The Joint Crediting Mechanism (JCM) Current Development in Indonesia

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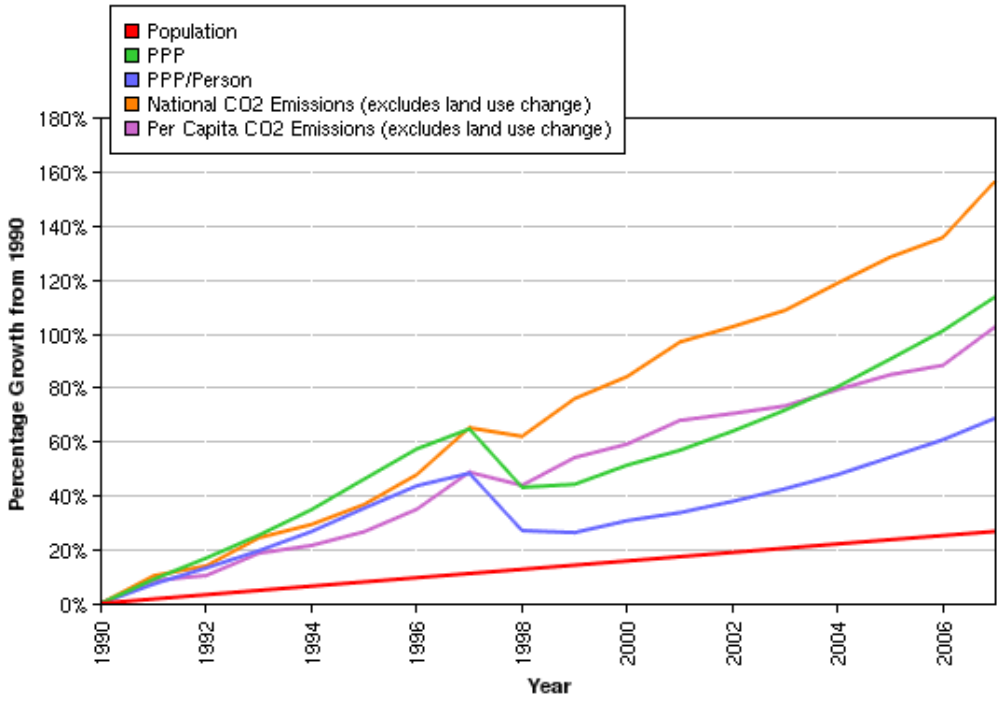
Presentation structure

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

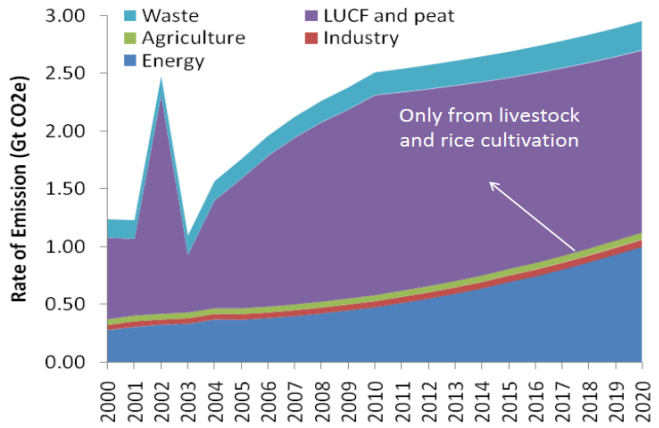
Emission reduction benefits for companies:

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

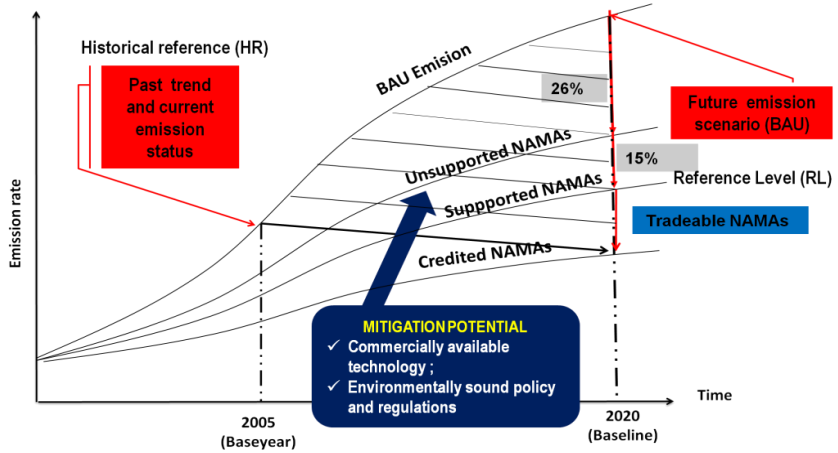
In Paris 2015 UNFCCC Conference of Parties XXI, every country must submit their target and commitment to reduce the emissions, this obligation will be translated to the national level

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 rather than how to develop and implement the green investment as well as low emission development and technology transfer between the 2 countries.

Reduce GHG emissions and get benefits

National Goals

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

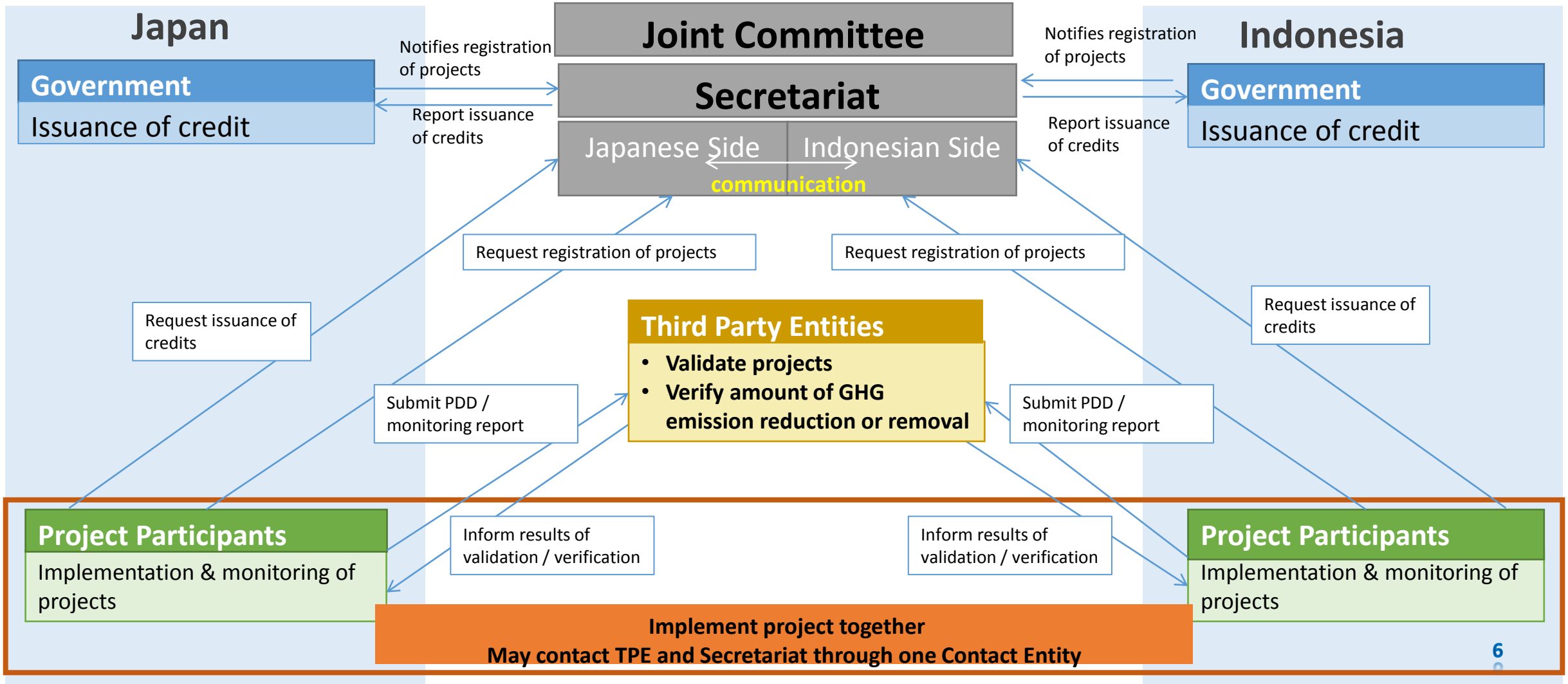
Outcome and Impact

- 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

Related ministries and agencies

Joint Committee Indonesia-Japan

Certification Bodies, Third Party Entities, experts and consultants

Business entities (state-owned and private)

Indonesia JCM Secretariat supported by JICA-CMEA Project

Local Governments (Indonesian and Japanese)

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.
- 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 1st JCM registered project:

- Collaboration between **Ebara Equipment & Systems** and **PT Primatexco Indonesia**
- Location: Batang, Central Java
- Estimated total emissions reduction **799 tCO_2 eq.** by 2020
- Annual **965 MWh** energy saving

List of JCM implementation projects

No	Project title	Estimated annual emissions reduction, average (tCO2/y)	Capacity/estimated energy saving
1	Energy Saving for Air-Conditioning and Process Cooling by Introducing High-efficiency Centrifugal Chiller **(registered)**	114	
2	Project of Introducing High Efficiency Refrigerator to a Food Industry Cold Storage in Indonesia **(registered)**	120	173 MWh
3	Project of Introducing High Efficiency Refrigerator to a Frozen Food Processing Plant in Indonesia **(registered)**	21	32 MWh
4	Energy saving for air-conditioning at textile factory	592	799 MWh
5	Energy Savings at Convenience Stores	33	39 MWh
6	Energy saving for textile factory facility cooling by high efficiency centrifugal chiller	104	92.4 MWh
7	Energy saving through introduction of regenerative burners to the aluminum holding furnace of the automotive components manufacturer	855	
8	Energy saving by double bundle-type heat pump at beverage plant	585	
9	Upgrading to Air-Saving Loom Project	566	
10	Introduction to high-efficient old corrugated cartons process factory	14,000	
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	2,786	18 kW
		204,608	**1,935 MWh/31.418 MW**

The JCM project development steps

- **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

Japan

International consortiums (which include Japanese entities)

Finance part of an investment cost: **up to the half**

Demonstration Scheme by METI

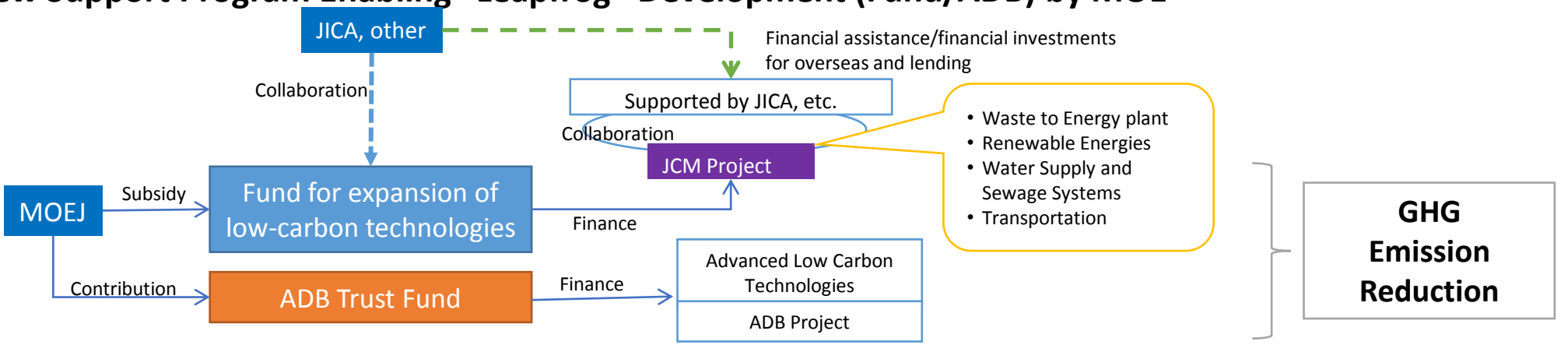
Japan

International consortiums (which include Japanese entities)

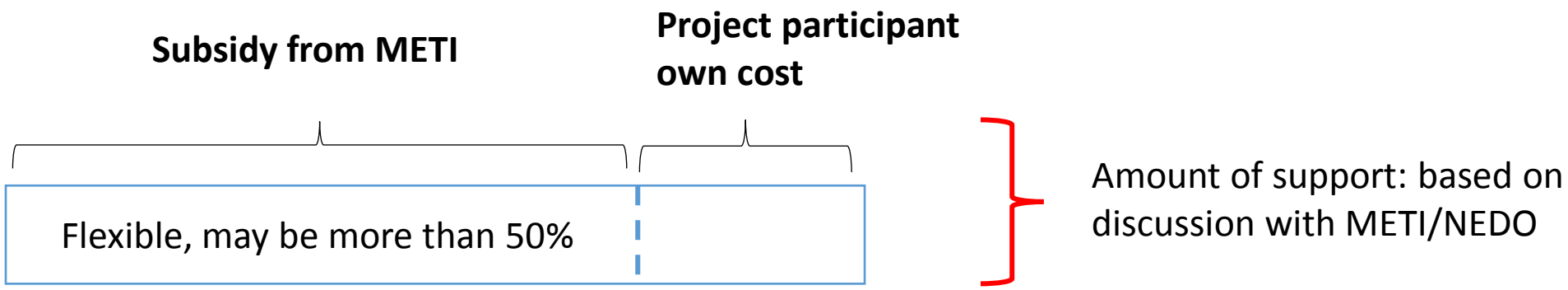
Finance part of an investment cost: **Based on negotiation**

Different portion of investment sharing between Indonesia companies and Japan institution

New Support Program Enabling "Leapfrog" Development (Fund/ADB) by MOE



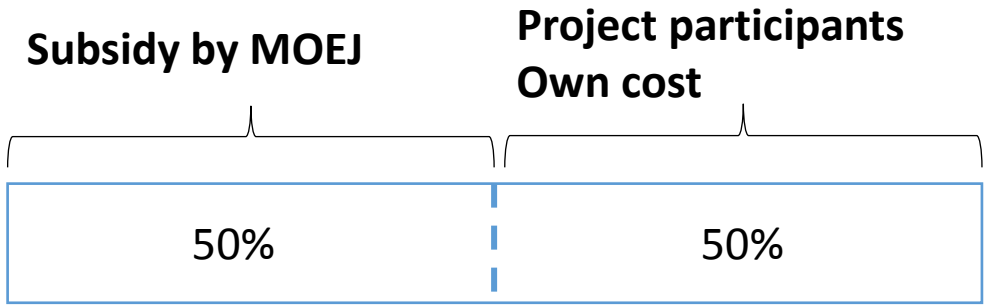
Promotion Scheme by METI (Ministry of Economy, Trade, and Industry)/NEDO for JCM Demonstration Project



- The equipment remains as property of METI for some time until handed over to the participants of the project.
- Direct subsidies on equipment, capital goods, and development of the capacity of project beneficiaries.
- Formulation of an international consortium on business basis not necessary, but other means of cooperation agreement are needed.
- Application through NEDO (New Energy and Industrial Technology Development Organization).

Promotion Scheme by MOE (Ministry of the Environment) Japan for JCM Model Project

- Covering half of cost for installing equipment which reduces GHG
- Need to formulate international consortium on a business basis
- Credit allocation to MOEJ and Indonesian side in a pro-rate basis, based on each side's investment



Initial cost for the installation of **new equipment**

Construction cost, cost for appurtenant work, equipment cost, costs for survey and test, administration cost, **monitoring equipment**

Amount of subsidy granted up to 50% of the total project cost

Technologies to reduce CO_2 emissions from energy-related sources

Project participants:
Japanese Entity(ies)
Indonesian Entity(ies)

International consortium

Apply this subsidy scheme to the GEC

GEC: Global Environment Center Foundation, secretariat of the subsidy scheme by MOEJ

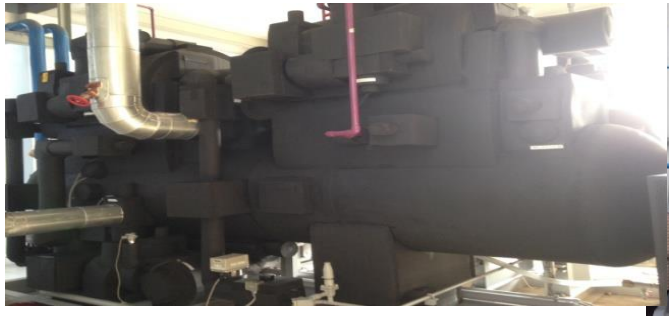
Coverage of Promotion Scheme by MOE for JCM Model Project

Item	Detailed item
Construction cost	Cost of material Cost of labor Direct expenses (including electricity cost and water charge for construction and machinery costs etc) Administrative expenses
Ancillary work cost	—
Survey and measurement cost	Investigation cost Design cost Survey and measurement cost
Administrative cost	Salary of staffs Cost of service operation Cost of Travel Rental cost etc

JCM project example 1:
Energy efficient refrigerants to cold chain industry

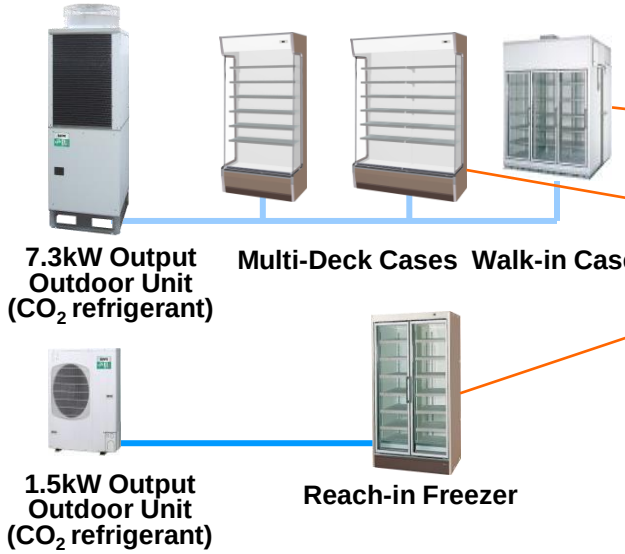
- **Karawang site:**
  - Installed technology: Compressor (43 kW)and Intelligent Quick Freezer.
  - By using Intelligent Quick Freezer, production capacity in Karawang site has increased from 2 tpd to 4 tpd.

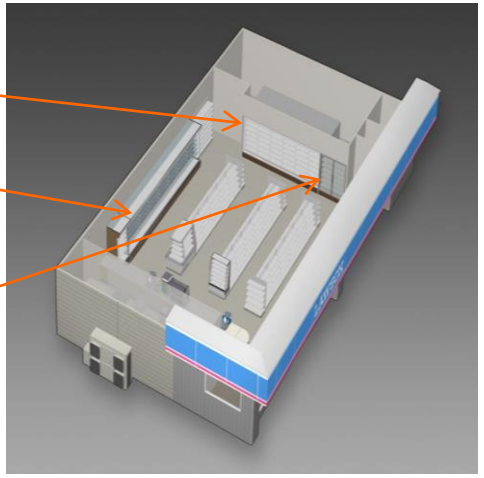

- **Bekasi site:**
  - Installed technology: Compressor (2x43 Kw)
  - The chillers were used for the cooling room purposes.
  - For Bekasi site 20% reduction of energy consumption is expected than the reference scenario.




JCM project 2 example: Energy efficiency in convenience stores

- 13 Alfa Midi stores around Jakarta, Tangerang and Depok already implemented technologies.
- Expected GHG reduction: 33.1 tCO_2/store/year.
- Technologies:
  1. CO_2 refrigerant chillers;
  2. LED lamps;
  3. Inverter-controlled AC; and
  4. In addition, photovoltaic power generation sytem on the store's rooftop may be implemented.





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 CO2 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.

Continues improvement of JCM scheme

- Develop effective & efficient instruments for emission reduction
- Promote the private sectors role in emission reduction
- Strengthen cooperation with national & local institutions
- Raise support from the international community
- Promote land-use and forestry projects
- Promote advanced technology transfer
- Promote the implementation of sustainable development

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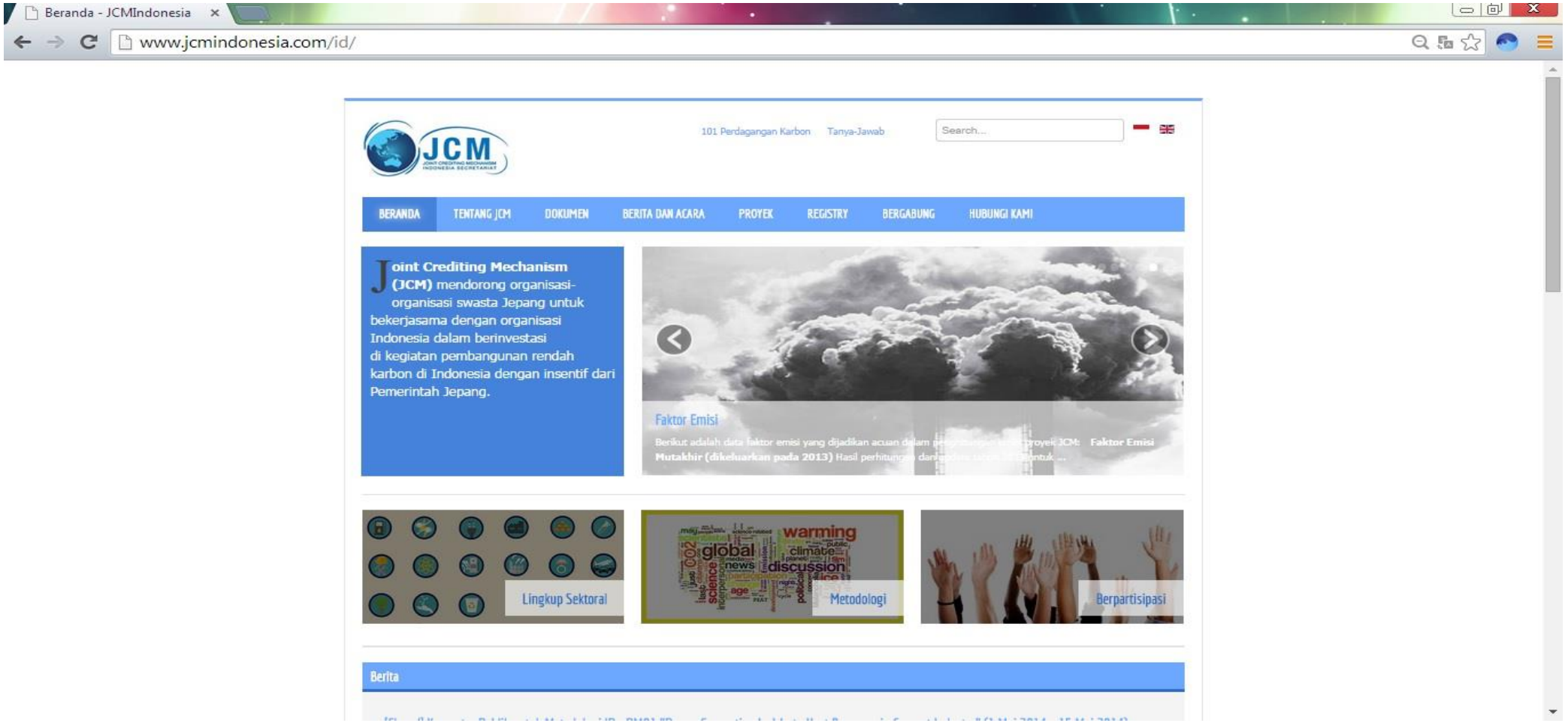

Thank you!

Terima kasih!

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