



CDM Implementation for Energy Efficiency Improvement

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Scope of energy efficiency

Scope of energy efficiency in CDM

- Supply side: energy distribution, energy supply, energy generation with waste gas/ residue pressure, cogeneration
- Energy demand: by industry, services, households, transportation

Most popular energy efficiency project types

- Using waste gas, residue heat and pressure for electricity generation
- Fuel switch and energy efficiency improvement at industrial facilities



Energy efficiency CDM projects implementation

	Energy Efficiency Projects		Total
	No.	Share in total	
At validation	498	17%	3005
Request registration	29	20%	142
Registered	290	9%	3145
With CER issued	114	11%	1057
Total active projects	931	15%	6292
Rejected by DOEs	233	22%	1074
Rejected by the EB	52	28%	186

- 15% of the existing CDM projects are energy efficient ones
- However, they account for a smaller share of the ones get registered and CER issues, but a higher share of the projects rejected by the DOE and the CDM EB



Energy efficiency CDM project types

Project type	Meth		Application	
	Large	SSC	Projects	PoAs
Energy distribution	3	1	22	3
Supply side	10	3	117	0
Generating electricity with waste gas, residue pressure, heat	2	6	487	1
Industry	9	10	246	12
Service sector	2	6	102	20
Transport	3	7	34	1
Households	3	7	105	22

- Half of the existing energy efficiency projects are those that generate electricity with waste gas, residue pressure and heat, instead of energy efficiency measures to reduce energy uses of their equipment and processes



Energy efficiency by Households: Methodologies and Projects, PoAs

Methodology	Projects	PoAs
AM46 Distribution of efficient light bulbs to households	2	
AM70 Manufacturing of energy efficient domestic refrigerators	1	
AM71 Manufacturing and servicing of domestic refrigeration appliances using a low GWP refrigerant		
AMS-II.C Demand-side energy efficiency programmes for specific technologies	28	9
AMS-II.E. Energy efficiency and fuel switching measures for buildings	31	2
AMS-II.J. Demand-side activities for efficient lighting technologies (deemed savings)	43	9
AMS-III.AE. Energy efficiency and renewable energy measures in new residential buildings		1
AMS-III.AR. Substituting fossil fuel based lighting with LED lighting systems		1
AMS-III.AS. Switch from fossil fuel to biomass in existing manufacturing facilities for non-energy applications		



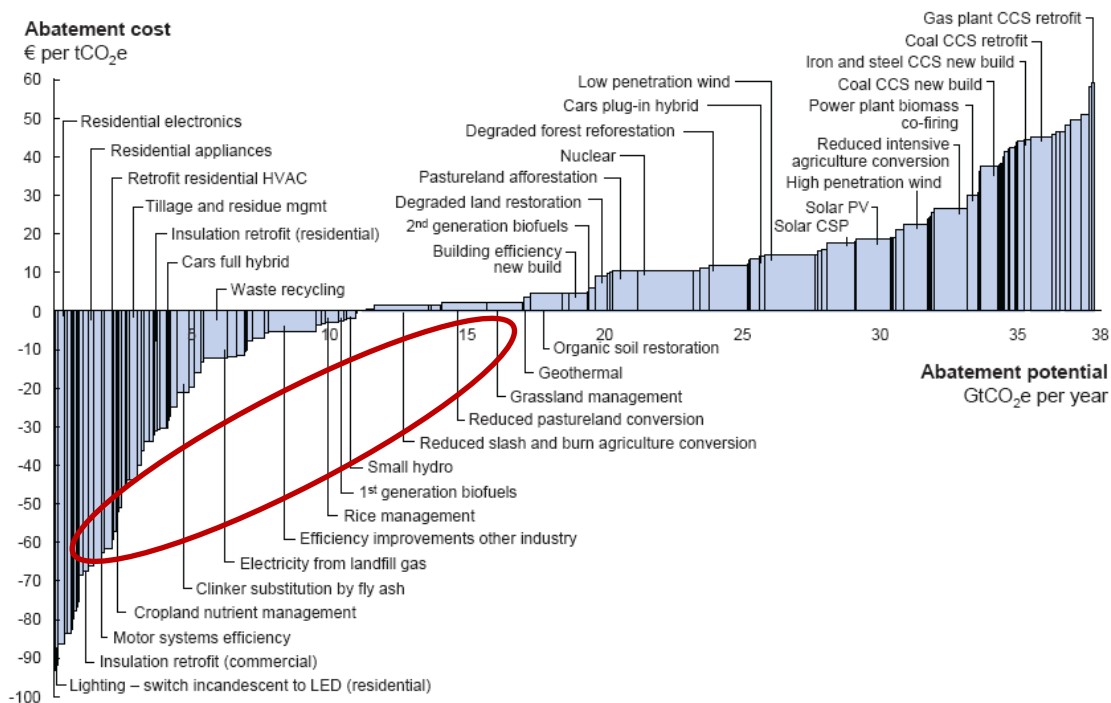
Industry, service, and transportation

- Energy efficiency projects by industries mainly take place in energy intensive industries, such as steel, paper, textile, chemicals, building materials etc
- Energy efficiency projects in service sector focus on lighting, air conditioning, and building
- Energy efficiency projects and PoAs in the transport sector concentrate in bus transit system, low emission vehicles, but there are a few other methodologies without projects



Mckinsey global mitigation costs curve

Global GHG abatement cost curve beyond business-as-usual – 2030



About 40% of the abatement at 'negative' marginal cost
Most are energy efficiency, but:
Negative Abatement Cost of Technology ≠ No Implementation Cost/Effort

Note: The curve presents an estimate of the maximum potential of all technical GHG abatement measures below €60 per tCO₂e if each lever was pursued aggressively. It is not a forecast of what role different abatement measures and technologies will play.
Source: Global GHG Abatement Cost Curve v2.0

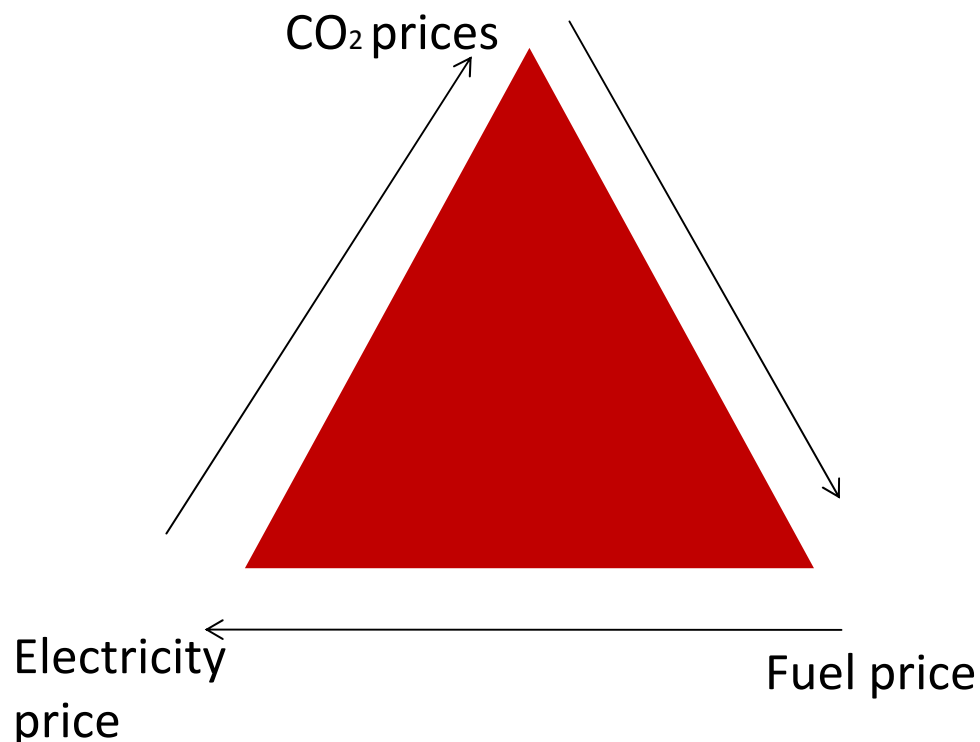


Energy Efficiency in CDM Implementation

- Compared with the enormous potential for energy efficiency improvement in developing countries, energy efficiency is under represented in CDM implementation
- Compared to regular stand-alone projects, a bigger share of the PoAs are from energy efficiency improvement



Several factors drive investment in efficiency measures



- Energy intensive industries constantly pursue measures to decrease production costs through demand and supply side efficiency improvement
- Fuel prices are a main factor influence the feasibility of energy efficiency investment. But this may also influence the additionality of such projects
- Regulatory framework may lead to legal requirements for efficiency measures



Three energy efficiency markets

➤ **Discretionary retrofit:**

Decisions to prematurely replace existing technology with high-efficiency equipment for the primary purpose of improving energy efficiency: may disturb normal use/production. With historic emission data, baseline easy to set

➤ **Planned replacement**

Decisions to replace existing technology at the end of its useful lifetime (e.g., failure, replacement schedule) with high-efficiency equipment. With historic emission data, good timing

➤ **New installations markets.**

Decisions to select high-efficiency equipment over other alternatives at a time of new installation: best timing, but without historic data.



Barriers to in energy efficiency project implementation

- Energy efficiency improvement in buildings: most cost-effective when building new houses. But baseline difficult to establish, because buildings are unique, energy consumption is influenced by many factors: weather, changes in energy consuming equipment used, users' behaviour etc
- In many cases, setting baseline requires modelling or monitoring reference groups
- In some cases, monitoring costs can be very high - like install meter for each new efficient bulb
- When replacing equipment, needs to address the leakage issue – collect and damage replaced inefficient equipment, the equipment to be used can not be a used ones from another user



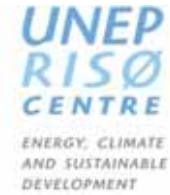
EB efforts to solve support energy efficiency projects

Existing efforts

- PoA CDM are operational
- Established rules about sampling
- Simplifying monitoring requirements (AMS-II.J: deemed saving for efficient lighting, instead of metering for each bulb)

Further efforts:

- Standardised baseline



Project website

www.acp-cd4cdm.org

Contact

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