

SOCIALCARBON® STANDARD

Indicators for Grouped Hydropower Plants in Chongqing,
Yunnan, Sichuan and Guizhou Provinces, P. R. China
Version 1.1 - July, 2015

DOCUMENT REVISION HISTORY

Version	Description of the main adjustments	Review Date
01	First version.	06/2010
1.1	Re-formatted after Public Consultation	07/2011

1. Identifying the Project

Project name: Grouped Hydropower Plants in Chongqing, Yunnan, Sichuan and Guizhou Provinces, P. R. China

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Version/Date of indicators: 1.0/June 2015

2. General orientation for Accredited Organizations

SOCIALCARBON was first applied to hydropower plant projects in 2007, using indicators based on The International Hydropower Association (IHA)'s Sustainability Guidelines to assess fundamental aspects of economic, social, and environmental sustainability pertaining to hydro projects. The original version of the indicators is applicable to hydroelectric power plants, both small- and large-scale, during implantation and operation activities.

In 2011, those indicators were adapted to evaluate SOCIALCARBON Point 0 and Point 1 of the Grouped Hydropower Plants in Chongqing, Yunnan, Sichuan and Guizhou Provinces Project, since the project consists of 95 individual micro-hydropower plants owned by different companies. The result was the "Indicators for Micro and Small Scale Hydropower Grouped Project Version 1.1, June 2011".

To applicate the indicators correctly, sampling techniques were used considering the "Basic Guidelines for SOCIALCARBON Assessment in PoAs or Bundling Projects":

- Project developers may choose to define different clusters (a group of projects) and include them in the assessment progressively, considering that by the ending of the credit period all clusters must have been assessed.
- For each cluster a pre-defined number of samples should be selected for collecting information and evidence. Number of samples should be defined according to the project, by selecting 'typical' villages/communities or project owners/power plants in each cluster and interviewing a number of people in each.
- At least one site visit per cluster must be done for the SOCIALCARBON assessment. Additional site visits during validation/verification might be required by the responsible auditor.

For the Grouped Hydropower Plants in Chongqing, Yunnan, Sichuan and Guizhou Provinces, the project was divided into 6 clusters:

Cluster 1 - Wulong	52 hydropower stations located in Wulong County in the Southeast of Chongqing.
Cluster 2 - Wanzhou	15 projects located in Wanzhou Cluster.
Cluster 3 - Yunnan	9 projects in Yunan Province.
Cluster 4 - Guizhou	6 projects located in Guizhou Province
Cluster 5 - Ebian	2 projects located in Ebian County in Sichuan Province
Cluster 6- Ya'an	11 projects located in Yingjing county of Ya'an, Sichuan province

For SOCIALCARBON Report Point 2, the set of indicators were rewritten to better reflect the reality of the project. The result was the present document, the **“Indicators for Grouped Hydropower Plants in Chongqing, Yunnan, Sichuan and Guizhou Provinces, P. R. China - Version 1.1, July 2015”**. In SOCIALCARBON Report Point 2, all 6 clusters will be evaluated.

3. List of potential social, economic and environmental impacts

Activity	Aspect	Impact	Effect			Comments/ Observation
			Beneficial	Neutral	Adverse	
Implementation of small scale hydropower plants in rural areas	Generation of electricity	Spread of electricity across the less developed rural areas, where previously the grid was not stable and some families did not have electricity.	X			Monitored by the Technological Resource: Indicator - Access to electricity
Implementation of small scale hydropower plants in rural areas	Use of renewable energy	Greenhouse gas emissions reductions	X			Monitored by the Carbon Resource: Indicator - Project performance
Implementation of small scale hydropower plants in rural areas	Construction	Environmental impacts		X		Monitored by the Natural Resource: Indicator - Environmental impacts and accordance with legislation
Carbon Credit Project	Application of the SOCIALCARBON Methodology	Encouragement and investment in research on social aspects in project region.	X			Monitored by the Social Resource: Indicator - Social impact of the project & Indicator - Local socioeconomic conditions
Carbon Credit Project	Application of the SOCIALCARBON Methodology	Encouragement in corporate social responsibility	X			Monitored by the Human Resource: Indicator - Training and capacity building programs
Carbon Credit Project	Application of the SOCIALCARBON Methodology	Empowerment of the communities and their activities.	X			Monitored by the Human Resource: Indicator - Capacity of local community
Carbon Credit Project	Commercialization of credits	Income generation	X			Monitored by the Financial Resource: Indicator - Sale of credits

4. List of significant risks for the project

Activity	Aspect	Risk	Comments/ Observation
Carbon Credit Project	Poor financial results.	Project abandonment.	Monitored by the Carbon resource: Indicator - Project performance
Implementation of small scale hydropower plants in rural areas	Difficulty in monitoring all 95 projects located in remote areas.	Project abandonment.	Monitored by Carbon resource: Indicator - Emissions reductions calculations & monitoring and Indicator - Validation & Verification

5. List of stakeholders affected by the project

Stakeholder	Brief description of how the project affects the stakeholders mentioned
Workers	The project provides professional, health and safety training to its staff.
Local Community	The project encourages measures to create a dialogue and improve relationships with the residents surrounding the project. It also promotes community benefits such as local environmental education, social donations and spread of electricity.
Local Associations	The project collaborates with project proponents in terms of communication and logistics, for example creating local associations to link the various projects.
Schools	The project collaborates with schools located in surrounding areas especially providing environmental programs to the students.

6. Benchmarking

A benchmarking analysis is an optional step for the elaboration of SOCIALCARBON indicators and includes research about best practices for project activity or existing sustainability indicators for the sector.

- 1) Indicators for Hydropower Plants, Version 4.1. Available at: <http://goo.gl/9eSa89>
- 2) Indicators for Micro and Small Scale Hydropower Grouped Project, Version 1.1. Available at: <http://goo.gl/Woh0kQ>
- 3) Basic Guidelines for SOCIALCARBON Assessment in PoAs or Bundling Projects. Available at: <http://goo.gl/ONWW4b>

7. Indicators

Social Resource: The networks, social duties, social relationships, relationships of trust, affiliations, and associations.

Indicator	Description	Evaluation Methods
Local socioeconomic conditions	<p>Assesses the comprehensiveness of local socio-economic conditions and the compatibility of the activities proposed for planning and implementing the additional programs with these conditions.</p> <p>Knowledge about the socio-economic conditions of the project should contain a brief description of: relevant aspects of the social environment (i.e. political context, institutional structure, demographics, land uses, current conditions and social trends); - local and regional economics; existing social and cultural values.</p>	<ul style="list-style-type: none"> - Interviews, questionnaires or meetings: testimony from local stakeholders. - Physical evidence: pictures or records of additional meetings with the community members. - Documentation: secondary researches and studies on socioeconomic conditions; agreements with governments, local entities or project owners; others (government or project owners' policies, plan of activities, etc.)

Social impact of the project	<p>Evaluates the relevant socio-economic impacts:</p> <ul style="list-style-type: none"> - Use of electricity in households (i.e for lighting, cooking, electronic equipment) - Public services (i.e. schools, offices, health centers, etc.) - Systems for water pumping (i.e. human consumption and productive activities such as irrigation and mills) - Impacts on the development of industries 	<ul style="list-style-type: none"> - Interviews, questionnaires or meetings: testimony from local stakeholders; authoritative opinion on the level of social impact. - Physical evidence: i.e. site visit or pictures. - Documentation: EIA; researches and studies on social impacts of the project; social impact assessment and social management plans; Mitigation / compensation / enhancement plans or programs.
Social programs for the elderly	<p>Evaluates programs to address elderly needs.</p>	<ul style="list-style-type: none"> - Interviews, questionnaires or meetings: testimony from local stakeholders; authoritative opinion on the level of social impact. - Physical evidence: i.e. site visit or pictures. - Documentation: agreements with governments, local entities or project owners; others (government or project owners' polices, plan of activities, etc.)

Indicator	1	2	3	4	5	6
Local socioeconomic conditions	No knowledge about the socioeconomic conditions of the project location.	There is knowledge about the socioeconomic conditions of the project location but the project implements no activities to attend the local needs.	There is knowledge about the socioeconomic conditions of the project location and the project implements activities to attend the local needs.	The implementation of activities is carried on in partnership with a local entity.	The activities are integrated with one of the following: - Existing activities developed by the project owners or; - Existing activities developed by other local organizations or; - Existing laws, polices or governmental programs.	Additional programs are integrated with at least two of the following: - Existing activities developed by the project owners or; - Existing activities developed by other local organizations or; - Existing laws, polices or governmental programs.
Social impact of the project	The project has no social impact.	The project has social impact in one of the areas below: - Households - Public services - Systems for water pumping - Development of industries	The project has social impact in two of the areas below: - Households - Public services - Systems for water pumping - Development of industries	The project has social impact in three of the areas below: - Households - Public services - Systems for water pumping - Development of industries	The project has social impact in all of the areas below: - Households - Public services - Systems for water pumping - Development of industries	In addition to scenario 5, the project has an action plan to improve the social benefits of the project long-term.
Social programs for the elderly	There is no knowledge of the vulnerability of	There is knowledge of the vulnerability of elderly people in	There is a formal action plan to implement social	One social program was held regarding the needs of the	A social program was held regarding the needs of the	Two or more social programs were held regarding the needs

	elderly people in the region.	the region, but nothing has been done.	programs to elderly people.	elderly people, but there was no association with local NGOs.	elderly people in partnership with local NGOs.	of the elderly people in partnership with local NGOs.
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Human Resource: The skills, knowledge, capacities for work and good health that people have. Taken together, these become fundamental for the successful pursuit of different strategies.

Indicator	Description	Evaluation Methods
Capacity of local association	Evaluates the creation of local associations to address project owners collective issues.	<ul style="list-style-type: none"> - Interviews, questionnaires or meetings: testimony from local stakeholders and project proponent. - Physical evidence: none. - Documentation: none.
Capacity of local community	Evaluates the contributions (capacity training, equipment donations etc) by project owners in the main economic activities of the region, such as: <ul style="list-style-type: none"> - Agriculture - Tourism - Mining 	<ul style="list-style-type: none"> - Interviews, questionnaires or meetings: testimony from local stakeholders. - Physical evidence: none. - Documentation: none.
Training and capacity building programs	Evaluates whether the project invests in training and capacity building programs for its employees.	<ul style="list-style-type: none"> - Interviews, questionnaires or meetings: testimony from employees and project proponent. - Physical evidence: pictures of the trainings and attendance list. - Documentation: contracts, certificates, statements, planning controls.
Gender diversity	Evaluates the employment opportunities provided by the project to women.	<ul style="list-style-type: none"> - Official government data, social civil

		society or international organization reports.
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Indicator	1	2	3	4	5	6
Capacity of local association	There is no local association.	There is a local association, but it is informal.	There is a local association and it is recognized by local legislation, but it does not meet neither of the following requirements: - It represents all project owners. - It has a democratic election.	There is a local association and it is recognized by local legislation, but it does not meet one of the following requirements: - It represents all project owners. - It has a democratic election.	There is a local association that is recognized by local legislation and that has an administration that represents all project owners democratically.	In addition to scenario 5, the association also addresses community needs.
Capacity of local community	Not known.	The project does not contribute to any main economic activity in the region.	The project contributes to one of the main economic activities of the region.	The project contributes to one of the main economic activities of the region plus other industries (i.e. local commerce).	The project contributes to two of the main economic activities of the region.	The project contributes to two of the main economic activities of the region plus other industries (i.e. local commerce).
Training and capacity building programs	The project did invest neither in isolated lectures	The project organized isolated lectures, but not to	The project organized isolated lectures to all	The project provided continuous professional	The project provided continuous professional	In addition to scenario 5, the training provided by

	nor in continuous professional training for staff.	all employees.	employees.	training, but not to all employees.	training to all employees.	the project is linked to the Human Resource Policies for promotion.
Gender diversity	There is currently no woman employed.	There are currently no woman employed, but the companies have started a selective process.	Less than 15% of employees are women.	Between 15 ≤ 30% of employees are women.	More than 30% of employees are women.	In addition to more than 30% of employees being women, the companies present initiatives or combat gender discrimination.

Financial Resource: Basic capital in the form of cash, credit/debt and other economic goods which are or may become available.

Indicator	Description	Evaluation Methods
Sale of credits	Evaluates uncertainties regarding the value of commercialized credits generated by the project and their attractiveness to potential buyers, in comparison with international voluntary carbon market reports.	<ul style="list-style-type: none"> - Interviews, questionnaires or meetings: testimony from proponent. - Physical evidence: none. - Documentation: Information on market conditions for similar projects.
Funds for social & environmental cobenefits	Evaluates if strategic planning and funds for implementing programs to achieve continual improvement goals are available and how much.	<ul style="list-style-type: none"> - Interviews, questionnaires or meetings: testimony from proponent. - Physical evidence: none. - Documentation: none.
Economic performance	Evaluates if the economic performance of the project met the expectations of the shareholders and directors regarding yuan per megawatt.	<ul style="list-style-type: none"> - Interviews, questionnaires or meetings: testimony from proponent.

		<ul style="list-style-type: none"> - Physical evidence: not required. - Documentation: not required.
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Indicator	1	2	3	4	5	6
Sale of credits	Uncertainties about the commercialization of the carbon credits for the period.	Carbon credits are being negotiated, with little uncertainty regarding its commercialization.	Price of the credits is below the current market value.	Price of the credits is in accordance with the average market value.	Credits with high aggregated value, above the market average	Credits with high aggregated value, above the market average
Funds for social & environmental cobenefits	There are no funds nor strategic planning for additional programs	Up to USD 10.000,00 (per cluster) in funds were invested in cobenefits, but in isolated initiatives	Up to USD 10.000,00 (per cluster) in funds were directed to cobenefits, according to strategic planning for progressive initiatives, thru investments of certain project owners individually	More than USD 10.000,00 (per cluster) in funds were directed to cobenefits, according to strategic planning for progressive initiatives, thru investments of certain project owners individually	More than USD 10.000,00 (per cluster) in funds were directed to cobenefits, according to strategic planning for progressive initiatives, thru an organized association of project owners.	More than USD 30.000,00 (per cluster) in funds were directed to cobenefits, according to strategic planning for progressive initiatives, thru an organized association of project owners.
Economic performance	Very low performance. Economic goals for power sale established have not been reached.	Low performance. Economic goals and expectations established for power sale have been partially	Moderate performance. Economic goals and expectations established have almost been	Adequate performance. Economic goals and expectations established have been accomplished.	Good performance. Economic goals and expectations established have been accomplished and in some cases	Outstanding performance. Economic goals and expectations established have all been surpassed.

		reached.	accomplished.		surpassed.	
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Natural Resource: The stock of natural resources (soil, water, air and environmental services (soil protection, maintenance of hydrological cycles, pollution sinks, pest control, pollination, etc.), from which resources for livelihoods are derived.

Indicator	Description	Method of evaluation
Environmental impacts and compliance with regulation	Evaluates magnitude of environmental impacts of the project, existence of environmental impact studies and accordance with environmental laws and regulations (including agreements with public authorities, such as environmental licenses, requested authorizations for installation, etc).	<ul style="list-style-type: none"> - Interviews, questionnaires or meetings: testimony from local stakeholders and/or regulators. - Physical evidence: i.e. site visit or pictures; Records of stakeholder involvement. - Documentation: Identification of directly affected stakeholders; Agreements with stakeholders and/or regulators; Environmental Impact Study (EIS/EIR or equivalents); Environmental licenses and certifications related to the fulfillment of obligations stated by environmental organizations.
Support from NGOs	Evaluates the support from NGOs and Institutes to the project's activities.	<ul style="list-style-type: none"> - Interviews, questionnaires or meetings: testimony from local stakeholders. - Physical evidence: none. - Documentation: Environmental licenses and certifications related to the fulfillment of obligations stated by environmental organizations.
Community environmental	Evaluates the relevant environmental education programs related to the project,	<ul style="list-style-type: none"> - Interviews, questionnaires or meetings:

education programs	including additional programs to the stakeholders and broader community.	testimony from stakeholders. - Physical evidence: pictures of trainings. - Documentation: plan of activities for implementing additional programs; Agreements with partners and other organizations; periodic reports on status of implementation of additional programs.
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Indicators	1	2	3	4	5	6
Environmental impacts and compliance with regulation	Inadequate fulfilment of environmental legal obligations. Therefore, the environmental license was suspended.	The environmental license has been issued, but there are uncertainties regarding the environmental impact since there are no studies.	The environmental license has been issued, but studies show high environmental impact and mitigation measures for such impacts are not yet in place.	The environmental license has been issued, but studies show high environmental impact and mitigation measures for such impacts were taken.	The environmental license has been issued and studies show neutral environmental impact.	In addition to scenario 5, the project implements new technologies or innovative processes to prevent environmental impacts.
Support from NGOs	The project has no support from NGOs.	The project has the support of only one NGO.	The project has the support of two NGOs.	The project has the support of more than two NGOs.	In addition to scenario 4, the project and the NGOs developed environmental programs, but there are still uncertainties about the benefits.	In addition to scenario 5, the project and the NGOs developed environmental programs which have reported great impacts on the environment.

Community environmental education programs	The project did not offer any environmental education activities.	The project offered only one environmental education activity.	The project offered two environmental education activities.	The project offered three environmental education activities.	The project offered four environmental education activities.	The project offered more than four environmental education activities.
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Technology Resource: Evaluates the conditions of access to new technologies, as well as the contribution of technology to economic development and diminished impact on the environment.

Indicator	Description	Method of Evaluation
Access to electricity	<p>Evaluates the level of access that local people and organizations have to the electricity provided in the project area, considering:</p> <ul style="list-style-type: none"> - If grid connection are available - The quality and continuity of the energy provided - If the cost of electricity is affordable for local population 	<ul style="list-style-type: none"> - Interviews, questionnaires or meetings: testimony from local stakeholders. - Physical evidence: none. - Documentation: plans, agreements or contracts outlining the expansion of grid connection; Monitoring reports on the quality and continuity of the energy provided; Project owners' asset strategies and plans for improving grid confection; Other documents containing information on the operational efficiency of individual power station, or groups of power stations.
Technological benefits of electricity	<p>Evaluates the technological benefits brought by the electricity provided by the project, such as:</p> <ul style="list-style-type: none"> - Irrigation - Mechanization 	<ul style="list-style-type: none"> - Interviews, questionnaires or meetings: testimony from local stakeholders. - Physical evidence: i.e. site visit or pictures. - Documentation: EIA; researches and studies on social impacts of the project;

	<ul style="list-style-type: none"> - Household appliances - IT and communication 	<p>social impact assessment and social management plans; Mitigation/compensation/enhancement plans or programs.</p>
Operational performance	Evaluates if the operational performance of the project met the expectations of the shareholders and directors in relation to megawatts generated.	<ul style="list-style-type: none"> - Interviews, questionnaires or meetings: testimony from local stakeholders. - Physical evidence: i.e. site visit or pictures. - Documentation: EIA; researches and studies on social impacts of the project; social impact assessment and social management plans; Mitigation / compensation / enhancement plans or programs. <p>Note: testimonies from stakeholders are enough to verify the audit evidence for this indicator.</p>

Indicator	1	2	3	4	5	6
Access to electricity	Not know or no assessment of range of access to electricity.	Very limited access to the electricity provided, due to absence of grid connection.	Good range of grid connection, but people have difficulties regarding the access to electricity due to the high cost.	Good range of grid connection and accessible costs, but facing some gaps due to the low quality or effectiveness of delivery of	Good access to electricity services, with minor or no gaps in grid connection, costs and quality of the electricity provided.	In addition to the previous scenario, there is at least one additional program that gives users conditional discounts on electricity bills.

				electricity.		
Technological benefits of electricity	The electricity provided by the project brought no benefits.	The electricity provided by the project brought benefits to one of the areas below: - Irrigation - Mechanization - Household appliances - IT and communication	The electricity provided by the project brought benefits to two of the areas below: - Irrigation - Mechanization - Household appliances - IT and communication	The electricity provided by the project brought benefits to three of the areas below: - Irrigation - Mechanization - Household appliances - IT and communication	The electricity provided by the project brought benefits to all the areas below: - Irrigation - Mechanization - Household appliances - IT and communication	In addition to scenario 5, the electricity provided by the project brought other types of benefits, such as the development of the commerce.
Operational performance	Very low performance. Operational goals established have not been reached.	Low performance. Operational goals and expectations established have been partially reached.	Moderate performance. Operational goals and expectations established have almost been accomplished.	Adequate performance. Operational goals and expectations established have been accomplished.	Good performance. Operational goals and expectations established have been accomplished and in some cases surpassed.	Outstanding performance. Operational goals and expectations established have all been surpassed.

Carbon Resource: The type of carbon project developed, encompassing the project performance and methodologies utilized.

Indicator	Description	Method of evaluation
Project performance	Evaluates performance of project, verified by comparison with estimates of emissions reductions under the PDD.	<ul style="list-style-type: none"> - Interviews, questionnaires or meetings: testimony from proponent. - Physical evidence: none. - Documentation: PDD & Verification

		Report.
Stakeholder consultation	Evaluates the methodology used for stakeholder consultation. The stakeholder consultation consists of interviews, workshops or questionnaires made with people who are involved or interact with climate change projects.	<ul style="list-style-type: none"> - Interviews, questionnaires or meetings: testimony from local stakeholders. - Physical evidence: i.e. pictures or records of consultation process. - Documentation: i.e. agreements with stakeholders; summary of interviews or meetings with local stakeholders; Plans for involvement and/or consultation with directly affected stakeholders.
Green marketing	Evaluates whether the project has marketing appeal regarding the list below: <ul style="list-style-type: none"> - Location - Pictures - Human related events 	<ul style="list-style-type: none"> - Interviews, questionnaires or meetings: testimony from stakeholders such as the sales team and buyers. - Physical evidence: pictures. - Documentation: none.

Indicator	1	2	3	4	5	6
Project performance	Not successful: 0% of carbon credits predicted for the period were effectively generated.	Very Low: 1% to 25% of carbon credits predicted for the period were effectively generated.	Low: 26% to 50% of carbon credits predicted for the period were effectively generated.	Reasonable: 51% to 75% of carbon credits predicted for the period were effectively generated.	Good: 76% to 100% of carbon credits predicted for the period were effectively generated.	Excellent: More than 100% of carbon credits predicted for the period were effectively generated.
Stakeholder consultation	No stakeholder consultation was carried out during the period analyzed.	A stakeholder consultation was conducted but it did not meet any of the following	At least one of the following requirements was met: - Frequency: once a	At least two of the following requirements was met: - Frequency: once a	All of the following requirements were met: - Frequency: once a year;	As well as the previous scenario, the project developer maintains open

		<p>requirements:</p> <ul style="list-style-type: none"> - Frequency: once a year; - Invitations: most of stakeholders groups were invited; - Record: comments were recorded. 	<p>year;</p> <ul style="list-style-type: none"> - Invitations: most of stakeholders groups were invited; - Record: comments were recorded. 	<p>year;</p> <ul style="list-style-type: none"> - Invitations: most of stakeholders groups were invited; - Record: comments were recorded. 	<ul style="list-style-type: none"> - Invitations: most of stakeholders groups were invited; - Record: comments were recorded. 	<p>channels of communication with stakeholders.</p>
Green marketing	<p>The project does not show marketing appeal based on their environmental practices.</p>	<p>The project shows marketing appeal regarding just one of the following aspects:</p> <ul style="list-style-type: none"> - Location - Pictures - Human related events 	<p>The project shows marketing appeal regarding two of the following aspects:</p> <ul style="list-style-type: none"> - Location - Pictures - Human related events 	<p>The project shows marketing appeal regarding all of the following aspects:</p> <ul style="list-style-type: none"> - Location - Pictures - Human related events 	<p>The project shows marketing appeal regarding all of the following aspects plus one other:</p> <ul style="list-style-type: none"> - Location - Pictures - Human related events 	<p>The project shows marketing appeal regarding all of the following aspects plus two other:</p> <ul style="list-style-type: none"> - Location - Pictures - Human related events