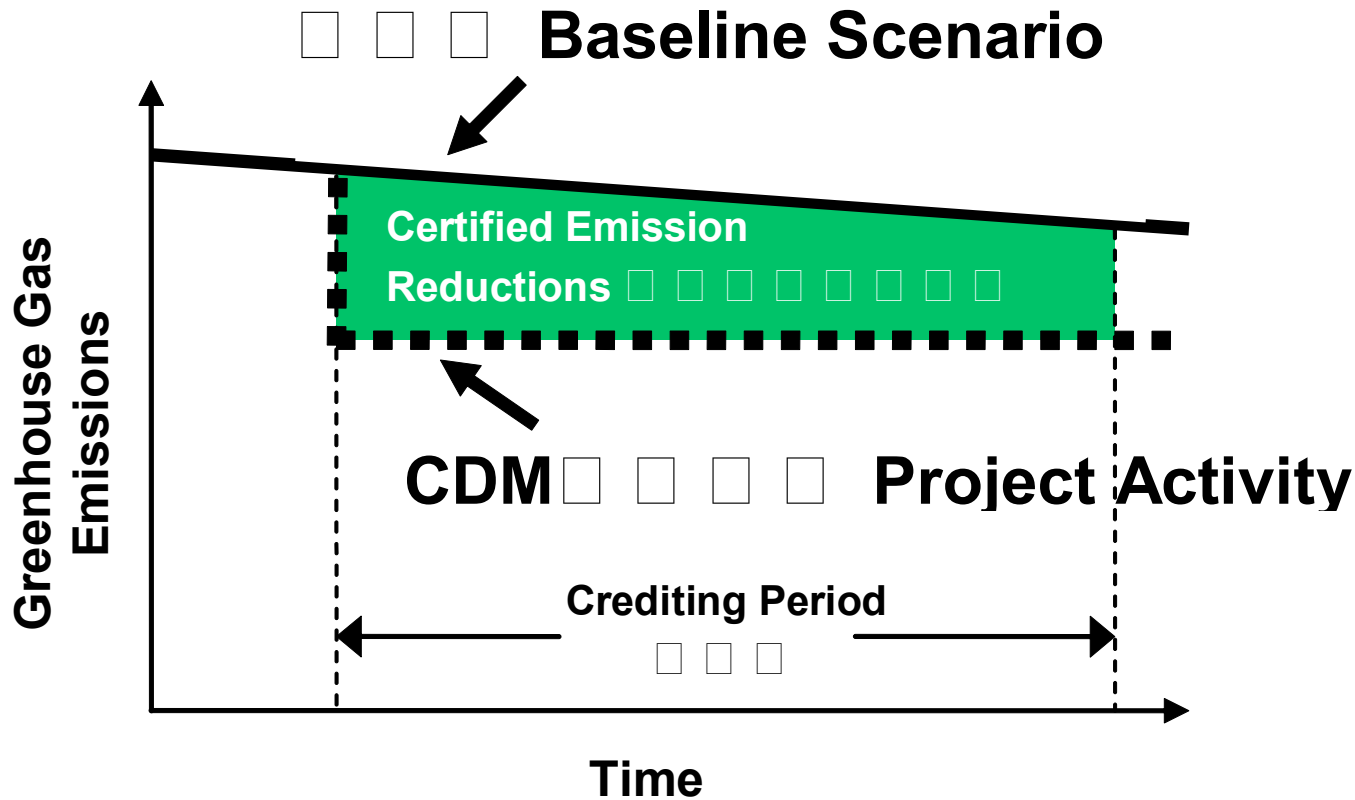


# Potential to Leverage CDM for Motor Systems

## Overview

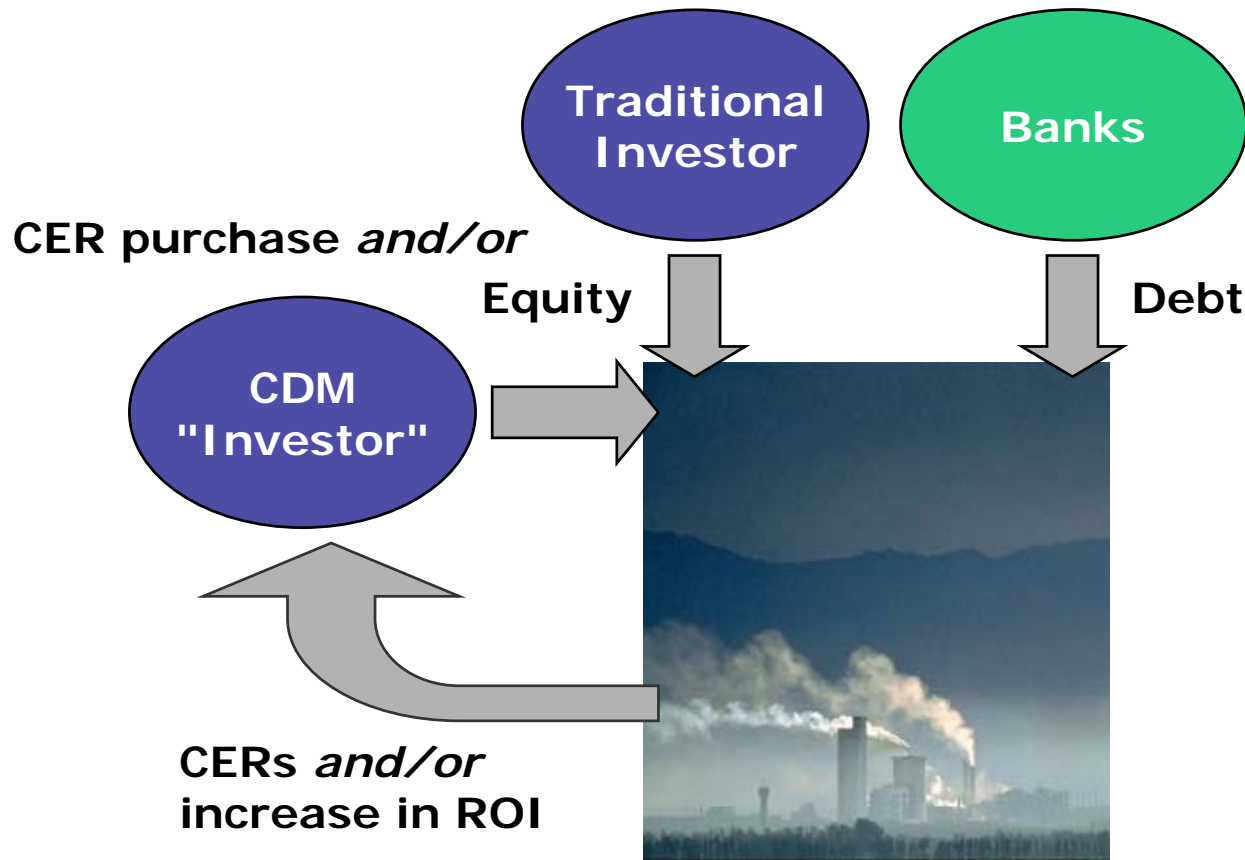
- CDM as a financial incentive
- Motor system promotion under CDM
- Design issues & challenges
- Call to action

# Key CDM Concepts

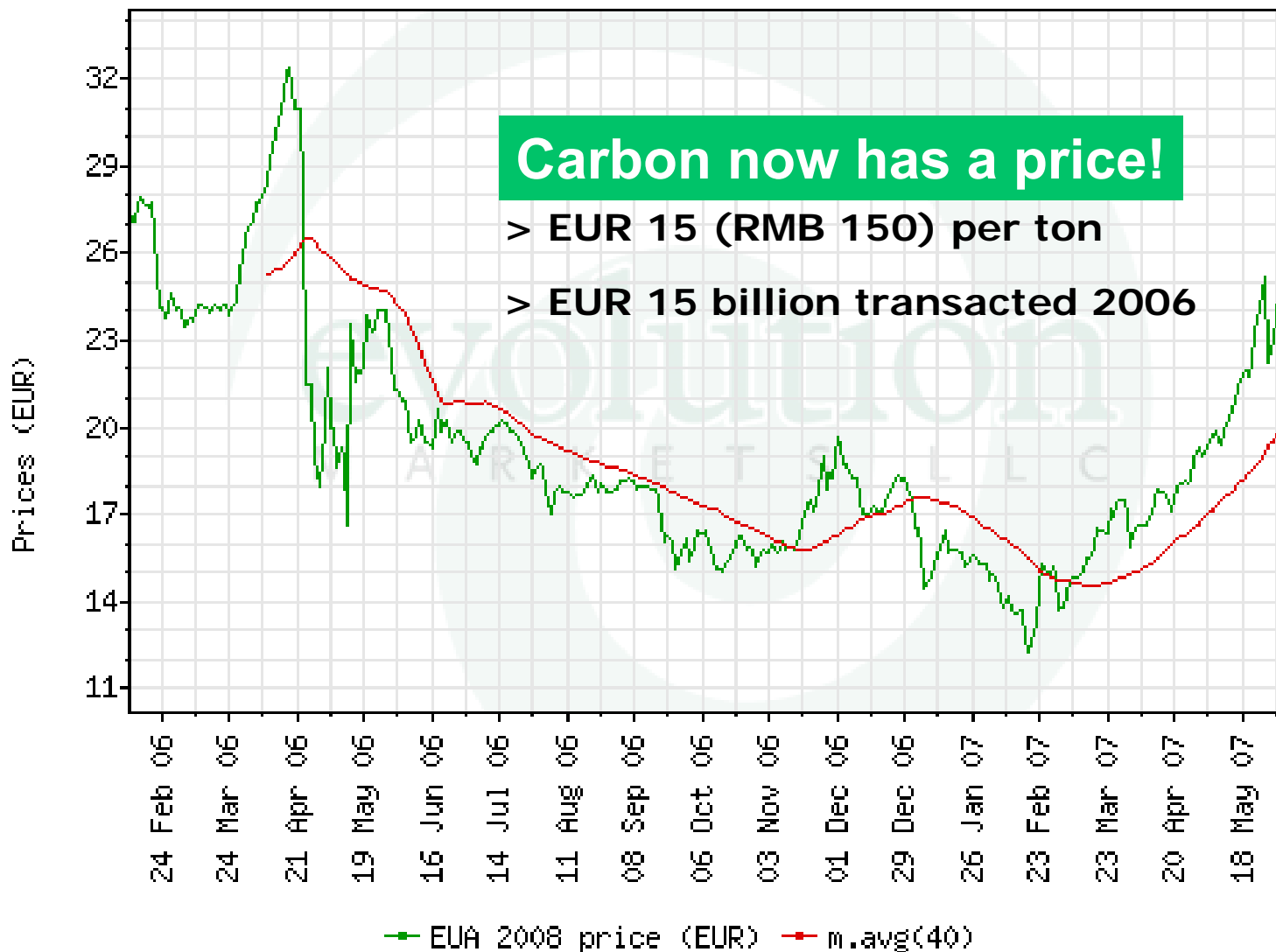


# Simplified CDM Deal Structure

CDM □ □ □ □



EUA 2008 price, moving average (m.avg)  
10-Feb-06...06-Jun-07



# CDM Can ↓ Investment Barrier

## CER Revenue and Additional Capital Investment

Scenario	Motor Size	Additional Capital Investment (EUR)	CER Revenue over 10-Year Crediting Period (EUR)	CER Revenue as Fraction of Additional Investment (%)
Baseline scenario	90 kW	not applicable	not applicable	not applicable
CDM project scenario (Premium motor, ASD)	75 kW	7372	4380	59

CER price: EUR 7.63 / t CO<sub>2</sub>-equivalent

Electricity price: EUR 0.05 / kWh

# Key Challenges

- Raising awareness of CDM
- Structuring transactions to remove up-front capital cost barrier
- Obtaining approval of appropriate methodologies for quantifying energy savings and greenhouse gas emission reductions from system improvements
- Scaling up carbon finance/investment

# Potential – Motor System Efficiency

## ■ Potential CO<sub>2</sub> reductions

- Industrial electricity use: 20.8 EJ  
Motor systems: 14 EJ
- Energy-saving potential: 20-30%  
= 3-5 EJ electricity (~ 2% total global primary energy demand)
- CO<sub>2</sub> reduction potential: 4 EJ \* 50 Mt C/EJ  
= 200 Mt C = 740 Mt CO<sub>2</sub>

## ■ CDM impact (assume 370 Mt CO<sub>2</sub>)

- 9250 small-scale CDM projects (40 kt CO<sub>2</sub> each)
- Additional carbon finance: \$3.7 billion / RMB 30 billion

# Status of Motor (System) CDM

## ■ Projects

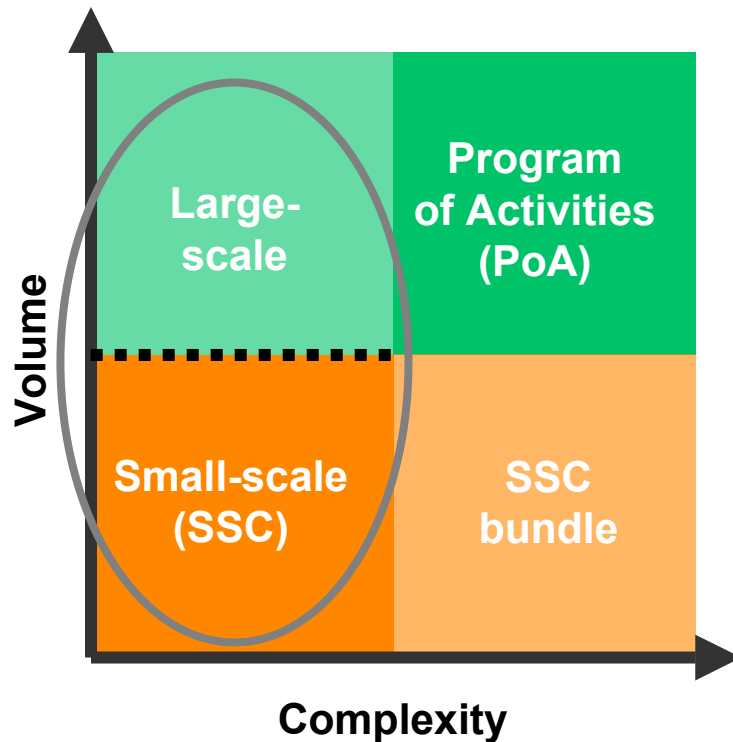
- ❑ **ASDs** replace flow dampers in **pump system** (Jayshree Textiles Division)
- ❑ **ASD** in **compressed air** system (Reliance Industries Ltd., petrochemicals)
- ❑ Comprehensive **suite of building efficiency measures**, incl. ASDs, pump dimensioning, chiller system optimization (ITC Hotel Sonar Bangla Sheraton and Towers )

## ■ Outcomes

- ❑ Huge gap between implementation and potential
- ❑ Limited geographical coverage
- ❑ Failure to scale up from small, individual projects

# CDM Implementation Modes

- Individual project  
(small-scale < 60 GWh ≤ full-size)



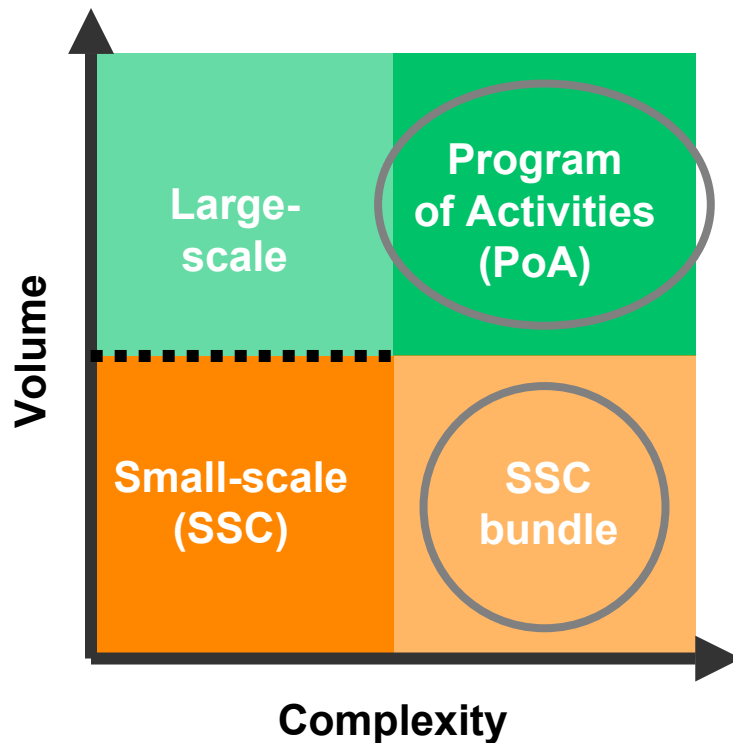
Motor Size (kWe)	Number of Systems
500	100
100	500
50	1000
10	5000
5	10000

## Examples

- ▶ 15 municipal sewage treatment plants (200 25 kW motors each)
- ▶ 3 large (or 200 small) factories

# CDM Implementation Modes

- Individual project  
(small-scale < 60 GWh ≤ full-size)



- Program of Activities

- Bundling small-scale projects via intermediary

# Program of Activities

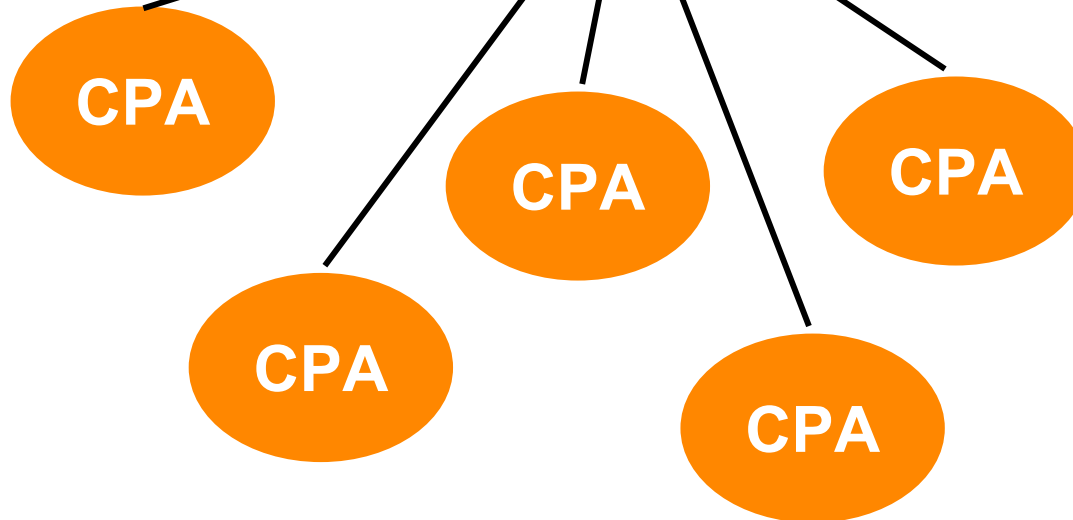
Voluntary program

- > government
- > private

**PoA**  
(Program of Activities)

- > coordination
- > incentives

CDM Program Activities



- > implementation

# Call to Action

- Methodologies & guidance on energy efficiency CDM
- Pilot innovative programmatic CDM models
  - Government incentives to promote voluntary standards or agreements
  - Public infrastructure investment programs
  - Technology supplier programs (e.g., "pay-as-you-save" finance programs)
  - ESCO or utility DSM programs
  - Energy efficiency financing facilities

→ **Motor System CDM Alliance**

# Thank You!

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