



清洁发展机制国际规则和方法学

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发达国家在议定书下的减排义务 Reduction Obligations

| 缔约方 | 量化的限制或减少排放承诺(基准年百分比) | | |
|--------|----------------------|---------------|-----|
| 澳大利亚 | 108 | 立陶宛* | 92 |
| 奥地利 | 92 | 卢森堡 | 92 |
| 比利时 | 92 | 摩纳哥 | 92 |
| 保加利亚* | 92 | 荷兰 | 92 |
| 加拿大 | 94 | 新西兰 | 100 |
| 克罗地亚* | 95 | 挪威 | 101 |
| 捷克共和国* | 92 | 波兰* | 94 |
| 丹麦 | 92 | 葡萄牙 | 92 |
| 爱沙尼亚* | 92 | 罗马尼亚* | 92 |
| 欧洲共同体 | 92 | 俄罗斯联邦* | 100 |
| 芬兰 | 92 | 斯洛伐克* | 92 |
| 法国 | 92 | 斯洛文尼亚* | 92 |
| 德国 | 92 | 西班牙 | 92 |
| 希腊 | 92 | 瑞典 | 92 |
| 匈牙利* | 94 | 瑞士 | 92 |
| 冰岛 | 110 | 乌克兰* | 100 |
| 爱尔兰 | 92 | 大不列颠及北爱尔兰联合王国 | 92 |
| 意大利 | 92 | 美利坚合众国 | 93 |
| 日本 | 94 | 拉脱维亚* | 92 |
| 列支敦士登 | 92 | | |

议定书下的三种灵活机制 **Mechanisms Under the Protocol**

- 温室气体排放影响的全球性
The impact of greenhouse gas emissions worldwide
- 不同国家的减排潜力和成本不同
Different reduction potentials and costs among countries
- 全球合作与减排的经济成本
Global cooperation and the costs of emission reduction
- 三种灵活机制：联合履行（JI, Joint Implementation）、清洁发展机制（CDM, Clean Development Mechanism）和排放贸易（ET, Emissions Trading）
- 发达国家之间的合作 (Between developed countries): JI和ET
- 发达国家和发展中国家之间的合作 (Between developed and developing countries): CDM
- 基于项目的合作 (Project-based): JI和CDM
- 纯粹的排放权交易 (Emission trading): ET

CDM的基本概念 Basic Concept

- CDM是《京都议定书》规定的，发达国家和发展中国家之间合作进行温室气体减排的基于项目的机制；

CDM is a project-based mechanism under the Kyoto Protocol which involves cooperation between developed and developing countries to reduce GHG emission

- 双重目的: (Dual purposes)

- 帮助发展中国家实现可持续发展，并对实现《公约》的最终目标作出贡献；

To help developing countries to achieve sustainable development and contribute to the ultimate goal of "the Convention"

- 帮助发达国家实现其部分的温室气体减排和限排义务。

To help developed countries to fulfill part of their greenhouse gases reduction obligations

- 对CDM项目的基本要求: (Basic requirements)

- 每个缔约方的自愿参与； (Voluntary)

- 产生真实、长期和可测量的温室气体减排效益；

(Real, long-term and measurable GHG reduction)

- 项目所产生的减排效益必须是额外。(Additionality)

CDM国际规则的进展

Development of International Rules

- 2001年第七次缔约方会议(7th COP)通过了《马拉喀什协定》(Marrakesh Accords), 规定了“清洁发展机制的方式和程序”(Modalities and procedures of CDM)
- 该次会议同时选举产生了CDM的执行理事会(EB, Executive Board), EB到09年7月为止举行了48次会议
- 2002年第八次缔约方会议(8th COP)通过了适用于小型CDM项目(Small-scale CDM)的简化方式和程序
- 2003年第九次缔约方会议(9th COP)议通过了适用于第一承诺期中的造林和再造林CDM项目的规则(Modalities for afforestation and reforestation projects under the CDM), 同意定义小型造林和再造林CDM项目

CDM国际规则的进展

Development of International Rules

- 2004年第十次缔约方会(10th COP)议通过了适用于小型造林和再造林CDM项目的简化程序

Adopted a decision on simplified modalities and procedures for small-scale afforestation and reforestation project activities under the CDM

- 2005年议定书第一次缔约方会议通过了公约缔约方会议代制定的CDM国际规则

Adopted further guidance relating to the clean development mechanism in COP/MOP 1 climate change meetings in 2005

- 2005—，每年一次的议定书缔约方会议就CDM给出指导意见

2005 - , Annual COP/MOP climate change meeting to provide guidance on CDM

CDM项目的基准线和额外性

Baseline and Additionality

- 基准线（比较的基准）：为了提供与CDM项目同样的服务，在没有该项目的情景下将出现的温室气体排放量

The baseline for a CDM project activity is the emission that would occur for providing the same level of services in the absence of the proposed project activity.

- 额外性（额外的排放）：没有CDM因素时，项目由于某些困难或者障碍不会实施，其所产生的减排量因而也不会发生（抵销机制）

Additionality: GHG emissions will not be reduced in the absence of the registered CDM project activity, due to certain difficulties and constraints. (offset mechanism)

可能的CDM项目类型

Possible CDM Projects

➤ 《京都议定书》界定的温室气体

| 温室气体 Greenhouse gas | 全球增温潜势 Global Warming Potentials(GWP) |
|-------------------------|--|
| CO ₂ (二氧化碳) | 1 |
| CH ₄ (甲烷) | 21 |
| N ₂ O (氧化亚氮) | 310 |
| HFCs (氢氟碳化物) | 140-11,700 |
| PFCs (全氟化碳) | 6,500-9,200 |
| SF ₆ (六氟化硫) | 23,900 |

➤ 可能的CDM项目类型 (Possible CDM Projects)

- 所有减排如上六种温室气体的项目

Emission reduction projects for greenhouse gases

- 所有增加CO₂吸收汇(sink)的项目 CO₂

CDM方法学

Methodologies

- 审查CDM项目合格性(Eligibility)、估算(Estimate)及计算项目减排量（=基准线排放(Baseline emission)－项目排放(Project emission)－泄漏(leakage)）的基础
- CDM方法学=基准线(Baseline)+监测方法学(Monitoring methodology)
- 基准线方法学 (Baseline methodology)
 - 确定基准线情景(Baseline scenario)、项目额外性 (Project additionality)、计算项目减排量的方法 (Method to calculate emission reduction from project)
- 监测方法学(Monitoring methodology)
 - 确定计算基准线排放(Baseline emission)、项目排放 (Project emission)、泄漏(Leakage)所需监测的数据/信息和相关的方法

CDM项目和方法学的类型 Project and Methodologies Type

1. 小型CDM项目 (Small-scale CDM Projects)

- 容量不超过15兆瓦的可再生能源项目活动；或
Renewable energy project activities with a maximum output capacity equivalent of up to 15 megawatts
- 年节能量不超过60GWh的提高能效项目；或
Energy efficiency improvement project activities which reduce less than 60 Gigawatt-hour (GWh) annually
- 每年减排量不高于6万吨二氧化碳当量的其他项目活动
Other project activities that both reduce anthropogenic emissions by sources and directly emit less than 60,000 tonnes of carbon dioxide equivalent annually

2. 大型CDM项目(CDM Projects)

3. 小型造林和再造林CDM项目(Small-scale afforestation and reforestation project)

- 每年的净人为碳去除量小于16000吨CO₂当量，以及
The annual net removal of anthropogenic carbon is less than 16,000 tons CO₂ equivalent
- 由东道国确定的低收入社区和个人开发或者实施
Develop or implement by low-income communities and individuals determined by the host Party

4. 大型造林和再造林CDM项目 (Afforestation and reforestation project)

5. 规划CDM项目 (Programme of activities)

CDM方法学批准状况 Approved Methodologies

- 到EB47，已批准的方法学共141个，包括：
 - ① 65个大规模方法学
(Methodologies for Large scale CDM project activities)
 - ② 14个整合方法学
(Consolidated Methodology)
 - ③ 45个小规模方法学
(Methodologies for small scale CDM project activities)
 - ④ 9个造林和再造林方法学
(Methodologies for afforestation and reforestation CDM project activities)
 - ⑤ 2个整合造林和再造林方法学
(Methodologies for consolidated afforestation and reforestation CDM project activities)
 - ⑥ 6个小规模造林和再造林方法学
(Methodologies for small scale A/R CDM project activities)

批准方法学的主要内容

Key Content for Approved Methodologies

- 包括基准线方法学(Baseline methodologies)和监测方法学(Monitoring methodologies)两部分
 - 名称 (Name)
 - 来源 (Source)
 - 适用范围 (Scope of application)
- 基准线方法学 (Baseline methodologies)
 - 基准线情景的确定 (Identify baseline scenario)
 - 基准线排放 (Baseline emission)
 - 项目排放 (Project emission)
 - 泄漏 (Leakage)
 - 额外性 (Additionality)
 - 项目边界 (Project boundary)

批准方法学的主要内容

Key Content for Approved Methodologies

- 监测方法学 (Monitoring methodologies)
 - 不需要监测的参数
Parameters not to be monitored
 - 需要监测的数据以及监测方法
Data to be monitored and the monitoring methods
 - 质量控制和质量保证程序
Quality control and quality assurance procedures

已方法学覆盖的项目类型

Scopes of Approved Methodologies

- 可再生能源利用 (Renewable energy)
 - 生物质能利用 (Use of biomass) (发电、供热、燃料替代、生物柴油)
 - 其它可再生能源 (Other renewable energy) (发电、供热)
- 节能和提高能效 (Energy efficiency and saving)
 - 废弃能源的回收利用 (发电、供热、机械能)
Recycling of waste energy (electricity, heat, mechanical energy)
 - 提高锅炉能效、蒸汽系统效率
Improve energy efficiency of boilers, steam system
 - 高效/低碳发电技术
Efficient / low carbon power generation technologies
 - 电厂/其它工业生产设施改造
Retrofit of power plant / other industrial facilities
 - 节能冰箱制造
Manufacture of energy-efficient refrigerator
 - 其它节能技术推广
Promote other energy-saving technologies

已方法学覆盖的项目类型

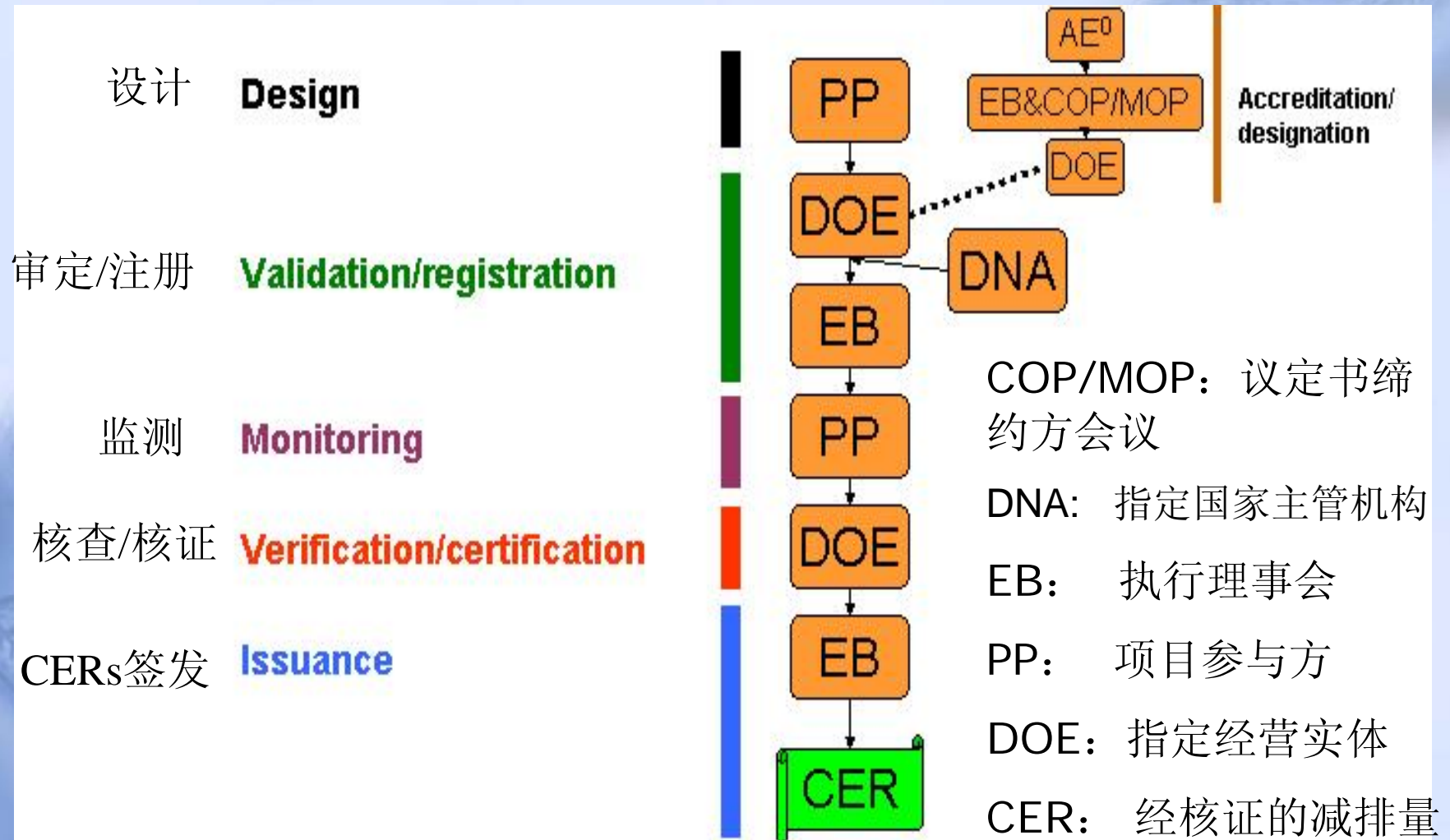
Scopes of Approved Methodologies

- 燃料替代 (Fuel Switching)
- 资源综合利用 (Utilisation of resources e.g. waste gas)
- 甲烷减排 (Reduction of methane emission)
 - 垃圾填埋气回收利用 (Recovery and utilisation of landfill gas)
 - 煤层气回收利用 (Recovery and utilisation of coal bed methane)
 - 其它来源甲烷回收利用 (Recovery and utilisation of methane from other sources)
 - 避免甲烷排放 (Avoid methane emission)
- SF6、N2O、HFC减排
Emission reduction of SF6、N2O、HFC
 - 化工厂 (Chemical plants)
 - 工业生产过程 (Industrial production process)

方法学领域分布 Distribution of Methodologies

| 领域 (Area) | 方法学数目 | 领域 | 方法学数目 |
|---|-------|--|-------|
| 能源工业 (可再生 / 不可再生资源) (Energy industries (renewable - / non-renewable sources))(1) | 44 | 金属生产 Metal production (9) | 6 |
| 能源分配 Energy distribution (2) | 2 | 燃料的逃逸排放 (固体、液体和气体) Fugitive emissions from fuels (solid, oil and gas) (10) | 8 |
| 能源需求 Energy demand (3) | 12 | HFC和SF6生产和消费中的逃逸排放 Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride (11) | 8 |
| 制造业 Manufacturing industries (4) | 26 | 溶剂适用 Solvent use (12) | 0 |
| 化工 Chemical industries (5) | 17 | 废弃物处理 Waste handling and disposal (13) | 15 |
| 建筑 Construction (6) | 0 | 造林和在造林 Afforestation and reforestation (14) | 18 |
| 交通 Transport (7) | 6 | 农业 Agriculture (15) | 5 |
| 采矿/矿物生产 Mining/mineral production (8) | 1 | 注：同一方法学可能属于不同的领域 Note: Same methodology may belong to different areas | |

CDM项目周期 Project Cycle



相关组织及其职能 **Related Bodies and Roles**

- **议定书缔约方会议(COP/MOP)**: CDM的最高机构, 可以就CDM的任何问题作出决定

The Conference of the Parties / meeting of the Parties to the Kyoto Protocol (COP/MOP) : the highest authority of CDM

- **CDM执行理事会 (Executive Board) (EB)**

- 制订有关规则 (Make the relevant rules)
- 批准新方法学 (Approve new methodologies)
- 注册CDM项目活动 (Register CDM project activities)
- 签发减排量 (Issue Certified Emission Reductions (CERs))
- 委任经营实体等 (Appointment of designated operational entities (DOEs))

相关组织及其职能 **Related Bodies and Roles**

➤ **CDM执行理事会(EB)**

- ✍ 委任委员会 (CDM accreditation panel)
- ✍ 方法学委员会 (Methodologies panel)
- ✍ 小项目工作小组 (Working group for small-scale CDM project activities)
- ✍ 造林和再造林工作小组 (Working group on afforestation and reforestation project activities)
- ✍ 注册和签发专家组 (Registration and issuance team)
- ✍ 秘书处 (Secretariat office)

➤ **相关缔约方**：批准该国参与的CDM项目活动，涉及可持续发展、环境影响评价等

Related parties: Approve CDM project activities with participants from the country taking into account sustainable development, environmental impact assessment, etc

相关组织及其职能 **Related Bodies and Roles**

➤ 指定经营实体 (**Designated Operational Entity**) (DOE)

- 审订项目活动(validation)
- 核证项目的减排量(verification)
- 提交新方法学、对已批准方法学的偏移和澄清等
(submit new methodologies, deviation from and clarification of approved methodologies)
- 审定监测计划的修改等 (evaluate changes to monitoring plan)

➤ 项目参与者 (**Project Participants**)

- 发起并实施CDM项目 (propose and implement CDM projects)
- 完成项目设计文件 (complete Project Design Documents)
- 监测并报告项目的实施情况 (monitor and report on the project implementation)
- 获得项目产生的减排量等 (receive CERs)

➤ 利益相关者及非政府组织等

(**Stakeholders and non-governmental organizations**)

CDM市场的主要参与方

Major Participants in CDM Market

☞ 买家（履约市场、自愿市场）

Buyers (compliance market , voluntary market)

☞ 卖家

Sellers

☞ 第三方认证机构（DOE）

Third-party certification bodies

☞ 中介机构（基金公司、技术/商业咨询/服务机构等）

Intermediary agents

☞ 监管机构（联合国系统、政府）

Monitoring bodies

市场上的买家构成

Constitution of Buyers

- 👉 发达国家政府
Developed countries
- 👉 国际机构
International bodies
- 👉 自身有需求的机构
Bodies with their own needs
- 👉 其它买家
Other buyers

CDM市场现状

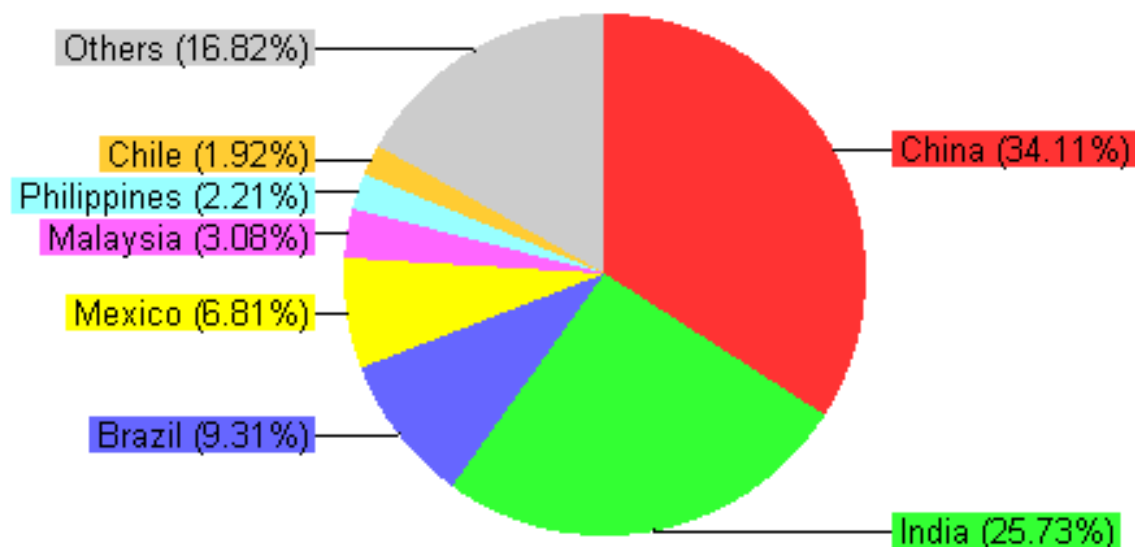
Current Market Situation

(2009/7/12)

| | 年均减排量 (CERs) | 到2012年底可产生的 的CERs |
|--|-------------------------|---------------------------|
| 项目数>4200个，其中： | | > 29亿吨CO ₂ |
| 1718个注册 (Registered) | 3.08亿吨CO ₂ e | > 16.2亿吨CO ₂ e |
| 52个正在申请注册 (Applying for registration) | 862万吨CO ₂ e | > 2000万吨CO ₂ e |

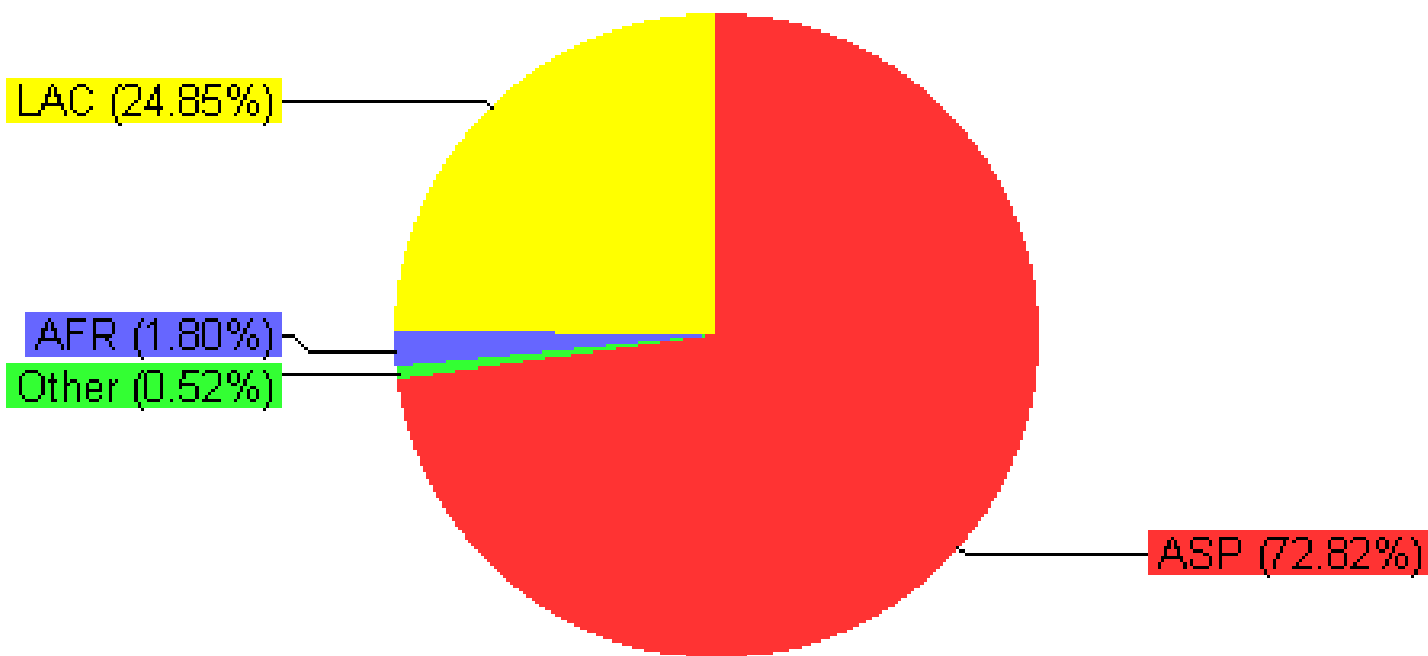
项目分布 Project Distribution

Registered project activities by host party. Total: 1,718



项目分布 Project Distribution

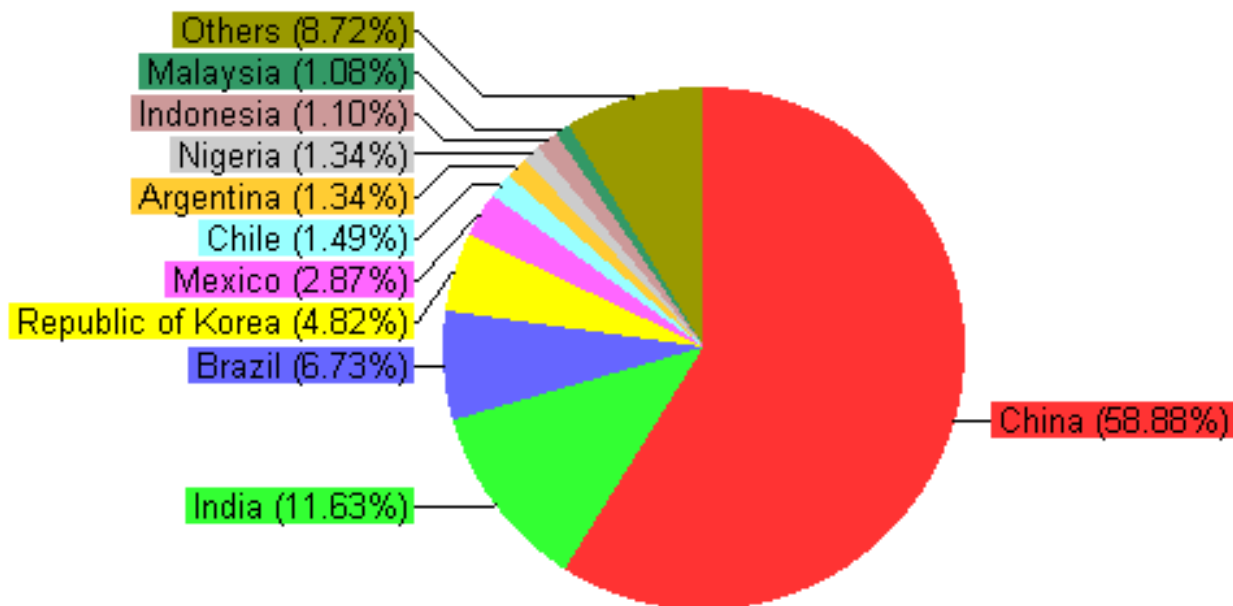
Registered projects by region. Total 1718



<http://cdm.unfccc.int> (c) 10.07.2009 14:53

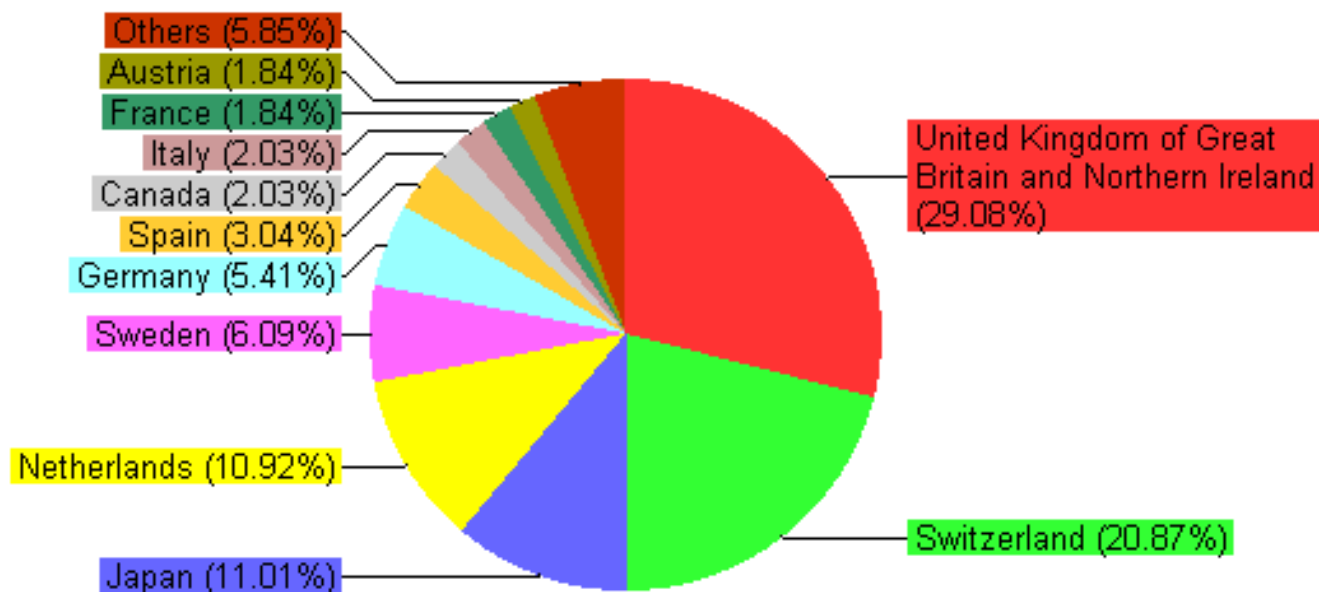
项目分布 Project Distribution

Expected average annual CERs from registered projects by host party. Total: 307,562,854



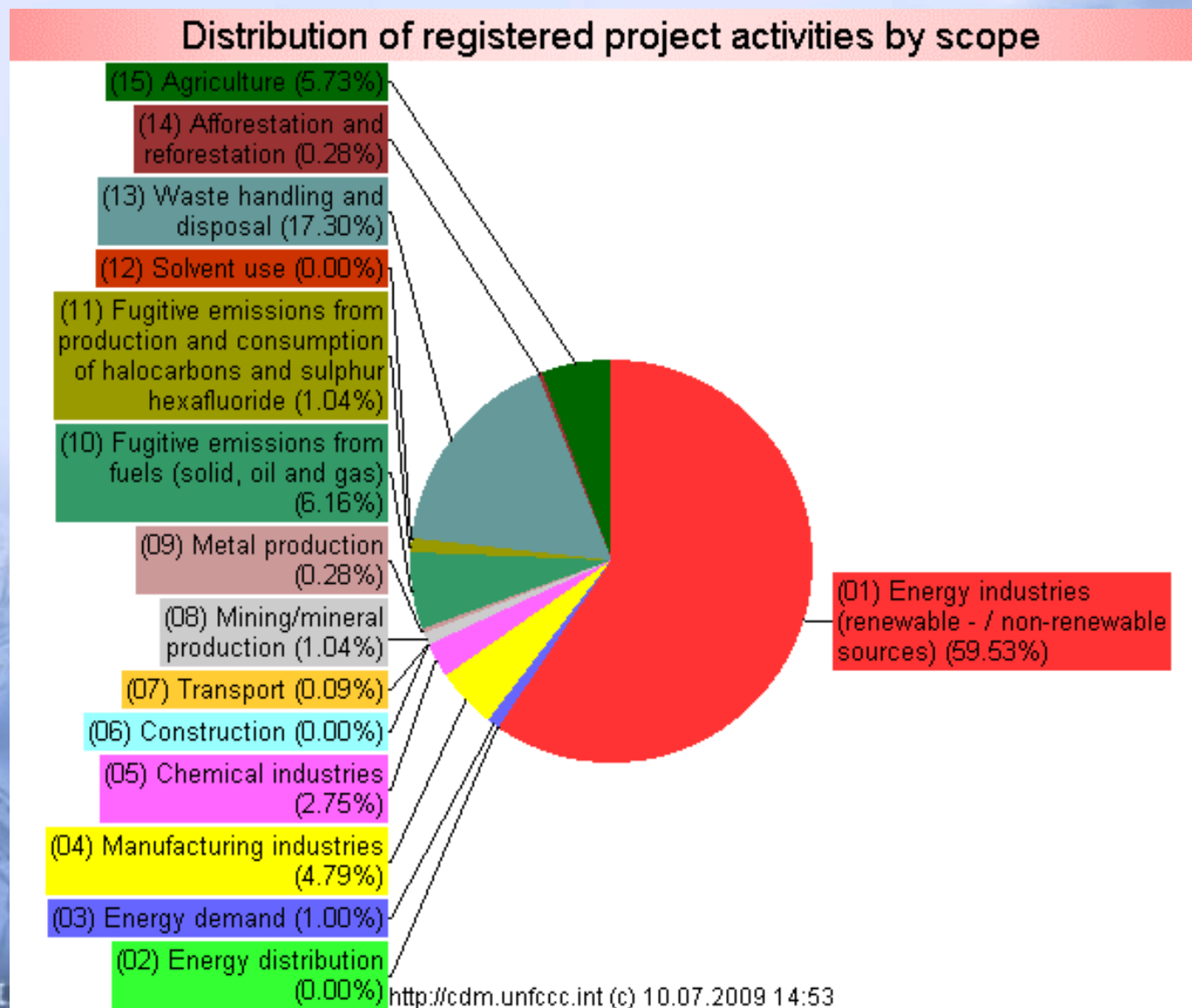
项目分布 Project Distribution

Registered projects by AI and NAI investor parties



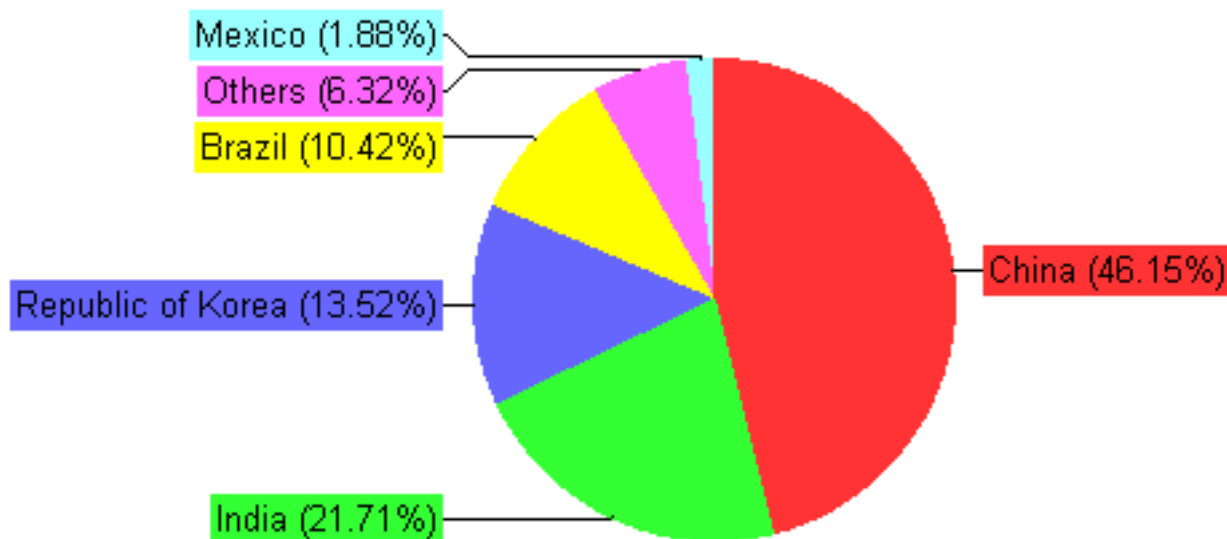
<http://cdm.unfccc.int> (c) 10.07.2009 14:53

项目类型分布 Project Scope Distribution



减排量签发 CERs Issued

CERs issued by host party. Total 310,971,486



<http://cdm.unfccc.int> (c) 10.07.2009 14:53

CDM项目开发的成本 Project Development Costs

- 项目搜寻 (search for project)
- 准备相关技术文件 (prepare related documents)
- 东道国的批准和利益相关方的咨询 (approval from host party and consultation with stakeholders)
- 准备CER购买协定 (prepare CER purchase agreement)
- 指定经营实体对项目的审定 (validation from DOE)
- CDM管理费 (management fee)

- 注册费 (registration fee)
 - 预付的平均年管理费，最高35万美元
The maximum registration fee shall be USD 350,000
 - 年均减排量15000吨CO₂e一下项目免付
No registration fee for CDM project activities with expected average annual emission reduction over the crediting period below 15,000 t-CO₂
 - 不成功时，30000美元以上部分退还
If an activity is not registered, registration fee above USD 30,000 shall be partly reimbursed
- 监测 (Monitoring)
- 核查和核证费用 (Verification and Certification fee)
- 其它费用 (Other charges)

交易方式

Transactions

- 绝大多数交易中买方直接购买减排量，不进行项目投资

For vast majority of transactions, buyers direct purchase emission reductions without further project investment

- 少数交易中买方以股权或者贷款的方式投资于项目，并获得项目的减排量

In a small number of transactions, buyers invested in the project in the form of loans or equity and receive CERs from projects

- 风险在买方和卖方之间的分配因交易而异

Risk distribution between the buyer and the seller varies

- 大多数买方货到付款，以降低风险

Most of the buyers prefer cash on delivery to reduce the risk

- 部分交易中买方可以先期支付部分费用

In part of the transaction, buyers may pre-pay part of the fee

CDM项目面临的可能困难/风险

Difficulties / Risk CDM Projects May Face

- 较高的交易成本

Higher transaction costs

- 繁琐而严格的程序（从合格性检验到减排量指标的签发）

Complex and stringent procedures (from the eligibility test to the issue of CERs)

- 减排量购买协议中减排量交付、违约等条款可能带来的风险

Possible risk of the CERs delivery, breach of the agreement terms

- 2012年之后CDM项目的法律地位

Legal status of CDM projects after 2012

最常用的网站 Useful Websites

<http://cdm.unfccc.int>

<http://cdm.ccchina.gov.cn/>

<http://www.ccchina.gov.cn/>



谢谢!

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