

## **PROGRESS WITH THE HYDROPOWER SUSTAINABILITY ASSESSMENT PROTOCOL**

**Simon Howard**  
**Sustainability Specialist, International Hydropower Association, London**

### **I. INTRODUCTION**

This paper describes the development of the Hydropower Sustainability Assessment Protocol and discusses the success achieved in its first four years of implementation. The Hydropower Sustainability Assessment Protocol is an enhanced sustainability assessment tool used to measure and guide performance in the hydropower sector. It provides a framework for assessing the sustainability of hydropower projects, distilling hydropower sustainability into clearly-defined topics. The Protocol is governed by a multi-stakeholder Council and regulated by a Charter and Terms and Conditions of use. A Protocol assessment covers up to 23 topics (depending on the project stage), each of which is scrutinised against up to six criteria: assessment, management, stakeholder engagement, stakeholder support, conformance and compliance, and outcomes.

This paper discusses the Protocol's early development from 2000 to 2008, before outlining the work of the Hydropower Sustainability Assessment Forum which occurred between 2008 and 2010, and then the results of training and assessment from 2011 to present. The Protocol's governance and quality control mechanisms are described, and actions for the coming years introduced. The paper analyses assessments to date and looks at some considerations that are commonly overlooked by project developers, before discussing the value that undertaking an assessment adds to a hydropower project.

### **II. EARLY DEVELOPMENT 2000-2008**

The Protocol is the culmination of a long process of debate and dialogue initiated by IHA in response to the World Commission on Dams final report in 2000. IHA disagreed with the recommendations of the Report, and while there was agreement on the objectives of the report's '*Strategic Priorities*', saw a need for a practically applicable tool to assess and demonstrate the sustainability of hydropower projects. This led in 2004 to IHA developing Sustainability Guidelines for the sector, with the intention that they provided practical and realistically implementable guidance.

By 2006, IHA had developed an initial sustainability assessment Protocol, intended to provide a uniform method of assessing sustainability on hydro projects worldwide. Recognising the value of this first version, WWF and The Nature Conservancy approached IHA with a view to further refining the tool. IHA agreed that the Protocol would benefit from a more inclusive process that would encompass sustainability perspectives from all hydropower stakeholders, and it was decided to bring together a group, the Hydropower Sustainability Assessment Forum to achieve this.

### **III. HYDROPOWER SUSTAINABILITY ASSESSMENT FORUM (2008-2010)**

The Forum was made up of representatives from social and environmental NGOs, governments of developed and developing countries, financial institutions, development banks, and the hydropower industry. Each member of the forum consulted with a reference group made up of organisations with similar interests and objectives. This structure increased the scope and reach of the forum to incorporate the perspectives of as broad a range of stakeholders as possible.

Within the Forum developing countries were represented by the China Institute of Water Resources and Hydropower Research and by the Zambian Ministry of Energy and Water Development, this was particularly important for discussions around working with project affected communities. Developed countries were represented by the Norwegian department of Energy, the National Energy Authority of Iceland and GTZ of Germany. The hydropower sector was represented by the International Hydropower Association. NGOs such as Oxfam and Transparency International focused on the social aspects of hydropower projects, encouraging the direct participation of dam-affected people in the development process. WWF and The Nature Conservancy represented issues of interest to environmental NGO's. The finance sector was represented by The World Bank (observer status) and SocieteGenerale and Citigroup, who in turn represented the Equator Principles Financial Institutions.

The current Protocol is the result of work by the Forum through an intensive period of debate and iterative drafting over a period of 30 months between 2008 and 2010. The Forum operated by negotiation and consensus, embedding stakeholder dialogue as the foundation of the Protocol. The forum members in their work drew on key existing guidelines and policies, particularly the World Bank safeguard policies, IFC performance standards and the World Commission on Dams' criteria and guidelines.

Stakeholder engagement during this process occurred in 24 countries with over 1,300 participants, 3,800 interested observers, and several thousand visits to the draft Protocol website. Draft versions of the Protocol were trialled in 20 countries, involving 18 hydropower companies on six continents, and projects of all types, sizes and life cycle stages. Project affected communities were engaged in the trials.

### **IV. GOVERNANCE**

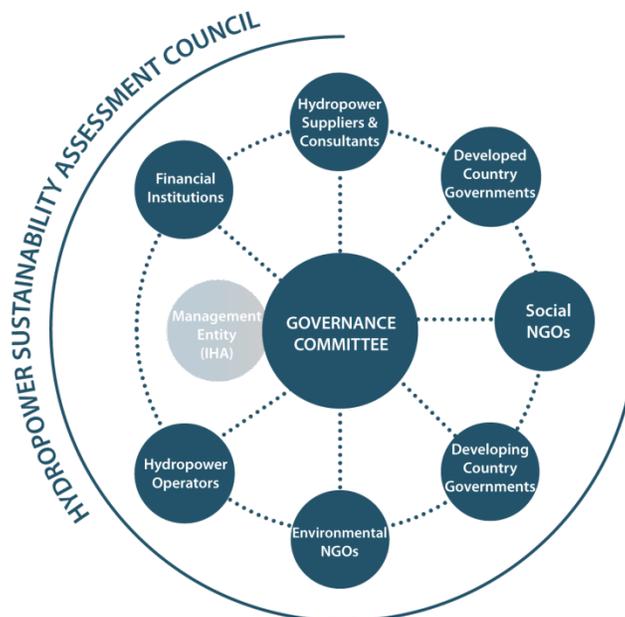
The multi-stakeholder Forum finalized its work in 2010, having achieved consensus<sup>1</sup> on the contents of the Protocol. IHA subsequently adopted the Protocol and many organizations expressed their support for the new instrument. Given the importance of the multi-stakeholder leadership in writing the Protocol, it was clear that this structure needed to be carried forward and the Forum in its last meeting agreed the principles of a governance structure that reflected this.

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<sup>1</sup>With the exception of a very small number of issues, where it was agreed to note the minority disagreement in the Protocol itself.

Subsequently, all the members of the Forum, bar one, came together in a Transitional Governance Committee (TGC) and drafted a Charter for a new organization: The Hydropower Sustainability Assessment Council (the Council) that would be responsible for the Protocol's governance. In addition they prepared Terms and Conditions for use of the Protocol. Both the Charter and terms and conditions were finalised during the IHA World Congress at Iguassu in June 2011, where the Protocol was formally launched and the Council created.

The structure of the council is shown in Figure 1. The Council is made up of Chambers which represent different stakeholder groups, mimicking the makeup of the Forum. Each chamber votes for a chair person who sits in a Governance Committee which has responsibility for all key decisions around the Protocol. In addition the council has a Management Entity, which is responsible for implementation of the Protocol including training, assessor accreditation, translations, maintaining the consistency of Protocol application and results, and the development of tools such as a standard report format and assessment database. The Management Entity currently resides in the Central Office of IHA.



**Fig.1: Structure of the Hydropower Sustainability Assessment Council**

The primary aim of the TGC was to roll out the Protocol globally and to establish a fully populated Council. Its main objective was to lay the groundwork for a membership-based, democratic council to represent all stakeholders in hydropower development and ensure widespread, consistent and credible use of the Protocol. The TGC over saw the development of support documents, translations, rules for assessments and rules for the accreditation of assessors. Members of the TGC also actively represented the Council in many outreach and training events, helped with fundraising and acted as observers on assessments.

In the first half of 2013 a member recruitment initiative was undertaken to populate the Chambers of the Council. This proved very successful, recruiting 89 members from across the world to the seven chambers. Elections for chamber chairpersons took place at the IHA world congress in Kuching in May 2013 and these representatives now constitute the fully elected governance committee.

## **V. IMPLEMENTATION**

Implementation of the Protocol has been multi-faceted, aiming to establish the management and support structures around which the Protocol will operate. This has included tools, processes and rules for accredited assessors, the Protocol website, as well as increase understanding of the Protocol through training and assessments. Interactive training courses consisting of lectures and practical exercises have been developed for different users of the Protocol, including hydropower developers, civil society, equipment manufacturers and accredited assessors.

IHA mobilised its members to make first use the Protocol using a ‘Sustainability Partner’ model, where partners were trained in the Protocol and had projects assessed. There are currently 15 Sustainability Partners, China Three Gorges Corporation, EDF, E-ON, EnergiaSustentável do Brasil, EPM, HEA, Hydro Tasmania, ISAGEN, ItaipuBinacional, Landsvirkjun, Manitoba Hydro, Odebrecht, RusHydro, Sarawak Energy and Statkraft, with a number of further entities including non-IHA members interested in joining the process. The World Bank, GIZ and NORAD have also funded assessments. The Sustainability Partners have played a significant role in increasing learning about practical application of the Protocol, and are industry leaders in this regard. At the same time, it is clear that the work has been of significant benefit to the Partners.

## **VI. THE ASSESSMENT PROCESS**

There are three phases in the process of undertaking a Protocol assessment: planning, the onsite assessment, and finally, reporting.

During the planning phase the Lead Assessor and the company’s project work closely together to plan interviews, documentary evidence and the on-site assessment. The Lead Assessor liaises with the other assessors and the SPC works with the company’s local support team. The local support team organise interviews, the site visit and engages observers who may wish to be part of the process. During this period there could be an optional readiness visit to the site by the Lead assessor to review preparation for the assessment.

The onsite assessment requires around five days depending on the scale of the project. During the onsite assessment the lead assessor and assessment team carry out interviews and review evidence. The assessors and representatives from the company usually have an initial

coordination meeting followed by a site visit, then interviews with internal and external stakeholders, and review of documentary evidence.

The final phase is reporting, which will happen over two to four weeks, depending on the scale of the project. During the reporting phase the lead assessor works with the assessment team to compile the final report. A first draft is delivered to the client, giving them an opportunity to comment on the findings. Once agreed, the lead assessor finalises the report and the report may be published on the Protocol website if the client wishes.

## **VII. QUALITY CONTROL**

A key aspect of the roll out of the Protocol has been ensuring that it is applied in a consistent manner, to appropriate standards. This ensures results are uniform, irrespective of where it is used. The keystone of this philosophy is the accreditation of assessors qualified to use the Protocol. Any use of the Protocol for commercial purposes must be done by accredited assessors. Given the knowledge base and expertise being developed by this group, it is vital that companies wishing to engage meaningfully with the Protocol do so using accredited individuals.

The accreditation requirements include completion of a substantial programme of training authorised by the Council and adoption of a code of conduct, with assessors regulated by a license issued by the Council. Assessors will also need to demonstrate previous experience relevant to the hydropower sector and have participated in at least two assessments under an already accredited assessor prior to being granted a license. There is increasing capacity to deliver Protocol assessments with ten assessors accredited and a number more scheduled to become accredited. IHA, under the guidance of the Governance Council, has and continues to support targeted trainee assessors to become accredited, to ensure that assessors are drawn from a broad spectrum of hydropower sustainability expertise.

## **VIII. RESULTS**

The Protocol has been applied to 19 projects in 14 different countries across the world, shown in Table 1. Project size has ranged from 3 MW to 3750 MW, and all project stages have been assessed. Reports that have been published are available on the Protocol website<sup>2</sup>.

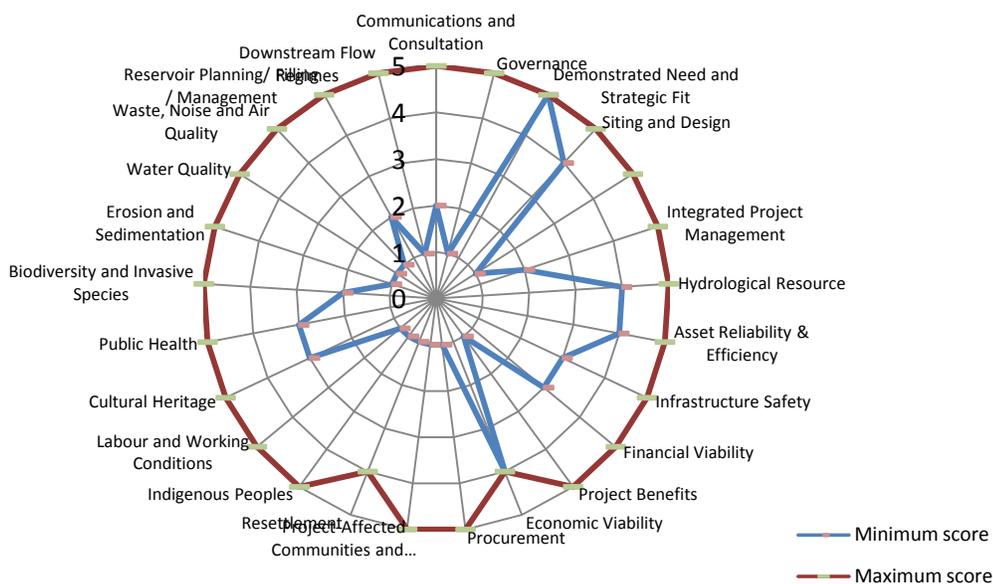
**Table 1: Protocol assessments to date**

<b>Date</b>	<b>Project Name</b>	<b>Developer</b>	<b>Country</b>	<b>Size (MW)</b>	<b>Stage</b>
<b>Oct-10</b>	Shardara	Shardara HPP JSC	Kazakhstan	100	Operation
<b>Oct-11</b>	Trevallyn	Hydro Tasmania	Australia	97	Operation
<b>Sep-12</b>	Murum	Sarawak Energy	Malaysia	944	Implementation
<b>Mar-12</b>	Walchensee	EON	Germany	124	Operation

<sup>2</sup>[www.hydrosustainability.org](http://www.hydrosustainability.org)

<b>May-12</b>	Hvammur	Landsvirkjun	Iceland	84	Preparation
<b>Aug-12</b>	Jostedal	Statkraft	Norway	290	Operation
<b>Sep-12</b>	Jirau	ESBR (GDF Suez)	Brasil	3750	Implementation
<b>Dec-12</b>	Keeyask	Manitoba Hydro	Canada	695	Preparation
<b>Jun-13</b>	Gavet	EDF	France	92	Implementation
<b>Sep-13</b>	Blanda	Landsvirkjun	Iceland	150	Operation
<b>Oct-13</b>	Sogamoso	Isagen	Colombia	820	Implementation
<b>Jan-14</b>	Trung Son	EVN/TSHPCo	Vietnam	260	Implementation
<b>Apr-14</b>	Santo Antonio	SAE	Brazil	3150	Implementation
<b>Jun-14</b>	Miel	Isagen	Colombia	260	Operation
<b>Mar-14</b>	Canafisto	Isagen	Columbia	936	Preparation
<b>Jun-14</b>	Sava river	HEP	Croatia	160	Early Stage
<b>Sep-14</b>	Kabeli A	Kabeli Hydro	Nepal	38	Preparation
<b>Nov-14</b>	EON	Semla	Sweden	3	Preparation
<b>Nov-14</b>	San Francisco	EPM	Columbia	52	Preparation

Figure 2 shows there have been a wide range of results, from projects performing below basic good practice to projects meeting proven international best practice.



**Fig. 2: Summary of results from all Protocol assessments to date**

Looking at the body of assessments as a whole a number of lessons can be drawn from the results. Working through the topic criteria, typical areas where projects could improve are:

**1) Assessment: Collect good baseline data**

Insufficient data about the state of the pre-construction project area can make it difficult for developers to fully understand a project's environmental and social impact. To address this, effective baseline monitoring systems need to be in place long before construction commences. Sometimes this is done well, particularly for hydrological records. But often incomplete understanding of, for example, historical water quality makes it difficult to prove that the project is performing well.

**2) Management: Ongoing monitoring should look for emerging risks AND opportunities**

Social and environmental impacts and opportunities can arise unexpectedly during the construction and operation of a hydroelectric project. At the 'proven best practice' level, the Protocol requires operators and developers to be able to anticipate and respond to such emerging risks and opportunities. A comprehensive monitoring programme is essential to achieving this. Spotting risks is common place in the hydropower industry, but often companies fail to be so attentive to identifying new opportunities to make improvements.

**3) Stakeholder engagement: Be sure to engage with hard-to-reach groups**

There are many stakeholder groups that can potentially be affected by a project, all groups should be consulted before, during and after project construction. Some stakeholders are easier to access than others, and it is important that the project communicates with hard to reach groups as much as it does with those that are highly engaged. So it's valuable to consider, for example, people who are unable to read, geographically remote, or not eager to engage in a consultation process. It is important to reach these stakeholders as they are often the most vulnerable project affected peoples.

**4) Conformance and Compliance: Pay attention to internal objectives**

Project compliance with national legislation is almost never a problem, because meeting legislation is a legal requirement. However, companies can miss their own internal objectives, and a Protocol assessment will check both. So it's useful to have processes in place to ensure internal goals are met just as legal requirements are, making this the responsibility of compliance managers is a good idea.

**5) Outcomes: Go beyond avoid negative impacts – create positive change**

Most developers try to avoid negative outcomes, but to achieve a high Protocol score a project needs to create a positive impact. This is why at the 'proven best practice' level the Protocol often asks that developers to go above and beyond what they have to do. This might be through biodiversity research programs, bird sanctuaries, improved living standards, access to health services, improved water quality etc. Such positive outcomes can be directly linked to a

project impact or achieved by improving something completely unaffected by the project, making enhancements to the area.

## **IX. VALUE ADDED**

To date, developers and operators have valued Protocol assessments for multiple purposes. For example, an assessment is useful to synthesise information across comprehensive range of sustainability topics. Hydro Tasmania found that the Protocol *“examines governance, financial and technical aspects alongside environmental and social, hence engaging all aspects of a hydropower business within a common framework”*

Using the Protocol also gives an objective third-party judgement on complex issues, ESBR (developers of the Jirau project, Brazil) noted *“Its value is in the process of re-evaluating and questioning programs and practices in the light of the criteria which have been defined in an independent multi-stakeholder process with diverse and international backgrounds”*.

The Protocol has been used to target weaker areas of a project through the scoring system to identify of significant gaps, EON (Germany) found that *“the efforts linked to an assessment pay off, as the Protocol gives valuable hints for the planning, development, construction and operation of future projects or power plants”*.

Assessments also provide an opportunity to engage with external stakeholders in a third-party-led assessment. Statkraft (Norway) found that *“the report from the assessment in Jostedal gives a ‘True Picture of Jostedal’. This is supported by both external and internal stakeholders. The assessment process and presentation of the results in stakeholder meetings creates engagement both internal and external.”*

## **X. GOING FORWARD (2015)**

Ongoing engagement with financial institutions, development banks, governments and regulators over the coming years will enable greater awareness of the additional benefits of the Protocol use. IHA and the Governance Committee will work to partner with these key stakeholders in 2015. Implementation of the Protocol will continue through sustainability partnerships, further assessors will be accredited to expand this body of experts and ensure the uniform application of the Protocol. A number of regional workshops will be run for key individuals within hydropower developers, operators and owners as an ‘Introduction to the Protocol’. A functional and engaged Governance Council will be essential to provide a broad recognition and support of the Protocol by all stakeholders.

It is clear however that responsibility for uptake of the Protocol cannot be the responsibility of industry alone. Great strides have been made in demonstrating the relevance of the tool through the Sustainability Partnerships, however unless incentives are in place for those companies that use the Protocol, there is little in the way of commercial justification for industry to drive use of the tool. This commercial benefit will come when the other stakeholders in the hydro sector reward use of the tool; not just governments and those financing hydropower, but also civil society engaged with hydropower.

When industry understands that it will be rewarded, either through provision of finance or project approval, or the social license for the project, through embedding the Protocol and sustainability performance into its projects, the Protocol will be regarded as a success.

## **XI. CONCLUSION**

The Hydropower Sustainability Assessment Protocol provides a globally-relevant, multi-stakeholder supported, assessment methodology, to continuously improve sustainability in the hydropower sector. It removes the need for individual criteria-setting at organization, sector, country and regional levels by providing an internationally-applicable language with which to assess hydropower sustainability.

The Protocol's value is in the facilitation of dialogue and shared expectations amongst stakeholders on the sustainability issues that need to be addressed for specific hydropower projects. Such a framework can improve, shorten and facilitate decision-making at key project stages, reducing project costs and timeframes, and promoting more sustainable outcomes.

## **XII. REFERENCE**

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All can be downloaded here:

<http://www.hydrosustainability.org/Protocol/downloads.aspx>