

# **The Joint Crediting Mechanism (JCM) in Indonesia and updates on its current status**

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# Presentation structure

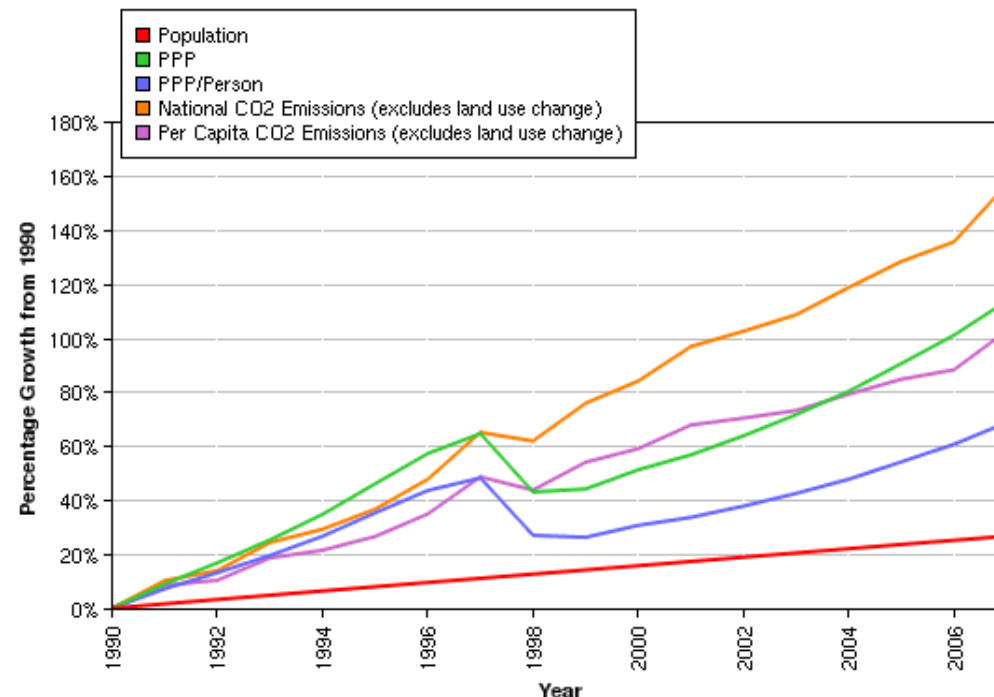


- 1. GHG emission reduction activities in Indonesia**
- 2. The JCM current development**
- 3. How the JCM works?**
- 4. The JCM financial scheme**
- 5. JCM project implementation**

# Whose responsibility is it to reduce the GHG emission?

## Facts:

- The major drivers of the global GHG emissions are population and economic growth
- Communities and individual, government, companies, and all of the part of societies have their own share in emitting the GHG gasses
- It means that everybody on earth is responsible for the GHG emissions and climate change.



Indonesia economic and GHG emissions growth are still coupled

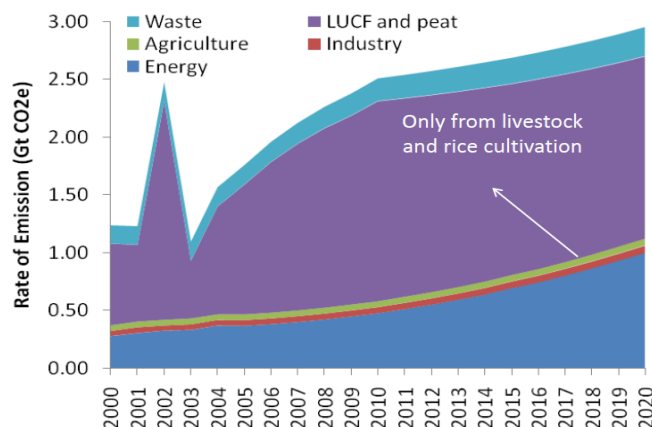
## Emission reduction benefits for companies:

- Shift the production and consumption patterns to low carbon technologies
- Improve energy efficiency and sustainability
- Saving money
- Reduce carbon footprint
- As a part of companies responsibilities to the earth and humanity.

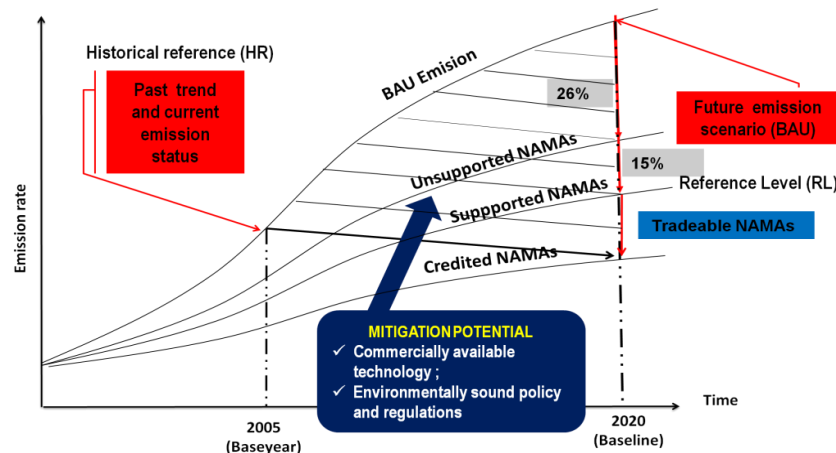
**In Paris 2015 UNFCCC Conference of Parties XXI, every country must submit their target and commitment to reduce the emissions. This obligation will be translated to the national level.**

# Indonesia emissions reduction target and the JCM

Historical and projection of GHG emission under BAU scenario by sector (2000-2020)



Indonesia Voluntary Emission Reduction Targets



**We need more than three years to develop the JCM scheme and agreement, started from 2010 and its finally signed on August 2013...**

- Japan and Indonesia have their own national target on emission reduction to be achieved, and it can be done through the JCM.
- Both countries also need to increase their economic development as well as develop more opportunities for their private sectors to grow.
- The Joint Crediting Mechanism is the most progress mechanism now in Indonesia. It is not only about the bilateral carbon trading, but also about how to develop and implement green investment, low emission development, technology transfer between the two countries.

# Reduce GHG emissions and get benefits

## National Goals

Environmental prudence (Environmental Quality Index 70-80%, Emissions Reduction 26%), economic growth (7%) , social equity

## Outcome and Impact

- Technology transfer and capacity building
- Financial support and green investment
- Energy efficiency
- Electrification
- Forest conservation
- Renewable energy use enhancement
- Multiplier effect

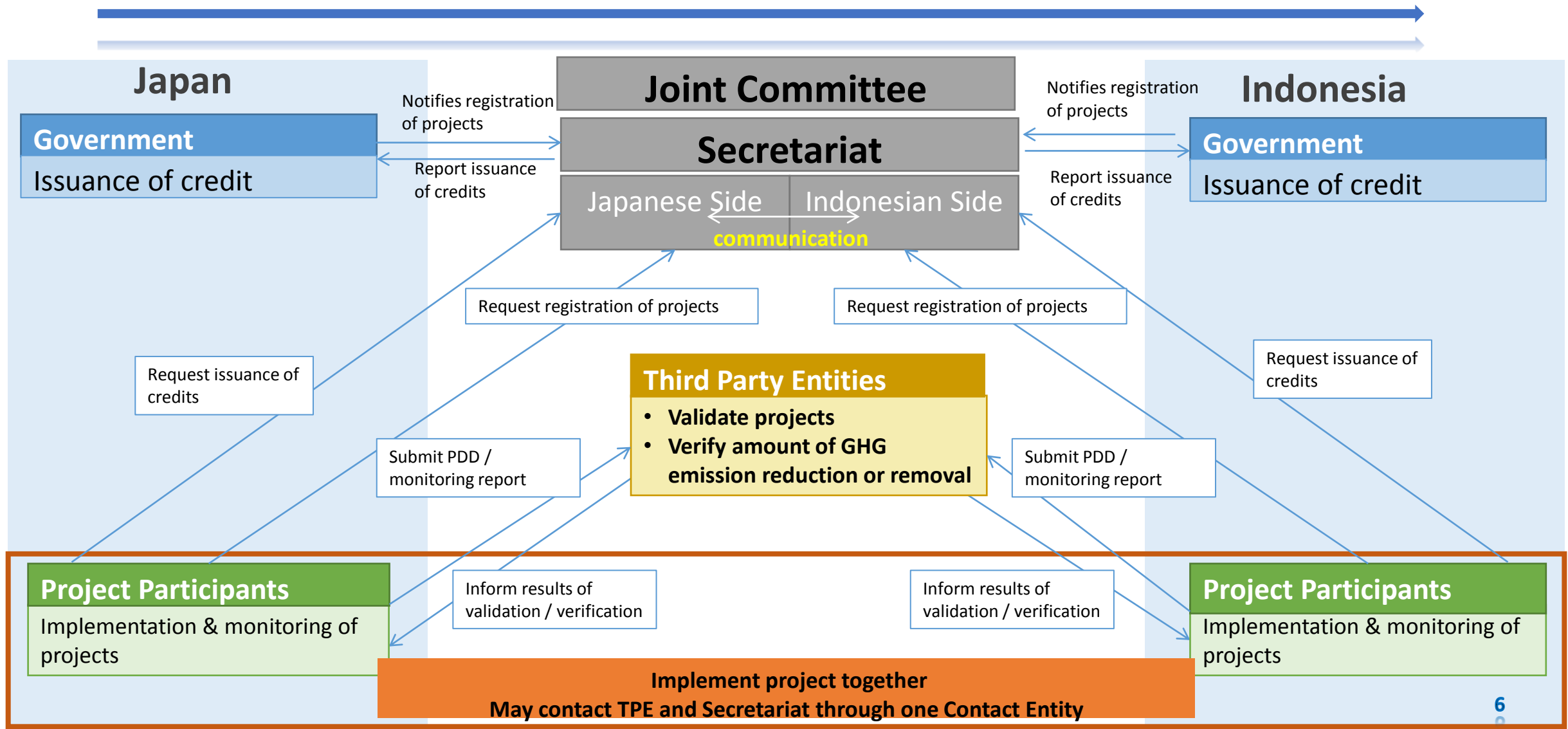
## Programs and Projects of Emission Reduction, e.g. JCM

The emission reduction program that have been done by the private companies should compliance to regulations and standards, investment, MRV, monitoring and evaluation





# How the JCM scheme works?



# The JCM stakeholders



# The JCM projects current development

## The JCM Project Progress

- 96 Feasibility Study have been done from 2010-2015
- 3 projects are registered as JCM projects in Indonesia.
- 12 JCM projects are now in our pipeline.
- 13 projects on energy efficiency and 2 projects on renewable energy (registered and pipeline).
- 1 project has withdrawn due to political issues.
- All projects are being developed with the cooperation between Indonesia and Japan participants.

## The Registered Projects

1. "Energy Saving for Air-Conditioning and Process Cooling by Introducing High-efficiency Centrifugal Chiller" (first registered project under the JCM worldwide)
2. "Project of Introducing High Efficiency Refrigerator to a Food Industry Cold Storage in Indonesia"
3. "Project of Introducing High Efficiency Refrigerator to a Frozen Food Processing Plant in Indonesia"



The 1<sup>st</sup> JCM registered project:

- Collaboration between **Ebara Equipment & Systems** and **PT Primatexco Indonesia**
- Location: Batang, Central Java
- Estimated total emissions reduction **799 tCO<sub>2</sub> eq.** by 2020
- Annual **965 MWh** energy saving



# List of JCM implementation projects

No	Project title	Estimated annual emissions reduction, average (tCO <sub>2</sub> /y)	Capacity/estimated energy saving
1	Energy Saving for Air-Conditioning and Process Cooling by Introducing High-efficiency Centrifugal Chiller <b>(registered)</b>	117	
2	Project of Introducing High Efficiency Refrigerator to a Food Industry Cold Storage in Indonesia <b>(registered)</b>	120	173 MWh
3	Project of Introducing High Efficiency Refrigerator to a Frozen Food Processing Plant in Indonesia <b>(registered)</b>	21	32 MWh
4	Energy saving for air-conditioning at textile factory	117	799 MWh
5	Energy Savings at Convenience Stores	33 (per store)	39 MWh
6	Energy saving for textile factory facility cooling by high efficiency centrifugal chiller	118	92.4 MWh
7	Energy saving through introduction of regenerative burners to the aluminum holding furnace of the automotive components manufacturer	856	
8	Energy saving by double bundle-type heat pump	170	
9	Upgrading to Air-Saving Loom Project	566	
10	Introduction to high-efficient old corrugated cartons process factory	14,884	
11	Energy Saving by Optimum Operation at Oil Refinery	3400	
12	Utility Facility Operation Optimization Technology - "RENKEI" Control	58,000	800 MWh
13	Power generation by waste heat recovery in cement industry	122,000	30.4 MW
14	Remote Auto-Monitoring System for Thin-Film Solar Power Plant in Indonesia	1,432	1 MW
15	Solar power hybrid System installation to existing base transceiver stations in off-grid area	3,096	18 kW
		<b>204,608</b>	<b>1,935 MWh/31.418 MW</b>

# List of JCM Feasibility Studies

Field of Activity	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	Total
LULUCF and REDD-plus	1	6	7	4	7	25
Renewable Energy	1	7	8	4	1	21
Energy Efficiency	3	5	6	5	9	29
Agriculture	1	1	1	0	0	3
Transportation	0	2	2	1	0	5
Waste Handling and Disposal	1	0	0	2	1	4
Fugitive emissions	0	0	0	1	0	1
Carbon Capture and Storage and SNG	1	2	2	0	1	5
Low-Carbon City	0	0	0	1	2	3
<b>Total FS</b>	<b>8</b>	<b>23</b>	<b>26</b>	<b>18</b>	<b>21</b>	<b>96</b>

# List of JCM Methodologies in Indonesia

- **8 approved methodologies**

1. Power Generation by Waste Heat Recovery in Cement Industry
2. Energy Saving by High-Efficiency Centrifugal Chiller
3. Installation of Energy-Efficient Refrigerators Natural Refrigerants at Food Industry Cold Storage and Frozen Food Processing Plant
4. Installation of Air-Conditioning for Grocery Store
5. Installation of LED lighting for grocery store
6. GHG emission reductions through optimization of refinery plant
7. GHG emission reductions through optimization of boiler operation in Indonesia
8. Installation of a separate type fridge-freezer showcase by using natural refrigerant for grocery store to reduce air-conditioning load inside the store

- **2 proposed methodologies being developed:**

1. Replacement of conventional burners with regenerative burners for aluminum holding furnaces
2. Introducing double-bundle modular electric heat pumps to a new building

# The JCM project development steps

Can be conducted by the same TPE  
Can be conducted simultaneously

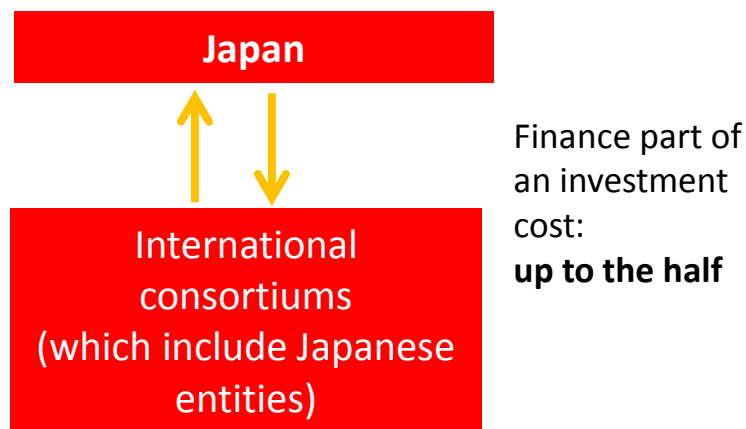


- **Simplicity, practicality and transparency**
- **No need to have additionality like CDM**
- **Net mitigation reductions**
- **Start as non-tradable credit type mechanism**

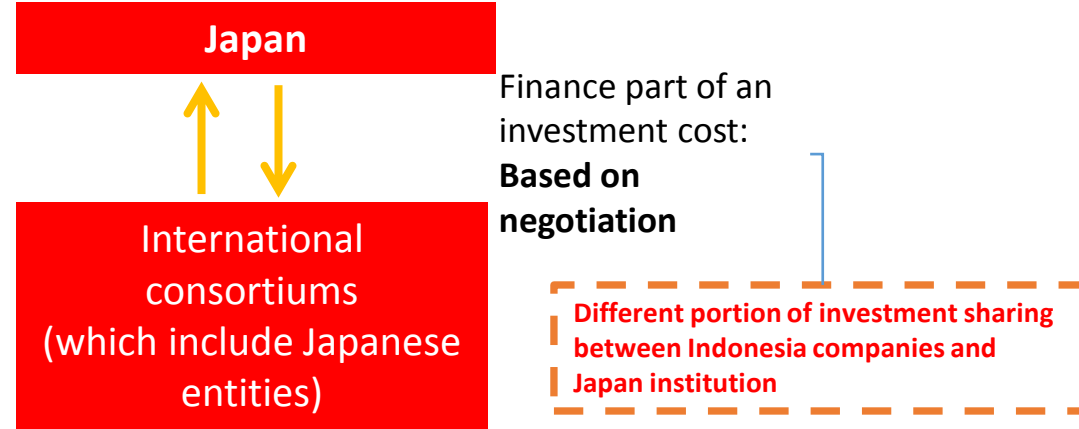
\*PDD: Project Design Document

# Financial scheme of JCM

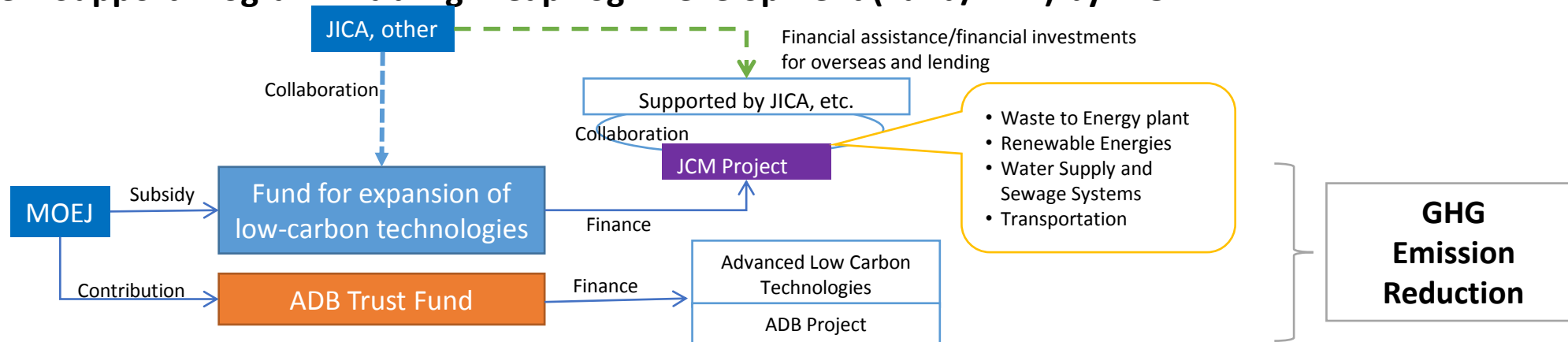
## Project Scheme by MOE



## Demonstration Scheme by METI



## New Support Program Enabling “Leapfrog” Development (Fund/ADB) by MOE





# JCM project example 1:

## Energy efficient refrigerants to cold chain industry

- **Karawang site:**

- Installed technology: Compressor (43 kW) and Intelligent Quick Freezer.
- By using Intelligent Quick Freezer, production capacity in Karawang site has increased from 2 tpd to 4 tpd.



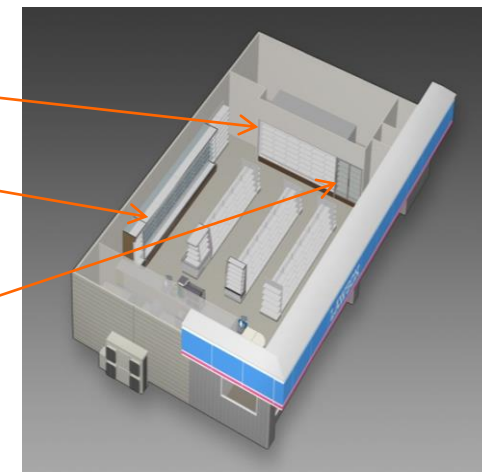
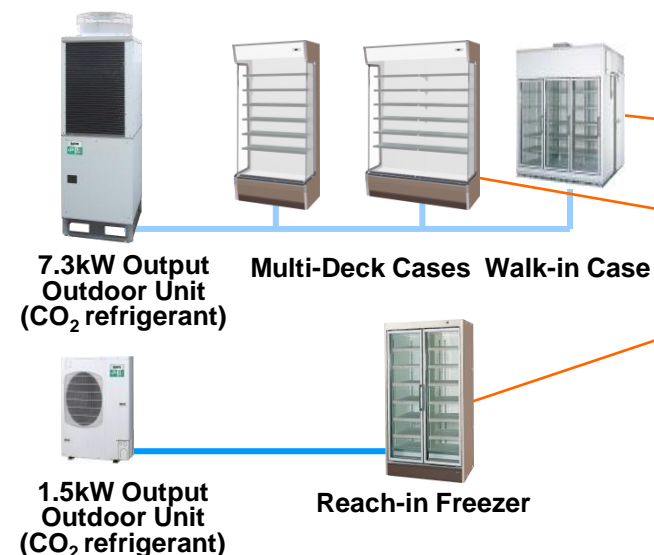
- **Bekasi site:**

- Installed technology: Compressor (2x43 Kw)
- The chillers were used for the cooling room purposes.
- For Bekasi site 20% reduction of energy consumption is expected than the reference scenario.



# JCM project 2 example: Energy efficiency in convenience stores

- 12 Alfa Midi stores around Jakarta, Tangerang and Depok already implemented technologies.
- Expected GHG reduction: 33.1 tCO<sub>2</sub>/store/year.
- Technologies:
  1. CO<sub>2</sub> refrigerant chillers;
  2. LED lamps; and
  3. Inverter-controlled AC;



# JCM project example 3:

## The waste heat recovery power generation in cement industry

- PT Semen Indonesia Tbk (SMGR) began constructing the power plant by utilizing the exhaust gas (Waste Heat Recovery Power Generation / WHRPG) Tuban I - IV with a capacity of 30.4 MW, which utilizes waste heat produced by the 4 kilns inside the factory to generate steam for the power generator.
- By this project, PT. Semen Indonesia can increase their factory energy efficiency while reducing the GHG emissions, each year up to 122,000 ton CO<sub>2</sub> is expected to be reduced. By using waste heat recovery power generation technology, PT. Semen Indonesia also can save up to 85% of its electricity bill.
- The project now is in its design and procurement of main equipment stage. This project is expected to finish on December 2016 (RKA).



# The opportunities for private sectors in JCM

## Become Third Party Entity

1. Currently 8 active TPEs (from Japan, India, China, UK).
2. TPE should be accredited in ISO 14065 by accreditation committee under International Accreditation Forum (such as Komite Akreditasi Nasional) or certified as CDM DOE.
3. Provisional TPE designation for entities under accreditation process
4. Indonesian individual experts are involved.

## Conduct Feasibility Studies

1. FS are planned together by the two governments in yearly basis.
2. Apply through **Project Idea Note** submission to the Government of Indonesia and Japan.

## Become project participant

1. Must establish cooperation with at least 1 Japanese private company/institution.
2. Apply through **Project Idea Note** submission to the Government of Indonesia and Japan.
3. Develop Project Design Document (PDD) to be submitted and approved by the Joint Committee of the both countries.

## Become Co-financier

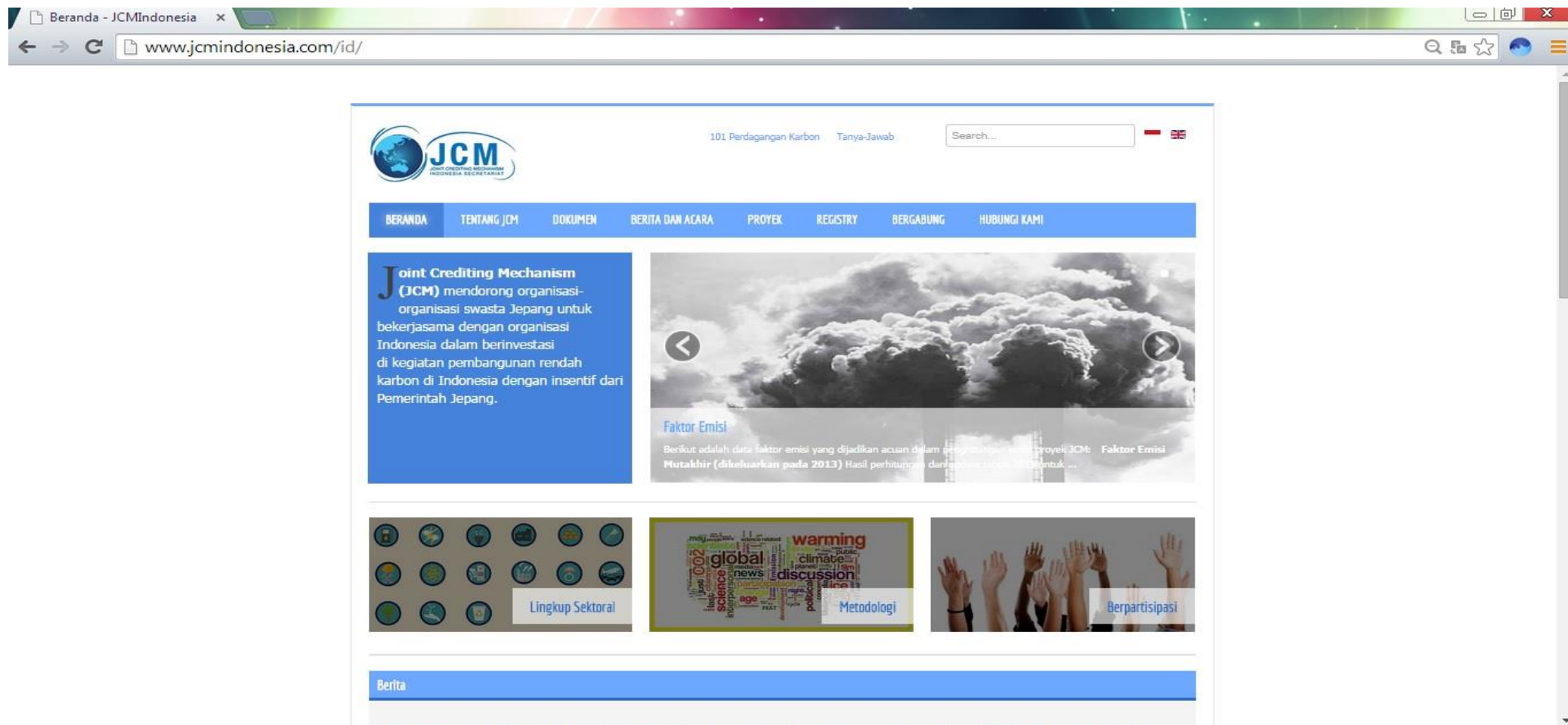
Indonesian financial institutions (banks, investment banks, guarantor, etc.) can grab the opportunity to collaborate with projects and Japanese financial institutions to support projects implementation.

## Learn from JCM Best Practices

1. JCM projects use the leading low carbon development technologies.
2. Indonesian private sectors can copy or learn from the JCM projects.
3. Every JCM project must build the capacity of related stakeholders.



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**Thank you!**  
**Terima kasih!**

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