



Risk Management in Carbon Credit Price

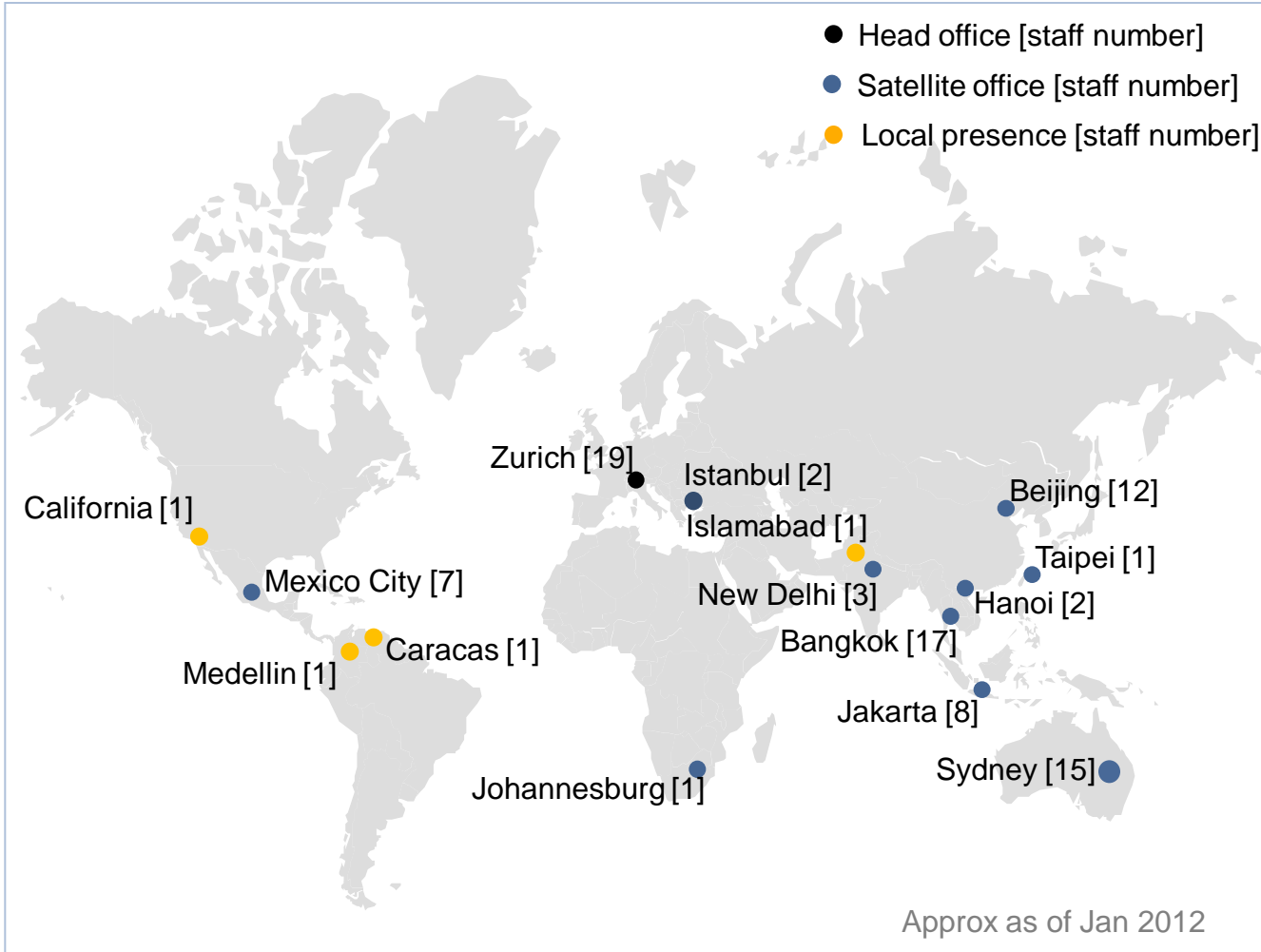


South Pole Carbon

- Current Carbon Market at a glance
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South Pole has a wealth of international experience



- Incorporated in July 2006
- 10+ offices worldwide
- Over 75+ carbon professionals
- Projects in 20+ countries
- Specialized in high-quality “Gold Standard” projects
- Developing both voluntary and compliance credits



Latest achievement

South Pole Carbon strengthens its position as global market leader for carbon offsetting. We are proud that the quality of our certificates is internationally recognized:

- Voted Best Project Developer in the Greenhouse Gas market survey, as voted by the readers of Environmental Finance magazine.
- Won Best Project Developer CDM in the Carbon Trading magazine 2012 market survey and the runners-up in the Best Project Developer in the Voluntary Carbon Markets categories.



International Market Leader in compliance and voluntary market



Rated among the World's Best Carbon Companies

- Voted as the **best project developer** by Carbon Fiance Magazine for two consecutive year on 2011 & 2012



- Issued almost **20 millions** carbon credits worldwide
- Issued more than **2 millions** carbon credits from Thai projects

Carbon Market Firsts

- Brought to market the **first ever Gold Standard carbon** credits (Biomass Malawalli / India)
- Handled the **first ever international Kyoto carbon credit transfer**
- **First company to cancel CERs**, making sure that they cannot be resold

Premium quality

- **One of the top GS VER developers** with 10% of entire GS VER pipeline
- **Leading developer of GS CER** projects with 25% of entire GS CER pipeline

South Pole references – an extensive network of high quality buyers

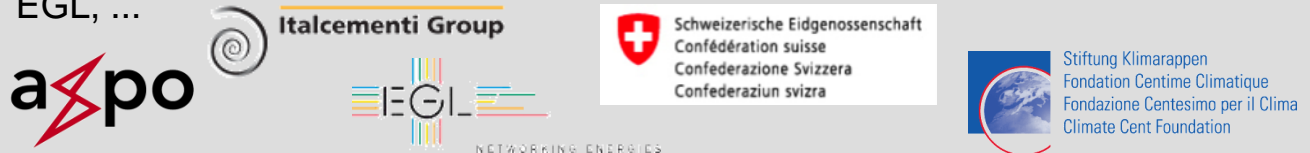


Unparalleled carbon market expertise

- Participation in the UNFCCC Methodology Panel
- Involved in major climate change negotiations since 1997
- Carbon advisory to international organizations (World Bank, European Commission, World Economic Forum, GTZ, Africa Progress Panel, World Food Programme, ...) and to registered CDM projects with a volume of 100 million tCO₂e until 2012

Extensive client network

- Top-rated compliance buyers
such as the Austrian Government, Swiss Government, Climate Cent Foundation (Switzerland), Italcementi Group, LUSO Carbon Fund (Portugal), EGL, ...



- Well-known voluntary buyers
such as BP, Unilever, Axpo, Swiss Re, WWF, Austrian Post, Eneco Energy, RBC, Greenpeace, Ben & Jerry's, Transoflex, ...)





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- South Pole Carbon



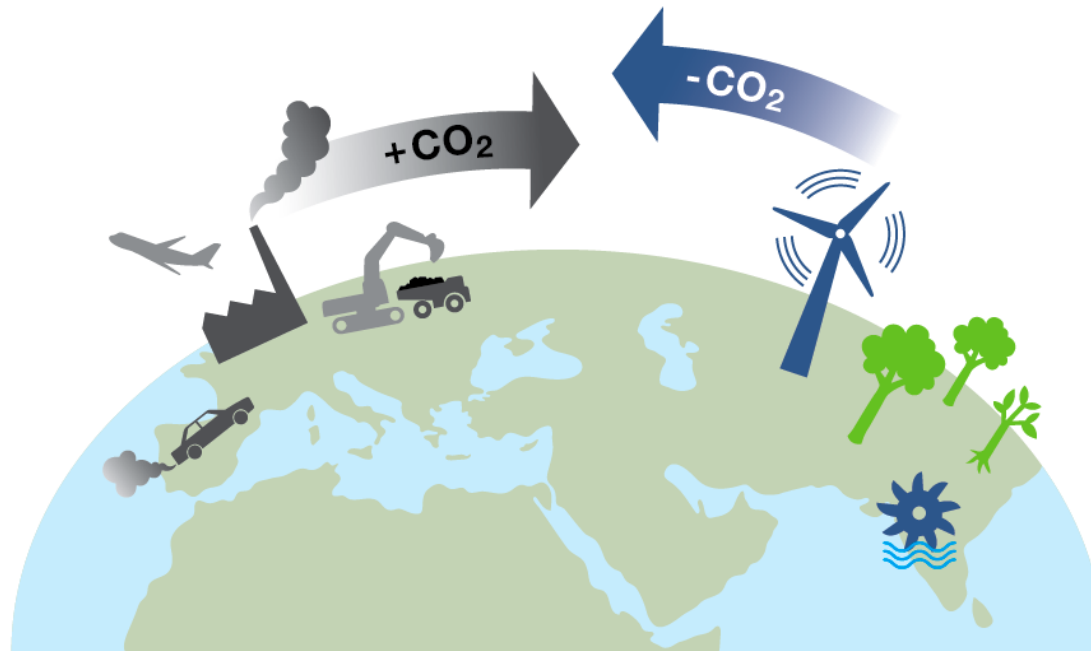
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Carbon credits – how it works



Man-made global warming threatens the basis of life, foremost it is threatening the poorest countries, and increasingly it threatens the standard of living in the industrialized world. Market based mechanisms are a strong and proven tool, beyond energy efficiency and savings, for the fight against climate change.



For every ton of avoided greenhouse gas emissions, achieved e.g. by replacing fossil fuel power with renewable energies, the project owner is receiving so called carbon credits which can be sold to companies and institutions with a voluntary or compliance carbon reduction strategy.

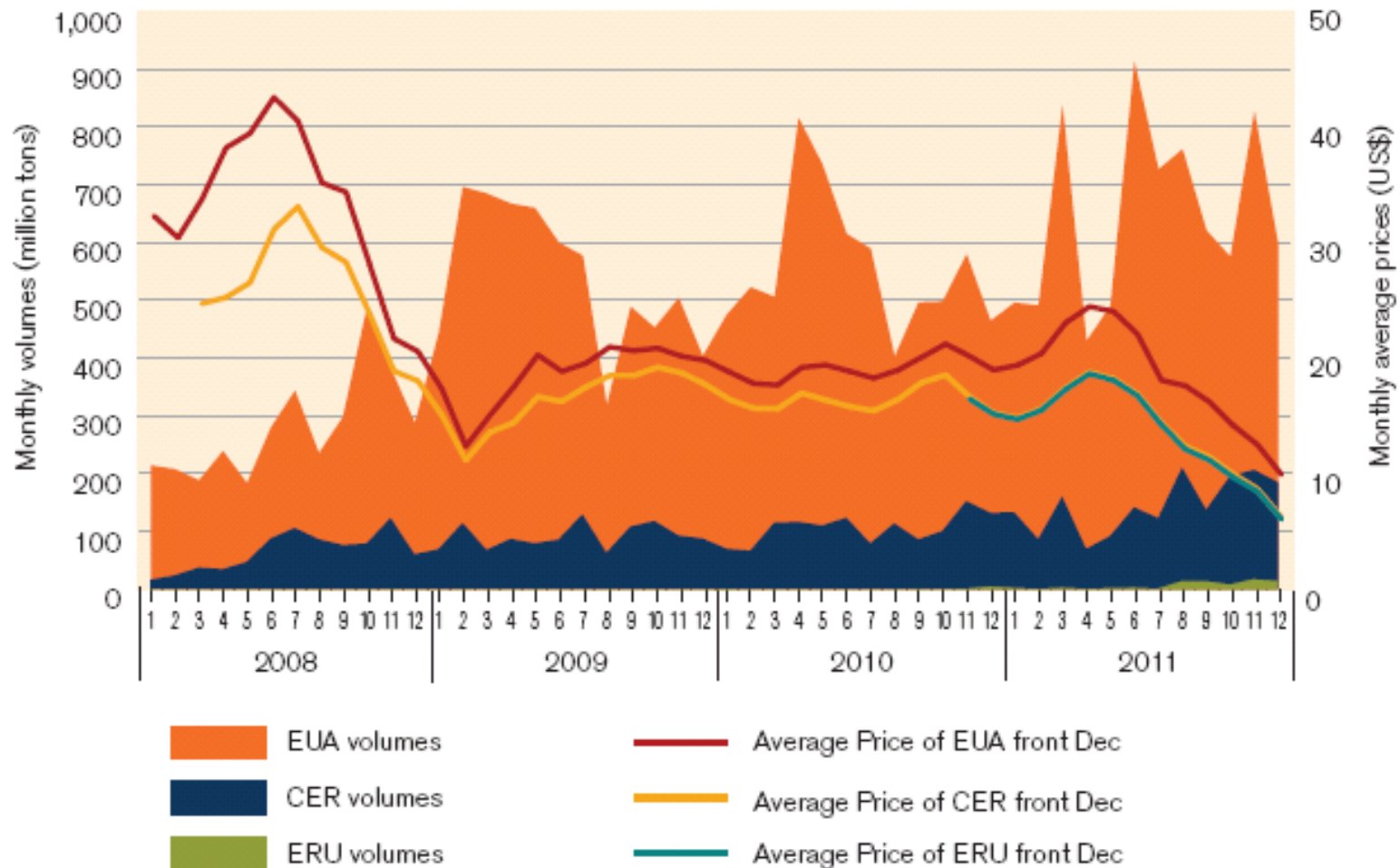


Compliance and voluntary carbon markets

	Examples	Key features
Compliance markets 	<ul style="list-style-type: none">• EU Emission Trading Scheme• Kyoto Protocol Market• New Zealand Emission Trading Scheme...	<ul style="list-style-type: none">• Different types of compliance carbon credits• Kyoto credits (CDM and JI) can be sold to Kyoto and EU markets• High liquidity• Unit price varies little across projects, but premium for Gold Standard certified projects
Voluntary markets 	<ul style="list-style-type: none">• GS VERs• VCU• VERs for Chicago Climate Exchange• ...	<ul style="list-style-type: none">• Carbon credits generated on the basis of voluntary standards• Not suitable for compliance purposes (Kyoto)• Prices vary with quality and origin of projects, with Gold Standard projects fetching the highest price



Historical CER price



Source: World Bank



Reason for the stall

1. Post-Kyoto Uncertainty. There is still no resolution on the future of the Kyoto Protocol, which expires in 2012. This is taking a toll on the Clean Development Mechanism (CDM) market, where emissions reduction projects in developing nations earn credits sold to industrialized countries to meet their Kyoto commitments. The value of the primary CDM market sank 44 percent.

2. Cap-and-Trade Loses Steam. Emissions trading schemes are facing stiff resistance in some regions, including the U.S., Australia and Japan, where governments have been wrestling over cap-and-trade legislation. Even in Korea, which adopted a law that would include cap-and-trade program, has postponed the scheme to 2015, from early next year.

3. Lingering Recessionary Effects. Though many economies around the world picked up in 2010, demand isn't where it could be. Lower emissions mean less demand for carbon trading.





Voluntary carbon market

Rank	Motivation	Share
1	Corporate Social Responsibility	32%
2	Public Relations/Branding	22%
3	Resale	22%
4	Anticipation of Regulation or Commodity Investment	19%
5	Greening a supply chain	7%

Location	Volume (MtCO ₂ e)	Value (\$ million)	Market Share
Europe	33	204	47%
North America	29	\$159	41%
Oceania	3	\$22	4%
Asia	3	\$47	4%
Latin America	2	\$23	2%
Africa	.9	\$10	1%

	Voluntary Buyers			Pre-Compliance Buyers		
	Volume (MtCO ₂ e)	Value (\$ million)	Market Share	Volume (MtCO ₂ e)	Value (\$ million)	Market Share
End Use/ Retirement	48	\$259	53%	8	\$64	8%
Secondary Market	26	\$172	28%	4	\$22	5%



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 - Current Carbon Market at a glance



Additional Carbon Standard (Label)

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What is CER/VER additional standard (Label)

- The additional Standard is an award certification label for carbon mitigation projects, recognized internationally as the benchmark for quality in both the compliance and voluntary carbon markets. The standard will provide the Emission Reduction Credit (CER/VER) buyer as a tool to ensure that the CDM or VER projects delivers credible credits with real environmental benefits other than GHG emission reduction.

Well Known Standard (labels)



Gold Standard

The Gold Standard - a best practice methodology and a high quality carbon credit label for both Kyoto and voluntary markets.



Social Carbon Standard

It is founded on the principle that transparent assessment and monitoring of the social and environmental performance of projects can improve their long-term effectiveness, thus adding value to the emission reductions generated.





The CCBA

The Climate, Community and Biodiversity Alliance (CCBA) is a partnership of international NGOs and research institutes seeking to promote integrated solutions to land management around the world.



The Carbon Fix Standard

Carbon Fix is a climate forest standard which aims to increase the amount of sustainably managed forests and decrease global CO₂ levels. The Carbon Fix Standard follows the principles that projects should be real, additional, measurable, permanent, independently verified, unique and have sustainable development benefits.





Crown Standard

Launched by Thailand Greenhouse Gas Management Organization (TGO) for Thai project. The project which receives the Crown Standard will have a greater chance of obtaining the Gold Standard in a shorter period of time and probably less approval fee.





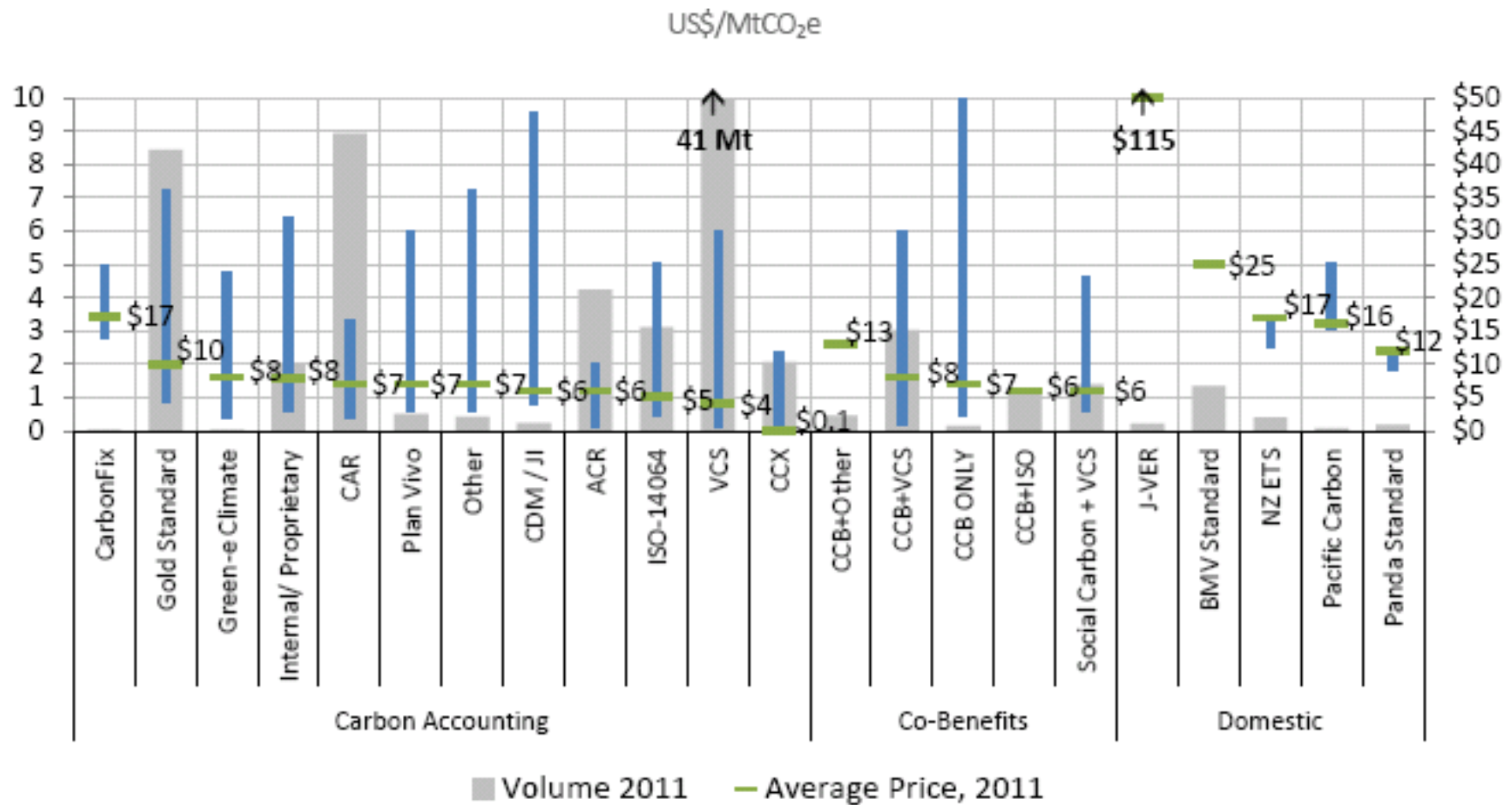
Reasons of buying

- Reduced reputational risk
- Confidence and peace of mind in credit robustness
- Widely viewed as *the* quality carbon credit in the marketplace
- Chosen to demonstrate broader CSR commitment
- Measurable co-benefits can enable a strong organizational fit
- Endorsed and supported by NGOs worldwide
- Credits more likely to be eligible in future compliance regimes

The credits from the projects which received addition label will become more internationally recognized and gaining more value added. This type of credit is the a preferred choice for multiple governments, multinationals and the United Nations and endorsed by NGOs worldwide.



Voluntary market standard's differences





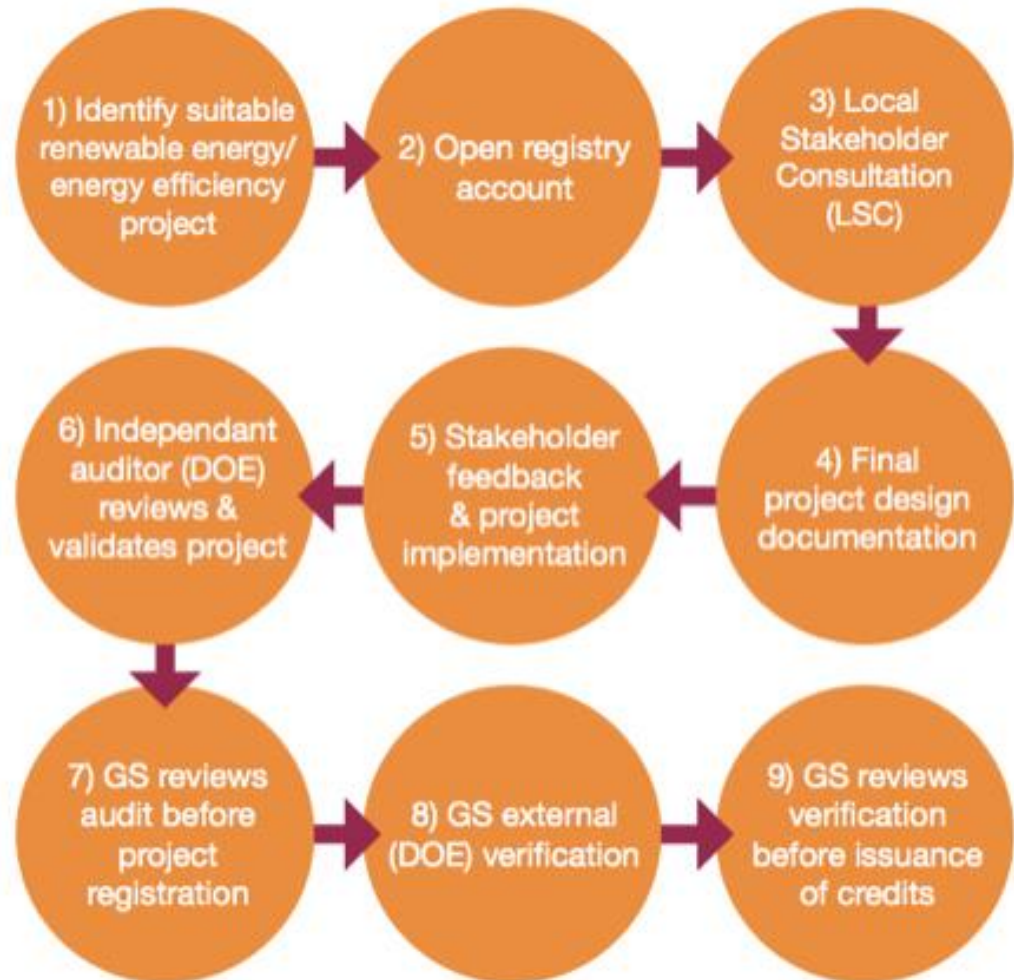
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How to get the Label



The Gold Standard Certification Process





- **1. IDENTIFY SUITABLE RENEWABLE ENERGY/ENERGY EFFICIENT PROJECT**

Assess project eligibility for The Gold Standard as only projects focusing on renewable energy and end-use energy efficiency can apply for Gold Standard certification.

- **2. OPEN REGISTRY ACCOUNT**

The Gold Standard Registry is a web-based software application that serves as the tracking tool and administration tool for both Gold Standard UNFCCC and VER projects.

- **3. LOCAL STAKEHOLDER CONSULTATION**

Start writing your Gold Standard Passport, which is the document that presents all required information using The Gold Standard's fixed template. Draft a non-technical summary explaining the project in laymen's terms, which must be used when sending out invitations for the Local Stakeholder Consultation (LSC)



- **4. FINAL PROJECT DESIGN DOCUMENTATION**

Write up the Local Stakeholder Consultation Report using The Gold Standard template and submit to The Gold Standard via the registry. Once the GS Secretariat deems the report acceptable, the project will be made publicly available in the registry and referred to as an official 'listed' GS applicant.

- **5. STAKEHOLDER FEEDBACK AND PROJECT IMPLEMENTATION**

Carry out the second round of consultation, called the Stakeholder Feedback Round (SFR), in order to show stakeholders how their comments from the first consultation were taken into account, as well as offering a second chance to make additional comments. During the SFR, the LSC Report, the PDD and the GS Passport must be made publicly available for comments for a 60-day period.

- **6. INDEPENDANT AUDITOR (DOE) REVIEWS & VALIDATES PROJECT**

Contact an independent UN-accredited auditor (e.g. DOE) to review and to validate the project activity. The validation may start in parallel with the SFR, as long as all comments from the SFR are incorporated into the final validated project documentation and the SFR ends before validation completion.



- **7. GS REVIEWS AUDIT BEFORE PROJECT REGISTRATION**

Following the project validation, the validated PDD, Passport and other relevant project documents plus the validation report must be uploaded into the registry. The GS Secretariat, the Technical Advisory Committee, and the GS NGO Supporters then conduct a final document review before the project becomes registered.

- **8. GS EXTERNAL (DOE) VERIFICATION**

An independent UN-accredited auditor (DOE/AIE) verifies the project's emission reductions and sustainable development monitoring activities.

- **9. GS REVIEWS VERIFICATION BEFORE ISSUANCE OF CREDITS**

Following the project verification, the verified PDD, Passport and other relevant project documents plus the verification report must be uploaded into the registry. The GS Secretariat, the Technical Advisory Committee, and the GS NGO Supporters then conduct a final document review before the project may issue credits.

Gold Standard Registry



The Gold Standard
Premium quality carbon credits

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VER Project Credits

Vintage	Project ID	Project Developer	Project Name	Version	Validation DOE	Verification DOE	Project Type	Region	Country	State/Province	Quantity of Credits	Documents	Project Website
2010	GS778	South Pole Carbon Asset Management Ltd.	Blue Fire Bio wastewater treatment and biogas utilization project (300147)_pre-CDM VER	V2.0	TUV Rheinland (China) Ltd.	Germanischer Lloyd Certification GmbH	Biogas – Cogeneration	SE-Asia	THAILAND	Nakorn Ratchasima	10,613	View	www.southpolecarbon.com
2011	GS778	South Pole Carbon Asset Management Ltd.	Blue Fire Bio wastewater treatment and biogas utilization project (300147)_pre-CDM VER	V2.0	TUV Rheinland (China) Ltd.	Germanischer Lloyd Certification GmbH	Biogas – Cogeneration	SE-Asia	THAILAND	Nakorn Ratchasima	8,719	View	www.southpolecarbon.com
2008	GS777	South Pole Carbon Asset Management Ltd.	Bangna Starch Wastewater Treatment and Biogas Utilization Project (300084)_pre-CDM VER	V1.0	TÜV NORD CERT GmbH	Germanischer Lloyd Certification GmbH	Biogas – Electricity	SE-Asia	THAILAND	Kalasin	2,497	View	www.southpolecarbon.com
2009	GS777	South Pole Carbon Asset Management Ltd.	Bangna Starch Wastewater Treatment and Biogas Utilization Project (300084)_pre-CDM VER	V1.0	TÜV NORD CERT GmbH	Germanischer Lloyd Certification GmbH	Biogas – Electricity	SE-Asia	THAILAND	Kalasin	20,094	View	www.southpolecarbon.com
2008	GS775	South Pole Carbon Asset Management Ltd.	CYY Biopower Wastewater treatment plant including biogas reuse for thermal oil replacement and electricity generation Project, Thailand (300059)_pre-CDM VER	V1.0	TÜV NORD CERT GmbH	RINA S.p.A.	Biogas – Cogeneration	SE-Asia	THAILAND	Nakorn Ratchasima	5,976	View	www.southpolecarbon.com
2009	GS775	South Pole Carbon Asset Management Ltd.	CYY Biopower Wastewater treatment plant including biogas reuse for thermal oil replacement and electricity generation Project, Thailand (300059)_pre-CDM VER	V1.0	TÜV NORD CERT GmbH	RINA S.p.A.	Biogas – Cogeneration	SE-Asia	THAILAND	Nakorn Ratchasima	8,681	View	www.southpolecarbon.com
2010	GS472	South Pole Carbon Asset Management Ltd.	InfraVest Changbin and Taichung bundled Wind Farms Project - Taiwan (300190)	V1.0 SoP	SGS United Kingdom Ltd.	CERPEI Certification Body	Wind	E-Asia	TAIWAN	N/A	248,316	View	www.southpolecarbon.com
2011	GS472	South Pole Carbon Asset Management Ltd.	InfraVest Changbin and Taichung bundled Wind Farms Project - Taiwan (300190)	V1.0 SoP	SGS United Kingdom Ltd.	CERPEI Certification Body	Wind	E-Asia	TAIWAN	N/A	310,115	View	www.southpolecarbon.com
2009	GS472	South Pole Carbon Asset Management Ltd.	InfraVest Changbin and Taichung bundled Wind Farms Project - Taiwan (300190)	V1.0 SoP	SGS United Kingdom Ltd.	CERPEI Certification Body	Wind	E-Asia	TAIWAN	N/A	238,414	View	www.southpolecarbon.com
2008	GS472	South Pole Carbon Asset Management Ltd.	InfraVest Changbin and Taichung bundled Wind Farms Project - Taiwan (300190)	V1.0 SoP	SGS United Kingdom Ltd.	CERPEI Certification Body	Wind	E-Asia	TAIWAN	N/A	217,064	View	www.southpolecarbon.com
2010	GS612	South Pole Carbon Asset Management Ltd.	InfraVest Guanyin Wind Farm Project - Taiwan	V2.0 SoP	SGS United Kingdom Ltd.	CERPEI Certification Body	Wind	E-Asia	TAIWAN	Taoyuan County	64,724	View	www.southpolecarbon.com



Gold Standard Criteria

Local/regional/global environment

Water quality and quantity

Air quality (emissions other than GHGs)

Other pollutants: (including, where relevant, toxicity, radioactivity, POPs, stratospheric ozone layer depleting gases)

Soil condition (quality and quantity)

Biodiversity (species and habitat conservation)

Social sustainability and development

Employment (including job quality, fulfilment of labour standards)

Livelihood of the poor (including poverty alleviation, distributional equity, and access to essential services)

Access to energy services

Human and institutional capacity (including empowerment, education, involvement, gender)

Economic and technological development

Employment (numbers)

Balance of payments (sustainability)

Technological self reliance (including project replicability, hard currency liability, skills development, institutional capacity, technology transfer)

Sustainable Development Indicators



SOCIALCARBON Standard is involved in the project design, validation, and verification stages of the carbon offset value chain. The process begins with the creation of SOCIALCARBON indicators, followed by the completion of SOCIALCARBON reports and their validation/verification by independent organizations. After successful validation and verification, SOCIALCARBON credits may be issued through the Markit Environmental Registry.



socialcarbon



Stage	SOCIALCARBON Cycle
1	Getting started – Prepare your SOCIALCARBON indicators - The indicators are project specific and co-developers may choose between adapting existing indicators or creating new. SOCIALCARBON indicators receive scores ranging from the worst scenario (level 1) to the ideal situation (level 6) that point to degrees of sustainability correlated to six aspects: social, human, financial, natural, biodiversity and carbon.
2	Elaboration of SOCIALCARBON Report - This will define a baseline for assessing the project's contribution to sustainable development. Collect data used to score the indicators through participative methods, like interviews, questionnaires or meetings with stakeholders. Then summarize it in a Report following the template.
3	Choose one organization to certify the SOCIALCARBON Report – Is an independent process from the PDD, but Designated Operational Entities (DOEs) can complete the validation and verification procedure both for PDD + SOCIALCARBON Reports at the same time. Bureau Veritas, TUV Nord and TUV Rheinland are reputable and renowned DOEs that certify SOCIALCARBON.



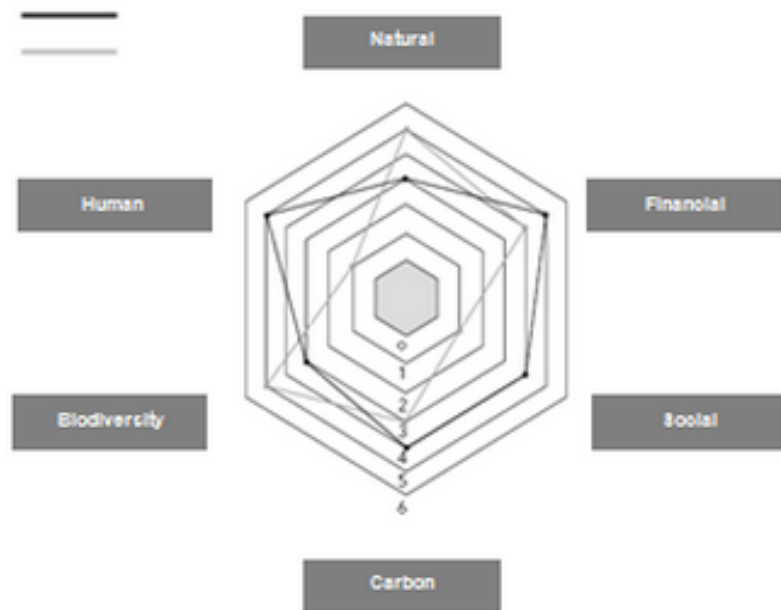
Stage	SOCIALCARBON Cycle
4	<p>Monitoring and verification – elaborate a SOCIALCARBON Report for each monitoring period (of the carbon accounting standard used) and submit it to independent verification to demonstrate project's contribution to sustainable development, based on the indicators. Achieving sustainability is not a quick and easy task; rather, it is a long process of continual improvements. After the first commercialization of carbon credits, project proponents:</p> <ul style="list-style-type: none">• Must demonstrate goals for improvement and provide evidence that they are being achieved.• Will not be allowed to present a decrease in the same aspect for two consecutive monitoring periods.
5	<p>After successful verification, you may issue the SOCIALCARBON credits through the Markit Environmental Registry. After initial issuance, the credits may be transferred to other registries Request the registration of a SOCIALCARBON project or credits to Markit. This request must be accompanied by corresponding SOCIALCARBON documentation.</p>
6	<p>When credits are bought, the SOCIALCARBON Registry transfers the credits from the developer to the buyer. When the primary buyer retires the credits, they will also be retired by the registry from which they were purchased. Buyers of SOCIALCARBON credits include The World Bank, First Climate, JP Morgan, World Energy, Eco-act, CantorCO2e and igogreen.</p>



Social Carbon criteria

Criteria 1 – Use of SOCIALCARBON Methodology

The methodology includes:



1. Basic guidelines for initiatives undertaken with local stakeholders.
2. A conceptual framework that provides a panorama of the situation, combining resources, perspectives and strategies. The methodology is based on the sustainable livelihoods approach and considers six basic resources: Social, Human, Financial, Natural, Biodiversity and Carbon.
3. Indicators chosen and developed using the six resources of the methodology. These indicators receive scores ranging from the worst scenario (level 1) to the ideal situation (sustainable use of resource – level 6).

Schematic representation of the gradient of "Social" resource indicators



Criteria 2 – Monitoring and continual improvement of project performance

The methodology is applied periodically and independently verified to incentivize continual improvement. Projects are re-evaluated according to the monitoring period of the corresponding carbon accounting standard through participative diagnosis and generation of SOCIALCARBON Reports to demonstrate project contributions to sustainable development.

Criteria 3 – Independent verification conducted through SOCIALCARBON Reports by a Certifying Entity

SOCIALCARBON Reports must be validated and verified by a Certifying Entity. In this process an independent verification of the SOCIALCARBON Report is performed. Validation and verification of the SCR and the PDD may be combined or done separately, according to the capability of the verifying technical team.

Social Carbon Tag



The VCS Project Database

[Home](#)

Issued VCUs



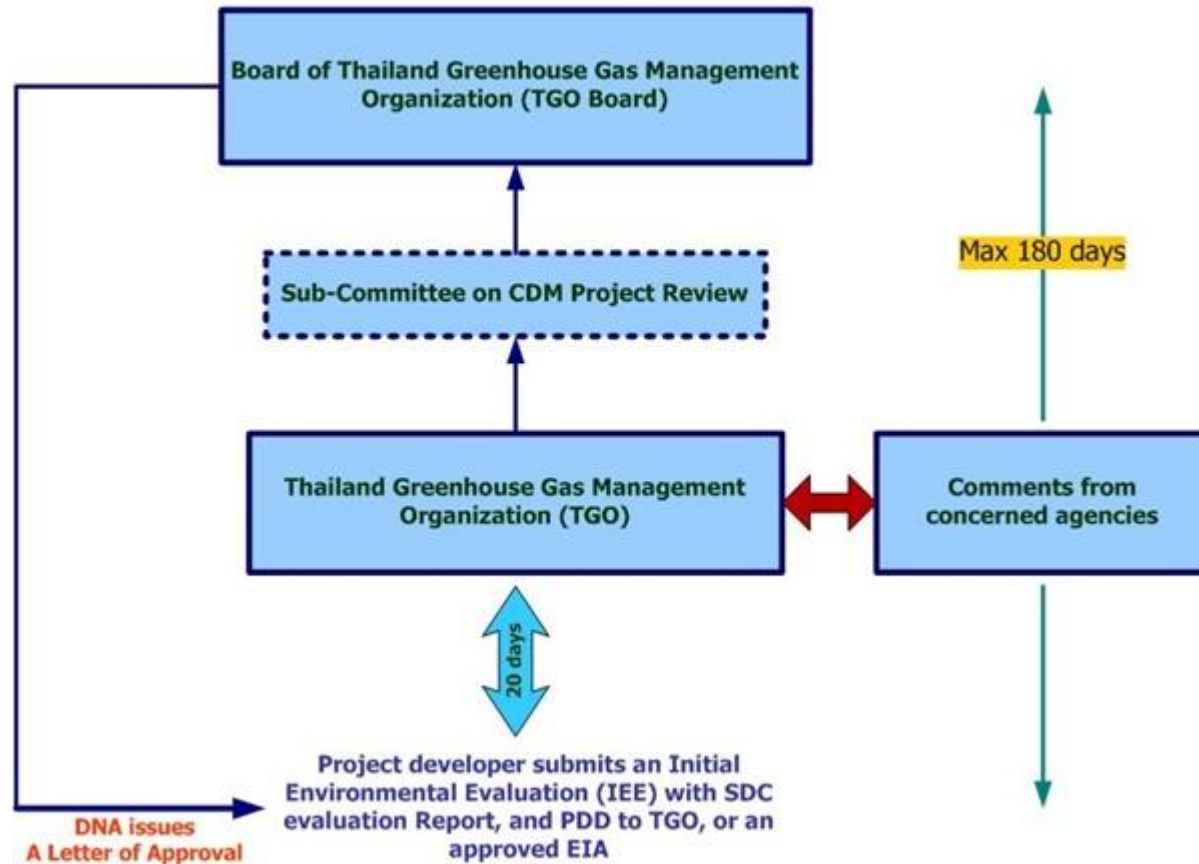
From Vintage ▲▼	To Vintage ▲▼	Project ID ▲▼	Project Name ▲▼	Project Proponent ▲▼	Project Verifier ▲▼	Primary Project Type ▲▼	Additional Project Types ▲▼	Additional Certifications ▲▼	Project Country ▲▼	VCU Quantity Issued ▲▼	Verification Report Total ▲▼	Issuing Registry ▲▼	Project Information ▲▼	Retired VCUs ▲▼
1/1/2010	1/31/2010	34	Cavalcante Ceramic fuel switching project	Social Carbon Company	Tuev Nord Cert GmbH (Tuev Nord)	Energy industries (renewable - / non-renewable sources)		Social Carbon	BRAZIL (BR)	1,483	16,313	TZ1 Limited	View	View
1/1/2010	1/31/2010	197	Kamiranga Ceramic Fuel Switching Project	Social Carbon Company	Tuev Nord Cert GmbH (Tuev Nord)	Energy industries (renewable - / non-renewable sources)		Social Carbon	BRAZIL (BR)	3,009	21,063	TZ1 Limited	View	View
12/25/2009	1/24/2010	434	Gansu Yongchang County Donghewan Cascaded Hydropower Project	Yongchang County Minrong Hydropower Development Co	China Quality Certification Center (CQC)	Energy industries (renewable - / non-renewable sources)			CHINA (CN)	3,160	201,350	TZ1 Limited	View	View
10/1/2009	3/31/2010	93	86 MW Hydro Project in Himachal Pradesh	Malana Power Company Limited	Tuev Nord Cert GmbH (Tuev Nord)	Energy industries (renewable - / non-renewable sources)			INDIA (IN)	45,737	45,737	Caisse des Depots	View	View
10/1/2009	12/31/2009	15	Tyson Wastewater Treatment Facilities - Amarillo	Blue Source, LLC	Det Norske Veritas Certification AS (DNV)	Waste handling and disposal			UNITED STATES (US)	30,885	30,885	TZ1 Limited	View	View
10/1/2009	12/31/2009	14	Tyson Wastewater Treatment Facilities - Amarillo	Blue Source, LLC	Det Norske Veritas Certification AS (DNV)	Waste handling and disposal			UNITED STATES (US)	12,464	12,464	TZ1 Limited	View	View



1. The project that earns a total score and the score of environmental category equal to or higher than "B" level.
2. The project has to organize a stakeholder consultation in the form of public participation process (not just to inform the public), and the project must demonstrate that it contributes benefit from income from carbon credits to local communities, or the project perform CSR. In conclusion, the project must earn a social category score in Item 1 is equal to or higher than 1.
3. The project that earns the score of social category in Item 2 (supporting social activities, culture and self-sufficient economy) equal to or higher than 1, or the project earns the score of social category in Item 3 (health and sanitation of workers and nearby communities) equal to or higher than 2.



CDM Approval Procedure in Thailand





Example of Gold Standard Project



Wastewater treatment, Thailand

This project is engaged with mitigating global warming and local air pollution at a Thai starch plant by capturing methane and generating sustainable energy and social benefits for local communities.

Project achievements



Socio-economic impact:

- 17 new jobs have been created both for the operation of the wastewater cycle.
- New qualified jobs for locals have increased the general income level which benefits all the community.
- The cleaned water from the new wastewater cycle allows for fish farming and irrigation of nearby fields, thus enabling locals to increase their income.
- The plant workers receive training on modern technologies and can increase their knowledge and skills.
- Technology transfer supports the workers' understanding of modern and sustainable applications.

Environmental impact:

- With the now covered lagoons and the UASB reactor in operation, air pollution and strong odour from the wastewater have been reduced significantly.
- All water from the wastewater cycle can be re-used in the plant which reduces water consumption.
- No solid waste is generated but sludge that is given to local farmers as fertilizer.





Example of Social Standard project

Small and micro run-of-river hydro, China

This bundle of small and micro hydro plants provides China's rural and mountainous South-West with emission free energy. Without the need for a retaining dam, the plants use natural height differences to generate sustainable power.

Project achievements



Socio-economic impact:

- Jobs for locals have been created both in construction and maintenance, with training on the job and health care above Chinese standards.
- Improvements of local roads ease the locals' daily lives, improve connections to the next cities, and enable sustainable development opportunities.
- Newly built water channels improve farming opportunities, with farmers having prioritized access to the water before power generation.
- Annually, agricultural workshops are given to local farmers according to their needs as expressed in stakeholder meetings, e.g. on fruit tree grafting. In addition, they receive support in the form of free tools and an agricultural library with books and DVDs. All these activities are funded by carbon revenues and conducted by a local NGO.
- The decrease of open fireplaces in households due to the availability of safe and clean energy leads to less respiratory diseases.
- Newly available irrigation brings increased prosperity to local farmers.
- About 80% of the workers in the company are from ethnic minorities. The working schedule allows them to remain cultivating their fields.
- The project upgraded access roads and community infrastructure.

Environmental impact:

- The decrease of open fires for light and heating leads to less deforestation and soil erosion, while the decrease of diesel generator use improves local air quality and mitigates air pollutants such as sulphur dioxide and nitrogen oxide.
- Generated electricity improves grid stability and economic stability of local population.

Micro and Small Scale Hydropower



China



500'000

A bundle of least-impact run-of-river hydropower stations is generating 100% sustainable and emission-free power in China's rural south-west.





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Thank you for your attention!