Potential for JCM in Indonesia
Sectors and Technologies

Promoting Bilateral Mechanisms in Asia and the Pacific:

A Workshop on the Joint Crediting Mechanism

Crowne Plaza Hotel, Jakarta, 21-21 May 2015

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Outline

- Background
- Experience of the Clean Development Mechanism
- JCM Potential and Benefits
- Project Opportunities on JCM projects

Republic of Indonesia

- Area: 1,910,930 sq.km (2014)
- Forest area: 930,620 (2012)
- Population 2013 census: 249,865,631
- Population 2015 estimated: 255,461,700 (Central Bureau of Statistics)
- Growth rate 2013: 5.8%
- Total GDP in 2013: USD 868,345,652,475
- GDP structure:
  - 46% in Industry
  - 40% in Services
  - 14% in Agriculture
- GDP (nominal) per capita 2015 estimated: USD 3,511 (IMF)

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All data sourced from the World Bank or otherwise stated

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Background

- Republic of Indonesia signed the Kyoto Protocol (KP) in July 1998 and ratified it in December 2004. Entry into force in March 2005
- Indonesia has proposed to cut emissions by 26% by 2020 from "business as usual" (BAU) levels. It proposed this target in September 2009 and submitted it to the Copenhagen Accord on 30 January 2010.
- In April 2011, Indonesia clarified that, in addition to its unilateral 26% target, it proposed a 41% reduction below BAU target conditional on international support for Nationally Appropriate Mitigation Actions (NAMAs).
- August 2013 – Indonesian Government signed a bilateral document with Government of Japan on the Joint Crediting Mechanism

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GHG Emissions of Indonesia

Sector *Sektor*	Year *Tahun*	
	2000	2005
Energy (Gg CO_2e) *Energi (Gg CO_2e)*	280.937,58	369.799,88
Industrial Processes (Gg CO_2e) *Proses Industri (Gg CO_2e)*	42.813,97	48.733,38
Agriculture (Gg CO_2e) *Pertanian (Gg CO_2e)*	75.419,73	80.179,31
Forestry and Land Use Change (Gg CO_2e) *Kehutanan dan Perubahan Penggunaan Lahan(Gg CO_2e)*	649.254,17	674.828,00
Peat Fires (Gg CO_2e) *Kebakaran Gambut (Gg CO_2e)*	172.000,00	451.000,00
Waste (Gg CO_2e) *Limbah (Gg CO_2e)*	157.327,96	166.831,32
Total (incl. Forestry and Land Use Change & Peat Fires) Gg CO_2e) *Total (dengan Kehutanan dan Perubahan Penggunaan Lahan & Kebakaran Gambut)[1] (Gg CO_2e)*	**1.377.753,41**	**1.791.371,892**
Total (not incl. Forestry and Land Use Change & Peat Fires) (Gg CO_2e) *Total (tanpa Kehutanan dan Perubahan Penggunaan Lahan & Kebakaran Gambut[2] (Gg CO_2e)*	**556.499,24**	**665.543,89**

Source: State of Environment Report Indonesia 2012

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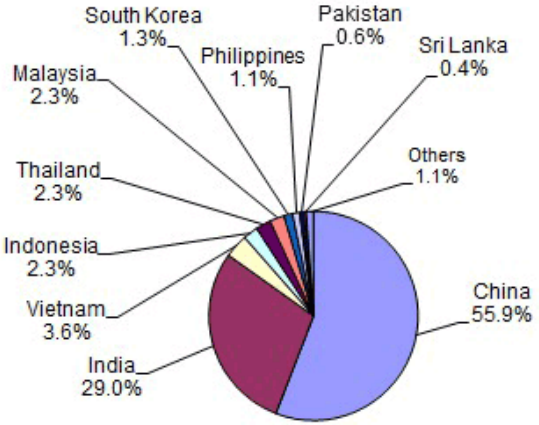
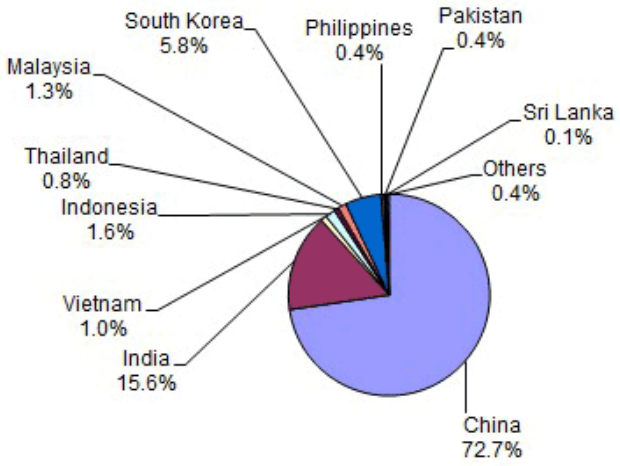
Clean Development Mechanism (CDM)

- Total 7641 CDM Projects Registered under the UNFCCC; 146 Registered CDM Projects from Indonesia (Source: UNFCCC)
- 1,567,153,095 CERs have been issued; 1.6% is issued from Indonesian CDM Projects (7th in the world, 4th in Asia) (Source: CDM Pipeline)

Number of CDM Proiects in Asia



Volume of CERs until 2012 in Asia by country



Data on 1st May 2015
Source: cdmpipeline.org

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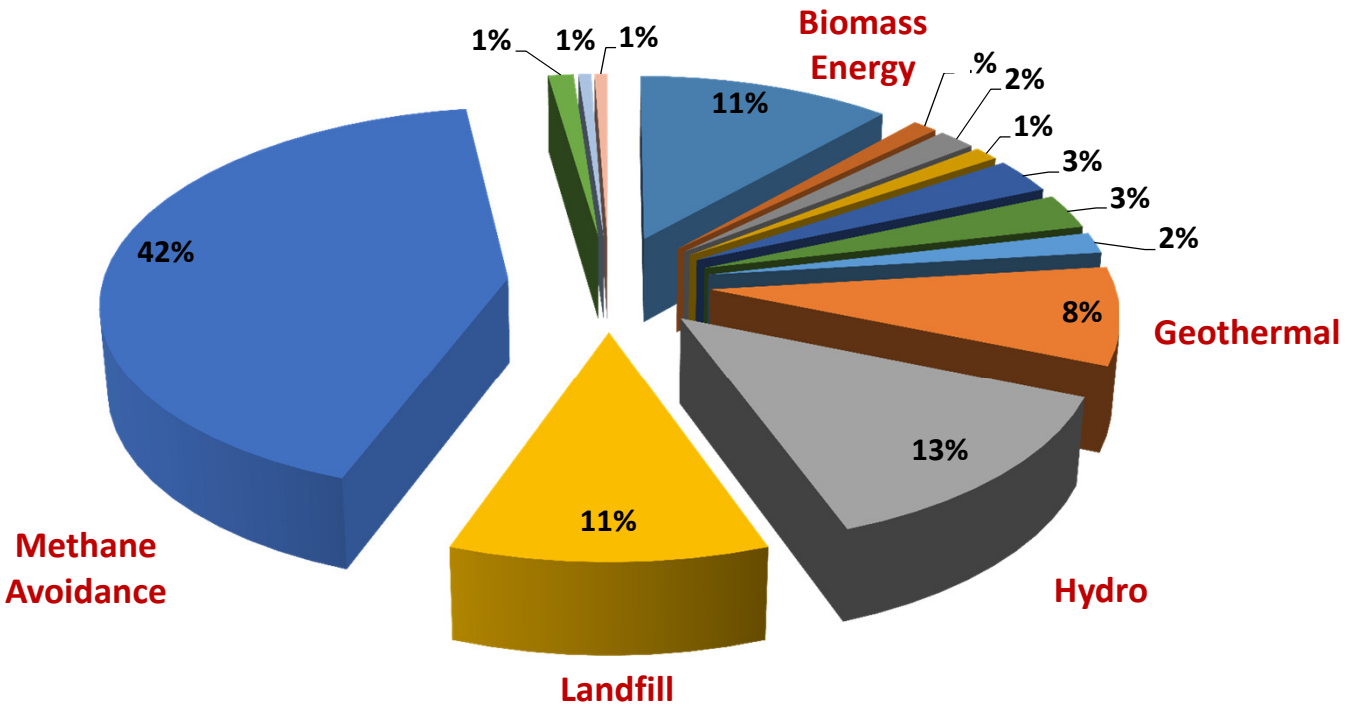
Clean Development Mechanism (CDM) in Indonesia



Data on 1st May 2015
Source: cdmpipeline.org

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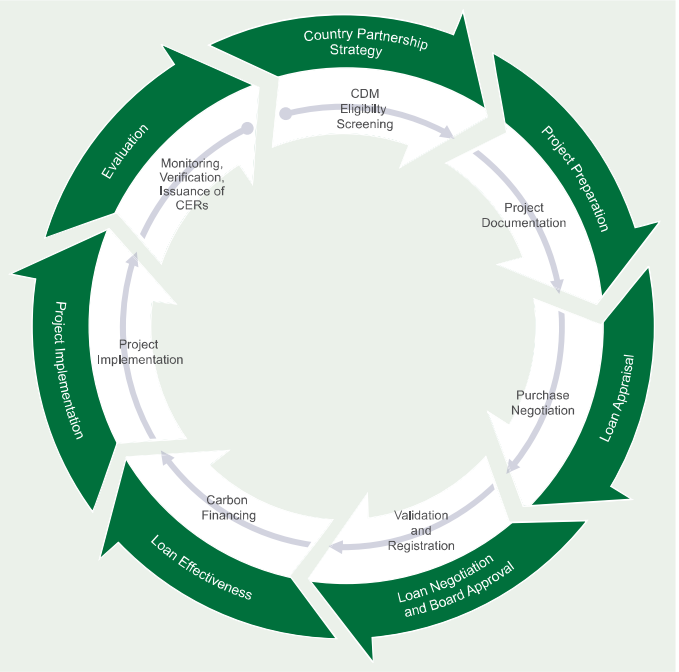
Lessons-learnt from CDM

- Heavy validation, registration and issuance process within CDM cycle: up to 3-6 years from starting point/ submission prior consideration to the first issuance of CERs
- Very difficult and time-consuming for proposing and approving new/revised methodologies
- Additionality requirements of the UNFCCC
- Availability of the certified DOEs for validation and verification



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JCM Solutions to CDM

- ***Default value*** can be used for calculating emission reductions while limit on monitored parameters
- Uses of ***eligibility criteria*** instead of *additionality*
- Less time-consuming for JCM procedure
- Shorter and more flexible procedure for JCM project
- Both Government can decide what technologies, products, etc. should be included in the eligibility criteria
- ***ISO 14065 certification entities*** can conduct validation & verification steps, beside Designated Operational Entities (DOEs)

⇒ **Facilitate <u>Low-carbon Technology Transfer</u>**

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JCM Benefits

- To contribute on national target to reduce GHG emission in Indonesia
- To implement advanced low carbon technology with financial support from the JCM provided by the Japanese government
- To save energy consumption with an advanced technology
- To reduce waste which is one of the biggest urbanization issues
- To deliver real and measurable sustainable development
- To contribute to the ultimate objective of the UNFCCC by facilitating global actions for emission reductions or removals

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JCM Sectors

JCM Sectoral Scope	
Energy industries (renewable/ non-renewable sources)	Fugitive emissions from production and consumptions of halocarbons and sulfur
Energy Distribution	Fugitive emissions from fuel
Energy Demand	Mining/ mineral production
Manufacture Industries	Transportation
Metal Production	Afforestation and reforestation
Solvent Use	Agriculture
Construction	Waste handling and disposal
Chemical Industries	

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JCM Potential on Energy Industries
(renewable and non-renewable sources)

Renewable Energy Potential in Indonesia

No	Type of Renewable	Available Resources (MW)	Installed Capacity (MW)
1	Hydro	75,000	8,671
2	Geothermal	28,910	1,344
3	Biomass	32,654	1,717
4	Solar	4.8 kWh/m2/day	14.1
5	Wind	3 – 6 m/s	1.4

Source: Ministry of Energy and Mineral Resources 2014

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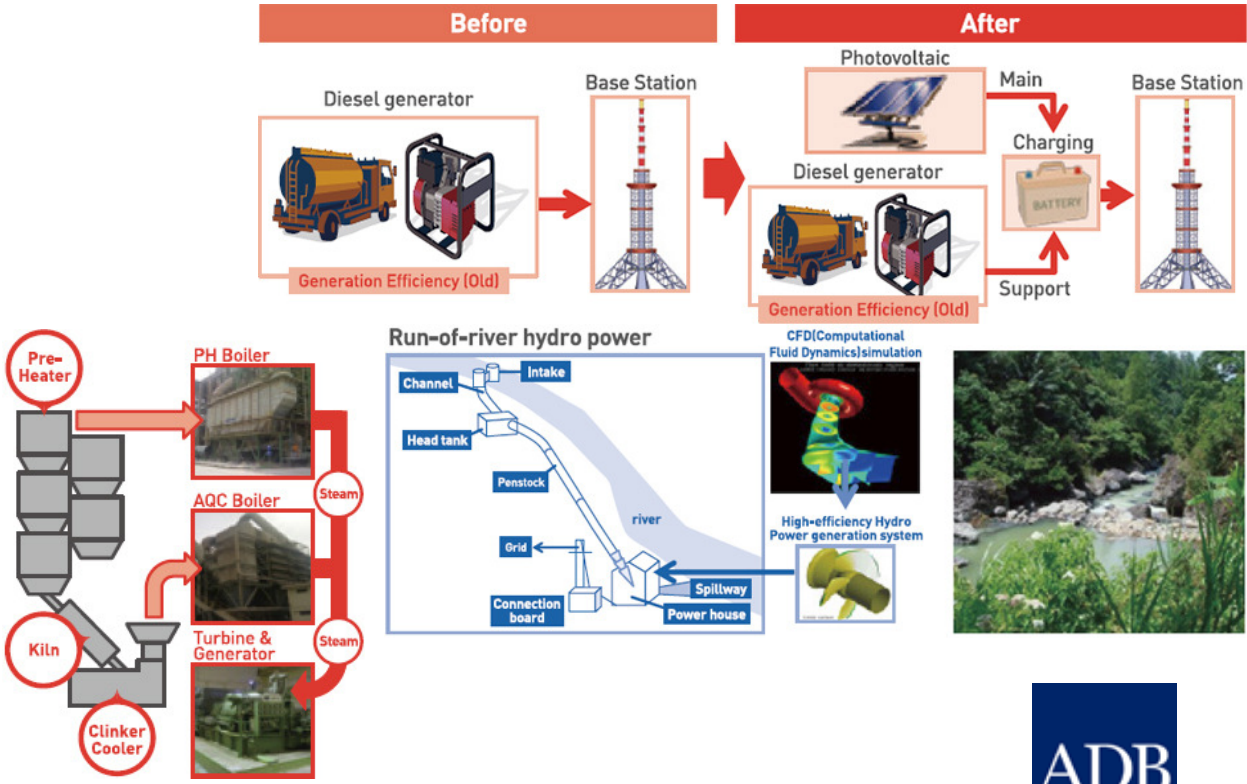
JCM Potential on Energy Industries
(renewable and non-renewable sources)

- Solar power hybrid system installation in off-grid
- Run-of-river hydropower
- Power generation by waste heat recovery
- Geothermal



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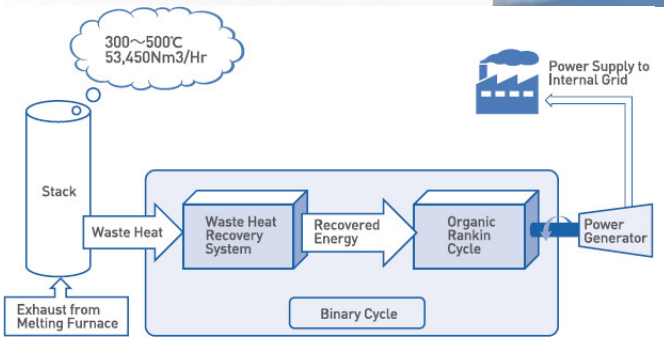
JCM Potential on Energy Industries
(renewable and non-renewable sources)

- Solar-wind power hybrid system
- Thin film solar power
- Waste Heat Recovery and Electricity generation
- Advanced Gasification for Biomass Power



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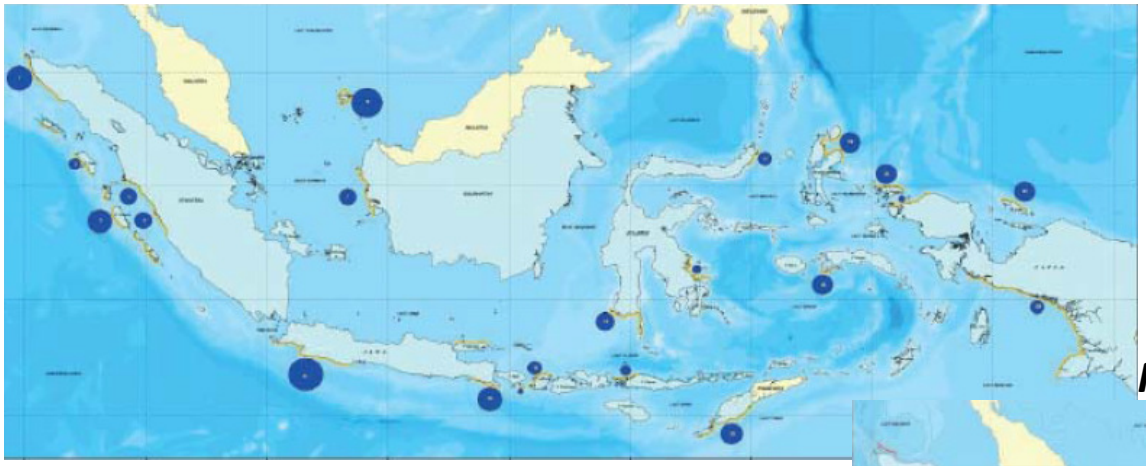
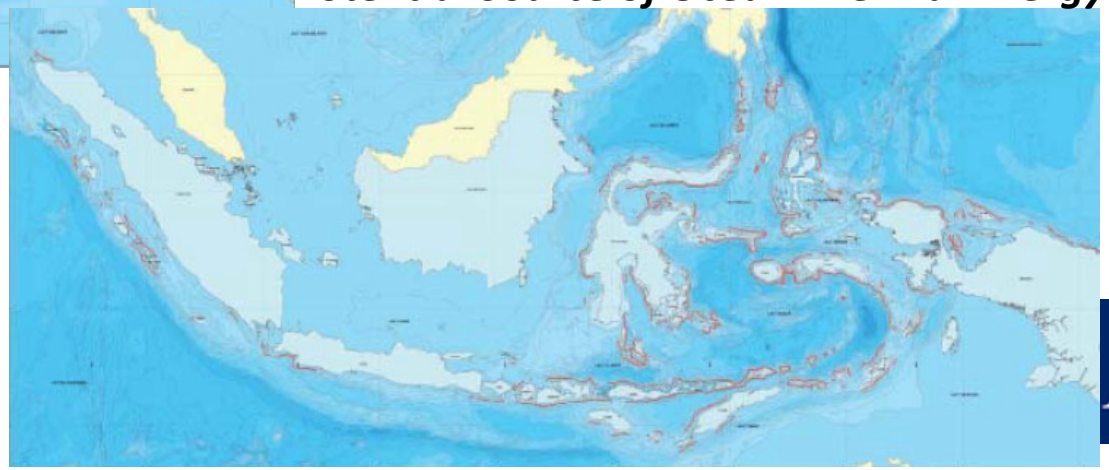
JCM Potential on Energy Industries
(renewable and non-renewable sources)

Potential Source of Wave Energy



Potential Source of Ocean Thermal Energy



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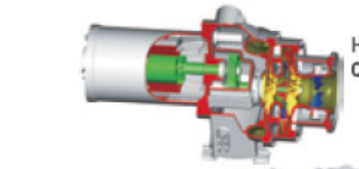
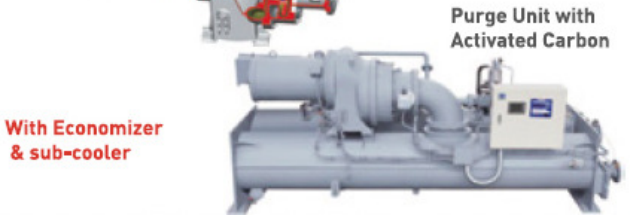
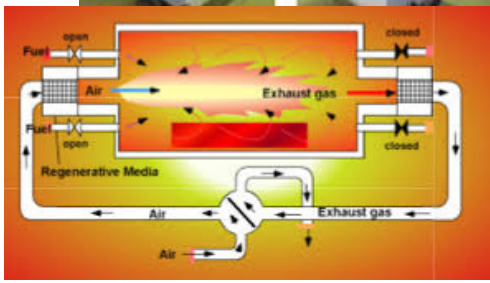
JCM Potential on Energy Demand

- High efficiency refrigerator for food industry
- Energy saving for factory cooling facility by high-efficiency centrifugal chiller
- Energy saving for air-conditioning and cooling process
- Energy saving by installation of double bundle type heat pump
- Energy efficiency at data center
- Energy efficiency for mobile communication system
- Regenerative burners to the aluminium furnaces







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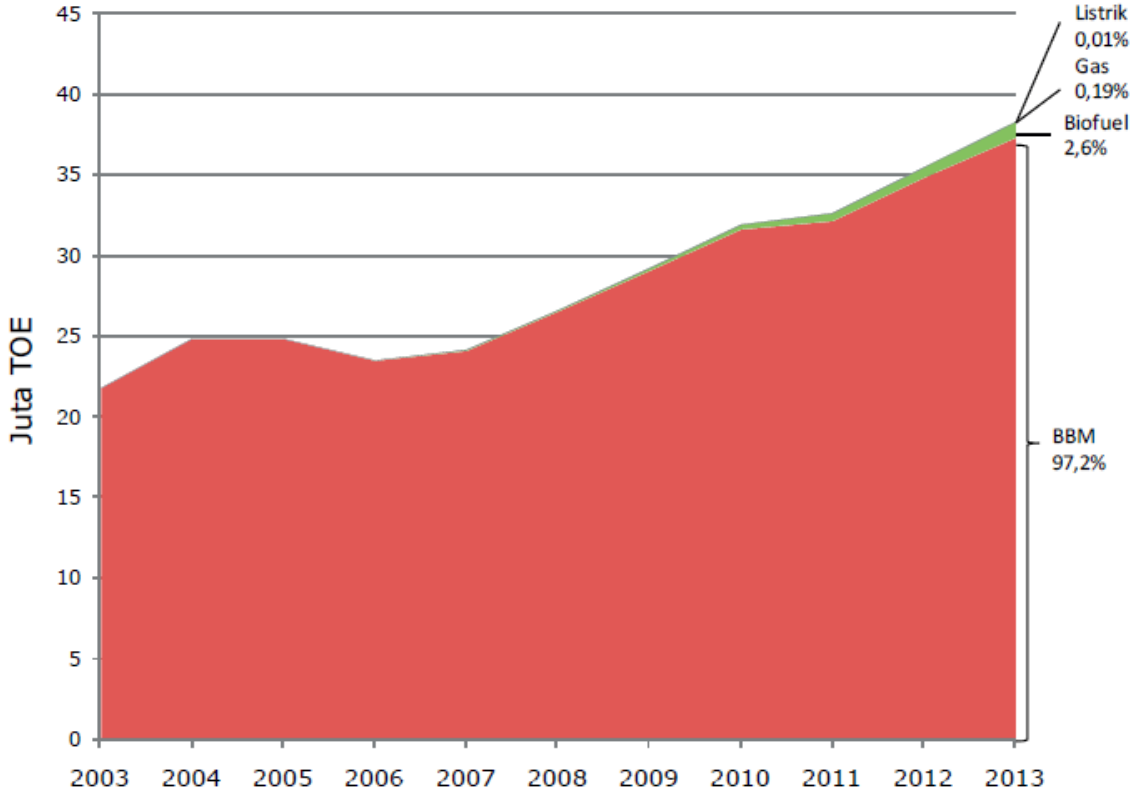
JCM Potential on Transportation

Energy consumption on Transportation sector



Source: Ministry of Energy and Mineral Resources 2014

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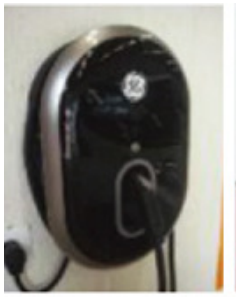
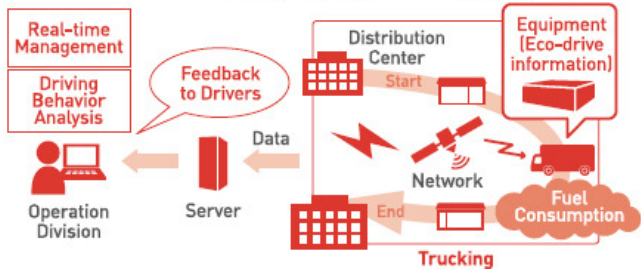
JCM Potential on Transportation

- Low carbon vehicle
- Electric vehicle
- Eco-driving by utilizing digital Tachograph system
- Mass Rapid Transport system



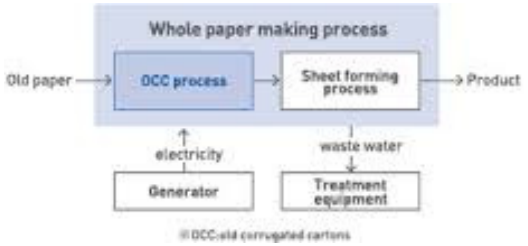
Normal Charger

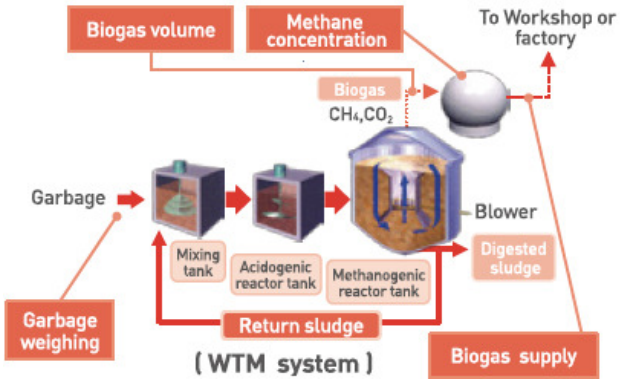
Quick Charger



JCM Potential on Manufacture and Waste Handling

- High efficient old corrugated cartons process at paper factory
- City Low Carbon Waste Treatment
- Anaerobic Digestion of Organic Waste for Biogas Utilization at Market
- Anaerobic Treatment Implementation at Wastewater Treatment Systems





Terima Kasih!

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