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POA for middle size Biogas plants in the agriculture sector in China

中国中型沼气项目规划类CDM的开发

SINO-GERMAN Project on Optimization of
Biomass Utilization

中德生物质能优化利用项目

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Content 内容



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- What is carbon finance?
碳金融简介
- What are the benefits for you
碳金融的益处
- Who can apply?
申请条件
- How do I apply?
申请过程
- Case Study
案例

What is carbon finance

什么是碳金融



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- Commitment of developed countries to reduce carbon emissions
发达国家对碳减排的承诺
 - 1997 < Kyoto Protocol >
1997 《京都议定书》
 - Framework between developed countries and developing countries on GHG emission reduction
发达国家及发展中国家减少温室气体排放的框架协议
 - “common but differentiated responsibility” implies that developing countries do not have obligations to reduce emission
“共同但有区别的责任” → 即发展中国家没有减排义务

What is carbon finance

什么是碳金融



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- CDM is a mechanism under the Kyoto Protocol

CDM 是《京都议定书》中引入的机制

- Developed countries can purchase emission reductions from developing countries

发达国家可以从发展中国家购买减排信用额

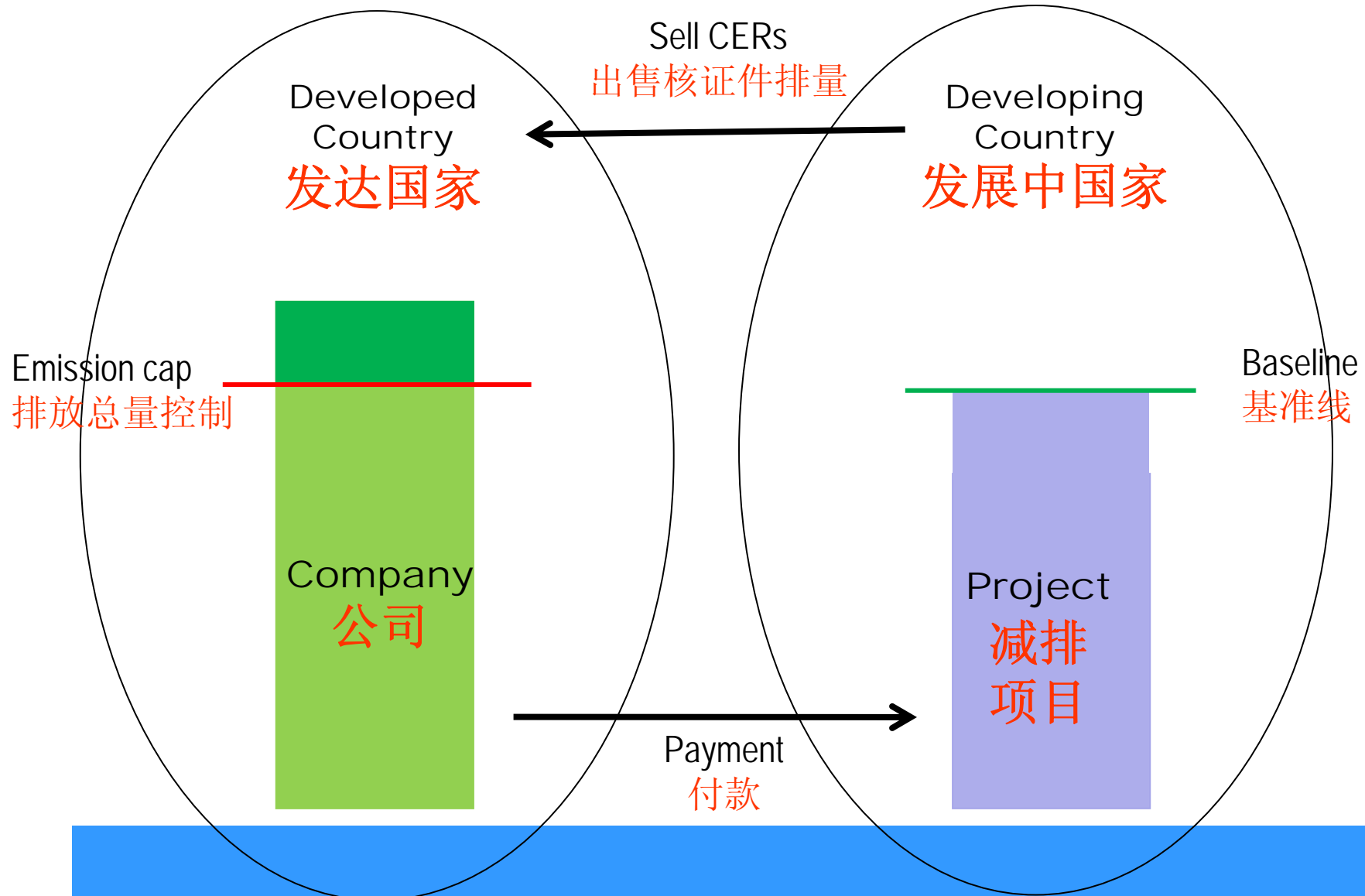
- Emission reduction projects in developing countries can benefit from financial support and advanced technology

发展中国家的减排项目可从中获得资金援助和先进技术

Basic principle of Carbon Trading 减排交易的基本原则



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Main characteristics of CDM

CDM的主要特征



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- International mechanisms supervised by the UNFCCC
在联合国监管下的国际机制
- Emission reductions have to be real and verifiable
减排必须真实可信
- Significant income to emission reduction projects in developing countries
为发展中国家的减排项目提供大量收入
- China main host country for CDM projects
中国是主要的CDM项目东道国
 - More than 2,400 projects approved by NDRC
2,400多个项目已通过国家发改委
 - More than 800 Chinese projects approved by UNFCCC
800多个项目已被联合国认可

CDM – 主要机构



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- Executive Board (EB) 联合国的执行理事会 (EB) :
 - Project registration 注册项目
 - Establishment of CDM policy 制定CDM 的相关规定
- NDRC (Designated National Authority) 发改委 (指定国家管理机构) :
 - Establishment of domestic CDM policy 制定国内的CDM相关规定
 - Project approval 项目批准
- DOE (independent third party) 指定经营实体 (独立第三方) :
 - Project validation/verification 项目审定/核查

Benefits of CDM

CDM收益



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- Additional income to project owners over several years
在未来项目运行阶段为业主带来额外的收益
 - EUR 8 per ton of CO₂ 每吨CO₂的价格是8欧元

Example:

Biogas Project: 17 Animal Farms with 50,000 Dairy cows

Emission reductions: 80,000 tCO₂e

Annual CER income: CNY ~5.7 million

实例:

沼气项目: 17个养牛场共5万头奶牛

年减排量: 8万吨CO₂

每年减排收入: 572 万元

Requirements for CDM application 申请CDM的条件



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- Third-party certification of emission reductions
第三方的减排认证
- Emission reduction project, e.g. biogas 减排项目（沼气）
- Project owner to be Chinese 项目业主需是中国公司/机构
- At early stage of project implementation (feasibility study stage) 项目处于初期阶段（可研阶段）
- Two basic concepts 两个基本概念:
 - Additionality 额外性
 - Baseline 基准线



Additionality 额外性

Prove the project has financial, technological or other barriers, and the project can not be implemented without the support of CDM. Hence, there would be no emission reduction.

证明如果没有CDM的支持（无其他财政支持），项目存在诸如财务、技术、融资、风险和人才方面的竞争劣势和/或障碍因素，靠国内条件难以实现，因此无减排量产生

Example 实例：

Project IRR could not reach the national benchmark without CDM support (renewable energy 8%).

项目的内部收益率在没有CDM资助的情况下达不到国家标准（可再生能源=8%）

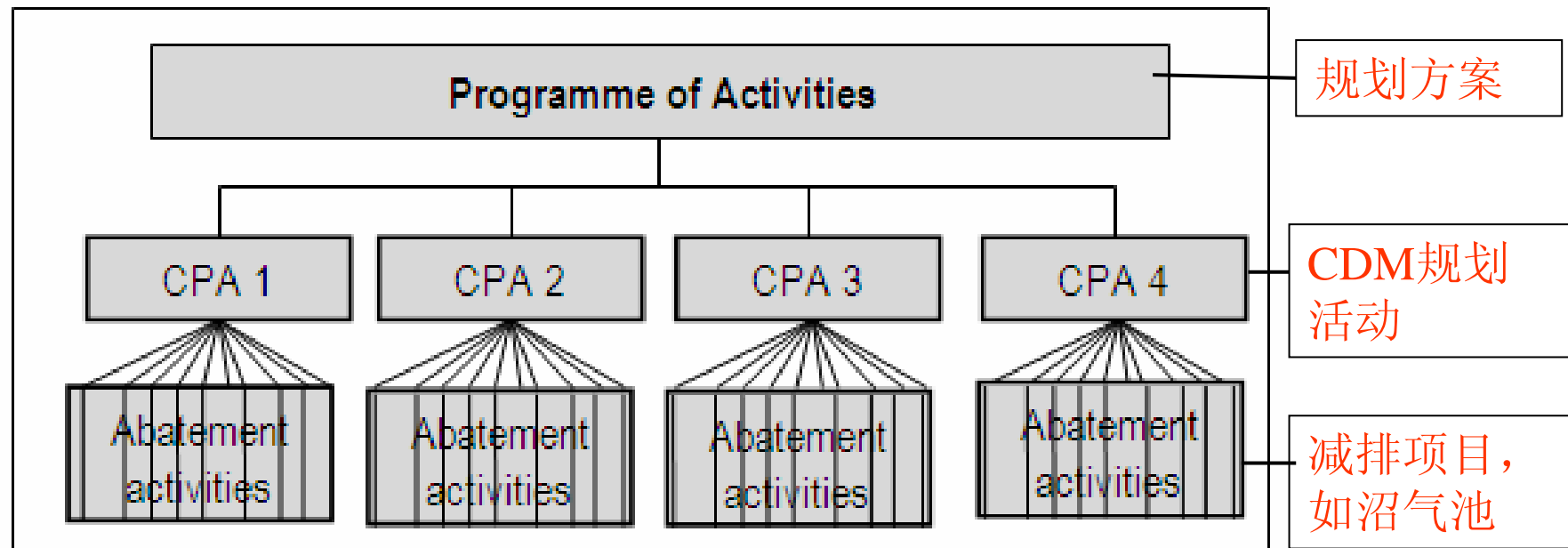
Introduction POA

规划类CDM介绍



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- “bundling” of several small CDM Project Activities (CPAs) under one Programme of Activity (PoA)
把很多小型的CDM规划活动(CPA)进行“打捆”并纳入一个规划方案(PoA)





POA basics

规划类CDM项目的基础

- Multiple locations, across countries
项目可位于不同地区，也可位于不同国家
 - E.g. several counties in one province or several provinces
例如：一个省内得多个县城或不同省份
- Multiple project participants (PP) + coordinating entity
各类项目参与方（PP）+ 协调管理机构
 - e.g. numerous owners of biogas plants
例如，多个沼气项目的业主
- One project activity needed for registration, rest join later
此规划只需注册一次，规划下的项目可以之后被纳入
- CPAs can be added over whole crediting period
在整个计入期内随时都可添加新的CPA
- CPAs included at a later stage do not require EB approval
之后被纳入PoA的CPA无需通过EB认可

POA – Coordinating Entity

规划类CDM-协调管理机构



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- Numerous smaller project units 包含大量同类小型项目
- Coordinated by one entity: Coordinating or Managing Entity 由一个实体协调：协调管理机构
 - Local CDM Center 当地CDM中心
 - Technology provider 技术供应商
 - Any registered company 任何合法注册的公司
 - ➔ Government entities are not eligible 政府机构不合格
- Tasks of Coordinating Entity 协调管理机构的责任
 - Counterparty for buyer of CDM Credits 碳信用买方的协议方
 - Coordinate monitoring 协调监测
 - Receive and distribute CDM revenues 获得与分配CDM收益
 - Possible: Technical assistance, maintenance services 技术与维护支持

CDM development cycle

CDM项目开发流程



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PDD: Emission reduction calculation



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项目开发文件：减排量计算

- Approved methodologies for calculation of baseline emissions and emission reductions available
已被认可的计算减排量的方法学
- For small animal farm biogas projects 可应用于养殖场沼气发电的小型方法学：
 - AMS.III.D “Methane recovery in animal manure management systems” “在粪便处理系统中的沼气回收与利用”
 - AMS.I.C “Thermal energy production with or without electricity” “可发电或不发电的供热项目”
 - AMS.I.D “Grid connected renewable electricity generation” “可上网的可再生能源发电项目”

PDD: Baseline

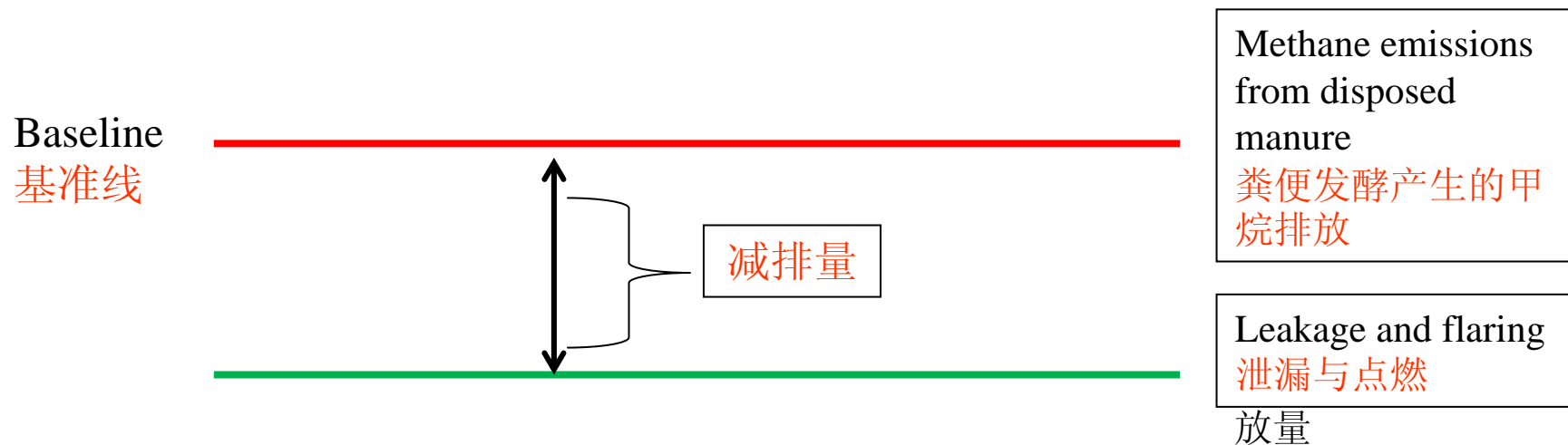
项目开发文件：基准线



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The development trend in the developing country without CDM support. The emission produced by the project under the current condition without CDM support.

在没有CDM项目的情况下，发展中国家的自然发展状况与趋势。即提议的CDM项目产生的减排效果在现时科技水平及发展状况下没有此CDM活动时产生的排放量。



Emission reduction calculation model

减排量计算模型



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Project emission reduction calculation tool

项目减排量计算工具

CDM development cycle

CDM项目开发流程



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Validation 审定

- Validation of emission reduction calculation by 3rd party, so called Designated Operational Entities
减排量计算由第三方认证机构（DOE）进行审查
- Chinese and international entities
第三方认证机构为中国或国际机构
- Tasks and responsibilities of DOEs
DOE 的责任与义务
 - Review PDD and monitoring plan 检查项目设计文件和监测计划
 - Site visit 现场检查
 - Submit documents to Executive Board 向联合国执行理事会提交审定报告

CDM development cycle

CDM项目开发流程



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Parameters to be monitored 监测数据



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Number of days the biogas plant is operational 项目运行天数

Production of fertilizer 肥料产量

Electricity and fossil fuel consumption of the project 项目的化石能源消耗



Livestock population and average weight of livestock 牲畜数量和平均重量

Fraction of the manure handled 进行处理的粪便比例

Biogas flared or combusted 沼气点燃或利用

Temperature and pressure of the biogas 沼气温与压强

CDM development cycle

CDM项目开发流程



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Verification 核查

- Verification that emission reductions have actually taken place
在项目注册之后，对项目实际产生的减排量进行核查
- Third-party verification to ensure independent assessment
核查工作由第三方认证机构进行，为确保评估的公正性

CDM development cycle

CDM项目开发流程



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Case Study 案例

- Biogas PoA in Liaoning Province
在辽宁省开发的规划类CDM项目

Outline 项目基本情况:

- Implementation of 500 biogas digesters over a period of 10 years
在未来十年内开发500个养殖场沼气项目
- Annual emission reductions ~1,000,000 tCO₂e
预计每年减排量为1百万吨
- Annual income: ~ CNY 71 million
每年减排收益7千1百万人民币

Contact 联系方式



CLIMATE FOCUS

Climate Focus Beijing Representative Office

气候焦点公司北京代表处

Karla Lieberg (李珂兰)

Tel: 010-840 945 94

E-mail: k.lieberg@climatefocus.com

Yuan Chi (袁驰)

Tel: 010-840 945 04

E-mail: c.yuan@climatefocus.com

<http://www.climatefocus.com>