

Benchmarking the Policies and Practices of International Hydropower Companies

STAGE 1: ENVIRONMENTAL AND SOCIAL POLICIES AND PRACTICES OF CHINESE OVERSEAS HYDROPOWER COMPANIES

PART A METHODOLOGY AND ANALYSIS

JUNE 2015

About International Rivers

International Rivers protects rivers and defends the rights of communities that depend on them. With offices in fourcontinents, International Rivers works to stop destructive dams, improve decision-making processes in the water and energy sectors, and promote water and energy solutions for a just and sustainable world.

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1. Introduction

This project explores the environmental and social policies and project performance of the Chinese overseas hydropower industry. Due to significant program growth in Latin America, Asia and Africa, and an increase in new hydropower projects, International Rivers has had opportunities to engage new players in the global hydropower industry, and advocate for leading international policies and standards to be adopted and implemented in hydropower development. The motivation for this project stems from our commitment to policy reform in the hydropower industry.

The decision to begin our global benchmarking project with the Chinese overseas hydropower industry is a reflection of its global strength and maturity, and the high level of interest within the sector in talking with international environmental NGOs. Since 2009, International Rivers has been engaging with Chinese hydropower companies – most of which are State Owned Enterprises (SOEs) – and monitoring their global environmental footprint. With Chinese government support since 2001 under the "Going Out" strategy, Chinese dam builders have emerged as one of the biggest players in the global hydropower industry. Chinese companies and banks are now associated with over 300 dams in 74 countries. Key markets for Chinese dam-builders are Southeast Asia, Africa and more recently, Latin America.

Many of the hydropower projects are located in areas with high environmental and social risks because the countries have low environmental protection requirements, weak human rights protections, and at times suffer from corruption. In these contexts, it is challenging for any company to construct projects that meet international standards. However, Chinese hydropower companies are committed to forging a positive international reputation despite working in these high-risk areas. This study is a timely reminder of the maturity and progress achieved by Chinese companies thus far.

The purpose of stage one of our benchmarking project is to:

- Understand Chinese hydropower companies' policies and practices for managing environmental and social risks;
- Compare the environmental and social policies of Chinese hydropower companies and benchmark on the grounds of performance, noting areas of high performance in line

with international standards and best practice;

- Rank the competitiveness of major Chinese hydropower companies on issues of management based environmental and social risk; and
- Provide constructive information to Chinese hydropower companies and the industry as a whole by identifying areas of high performance, as well as areas where performance can be improved.

The companies included for assessment are the seven main Chinese overseas hydropower companies. They are: Datang, Gezhouba, Huadian, Huaneng, Sinohydro International, PowerChina Resources, and Three Gorges. We acknowledge that individual companies adopt different modes of engagement when it comes to overseas dam building. Both Gezhouba and Sinohydro International are largely Engineering, Procurement and Construction (EPC) contractors. Recognizing this, we have assessed their environmental and social commitments and implementation practices based on the responsibilities as a contractor. Datang, Huadian, Huaneng, PowerChina Resources and Three Gorges

Project Developers and Contractors

The modes of engagement for Chinese hydropower companies have matured over the past few years. Previously, Chinese companies acted only as contractors for hydropower projects. Depending on the contractual arrangements, companies could be responsible for all Engineering, Procurement and Construction (EPC) contracts, or just specific aspects of the hydropower project, such as civil or hydraulic works, or supply of electrical equipment. Today, many Chinese hydropower companies are moving into a project development space in the form of Build, Operate and Transfer (BOT) contracts. This arrangement normally sees companies arranging the financing, designing and building the dam, and then operating the dam for a number of years to recover investment costs before handing back ownership to the government. Within this study, all the companies surveyed are either EPC or BOT companies.



are largely developing and investing in overseas hydropower projects as Build, Own and Trnsfer (BOT) companies, although there are some exceptions such as Three Gorges' EPC Murum Dam Project. Therefore, we have assessed them against developer's responsibilities.

Companies Assessed in Stage One:





2. Benchmarking Project Methodology

In developing the benchmarking matrix for this project, International Rivers drew on a range of existing standards and guidelines. We reviewed Chinese domestic standards on hydropower development, Chinese government guidelines on overseas investment, and international guidelines, including: the World Commission on Dams, the International Hydropower Association's Hydropower Sustainability Assessment Protocol, general policy standards created by the Equator Principles, the International Finance Corporation's safeguard policies, and non-binding policy guidance such as the OECD Guidelines for Multinational Enterprises, the Global Reporting Initiative, and Guiding Principles on Business and Human Rights. Based on these, three main indicator categories were defined: Environmental Management, Community and Labor Relations, and Risk Management.

The intention of the benchmarking matrix is not to set another global standard for policy or project performance. Rather, we define a set of indicator categories that will enable the measurement of individual company performance between company headquarters and the project site. The benchmarking matrix is shown in Table 1 and provides a tool to compare companies' performance.

Because International Rivers has always placed equal importance on policy commitments and project performance, stage one of this study benchmarks Chinese companies across two dimensions – policy commitment and project performance. The two dimensions allowed us to reveal areas within the Chinese overseas hydropower industry where project performance exceeded policy commitments, and implementation deficits where company policy commitments had little impact on the project.

In total there are 23 key performance indicators (KPIs), which fall across the three indicator categories (Environmental Management, Community and Labor Relations, and Risk Management). Some KPIs are qualitative and others are quantitative. Each KPI in the Environmental Management, and Community and Labor Relations indicator categories is scored out of four points, while each KPI in the area of Risk Management is scored out of two points. The benchmarking matrix therefore gives a stronger emphasis on the Environmental Management and Community and Labor Relations practices of companies.

Within the indicator categories, some of the KPIs in the project performance assessment are separated into sub-indicators, with scores assigned accordingly. However, the overall score per KPI will always be four (Environmental Management and Community and Labor Relations) or two (Risk Management). To determine a company's result for each indicator category the scores are averaged. To determine the overall score, the average scores are added together to form a total score out of ten. Each company received a score for policy commitment and a separate score for project performance. Table 2 sets out the project's scoring methodology. Only the color ratings (good, fair and poor) are contained in this report. The final scores will be released after additional consultation is conducted.

As noted, this study considers both EPC and BOT companies. The applicable KPIs have been adjusted to reflect the differentiated responsibilities. For the EPC companies, Sinohydro International and Gezhouba, only 17 of the 23 KPIs are applied. Therefore EPC companies and projects (including Three Gorges EPC Murum Dam Project) were not assessed with respect to EN4 (EIAs), EN5 (Compliance with Strategic Planning Instruments), EN10 (Environmental Flow Regimes), CL1 (Resettlement), CL2 (Social Impact Assessments), and RM3 (Transboundary Impacts).



Table 1: The Benchmarking Matrix includes 3 Indicator Categories and 23 Key Performance Indicators

	FORMANCE INDICATORS	POLICY COMMITMENTS	PROJECT PERFORMANCE (SUB-INDICATORS)		
ENVIRO	MENTAL MANAGEMENT				
EN1	The company's environmental policy commitments are consistent with international standards.	 Does the company endorse internationally recognized and verified standards on environmental impacts such as IFC Performance Standards, relevant elements of the OECD Guidelines for Multinational Enterprises? Does the company endorse international corporate protocol such as the United Nations Global Compact and Global Reporting Initiative? What other international standards on sustainable development or sustainable hydropower development does the company publicly endorse or use? Does the company make use of standardized procedures and measurements such as the ISO at the corporate headquarters level? Does the company have a company-wide Environmental Management System (with a standardized certification) in place? Does the company undertake initiatives to promote greater environmental responsibility? 			
EN2	The company's policy commitments incorporate environmental and social standards set by Chinese law as a minimum.	• Does the company's overseas investment policy commitment incorporate environmental and social standards set by Chinese law as a minimum? This should include consideration of transboundary impacts, opportunities for public participation, allowance for environmental flows, fish protection, and rare animal and plant protection measures.	 Where the host country requirements are lower, does the company conduct an EIA and resettlement in accordance with Chinese standards, as established under Chinese law? Does the company always conduct EIAs even when not required by local law? At a minimum, is the resettlement package on par with the Chinese resettlement compensation standards? 		



EN3			• Does the project have an EMP in place?		
	Prepares and implements Environmental Management Plans (EMP).	• Does the company's environmental management system enable the company to develop and implement policies and objectives, which take into account legal requirements and other requirements?	• Does the EMP address construction related waste, noise, air quality, land disturbance, and rehabilitation?		
			• Have the key associated management plans been publicly disclosed?		
		• Does the company carry out an EIA for projects that are likely to have significant adverse effects on the environment	• Does the EIA include information of the impacts on biodiversity, forests and vegetation, aquatic species, sedimentation, water quality, quantity, abstraction and withdrawal, cultural heritage and property, and cumulative, indirect and interactive impacts?		
EN4	Carries out rigorous and verifiable EIAs.	and affected communities with a view to avoiding, reducing, mitigating or offsetting such effects and, where appropriate, allow for public participation throughout the entire project cycle? E.g. information should be disclosed in a transparent and culturally-sensitive manner, with grievance mechanisms	• Are the EIAs based on factual information appropriate for the size and nature of the project, and based on consultations with local stakeholders, project-affected communities, and regulatory authorities?		
		justice and recourse.	• Does the EIA establish baseline data and alternative actions (including the option of no dam, and multiple siting options)?		
			• At a minimum, is the EIA made publicly available upon request?		
EN5	Consistent basin development or water resource management plans, and Integrated Resources Plans.	• Does the company assess basin development, water resource management plans, or energy plans, and promote the coordinated development and management of water, land, and related resources?	• Is the project consistent with basin-wide assessments and relevant plans?		



EN6	Seeks to avoid impacts on biodiversity and ecosystem services, and supports conservation and biodiversity efforts related	• Does the company promote ecosystem protection, rehabilitate and restore degraded ecosystems, promote the recovery of threatened species, and establish guidelines for the selection, establishment and management of protected areas or areas where special measures need to be taken to conserve biological	 Does the project impact critical habitats with high biodiversity value? What are the number of IUCN Red List Species and the number of the national conservation species with habitats in areas affected by project operations, by level of extinction risk? What's the status, size and biodiversity value of water bodies and related habitats significantly affected by the company or contractors? Does the project construction introduce more illegal logging in the surrounding area? 	
	to the impacts on natural habitats by its hydropower projects.	 where special measures need to be taken to conserve biological diversity? Has the company adopted the policy of avoidance first, mitigation second in its biodiversity impact policy? 	 Does the company develop a management and monitoring plan for biological impact mitigation? If the project impacts critical habitats with high biodiversity values, does the company assess other viable alternatives to the project in order to avoid measurable adverse impacts on critical biodiversity values and net reduction in the population of a critically endangered or endangered species? 	
			• Examples of efforts by the company to avoid and mitigate its negative impact on biodiversity	
			• Does the company develop a management and monitoring plan for water quality, air quality, waste and noise impacts, and public health risk mitigation?	
EN7	Takes measures to prevent pollutions and protect public health during construction and operation.	 Does the company endorse national standards of pollution discharges and environmental quality? Does the company's policies include requirements to monitor and manage waste, noise, dust, air quality, water quality, and hazardous materials? 	 What efforts has the company made to avoid and mitigate pollution and protect public health during construction and operation stages? Has the company optimized the dam design and taken measures to ensure the water quality? Does the company manage and monitor the water and air quality during site preparation, construction and operation stages? Does the company properly manage the waste and noise impacts? 	



EN8	Carries out cultural resources assessments, and develops plans and processes to avoid, minimize, mitigate, and	• Does the company assess physical and non-physical cultural heritage and ensure management of identified cultural heritage	• Has the company conducted assessments to identify potential inundation of important sites or artifacts under the new reservoir, damage or destruction to important sites or artifacts due to construction activities and loss of access to important sites due to changes in access routes?		
	compensate negative impacts on cultural heritage.	155005.	• Has the company avoided, minimized, mitigated and compensated the negative impacts?		
			• Does the project have plans to address erosion and sedimentation issues for preparation, construction and operations?		
EN9	Addresses erosion and sedimentation issues.	• Does the company assess erosion and sedimentation issues caused by project construction and other implementation activities, and undertake measures to avoid, minimize, mitigate and compensate the impacts?	 What measures has the company taken to address erosion and sedimentation issues? Has the company integrated any design features into the dam design in order to address erosion and sedimentation issues? Has the company carried out any reforestation and re-vegetation activities? Has the company adopted good land-use practices? Has the company included any consideration of cumulative impacts? 		
EN10	Adopts healthy downstream flow regimes, taking into account environmental, social and economic objectives, and where relevant, agreed transboundary objectives.	• Does the company protect environmental flows and minimize downstream impacts?	• Has the company conducted an Environmental Flows Assessment and created benchmarks for flow regime?		



сомми	JNITY AND LABOR RELATIO	NS			
CL1			• Has the company conducted assessment of the livelihoods, living standards, the nature of the impacts of the project on the local communities' livelihoods and living standards, and the degree of economic displacement?		
	The company has a policy on involuntary resettlement	• Does the company commit to the rights to place-based livelihoods, adequate housing, land-for-land compensation, transparency and access to information, participation in decision-making, access to justice, and livelihood improvement and benefit sharing?	• Has the company taken measures to protect downstream riparian lands and enable sustained livelihoods for downstream communities?		
	and indigenous people.	• Does the company endorse the principle of Free, Prior and Informed Consent for indigenous peoples?	• Does the project provide opportunities for project-affected communities?		
			• Does the resettlement provide improvement of livelihoods and living standards, and appropriately compensate for economic displacement?		
CL2			• Does the assessment include discussion of displacement of affected people, health impacts, gender impacts and impacts on women, cumulative, indirect and interactive impacts?		
	(SIAs) are routinely conducted for major projects.	• Do the company's policies require a social impact assessment and, where appropriate, allow for public participation, when projects are likely to have significant adverse effects on local communities and indigenous peoples?	• Are the assessments based on factual information, appropriate for the size and nature of the project, and based on consultations with local stakeholders and regulatory authorities?		
			• At a minimum, are the assessments made publicly available upon request?		
CL3	Meaningful and accountable stakeholder communication and consultation across all stages.	• Has the company adpoted policies to ensure institutional transparency, grant access to information, hold proper consultations, and ensure the participation of affected communities in decision-making?	 Is a community consultation system in place? What is the number of public consultation sessions and events conducted for the project? 		
CL4	Establishes a clear framework for filing	• Does the company have systems and processes for the filing of	• Is a disputes and complaints mechanism in place at the project site?		
	complaints and dispute resolution.	grievances and complaints?	• How many major disputes with local communities have been reported and solved through the mechanism?		



CL5	Benefits sharing commitment.	• Does the company have general commitments to project benefits sharing? Project benefits sharing examples include: equitable access to electricity services, project affected communities receive enhanced local access to natural resources; project affected communities share the direct monetary benefits of hydropower.	• Does the project have benefit sharing beyond one-time compensation payments or resettlement support?		
CL6	The company practices do not breach relevant rights established under international human rights instruments.	 Does the company have a company wide human rights policy? Does the company endorse international human rights standards and respect the rights to equal pay for equal work, right to organize and participate in collective bargaining, right to equality at work, right to non-discrimination, right to just and favorable remuneration, and freedom of association? 	 Instances of documented direct and indirect abuse of international human rights for projects where the dam company has a BOT or EPC contract. Number and size of labor related fines and non-monetary sanctions. Number of documented conflicts between the company and its employee over local labor conditions, including non-payment of salaries and instances of discrimination. How many complaints have the workers filed? How were they solved? 		
			• How do the workers rate the living conditions, salary and working conditions?		
	Occupational safety and		• Number of work site accidents or incidents.		
CL7	a safe and healthy work environment.	• Does the company have policies or programs for protecting the safety, health and welfare of people engaged in work or employment?	• Does the company have programs and targets to reduce safety violations and workplace incidents?		
			• Break-down of local and non-local employees engaged at the project site.		
CL8	Promotes local employment and related training.	• Does the company have policies to encourage local employment and provide relevant trainings?	• Does the company have relevant training programs for local employment and programs for skills management and lifelong learning that support the continued employability of employees?		



RISK MA	NAGEMENT				
			• Has the company abstained from improper involvement in local political processes?		
RM1	Evidence of a company wide policy on corruption and bribery	• Does the company have policies to mitigate the risk of corruption and bribery in high-risk countries?	• Does the company analyze corruption related risks in the business?		
			• Does the company train their employees in the company's anti-corruption policies?		
			• Is there a survey of relevant laws and regulations included in the feasibility study?		
RM2	Compliance with local and national laws.	• Does the company have systems and processes to ensure legal compliance with local regulations and national laws?	• Is there a responsible manager in charge of legal compliance the project office or host country representative office?		
			• Are there any legal issues or reported incidents of violence during the project process, construction and operation?		
	Addresses transboundary issues to prevent, control		• Has the company assessed the transboundary impacts and ris entered into specific agreements and establish joint bodies?		
RM3	and reduce transboundary impacts and use transboundary waters in a reasonable and equitable way.	• Do the company's policies oblige to prevent, control and reduce transboundary impact and use transboundary waters in a reasonable and equitable way?	• Does the company establish a monitoring, warning and alarm system and exchange information with upstream and downstream countries?		
	Plans and processes for dam	• Do the company's policies undertake infrastructure safety risk	• Does the company have safety management procedures and incidents response plans?		
RM4	and other infrastructure safety management.	assessment, establish and implement safety monitoring mechanisms, safety management plans, and emergency response plans?	• Does the company provide training to its employees?		
RM5	15 Systematic risk reporting and information sharing with local communities. • Does the company have systems and processes to establish and implement risk reporting and information sharing?		• Does the company regularly report to the communities on the most important risks and opportunities it faces, particularly arising from the environmental and social impacts of its project activities?		



Table 2: Scoring Methodology in the Benchmarking Project

	Performance Level	s	Scoring	Color Rating
Company	Clear and solid policy	which meets or exceeds international standards.	Full Score	💽 Good
Policy	Vague and general poli	Half Score	💽 Fair	
Commitment	No policies.		Zero Score	• Poor
	Measuring scale of	Assessments have been appropriately undertaken by taking into account full scope of impacts and cumulative impacts. AND Company assessments demonstrate that the project has minimal environmental and social impacts or risks.	Full Score	⊙ Good
	environmental and social impacts and risks	Assessments have been appropriately undertaken by taking into account full scope of impacts and cumulative impacts. AND The assessment results show that the project leads to medium environmental and social impacts or risks.	Half Score	⊙ Fair
		No appropriate assessments have been undertaken. AND/OR The project will result in significant impacts and risks.	Zero Score	• Poor
	Measuring manage- ment and monitoring plans and processes	Standardized, appropriate and detailed plans or processes are in place to manage the impacts and risks.	Full Score	🖸 Good
Project Performance		General plans or processes are in place to mitigate or manage the impacts and risks.	Half Score	💽 Fair
		No or minimum plans or processes are in place to manage the impacts or risks.	Zero Score	• Poor
		All the relevant elements of best practice have been undertaken.	Full Score	🖸 Good
	Measuring outcomes of impacts and risk Some best practice elements have been undertaken, and although there are still significant gaps, there is 100% compliance or no reports of non-compliance.		Half Score	💽 Fair
	management	There are significant gaps relative to basic practices, and/or evidence of non-compliance or non-conformance.	Zero Score	O Poor
	Measuring transpa- rency and informa-	Publicly discloses relevant information through company websites or publicly available upon request.	Full Score	O Good
	tion disclosure	Relevant information is not publicly available.	Zero Score	• Poor



Company Participation

In order to better understand the company policies and implementation of Chinese hydropower companies, data was collected via desktop research, interviews and fieldwork. Due to the willingness of the individual Chinese hydropower companies to engage with international environmental NGOs, stage one of this benchmarking project has had over 80% company participation. To ensure that our analysis was transparent, we have continually updated the companies involved on our progress by sharing information collected, disclosing preliminary results, and inviting feedback.

We conducted seven project case studies in total, for which fieldwork ranged from 5 to 14 days. The projects selected for each individual case study were chosen based on their ability to showcase all three indicator categories (Environmental Management, Community and Labor Relations and Risk Management). However, some companies had only completed a single project, and therefore the project choice was determined for us. The case studies included:

- Datang's Stung Atai Hydropower Project (120MW) in Cambodia;
- Gezhouba's Paute-Sopladora Hydropower Project (487MW) in Ecuador;
- Huadian's Stung Russei Chrum Hydropower Project (338MW) in Cambodia;
- Huaneng's Lower Sesan 2 Hydropower Project (400MW) in Cambodia;
- Sinohydro International's Coca Codo Sinclair Hydropower Project (1500MW) in Ecuador;
- PowerChina Resources's Nam Ou 2 Hydropower Project (120MW) in Lao PDR;
- Three Gorges' Murum Hydropower Project (944MW) in Malaysia.

Five of the seven case studies also involved project management team interviews. Sinohydro International, Gezhouba and Huadian all officially invited us to visit their project sites and conduct interviews. We also had the opportunity to interview managers at PowerChina Resources' Nam Ou project in Luang Prabang, and the project manager of Three Gorges' Murum Hydropower Project in Malaysia. In the cases where the project management team were unresponsive, we drew on a wide range of stakeholder interviews including national and local government representatives, NGOs, researchers, and local communities. In addition to on-ground interviews, we interviewed management staff in the Beijing company headquarters of Datang, Gezhouba, Sinohydro International, and PowerChina Resources.

Our full analysis (policy and project assessments) was finalized in February 2015 and shared with all companies for consultation, comment and correction. All companies were provided with one full month to respond and if desired, meet with International Rivers. Comments provided by the companies were evaluated and incorporated into the analysis where appropriate. We welcome updates and comments from all Chinese hydropower companies and project stakeholders at any time. Updates will be reflected on the project website.





3. How Are The Companies Doing?

The results presented below offer an analysis of industry trends and an overview of company performance. More detailed results outlining individual company performance and competition are provided in Part B of this report.

Table 3 presents the final rankings based on the policy dimension of the benchmarking project. The companies with the most experience in overseas hydropower construction – Sinohydro International and Gezhouba – ranked number one and two respectively. Both companies had sophisticated policies and internal regulations across a number of KPIs, and the case studies revealed areas where project implementation exceeded company commitments. In contrast, Huadian and Huaneng struggled to do well in the area of Community

Table 3 Rankings of Policy Commitments Assessment of ChineseOverseas Hydropower Companies

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and Labor Relations, and were ranked sixth and seventh respectively.

Table 4 presents the final rankings based on the project performance dimension. In comparing the company policy and project rankings, it is worth noting that some companies did well across the policy dimension because they made blanket commitments to international standards, such as those established by the World Bank's Safeguard Policies. However, based on our fieldwork, companies often failed to translate these commitments to the project level. For example, Datang and PowerChina Resources were ranked third and fourth in the policy assessment, but dropped to seventh and fifth place in the project assessment.

Table 4 Rankings of Project Performance Assessment of ChineseOverseas Hydropower Companies

🖸 Good	• Fair	• Poor				Good Good	• Fair	• Poor			
Rankings	Company Name	Environmental Management Scores	Community & Labor Relation Scores	Risk Management Scores	Overall Scores	Rankings	Company Name	Environmental Management Scores	Community & Labor Relation Scores	Risk Management Scores	Overall Scores
1	Sinohydro International	Ο	Ο	Ο	Ο	1	Sinohydro International	Ο	Ο	\odot	Ο
2	Gezhouba	Ο	Ο	Ο	Ο	2	Gezhouba	Ο	\odot	\odot	Ο
3	Datang	Ο	Ο	Ο	Ο	3	Huadian	Ο	O	Ο	Ο
4	PowerChina Resources	\odot	Ο	\odot	\odot	4	Three Gorges	\odot	Ο	Ο	\odot
5	Three Gorges	\odot	Ο	Ο	\odot	5	PowerChina Resources	Ο	Ο	Ο	Ο
6	Huadian	Ο	Ο	\odot	Ο	6	Huaneng	Ο	Ο	\odot	Ο
7	Huaneng	Ο	Ο	\odot	\odot	7	Datang	Ο	Ο	\odot	Ο

Note: The rankings in the table 3 and 4 reflect the actual scores awarded to the companies. Only the color ratings (good, fair and poor) are contained in this report. The final scores will be released after additional consultation is conducted.



Chart 1 summarizes the individual company assessment results. The top circle shows the scores against each KPI in the policy assessment dimension, while the bottom circle shows the scores against each KPI at the project level. The triangle chart is based on the average score across the indicator categories (Environmental Management, Risk Management, and Community and Labor Relations) and enables a comparison between the policy committments and project performance. Where the triangles match or closely align (as the case for Sinohydro International, Gezhouba, and Three Gorges) there is little difference between the policy frameworks adopted and project performance. When the triangles diverge, the level of commitment to policy far exceeds project performance (as the case with Datang, Huaneng and PowerChina Resources), or the level of project performance exceeds policy commitment (as the case of Huadian).

Chart 1 Illustration of Assessment Results of Seven Chinese Overseas Hydropower Companies























The following is a summary of industry trends drawn from the company results:

Finding 1. EPC Contractors outperform BOT Companies: In both policy and project assessments, EPC companies performed better than BOT companies. One of the reasons could be that EPC companies Sinohydro International and Gezhouba entered the global hydropower industry more than 10 years before the other BOT companies, and therefore have the advantage of experience. Another reason could be that the EPC contracts carry less responsibility than the BOT contracts, and therefore the risks are fewer.

Finding 2. Impact of Local Country Standards and Laws: The projects evaluated in this study are located in Latin America and Southeast Asia. Significant differences in performance were found between countries. With regards to environmental and social impact management, the projects in Ecuador were completed to a higher standard than those in Cambodia. Project performance in Malaysia and Laos was also much higher than in Cambodia. This indicates that local laws and standards in the host country are a key factor in determining project performance. Although about half the companies are committed to incorporating Chinese laws and standards as a minimum, on-ground implementation of this commitment is poor.

Finding 3. Policy Standards: Across all seven companies, policies regarding Risk Management were slightly better than Environmental Management or Community and Labor Relations.

The two EPC companies, Sinohydro International and Gezhouba, have developed more comprehensive policies than the BOT companies. However, the BOT companies are committed to following international standards. PowerChina Resources and Datang have committed to World Bank safeguards policies, and Datang, Huadian and Huaneng have endorsed the United Nations Global Compact. Datang ranked as the top company in policy among the BOT companies.

Out of all the KPIs, RM4 (Dam Safety) averaged the highest score. All seven companies have established safety management plans for project implementation and operation, which meet the relevant international standards. The second highest-scoring KPIs were EN3 (Environmental Management Plans) and EN4 (Environmental Impact Assessment), with Chinese companies commitments in these areas being very close to international standards.

Compared to international standards and best practices, important policy gaps include:

- Environmental Management: None of the companies had policies or commitment to comply with relevant water management plans including basin development or water resource plans (EN5), or adopting environmental flows (EN10), which resulted in these two KPIs being the lowest scored in the policy assessment.
- Community and Labor Relations: The majority of BOT companies have yet to develop policies promoting local employment and related training (CL8) and many of the surveyed companies haven't developed adequate community relationship policies (CL1 involuntary resettlement and indigenous people, CL2 Social Impacts Assessment, CL3 meaningful and accountable consultation, CL4 complaints and grievance mechanism and CL5 benefits sharing commitment).
- Risk Management: Most BOT companies have yet to make commitments to comply with local and national laws (RM2), and develop policies addressing transboundary impacts (RM3).

Finding 4. Project Implementation: Through the assessment of projects, we found that companies performed much better in the area of Environmental Management, compared to Community and Labor Relations, and Risk Management. Similar to our findings in policy standards, the two EPC companies, Sinohydro International and Gezhouba, again ranked as top performers.

Compared to international standards and best practices, important project implementation gaps include:

Environmental Management: The lowest scoring project assessment KPIs were EN4 (carry out rigorous and verifiable EIAs) and EN5 (comply with relevant basin development and water resources management plans). Reasons contributing to these low scores in EIAs include: in Cambodia, companies didn't wait until EIAs were approved before starting construction, BOT companies did not incorporate or respond to local stakeholders' comments in the EIAs, and none of the project EIAs were publicly disclosed. In relation to EN5, the Chinese companies didn't have relevant policies, or pay attention to basin development plans in the implementation of the projects. All the BOT companies adopted environmental and social standards lower than Chinese requirements in their projects (EN2), and paid limited attention to protecting biodiversity and ecosystem (EN6) and maintaining environmental flows (EN10). Almost every Chinese company developed a project Environmental Management Plan (EMP)



covering the necessary topics (EN3), but none of them had publicly disclosed the EMPs in line with international standards.

- Community and Labor Relations: Chinese companies gained better scores in labor relations than community relations KPIs. The BOT companies generally failed to conduct comprehensive SIAs (CL2) or publicly disclose the SIAs, carry out meaningful and accountable stakeholder consultation (CL3), provide appropriate compensation measures and improve livelihoods and living standards for the displaced people, take measures to protect downstream communities, provide opportunities for project-affected communities (CL1), and establish complaint and dispute mechanism (CL4). Most of the companies had not committed to any benefit sharing measures. In the Labor KPIs, five out of seven projects had documented incidents of workplace death, which resulted in low scores in the occupational workplace safety (CL7).
- Risk Management: all companies performed especially poorly in addressing transboundary issues (RM3), and systematic risk reporting and sharing information with local communities (RM5).

Finding 5. Comparison between Policies and Projects Performances: Overall, company project performance scored lower than company policies. Only Huadian and Three Gorges gained slightly higher scores for their projects, however the availability of information may have impacted this result, as both company project teams facilitated field visits. Poor policy assessment scores for these companies could also be attributed to the fact that no policies were publicly disclosed, and the companies did not respond to requests from International Rivers to meet with them. Datang ranked last in project performance.

The biggest gap between policy and project assessments was found in the EN4 – carrying out rigorous and verifiable EIAs. According to Chinese laws, large hydropower projects must have approved EIAs before construction commences, public consultation must have taken place during the EIA process, and the full reports of EIAs must be publicly disclosed. Although some Chinese companies committed to fully comply with Chinese laws, there were many instances of non-compliance. Two companies failed to receive formal approvals before commencing project construction. Additionally, the project EIAs had not been publically disclosed, and did not include a proper public consultation processes, nor had the EIAs been publicly disclosed. Similar issues exist in the SIA process.





4. Next Steps

In May 2015, the Chinese hydropower industry hosted the International Hydropower Association's biannual meeting in Beijing, China, to showcase the achievements of the industry. Chinese overseas hydropower companies are still relative newcomers to the global hydropower industry. However, this benchmarking project clearly shows that Chinese companies recognize that their environmental and social policies and practices are becoming important in determining their competitiveness in the global market.

Over the coming years, International Rivers will continue to consult with the companies surveyed in this report in order to record improvements in policy reform and project performance. We hope that future installments of this project will demonstrate learning and growth among the companies surveyed, despite the challenging contexts in which many hydropower projects are undertaken. The next phase of the benchmarking project will include other global players from both developed and developing countries.

This study provides new insights into the environmental and social policies and project performance practices of Chinese overseas hydropower companies. The environmental and social consequences of large dams are significant, and through our research we have highlighted important areas for improvement within the global hydropower industry.



