



Agriculture and the carbon market

Carbon Credits for Sustainable Land Use Systems (CaLas)

Presented by Patrick Horka, head of PoAs, South Pole Carbon Asset Management Ltd.

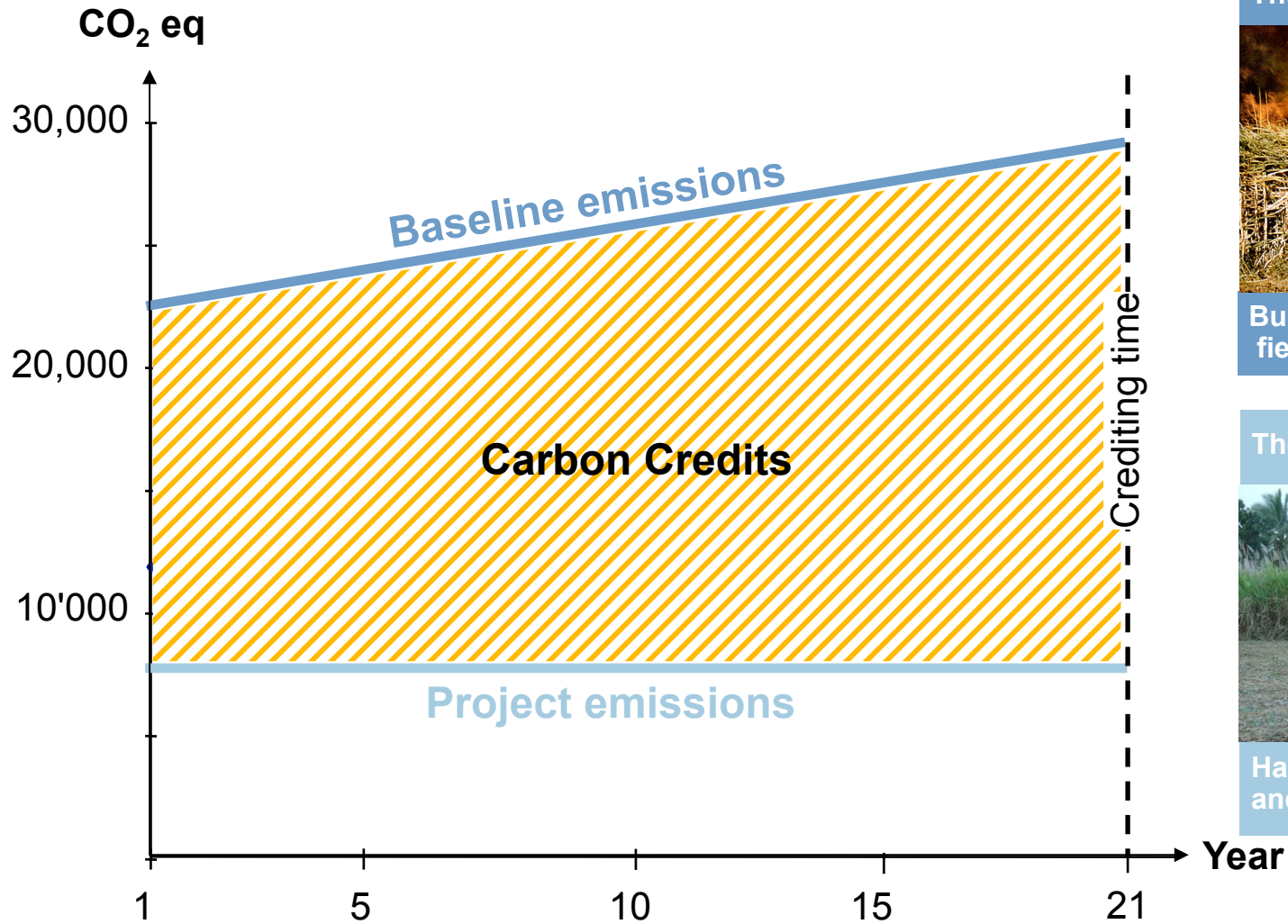
15 December, 2012



Basic concepts of CDM and current state

- The size and the meth issue.... and its solution
 - A bit of South Pole
-

Carbon credits are issued for reductions in greenhouse gas emissions



Business as usual:
The “baseline” scenario



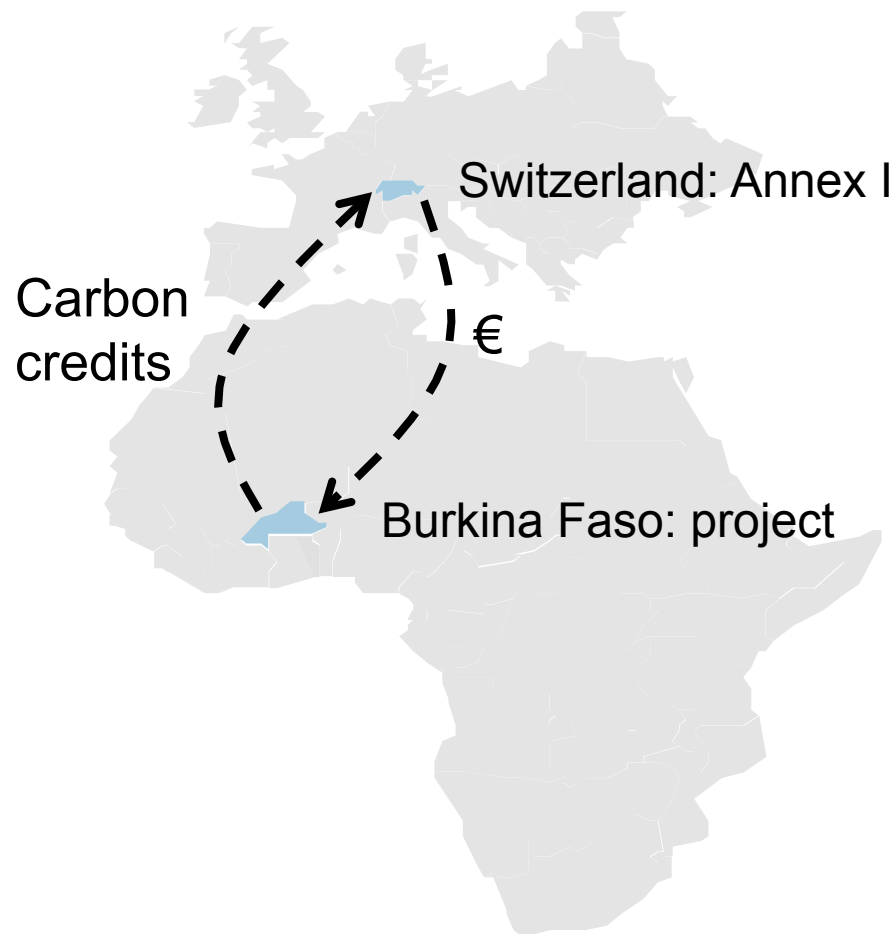
Burning of sugar cane fields emitting CH₄ and N₂O

The CDM project



Harvesting of green fields and mulching of residues

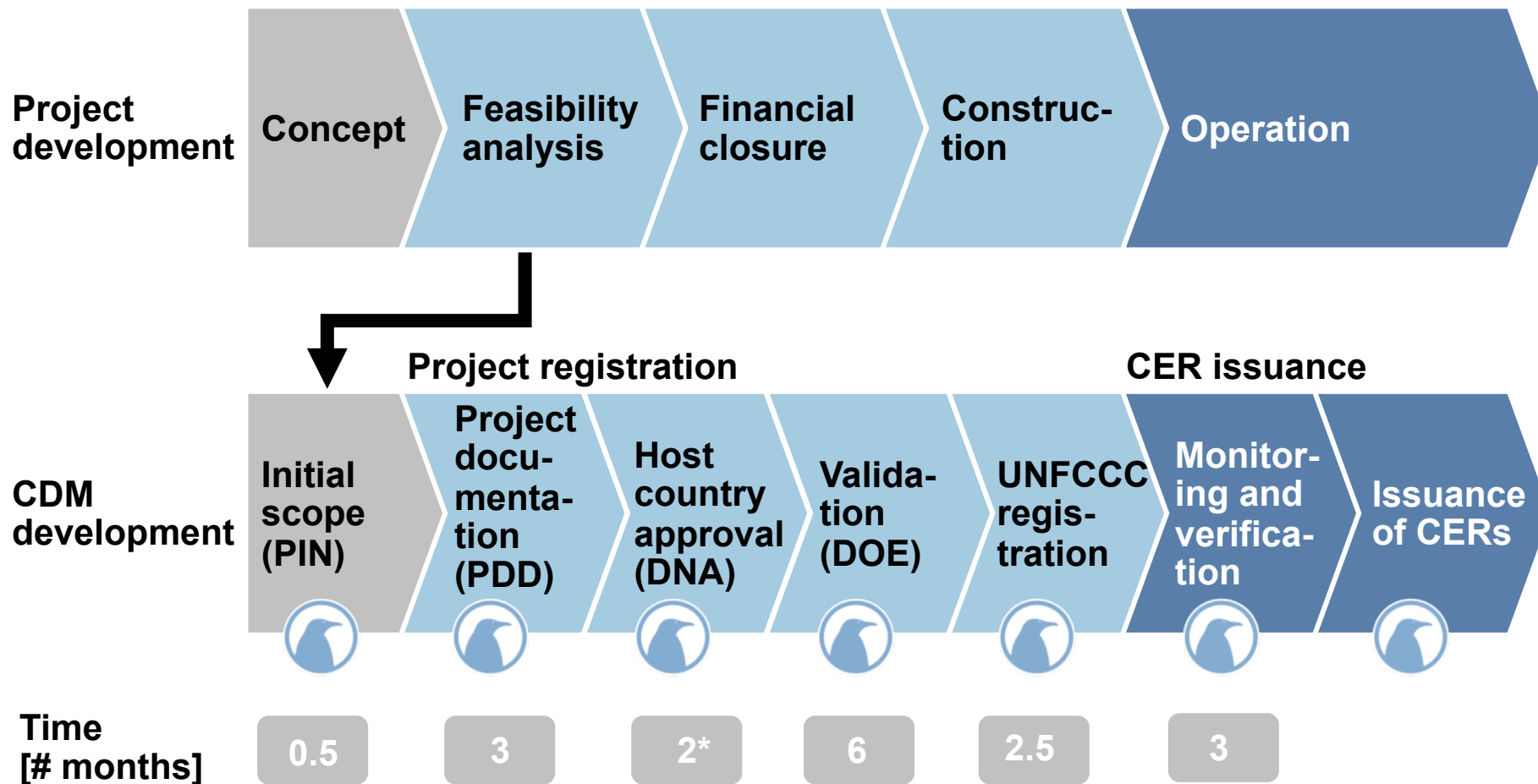
Carbon credits can be traded internationally



Example

- **Switzerland needs to reduce its emissions** to comply with the PK
- **Burkina Faso** has no emission limits
- **In Burkina many emission reduction opportunities exist** and some are realized
- **Carbon credits are sold** from Burkina Faso to Switzerland

Carbon Credit projects go through a lengthy approval cycle



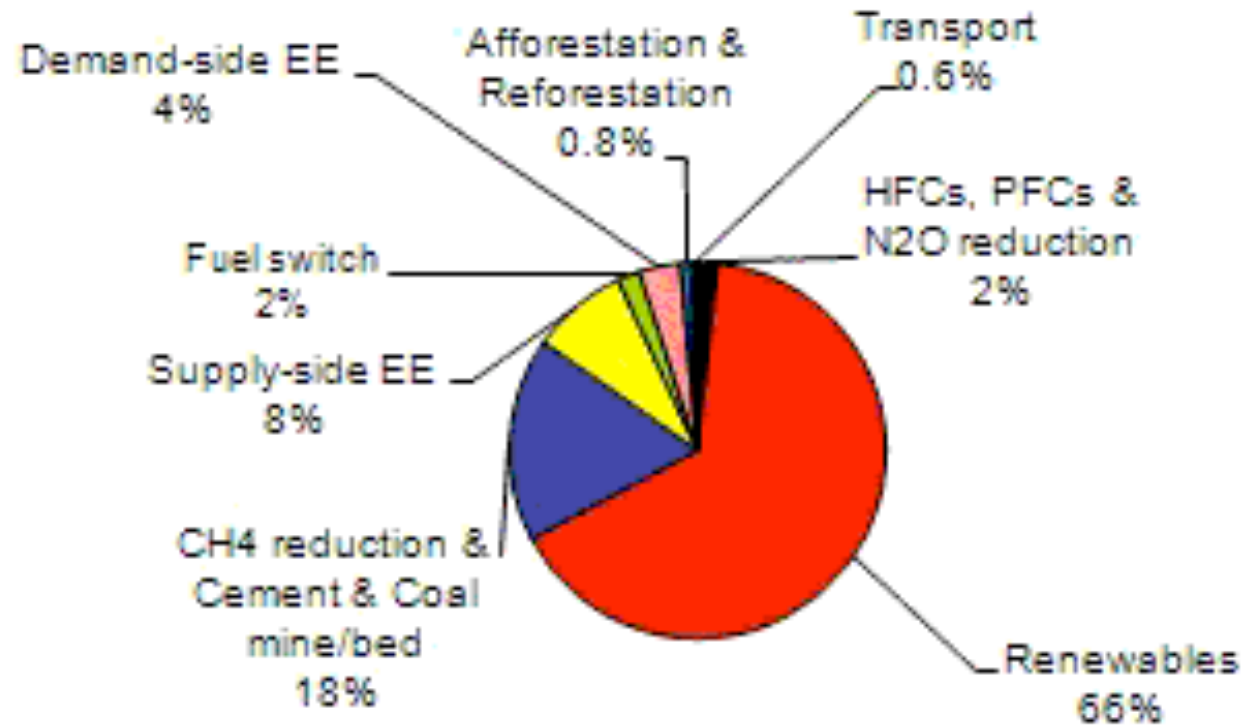
* In parallel to validation

A number of factors need to be fulfilled for a project to become viable carbon credit project



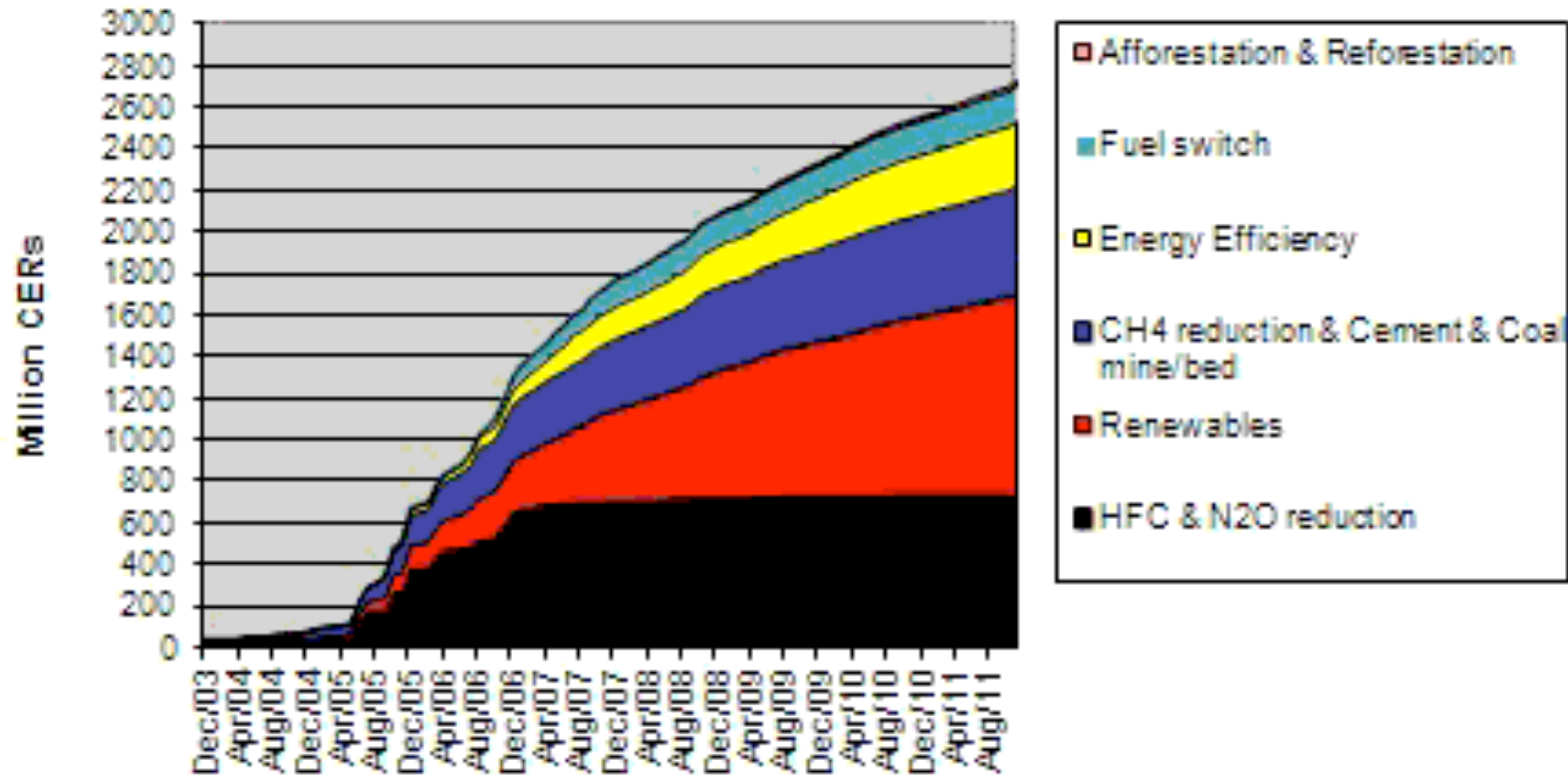
| Factors | Description | Difficulty |
|------------------------------|--|------------|
| 1 Additionality | <ul style="list-style-type: none">• Additional effort• Not financially interesting• Early consideration | |
| 2 Methodology | <ul style="list-style-type: none">• Approved methodology by the UNFCCC• Possibility to develop a new methodology• http://cdm.unfccc.int/DOE/scopes.html | |
| 3 Critical size | <ul style="list-style-type: none">• High transaction costs• Bigger than 25'000 tCO2e/y | |
| 4 Sustainable development | <ul style="list-style-type: none">• Project needs to contribute to sustainable development in host country• Each country is free to define its own rules | |

Number of CDM projects in each category of types



Agriculture: 2 projects at validation

“Chemical projects account for 2% of project but represent 27% CERs of the expected CERs by 2012...”



Agriculture: 0 issued credits



DURBAN UPDATE!



- Kyoto protocol prolonged until 2017 with possible extension 2020



- No post Kyoto agreement
- No commitment to a “low carbon economy”
- Kanada, Japan and Russia stepped out of Kyoto



- Post Kyoto agreement to be developed and ratified up to 2015, valid from 2020 onwards
- Is the Kyoto protocol extension a legally binding agreement that triggers EUs reduction commitment from 20% to 30% up to 2020?
- Momentum created to further mitigating emissions in agriculture but no clear way forward

A number of factors need to be fulfilled for a project to become viable carbon credit project



| Factors | Description | Difficulty |
|------------------------------|--|------------|
| 1 Additionality | <ul style="list-style-type: none">• Additional effort• Not financially interesting• Early consideration | |
| 2 Methodology | <ul style="list-style-type: none">• Approved methodology by the UNFCCC• Possibility to develop a new methodology• http://cdm.unfccc.int/DOE/scopes.html | |
| 3 Critical size | <ul style="list-style-type: none">• High transaction costs• Bigger than 25'000 tCO2e/y | |
| 4 Sustainable development | <ul style="list-style-type: none">• Project needs to contribute to sustainable development in host country• Each country is free to define its own rules | |



-
- Basic concepts of CDM and current state



The size and the meth issue.... and its solution

- A bit of South Pole
-

Key challenges to develop agriculture methodologies



- **Monitoring:**
 - Restrictive UNFCCC monitoring requirements vs. farmers monitoring capabilities
- **Heterogeneity:**
 - Agricultural practice,
 - Soil type/condition within one field
 - Regional climate conditions
- **Leakage:**
 - Change of agriculture practice might lead to change in outputs
- **Certified Emissions Reductions (CERs) ownership:**
 - CERs belong to the entity responsible for the reduction (farmers)
 - Carbon project managers are mostly not farmers
- **Type of credits issued:**
 - Credits from potential methodologies on land use and land use change are temporary, limited demand

Projects (stand-alone CDM) need to be of a sufficient scale to be attractive & economically viable



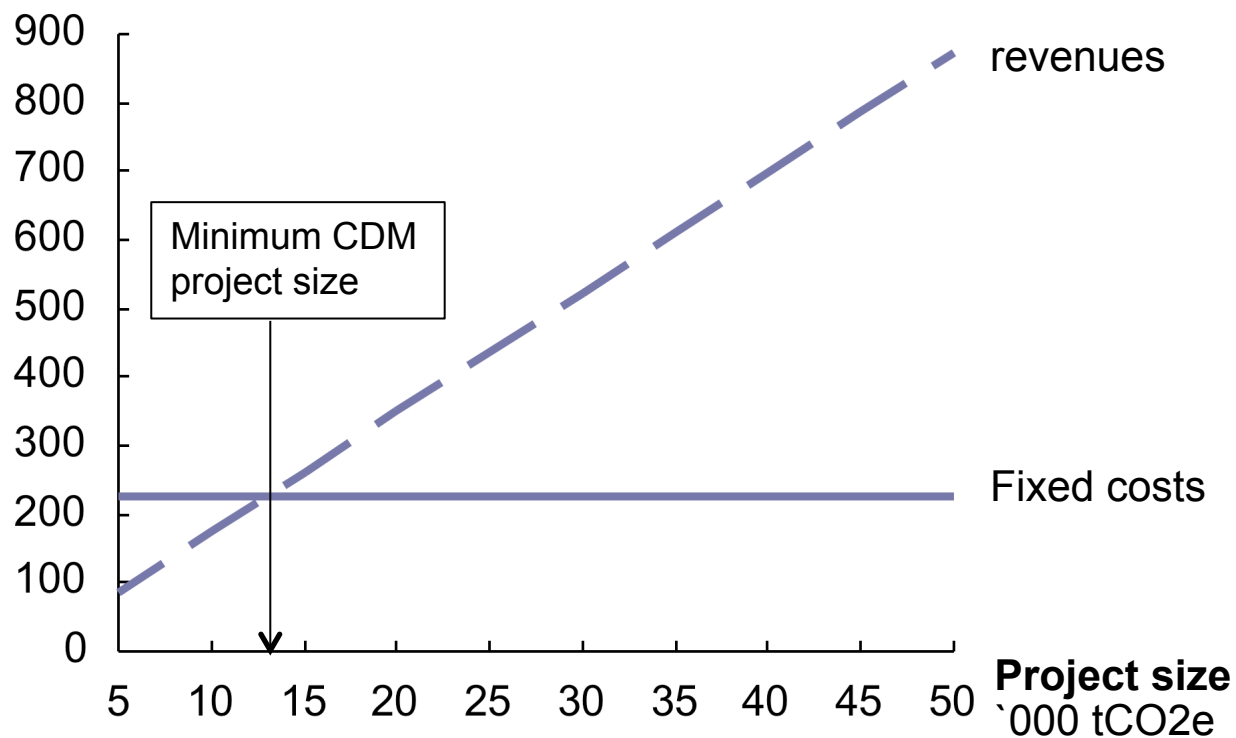
Registering CDM projects involves a number of fixed costs...

- (PIN development)
- PDD development
- Advisory services
- Validation
- Registration
- Verification
- Issuance

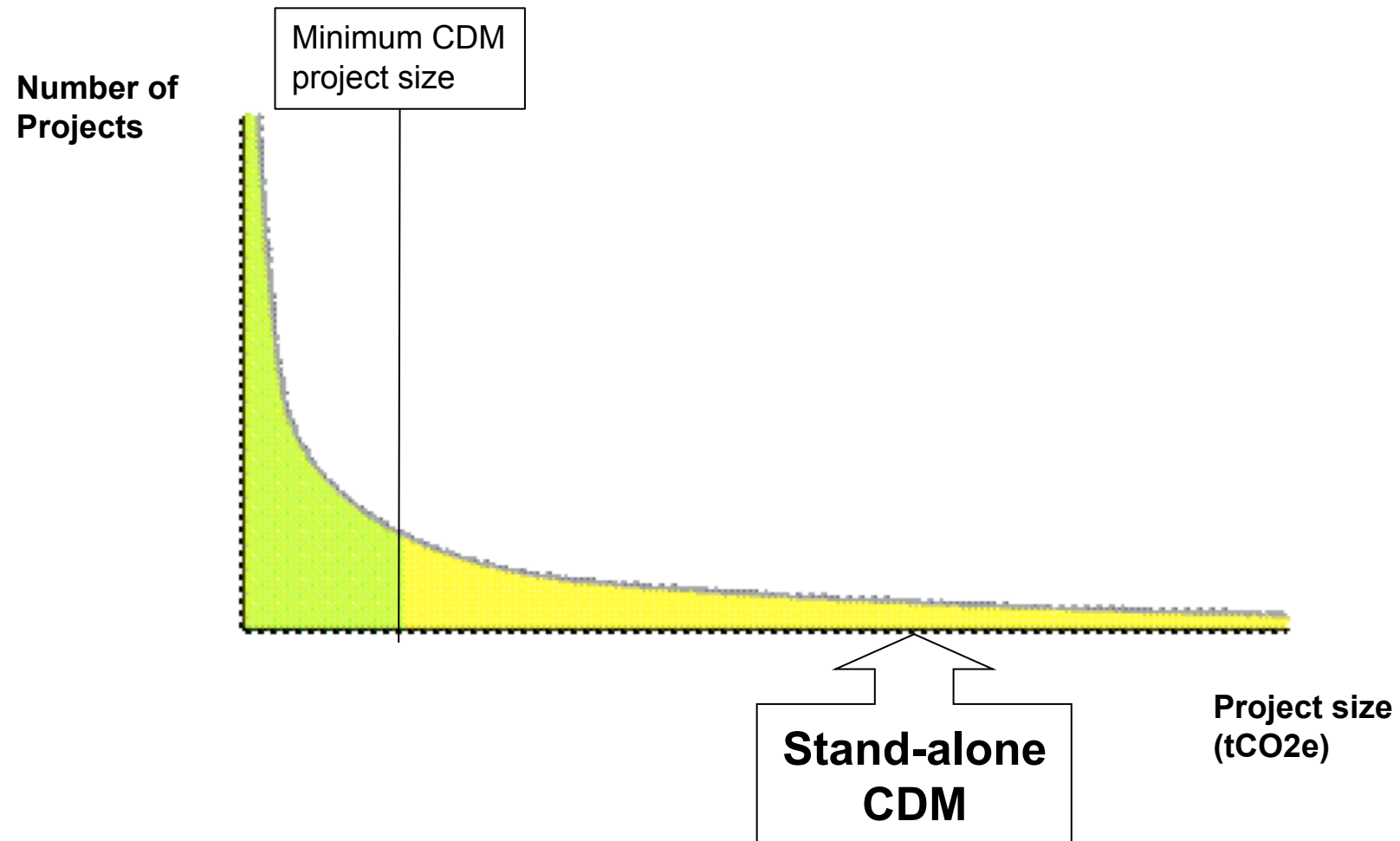
... And therefore a project requires sufficient scale to overcome these costs and to be profitable/attractive

Present value of CDM costs and revenues

'000 EUR



Most of CDM projects are too small to be undertaken as stand-alone activities



Adapted from C Figueres & M Phillips, 2007, unpublished draft.



Proposed solutions

Failures

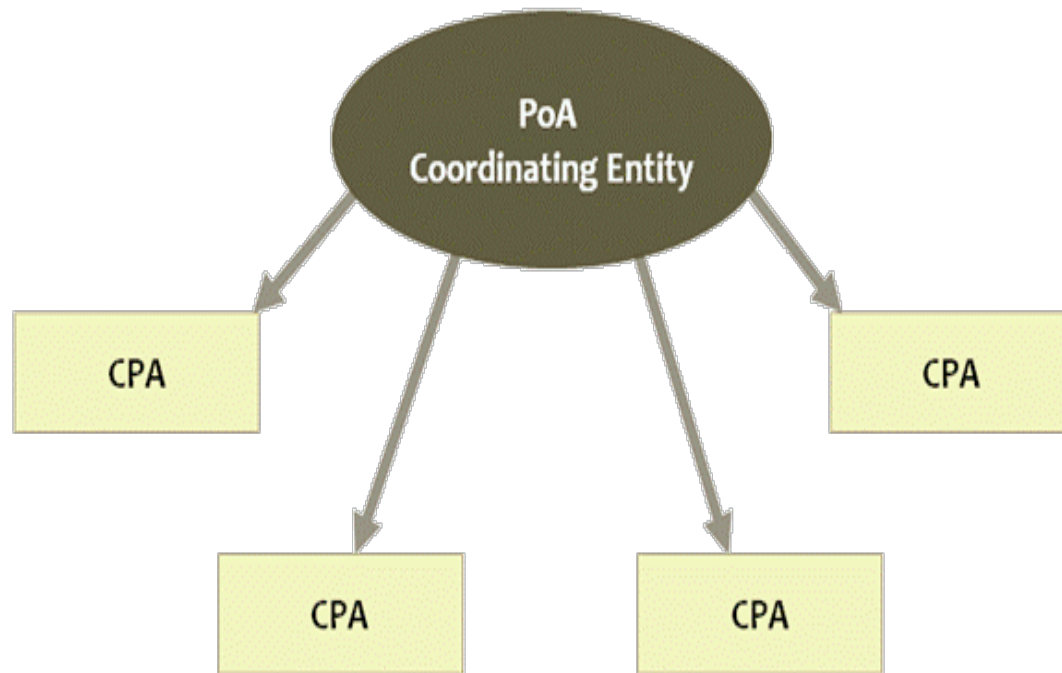
- Non-uniform distribution of CDM (EB50)
- Simplified methodologies and rules
- Reduced transaction costs

- Issued CERs limited to “high density“ CDM projects
- **Programmatic approach of CDM (EB32)**

Which sectors/projects types show „low density“ but high potential?



Definition



- Voluntary coordinated action by a private or public entity implementing any policy/measure or stated goal



A PoA is the framework that defines broad parameters for project Activities (CPAs) that are eligible for inclusion in the PoA.



**PoAs create four strategic opportunities
for taking the carbon markets to scale...**

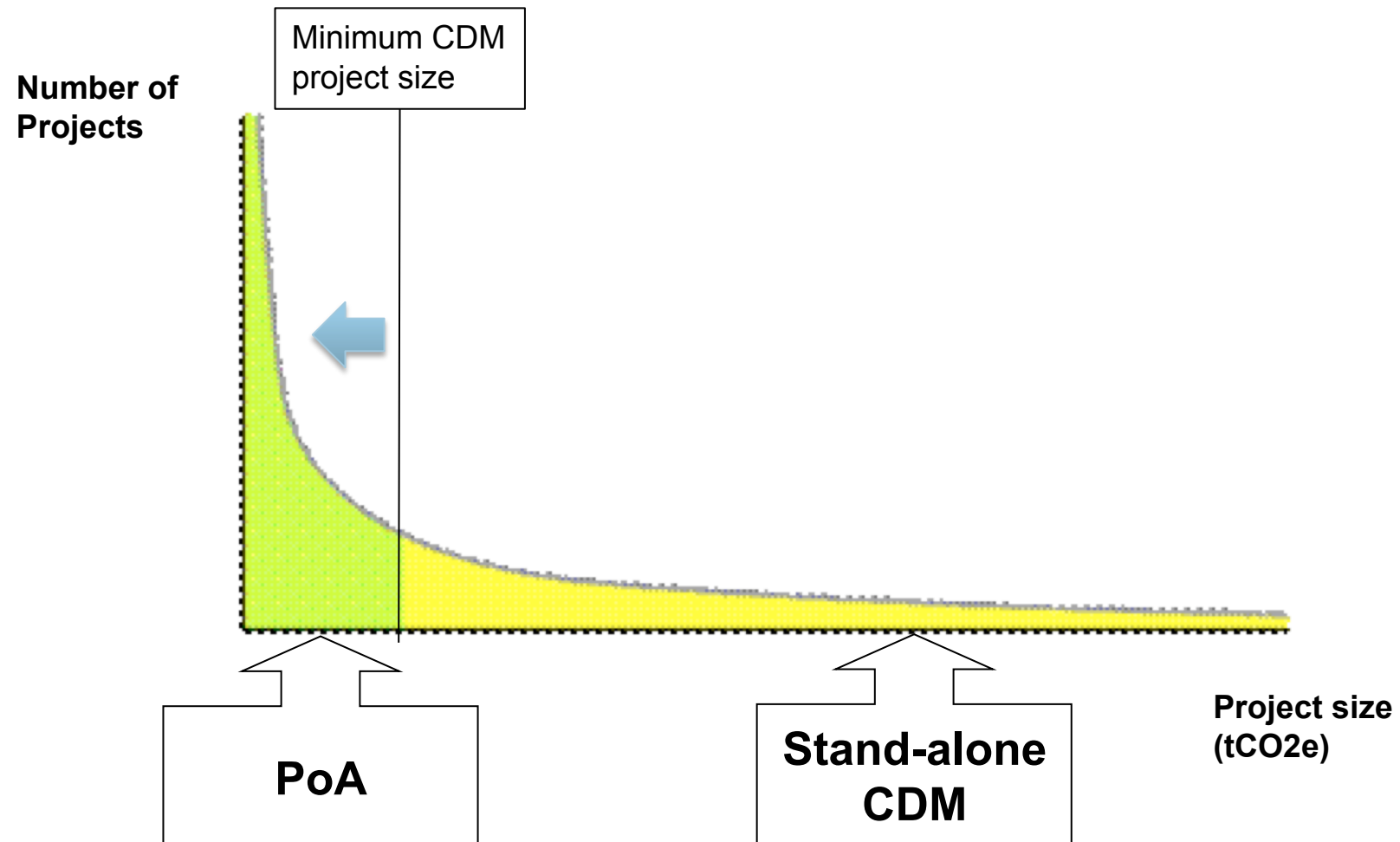
Opportunity 1: Extend CDM to micro-activities, lower transaction costs



- PoAs are ideal for CFLs, **small farming activities**, solar water heaters, cook stoves, household biogas, distributed energy, etc.
 - Registered PoAs can generate recurring revenues to reduce need for working capital
- ⇒ Most of PoAs in validation cover household sector (<<1% for stand-alone CDM projects)
- ⇒ Besides South Pole only modest private sector activity in this segment



Opportunity 1: Thanks to PoA the minimum CDM size limit can be lowered



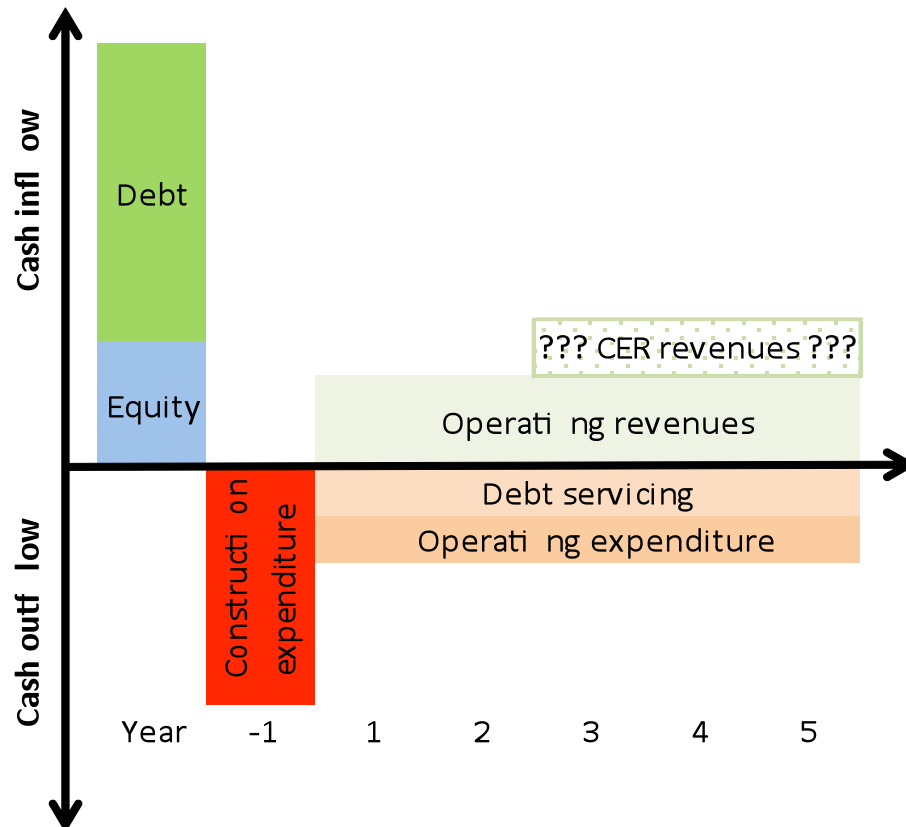
Adapted from C Figueres & M Phillips, 2007, unpublished draft.

Opportunity 2: Provide upfront finance under a PoA



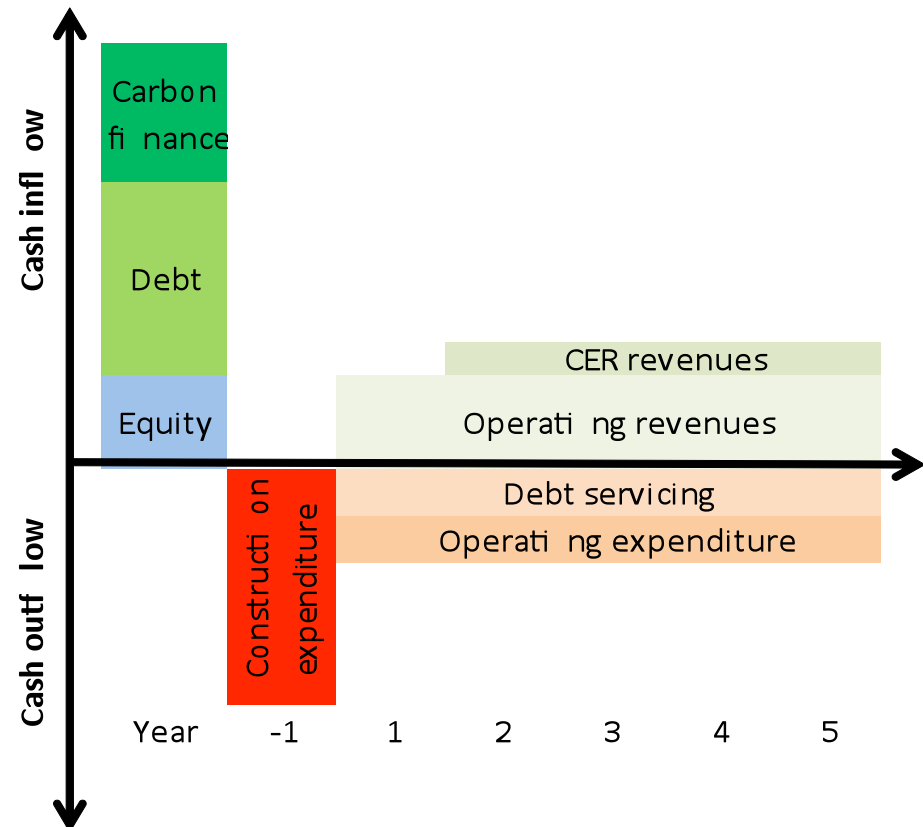
Stand-alone RE projects

- 3 years until CDM revenues materialize (registration + 1st verification)
 - Perceived high registration risk
- ⇒ CERs are not bankable at financial closure



Under registered RE PoA

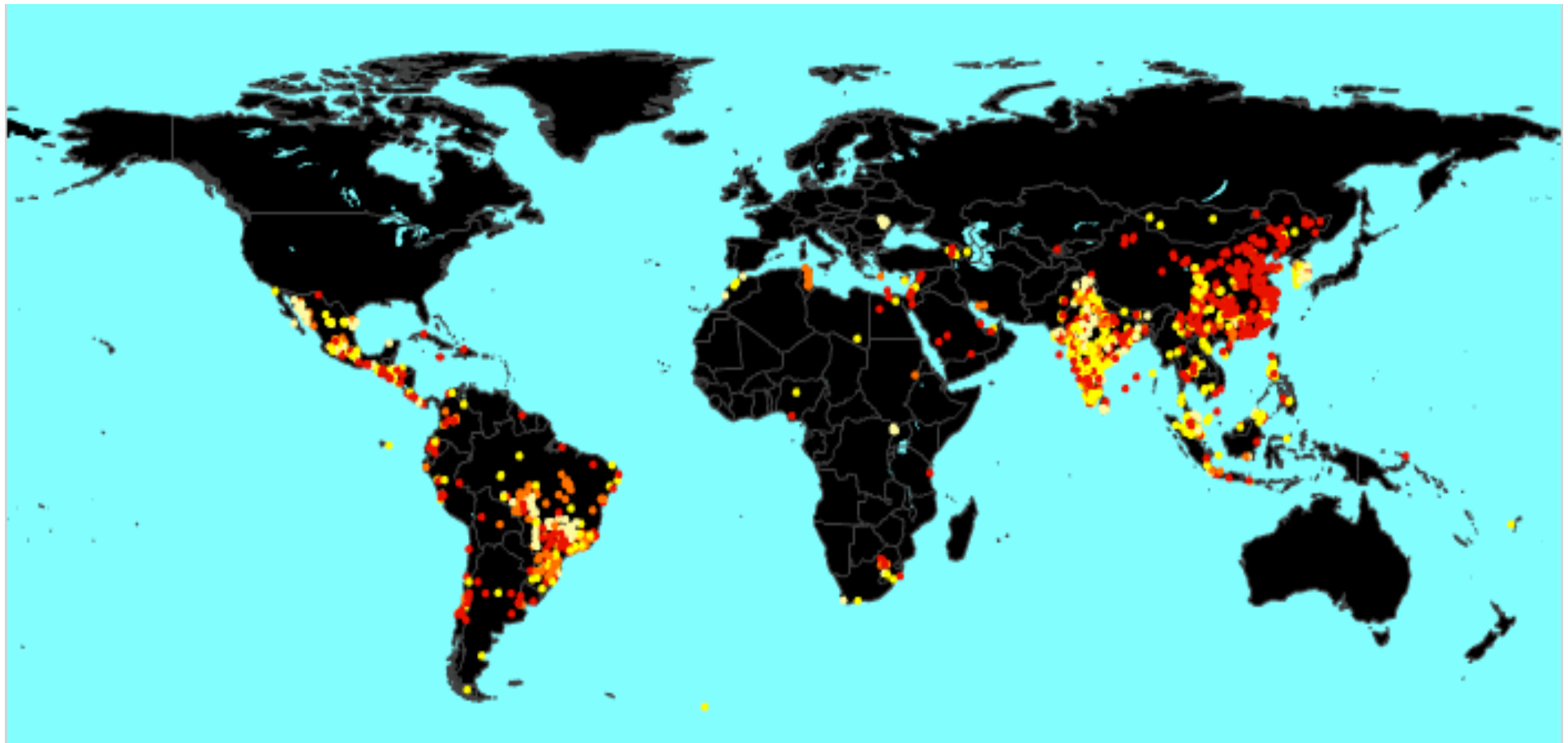
- ~15 months until CDM revenues materialize (inclusion + 1st verification)
 - Low inclusion risk
- ⇒ CERs become bankable at financial closure



Opportunity 3: Improve regional representation of CDM



- Lower transactions costs & bankable CDM revenues
- Regional PoAs



Opportuntiy 4: Step towards NAMAs & sect. mechanisms



PoAs establish operational features of NAMA, e.g.

- Project identification & inclusion
- Program finance
- Carbon incentives for individual sites
- Monitoring, reporting verification (MRV)

Implications for Governments:

- ⇒ Identify national development / GHG mitigation priorities that can be implemented through PoAs
- ⇒ Promote PoAs to learn how to address NAMA challenges
- ⇒ Experiment with implementation models (public, private or PPPs)



The way forward for carbon credits from agriculture...

- Develop new STANDARDIZED methodologies
- Based on improved data inventory in particular on soil carbon
- Bring down transaction costs via the development of PoAs
- Use PoAs to scale up nationally/internationally and further act as a pilot case for NAMAs



-
- Basic concepts of CDM and current state
 - The size and the meth issue.... and its solution



A bit of South Pole



South Pole – developing solutions worldwide

Best Project Developer 2011
Environmental Finance's
Voluntary Carbon Markets Survey

- Head office
- Satellite office
- Local presence



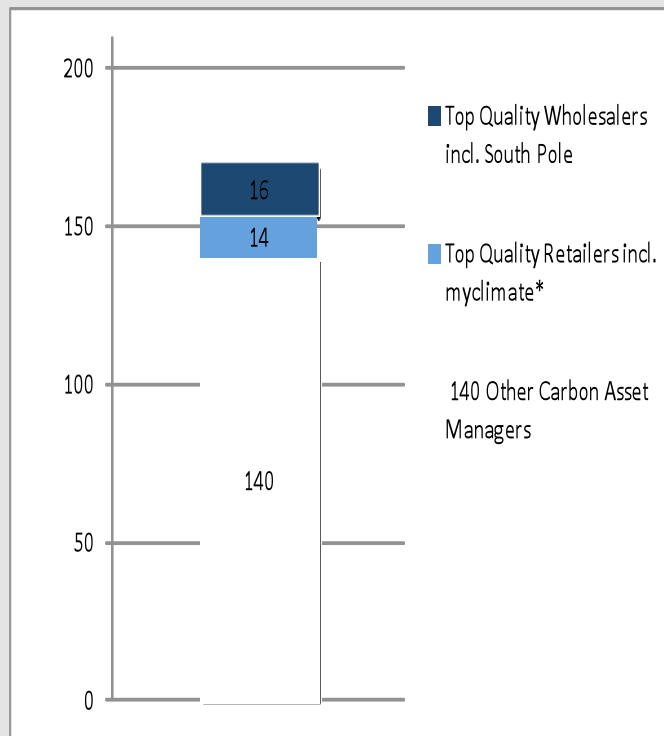
- 2006: Incorporation in Zurich / Switzerland
- 2011: ten offices worldwide
- 2011: Best Project Developer*
- Over 80 carbon pros from 22 countries
- Projects in 21 countries
- Specialized in high-quality “Gold Standard”
- Developing both voluntary and compliance credits

* Environmental Finance:
Voluntary Carbon Market Survey 2011

International market leader in compliance and voluntary markets



Rated among the world's top carbon wholesalers



*founded by South Pole partners in 2002
Source: The ENDS Guide to Carbon Offsets, 2008

Carbon market firsts

- Brought to market the **first ever Gold Standard carbon credits** (Biomass Malavalli / India)
- Handled the **first ever international Kyoto carbon credit transfer**
- **First company to cancel carbon credits**, making sure that they cannot be resold
- **First issuance of Social Carbon credits** outside Latin America

Premium quality



- **Leadership Position on Gold Standard (GS) Registry: 45 projects listed**
- **One of the top GS VER developers** with 10% of entire GS VER pipeline, **market leader in issued GS VER credits**
- **Best Project Developer** (Environmental Finance: Voluntary Carbon Market Survey 2011)



PoA advisory mandates

| Advisory Assignment | Location | Description |
|--|-----------------------------|---|
| CFL feasibility study | El Salvador | Feasibility study, program design and capacity development for UNDP El Salvador |
| PoAs under the Mediterranean Solar Plan | North Africa, Mediterranean | PoA capacity development and preparation of five PoAs in Mediterranean countries that will be supported under the first phase of the Mediterranean Solar Plan (Union pour la Méditerranée) |
| Kick-starting the carbon markets in Africa | Africa | South Pole has developed a detailed analysis of opportunities for developing PoAs in Africa for the Africa Progress Panel. [www.africaprogresspanel.org/cdmworkshop/index.shtml] |
| Energy efficient lighting for sub-Saharan Africa | Sub-Saharan Africa | South Pole staff developed a feasibility study for the World Bank on energy efficient lighting programs in Africa with a particular focus on micro-scale solar devices. |
| Building Energy Efficiency PoA | India | Development of a PoA for energy efficiency in the building sector in India. |
| Energy efficient Brick Kilns | South-Africa | Feasibility study for developing a PoA targeting the deployment of energy efficient vertical shaft brick Kilns in South-Africa. |
| Cook-Stove energy efficiency | Peru | South Pole has prepared a PIN and draft PoA documentation, capacitated national ministries on PoAs in general and increased the local support for this specific PoA |
| National PoA capacity building | Brazil | Capacity Development for potential CMEs during four three day workshops in four different cities within Brazil |
| Hydro PoA Feasibility Study | Georgia | The feasibility of implementing a PoA to increase the use of the large hydropower potential in Georgia has been assessed by South Pole staff. |
| Pig Farm Manure Management PoA Feasibility Study | Cambodia | Feasibility study for a potential PoA that seeks to install manure management, biogas production and use technology. |
| Feasibility Study Energy Efficiency PoA | Mexico | Elaboration and feasibility assessment of a potential PoA in energy efficiency. |
| Solar Water Heater PoA Nepal | Nepal | South Pole has prepared a feasibility study for a PoA covering solar thermal and PV applications in Nepal. The outcome leadt to a Baseline Development, carbon related feasibility study and development of PoA documentation. |
| Cookstoves in Ghana | Ghana | South Pole has developed a feasibility study for cookstove PoAs planned by Care International in Ghana. |
| Regional cookstove PoA sub-Saharan Africa | Southern Africa | Feasibility study for regional cookstove PoAs covering countries in Southern Africa conducted for GTZ BECCAP Carbon Facility. |
| Cook stove PoAs in East and West Africa | East and West Africa | South Pole develops two international cook stove PoAs together with a cook stove technology provider. |
| Energy Efficiency PoA in SME Steel Clusters in India | India | South Pole developed an energy efficiency PoA in the SME steel sector for KfW of Germany and supports currently its validation. |
| PV kits in Madagascar | Sub-Saharan Africa | South Pole staff developed the CDM documentation for a PV kits programme developed in Madagascar. |
| Trigeneration PoA | Saudi- Arabia | Current development of a Trigeneneration PoA up to registration in collaboration with a technology provider. |



PoAs owned and managed by South Pole

| Programme | Methodology | Location | Description |
|---|--------------------|-----------------|---|
| Hydropower PoA Indonesia | AMS-I.D. | Indonesia | The PoA covers run-of-river hydropower plants in Indonesia. It is currently undergoing validation. |
| Hydropower PoA Viet-Nam | ACM002 | Viet-Nam | The PoA covers hydropower plants in Viet-Nam. It is the first ever large-scale PoA submitted for validation. |
| Composting PoA | AMS-III.F | Indonesia | The PoA covers composting and co-composting activities in the Indonesian palm oil sector. It is currently undergoing validation. |
| Hydropower PoA Central America | AMS-I.D | Central America | The PoA is a multinational programme covering small-scale hydropower plants within Central America. |
| Renewable Energy PoA East Africa | AMS-I.D | East Africa | The PoA is a multinational programme covering small-scale renewable energy plants within East Africa helping to increase rural electrification. |
| “Turbococinas”, rural cooking stove substitution program in El Salvador | AMS-II.G | El Salvador | South Pole developed the cook stove PoA and brought it to registration. |
| Water Purification PoA | AMS-III.AV | World-wide | The PoA intends to cover as much countries as possible to provide a maximum amount of carbon support to the bottom of the income pyramid. Currently under Technical Review. |
| Renewable Energy PoA India | AMS-I.D | India | South Pole develops a PoA in Mexico that allows solar, hydro and wind projects to join |
| South East Asia Biogas PoA | AMS-III.H, AMS-I.D | Indonesia | The recovered biogas from wastewater processes will be used for renewable energy generation within this PoA. |



Pioneers on standardized methodologies

- **DFID Standardizing the CDM:** SouthPole together with Perspectives, Pöyry and GERES successfully completed a study commissioned by the Department for International Development (DIFID), UK, on piloting greater use of standardized approaches in the CDM. In total, nine country specific case studies (three per methodology) have assessed the effectiveness as well as the practicability of the approaches, especially with regard to national circumstances. The project outputs include fully drafted methodologies, methodology justification documents, study reports with key findings and country-specific case studies.
- **LAC forum:** Christian was in a panel on CDM Standardized Baselines: policy developments and opportunities for application in LAC at [Latin American Carbon Forum](#), San José (Costa Rica), September 29.
- **Workshop on Standardized baselines:** Paris, October 2011. Organized by the World Bank. Presentation by Christoph and Sophie on : “A standardized CDM: to scale up Carbon Crediting and Improve Access”.
- **World Bank Standardized baselines:** the study demonstrates how standardized baselines in renewable energy, energy efficiency, transport and waste management sectors can be adapted to promote regional balance in the uptake of CDM projects and programs and to scale up mitigation actions. The analytical activity is based on the desk review and analysis. It includes proposals for standardization of CDM methodologies in renewable energy, energy efficiency, transport and waste management. Check-lists for registration and prototypes of quantification guidelines as a basis for simplifying the registration requirements for projects/programs were developed.
- **Durban:** COP 17, Christoph presented “Case Study on submission of Standardized Baselines and Checklists”



Thanks for your attention!

Zurich
Patrick Horka
Phone: +41 43 501 35 50
p.horka@southpolecarbon.com