



**How to use Carbon Finance to facilitate development of biogas--
experience drawn from the World Bank in China**
如何利用碳融资工具加速沼气的发展--世界银行在中国的经验

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What is Carbon Finance | 如何理解碳金融 |

Carbon Finance includes various of financial regulation formulation, project financing and emission reduction trading

碳金融包括一系列的金融规则制定和金融投资及减排交易活动

- Objective: promoting Green House Gas emission reductions through market and financial instrument globally

目标：在全球利用市场机制和金融手段促进温室气体减缓活动

- Participates: government, banks/ securities/insurances/funds, enterprises and etc.

参与主体：政府，银行/证券/保险/基金等主流金融机构，企业实体等

- Products: low carbon related investment and financing, carbon allowance allocation, carbon credits transaction, carbon rights auction and etc.

产品：低碳相关的投融资，碳配额分配，碳现/期货交易，碳期权拍卖等

What is Carbon Finance II 如何理解碳金融 II

- Two types of regulatory basis for Carbon Finance: Kyoto Protocol (EU ETS, JI, CDM etc.) and regional binding agreement (CCX, NSW GGAS etc.)

碳金融的两类法律框架基础：京都议定书（欧盟排放交易体系，清洁发展机制和联合履约市场等）和区域型法律合约（芝加哥气候交易所和澳大利亚新南威尔士气候减排体系等）

- Two types of incentive for Carbon Finance: regulatory/compliance based carbon finance and voluntary based carbon finance

碳金融的两类开展动机：强制履约为基础的碳金融和自愿减排为基础的碳金融

- Four levels for Carbon Finance to happen: multi-countries level, national level, provincial/city/sectional/state level and project level

碳金融的活动的四个层面：多国合作层面，国家级层面，省/州/市/行业层面和项目层面

The most importance regulatory context for Carbon Finance :The Kyoto Protocol 为碳金融提供了最重要政策环境的京都议定书

1. Emission Trading 排放交易机制

- q Carbon trading based on allowance 基于配额分配的交易机制
 - § “Cap and Trading” Whatever emission cap set and allocated by governor, “总量控制与交易”，由管理者制定总的排放配额，并在参与者间进行分配，
 - § Both allowances (emission rights) and emission reductions (from activities that generate measurable reductions in emissions) are traded by participations . 参与者根据自身的需要进行排放配额及/或减排量的买卖。

2. Joint Implementation 联合履约机制

- q Annex I countries jointly develop project based emission reduction project and share the credits 附件一国家（主要为发达国家）以项目为基础，共同削减温室气体排放。
- q The emission reductions are shared by those countries and not served for trading 目标和削减量为参与方共享

3. Clean Development Mechanism 清洁发展机制

- q Purchase of emission reductions credits from projects based in developing countries by Annex 1 countries 附件一国家购买发展中国家的减排项目产生的减排量
- q Lowering the cost of reducing greenhouse gas (GHGs) emissions 降低附件一国家的减排成本
- q Encouraging technology transferring 推动技术转让

Examples of other regulatory/agreement basis for Carbon Finance 为碳金融提供政策或合约基础的其他例子

- The European Climate Change Program I (2000), The Directive on Emission Trading in EU (2005), Plan on Climate Change and Energy Development (2008)
欧盟气候变化方案2000， 欧盟温室气体排放交易指令2005， 气候及能源一揽子计划2008。
- UK Climate Change Bill 英国气候变化法案 2008
- UK Carbon Reduction Commitment, and UK Feed in Tariff 2010
英国碳减排承诺能效机制和可再生能源发电补贴 2010
- US Regional Greenhouse Gas Initiative RGGI 2009
美国东北部九州的区域温室气体倡议 2009

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Major parties on carbon Finance Market 碳金融市场上的主要参与方

- Carbon market for carbon credits transactions 碳交易市场
- Enterprisers who are emitting GHG 有排放产生的企业
- UNFCCC ED, Designed national authority ,designed operation entity
联合国气候变化框架公约理事会，东道国主管机构，指定经营实体
- Investors 投资者
 - Carbon Funds 碳基金
 - Commercial Bank 商业银行
 - Hedge funds and private equity financing funds 对冲基金和私募基金
 - international organizations 国际组织
- Intermediaries and service providers 中介服务机构
 - consulting firm for carbon asset development 碳资产开发咨询机构
 - carbon rating agency 碳信用评级机构
 - carbon auditing agency 碳审计服务机构
 - carbon information platform 碳信息服务机构
 - carbon trading issuance agency 碳交易保险机构

Two types of carbon market 碳市场的两大类

Allowance based carbon market 基于配额的碳市场

- q Trading target: carbon allowance
交易对象：碳配额
- q Trading basis: cap and trade
交易机制：总量限制与交易
- q Liable party: emission intensive enterprises
承担义务主体：高排放企业
- q Including both compliance market (EU ETS etc.) and voluntary cap and trade scheme (CCX, VER etc.)
包括强制性配额交易（如EU ETS）和自愿性配额交易（如CCX, VER）

Project based carbon market 基于项目的碳市场

- q Carbon credit
碳量
- q Baseline and project scenario
基准线和项目建成后情况
- q Depending on difference methodologies, not limited to emission intensive enterprises to be liable for reductions
由不同方法学决定，不一定局限在高排放企业
- q Including JI, CDM (including primary and secondary market) and VER
包括联合履约，清洁发展机制（包括一级和二级市场）和自愿减排

Those two types of carbon market are not working exclusively
这两类碳市场不是互相排他存在的

2009 – Overall, market showed resilience 2009年的国际碳市场回弹
 Allowances up, offsets down (in US\$ billion) 配额市场上涨，义务抵消市场回落（单位10亿美元）

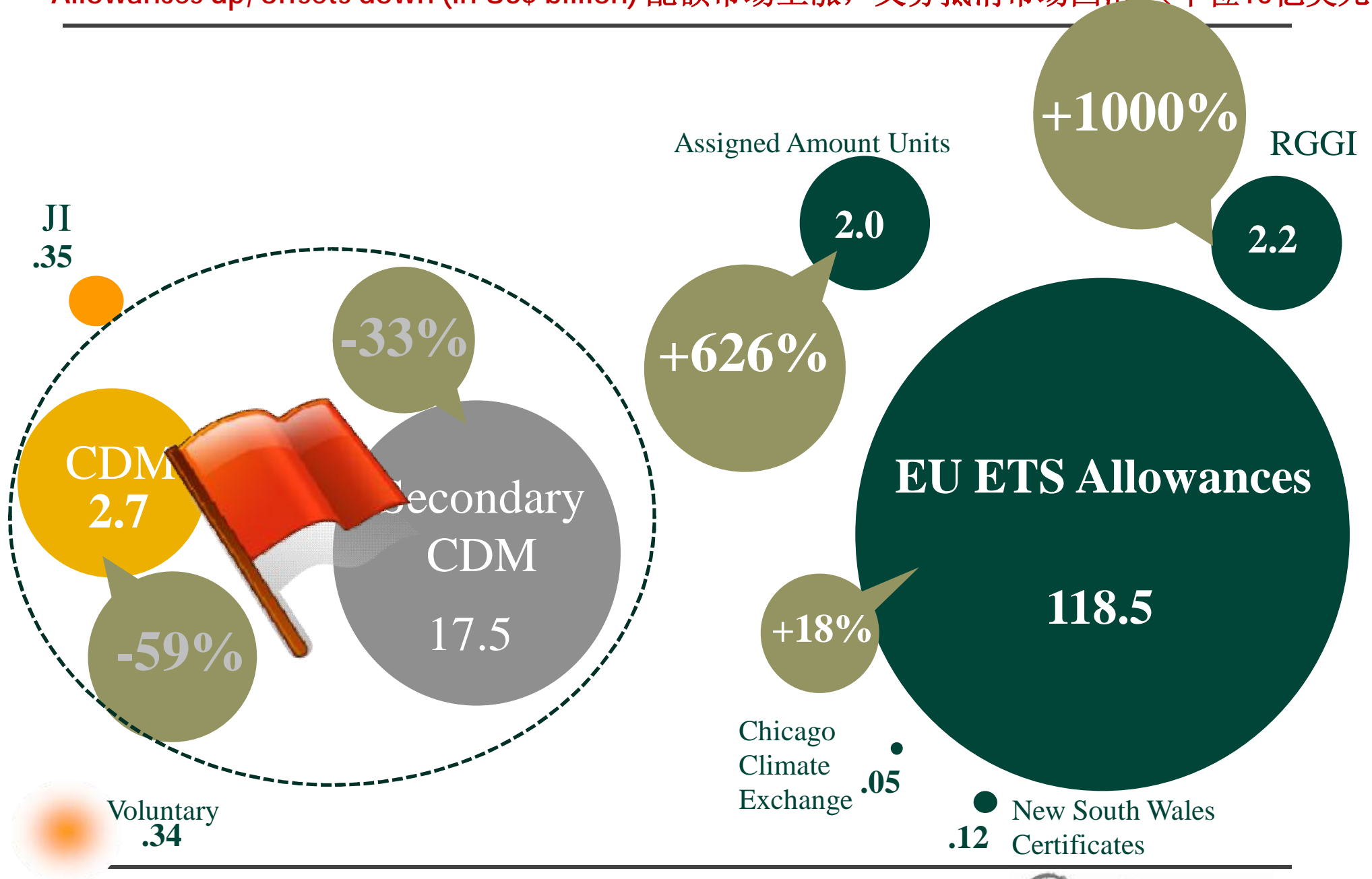


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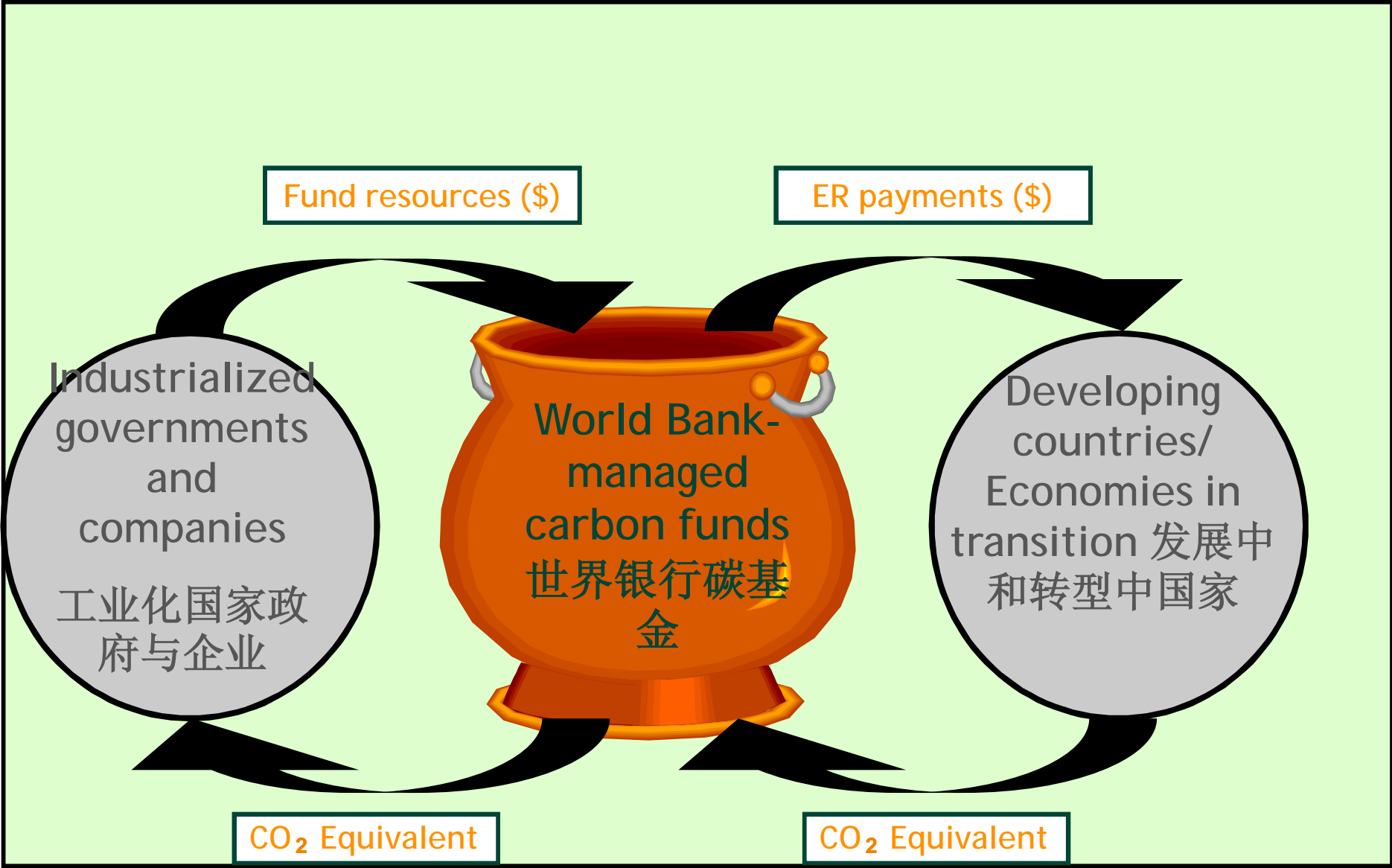
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Role of the World Bank in Carbon Finance 世界银行在碳金融中的角色



Fourteen Carbon Funds with total asset of USD 2.3 billion

总资产超过23亿美金的十四只碳基金



n 原型碳基金. \$180 million. Multi-shareholder. Multi-purpose.



n 荷兰碳基金. \$268.3 million. Netherlands Ministry of Environment. CDM energy, infrastructure and industry projects.



n 社区发展碳基金. \$128.6 million. Multi-shareholder. Small-scale CDM energy projects.



n 生物碳基金. \$53.8 million. Multi-shareholder. CDM and JI land use and forestry projects.



n 意大利碳基金. \$155.6 million. Multi-shareholder (from Italy only). Multipurpose.



n 荷兰欧盟碳基金. \$56.6 million. Netherlands Ministry of Economic affairs. JI projects. IFC manages similar fund.



n 西班牙碳基金. \$282.4 million. Multi-shareholder (from Spain only). Multipurpose.



n 丹麦碳基金. \$69.4 million. Multi-shareholder (from Denmark only). Multipurpose.



n 伞型碳基金一期和伞型碳基金二期



n 欧洲碳基金

n 森林碳伙伴基金

n 碳合作伙伴基金

n 市场伙伴基金



How Carbon Finance could benefit biogas development in China

碳金融能够在哪些方面促进中国沼气发展

To be prepared for meeting the requirement of national low carbon target (40-45% carbon intensity reduction per GDP by 2020)

为满足国家低碳发展要求做好准备（在2020年之前的单位GDP碳强度降低40-45%）

To provide additional financial resources, i.e carbon revenue, green investment, etc. for technology innovation and industry development

为技术革新和产业发展带来额外的资金支持，如，碳减排收益，绿色投资基金等



To promote value of enterprise through enhancing Corporate social responsibility (CSR)

通过履行企业社会责任带来企业价值的提升

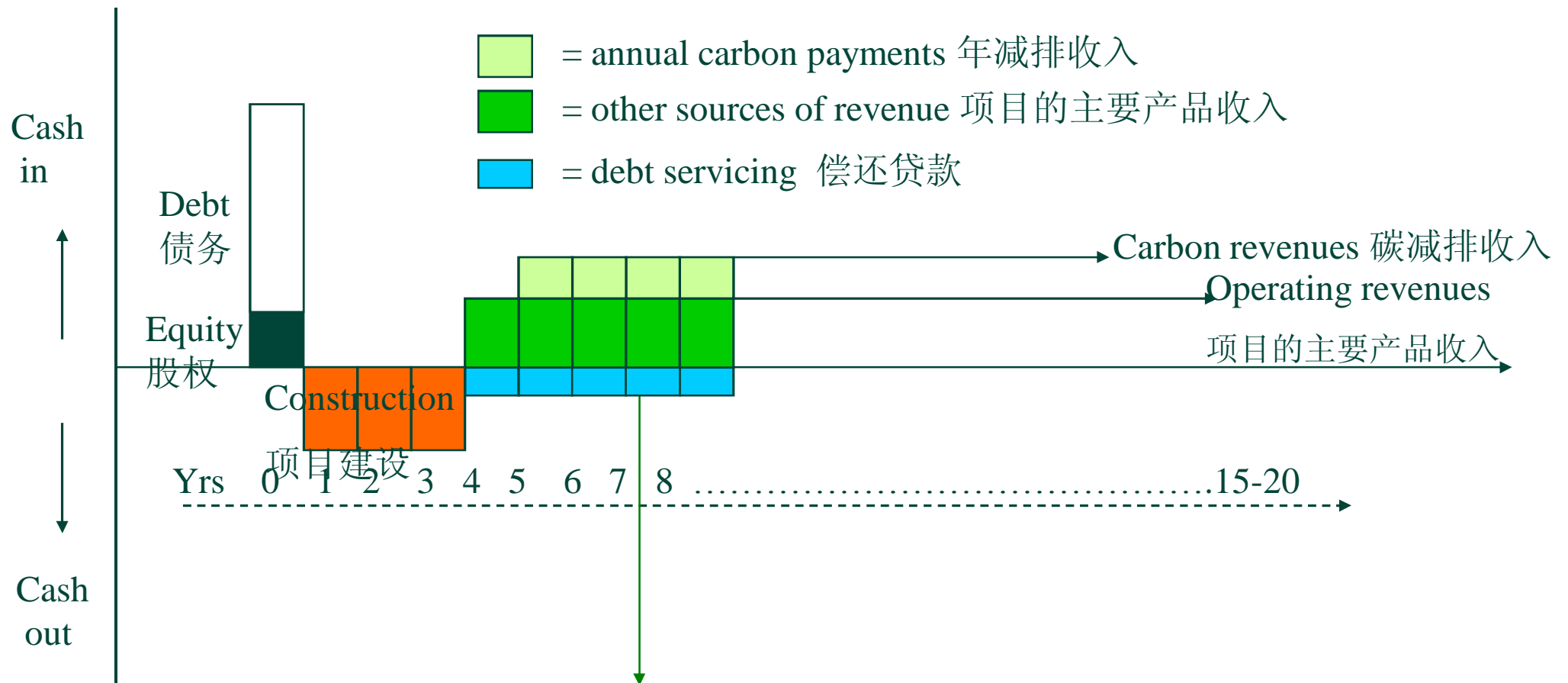
To realize sustainable development for enterprise itself through improving efficiency of resources utilization and lowering consumptions

通过提高资源利用效率和降低资源消耗等手段真正实现企业自身的可持续发展

To strengthen operation and maintain through introducing credible recording, evaluation, and monitoring approach.

通过引入先进可靠的记录，评价和监测方法提高项目的运行维护水平

Carbon revenue flow from trading 通过碳减排交易获得的现金流



Emission reductions created only after project is implemented and operational.

项目完工和运行后才能产生碳减排

- **Beijing, Shanghai and Tianjin environment exchanges based on voluntary carbon emission reduction mechanism, especially Panda Standard under Beijing exchange to encourage development on agriculture through promoting Payment for Environmental Services(PES)**

基于自愿碳减排机制的北京上海和天津环境交易所,尤其在北京环交所下出台的熊猫标准, 通过推出生态补偿法推动农业领域发展

- **Green Financing by commercial banks: the Equator Principles (EPs) adopted by Xinye Bank, Energy Service Company (EMC), loan guarantee by carbon revenue etc.**

商业银行推广中的绿色信贷业务: 如兴业银行的赤道原则, 节能服务公司模式, 利用碳交易收益的信贷模式

- **Green bond, carbon neutralization**
绿色债券, 碳中和

- **China announced plans to start carbon trading pilot at two provinces and four cities before 2013 and establish domestic trading scheme country wide**
2013年前我国将在六省市展开碳交易试点，并在2015年前成立全国范围的碳交易平台
- **Agriculture sector, as the less developed sector with comparatively higher emission potential is likely to play a role of emission reduction seller during pilot stage**
农业行业，作为发展相对落后并拥有相对较高减排潜力的行业，在试点阶段将可能扮演减排量出售方的角色
- **Two new initiatives of the World Bank on Carbon Finance to meet the emerging opportunities**
世界银行针对新生机会的两项碳金融领域的创新机制

The Carbon Partnership Facility 碳合作伙伴基金

Mission 目的

- Support systematic approaches to low carbon growth by countries to catalyze investment in clean technologies
采用系统的方法大规模推动清洁技术的推广
- The governance of the CPF is based on a partnership of buyers and sellers of carbon credits
基于减排交易双方的合作伙伴关系
- Not limited to traditional CDM methodologies, but will utilize programmatic approaches to scale up emission reduction programs
在现有CDM方法基础上尝试规划类的新模式
- One of the polite project under CPF in China is farm level biogas
在中国支持的示范项目之一为养殖场沼气项目

Approach 方式

- € 100 million in buyer commitments to Carbon Fund; operational since May 2010
一期购买减排资金为1个亿欧元
- € 9 million in donor contributions in Carbon Asset Development Fund (for program preparation)
一期项目准备基金为9百万欧元
- Carbon credits purchase until 2020
购买项目产生的直至2020年的减排量

Mission 目的

- u Contribute to enhancement of global mitigation efforts post-2012 via market instruments
旨在利用市场机制推动全球减排发展
- u Provide a platform for market instrument and clean technology related technical discussions and information exchange
为发达国家和发展中国家提供和利用市场机制及推广节能技术相关的技术讨论平台和信息交流平台
- u Policy research, Capacity-building and supporting pilots led by countries and builds upon countries' priorities
赠款的方式,由参与国主导,在其优先领域进行政策模式研究,示范开展及能力建设

Supported activities 支持的活动

- u Supporting 10-15 developing countries' development of readiness component for market instruments
支持10-15个发展中国家的市场准备活动
- u Exploring, piloting and testing domestic emissions trading and non-GHG based schemes such as renewable energy & energy efficiency trading
研究设计示范并且评价国内减排相关的市场交易体系,包括能效交易,可再生能源交易,减排交易等
- u Exploring and testing international market instruments such as reformed CDM, sectoral and NAMA crediting – as well as new instruments not yet envisioned
在全球范围内探寻革新的市场机制,包括CDM的革新,行业和发展中国家对国家适合减排行动等

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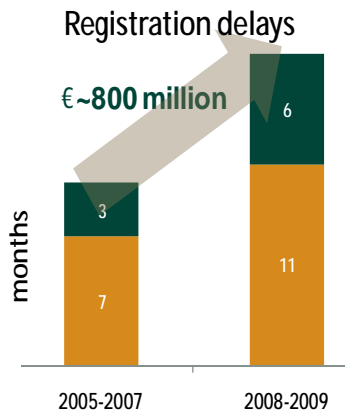
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Key challenges currently constraining the positive impact of the Carbon Finance on biogas 目前局限碳金融对沼气行业发展起到积极作用的几大因素



- q Lack of post-2012 policy clarity limits demand and increases risk: dampening leveraging of carbon finance revenues 2012年之后的全球碳交易不确定性带来碳收益的风险性
- q Could be improved by exploiting more market instruments related to carbon finance
- q 可以通过积极寻求除CDM交易之外的其他碳金融工具减缓
- q Received less attention from financial sectors due to comparatively lower profit making and unstable characters resulted from fluctuant market demand 较少吸引商业投资机构的注意力，由于此行业受市场波动需求影响导致的盈利性和经营状况不稳
- q To expand business line into a more sustainable model
- q 改良商业结构实现更加可持续发展



- q Long & costly project cycle under CDM with increased transaction costs especially for agriculture projects with small scale
- q 传统CDM模式下的项目开发过程复杂，成本过高，尤其是农业行业的小规模项目
- q Could be improved by adopting Programmatic CDM or other innovative approach
- q 可以尝试采用规划类CDM项目方式或者其他创新



- q Lack of awareness and capacity on operation and maintaining which will decrease the emission reduction outcomes
行业的运行和维护意识和能力相对缺乏，将影响预计实现的减排效益

Thank you