

HYDROPOWER SUSTAINABILITY ASSESSMENT PROTOCOL

KEY COMPONENTS DOCUMENT

January 2009

**A consultation document for the work of the
Hydropower Sustainability Assessment Forum Phase 1
Consultation, January-February 2009**

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1. About this Document

This document has been produced by the Hydropower Sustainability Assessment Forum.

The Hydropower Sustainability Assessment Forum (HSAF) is a collaboration of representatives from different sectors who aim to establish a broadly endorsed sustainability assessment tool to measure and guide performance in the hydropower sector. They are jointly reviewing and recommending improvements to the IHA Sustainability Assessment Protocol (2006).

The IHA Sustainability Assessment Protocol was developed as a measuring tool to assess social, environmental and economic performance of hydropower projects and operating facilities against criteria described in the IHA Sustainability Guidelines (2004). Both the IHA Sustainability Guidelines (the “Guidelines”) and the IHA Sustainability Assessment Protocol (the “Protocol”) (Figure 1) can be viewed at www.hydropower.org.

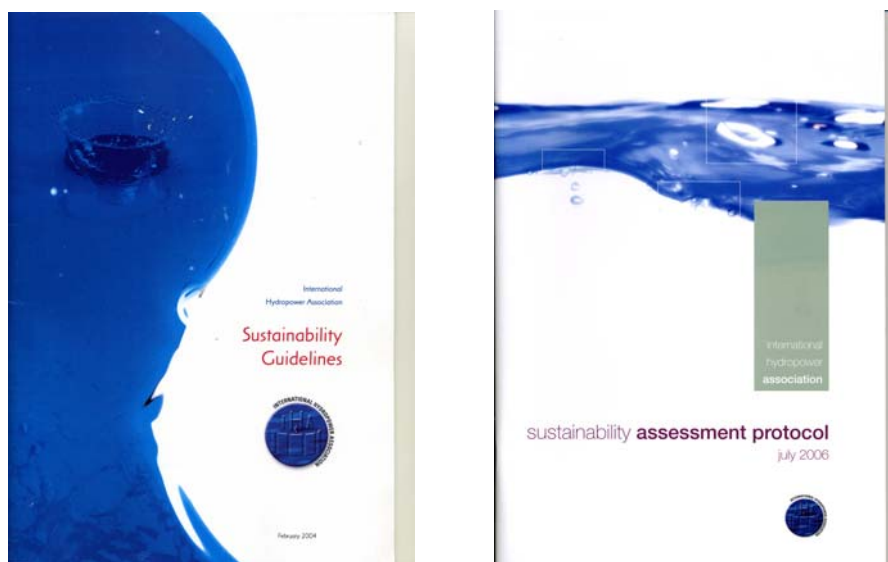


Figure 1 IHA Sustainability Guidelines and IHA Sustainability Assessment Protocol

This document is an interim document in the process of drafting a revised hydropower sustainability assessment protocol. It describes the essential elements of the hydropower sustainability assessment protocol, provides an overview of the four protocol sections, and then provides the key components of each section that will be used to develop the draft revised protocol.

The Forum is seeking feedback on any aspect of this document's content: the principles underpinning the protocol; the four protocol sections; the aspects for each section; and/or the description, policy objective, attributes and examples of objective evidence for each aspect.

This document has been produced for the first consultation period for the work of the Forum, January-February 2009. This document reflects work to date but is not, nor is it intended to be, complete. This consultation period is an early opportunity to provide input and suggestions on structure as well as specific components. A second consultation period is

scheduled for July–August 2009 and will focus on more detailed protocol content review and the practical application of this assessment tool.

For more information about the Forum, and have the opportunity to submit your comments through an on-line questionnaire before 20 February 2009, please see www.hydropower.org/sustainable_hydropower/hsaf.html

2. Understanding the Hydropower Sustainability Assessment Protocol

2.1 Assessing Sustainability Performance

The hydropower sustainability assessment protocol is an assessment framework of sustainability in the hydropower sector. It outlines the important considerations for sustainability for a hydropower project, and sets out a measurement framework to score where that particular project sits within a graded spectrum of practice. Four different sections of the protocol are dedicated to different life cycle stages of a hydropower project, as the critical issues and criteria to evaluate performance differ in these different stages. Assessment relies on objective evidence to support a score, that is, evidence that is factual, reproducible, objective and verifiable.

The assessment protocol is a voluntary tool. Its potential applications are broad in terms of who uses it and for what purpose. Potential users and uses of the hydropower sustainability assessment protocol include but are not limited to:

- All sectors providing a common basis for dialogue on sustainability issues.
- Governments, potential financiers and other decision-makers can use the Protocol to ensure that new hydropower developments are an appropriate solution for the context in which they are proposed.
- Companies, governments, financial institutions and NGOs can all use the Protocol to guide development of new hydropower facilities.
- Companies, governments and development agencies to assess the sustainability of existing operations and develop programs for improvement.
- NGOs and civil society to evaluate the sustainability of hydropower projects at different life cycle stages and to form a basis for dialogue and for holding operators and financiers to account.
- Developers, financial institutions and other investors in assessing the risks of potential investments and as part of due diligence.
- The hydropower sector in seeking external qualification for financing from banks, carbon credits (e.g. CDM/JI), renewable energy credits (e.g. RECs), recognition in voluntary markets (e.g. green certificates); and the administrators of these schemes in judging admission
- Verification agencies certifying a level of sustainability.
- Hydropower owners/operators for corporate sustainability management and training and as a basis for continual improvement.

In the future, it could be used as a basis for development of a sector standard.

2.2 Structure and Terminology of the Protocol

2.2.1 Overview of Structure

The hydropower sustainability assessment protocol consists of four sections, each with a set of aspects. Aspects are the relevant issues to be assessed for each Protocol section. Each aspect has a description, a policy objective, a set of attributes, and examples of objective evidence. Aspects may be accompanied by guidance notes and scoring instructions. The terms are shown in Figure 2 and explained in more detail below.

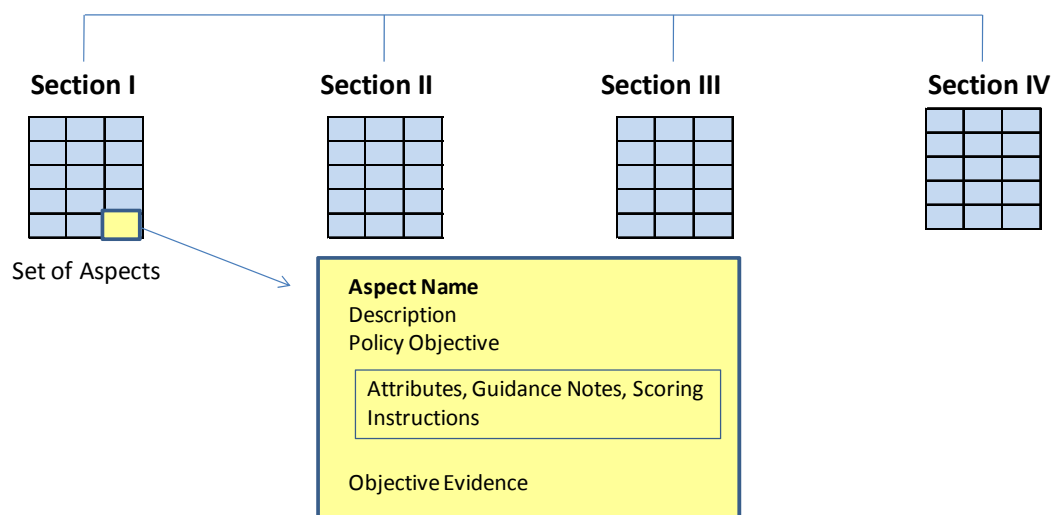


Figure 2 Structure and Terminology Used in the Protocol

2.2.2 Sections

The Protocol consists of four sections appropriate to different stages of the project life cycle:

- Section I – Strategic Assessment
- Section II – Project Preparation
- Section III – Project Implementation
- Section IV – Project Operation

Each section is a stand-alone assessment tool to measure performance of a hydropower project against sustainability criteria appropriate to that point in the project life cycle.

2.2.3 Aspects

Each protocol section contains a set of aspects important to forming a view on the overall sustainability of that project at that point in its life cycle. An aspect is one of a set of key sustainability issues (e.g. water quality). Aspects, when taken together, provide the list of issues that must be considered to confidently form a view on the overall sustainability of a hydropower project at a particular point in its life cycle. Aspects can be scored on a graded scale based on attributes.

2.2.4 Attributes

Attributes are the criteria which form the basis for determining sustainability performance for each aspect. Each protocol aspect has a set of attributes covering both process and performance. Process attributes relate to the systems or processes in place to address a particular sustainability issues (e.g. a water quality monitoring program). Performance attributes relate to the outcomes of efforts to address a particular sustainability issue (e.g. the quality of the water).

2.2.5 Policy Objectives

Each of the protocol aspects has an associated policy objective which identifies what is trying to be achieved.

2.2.6 Guidance Notes

Guidance notes are notes to assist with application of the protocol. The extent and form of the guidance notes is still under consideration.

2.2.7 Objective Evidence

The term objective evidence refers to evidence provided by an auditee and used by an assessor to verify whether and to what degree an attribute has been met. Objective evidence can be qualitative or quantitative information, records or statements of fact, either verbal or documented. It is retrievable or reproducible, is not influenced by emotion or prejudice, and is based on facts obtained through observation, measurements, documentation, tests or other means.

2.3 Scoring

Scoring is an essential feature of the hydropower sustainability assessment protocol. Each aspect has a score, determined by the objective evidence brought forward in relation to each of the process and performance attributes.

Figure 3 shows the approach to aspect scoring used in the existing IHA Sustainability Assessment Protocol (2006). As demonstrated with this aspect – Biodiversity and Pest Species – there is a graded scale of scoring from 0 to 5, with 5 being the top score. There are considerations relating to both process (e.g. in B17 - plans for understanding biodiversity issues) and performance (e.g. in B17 - agreements with regulators and stakeholders). The criteria used to determine the scoring (in this case planning for understanding of relevant issues, and agreements with regulators and stakeholders) are what are termed the “attributes”.

B17 Aspect: Biodiversity and Pest Species.		
Looks at ecosystem values, habitat, and specific issues such as threatened species, fish passage, and introduced pest species in the catchment, reservoir, and downstream areas. Assesses planned investigations and likelihood of agreement with regulators and stakeholders.		
Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.		
Score	Performance	Planning
5	<ul style="list-style-type: none"> Likelihood of comprehensive agreement with regulators and other stakeholders on ecosystem values. 	Adequate and suitable plans for understanding of relevant catchment, in-reservoir, and downstream biodiversity issues.
4	<ul style="list-style-type: none"> Likely agreement with regulators and other stakeholders covering nearly all issues. 	Very few gaps in plans for understanding of relevant catchment, in-reservoir, and downstream biodiversity issues.
3	<ul style="list-style-type: none"> Likely agreement with regulators and other stakeholders on most issues (including all critical issues). 	Minor gaps in plans for understanding of relevant catchment, in-reservoir, and downstream biodiversity issues.
2	<ul style="list-style-type: none"> Agreement with regulators and other stakeholders likely to contain significant gaps. 	Significant gaps in plans for understanding of relevant catchment, in-reservoir, and downstream biodiversity issues.
1	<ul style="list-style-type: none"> Agreement with regulators and other stakeholders likely to contain major gaps. 	Major gaps in plans for understanding of relevant catchment, in-reservoir, and downstream biodiversity issues.
0	<ul style="list-style-type: none"> Agreement with regulators and other stakeholders unlikely. 	No plans for understanding of relevant catchment, in-reservoir, and downstream biodiversity issues.

Figure 3 Example of Scoring Approach used in the Existing Protocol

The focus of the Hydropower Sustainability Assessment Forum to date has been on ensuring each section has the right aspects and attributes. The exact methodology for determining aspect scores is still to be determined. The existing Protocol makes no specification about levels of acceptability or how to go from the aspect scores for each section to a total sustainability score. This is yet to be discussed within the Forum.

3. Principles underpinning the Hydropower Sustainability Assessment Protocol

The following draft principles have been outlined by the Forum members as underpinning the Protocol:

- Hydropower, developed and managed sustainably, can provide national, regional, and local benefits, and has the potential to play an important role in enabling communities to meet sustainable development objectives.
- Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.
- Sustainable development embodies reducing poverty, respecting human rights, changing unsustainable patterns of production and consumption, protecting and managing the natural resource base, responsible environmental management, long-term economic viability, financial stability including participation of private sector parties, and ethical business practices.
- Sustainable development calls for a balancing of economic, social and environmental values, informed but not dictated by financial benefits to private interests. This balance should be achieved and ensured in a transparent, interactive and accountable manner, taking advantage of expanding knowledge, multiple perspectives, and innovation.

4. Protocol Sections

The four sections – Strategic Assessments, Project Preparation, Project Implementation, and Project Operation – are designed to be applied at particular stages of the project life cycle and have the potential to assist in the formulation of views on key decision points, as shown in Figure 4.

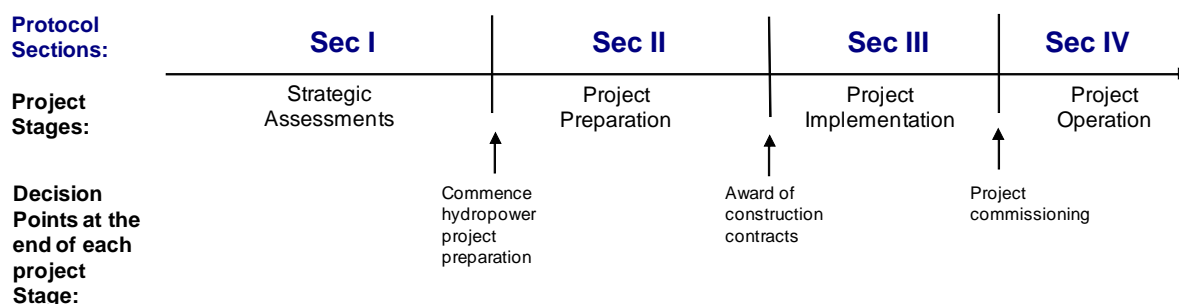


Figure 4 Section Summaries

Section I assesses the strategic basis for a hydropower project. There is potentially a dual function of Section I, depending on the interests and needs of the user. It can be used to assess the strategic environment from which a hydropower project might emerge, or the fit of a project within the strategic environment. This section of the Protocol can be used prior to and to inform the decision that there is a strategic basis to move forward with project preparation.

Section I is considered valuable to demonstrate the strategic basis for the project, so that it is clear where a particular project fits within a strategic framework for development or sustainability (e.g. is a preferred source of electricity). Section I is seen as critical to getting support from all stakeholders for a project. From a government perspective, it was noted that project criticisms often relate back to the strategic basis for the project. Section I will identify consistencies and conflicts with important contextual components such as energy, water, conservation and economic development plans for the relevant country/region. A critical decision at the end of Section I is to commence preparation of a hydropower project.

Section II assesses the preparation stage of a hydropower project, during which investigations, planning and design are undertaken for all aspects of the project. This section of the protocol can be used prior to and to inform the decision to move forward with project implementation.

Following project preparation, there is a critical decision point in the decision to award the construction contracts. An assessment conducted at this point in time would assess whether all preparatory requirements have been met, management plans are in place, and commitments are appropriate and binding. Following this point, not only does construction commence but also relevant elements of environmental, social and resettlement action plans.

Section III assesses the implementation stage of a hydropower project, during which construction, resettlement, environmental and other management plans and commitments are implemented. This section of the protocol can be used to inform the timing and conditions of project commissioning.

A following critical decision point, at the end of the Project Implementation stage, is the decision to commission the power station. At the point of commissioning the project earns money. An assessment made prior to the decision to commission would assess whether all commitments have been met, and can inform the timing and conditions of project commissioning.

Section IV assesses the operation of a hydropower facility. This section of the protocol can be used to inform the view that the facility is operating on a sustainable basis with active measures in place towards monitoring, compliance and continuous improvement.

5. Development of the Hydropower Sustainability Assessment Protocol

Section Content

The methodology of the Forum in developing the hydropower sustainability assessment protocol has been first to identify the aspects for each section, and then generate the key components of the protocol content – description, policy objective, process attributes, performance attributes, and examples of evidence. The following sections provide details on these key components for Sections I and II, and the final sections of this document list the draft aspects for Sections III and IV.

Figure 5 is an example of how these key components might be presented in an assessment worksheet. The assessor will ask questions pertinent to each attribute, and seek objective evidence to support the grading (0-5) for that attribute.

At this point in time, the Forum members are seeking feedback on the sections, the aspects identified for each section, and any of the proposed aspect content. Once there is a firm view on the aspects and the aspect content, the Forum will discuss the approach to grading each aspect. Grading may be done on an attribute-by-attribute basis, such as shown in Figure 5, but this leaves questions about how to consolidate the attribute scores into an overall aspect score. An alternative approach is that used in the existing IHA Sustainability Assessment Protocol (2006) and shown in Figure 4, but this becomes cumbersome if there are a large number of attributes defined for each aspect.

Further to this, the Forum needs to determine how gradings on attribute performance translate into an aspect score, the approach to be recommended for determining an overall project sustainability score, and the form and extent of guidance notes.

Figure 5 – Example of Assessment Worksheet for the Institutional Capacity Aspect (Section I)

Section I Aspect: INSTITUTIONAL CAPACITY

Description: The development of water and energy services in general, and of a hydropower project in particular, requires a comprehensive and balanced set of capacities amongst a range of stakeholders, namely- a) governments / regulators, b) developers, c) financial institutions, d) contractors, suppliers and labour force, e) civil society and affected people. Where such skills are lacking in any of these sectors, such shortfalls may be mitigated by drawing on externally available resources, with the eventual objective of developing local capacity by transferring skills and technology.

Policy Objective: This objective is to ensure that the institutional capacity provides a basis for developing and operating sustainable water and energy services. If there is a particular hydropower project or set of projects being considered, the institutional capacity requirements and the existing capacity have been evaluated and capacity shortfalls can be managed.

Auditor’s Comment on Relevance of this Aspect to Project being Assessed:

Process Attributes	Examples of Assessment Questions	5 Outstanding / Strong / Comprehensive	4	3	2	1	0 Very poor
(Level of) understanding of the relevance of institutional capacities	<i>What is the level of understanding of planners aware of the sustainability risks arising from capacity constraints?</i>						
(Quality of) evaluation of existing capacities	<i>Are planners capable of realistically and thoroughly identifying and analysing capacity constraints?</i>						
(Level of) evaluation of relevant stakeholders against required capacities	<i>Have all relevant stakeholders been comprehensively identified (which requires a good understanding of their roles) and have they been assessed with respect to their capacities which are relevant for the project?</i>						
(Quality of) plans to mitigate and overcome capacity gaps	<i>Have the possibilities of local recruiting, training and outsourcing and the availability of external resources to close local gaps been appropriately analysed, and convincing mitigation plans prepared?</i>						
Performance Attributes	Examples of Assessment Questions	5 Outstanding / Strong / Comprehensive	4	3	2	1	0 Very poor
(Level of) status of capacity in local institutions	<i>What is the current level of leadership/management capabilities, staff skills, institutional experience and stability? Is the scale of the institutions commensurate with the scale of the project?</i>						
(Level of) likelihood of closing gaps	<i>To what degree can capacity gaps be closed, and how can this be achieved?</i>						

Examples of Objective Evidence to Support Scoring:

- Analysis of institutional framework, incl. roles and responsibilities of public sector agencies, private sector companies, and civil society organisations
- Analysis of their respective capacities and track records (with respect to quality of planning, time and cost overruns, conflicts etc.)
- Comparability of scale and other characteristics of project with previous projects (of the same developer, in the same country, or worldwide)

6. Section I Key Components

Section I Aspects
Demonstrated Need
Options Assessment
Regional and National Policies and Plans
Political Risk
Institutional Capacity

Table 1 – Working Set of Section I Aspects

6.1 Section I Aspect – Demonstrated Need

DESCRIPTION: This aspect examines the needs that justify management and infrastructure investments in water and energy services. Water and energy services encompass the needs of natural systems/environmental, social and economic sectors (e.g., aquatic habitats, riparian livelihoods, energy production, respectively).

This aspect is important in order to support sustainable development objectives at the local, regional, national and transboundary levels; and avoid over-or under-investment in energy and water services. It is also important as it seeks a balanced approach between water management and needs and energy management and needs.

POLICY OBJECTIVE: The objective is to establish the needs and objectives for water and energy services in response to sustainable development objectives over the short term and long term. If there is a particular project or system of projects being considered, the capability for it to contribute to established needs can be demonstrated.

PROCESS ATTRIBUTES:

- Quality of assessment of demand for energy services
- Quality of assessment of demand for water services
- Quality of establishment of objectives and targets
- Level of transparency
- Integration of needs assessment for water and energy services

PERFORMANCE ATTRIBUTES:

- Level of demand for electricity services
- Level of demand for water user needs (including environmental, social and economic uses)
- Level of regulator support

EXAMPLES OF EVIDENCE:

- Analysis of likely future water and energy requirements
- Analysis of need for water and energy services

6.2 Section I Aspect – Options Assessment

DESCRIPTION: This aspect describes the choices available for meeting energy and water needs in terms of both infrastructure and management approaches.

This aspect is important because it compares hydropower options with other options such as other resources types (thermal energy) and/or conservation (e.g., energy efficiency, alternatives to irrigation). It adopts a sustainability perspective to ensure a realistic and comprehensive comparison of options across a range of economic, technical, environmental and social factors.

POLICY OBJECTIVE: The objective is to ensure that hydropower development is supported as a priority option for addressing development needs, in particular those identified under “Demonstrated Need”.

PROCESS ATTRIBUTES:

- Level of thoroughness and quality of options assessment and prioritisation
- Level of comprehensiveness of options compared
- Quality of participatory process
- Level of transparency
- Degree of integration of government policy and legislative priorities in assessment

PERFORMANCE ATTRIBUTES:

- Relative strengths and risks of various options clearly described and trade-offs/choices articulated
- Level of regulatory support for assessment process
- Level of stakeholder support for assessment process
- Level of regulator support for assessment results
- Level of stakeholder support for assessment process

EXAMPLES OF EVIDENCE:

- Evaluation of a range of alternative options

6.3 Section I Aspect – Regional and National Policies and Plans

DESCRIPTION: This aspect addresses the context set by regional and/or national plans for energy services, water resources management, biodiversity / conservation, and social and economic development as well as the relevant policies on human rights, resettlement, strategic environmental assessment, environmental impact assessment, climate change, and benefit sharing, which set the scene for project planning, implementation and operations.

This aspect is important because the sustainability of hydropower development will generally depend on the quality of integrated planning for resource development.

POLICY OBJECTIVE: The objective is to ensure regional and national policies and plans are sufficient to support sustainable hydropower through synergies and coherence with overall and sectoral plans as well as identification of gaps in national policies to be addressed in project preparation

PROCESS ATTRIBUTES:

- Level of understanding of the regional and national policies and plans
- Quality of regional and national policies and plans
- Degree to which the entire package of plans and policies provide guidance to project planning and operation
- Transparency / accessibility to the information on the regional and national policies and plans

PERFORMANCE ATTRIBUTES:

- Degree to which the entire package of plans and policies provide guidance to project planning
- Degree to which gaps or shortcomings can be addressed
- If there is a hydropower project under consideration, level of alignment of the project with regional and national policies and plans
- If there is a hydropower project under consideration, likelihood of compliance with regional and national policies

EXAMPLES OF EVIDENCE:

- Analysis of existence, currency, completeness and integration of regional and national plans (energy services, water resources management, biodiversity / conservancy, social and economic development).
- Analysis of existence, currency and completeness of the regional and national policies (human rights, resettlement, strategic environmental assessment, environmental impact assessment, climate change, benefit sharing).
- Analysis of project alignment with regional and national projects and plans.

6.4 Section I Aspect – Political Risk

DESCRIPTION: This aspect addresses political risks including war and political violence; currency inconvertibility, transfer restrictions and depreciation; expropriation of a company; and political interference in institutional and regulatory functions. This aspect also addresses political risks specific to hydropower development, including the complexities of the regulatory framework as well complexities of projects that cross national borders.

This aspect is important because the risk that a government may unilaterally repudiate its obligations or prevent others in its jurisdiction from honouring their obligations may affect the level and lending terms of financing for hydroelectric projects in its jurisdiction as well as long term sustainability and thus must be addressed.

POLICY OBJECTIVE: The objective is to ensure that the political risks influencing development and management of water and energy services are well understood. If there is a particular hydropower project or system of project being considered, the political risks can be managed.

PROCESS ATTRIBUTES:

- Level of understanding of political risks
- Degree of comprehensiveness of the political risk assessment (e.g. includes political system, regulatory framework, judicial system, protectionism)
- Level of comprehensiveness of review of available data sources as input into the political risk analysis
- Level of comprehensiveness of the consultation with relevant knowledge specialists as input into the political risk analysis
- Level of appropriateness of the management and technical capacity to undertake the political risk analysis

PERFORMANCE ATTRIBUTES:

- Level of political risk
- Level of appropriateness of the technical assistance and capacity building measures identified to address political risks
- Level of likelihood of effectiveness of mitigation measures

EXAMPLES OF EVIDENCE:

- Authoritative assessment of political risk / sovereign stability
- National Governance Audits
- Insurance, negotiation mechanisms

6.5 Section I Aspect – Institutional Capacity

DESCRIPTION: This aspect addresses the capacities of the institutions that have a role in the development and operation of hydropower projects (e.g. governments, developers, financiers, civil society etc).

This aspect is important because the development of water and energy services in general, and of a hydropower project in particular, requires a comprehensive and balanced set of capacities amongst a range of stakeholders, namely- a) governments / regulators, b) developers, c) financial institutions, d) contractors, suppliers and labour force, e) civil society and affected people. Where such skills are lacking in any of these sectors, such shortfalls may be mitigated by drawing on externally available resources, with the eventual objective of developing local capacity by transferring skills and technology.

POLICY OBJECTIVE: The objective is to ensure that the institutional capacity provides a basis for developing and operating sustainable water and energy services. If there is a particular hydropower project or set of projects being considered, the institutional capacity requirements and the existing capacity have been evaluated and capacity shortfalls can be managed.

PROCESS ATTRIBUTES:

- Level of understanding of the relevance of institutional capacities
- Quality of evaluation of existing capacities
- Level of evaluation of relevant stakeholders against required capacities
- Quality of plans to mitigate and overcome capacity gaps

PERFORMANCE ATTRIBUTES:

- Level of status of capacity in local institutions
- Level of likelihood of closing gaps

EXAMPLES OF EVIDENCE:

- Analysis of institutional framework, incl. roles and responsibilities of public sector agencies, private sector companies, and civil society organizations.
- Analysis of their respective capacities and track records (with respect to quality of planning, time and cost overruns, conflicts etc.).
- Comparability of scale and other characteristics of project with previous projects (of the same developer, in the same country, or worldwide).

7. Section II Key Components

Note that some aspects are repeated from Section I. The purpose is to enable each section to be applied as a stand-alone assessment; and because some aspects are legitimately reassessed in more than one point in the project cycle.

Section II Economic / Technical / Governance Aspects	Section II Social Aspects	Section II Environmental Aspects
Demonstrated Need	Social Impact Assessment	Environmental Impact Assessment
Public Sector Governance	Social Management Plan	Environmental Management Plan
Transboundary Issues	Cultural Heritage	Catchment Management
Regulatory Approval	Indigenous Peoples & Ethnic Minorities	Reservoir Management
Site Selection and Design Optimisation	Public Health	Environmental Flows & Downstream Sustainability
Integrated Programme Management	Resettlement	Biodiversity, Habitats & Protected Areas
Corporate Governance	Affected Communities	Pest & Invasive Species
Economic Viability	Community Acceptance	Sedimentation and Erosion
Financial Viability	Asset & Community Safety	
Management of the Hydrological Resource	Labour and Working Conditions	
Construction Management Plan	Communications	
Procurement	Project Benefits	

Table 2 – Working Set of Section II Aspects

7.1 Demonstrated Need

DESCRIPTION: This aspect addresses the justification for a project towards meeting water and energy service requirements.

This aspect is important because it supports sustainable development objectives at the local, regional, national and transboundary levels; and it optimises investment in energy and water services.

POLICY OBJECTIVE: The objective is to ensure that through a comprehensive process the need for the project can be demonstrated, and there is a strategic fit with regional and national policies and plans.

PROCESS ATTRIBUTES:

- Level of understanding of need for water and energy services
- Level of understanding of development objectives
- Level of understanding of national and regional policies and plans

- Level of quality of analysis of project's strategic fit
- Level of comprehensiveness of the stakeholder process – includes a variety of perspectives, transparency

PERFORMANCE ATTRIBUTES:

- Degree to which the project would satisfy the demand requirement
- Degree to which the project fits with regional and national policies and plans
- Level of stakeholder support
- Level of regulator support

EXAMPLES OF EVIDENCE:

- Energy Master planning
- Water Development Plan
- Country Development Report

7.2 Public Sector Governance

DESCRIPTION: This aspect addresses the adequacy of the legal, judicial and institutional structures important to project development.

This aspect is important because it promotes efficient and effective project development and operation and avoids political and corruption risk.

POLICY OBJECTIVE: The objective is to ensure that the project is developed in an economically efficient and equitable manner, and to ensure that political and corruption risks are appropriately mitigated.

PROCESS ATTRIBUTES:

- Level of understanding of legal, judicial and institutional structures and capacity
- Level of understanding of political risks
- Level of understanding of corruption risks
- Quality of corruption assessment and governance improvement plan

PERFORMANCE ATTRIBUTES:

- Degree to which corruption risks are likely to be mitigated
- Degree to which political risks are likely to be mitigated
- Degree to which capacity shortfalls can be compensated and managed
- Level of stakeholder support
- Level of regulator support

EXAMPLES OF EVIDENCE:

- Identification of appropriate government policies
- Compatibility of proponent policies on employee health, well-being and equality, with government policies
- Compensation for gaps in government policies

7.3 Transboundary Issues

DESCRIPTION: This aspect addresses the adequacy of the legal, judicial and institutional structures relevant to transboundary issues for those projects with shared catchments, reservoirs, assets and/or downstream river systems.

This aspect is important because it promotes regional cooperation and avoids conflict.

POLICY OBJECTIVE: The objective is to ensure that the project is developed in an economically efficient and equitable manner, taking into account sustainable development objectives and priorities of all riparians as well as upstream and downstream impacts, and to ensure that conflict is avoided or minimised.

PROCESS ATTRIBUTES:

- Level of understanding of legal, judicial and institutional structures and capacity in each of the countries involved
- Level of understanding of transboundary risks
- Quality of transboundary agreements and frameworks
- Quality of institutions for ongoing implementation

PERFORMANCE ATTRIBUTES:

- Degree of conformance with relevant regional and international protocols and conventions
- Degree to which conflict is avoided
- Degree to which agreements can be reached
- Level of stakeholder support
- Level of regulator support

EXAMPLES OF EVIDENCE:

- Transboundary agreements and frameworks

7.4 Regulatory Approval

DESCRIPTION: This aspect addresses the preparation for obtaining all relevant project approvals.

This aspect is important because it promotes efficient and effective project development.

POLICY OBJECTIVE: The objective is to ensure that the project is developed in an economically efficient and equitable manner, and to ensure that the legal and institutional regulatory framework is appropriate.

PROCESS ATTRIBUTES:

- Level of understanding of approval processes and requirements
- Degree of efficiency of preparations for project approvals
- Quality of the developer's risk assessment and management planning for obtaining regulatory approvals

PERFORMANCE ATTRIBUTES:

- Degree of adherence to the assessment and approval process
- Likelihood of obtaining approval
- Level of stakeholder support
- Level of regulator support

EXAMPLES OF EVIDENCE:

- Regulatory agreements
- Interviews with regulators
- Authoritative assessment of likelihood of obtaining regulatory approval, including timeframe and conditions

7.5 Site Selection and Design Optimisation

DESCRIPTION: This aspect addresses the evaluation of site selection and design options for the project.

This aspect is important because it optimises the final project location and design, and ensures that technical, economic, environmental and social considerations are adequately factored into the process.

POLICY OBJECTIVE: The objective is to ensure that the project is optimally and efficiently located and designed with respect to technical, economic, environmental and social considerations.

PROCESS ATTRIBUTES:

- Quality of investigations and data collection relevant to the identification and consideration of location and design options
- Level of comprehensiveness of the risks and opportunity analysis of location and design options
- Degree to which the options generation, analysis and selection is transparent
- Level of understanding of relevant standards and procedures
- Quality of analysis of design alternatives and their optimization
- Quality of the participatory process

PERFORMANCE ATTRIBUTES:

- Level of compatibility of the final project location and design with demonstrated needs
- Degree to which the final project location and design avoids exceptional environmental and cultural heritage sites
- Degree to which the final project location and design practicably minimises disturbance to existing features and activities
- Degree to which the final project location and design practicably minimizes social, environmental and economic opportunities
- Degree to which the final project location and design practicably maximises social, environmental and economic opportunities
- Level of stakeholder and regulatory support for the final project location and design

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

7.6 Integrated Programme Management

DESCRIPTION: This aspect addresses the developers' capacity to coordinate and manage all components of the hydropower project including construction, environmental, social, resettlement, contracts and procurement.

This aspect is important for efficient and sustainable planning, implementation and future operation of the project, and to ensure that all programme elements progress without hindering other elements.

POLICY OBJECTIVE: The objective is to ensure that the developer is aware of and makes provision for the complex nature of hydropower development, with particular regard to integrating technical, social and environmental elements of the overall programme, ensuring

one does not progress at the expense of another, and that interfaces and feedback loops across elements are managed well.

PROCESS ATTRIBUTES:

- Quality of the integrated management plan
- Quality of the communication plan
- Level of accountability for all aspects of project management
- Quality of plans to mitigate and overcome capacity gaps
- Quality of the monitoring and response system

PERFORMANCE ATTRIBUTES:

- Degree to which potential interface problems are likely to be mitigated
- Degree to which project scheduling is controlled
- Degree to which costs are controlled
- Degree to which adaptive management can be demonstrated
- Level of stakeholder support
- Level of regulator support

EXAMPLES OF EVIDENCE:

- Integrated programme management plan
- Programme management reports
- Records of meetings

7.7 Corporate Governance

DESCRIPTION: This aspect addresses corporate governance of the developer with respect to ethical business practices; addressing corruption risks; management of risk; business administration, policies and processes; corporate social responsibility; stakeholder relations; and compliance.

This aspect is important to minimise corporate reputational risk and thereby facilitate multi-stakeholder support for the project and the developer going forward.

POLICY OBJECTIVE: The objective is to ensure that the developer has sound business structures, policies and practices and that every action of the developer that could affect the project is undertaken with due attention to transparency, integrity and accountability.

PROCESS ATTRIBUTES:

- Level of comprehensiveness of business policies and processes
- Quality of the corporate risk assessment and management processes
- Quality of systems to ensure compliance
- Degree to which accountability is defined at the executive and board level
- Quality of plans to identify and mitigate corruption risks, including relationships with external partners and country and project risk

PERFORMANCE ATTRIBUTES:

- Level of compliance
- Level of transparency
- Level of conformance with established policies and procedures, both internal and external
- Level of effectiveness of risk assessment and management processes
- Level of effectiveness of corporate anti-corruption program, including relationship with external partners and country and project risk

EXAMPLES OF EVIDENCE:

- Corporate policies and programs with particular attention to sustainability, corporate social responsibility and ethics
- Corporate annual reporting
- Document setting out developer's policy and detailed program to address bribery and other corrupt practices, including addressing relationships with external partners and country and project risk

7.8 Economic Viability

DESCRIPTION: This aspect addresses the economic viability of the project based on cost-benefit analyses.

This aspect is important because judgements on project benefit made only on financial criteria can neglect major public good costs and benefits such as environmental and social costs, or multi-purpose benefits.

POLICY OBJECTIVE: The objective is to ensure that there is a net benefit from the project once all economic, social and environmental costs and benefits are factored in, and that costs and benefits are equitable, transparent and have stakeholder support.

PROCESS ATTRIBUTES:

- Comprehensiveness of the scope of the cost benefit analysis includes social, environmental and economic aspects
- Frequency of updates of cost-benefit analysis based on emerging technical, social, environmental and economic data
- Degree of sophistication of the analytical process
- Degree of transparency in the analytical process, outputs and decision-making
- Level of comprehensiveness and quality of the input data

PERFORMANCE ATTRIBUTES:

- Level of net project benefit
- Level of stakeholder support

EXAMPLES OF EVIDENCE:

- Cost/benefit analysis
- Independent analysis
- Interviews with stakeholders

7.9 Financial Viability

DESCRIPTION: This aspect addresses both access to finance, and the ability of the project to generate the required cash flow to meet project funding requirements and fund the obligations pertaining to profit and shareholders' return and sustainability.

This aspect is important because it ensures that the implementation and operation of the project and all the associated programmes and commitments.

POLICY OBJECTIVE: The objective is to ensure that projects proceed with a sound financial basis that supports financing, covers all project costs and enables a return to shareholders/investors.

PROCESS ATTRIBUTES:

- Level of quality of project financial model (including all planned sustainability obligations / plans / commitments)
- Level of understanding of financial obligations arising from all programme streams
- Level of access to financial information
- Level of understanding of risks and opportunities relating to cash flow

PERFORMANCE ATTRIBUTES:

- Level of ability to attract finance
- Level of ability to meet financial obligations including return to shareholders
- Degree of financial risk mitigation

EXAMPLES OF EVIDENCE:

- Financial modeling reports
- Finance risk analysis
- Assessment of favorability of long and short-term conditions of finance

7.10 Management of the Hydrological Resource

DESCRIPTION: This aspect addresses the planning for short and long term management of the hydrological resource, with respect to understanding the water resource and efficiency of use in sustainable hydropower generation. This aspect must be considered in conjunction with other uses of the resource as covered in other planning activities, including downstream uses.

This aspect is important because it ensures efficient and sustainable use across water management objectives, through an understanding of the variability and longer term reliability of the hydrological resource. It also ensures the value of water allocated to power generation is maximised.

POLICY OBJECTIVE: The objectives are to understand (i) what water is available (in the short term and longer term) taking into account climate change, and (ii) to ensure efficiency of use in hydropower generation whilst meeting all environmental, social and multiple-use obligations.

PROCESS ATTRIBUTES:

- Level of understanding of hydrological resource (short and long term, variability, trends, reliability)
- Quality of hydrologic modelling and associated power system planning
- Level of integration with economic, social and environmental impact assessments

PERFORMANCE ATTRIBUTES:

- Level of likelihood of maximum efficiency of use of water resource for power generation (subject to other competing uses)
- Level of conformance to regulatory and policy requirements in relation to water use and quality (e.g., approval of conditional water rights)
- Level of likelihood of longer term viability of hydropower generation in the face of water stress over time (including over a range of climate change scenarios)

EXAMPLES OF EVIDENCE:

- Analysis of long and short-term resource availability
- System modeling reports
- Analysis of efficiency constraints or opportunities arising from broader system configuration

7.11 Construction Management Plan

DESCRIPTION: This aspect addresses the construction planning requirements, including contractual arrangements, bid documents and scheduling, including managing the environmental, social and safety aspects of construction.

This aspect is important because it promotes efficient project construction.

POLICY OBJECTIVE: The objective is to ensure that the construction of the project will proceed in a well-planned, coordinated, transparent and cost-effective manner, including management of the environmental, social and safety aspects of construction.

PROCESS ATTRIBUTES:

- Quality of the contractual arrangements
- Quality of the bidding documents
- Quality of the scheduling and interface among different components, including the critical path linking social, environmental and technical activities
- Quality of the planning for environmental, social and safety aspects of construction
- Degree to which local labour and industry is included in the plan
- Level of transparency in the bidding process
- Level of accountability for all aspects of planning for construction management
- Level of capacity to manage project construction

PERFORMANCE ATTRIBUTES:

- Level of completeness of the bidding document preparation
- Degree to which potential interface problems are likely to be mitigated
- Degree to which project scheduling is controlled
- Degree to which costs are controlled
- Level of compliance
- Explicit coordination and linked decisions/milestones among technical, social and environmental activities

EXAMPLES OF EVIDENCE:

- Construction management plan
- Protocols and agreements regarding construction workforce
- Social and environmental plans relating to construction impacts, including associated infrastructure, e.g. roads

7.12 Procurement

DESCRIPTION: This aspect addresses the procurement of civil works, goods and services (including consultancies) relevant to development of the hydropower project, not just relating to the site development but also to any project-related activities including associated off-site works and social and environmental assessment and planning.

This aspect is important because (i) timely and reliable procurement of civil works contracts, services and supplies is critical for the project to meet its scheduling milestones to deliver on the development objectives; (ii) the quality of components and maximizing local procurement are important dimensions of the sustainable performance of the project, and (iii) all aspects of procurement need to be undertaken transparently and with full accountability.

POLICY OBJECTIVE: The objective is to ensure that procurement is equitable, transparent, and accountable; promotes opportunities for local industries; and articulates and ensures developer and contractor obligations for environmental, social and ethical obligations.

PROCESS ATTRIBUTES:

- Level of understanding of sustainability issues and corruption risks in procurement of project contracts, goods and services
- Degree to which sustainability issues are factored into procurement decisions and documentation
- Level of transparency in the bidding process Quality of the contractual arrangements including penalties for the developer and bidders relating to non-compliance with anti-bribery requirements
- Quality of the bidding documents, including addressing antibribery issues
- Level of independent monitoring of the procurement processes
- Quality of the contract supervision mechanisms and of the internal and external government control bodies with responsibilities on overseeing the procurement processes.
- Quality of the complaints and dispute resolution system, including an effective and timely appeal mechanisms

PEFORMANCE ATTRIBUTES:

- Degree to which local labour and industry is included
- Quality and reliability of procured goods and services
- Level of competence of the suppliers and service providers
- Degree to which procurement decisions are accepted as economically efficient, fair, transparent and accountable by project stakeholders, including civil society
- Number of disputes
- Percentage of disputes successfully resolved

EXAMPLES OF EVIDENCE:

- Tender requirements / specifications
- Evaluation of supplier performance
- Purchasing policy / procedures

7.13 Social Impact Assessment

DESCRIPTION: This aspect addresses the assessment of social impacts associated with the planned hydropower development and operation.

This aspect is important because it identifies and assesses the social issues as a basis for developing social management measures; if done well, many social issues can be avoided, minimised and mitigated at an early stage and opportunities for positive impacts identified.

POLICY OBJECTIVE: The objective is to ensure that social impacts are properly identified and assessed such that effective avoidance, minimisation, mitigation and compensation measures can be designed and implemented for the various stages of the project.

PROCESS ATTRIBUTES:

- Quality of the social baseline survey (e.g. scope, data collection)
- Quality of the stakeholder identification process
- Level of disclosure of information
- Level of appropriate expertise of personnel involved
- Quality of the treatment of uncertainty
- Quality of participatory process (stakeholder engagement / regulator, variety of perspectives)
- Quality of the review and revision process

PERFORMANCE ATTRIBUTES:

- Level of regulatory support for SIA
- Level of stakeholder support for SIA
- Degree to which the SIA informs site selection, design optimisation and the integrated project management plan
- Degree to which the SIA is a comprehensive foundation for the social management plan

EXAMPLES OF EVIDENCE:

- Regulatory requirements for SIA
- Plans for SIA or actual SIA
- Plans for involvement and/or consultation with directly affected stakeholders during assessment process

7.14 Social Management Plan

DESCRIPTION: This aspect addresses the planning for management of social impacts associated with the planned hydropower development and operation.

This aspect is important because it identifies and assesses the social management measures to avoid, minimise, mitigate and compensate for social impacts and, where possible, enables enhancement of social benefits.

POLICY OBJECTIVE: The objective is to ensure that management measures are designed that will comprehensively and effectively address social impacts for the various stages of the project, and seek opportunities for positive impacts.

PROCESS ATTRIBUTES:

- Quality of social management planning
- Level of adequacy of capacity and resources to implement
- Degree of alignment with the social impact assessment
- Quality of participatory process (stakeholder engagement / regulator, variety of perspectives)
- Quality of mechanisms for monitoring and continual improvement throughout the life of the project

PERFORMANCE ATTRIBUTES:

- Level of well-being of groups directly and indirectly affected by the project
- Level of regulatory support for SMP
- Level of stakeholder support for SMP
- Degree to which the SMP has been integrated with site selection, design optimisation and project management plan
- Degree to which SMP has been costed and integrated within the overall project budget
- Degree to which the SMP has effective measures to comprehensively avoid, minimise, mitigate and compensate for social impacts and where possible enable social enhancement

EXAMPLES OF EVIDENCE:

- Plans for or the actual SMP
- Agreements with stakeholders and/or regulators
- Independent expert testimony on SMP plans or contents

7.15 Cultural Heritage

DESCRIPTION: This aspect addresses the level of impact and planning for protection and conservation of tangible and intangible forms cultural heritage.

This aspect is important because cultural heritage artifacts 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). Furthermore, non-physical cultural heritage such as traditions, festivals and rituals can also be impacted through hydropower project impacts to local communities.

POLICY OBJECTIVE: The objective is to ensure that cultural heritage is identified, recognised and conserved.

PROCESS ATTRIBUTES:

- Comprehensiveness of the list of cultural heritage identified
- Quality of the cultural heritage management plans
- Degree to which local knowledge and expertise is utilised in assessment and development of management plans
- Quality of the consultative process

PERFORMANCE ATTRIBUTES:

- Level of stakeholder support/community acceptance
- Level of regulator support

EXAMPLES OF EVIDENCE:

- Heritage impact statements
- Conservation plans
- Heritage plans and agreements

7.16 Indigenous Peoples and Ethnic Minorities

DESCRIPTION: This aspect addresses the particular issues, risks and opportunities of the project with respect to indigenous people and ethnic minorities.

This aspect is important because indigenous peoples and ethnic minorities may be more vulnerable and face greater risks due to a hydropower development, and may need support to understand the project proposal, what it means for them, what their options and rights are with respect to the project, and to not be disempowered by the project. Meaningful engagement with indigenous peoples and ethnic minorities might also help inform on other aspects (e.g. cultural heritage).

POLICY OBJECTIVE: The objective is to ensure that indigenous and ethnic minority communities affected either directly or indirectly by the project should be specifically identified, adequately represented in any consultation process, and not adversely affected by the project.

PROCESS ATTRIBUTES:

- Quality of the identification process of indigenous people and ethnic minorities
- Understanding of legal rights as embedded in national and international law
- Quality of identification of special requirements of indigenous peoples and ethnic minorities
- Level of participation of indigenous peoples and ethnic minorities

- Comprehensiveness of the plan to address project-related issues for indigenous peoples and ethnic minorities
- Quality of the monitoring program

PERFORMANCE ATTRIBUTES:

- Degree to which indigenous people's plan is developed with comprehensive participation of indigenous peoples and ethnic minorities and mutually acceptable independent experts
- Level of integration of indigenous peoples and ethnic minorities issues, values and knowledge in other aspects of project planning and preparation
- Level of stakeholder support for plan
- Level of support for plan from indigenous peoples and ethnic minorities

EXAMPLES OF EVIDENCE:

- Assessment report of indigenous peoples and ethnic minorities
- Management plan
- Records of meetings and interviews

7.17 Public Health

DESCRIPTION: This aspect addresses public health risks and opportunities associated with the hydropower project throughout the project life cycle.

This aspect is important because hydropower projects can create public health risks through introduction of the construction workforce, impacts to local communities, and through creating conditions conducive to waterborne diseases (e.g. schistosomiasis). At the same time, through stimulating the local economy, developing new infrastructure and provision of electricity, water supply, and sanitation there is the potential to upgrade the existing public health facilities in the project affected area.

POLICY OBJECTIVE: The objective is to ensure that public health risks are avoided and opportunities to enhance public health are identified alongside other potential project benefits.

PROCESS ATTRIBUTES:

- Quality of assessment of public health risks and opportunities
- Quality of collection of public health baseline data
- Quality of public health management plan
- Thoroughness of identification of relevant public health standards
- Quality of the communications / engagement planning
- Degree to which an indigenous people's public health plan is developed with comprehensive participation of indigenous peoples and ethnic minorities and independent experts

PERFORMANCE ATTRIBUTES:

- Degree of mainstreaming of public health plan into public health system
- Level of public health impact and risk minimisation and mitigation
- Degree to which public health benefits can be realised
- Level of stakeholder support for public health management plan
- Level of compliance with public health legislation, standards, and management plan targets

EXAMPLES OF EVIDENCE:

- Public health risk assessment
- Assessment of public health enhancement opportunities
- Public health management plans

7.18 Resettlement

DESCRIPTION: This aspect addresses voluntary and involuntary resettlement relating to the hydropower development.

This aspect is important because poor management of involuntary resettlement has been one of the most high profile issues creating controversy with hydropower projects, in cases resulting in disenfranchisement and negative impacts on living standard and quality of life, especially for the rural poor. It needs to be managed well.

POLICY OBJECTIVE: The objective is to ensure that project resettlement is dealt with in a fair and equitable manner, that displaced groups are at a minimum re-established at no disadvantage, and ideally that standards of living are improved for both displaced and host communities.

PROCESS ATTRIBUTES:

- Quality of the resettlement baseline survey
- Quality of the stakeholder identification process
- Level of disclosure of information relating to resettlement
- Level of informed participation of affected peoples
- Quality of the options assessment
- Quality of the consultation and negotiation process
- Quality, funding and management structure of resettlement plan
- Quality of the communications and engagement planning
- Quality of the monitoring, evaluation and review process

PERFORMANCE ATTRIBUTES:

- Degree of resettlement impact avoidance, minimisation, mitigation
- Level of stakeholder / regulator support for resettlement plan
- Appropriateness of timing of resettlement
- Degree of change in living standard of directly affected stakeholders
- Degree of cohesiveness of resettled communities
- Level of compliance with resettlement legislation and standards requirements
- Level of compliance with resettlement plan targets and commitments

EXAMPLES OF EVIDENCE:

- Documented compensation agreements
- Resettlement plan
- Minutes from meetings

7.19 Community Acceptance

DESCRIPTION: This aspect addresses the degree of community acceptance for the project and all associated assessments, programs and plans, and the processes used to maintain that acceptance. This aspect addresses acceptance in aggregate; other aspects include attributes related to stakeholder acceptance on specific items (e.g. cultural heritage management plan).

This aspect is important because developing and maintaining community engagement and support for a project can considerably facilitate many aspects of hydropower project development and ongoing operations.

POLICY OBJECTIVE: The objective is to gain acceptance of communities for the project construction and operations, and to achieve the confidence of communities in project impact avoidance, mitigation and management plans, through negotiated agreements with affected communities where possible.

PROCESS ATTRIBUTES:

- Quality of the stakeholder / community identification process
- Level of disclosure of information
- Quality of the community participation and consultation plan
- Quality of the communication strategies / engagement planning
- Quality of the grievance process / dispute resolution planning

PERFORMANCE ATTRIBUTES:

- Quality of the community / stakeholder confirmation / agreements
- Level of community / stakeholder support
- Comprehensiveness of meeting targets of consultation plan
- Quality of resolution of grievances / disputes

EXAMPLES OF EVIDENCE:

- Records of meetings
- Documentation of agreements
- Surveys and polls

7.20 Asset and Community Safety

DESCRIPTION: This aspect addresses planning for asset and community safety through construction and operation periods.

This aspect is important because the first priority for dam designers, builders, owners and operators is dam safety and the protection of life, property and the environment from the consequences of dam failure and other safety risks (e.g. road, construction and water management, or personal safety of non-project locals).

POLICY OBJECTIVE: This objective is to ensure the protection of life, property and the environment from the consequences of dam failure and other safety risks.

PROCESS ATTRIBUTES:

- Quality of the safety management and monitoring plan
- Quality of the Emergency Preparedness Plan (EPP) / asset safety planning
- Quality of the auditing and reporting on safety performance
- Quality of the community and staff consultations and training for safety and EPP
- Quality of the log of complaints and suggestions
- Quality of the communications / engagement planning
- Comprehensiveness of the identification and prioritisation of risks

PERFORMANCE ATTRIBUTES:

- Degree of involvement of regulators and safety-oriented stakeholders in monitoring, testing, reporting
- Degree of effectiveness of the complaints mechanism

- Level of community participation and support
- Level of performance on safety performance statistics
- Level of adherence to planned arrangements during safety drills and incidents

EXAMPLES OF EVIDENCE:

- Safety management plans
- Emergency preparedness plans
- Safety monitoring reports and records

7.21 Labour and Working Conditions

DESCRIPTION: This aspect addresses labour and working conditions, including employee opportunity, equity, diversity, health and safety

This aspect is important because workers need to be treated fairly and protected, and expectations on labour and working conditions are well-established in national and international standards and comparable industry practice.

POLICY OBJECTIVE: This objective is to ensure that workers are treated fairly and protected.

PROCESS ATTRIBUTES:

- Quality of the labour management system
- Thoroughness of identification of relevant policy, law and standards
- Quality of the negotiation process where relevant
- Quality of issues and risk identification and prioritisation
- Quality of communications and engagement planning
- Quality of workforce planning
- Quality of the occupational health and safety program

PERFORMANCE ATTRIBUTES:

- Level of compliance
- Degree of risk of labour conflicts or interruptions
- Degree of risk of staff safety incidents
- Levels of employee safety, occupational health and wellbeing performance
- Levels of employee equity, opportunity, diversity
- Level of engagement / relationship with labour representatives
- Level of staff satisfaction
- Levels of conflicts and disputes

EXAMPLES OF EVIDENCE:

- Staff satisfaction surveys
- Corporate policies and programs, e.g. on equity, occupational health & safety, workforce planning
- Employee and management profiles

7.22 Communications

DESCRIPTION: This aspect addresses the effective use of communication to measure and address expectations and risks regarding the sustainable performance of the hydropower project as seen from all stakeholder perspectives. It encompasses communication within the company, communication between the company and external stakeholders (e.g. affected communities, governments, key institutions, partners, contractors, catchment residents, etc),

communication mechanisms used by the developer to ensure sound business management and stakeholder relations, and the overall level of transparency in the communications about the project.

This aspect is important because of the cross-cutting need to coherently involve people in decisions that affect them and to support functional partnerships essential to deliver sustainable performance in all dimensions of hydropower development and operation. The quality of communications (alongside quality processes and products) can greatly influence the employee, contractor, regulator and stakeholder trust and confidence in the developer, and the efficiency of business processes.

POLICY OBJECTIVE: To ensure that project communications support all aspects of the project's sustainability performance, address stakeholder perceptions and concerns, and add value for all involved.

PROCESS ATTRIBUTES:

- Degree to which analytical based-assessments are used to identify communication needs of stakeholders
- Quality of the project communications strategy (e.g. comprehensive, linked to project objectives, prepared collaboratively)
- Level of communication support for key project partnerships
- Level of communication support to empower stakeholder voices
- Quality of the processes to review, refine and adjust communication strategies over time
- Adequacy of a developer's communication unit (with qualified staff) in the project management structure to coordinate communication inputs

PERFORMANCE ATTRIBUTES:

- Degree to which stakeholder views are reflected in the project communication strategy
- Number of stakeholder complaints on lack of project status information or responsiveness to raised concerns
- Number of communication failures on key project partnerships

EXAMPLES OF EVIDENCE:

- Project communication plans and strategies
- Independent surveys
- Records of stakeholder input and feedback

7.23 Project Benefits

DESCRIPTION: This aspect addresses project benefits with a particular focus on benefit sharing, including revenue sharing, entitlements and access to resources and equitable access to electricity for those in the resettlement zone and immediate project area.

This aspect is important because through project benefits there is the potential to improve livelihoods of host communities and the broader region, and to potentially support broader economic development, and through benefit sharing strategies it can clearly be demonstrated that the project adds value to all affected parties.

POLICY OBJECTIVE: The objective is to ensure that (i) opportunities for provision of benefits to the region are identified and explored; and that (ii) opportunities for provision of benefits to project affected people are identified and implemented, that project affected people share in

those benefits, and that they have a role in decision making on optimizing and sharing of those benefits throughout the project life.

PROCESS ATTRIBUTES:

- Quality of the project benefit analysis
- Quality of the benefit sharing assessment
- Quality of the benefit sharing plan
- Quality of the participatory process
- Quality of the monitoring, evaluation and review plan to ensure commitments are met

PERFORMANCE ATTRIBUTES:

- Level of finance secured for revenue sharing
- Level of stakeholder support
- Likelihood of extent to which opportunities identified and prioritised by project affected people can be realised.
- Extent of livelihood restitution and food security attained

EXAMPLES OF EVIDENCE:

- Benefit sharing plan
- Independent assessments of poverty, living standards, food security, access to electricity and access to resources
- Stakeholder interviews

7.24 Environmental Impact Assessment

DESCRIPTION: This aspect addresses the assessment of environmental impacts associated with the planned hydropower development and operation.

This aspect is important because it identifies and assesses the environmental issues as a basis for developing environmental management measures; if done well, many environmental risks can be avoided, and future costs saved by avoiding, minimizing and mitigating environmental issues at an early stage.

POLICY OBJECTIVE: The objective is to ensure that environment impacts are properly identified and assessed such that effective avoidance, minimisation, mitigation and/or compensation measures can be designed and implemented for the various stages of the project.

PROCESS ATTRIBUTES:

- Quality of the environmental baseline survey (e.g. scope, data collection)
- Quality of the issues identification process
- Level of disclosure of information
- Level of appropriate expertise of personnel involved
- Quality of the treatment of uncertainty
- Quality of participatory process (stakeholder engagement / regulator, variety of perspectives)
- Quality of the review and revision process

PERFORMANCE ATTRIBUTES:

- Level of regulatory support for EIA
- Level of stakeholder support for EIA
- Degree to which the EIA informs site selection, design optimisation and the integrated project management plan

- Degree to which the EIA is a comprehensive foundation for the environmental management plan

EXAMPLES OF EVIDENCE:

- Regulatory requirements for project EIA
- Plans for environmental impact assessment or the actual assessment
- Independent expert testimony on EIA plans or content

7.25 Environmental Management Plan

DESCRIPTION: This aspect addresses the planning for management of environmental impacts associated with the planned hydropower development and operation.

This aspect is important because it identifies and assesses the environmental management measures to avoid, minimise, mitigate and/or compensate for environmental impacts and, where possible, enables environmental enhancement.

POLICY OBJECTIVE: The objective is to ensure that management measures are designed that will comprehensively and effectively address environment impacts for the various stages of the project.

PROCESS ATTRIBUTES:

- Quality of environmental management planning
- Level of adequacy of capacity and resources to implement
- Degree of alignment with the environmental impact assessment
- Quality of participatory process (stakeholder engagement / regulator, variety of perspectives)
- Quality of mechanisms for monitoring and continual improvement throughout the life of the project

PERFORMANCE ATTRIBUTES:

- Level of regulatory support for EMP
- Level of stakeholder support for EMP
- Degree to which the EMP has been integrated with site selection, design optimisation and the project management plan
- Degree to which the EMP has effective measures to comprehensively avoid, minimise, mitigate and compensate for environmental impacts and where possible enable environmental enhancement

EXAMPLES OF EVIDENCE:

- Plans for EMP or the actual EMP
- Agreements with stakeholders and/or regulators
- Independent expert testimony on EMP plans or content

7.26 Catchment Management

DESCRIPTION: This aspect addresses the proponent's role in catchment management in relation to other stakeholders and managers.

This aspect is important because (i) the health of the catchment and present and future land uses may have implications for hydropower operations; and (ii) management actions of the developer can affect environmental, social and economic values in the catchment.

POLICY OBJECTIVE: The objective is to promote catchment management that ensures good environmental, social and economic outcomes, taking into consideration the specific role and responsibility of the proponent.

PROCESS ATTRIBUTES:

- Level of understanding of the catchment, land uses, interactions and other influences on catchment condition
- Clarity of definition of the role and responsibility of the proponent and accountability of other parties
- Quality of identification of environmental, social and economic objectives for catchment management
- Quality of the catchment management planning process
- Quality of participatory process (stakeholder engagement / regulator, variety of perspectives)
- Degree of integration of catchment management planning with broader regional conservation and land-use priorities

PERFORMANCE ATTRIBUTES:

- Degree to which the catchment management plan is likely to achieve desired specific environmental, social and economic outcomes
- Degree to which the monitoring and adaptive management programme is adequately resourced and likely to achieve desired outcomes
- Level of regulator support
- Level of stakeholder support

EXAMPLES OF EVIDENCE:

- Design plans for land restoration and rehabilitation
- Catchment management agreements or planning
- High-value terrestrial habitat retention or protection programs

7.27 Reservoir Management

DESCRIPTION: This aspect addresses the planning for management of environmental, social and economic issues within and around the reservoir area during project development and operation.

This aspect is important because there are some particularly critical issues relevant to the reservoir area to be addressed at all stages: (i) during construction (e.g. clearing of vegetation, contaminated sites, cultural heritage); (ii) during reservoir filling (e.g. water quality, wildlife management, community impacts, land stability); and (iii) during operations (e.g. optimising power generation, integrating multiple uses, commercial uses, rights of access, safety, aesthetics). The potential for production of greenhouse gases needs assessment at the project preparation stage with feedback into siting and design considerations.

POLICY OBJECTIVE: The objective is to ensure 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.

PROCESS ATTRIBUTES:

- Quality of identification of environmental, social and economic objectives for reservoir management

- Quality of design of the reservoir, preparation of the reservoir and ongoing operation and maintenance of the reservoir
- Quality of participatory process (stakeholder engagement / regulator, variety of perspectives)
- Quality of the assessment of greenhouse gas emissions

PERFORMANCE ATTRIBUTES:

- Degree to which reservoir design, preparation and management is likely to achieve desired specific environmental, social and economic outcomes
- Degree to which monitoring and adaptive management programme is adequately resourced and likely to achieve desired outcomes.
- Degree to which reservoir management is fully integrated in infrastructure design, operations management and economic / financial analysis
- Level of regulator support
- Level of stakeholder support

EXAMPLES OF EVIDENCE:

- Reservoir design documents
- Model output for reservoir operations
- Documented environmental, social, and economic objectives for reservoir management

7.28 Environmental Flows and Downstream Sustainability

DESCRIPTION: 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.

This aspect is important because flow regulation can affect the viability of representative ecosystems and habitats for rare, endemic and endangered fresh water dependant species, and ecosystem services as well as social and economic objectives.

POLICY OBJECTIVE: The objective is to ensure that a downstream flow regime is designed to achieve the best fit between biodiversity, habitat, ecosystem services and social and economic objectives, including power and other multi-purpose outcomes of the hydropower facility.

PROCESS ATTRIBUTES:

- Quality of identification of environmental, social and economic objectives for environmental flows
- Level of understanding of relationship between hydrology, ecosystems and social uses
- Level of understanding of relationship between hydrology and environmental, social and economic objectives
- Quality of design of the environmental flow (e.g. pattern of flow, balance between objectives)
- Quality of participatory process (stakeholder engagement / regulator, variety of perspectives)

PERFORMANCE ATTRIBUTES:

- Degree to which the flow regime is likely to achieve environmental, social and economic objectives
- Degree to which the monitoring and adaptive management programme is adequately resourced and likely to achieve desired outcomes

- Degree to which the environmental flow is fully integrated in infrastructure design, operations management and economic / financial analyses
- Level of regulator support
- Level of stakeholder support

EXAMPLES OF EVIDENCE:

- Documented environmental, social, and economic objectives for downstream flows
- Surveys or other measures of stakeholder opinion
- Investigations and scientific reports

7.29 Biodiversity, Habitats and Protected Areas

DESCRIPTION: This aspect addresses ecosystem values, habitat and specific issues such as threatened species and fish passage in the catchment, reservoir and downstream areas. It also looks at management actions to protect habitats and specific areas of high conservation value and assesses opportunities for enhancement / restoration of biodiversity resources.

This aspect is important because hydro projects can have significant impacts on biodiversity and because development of all types may create cumulative impacts on biodiversity.

POLICY OBJECTIVE: The objective is to ensure the protection of biodiversity and high conservation value areas through the design and operation of the project, and to enhance where practicable opportunities arise.

PROCESS ATTRIBUTES:

- Quality of identification of objectives for biodiversity and conservation area management, including target species and habitats
- Quality of plans to manage for biodiversity and conservation objectives
- Quality of participatory process (stakeholder engagement / regulator, variety of perspectives)
- Degree of integration with broader regional conservation and biodiversity priorities

PERFORMANCE ATTRIBUTES:

- Degree to which biodiversity and habitat management plan is likely to achieve objectives
- Degree to which monitoring and adaptive management programme is adequately resourced and likely to achieve objectives
- Level of regulator support
- Level of stakeholder support

EXAMPLES OF EVIDENCE:

- Research and database on biodiversity and threatened species
- Interviews with regulators
- Independent assessment by appropriately qualified individuals or groups

7.30 Pest and Invasive Species

DESCRIPTION: This aspect addresses potential impacts arising from pest and invasive species associated with the planned hydropower project.

This aspect is important because pests and invasive species can have significant impacts on indigenous biodiversity and the social and economic activities in the project area including the future operation of the hydropower project.

POLICY OBJECTIVE: The objective is to ensure the protection of biodiversity and social and economic values in the catchment area, reservoir and downstream environment from the impacts of pest and invasive species.

PROCESS ATTRIBUTES:

- Quality of the risk assessment of potential pests and invasive species
- Quality of planning to prevent the introduction and manage the spread of pests and invasive species, including setting objectives
- Degree of integration with broader regional pest and invasive species management programmes

PERFORMANCE ATTRIBUTES:

- Degree to which pest and invasive species management plan is likely to achieve objectives
- Degree to which monitoring and adaptive management programme is adequately resourced and is likely to achieve objectives
- Level of regulator support

EXAMPLES OF EVIDENCE:

- Research and database on pest and invasive species
- Interviews with regulators
- Independent assessment by appropriately qualified individuals or groups

7.31 Sedimentation and Erosion

DESCRIPTION: This aspect addresses the management of potential impacts arising from sedimentation and erosion associated with the planned hydropower development.

This aspect is important because sedimentation and erosion can affect the functioning of the hydropower facility, the lifetime of the reservoir, and the environmental, social, economic values and safety in the reservoir and downstream areas.

POLICY OBJECTIVE: The objective is to ensure that the project as a whole is designed and managed to avoid, minimise and mitigate reservoir and downstream impacts related to sedimentation and erosion.

PROCESS ATTRIBUTES:

- Quality of risk assessment of potential sedimentation and erosion issues in the reservoir and downstream area
- Quality of the planning for the siting, design and operations of the hydropower project to manage risks associated with sedimentation and erosion.

PERFORMANCE ATTRIBUTES:

- Degree to which siting, design and operations of the hydropower project are likely to achieve desired level of risk management in relation to sedimentation and erosion
- Degree to which the monitoring and adaptive management programme is adequately resourced and likely to achieve desired outcomes.
- Degree to which the sedimentation and erosion management is fully integrated in site selection, design, operations planning, economic / financial analysis and environmental flow planning.
- Level of regulator support

EXAMPLES OF EVIDENCE:

- Sedimentation and erosion risk management planning
- Investigations into sedimentation and erosion issues in the reservoir and downstream
- Interviews with stakeholders and regulators

8. Section III Key Components

Section III Economic / Technical Aspects / Governance	Section III Social Aspects	Section III Environmental Aspects
Integrated Project Management	Social Management Plan	Environmental Management Plan/System
Public Sector Governance	Cultural Heritage	Catchment Management
Transboundary Issues	Indigenous Peoples	Reservoir Management
Corporate Governance	Public Health	Environmental Flows and Downstream Sustainability
Construction Management Plan	Resettlement	Biodiversity, Habitats and Protected Areas
	Community Acceptance	Pest and Invasive Species
	Labour and Working Conditions	Sedimentation, Erosion and Water Quality
	Suppliers and Service Providers	Waste, Noise and Air Quality Management
	Communications	
	Project Benefits	
Asset and Community Safety		

Table 3 – Working Set of Section III Aspects

9. Section IV Key Components

Section IV Economic / Technical / Governance Aspects	Section IV Social Aspects	Section IV Environmental Aspects
Transboundary Issues	Social Management Plan	Environmental Management
Corporate Governance	Cultural Heritage	Catchment Management
Financial Viability	Indigenous Peoples	Reservoir Management
Markets, Innovation and Research	Public Health	Environmental Flows and Downstream Sustainability
Management of the Hydrological Resource	Labour and Working Conditions	Biodiversity, Habitats and Protected Areas
Asset Reliability and Efficiency	Suppliers and Service Providers	Pest and Invasive Species
	Communications	Sedimentation and Erosion
	Asset and Community Safety	Water Quality
	Project Benefits	

Table 4 – Working Set of Section IV Aspects

10. Further Information

If you need assistance in understanding this document, or would like any further information, please refer to the Hydropower Sustainability Assessment Forum website at www.hydropower.org/sustainable_hydropower/hsaf.html or contact the Forum Coordinator, Dr Helen Locher, at hl@hydropower.org.