	Intermittent over time	None
	• Community representative structures for engagement about the project				
	Formed for most of the community groups	Formed for many of the community groups	Formed for some of the community groups	At least one formed	None
	• Quality of the consultation process [see Consultation guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Performance Attributes	• Engagement with project affected community				
	Frequent and two-way, stakeholder involvement in decision-making	Regular and two-way	Regular, often one-way (for project to inform)	Some	None
	• Degree to which consultation process is respectful of rights, culturally sensitive, supportive to those requiring assistance, free, prior and informed				
	Excellent	Very Good	Good	Poor	Very Poor
Stakeholder Support	• Level of stakeholder support [see Stakeholder Support guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Compliance	• Compliance with legislation or any publicly stated commitments relating to human rights ⁴ [see Compliance guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Conformance with Plans	• Conformance with plans regarding engagement with project affected communities and addressing human rights [see Conformance with Plans guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor

II-14 PROJECT AFFECTED COMMUNITY - SECTION II PROJECT PREPARATION

Effectiveness	• Expressions of support by project-affected community groups				
	Unsolicited, numerous and diverse across many community groups	Multiple and diverse across a number of community groups	Some, diverse across community groups	Few with low diversity across community groups	None
	• Likelihood of longevity of engagement mechanisms				
	Very High	High	Good	Minimal	None
	• Community partnerships				
	Several community partnerships established and formalised	One or more community partnerships established	Progress towards establishment of a community partnership	Little progress towards establishment of community partnerships	None
	• Performance on human rights issues				
	Strong performance independently analysed	Good performance with minor gaps, independently analysed	Good performance with minor gaps, internal analysis	Some critical gaps in performance	Many critical gaps in performance

AUDITING GUIDANCE NOTES:

1. The project affected community is an interacting population of various kinds of individuals living in the region that is directly affected by the hydropower project preparation, implementation and/or operation. These may be within the catchment, reservoir area, downstream, or in the periphery where project-associated activities occur.
2. Community groups are groups of people with common characteristics or interest living together within the larger society. There are many different ways to view these groups, and these will need to be defined in meaningful ways for the project. These may include, by way of example, urban dwellers, rural dwellers, indigenous peoples, ethnic minorities, people of a common profession or religion, disabled, elderly, illiterate, women, men, children, etc. Particular attention needs to be paid to community groups that might be considered vulnerable with respect to the degree to which they are marginalized or impoverished, and their capacity and means to absorb change
3. Forms of assistance may include, for example, translation of documents, interpreters, forms of communication, assistance to attend meetings, personal visits, physical infrastructure installations, etc.
4. For example, a commitment to adhere to any international conventions or declarations such as the UN Convention on Human Rights.

EXAMPLES OF EVIDENCE: - Analyses, - Plans, - Records of meetings, - Documentation of agreements, - Surveys and polls

II-15 INDIGENOUS PEOPLES - SECTION II PROJECT PREPARATION

This aspect addresses the issues, risks and opportunities of the project with respect to indigenous peoples, recognising that as social groups with identities distinct from dominant groups in national societies that they are often the most marginalized and vulnerable segments of the population. The intent is that the project respects the dignity, human rights, aspirations, culture, knowledge, practices and natural resource-based livelihoods of indigenous peoples.

CRITERIA FOR ASPECT TO BE CONSIDERED NOT RELEVANT: This aspect is not relevant if the Social Impact Assessment shows that there are no indigenous peoples affected by the project.

CONSIDERATIONS RELEVANT TO PROJECT CONTEXT OR SCALE: National policies will differ with respect to their recognition of indigenous peoples and their rights.

<i>Process Attributes</i>	5	4	3	2	1
Assessment	• Understanding of the representation of indigenous peoples groups in the project affected community ¹				
	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of indigenous peoples rights with respect to the project ²				
	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of risks and vulnerabilities of indigenous peoples with respect to the project ³				
	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of communication and engagement approaches appropriate to the indigenous peoples				
Management	Excellent	Very Good	Good	Poor	Very Poor
	• Level of understanding by indigenous peoples of the project				
	Excellent	Very Good	Good	Poor	Very Poor
	• Quality of the management planning process with respect to indigenous peoples issues, risks and opportunities [see Management guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
	• Quality of the consultation process with indigenous peoples [see Consultation guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Consultation	• Engagement with indigenous peoples communities				
	Frequent and two-way, community involvement in decision-making	Regular and two-way	Regular, often one-way (for project to inform)	Some	None
	• Degree to which consultation process is respectful of rights, culturally sensitive, supportive to those requiring assistance, free, prior and informed				
	Excellent	Very Good	Good	Poor	Very Poor
<i>Performance Attributes</i>	5	4	3	2	1
Stakeholder Support	• Level of stakeholder support [see Stakeholder Support guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Compliance	• Compliance with any relevant legal requirements or public stated business commitments [see Compliance guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Conformance with Plans	• Conformance with management plans with respect to indigenous peoples issues, risks and opportunities [see Conformance with Plans guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Effectiveness	• Degree to which negative project impacts to indigenous peoples and their associated culture, knowledge and practices are identified, avoided, mitigated and/or compensated				
	All major and minor negative impacts with no gaps	All major and minor negative impacts with very few non-critical gaps	Major negative impacts with a number of non-critical gaps	Major negative impacts with some critical gaps	Major negative impacts with many critical gaps
	• Likelihood of positive project social impacts for indigenous peoples				
	Very High	High	Good	Minimal	None
• Likelihood of longevity of engagement mechanisms with indigenous peoples					

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Very High	High	Good	Minimal	None
• Performance on human rights issues with respect to indigenous peoples				
Strong performance independently analysed	Good performance with minor gaps, independently analysed	Good performance with minor gaps, internal analysis	Some critical gaps in performance	Many critical gaps in performance

AUDITING GUIDANCE NOTES:

1. There is no universally accepted definition of “indigenous peoples”. The definition used in this Protocol is as defined as per IFC Performance Standard 7, and refers to “a distinct social and cultural group possessing the following characteristics in varying degrees:
 - o Self-identification as members of a distinct indigenous cultural group and recognition of this identity by others;
 - o Collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories;
 - o Customary cultural, economic, social or political institutions that are separate from those of the dominant society or culture;
 - o An indigenous language, often different from the official language of the country or region”.

Indigenous peoples groups would need to be defined as meaningful for the project, and may relate to villages, family groups or households.

2. Indigenous peoples rights are articulated in International Labour Organisation ILO 169, and in the UN Declaration on Rights of Indigenous Peoples. Indigenous peoples' rights may be individual and/or collective rights and belong concurrently to individuals and groups. Rights may address the tangible (land, water and resources) and/or the intangible (traditional knowledge understandings and practices, spirituality and artistic teachings and representations of these). While national and international instruments recognise the rights of indigenous peoples, the content of these rights is generally determined by the laws and customs governing the relationship of an Indigenous group to their traditional country, region and to other groups with whom they have contact.
3. “The economic, social and legal status [of indigenous peoples] often limits their capacity to defend their interests in, and rights to, lands and natural and cultural resources, and may restrict their ability to participate in and benefit from development. They are particularly vulnerable if their lands and resources are transformed, encroached upon by outsiders, or significantly degraded. Their languages, cultures, religions, spiritual beliefs, and institutions may also be under threat. These characteristics expose indigenous peoples to different types of risks and severity of impacts, including loss of identity, culture, and natural resource-based livelihoods, as well as exposure to impoverishment and disease” (IFC Performance Standard 7).

EXAMPLES OF EVIDENCE: - Analytical reports, - Interviews, - Management plans, - Records of meetings, - Correspondence, - Independent reviews and analyses

II-16 RESETTLEMENT - SECTION II PROJECT PREPARATION

This aspect addresses resettlement, the displacement of populations, in relation to hydropower project development. The intent is that project resettlement is dealt with in a fair and equitable manner reflecting the priority of approaches being avoidance, followed by where avoidance is not possible, minimization, mitigation or compensation, and standards of living for displaced persons and host communities are improved.

CRITERIA FOR ASPECT TO BE CONSIDERED NOT RELEVANT: This aspect is not relevant if the Social Impact Assessment shows that there are no people to be resettled by the project.

CONSIDERATIONS RELEVANT TO PROJECT CONTEXT OR SCALE: Some countries have policies that stipulate the compensation measures for resettled people, and these may or may not require improvements to livelihoods and living standards; the project may not be able to go beyond national policy. Definition of stakeholder groups with respect to the stakeholder support attribute would be influenced by the scale of the resettlement.

Process Attributes	5	4	3	2	1
Assessment	• Understanding of the socio-economic baseline for potentially displaced persons ¹				
	Excellent	Very Good	Good	Poor	Very Poor
	• Socio-economic impact analysis for potentially displaced persons ²				
	Excellent, good analysis of trends, options and uncertainties	Very Good, includes analysis of trends, options and uncertainties	Good, some options analysis	Poor, no options assessment	Very Poor
	• Understanding of government policies and legislation and international standards relating to resettlement, compensation and the role of the developer ³				
	Excellent	Very Good	Good	Poor	Very Poor
Management	• Quality of the resettlement management planning process [see Management guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
	• Comprehensiveness of the Resettlement Action Plan ⁴				
	All components included in detail	All components included	Most components included	Some components included	No Plan
Consultation	• Quality of the resettlement consultation process [see Consultation guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
	• Engagement with project affected community				
	Frequent and two-way, stakeholder involvement in decision-making	Regular and two-way	Regular, often one-way (for project to inform)	Some	None
	• Degree to which consultation process is respectful of rights, culturally sensitive, supportive to those requiring assistance, free, prior and informed				
	Excellent	Very Good	Good	Poor	Very Poor
	• Grievance mechanisms in appropriate languages				
	Fully available and accessible, timely and personal responses	Available and mostly accessible, timely responses	Available with some issues of accessibility, all issues responded	Available with major issues of accessibility and response	Not available
• Negotiation in relation to resettlement process through assessment, management planning and decision-making stages					
Transparent and fully informed negotiation process through all stages with recognized representatives of all affected community group	Negotiation process through all stages with representatives of all affected community group	Negotiation process through most stages with representatives of all affected community group	Some opportunity for negotiation on the resettlement process	No opportunity for negotiation in the resettlement process	
Performance Attributes	5	4	3	2	1
Stakeholder Support	• Level of stakeholder support [see Stakeholder Support guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor

II-16 RESETTLEMENT - SECTION II PROJECT PREPARATION

Compliance	<ul style="list-style-type: none"> Compliance with any relevant legal requirements or public stated business commitments [see Compliance guidance note] 				
	Excellent	Very Good	Good	Poor	Very Poor
Conformance with Plans	<ul style="list-style-type: none"> Conformance with management plans or planned arrangements with respect to resettlement [see Conformance with Plans guidance note] 				
	Excellent	Very Good	Good	Poor	Very Poor
Effectiveness	<ul style="list-style-type: none"> Efforts through siting and design options to minimise displaced persons compared to initial project concept 				
	Good evidence to show final design significantly minimises resettlement	Good evidence to show final design minimises resettlement	Some evidence to show final design minimises resettlement	Little evidence to show minimisation of resettlement	No evidence to show minimisation of resettlement
	<ul style="list-style-type: none"> Entitlements to resettled persons 				
	Formal, publicly committed, legally enforceable	Formal, publicly committed	Publicly committed	Informal	No entitlements
	<ul style="list-style-type: none"> Likelihood of improvement in living standards for displaced persons 				
	Very High	High	Good	Minimal	None
	<ul style="list-style-type: none"> Likelihood of improvement in livelihoods for displaced persons 				
	Very High	High	Good	Minimal	None

AUDITING GUIDANCE NOTES:

1. A good socio-economic baseline for resettlement would show that:
 - o Data is collected early in the project preparation stage, with a cut-off date clearly communicated (to avoid inflows of those interested in compensation benefits);
 - o Data is analysed to enable a good understanding of community groups, with particular attention to gender and vulnerable social groups;
 - o Data is analysed with respect to living standards and livelihood measures. Living standards measures could include many dimensions of household well-being such as consumption, income, savings, employment, health, education, nutrition, and housing. Livelihood refers to the capabilities, assets (stores, resources, claims and access) and activities required for a means of living.

The baseline can be improved through the level of detail of data collection, the level of detail of analysis, and independent review of this baseline data set.

2. Emphasis is on the analysis of resettlement options and their interlinkages with options for project siting and design.
3. e.g. IFC Performance Standard 5 on Land Acquisition and Involuntary Resettlement
4. A Resettlement Action Plan would include but not be limited to:
 - o Identification of project impacts and affected population – mapping, census, inventory of affected assets, socioeconomic studies, analysis of surveys and studies, consultation with affected people concerning assistance benefits and development opportunities;
 - o Legal framework;
 - o Compensation framework – compensation, eligibility for assistance, responsibility and schedule for compensation payments;
 - o Resettlement assistance and livelihood - selection and preparation of the resettlement site, influx management, relocation schedule and assistance, replacement of services and enterprises, livelihood restoration, treatment of cultural property, special assistance for women and vulnerable groups;
 - o Budget and implementation schedule;
 - o Organizational responsibilities;
 - o Consultation and participation - information exchange, promoting participation;
 - o Grievance redress;
 - o Monitoring and evaluation - performance monitoring, impact monitoring, completion audit (source: IFC Handbook on Preparing a Resettlement Action Plan)

EXAMPLES OF EVIDENCE: - Analytical reports, - Resettlement Action Plan, - Minutes from meetings, - Formal agreements, - Public commitments, - Independent analyses

II-17 BENEFIT SHARING - SECTION II PROJECT PREPARATION

This aspect addresses the sharing of project benefits amongst project affected communities. The intent is that there are opportunities for provision of regional benefits through the project are explored, and a benefit sharing strategy is designed so that the project affected community is amongst the first to benefit from the project.

CRITERIA FOR ASPECT TO BE CONSIDERED NOT RELEVANT: This aspect is not relevant if the Social Impact Assessment shows that there is no project affected community.

CONSIDERATIONS RELEVANT TO PROJECT CONTEXT OR SCALE: There are no particular considerations relevant to project context or scale.

<i>Process Attributes</i>	5	4	3	2	1
Assessment	• Understanding of the purpose and intent of project benefit sharing strategies ¹				
	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of the socio-economic baseline, institutional capacities and development objectives in the project region				
	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of potential benefit sharing mechanisms relevant to the project ²				
	Excellent	Very Good	Good	Poor	Very Poor
Management	• Quality of the benefit sharing planning process [see Management guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Consultation	• Quality of the benefit sharing consultation process [see Consultation guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
<i>Performance Attributes</i>	5	4	3	2	1
Stakeholder Support	• Stakeholder support for benefit sharing assessment, planning and consultation processes [see Stakeholder Support guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Compliance	Not relevant at project preparation stage				
Conformance with Plans	Not relevant at project preparation stage				
Effectiveness	• Commitments to benefits for project affected communities				
	All receive significant benefits	Nearly all receive significant benefits	All receive some form of benefit	Some receive some form of benefit	None receive any form of benefit

AUDITING GUIDANCE NOTES:

- Through project benefit sharing there is the potential to improve livelihoods of host communities and the broader region, and through benefit sharing strategies it can clearly be demonstrated that the project adds value to project affected communities. This is different than additional benefits, which focuses on leveraging opportunities from the project for regional development such as through infrastructure and additional services.
- Potential benefit sharing mechanisms include:
 - Equitable access to electricity services – project affected communities are among the first to be able to access the benefits of electricity services from the project, subject to contextual constraints (e.g. power safety, preference);
 - Non-monetary entitlements to enhance resource access – project affected communities receive enhanced local access to natural resources; and
 - Revenue sharing – project affected communities share the direct monetary benefits of hydropower according to a formula and approach defined in regulations; this goes beyond a one-time compensation payment or short-term resettlement support.

EXAMPLES OF EVIDENCE: - Analytical reports, - Benefit sharing plan, - Independent assessments, - Stakeholder interviews

II-18 LABOUR & WORKING CONDITIONS - SECTION II PROJECT PREPARATION

This aspect addresses labour and working conditions, including employee opportunity, equity, diversity, health and safety. The intent is that workers are treated fairly and protected, and equal opportunities provided, in accordance with national and international standards and expectations on labour and working conditions.

CRITERIA FOR ASPECT TO BE CONSIDERED NOT RELEVANT: This aspect is always relevant.

CONSIDERATIONS RELEVANT TO PROJECT CONTEXT OR SCALE: In cases where the labour workforce is imported, there may be elevated risk of labour conflicts and workforce safety incidents, particularly if there are language issues. Employee diversity will be influenced by the labour available for employment.

Process Attributes	5	4	3	2	1
Assessment	• Understanding of labour and working conditions needs, issues and risk identification relevant to the hydropower project				
	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of policies, laws and standards relevant to labour and working conditions ¹				
Management	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of occupational health and safety risks and mitigation/ management measures				
	Excellent	Very Good	Good	Poor	Very Poor
Consultation Process	• Quality of the labour management planning process [see Management guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
	• Comprehensiveness of the labour management planning ²				
Performance Attributes	5	4	3	2	1
	• All components included in detail				
Stakeholder Support	All components included in detail	All components included	Most components included	Some components included	No Plan
	• Quality of the consultation process [see Consultation guidance note]				
Conformance with Plans	Excellent	Very Good	Good	Poor	Very Poor
	• Level of conformance with plans [see Conformance with Plans guidance note]				
Compliance	Excellent	Very Good	Good	Poor	Very Poor
	• Level of compliance [see Compliance guidance note]				
Effectiveness	• Risk of labour conflicts				
	Fully minimised with no gaps	Close to minimised with very few non-critical gaps	Significantly minimised with a number of non-critical gaps	Somewhat minimised with critical gaps	Not minimised
	• Risk of employee and workforce safety incidents				
	Fully minimised with no gaps	Close to minimised with very few non-critical gaps	Significantly minimised with a number of non-critical gaps	Somewhat minimised with critical gaps	Not minimised
	• Employee and workforce occupational health and safety performance				
	Very high	High	Good	Low	Very Low
• Employee and workforce equity, opportunity and diversity					
Very high	High	Good	Low	Very Low	

AUDITING GUIDANCE NOTES:

- e.g. International Labour Organisation (ILO) conventions, International Finance Corporation Performance Standard 2 Labour and Working Conditions.

II-18 LABOUR & WORKING CONDITIONS - SECTION II PROJECT PREPARATION

2. Key components of a labour management system would include human resources policies, staff and workforce planning, occupational health and safety, equal opportunity, staff development and training, grievance and dispute mechanisms, and (where appropriate) collective bargaining mechanisms.

EXAMPLES OF EVIDENCE: - Staff satisfaction surveys, - Corporate policies and programs e.g. on equity, occupational health and safety, workforce planning; - Employee and management policies.

II-19 CULTURAL HERITAGE - SECTION II PROJECT PREPARATION

This aspect addresses the level of impact and planning for protection and conservation of cultural heritage¹ that can be damaged or lost through the physical landscape changes brought about by hydropower project construction and operation, as well as through associated infrastructure impacts (e.g. new roads, transmission lines). The intent is that cultural heritage is identified, recorded, and high value artefacts protected.

CRITERIA FOR ASPECT TO BE CONSIDERED NOT RELEVANT: This aspect is not relevant if the Social Impact Assessment shows that there is no cultural heritage affected by the proposed project.

CONSIDERATIONS RELEVANT TO PROJECT CONTEXT OR SCALE: National legislation and policies are very relevant to this aspect. Project context and scale will significantly influence the degree to which cultural heritage artefacts can be protected, recovered or preserved.

Process Attributes	5	4	3	2	1
Assessment	• Cultural heritage data collection methodologies				
	Good desk top or interview based mapping with good field data	Good desk top or interview based mapping with some field data	Good desk top or interview based mapping	Some desk top or interview based mapping	Limited desk top or interview based mapping
	• Understanding of local, national, regional and international legislation, policies, agreements and conventions relating to protection of cultural heritage				
	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of the significance and value to stakeholders of the cultural heritage artefacts				
	Excellent	Very Good	Good	Poor	Very Poor
Management	• Expertise utilized in the cultural heritage assessment process				
	National or international experts, indigenous and local knowledge extensively drawn on	National experts, some indigenous and local knowledge	Some indigenous and local knowledge	Local knowledge	Limited expertise
	• Quality of the cultural heritage management planning process [see Management guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
	• Expertise utilized in the cultural heritage management planning process				
	National or international experts, indigenous and local knowledge extensively drawn on	National experts, some indigenous and local knowledge	Some indigenous and local knowledge	Local knowledge	Limited expertise
Consultation	• Diversity of approaches in cultural heritage management planning strategies ²				
	High	Good	Some	Limited	None
	• Quality of the consultation process [see Consultation guidance note]				
Performance Attributes	Excellent	Very Good	Good	Poor	Very Poor
	5	4	3	2	1
Stakeholder Support	• Level of stakeholder support [see Stakeholder Support guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Conformance with Plans	• Level of conformance with plans [see Conformance with Plans guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Compliance	• Level of compliance [see Compliance guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Effectiveness	• Recording, protection and conservation of cultural heritage artefacts of high significance and value				
	All	Most	Many	Some	None
	• Degree to which negative project impacts to cultural heritage are identified, avoided, mitigated and/or compensated				
	All major and minor negative impacts with	All major and minor negative impacts with	Major negative impacts with a number of non-	Major negative impacts with some	Major negative impacts with many

II-19 CULTURAL HERITAGE - SECTION II PROJECT PREPARATION

	no gaps	very few non-critical gaps	critical gaps	critical gaps	critical gaps
	<ul style="list-style-type: none"> Likelihood of positive project impacts to cultural heritage being realised 				
	Very High	High	Good	Minimal	None

AUDITING GUIDANCE NOTES:

1. This aspect relates only to physical cultural heritage. Non-physical cultural heritage such as traditions, festivals and rituals can also be impacted through hydropower project impacts to local communities and should be assessed as part of the social impact assessment aspect.
2. A diversity of management approaches could include protection, conservation, restoration, documentation and record-keeping. Protection, conservation and restoration could be *in situ* or relocated.

EXAMPLES OF EVIDENCE: - Heritage impact statements, - Conservation plans, - Heritage plans and agreements

II-20 PUBLIC HEALTH - SECTION II PROJECT PREPARATION

This aspect addresses public health risks and opportunities associated with the hydropower project. The intent is that public health risks are avoided, and enhancement opportunities are identified and implemented where practicable.

CRITERIA FOR ASPECT TO BE CONSIDERED NOT RELEVANT: This aspect is always relevant.

CONSIDERATIONS RELEVANT TO PROJECT CONTEXT OR SCALE: If the project has no reservoir, the risks of water-borne disease are considerably reduced and management measures relating to water management are not relevant. Small hydropower projects may have less capacity to provide public health opportunities.

Process Attributes	5	4	3	2	1
Assessment	<ul style="list-style-type: none"> Understanding of public health issues and risks associated with the hydropower project¹ 				
	Excellent	Very Good	Good	Poor	Very Poor
	<ul style="list-style-type: none"> Understanding of the public health system capacities and relevant national regulations 				
	Excellent	Very Good	Good	Poor	Very Poor
	<ul style="list-style-type: none"> Understanding of public health opportunities associated with the hydropower project² 				
	Excellent	Very Good	Good	Poor	Very Poor
Management	<ul style="list-style-type: none"> Quality of the public health management planning process [see Management guidance note] 				
	Excellent	Very Good	Good	Poor	Very Poor
	<ul style="list-style-type: none"> Comprehensiveness of the public health management planning with respect to risks and opportunities³ 				
	All components included in detail	All components included	Most components included	Some components included	No Plan
	<ul style="list-style-type: none"> Integration of public health planning considerations with public health system, including a hand-over strategy 				
	Excellent	Very Good	Good	Poor	Very Poor
Consultation	<ul style="list-style-type: none"> Quality of the consultation process regarding public health assessment and planning [see Consultation guidance note] 				
	Excellent	Very Good	Good	Poor	Very Poor
	<ul style="list-style-type: none"> Integration of local and indigenous knowledge into assessment and management consultation processes 				
	Excellent	Very Good	Good	Poor	Very Poor
Performance Attributes	5	4	3	2	1
Stakeholder Support	<ul style="list-style-type: none"> Level of stakeholder support for public health assessment, management planning and consultation [see Stakeholder Support guidance note] 				
	Excellent	Very Good	Good	Poor	Very Poor
Conformance with Plans	Not relevant at project preparation stage				
Compliance	Not relevant at project preparation stage				
Effectiveness	<ul style="list-style-type: none"> Degree to which negative project impacts to public health are identified, avoided, mitigated and/or compensated 				
	All major and minor negative impacts with no gaps	All major and minor negative impacts with very few non-critical gaps	Major negative impacts with a number of non-critical gaps	Major negative impacts with some critical gaps	Major negative impacts with many critical gaps
	<ul style="list-style-type: none"> Likelihood of positive project impacts to public health being realised 				
	Very High	High	Good	Minimal	None
	<ul style="list-style-type: none"> Likelihood of accessibility of public health facilities by project affected communities 				
	Very High	High	Good	Minimal	None

AUDITING GUIDANCE NOTES:

- Assessment considerations include risks due to introduction of the construction workforce (e.g. HIV, Aids); risks of vector borne diseases (e.g. malaria, schistosomiasis); communicable and non-communicable diseases, malnutrition, psychological disorders, social well-being; maternal and child health; accessibility to health services (financial, technical, cultural) with special regard to gender and ethnicity; access to and use of traditional medicines; possible loss or contamination of traditional resources (plants) and access to traditional fisheries; increased health risks for resettled individuals which may relate to stress; anaerobic decay processes in large reservoirs can increase levels of contaminants such as mercury in fish through bio-accumulation; and health needs, issues and risks for different community groups.

II-20 PUBLIC HEALTH - SECTION II PROJECT PREPARATION

2. Examples of creation of public health opportunities include:
 - o Improved health services through provision of electricity, water supply, and sanitation;
 - o directly developing or upgrading public health facilities in the project affected area;
 - o provision of equipment (medical and non-medical, including buildings and vehicles);
 - o training and/or capacity building for public health servants;
 - o health education for project-affected communities;
 - o disease prevention education and awareness campaigns, monitoring of vectors and disease outbreaks, vector control, and clinical treatment of disease cases;
 - o practical measures such as control of floating aquatic weeds near populated areas to reduce mosquito-borne disease risks, and mechanical or chemical treatment of shallow reservoir areas to reduce proliferation of insects that carry waterborne diseases.
3. Management measures include:
 - o efficient and ready access to medical supplies and immunisations for outbreaks;
 - o educational awareness schemes and disease prevention trainings;
 - o clear warnings and instructions in relevant languages on potentially hazardous materials;
 - o regular testing of water quality at multiple sites.

EXAMPLES OF EVIDENCE: - Public health risk assessment, - Assessment of public health enhancement opportunities, - Public health management plans

II-21 ASSET & COMMUNITY SAFETY - SECTION II PROJECT PREPARATION

This aspect addresses planning for asset and community safety through project preparation, implementation and operation periods. The intent is that life, property and the environment are protected from the consequences of dam failure and other safety risks.

CRITERIA FOR ASPECT TO BE CONSIDERED NOT RELEVANT: This aspect is always relevant.

CONSIDERATIONS RELEVANT TO PROJECT CONTEXT OR SCALE: Safety risks increase where there are multiple languages or illiteracy amongst stakeholders involved, and where the project interacts closely with project affected communities. Seismic risk is strongly influenced by the project location and scale.

Process Attributes	5	4	3	2	1
Assessment	• Identification and prioritization of asset and community safety risks ¹				
	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of relevant safety standards				
	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of safety management and risk mitigation strategies ²				
	Excellent	Very Good	Good	Poor	Very Poor
Management	• Quality of the asset and community safety management process [see Management guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
	• Comprehensiveness of the safety management plans with respect to addressing risks and utilizing management and mitigation strategies				
	All components included in detail	All components included	Most components included	Some components included	No Plan
Consultation	• Quality of the consultation process related to asset and community safety [see Consultation guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Performance Attributes	5	4	3	2	1
Stakeholder Support	• Level of stakeholder support for asset and community safety processes [see Stakeholder Support guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Conformance with Plans	• Level of conformance with plans [see Conformance with Plans guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Compliance	• Level of compliance [see Compliance guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Effectiveness	• Likelihood of excellent asset and community safety record				
	Very High	High	Good	Minimal	None

AUDITING GUIDANCE NOTES:

1. Asset and community safety risks includes seismic, geotechnical, dam failure, electric shock, drowning, road accidents, accidents arising from community interactions with project activities, etc.
2. Asset and community safety management and mitigation strategies includes fencing, signage, "housekeeping", exclusion zones, protective clothing, Emergency Preparedness Plans, monitoring, inspections, training, incident recording and response, designation of safety officers, etc.

EXAMPLES OF EVIDENCE: - Safety management plans, - Emergency preparedness plans, - Safety monitoring reports and records

II-22 ENVIRONMENTAL IMPACT ASSESSMENT & MANAGEMENT - SECTION II PROJECT PREPARATION

This aspect addresses the assessment and planning for management of environmental impacts associated with the planned hydropower project implementation and operation. The intent is that environmental impacts are identified and assessed such that avoidance, minimisation, mitigation, compensation and enhancement measures can be designed and implemented for the various stages of the project.

CRITERIA FOR ASPECT TO BE CONSIDERED NOT RELEVANT: This aspect is always relevant.

CONSIDERATIONS RELEVANT TO PROJECT CONTEXT OR SCALE: Requirements for an environmental impact assessment may be stipulated in national legislation, or project assessment requirements as set out by government.

Process Attributes	5	4	3	2	1
Assessment	• Quality of the environmental impact assessment (EIA) process ¹ [see Assessment guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of the environmental baseline for the project ²				
	Excellent	Very Good	Good	Poor	Very Poor
	• Integration of local and traditional knowledge				
	Excellent	Very Good	Good	Poor	Very Poor
Management	• Consideration of cumulative impacts and legacy issues				
	In depth consideration of both components	Good consideration of both components	Some consideration of both components	Minimal consideration of either component	No consideration of either component
	• Quality of the environmental management planning (EMP) process [see Management guidance note]				
Consultation	Excellent	Very Good	Good	Poor	Very Poor
	• Quality of the environmental impact assessment and management planning consultation process [see Consultation guidance note]				
Performance Attributes	5	4	3	2	1
Stakeholder Support	• Level of stakeholder support the environmental impact assessment and management planning [see Stakeholder Support guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Compliance	• Level of compliance of the environmental impact assessment and management planning [see Compliance guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Conformance with Plans	Not relevant at project preparation stage				
Effectiveness	• Input provided by the EIA/EMP to site selection, design optimization, and integrated programme management planning				
	EIA/EMP are inputs and also respond	EIA/EMP are inputs and also respond	EIA/EMP are inputs	EIA/EMP provide limited input	EIA/EMP are not utilized as inputs
	• Degree to which negative project environmental impacts are identified, avoided, mitigated and/or compensated				
	All major and minor negative impacts with no gaps	All major and minor negative impacts with very few non-critical gaps	Major negative impacts with a number of non-critical gaps	Major negative impacts with some critical gaps	Major negative impacts with many critical gaps
	• Likelihood of positive project environmental impacts				
	Very High	High	Good	Minimal	None

AUDITING GUIDANCE NOTES:

1. Environmental issues assessed should include biodiversity, weeds, pest species, migration of aquatic species, wetlands of significance, threatened species, critical habitats, erosion, sedimentation, water quality, air quality, noise and dust. These should be considered for both project implementation and operation.
2. A good environmental baseline would show that:
 - o Data is collected early in the project preparation stage; and

II-22 ENVIRONMENTAL IMPACT ASSESSMENT & MANAGEMENT - SECTION II PROJECT PREPARATION

- Data has been collected for the project catchment, all construction sites, downstream areas and project associated infrastructure (e.g. roads, transmissions lines, housing).

The baseline can be improved through the level of detail of data collection, the level of detail of analysis, and the updating of the environmental data set moving through the project preparation stage.

EXAMPLES OF EVIDENCE: - Regulatory requirements for EIA, - EIA and associated reports, - Environmental management plan, - Records of consultation in association with the EIA/EMP, - independent reviews

II-23 CATCHMENT MANAGEMENT - SECTION II PROJECT PREPARATION

This aspect addresses the health of the project catchment and the present and future catchment land uses which may have implications for hydropower operations (e.g. water quality, land clearing, erosion, future water abstraction activities), as well as management actions of the developer that can affect environmental, social and economic values in the catchment (e.g. creating biodiversity reserves, land access rights, educational facilities). The intent is that project catchment management measures promote positive environmental, social and economic outcomes, taking into consideration the specific role and responsibility of the proponent.

CRITERIA FOR ASPECT TO BE CONSIDERED NOT RELEVANT: This aspect is not relevant if there is another project immediately upstream.

CONSIDERATIONS RELEVANT TO PROJECT CONTEXT OR SCALE: Projects with very small undeveloped catchments may not have catchment management plans nor catchment management committees, but should still have assessment and monitoring of catchment condition and issues. Undeveloped catchments may be most at risk of future developments due to increased activity around the project.

Process Attributes	5	4	3	2	1
Assessment	<ul style="list-style-type: none"> Understanding of present and likely future catchment uses and users, and the interactions and influences of the project with these 				
	Excellent	Very Good	Good	Poor	Very Poor
Assessment	<ul style="list-style-type: none"> Understanding of the range of management measures that the developer could utilize to address the issues and opportunities¹ 				
	Excellent	Very Good	Good	Poor	Very Poor
Management	<ul style="list-style-type: none"> Quality of the management processes with respect to catchment management [see Management guidance note] 				
	Excellent	Very Good	Good	Poor	Very Poor
	<ul style="list-style-type: none"> Diversity of management approaches considered in the catchment management planning process 				
	Very High	High	Some	Minimal	None
Management	<ul style="list-style-type: none"> Integration of catchment management planning with broader regional objectives 				
	Excellent	Very Good	Good	Poor	Very Poor
Consultation	<ul style="list-style-type: none"> Quality of the consultation process with respect to catchment management planning [see Consultation guidance note] 				
	Excellent	Very Good	Good	Poor	Very Poor
	<ul style="list-style-type: none"> Catchment management committee 				
	Long-term, fully representative of catchment interests	Long-term, mostly representative of catchment interests	Long-term, partially representative of catchment interests	Temporary, partially representative of catchment interests	None
Performance Attributes	5	4	3	2	1
Stakeholder Support	<ul style="list-style-type: none"> Level of stakeholder support for catchment management planning process and plans [see Stakeholder Support guidance note] 				
	Excellent	Very Good	Good	Poor	Very Poor
Conformance with Plans	Not relevant at project preparation stage				
Compliance	Not relevant at project preparation stage				
Effectiveness	<ul style="list-style-type: none"> Degree to which negative project impacts to catchment users and uses are identified, avoided, mitigated and/or compensated 				
	All major and minor negative impacts with no gaps	All major and minor negative impacts with very few non-critical gaps	Major negative impacts with a number of non-critical gaps	Major negative impacts with some critical gaps	Major negative impacts with many critical gaps
	<ul style="list-style-type: none"> Likelihood for enhancement of catchment condition 				
	Very High	High	Good	Minimal	None

AUDITING GUIDANCE NOTES:

1. Catchment management measures include but are not limited to forming or joining a catchment management committee, creation of protected areas, creating rights of access to land and water resources for particular community groups, developing educational facilities, working with catchment residents to address land use practices, project revenue

II-23 CATCHMENT MANAGEMENT - SECTION II PROJECT PREPARATION

investment programs for the catchment, capacity building programs such as management opportunities for locals e.g. with respect to managing reserves, tourist facilities, side industries, projects, etc.

EXAMPLES OF EVIDENCE: - Design plans for land restoration and rehabilitation, - Catchment management agreements or planning, - High-value terrestrial habitat retention or protection programs, - Minutes of catchment management committee meetings

II-24 RESERVOIR MANAGEMENT - SECTION II PROJECT PREPARATION

This aspect addresses the planning for management of environmental, social and economic issues within and around the reservoir area during project implementation and operation. The intent is that the reservoir is designed, prepared and managed to achieve a balance among biodiversity, habitat and ecosystem services and social and economic objectives, including power and other multi-purpose outcomes of the hydropower facility.

CRITERIA FOR ASPECT TO BE CONSIDERED NOT RELEVANT: This aspect is not relevant if the project has no reservoir storage.

CONSIDERATIONS RELEVANT TO PROJECT CONTEXT OR SCALE: Risk of significant greenhouse gas emissions from reservoirs is greatest for reservoirs in tropical climates. Clearing of reservoir vegetation will not be practical for reservoirs of any significant scale, and is most likely where there is a commercial value for that vegetation. Reservoir management planning may be dictated by regulatory authorities depending on project context.

Process Attributes	5	4	3	2	1
Assessment	• Understanding of the issues critical to sustainable reservoir management at different stages of the project life cycle ¹				
	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of the risks of high greenhouse gas emissions ²				
	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of the range of management measures that the developer could utilize to address the issues and opportunities				
	Excellent	Very Good	Good	Poor	Very Poor
Management	• Quality of the management processes with respect to reservoir management [see Management guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
	• Comprehensiveness of the reservoir management planning with respect to critical issues				
	All components included	All components included with very few non-critical gaps	Most components included with a number of non-critical gaps	Many critical components not included	No Plan
	• Integration of planning for reservoir filling with respect to other plans and objectives (e.g. environmental, social, resettlement) ³				
	Excellent	Very Good	Good	Poor	Very Poor
	• Planned measures to address greenhouse gas emissions where of high risk ⁴				
	Comprehensive	Good	Some	Minimal	None
	• Integration of reservoir management planning with downstream flow objectives				
	Excellent	Very Good	Good	Poor	Very Poor
Consultation	• Quality of the consultation process with respect to reservoir management planning [see Consultation guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Performance Attributes	5	4	3	2	1
Stakeholder Support	• Level of stakeholder support for reservoir management planning process and plans [see Stakeholder Support guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Conformance with Plans	Not relevant at project preparation stage				
Compliance	Not relevant at project preparation stage				
Effectiveness	• Likelihood of reservoir management to provide for multiple use benefits				
	Very High	High	Good	Minimal	None
	• Change in greenhouse gas emissions caused by reservoir creation (i.e. net GHG emissions) over the project life				
Reduction or no change	Very minor increase (<10%)	Minor increase (10-20%)	Moderate increase (20-50%)	Significant increase (>50%)	

AUDITING GUIDANCE NOTES:

1. Important considerations relevant to the reservoir area at different stages of the project life cycle include:

II-24 RESERVOIR MANAGEMENT - SECTION II PROJECT PREPARATION

- Project preparation – evaluation of the potential for production of greenhouse gases with feedback into siting and design options.
 - Project implementation, prior to reservoir filling - clearing of vegetation, management of contaminated sites and cultural heritage that will be flooded.
 - Project implementation, during reservoir filling - water quality, wildlife management, safety, community impacts, land/slope stability, timing of reservoir filling in relation to resettlement or other management activities.
 - Project operations - optimising power generation, integrating multiple uses, commercial uses, rights of access, safety, flood management, aesthetics, public health, invasive species.
2. Relatively high risks of greenhouse gas emissions would be in cases where there are high reservoir water retention times, high carbon and nutrient loading, high water temperatures, and relatively high shoreline length compared to reservoir surface area (e.g. shoreline is very convoluted with many inlets).
 3. Reservoir filling needs to be mindful of other reservoir management activities such as resettlement activities, cleaning up contaminated sites, and relocating cultural heritage items.
 4. Measures include variations in project siting (e.g. as affects reservoir bathymetry, carbon and nutrient loading), variations in project design (e.g. high level or variable level outlet), clearing of reservoir vegetation, management of reservoir water retention times, etc.

EXAMPLES OF EVIDENCE: - Reservoir design documents, - Model output for reservoir operations, - Documented environmental, social, and economic objectives for reservoir management, - Reservoir manage planning documents, - Analyses of potential for greenhouse gas emissions and measures to address these, - Analyses of multiple use benefit opportunities with reservoir management.

II-25 ENVIRONMENTAL FLOWS & DOWNSTREAM SUSTAINABILITY - SECTION II PROJECT PREPARATION

This aspect addresses the design of environmental flows¹ in relation to environmental, social and economic impacts and benefits downstream of the planned hydropower development and operation. The intent is that downstream flow regimes are designed to achieve a good fit between biodiversity, habitat, ecosystem services, social and economic objectives, including power and other multi-purpose outcomes of the hydropower facility, taking into account regional and system-wide plans for hydropower and water resources development.

CRITERIA FOR ASPECT TO BE CONSIDERED NOT RELEVANT: This aspect is not relevant if the power station discharges immediately into the reservoir of another downstream project, and dewatered stream reaches downstream of diversion dams are short with no social or environmental values to be protected.

CONSIDERATIONS RELEVANT TO PROJECT CONTEXT OR SCALE: Where there is no or little reservoir storage, the owner/operator may have very little capacity to control downstream flows, but there still may be provision to maintain a minimum flow. Complex projects with multiple dams may require environmental flow assessments for all affected rivers, but priority may be put on those affected waterways which have the most significant hydrological change or those recognized to have the most downstream values.

Process Attributes	5	4	3	2	1
Assessment	• Understanding of the downstream baseline condition ²				
	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of relationship between alterations to the hydrology and environmental, social and economic objectives in the downstream river system ³				
	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of the environmental flow release mechanisms that could be employed by a hydropower project ⁴				
	Excellent	Very Good	Good	Poor	Very Poor
Management	• Articulation of flow-related objectives and flow requirements				
	Clear and detailed for all	Clear for most	Basic definition of objectives	Poor	Very poor
	• Planning to provide a fit of flow requirements between all objectives in relation to threshold levels of sustainability ⁵				
	Best fit, above threshold levels	Good fit at threshold levels	Balance amongst key objectives at threshold levels	Poor	Very poor
	• Integration of environmental flows into project design, operations planning and economic/financial analyses				
	Excellent	Very Good	Good	Poor	Very Poor
Consultation	• Integration of stakeholder input into definition of flow related objectives and flow design				
	Excellent	Very Good	Good	Poor	Very Poor
	• Quality of the consultation process [see Consultation guidance note]				
	Excellent, specialist expertise on hydro-biological issues provided to stakeholders	Very Good	Good	Poor	Very Poor
Performance Attributes	5	4	3	2	1
Stakeholder Support	• Level of stakeholder support in relation to the flow related objectives and plan for delivery [see Stakeholder Support guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Conformance with Plans	Not relevant at project preparation stage				
Compliance	Not relevant at project preparation stage				
Effectiveness	• Agreed objectives likely to be met by downstream flow requirements				
	Very high likelihood that all objectives will be met	High likelihood that nearly all objectives will be met	High likelihood that most objectives will be met	High likelihood that some objectives will be met	High likelihood that no objectives will be met
	• Level of commitment to environmental flow delivery				

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PROJECT PREPARATION**

Public, formal, legally enforceable	Public	Internal	Uncertain	None
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AUDITING GUIDANCE NOTES:

1. Environmental flows refers to the patterns of flow of water in a river or lake that sustains healthy ecosystems and the goods and services that humans derive from them. They might in some places be referred to as compensation flows.
2. Baseline condition encompasses hydrology, ecological systems, habitats and services, and socio-economic uses and values throughout the zone of influence of the power station. Quality of the hydrological datasets is as per assessment criteria in Aspect II-3 Hydrological Resource.
3. Altered flow regimes create a host of potential effects, depending on the specific context and degree of change - fish cues for migration, connectivity of habitat and quality of habitat refuges, habitat area available for macroinvertebrates and fish, changes to habitat quality through altered riparian zones, increased erosion or sedimentation, and delivery of organic materials and nutrients. Altered flow regimes from natural patterns can disadvantage native species to the advantage of introduced species. The retention of flood flows in the reservoir can affect the natural productivity and stability of riparian zones, floodplains and deltas. In estuarine systems, altered flows can change the extent of salt-water intrusion due to changed freshwater inflow patterns to the estuary. The ecosystem impacts from altered flow regimes can lead to or are accompanied by impacts on the local communities and economies. Loss of silt and nutrient delivery to floodplains can have major implications for agriculture, as can loss of water in diverted river systems, and impacts to fishery productivity can significantly affect local economies.
4. Managed flow regimes to enhance environmental or social values can comprise maintenance of a minimum flow in the river, capping of maximum flow releases, constraints on draw-down or ramp-up rates, and periodic flushing flows. The characteristics of the project design would influence whether the mechanics of how these flows are released. Agreed environmental flow regimes may include some or all of these considerations, and may be specified for year-round or by season.
5. Threshold levels of sustainability refers to those objectives that require a specific minimum flow level to remain viable.

EXAMPLES OF EVIDENCE: - Documented environmental, social, and economic objectives for downstream flows, - Surveys or other measures of stakeholder opinion, - Investigations and scientific reports, - Commitments to flow release, - Records of meetings

II-26 BIODIVERSITY & INVASIVE SPECIES - SECTION II PROJECT PREPARATION

This aspect 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 planned hydropower project. The intent is that biodiversity and high conservation value areas are addressed with the priority of approaches being avoidance, followed by where avoidance is not possible, minimisation, mitigation or compensation, and opportunities for enhancement are identified.

CRITERIA FOR ASPECT TO BE CONSIDERED NOT RELEVANT: This aspect is always relevant.

CONSIDERATIONS RELEVANT TO PROJECT CONTEXT OR SCALE: Countries usually have their own listings for protected species and habitats. Risk of invasive species needs careful assessment in all situations. Small projects may have less capacity to make positive enhancements to biodiversity.

Process Attributes	5	4	3	2	1
Assessment	• Quality of the biodiversity and invasive species assessment process [see Assessment guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of the biodiversity characteristics and risks relating to project activities ¹				
	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of the risks of invasive species ²				
	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of the range of management measures that could be employed to address biodiversity and invasive species issues ³				
	Excellent	Very Good	Good	Poor	Very Poor
Management	• Expertise utilized in the biodiversity and invasive species assessment process				
	National or international experts, indigenous and local knowledge extensively drawn on	National experts, some indigenous and local knowledge	Some indigenous and local knowledge	Local knowledge	Limited expertise
	• Quality of the management planning process to address biodiversity and invasive species issues [see Management guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
	• Expertise utilized in the management planning process to address biodiversity and invasive species issues				
	National or international experts, indigenous and local knowledge extensively drawn on	National experts, some indigenous and local knowledge	Some indigenous and local knowledge	Local knowledge	Limited expertise
Consultation	• Diversity of approaches in the biodiversity and invasive species management planning strategies				
	High	Good	Some	Limited	None
	• Quality of the consultation process to address biodiversity and invasive species issues [see Consultation guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Performance Attributes	5	4	3	2	1
Stakeholder Support	• Level of stakeholder support for biodiversity and invasive species assessment, management and consultation processes [see Stakeholder Support guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Conformance with Plans	Not relevant at project preparation stage				
Compliance	Not relevant at project preparation stage				
Effectiveness	• Degree to which negative project impacts to biodiversity are identified, avoided, mitigated and/or compensated				
	All major and minor negative impacts with no gaps	All major and minor negative impacts with very few non-critical gaps	Major negative impacts with a number of non-critical gaps	Major negative impacts with some critical gaps	Major negative impacts with many critical gaps

II-26 BIODIVERSITY & INVASIVE SPECIES - SECTION II PROJECT PREPARATION

• Likelihood of avoidance of invasive species issues				
Very High	High	Good	Minimal	None
• Likelihood of positive project impacts to biodiversity being realised				
Very High	High	Good	Minimal	None

AUDITING GUIDANCE NOTES:

1. Biodiversity and invasive species considerations relate to both flora and fauna. The area of consideration would include the catchment, reservoir and downstream areas as well as any project construction areas and associated infrastructure. Assessment components include:
 - o terrestrial and aquatic species and their life cycle developments and associated habitat, movement and feeding needs;
 - o interactions amongst the different species and populations within those species, and the pressures that would be put on these by the land use changes brought about by project development and operation;
 - o threatened or at risk species and their survival requirements;
 - o migratory species, both aquatic and terrestrial and with respect to both upstream and downstream migration - the habitat connectivity requirements of these species, the cues (e.g. flow, temperature, water quality) that trigger migration; and
 - o critical habitat areas.
2. Invasive species risks include:
 - o Weeds, algal blooms;
 - o Proliferation of certain terrestrial or aquatic fauna with no natural predators;
 - o Proliferation of insect-related issues such as mosquitos;
 - o Facilitated passage of invasive species into uninfested waterways through water transfers around the hydro system;
 - o Associated public health issues.
3. Various management approaches to address biodiversity and invasive species issues include:
 - o Alternative siting and design to minimize biodiversity and invasive species risks.
 - o To protect or enhance biodiversity: catchment protection, creation of reserves, habitat conservation, species management plans, translocations, habitat rehabilitation, new habitat creation, managed flow releases.
 - o To address passage of aquatic species: fish ladders, fish elevators, catch and release programs, fish hatcheries, re-stocking programs, mechanisms for diversion away from turbines for downstream passage, assisted cues (water chemistry, operational conditions), and choice of turbine design.
 - o To address invasive species include (as appropriate) reservoir vegetation clearing prior to filing, physical barriers to pest species passage, pollution control, physical removal or containment, chemical treatment, reservoir water residence times, and managed flow releases.

EXAMPLES OF EVIDENCE: - Research and database on biodiversity and threatened species and on pest and invasive species, - Interviews with regulators, - Independent assessment by appropriately qualified individuals or groups

II-27 EROSION & SEDIMENTATION - SECTION II PROJECT PREPARATION

This aspect addresses the management of potential impacts arising from sedimentation and erosion associated with the planned hydropower development. The intent is that reservoir and downstream impacts related to sedimentation and erosion are addressed with the priority of approaches being avoidance, followed by where avoidance is not possible, minimisation, mitigation or compensation.

CRITERIA FOR ASPECT TO BE CONSIDERED NOT RELEVANT: This aspect is always relevant.

CONSIDERATIONS RELEVANT TO PROJECT CONTEXT OR SCALE: Erosion and sedimentation risk is highly influenced by the geographic setting and the surrounding land uses. In some settings, sedimentation of hydropower projects is a major problem even if there is not reservoir storage. Transboundary issues can be highly relevant here, in that sediment and erosion effects can arise or be felt over great distances, particularly with large projects on mainstem rivers.

<i>Process Attributes</i>	5	4	3	2	1
Assessment	• Quality of the erosion and sedimentation assessment process [see Assessment guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of erosion and sedimentation issues relating to the project ¹				
	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of management strategies to address erosion and sedimentation issues ²				
	Excellent	Very Good	Good	Poor	Very Poor
Management	• Quality of the management planning process to address erosion and sedimentation issues [see Management guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
	• Diversity of approaches in erosion and sedimentation management planning strategies				
	High	Good	Some	Limited	None
Consultation	• Quality of the consultation process to address erosion and sedimentation issues [see Consultation guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
<i>Performance Attributes</i>	5	4	3	2	1
Stakeholder Support	• Level of stakeholder support for erosion and sedimentation assessment, management and consultation processes [see Stakeholder Support guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Conformance with Plans	Not relevant at project preparation stage				
Compliance	Not relevant at project preparation stage				
Effectiveness	• Degree to which negative project impacts to erosion and sedimentation are identified, avoided, mitigated and/or compensated				
	All major and minor negative impacts with no gaps	All major and minor negative impacts with very few non-critical gaps	Major negative impacts with a number of non-critical gaps	Major negative impacts with some critical gaps	Major negative impacts with many critical gaps
	• Likelihood of avoidance of erosion and sedimentation issues				
	Very High	High	Good	Minimal	None
	• Likelihood of positive project impacts to local erosion and sedimentation issues being realised				
	Very High	High	Good	Minimal	None

AUDITING GUIDANCE NOTES:

1. Erosion and sedimentation issues for hydropower projects can relate to:
 - o Catchment sediment yields - sediment accumulation can reduce the effective water storage area of hydropower reservoirs over time.
 - o Reservoir - erosion issues can occur depending on the lake level operating regime, the retention of stabilizing vegetation, the control of recreational activities on the lake, and other factors such as wind-induced wave action or rapid drawn-downs.
 - o Downstream river systems - trapping of the river's natural sediment load within the storage deprives sediments to the downstream river system. Where diversions out of river systems have occurred, downstream channels can become blocked up with sediments, allowing vegetative species can encroach on the river channel, which can

II-27 EROSION & SEDIMENTATION - SECTION II PROJECT PREPARATION

exacerbate the impacts of floods. Downstream of power stations, reduced sediment loads and often higher than natural base flows can lead to erosion of the existing channel sediments and consequent destabilization of riparian vegetation through a range of mechanisms, e.g. rapidly fluctuating discharges, rapid water level draw-downs, or continuous discharges at a single flow. Erosion and sedimentation cause fundamental changes to habitat, and so have implications for biodiversity in the reservoir and downstream river systems. Dependent on the location and extent of influence of the project, coastal and deltaic erosion issues could also arise.

2. Various management approaches to address erosion and sedimentation issues include:
 - o Alternative siting and design to minimize erosion and sedimentation risks.
 - o To address reservoir sediment accumulation: at the catchment level, cooperation with local communities and regulatory authorities to improve catchment management practices; specific catchment controls on road construction, mining, agriculture or other land uses; catchment vegetative cover protected through reservation; catchment terracing; upstream check structures; catchment reforestation can be employed in the catchment. Within the reservoir, sediment by-pass systems for floodwaters; gated structures for sediment flushing; sediment trapping and filtration systems; direct dredging.
 - o To address shoreline erosion in reservoirs: water management measures (e.g. ramp-down rules, constraints on time spent at particular operating levels, operating to maintain the stabilising characteristics of existing or planted vegetation); direct intervention techniques (e.g. rip-rap, bank protection works, planting stabilising vegetation).
 - o To address shoreline erosion in downstream river systems: water management and direct intervention approaches listed above; utilization of re-regulation storages to dampen rapidly fluctuating flow releases from power stations and attenuate the downstream flows.
 - o To address sediment accumulation in downstream river systems: careful removal of sediment retaining weed species, such as willows, and replanting with more appropriate species; sediment flushing of the river channel itself through controlled releases if shown to be effective.

EXAMPLES OF EVIDENCE: - Sedimentation and erosion rates and characteristics data, - Mapping of catchment sediment sources and yields, - Analytical reports, - Sedimentation and erosion risk management planning, - Bathymetric survey of reservoir area, - Interviews with stakeholders and regulators

II-28 WATER QUALITY - SECTION II PROJECT PREPARATION

This aspect addresses how water quality issues are addressed during the preparation stage of a project. The intent is that water quality issues are understood and addressed.

CRITERIA FOR ASPECT TO BE CONSIDERED NOT RELEVANT: This aspect is always relevant.

CONSIDERATIONS RELEVANT TO PROJECT CONTEXT OR SCALE: Water quality issues can be most complex where there are multiple other land uses. Reservoir shape is very relevant to water quality risks developing in the reservoir. Small hydropower projects are less susceptible but not immune to water quality risks arising from the project itself.

<i>Process Attributes</i>	5	4	3	2	1
Assessment	• Quality of the erosion and sedimentation assessment process [see Assessment guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
	• Understanding of water quality issues relating to the project ¹				
	Excellent	Very Good	Good	Poor	Very Poor
Management	• Understanding of management strategies to address water quality issues ²				
	Excellent	Very Good	Good	Poor	Very Poor
	• Quality of the management planning process to address water quality issues [see Management guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Consultation	• Diversity of approaches in water quality management planning strategies				
	High	Good	Some	Limited	None
Consultation	• Quality of the consultation process to address water quality issues [see Consultation guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
<i>Performance Attributes</i>	5	4	3	2	1
Stakeholder Support	• Level of stakeholder support for water quality assessment, management and consultation processes [see Stakeholder Support guidance note]				
	Excellent	Very Good	Good	Poor	Very Poor
Conformance with Plans	Not relevant at project preparation stage				
Compliance	Not relevant at project preparation stage				
Effectiveness	• Degree to which negative project impacts to water quality are identified, avoided, mitigated and/or compensated				
	All major and minor negative impacts with no gaps	All major and minor negative impacts with very few non-critical gaps	Major negative impacts with a number of non-critical gaps	Major negative impacts with some critical gaps	Major negative impacts with many critical gaps
	• Likelihood of avoidance of water quality issues				
	Very High	High	Good	Minimal	None
Effectiveness	• Likelihood of positive project impacts to local water quality issues being realised				
	Very High	High	Good	Minimal	None

AUDITING GUIDANCE NOTES:

- Water quality issues for hydropower projects can relate to reduced oxygenation, temperature, stratification potential, pollutant inflow, propensity for disease proliferation, nutrient capture, algal bloom potential and the release of toxicants from inundated sediments. The residence time of water within a reservoir is a major influence on the scale of these changes, along with bathymetry, climate and catchment activities. More specifically, risks that should be assessed include:
 - Flooding of biomass, especially forests, results in underwater decay which can result in de-oxygenated water.
 - In deep lakes that tend to stratify, colder de-oxygenated water at depths in the lake can release metals from the sediments e.g. methylmercury.
 - Deep intakes can result in deoxygenated and hydrogen sulphide rich releases out of the power station tailrace into the downstream river system.
 - Particularly high hydropower dams can have problems with gas supersaturation resulting in fish deaths.
 - In shallow lakes, water quality problems can result from wind-induced sediment re-suspension, eutrophication and algal blooms.

II-28 WATER QUALITY - SECTION II PROJECT PREPARATION

- Water temperatures in the discharged water can differ significantly from ambient temperatures, and can also fluctuate over short time scales depending on operating patterns. Biological impacts can ensue, as temperature has a major influence on biological health and can be instrumental in providing migrational cues for some species.
 - Turbidity can occur due to erosion of riverbanks, incoming sediments, and re-suspension of bottom sediments in shallow lakes.
 - Activities within the catchment beyond the direct control of the proponent can cause water quality problems when compounded with the power station operations.
2. Various management approaches to address erosion and sedimentation issues include:
- Alternative siting and design to minimize water quality risks.
 - To avoid release of cold anoxic waters from deep reservoirs: selective or multi-level offtakes; seasonal management of lake levels; air injection facilities and aerating turbines.
 - To avoid downstream gas supersaturation: stilling basins, spillway design, structures that favour degassing.
 - To address consumption of oxygen in reservoirs: vegetation clearing prior to inundation to limit organic decomposition in the reservoir; reducing water residence time through operating patterns; in shallow lakes, baffles to direct circulation and ensure adequate water flow-through and mixing.
 - To address reservoir sediment resuspension and erosion: planting of appropriately selected microphyte communities (aquatic vegetation); in shallow lakes baffles to inhibit wind-induced resuspension, and/or raising minimum operating levels in the reservoir.
 - To address water pollution inflows to the reservoir: catchment management measures; collection/treatment of pollutant-laden inflows; water pollution control measures such as sewage treatment plants or control of industrial emissions.

EXAMPLES OF EVIDENCE: - Water quality data, - Analytical reports