

# **International Sustainability Tools for Hydropower: Role, Relevance and Industry Reporting Trends**

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## **Introduction**

This paper discusses the contemporary topic of international sustainability principles, standards and guidelines in the hydropower sector. Increasing demand for electricity and concerns about climate change and energy security are factors adding to the new consideration of hydropower as an attractive opportunity worldwide. A number of large dams have been built or are under construction, many in developing countries. At the same time, changing stakeholder expectations, increased scrutiny, and globalised markets are creating a new risk reality for hydropower companies

Expectations of responsible management are high and at times forcefully expressed by stakeholders, representing a shift in active awareness of what are legitimate or responsible ways for a company to do business. The risk of severe reputational damage is high, should a company fail live up to expected performance. Currently, no globally agreed hydropower sustainability standard exists. Instead there is a myriad of international sustainability tools available with the aim of guiding companies in establishing environmentally, socially and economically sustainable business practices. Many are meant to provide general guidance on broader strategic topics, others are industry specific and address concrete challenges. Sustainability tools can help hydropower companies address and proactively manage a broader spectre of risks, but the challenge is to know which tools are practical to use and add value.

This paper is intended to help navigate the path for hydropower companies, investors and other stakeholders by presenting relevant sustainability tools that are used or could be used for the hydropower sector today. Eleven guidelines or standards have been selected, divided into the following categories: Hydropower specific tools, general tools, frameworks for investment decisions, and Greenhouse Gas (GHG) measurement tools. This paper starts by arguing the role of sustainability principles within the hydropower sector. It then provides an overview of a selection of relevant tools and their applicability for the hydropower sector. Finally, the paper explores some industry trends for deployment within the hydropower sector, based on a recent survey conducted by DNV among European power companies.

## **1. The relevance of international sustainability principles in the development of large hydropower projects**

Over the years, the climate change debate has contributed to giving the hydropower sector a new boost as a “clean” provider of energy. At the same time environmental demands have emerged as a cross-cutting topic that needs to be addressed. From an operator’s point of view, high expectations of social and environmental performance and low tolerance for failure (particularly for Western operators) put the industry under continuous public scrutiny, making reputational risk a significant issue. This is enforced by the strong element of state-ownership that has traditionally marked the sector, with many of the largest players still subject to full or partial public ownership today.

The fact that the largest unleashed potential remains in the developing world, with often weaker regulatory regimes and institutional frameworks, places more responsibility on the developer or operator to ensure a sustainable project. In the absence of acceptable national regulatory structures, internationally acknowledged standards or guidelines can help create the necessary frameworks to assist an external operator and encourage transparency and dialogue in the process.

From a societal point of view, some significant and inherent features of large scale hydropower development sets wider expectations than merely efficient production. This includes the often major change to the local environment from the new hydropower facility, especially in the case of the construction of larger dams. The greatest controversy is typically seen when the development takes place in populated areas where resettlement schemes will be required and/or in areas with indigenous populations. The development of a country's hydropower potential for economic development purposes often comes at a cost for local communities. In the absence of regulatory structures, stakeholders increasingly expect that the developer takes the responsibility for ensuring a sustained living standard for affected communities.

Against this background, the EU emission trading directive, the "Linking Directive", requires member states to ensure that "relevant international criteria and guidelines" will be respected before approving hydropower projects exceeding 20 MW of generating capacity (art. 11b, point 6). The directive emphasises that large hydro projects can have severe impacts on local surroundings, potentially altering ecosystems and possibly requiring the resettlement of people.

The industry is also increasingly stressing the importance of managing environmental and social risks in hydropower projects. A survey conducted by DNV among European power companies in 2008<sup>1</sup> shows that sustainability risks are considered to be high for operations in developing markets (Figure 1).

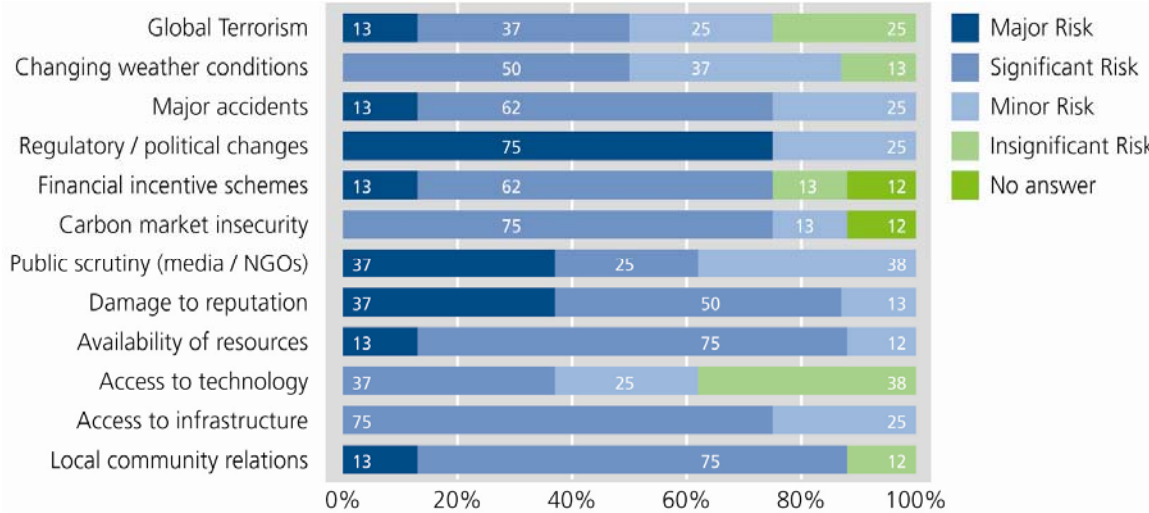


Figure 1: Risk factors in developing markets today (2008)

Risks related to regulatory/political changes are considered the most critical risk factors in developing markets. However, as many as 88% and 87% of respondents consider the risk of local community relations and damage to reputation as major or significant risks, while public scrutiny is considered a major or significant risk by over 60 percent of the respondents. Many the companies interviewed have operations outside of Europe. This suggests that international sustainability standards should have a critical role to play in industry risk management schemes.

## 2. Spending internal funds and resources on applying voluntary schemes

Applying voluntary sustainability schemes can serve several purposes: It can help enhance internal risk management but also encourage external communication of performance. The former has the primary objective of reducing project costs, the latter of attracting finance or helping to enhance company reputation by building robust and effective stakeholder relations.

<sup>1</sup> DNV Cleaner Energy Survey (2009): *Tackling the risks and opportunities related to Climate Change and Corporate Responsibility in the European power sector*. 13 of the largest European power companies participated in the survey, represented by top level management (CSR or strategy directors). Several of the companies have hydropower in their portfolio and operations in developing countries.

A major reason for implementing international principles is to proactively meet expectations of performance, and thereby lower risks and potential costs, rather than “fire-fighting” every time bad luck or disaster has already struck. Embedding sustainability principles into operations can help avoid costly delays, increase efficiency and lower stress on project affected surroundings, potentially avoiding external criticism and costly civil campaigns against a project. Integrating environmental and social considerations into project design will strengthen risk management in the longer run. Many critical risks can thereby be identified and mitigated at an early stage, while others can be proactively managed as far as possible throughout the project lifespan.

Reporting plays an important role because *what gets measured, gets managed*. Internally, a company needs to understand and communicate management performance to drive ongoing engagement, motivation, innovation and continuous improvement. Externally, communication is important to reap any rewards or support from shareholders, investors or stakeholders. By putting focus on critical sustainability risks, voluntary schemes can in fact help a company be more profitable, attract new business partners, investors and committed employees. It can also help secure an ongoing license to operate, and not least meet the information needs of local communities who are affected by – and closely monitor – the company’s local environmental and social performance

Reporting enables the sharing of best practice within and between industries and improving communication with stakeholders to advance practical solutions to common challenges. At the end of the day, more and more companies have realised that reporting can lower barriers to successful completion of projects, and thereby positively affect the bottom line.

### **3. Overview of international standards, principles and guidelines deployed in the industry today**

The following section presents the sustainability principles and guidelines in use by the hydropower industry today. A common thread for them all is reporting. This can either be a one-off or a repeated activity. A one-off report is usually completed to demonstrate the sustainability of a given project development (or acquisition), e.g. to meet requirements for funding from a financial institution or to gain access to support schemes such as the Clean Development Mechanism (CDM). Examples of such one-offs are the World Commission on Dams (WCD) accreditation or a third party verification against the IHA Sustainability Assessment Protocol (although the latter can also be applied as a continuous reporting scheme). Other frameworks involve continuous reporting where companies voluntarily report their own performance over time against an external set of indicators, such as the Global Reporting Initiative (GRI).

The GRI defines the term “performance indicators” as follows: “Qualitative or quantitative information about results or outcomes associated with the organisation that is comparable and demonstrates change over time.” The first key term of this definition is “comparable”. A reporting scheme allows for ambitious operators to benchmark and externally communicate their internal efforts on various aspects of sustainability and sustainable practices. They may advocate their efforts, and they may advocate these relative to less advanced players in the field. The second key term is the aspect of “demonstrated change over time”. Reporting will thus enable the credible demonstration of improvement on critical and/or weak areas, e.g. in the face of hesitant investors or sceptical bodies of civil society. Notably, the GRI definition of “performance indicators” encompasses both qualitative and quantitative information. In practice, this means reporting both on the quantitative and generally measurable indicators (such as “percentage of”), but also on the qualitative, typically narrative indicators. The latter are undoubtedly more challenging to measure and compare over time, but are no less important for obtaining an integrated view on the data.

At the industry level, the majority of operators have a varied energy portfolio. This implies that not all reporting will be hydropower specific but rather energy specific. For the hydropower industry, however, some guidelines and principles are among the most common. The table below gives an overview of the most relevant voluntary standards, guidelines and frameworks assessed against a set of criteria. These are further discussed below.

Tool	Description	Objective	Mode	Level	Governance
<b>Hydropower-specific tools/frameworks</b>					
WCD	A new framework for decision-making for the water and energy sectors	Form a basis for dialogue and decision-making based on recognizing the rights of, and assessing the risks to, all stakeholders	One-off for new projects, continuous implementation	Water and energy sectors, project level	Multi-stakeholder led
IHA SAP	Sustainability assessment tool to measure and guide performance in the hydropower sector	Promote environmental, social and economic sustainability in new and existing projects	One-off for new projects, continuous implementation	Hydropower sector, project level	Business led with multi-stakeholder involvement
Global Reporting Initiative (GRI) Electric Utilities Sector Supplement	Provides reporting guidance on key aspects of sustainability performance that is meaningful and relevant to the electric utility sector	Serves as a generally accepted framework for reporting on an organisation's economic, environmental, and social performance	Continuous reporting	Utilities, corporate level	Multi-stakeholder led
<b>General tools/frameworks</b>					
UN Global Compact	A policy platform and a practical framework for companies committed to sustainability and responsible business practices	Align business operations and strategies with ten universally accepted principles in the areas of human rights, labour, environment and anti-corruption.	Continuous implementation and reporting	All sectors, corporate level	Multi-stakeholder led
AccountAbility Principles Standard (AA1000APS) and AA1000 Stakeholder Engagement Standard (AA1000SES)	Two principles-based standards that help organisations identify, prioritise and respond to sustainability challenges and to ensure that stakeholder engagement processes are robust and effective	Provide a framework and operational guidance to help organisations be more accountable, responsible and sustainable	Continuous implementation and reporting	All sectors, all organisational levels	Multi-stakeholder led
ISO 26000 Guidance Standard on Social Responsibility (to be published in December 2010)	A non-certifiable guidance standard providing practical guidance on how to implement social responsibility principles in organisations	To help organisations contribute to sustainable development through sustainable and responsible practices across their operations	Continuous implementation and reporting	All sectors, all organisational levels	Multi-stakeholder led

Tool	Description	Objective	Mode	Level	Governance
<b>Frameworks for Investment Decisions</b>					
Equator Principles	Set of standards for determining, assessing and managing social and environmental risk in project financing	Serve as a financial industry benchmark for developing individual, internal social and environmental policies, procedures and practices	One-off	Finance industry, corporate level	Business led
International Finance Corporation (IFC) Performance Standards on Social and Environmental Sustainability	Standards to define clients' roles and responsibilities for managing their projects and the requirements for receiving and retaining IFC support	Minimize impact of investment projects on the environment and on affected communities	One-off and continuous implementation	Project level	Business led
World Bank Safeguard Policies	Requirements to prevent or minimize adverse environmental and social impacts of projects financed by the World Bank	Prevent and mitigate undue harm to people and their environment in the development process	One-off and continuous implementation	Project level	Business led
<b>GHG Measurement Tools/Frameworks</b>					
Greenhouse Gas (GHG) Protocol	International accounting tool for government and business leaders to understand, quantify, and manage greenhouse gas emissions	Standardize corporate measurement and reporting of GHG emissions	Continuous reporting	Corporate level	Multi-stakeholder led (business and NGO)
Carbon Disclosure Project	A database for organisations to publicly report their greenhouse gas emissions and climate change strategies.	To harmonize climate change data from organisations worldwide and develop international carbon reporting standards.	Continuous implementation and annual reporting	All sectors, primarily corporate level	Multi-stakeholder led

**Table 1:** Overview of relevant sustainability tools and frameworks for the hydropower sector

Two hydropower specific tools are particularly relevant for evaluating and guiding sustainability aspects of hydropower development. These are the **World Commission on Dams Report (WCD)** and the **International Hydropower Association's (IHA) Sustainability Assessment Protocol (SAP)**. Both tools are commonly used in the industry today.

The WCD report was released in 2000 and is based on an extensive review of the performance of large dams worldwide. It gives guidance on sustainability risks to consider in hydropower, and it has broad support cross sectors, particularly among NGOs. It proposes seven strategic priorities and associated policy principles, supported by 26 guidelines. It includes public acceptance criteria and a comprehensive options assessment. WCD assessments are meant to be compulsory for all hydropower projects over 20MW in order to be eligible for trading under the EU Emission Trading scheme. However, due to different interpretations among EU Member States, the impact of the standard is still uncertain. The WCD is considered the most comprehensive international guideline for dam development, however it does not provide a systematic framework that enables benchmarking or consistent auditing practices.

The IHA SAP builds on the values and strategic priorities of WCD, and is intended to be a practical assessment tool to measure hydropower sustainability. Released in 2006, the protocol addresses risks in different phases of new hydro projects. The protocol is currently undergoing revision, drawing on input from different sectors and stakeholder groups. A new version is expected to be released in the Autumn of 2010. The protocol provides a comprehensive framework for scoring a range of sustainability risks and can be used by auditors, risk managers and others to evaluate and benchmark new and existing projects. The protocol does not, however, establish any minimum standard for sustainable performance in hydropower projects. It is expected to become a widely used industry tool after the release of the revised version later this year.

The **GRI Electric Utilities Sector Supplement (“GRI Supplement”)** is based on GRI’s Reporting Framework, which is a general framework for reporting on an organization’s economic, environmental, and social performance. Published in 2010, the GRI Supplement outlines key reporting indicators specifically relevant to the power sector (but across energy sources). Reports can be used for e.g. assessing and comparing sustainability performance over time. The framework is mainly relevant for utilities also involved in the transmission of electricity.

The **UN Global Compact** is a widely endorsed global corporate citizenship and sustainability initiative with over 7700 corporate participants and stakeholders from over 130 countries. It is used in a wide range of industries, including the power sector. The initiative provides ten general principles in the areas of human rights, labour, environment and anti-corruption. As it is fairly general, it is relevant for hydropower companies mainly to align corporate operations and strategies in these areas. Supporting guidance on implementation and reporting on progress is published regularly.

**AccountAbility** is a global, not-for-profit organisation whose AA1000 series of standards comprise a core set of principles to help organisations become more accountable, responsible and sustainable. The principles of Inclusivity (participation of stakeholders in developing and achieving an accountable and strategic response to sustainability), Materiality (determining the relevance and significance of an issue to an organisation and its stakeholders) and Responsiveness (responding to stakeholder concerns) make up a framework for strategic management and disclosure of an organisation’s sustainability performance. The standards are relevant for hydropower companies, as they provide an overall framework, based on best practice, for managing sustainability issues and stakeholder engagement.

The **ISO26000 Guidance Standard on Social Responsibility** is a voluntary, non-certifiable standard due to be published in December 2010. It provides a set of guiding principles for putting a commitment to social responsibility into practice and draws on best practice initiatives from a wide range of stakeholders, including business, governments, labour organisations, NGOs, consumers and others. The guidance standard is valid for all types of organisations, both private and public, and of all sizes. It encourages organisations to focus on the areas that are most relevant to their business strategy and to their stakeholders. The guidance standard is a unique achievement based on a consensus definition of social responsibility. It is relevant for hydropower companies wanting to better understand their sustainability context and integrate social responsibility principles into their strategies, goals and daily operations. With broad participation and support from developing countries, the guidance standard is likely to be a useful document around which operators can build effective dialogue with local stakeholders affected by a hydropower project.

The **Equator Principles** is a framework which financial institutions can sign and then apply to all new project financings globally with total project capital costs of US\$ 10 million or more, across all industry sectors. Established in 2003, they provide a general set of standards for assessing and managing social and environmental risk in projects. They do not, however, provide any guidance on dams. The Equator Principles are based on the International Finance Corporation’s Performance Standards on social and environmental sustainability and on the World Bank Group’s Environmental, Health and Safety general guidelines. Developed to provide investment guidance for financial institutions, the principles may have an impact on hydropower projects depending on project financing, and they should be known by the industry.

In 2006, the **International Finance Corporation (IFC)** issued its Sustainability Framework which includes the Performance Standards on Social and Environmental Sustainability and a Policy on Disclosure of Information. The Performance Standards outline the responsibilities of companies receiving or applying for IFC investment, and they have become a leading benchmark for international financial institutions working with the private sector, for example as a basis of the Equator Principles (see above). The framework is currently being updated to reflect the experience of implementation to date and address the changing sustainability agenda through a greater

focus on human rights, consent for Indigenous Peoples, climate change and ecosystem services. A recent draft document has been published connecting IFC’s Sustainability Performance Standards and the GRI Reporting Framework, in order to help companies meet the Performance Standards’ requirements on reporting. The Performance Standards are regularly applied in hydropower projects, though they are arguably not as specific to the industry as the WCD and IHA tools.

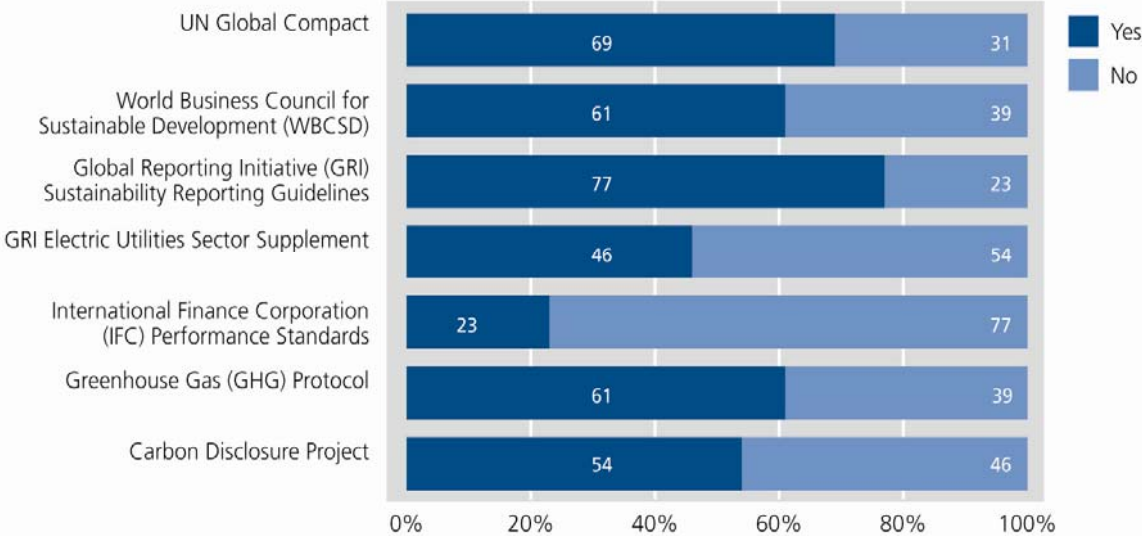
The **World Bank** operates a set of ten environmental and social safeguard policies for projects that are government or state-owned. They are designed to ensure that adequate measures are incorporated into the project design and operations to prevent or minimize adverse environmental and social impacts of projects financed by the World Bank. These include environmental assessment standards, protecting biodiversity, consultation with affected communities, disclosure of information, restoration of compensation and livelihoods, and other activities. The policies have moved many international financial institutions to adopt similar requirements, in support of rigorous due diligence and risk mitigation in projects.

**Greenhouse Gas (GHG) Protocol** is an international accounting tool for government and business leaders to quantify and manage greenhouse gas emissions. The GHG Protocol presents calculation tools to assist companies in calculating their greenhouse gas emissions on a corporate level. In addition, it presents methodologies for calculating emissions reductions from specific GHG reduction projects. It does not provide any concrete guidance the calculation of emissions from hydropower reservoirs, but it provides general guidance that could be useful also for hydropower relevant activities. Since the release of the first edition in 2001, over 1000 companies and organisations have used the protocol to develop their GHG inventories.

Finally, the **Carbon Disclosure Project (CDP)** is an organisation which works with investors and companies to manage a global climate change reporting system. Major companies can disclose their greenhouse gas emissions, their energy usage and reduction, as well as their climate change strategies through the CDP. Most recently, the CDP has expanded its scope to include collection of critical water-related data. Much of the data submitted by companies has never been collected before. The data is made available for use by many different stakeholders, but it is primarily investors who use the information to make informed decisions on companies’ carbon risk profile. The CDP’s aim is to harmonize climate change data and develop international carbon reporting standards, as well as to help companies set reduction targets, improve and benchmark their performance. To date, more than 70 hydropower companies have submitted their data to the CDP.

**4. Industry trends of standard, guideline and reporting deployment**

The question is then: to what extent are these international guidelines and principles actually used by the hydropower industry today? DNV’s European power sector survey, presented in section 2, shows that a majority of the leading European power companies in fact are already using international sustainability reporting initiatives. To identify trends in sustainability reporting practices within the sector, respondents were asked whether their organisations had joined/adopted the below range of initiatives.



**Figure 2:** Adoption of sustainability reporting initiatives.

The survey shows a trend in the power sector at a corporate level towards participating in sustainability initiatives and reporting performance.

Notably, the GRI stands out as the most widely applied sustainability reporting practice among respondents. A significant share of respondents confirmed that they report against this standard, where half of these have also begun applying the GRI Sector Supplement. A large share of the group confirmed to be signatories to the UN Global Compact. WBCSD membership is also extensive across the group, with some additional operators stating that they were thinking about joining. Over half the group reported to have applied the GHG Protocol, while relatively few operators reported that they use the IFC Performance Standards. Finally, approximately half the group participate (or have participated) in the Carbon Disclosure Project. The IFC Performance Standards were only known to around half the group. In addition to the above listed initiatives, the Dow Jones Sustainability Index, the WCD, the IHA SAP as well as various local initiatives were also mentioned.

## 5. Conclusion

In conclusion, the authors believe that there is a role for independent sustainability and transparency tools in the hydropower sector based on the following key characteristics:

- The often major impact of new developments both on local environments and communities
- The challenging characteristics of many of the most attractive markets for new development (e.g. weak regulatory regimes and lack of institutions)
- Growing expectations from the investor community regarding operators' sustainability profile and performance
- The low tolerance for failure, particularly by Western operators, in managing environmental, social and ethical risks
- State-ownership of many operators and the implication of this on expected performance.

It is, however, critical that the sustainability principles used become an integrated part of a company's strategy and are implemented at the core of daily business practices. If not, the changes are only marginal, and a company will no longer be able to reap rewards in the market on marginal changes. Stakeholder expectations have increased and genuine commitment has to be demonstrated, even if the principles are voluntary. This also means that operators are expected to apply the principles and tools in a comprehensive way; none of the tools reviewed here should simply be reduced to a checklist.

By using sustainability guidelines and principles, hydropower companies can more proactively manage risks both within and outside their traditional home markets. By increasing transparency through reporting and extended stakeholder involvement, new projects can benefit from improved longer term performance and lowered risk of delays or complications due to conflicting interests or poor project planning. By internalising external costs related to environmental and social impacts at an early stage, new hydro developments can better meet expectations and demands from local communities as well as their owners.

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