

Japan's Domestic Clean Development Mechanism

Why is the domestic CDM important?

- CO2 emissions from the industrial sector have been reduced substantially compared to the 1990 level, while emissions from other sectors (e.g. transportation, households, etc.) have increased.
- A major factor to discourage small and medium-sized enterprises (SMEs) from making investments for lower emissions equipment is cost.

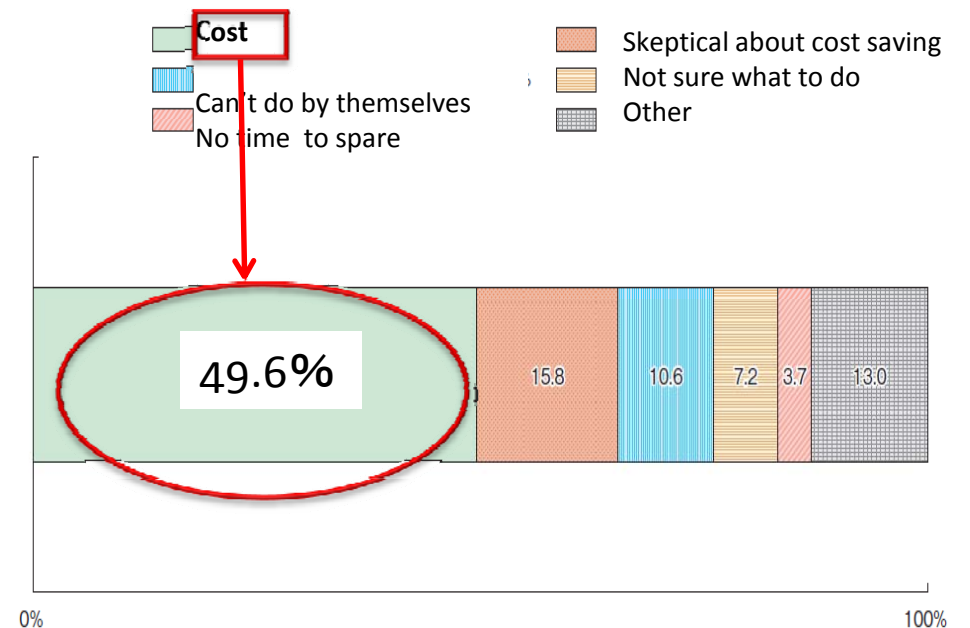


It is necessary to promote emissions reductions from SMEs & the agriculture and forestry, civil and transportation sectors by providing incentives for lower emissions investments.

Trend of CO2 emissions generated from energy use by sectors

	(Million t-CO2)				
	1990	1996	2002	2011	Compared to 1990 level
Industry	482	480	461	420	-12.8%
Transportation	217	263	262	230	+5.8%
Operations	164	185	227	247	+50.6%
Household	127	148	165	189	+48.1%
Energy Conversion	67.9	71.5	76.6	86.1	+26.8%
Total		(Compared to 1990 level)			
		+8%	+13%	+10.7%	

The reason why SMEs hesitate to make lower emissions investment

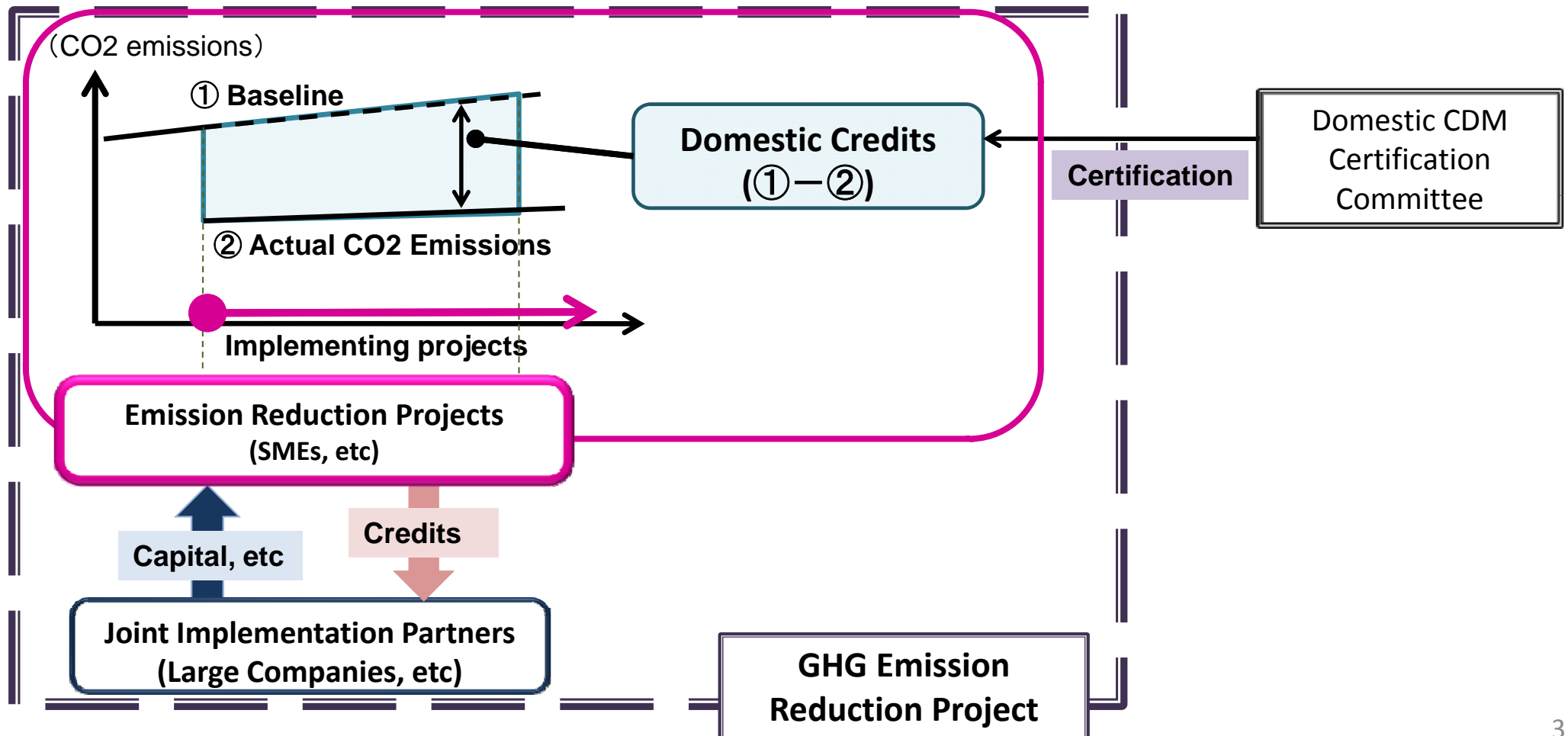


(Source) White Paper on Small and Medium-sized Businesses 2010

★GHG emissions from SMEs in Japan are 154 million t-CO2. It covers 12.6% of all emissions and 11% of emissions from Japan's industrial sector.

About the domestic CDM

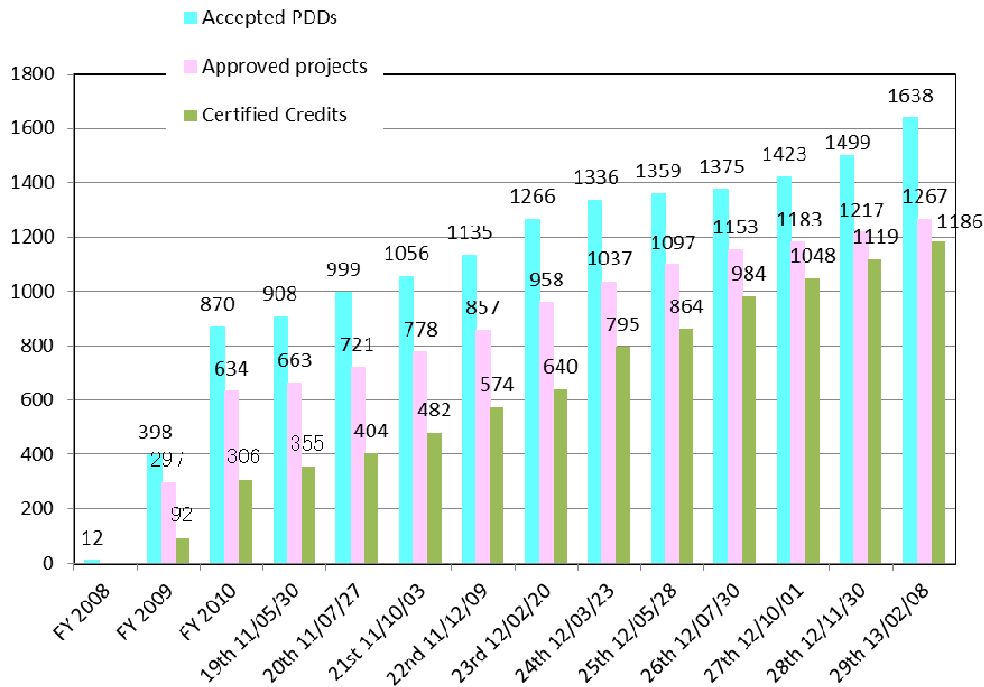
- Large companies and SMEs conduct **joint projects** for GHG reduction.
- Other than SMEs, emission reductions by the agriculture and forestry sectors (forest biomass) and the civilian sector (operations, residential, etc.) are also targets of this system.
- Large companies provide necessary capital **in exchange for domestic credits**, which are certified as credits by the Domestic CDM Certification Committee.
- They utilize those credits to achieve voluntary action plan goals for the Kyoto Protocol, CSR, offsets, etc.



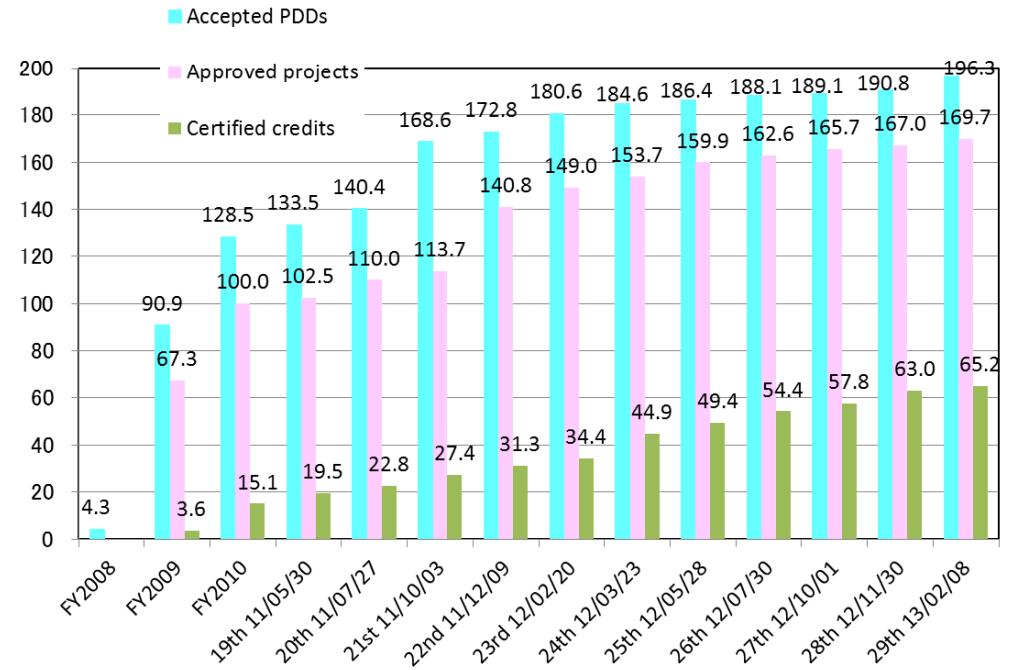
Current status of certified credits, projects, and project design documents (PDDs)

- The Domestic CDM Certificate Committee has accepted 1,638 PDDs as of the 29th Certificate Committee (held on February 8th.)
- Prospective amount of emissions reduction by the end of FY2012 is 1.96 million t-CO₂ from the 1,638 projects above. (Amount of emissions reduction per project is 1,198 t-CO₂.)
- Certified Domestic CDM Credits are 652,000 t-CO₂ at this time. They have been generated from 1,186 projects.

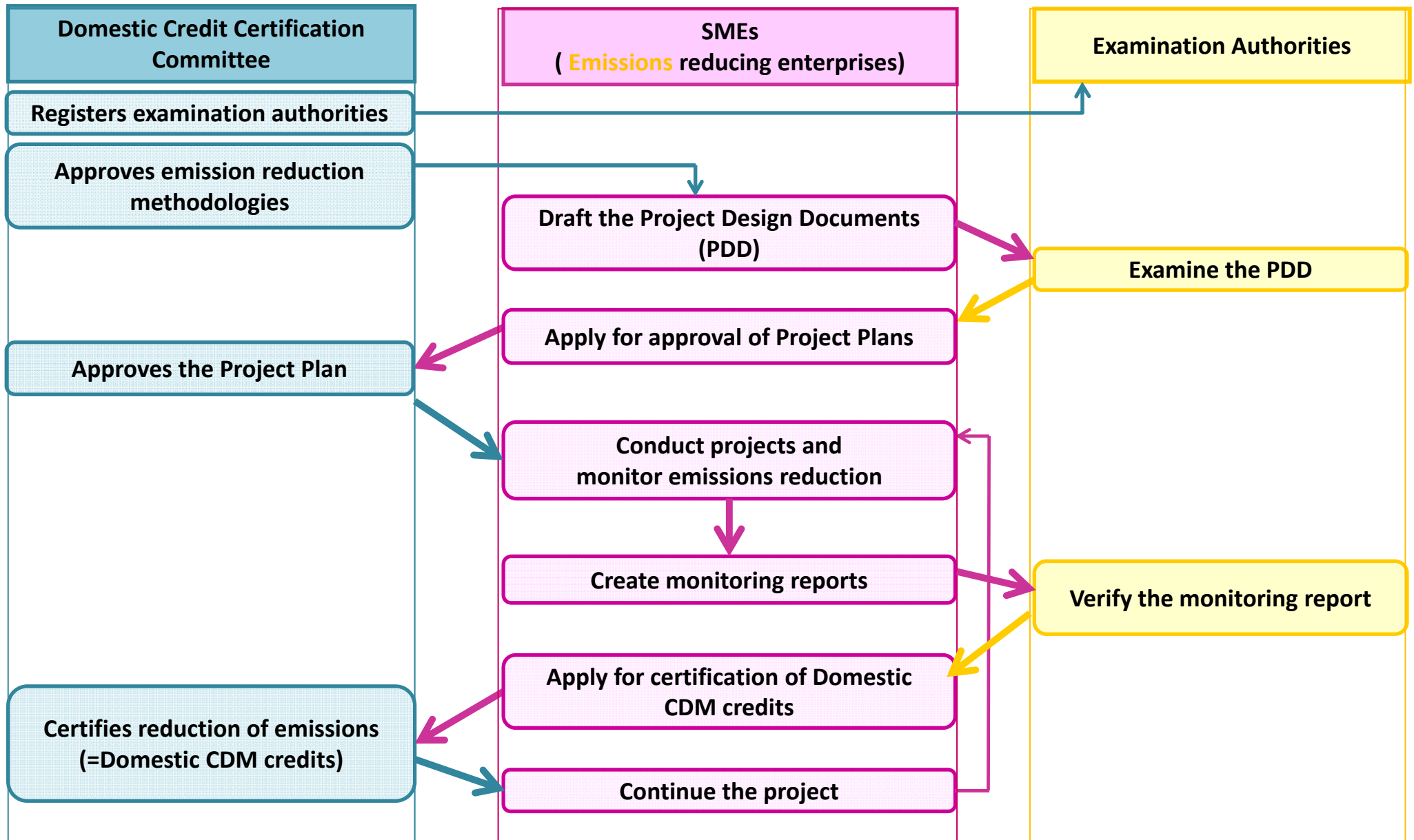
Trend of the number of submitted PDDs, approved projects, and certified domestic CDM credits



Trend of the amount of prospective emissions reduction and certified domestic CDM credits



Process of the Domestic Credit Certification



Domestic CDM Certification Committee

Tasks

- ① Approval of methodologies
- ② Approval of emissions reduction project plans
- ③ Certification and Management of Domestic CDM Credits
- ④ Registration of Examining Authorities
- ⑤ Making administrative instruction for implementing the above tasks
- ⑥ Providing information about the domestic CDM

Members

- ★ **Dr. Yoichi Kaya** Senior Vice President, Research Institute of Innovative Technology for the Earth
- Mr. Tadashi Otsuka** Professor of Law, Waseda University
- Dr. Minoru Kumazaki** Professor Emeritus of Tsukuba University
- Ryuji Matsuhashi, PhD** Professor of the Graduate School of Engineering, the University of Tokyo
- Mr. Tsutomu Miyagi** Executive Managing Director, the Japan Chamber of Commerce & Industry
- Mr. Satoshi Mukuta** Managing Director, Japan Business Federation (Nippon Keidanren)
- Dr. Yuichi Moriguchi** Professor of the Graduate School of Engineering, the University of Tokyo

Secretariat

Ministry of Economy, Trade and Industry, Ministry of the Environment,
Ministry of Agriculture, Forestry, and Fisheries

← **Minister of Economy, Trade and Industry, Minister of the Environment, and Minister of Agriculture, Forestry and Fisheries appoint the members of the Certification Committee.**

Emissions Reduction Projects

Emissions Reduction Projects

These are projects that renew equipment and/or introduce new equipment in order to reduce Green House Gases (GHG) emissions.

✂Covered gases are CO₂, Methane, N₂O, HFC, PFC, and SF₆

Requirements for approval

1. Implemented in Japan
2. **Additionality**
✂More than three years is necessary to recover investments.
3. **Non-member firms of the industrial sector's Voluntary Action Plans**
4. In accordance with **Methodologies**
5. **Examined and Verified by the Examination Authorities**

Methodologies

Methodologies

Decide how to monitor and calculate GHG emissions reduction by technologies or equipment.

Requirements for approval

1. Technologies and boundaries are appropriate and legitimate.
2. Calculating method of baseline is appropriate and legitimate.
3. Emissions reductions are shown as mathematical formula, and coefficients and monitoring factors are defined clearly.
4. Appropriate and legitimate measuring method for coefficients and monitoring factor is adopted.

Process of approval

Application

Report to the Certification Committee

Public comment

Deliberation at the Certification Committee

Approval of methodologies

Approved Methodologies for the Domestic CDM

There are 64 methodologies as of February 20, 2012.

#	Methodologies
001	Renewal of boilers
001-A	Introduction of higher efficiency boilers
002	Renewal of heat source equipment by introducing higher efficiency heat pumps
002-A	Renewal of heat source equipment by introducing higher efficiency heat pumps (heat recovery type)
002-B	Introduction of higher efficiency heat pumps
002-C	Introduction of higher efficiency heat pumps (heat recovery type)
003	Renewal of industrial furnaces
004	Renewal of air conditioning facilities
004-A	Introduction of free-cooling
004-B	Introduction of woody biomass heater stoves
004-C	Introduction of higher efficiency air conditioning facilities
004-D	Renewal of heaters by introducing woody biomass heater stoves
005	Renewal of fan and pump or installation of inverter and controlling equipment
006	Renewal of lighting facilities
006-A	Introduction of higher efficient lighting facilities
007	Renewal of heat source by introducing co-generation
007-A	Introduction of co-generation equipment
008	Introduction of solar power generation

Approved Methodologies for the Domestic CDM

#	Methodologies
009	Utilization of heat or waste heat from hot springs
010	Renewal of transformers
011	Introduction of controlling equipment for outlets
012	Switch of reduction agent from coke to biomass coke used in melting furnaces
013	Switch from private heat source equipment to outside heat sources
014	Introduction of compact steam electric generators utilizing waste steam
015	Switch from off-grid power system to grid electricity
016	Renewal of heat source equipment utilizing solar heat
016-A	Introduction of heat source equipment utilizing solar heat
017	Introduction of small hydroelectric power generation
018	Introduction of heat storage system to recover and utilize waste heat
018-A	Switch from existing heat source to recovered waste heat
019	Utilization of water from melting snow for cold source
020	Switch from fossil fuel vehicles to electric vehicles
020-A	Introduction of electric vehicles
021	Renewal of vending machines
022	Renewal of refrigeration equipment
022-A	Introduction of higher efficiency refrigeration equipment
023	Introduction of wind generators

Approved Methodologies for the Domestic CDM

#	Methodologies
024	Renewal of marine vessels by introducing storage battery –driven vessels
025	Renewal of pumps and fans
026	Renewal of construction machinery and industrial trucks by introducing power-operated machineries and trucks
026-A	Renewal of construction machinery and industrial trucks by introducing hybrid machineries and trucks
027	Renewal of machine tools
028	Switch from fossil fuels to biodiesel fuels
028-A	Switch from fossil fuels to biogas
029	Renewal of press machines
030	Renewal of private electric generators
030-A	Introduction of biomass generators
031	Renewal of television receivers
032	Renewal of injection machines
033	Abatement of N ₂ O emissions from pig excreta disposal by utilizing low-protein feed
034	Conversion of disposal management system for livestock excreta
035	Renewal of drying machines
036	Switch of cover gas in casting magnesium from SF ₆ to lower GWP gases
037	Introduction of recovery and degradation systems of N ₂ O used for anesthesia
038	Switch from fossil fuel vehicles to natural gas vehicles
038-A	Introduction of natural gas vehicles

Approved Methodologies for the Domestic CDM

#	Methodologies
039	Renewal of printing machines
042	Renewal of servers
043	Renewal of plumbing products
043-A	Introduction of water saving plumbing products
044	Energy efficiency improvement by relocating servers to outside data centers
045	Renewal of heat source equipment utilizing geothermal energy
045-A	Introduction of heat source equipment utilizing geothermal energy
046	Renewal of air compressor by introducing steam-driven air compressors
047	Reduction of sludge by adding microorganisms activator
048	Introduction of electric generator utilizing renewable heat energy

Merits for the participants

Small and Medium Enterprises

1. CO2 emission reductions/
Energy saving
2. Saving running costs /
Profit on sale of the credits
3. PR effects

Equipment Suppliers

- Provide additional value to their services

Large Enterprises

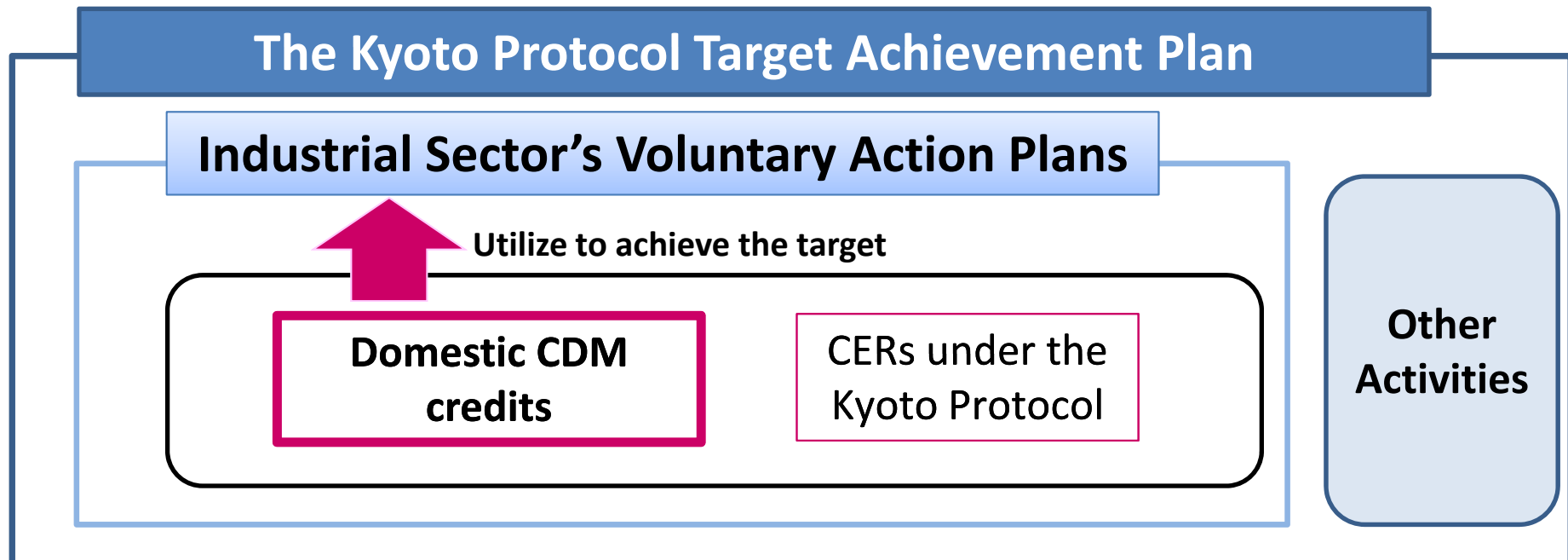
1. **Achievement of Voluntary Action Plan targets**
2. **Achievement of Experimental Emissions Trading Scheme targets**
3. Report of emissions after adjustment of greenhouse effect countermeasures
4. Report on joint energy conservation projects under the Energy Conservation Law
5. CSR, offsetting, etc.

Merits for large enterprises

1. Achievement of the Voluntary Action Plan Targets

- Domestic CDM credits can be utilized to achieve the Voluntary Action Plan targets established by the industrial sector as a major action in the Kyoto Protocol Target Achievement Plan.

✘The industrial sector sets targets by sectors voluntarily . These targets are reviewed by the government annually to ensure achievement. As of 2011, 116 sectors set their targets and are making efforts to achieve them.



Merits for large enterprises

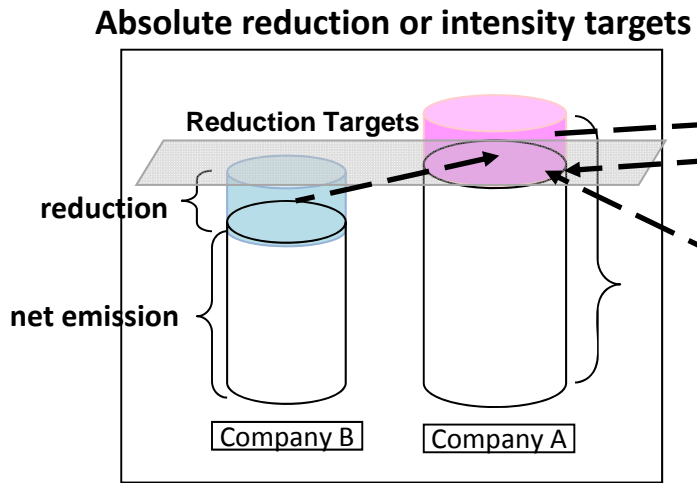
2. Achievement of Experimental Emissions Trading Scheme targets

- Participating companies set their own targets (absolute reduction or intensity-based) and strive to achieve them.
- Targets are set to be consistent with each industry group's Voluntary Action Plan. Government examines validity of each target.
- The following allowances and credits can be used to achieve the targets:
 - (1) Excess emission allowances of other companies; (2) **Domestic CDM credits**; (3) Kyoto Mechanism Credits (CERs, etc.)

Integrated Domestic Market

1. Experimental emissions trading scheme

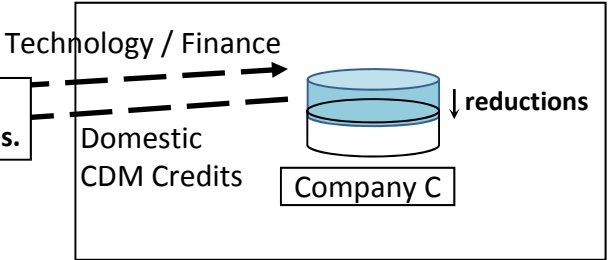
➤ Companies can choose various options, including absolute reduction or intensity targets, and strive to achieve them, if necessary, by trading allowances and credits.



A joint project between large and mid-to-small enterprises.

2. Domestic CDM Program

➤ The government verifies the amount of emissions reductions achieved by small and medium enterprises with technology and financing provided by large enterprises.



3. CERs (Kyoto Credits)

[GHG reduction overseas]

Merits for large enterprises

3. Report of adjusted amount of GHG emissions

Businesses can utilize the Domestic CDM credits to calculate adjusted amount of GHG emission report.

How to calculate adjusted amount of GHG emissions

**Adjusted amount of
GHG emission**

=

Actual amount of GHG
emission

—

① Kyoto Credits (amount of which cleared off)
② Domestic CDM credits (amount of which cleared off)

4. Report as joint energy conservation projects

- Under the Energy Conservation Law, businesses are required to reduce their energy consumption intensity by 1% every year.
- They can report the emission reduction project approved by the Domestic Credit Certification Committee as a joint energy conservation project.

**Amount of joint energy
conservation**

=

Amount of energy consumption
without the energy
conservation project

—

Amount of energy consumption
**with conducting the energy
conservation project**

Merits for large enterprises

5. Carbon Offsetting using the Domestic CDM credits

Example of Selery. Co., Ltd.

Selery Co., Ltd. sells uniforms which are offset with the domestic CDM credits. Their customers can contribute to CO2 emissions reduction in Japan and to help achieve the Kyoto

Protocol targets.

- Contribute to achieving Kyoto Protocol target
- Promotion of CO2 emissions reduction project



Governmental Support

【Supports】

- | | | |
|--|------------------------------|--|
| 1. Support for drafting PDDs | 2. Establish matching scheme | 3. Support for examination fees of PDDs |
| 4. Support for creating monitoring reports | | 5. Support for verification fees of monitoring reports |

