

Development of JCM Projects toward a Sustainable Low-Carbon Society in Indonesia

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- Basic of JCM
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- Green Industry Policy in Indonesia
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Introduction of The Workshop

The participants were from government, industries, Indonesia JCM secretariat, and universities.

Basic of JCM

*measurement, reporting and verification

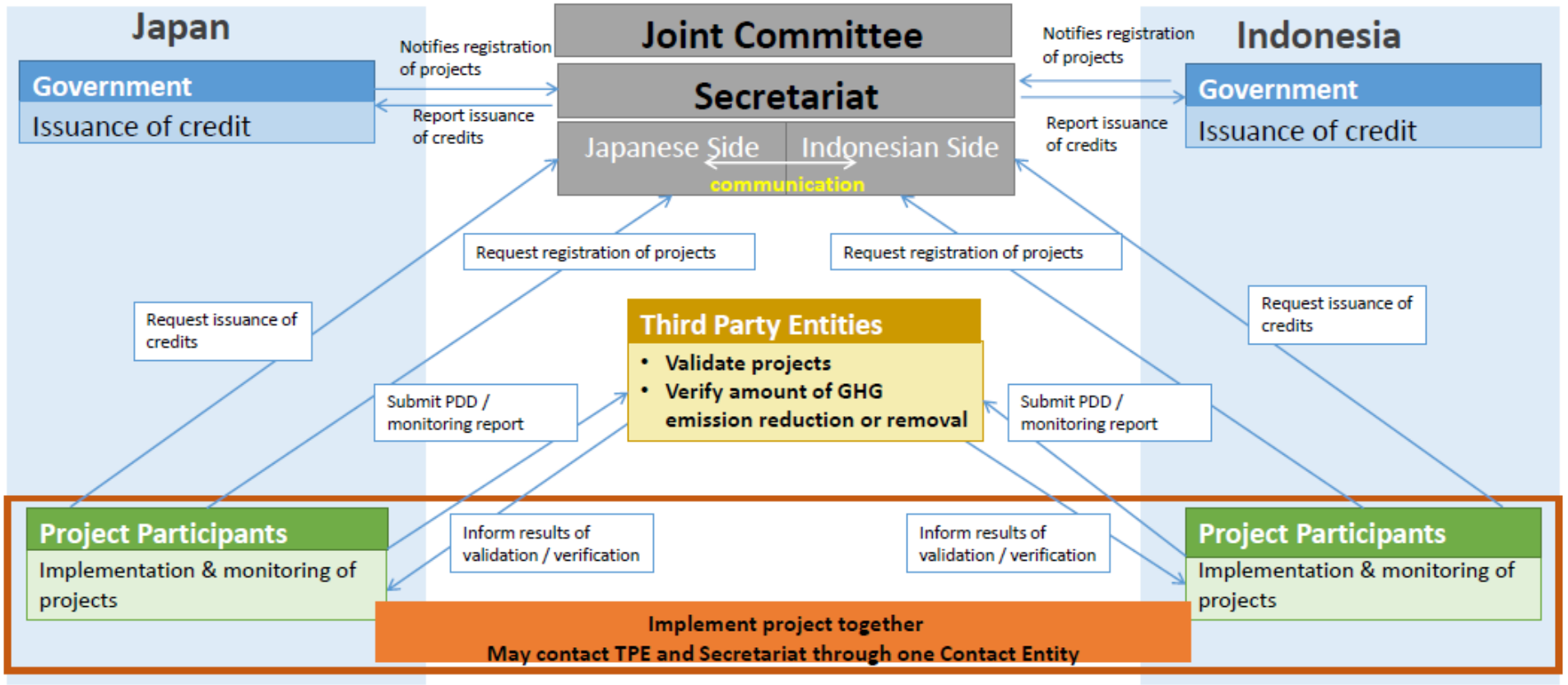
MRV methodologies will be developed by the Joint Committee

Facilitating of technologies transfer and contributing to sustainable development in developing countries

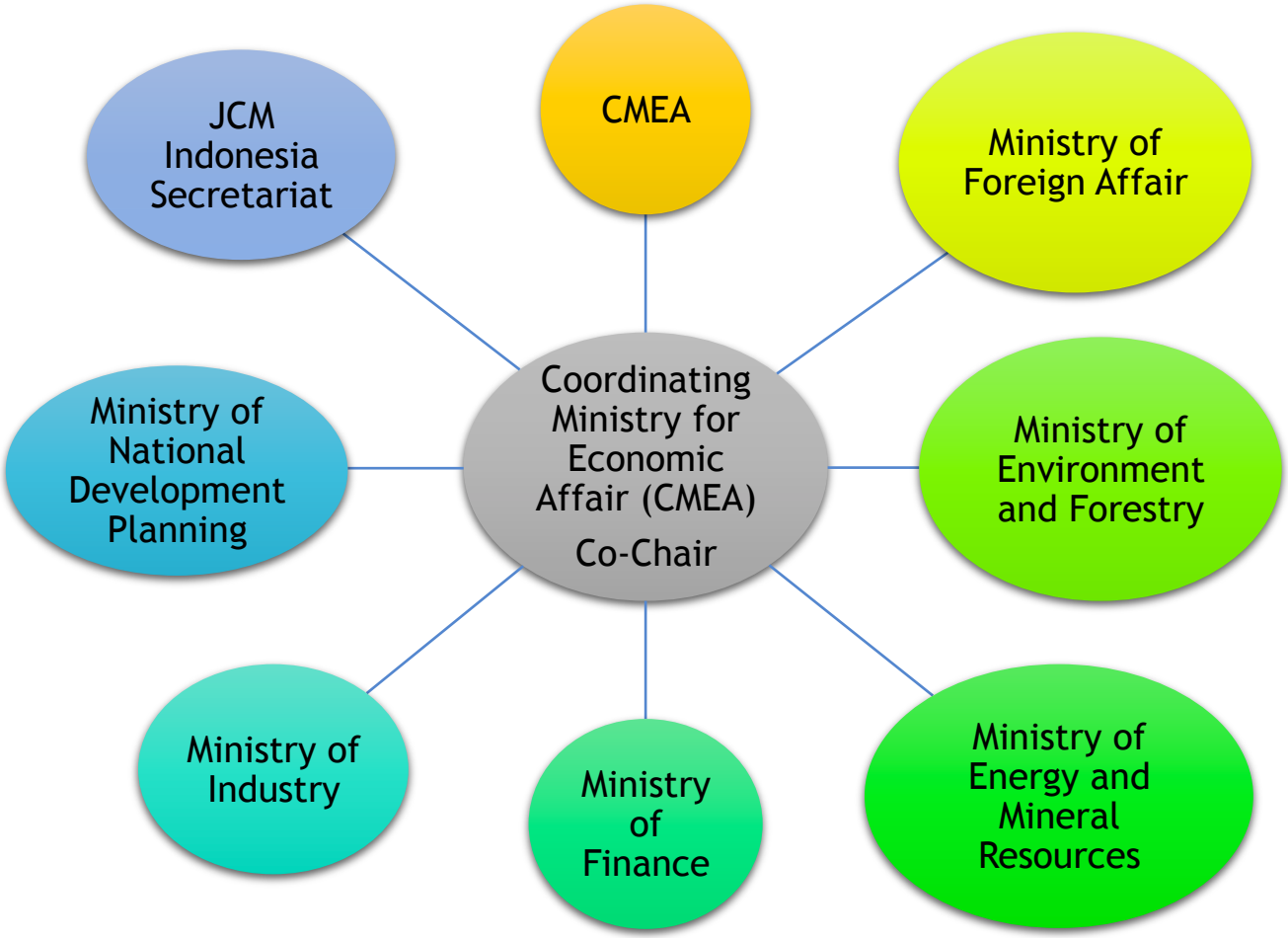
Evaluating contributions to GHG emission reduction and use them to achieve Japan's reduction target

Facilitating global actions for GHG emission reduction, complementing CDM

JCM Scheme in Indonesia



Structure of the Indonesia Joint Committee



Joint Committee consist of 10 director-level members from 7 ministries and JCM Secretariat

JCM Project Proposal in Indonesia Secretariat

*PDD: Project Design Document

Initiation of JCM Feasibility Studies Project from Host Country

Identify Project	• Short proposal development • Team in could be established • Coordination with JCM secretariat
Identify Host Institution in Japan	• JCM secretariat will help find partner • In particular case, partner is not necessary
Proposal Development	• Project idea development should be discussed with JCM secretariat • Co-benefit should be identified • Proposal should be developed by Japanese host

Key Points in Proposal Development

- Follow format strictly
- Apply proposed methodology to calculate CER or other parameters
- Appropriate reduction efficiency (Yen/t-CO_2) is required
- Co-benefit should be clearly stated (quantitative evaluation is preferred)
- Project size should not be very small
- Applicable to other facilities, cities or countries are preferred (good model)

Green Industry Policy in Indonesia

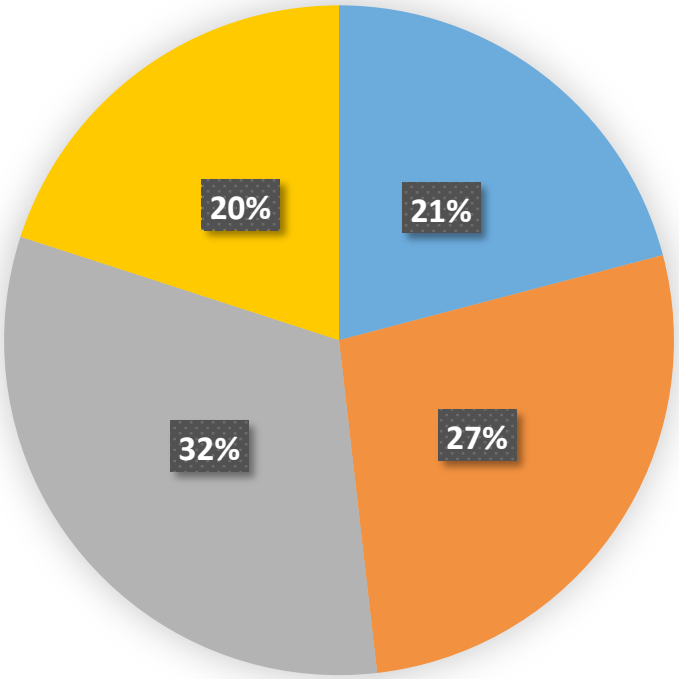
Green industry in Indonesia policy: Industry which places priority on **efficiency** and **effectivity** in the sustainable use of resources, to harmonize industrial development and environmental protection.

Green industry is one of Indonesia goal: to achieve self-sustaining, competitive and advanced industry, as well as green industry.

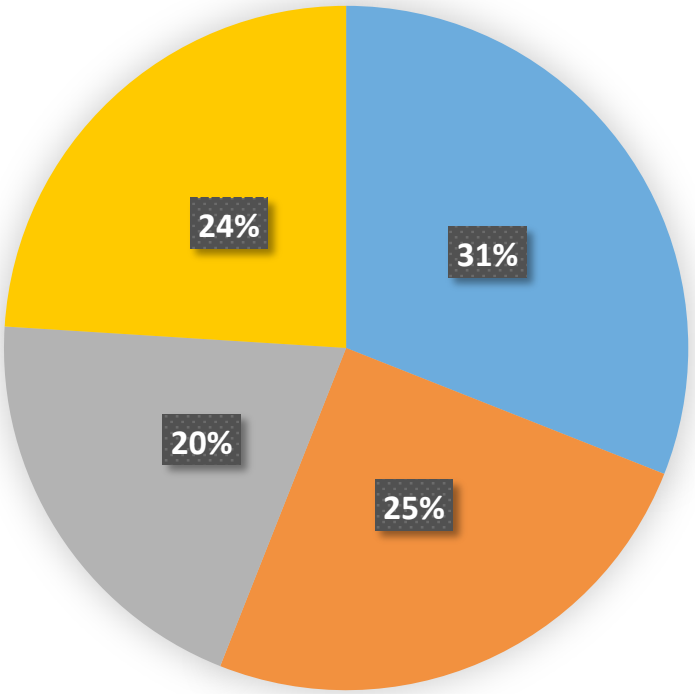
Green Industry Policy in Indonesia

Energy sources target of Indonesia government

Energy Mix Target 2025



Energy Mix Target 2050



Green Industry Policy in Indonesia

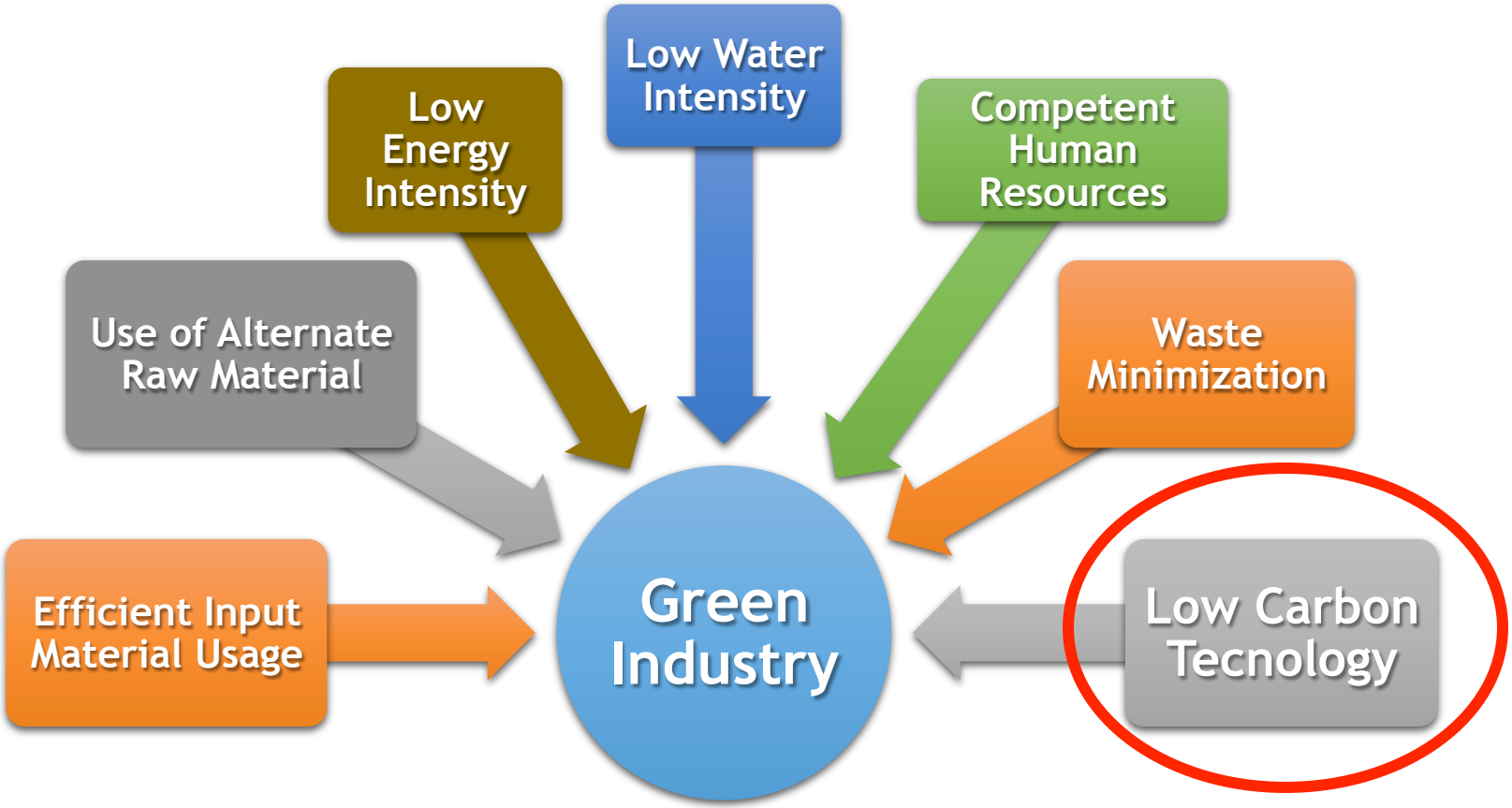
Target of Energy Conservation in Industry

Sector	Energy Consumption Per Sector Year 2012 (Million BOE)	Potential of EC	Sectoral Target of Energy Conservation (2025)
Industry	305 (39,7%)	10 – 30%	17%
Transportation	311 (40,4%)	15 – 35%	20%
Household	92 (12%)	15 – 30%	15%
Commercial	34 (4,4%)	10 – 30%	15%
Others (Agriculture, Construction, and Mining)	26 (3,4%)	25%	-

Note:
- Based on *Handbook of Energy & Economic Statistics of Indonesia* 2013
- Exclude biomass and non-energy used

source: National Energy Conservation Master Plan (RIKEN) Draft 2011

Green Industry Policy in Indonesia



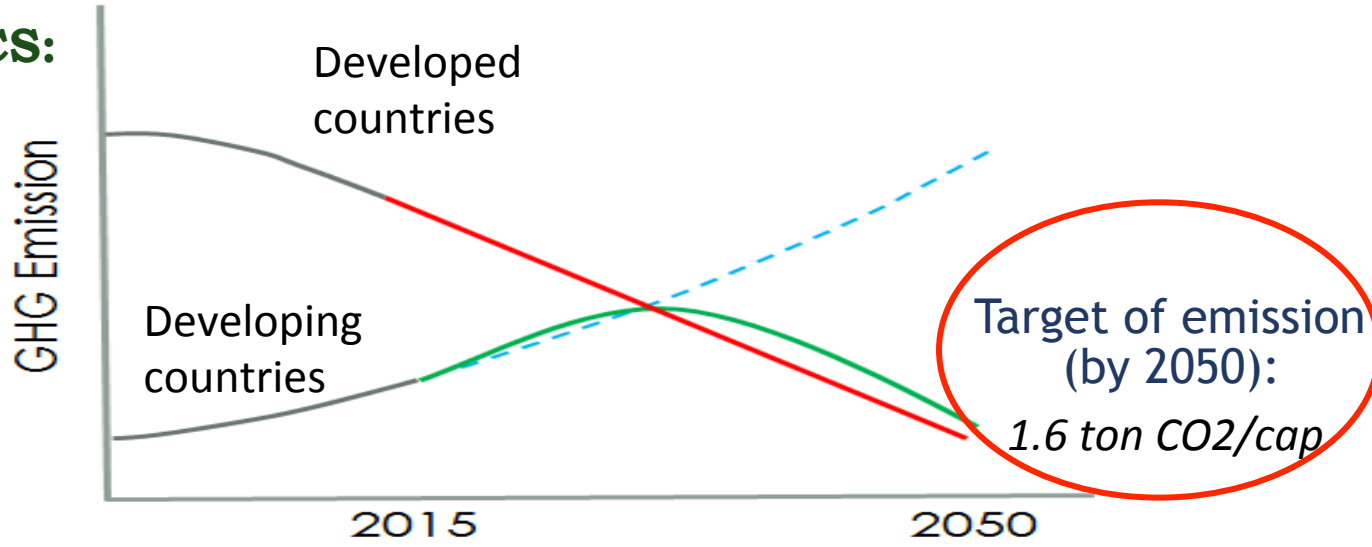
Components of Green Industry. JCM contributes especially in low carbon technology projects.

Low Carbon Society

Low Carbon Society: Activities of a society which result in low carbon emission by changing people lifestyle, city design, country's development pathway, and economic structure.

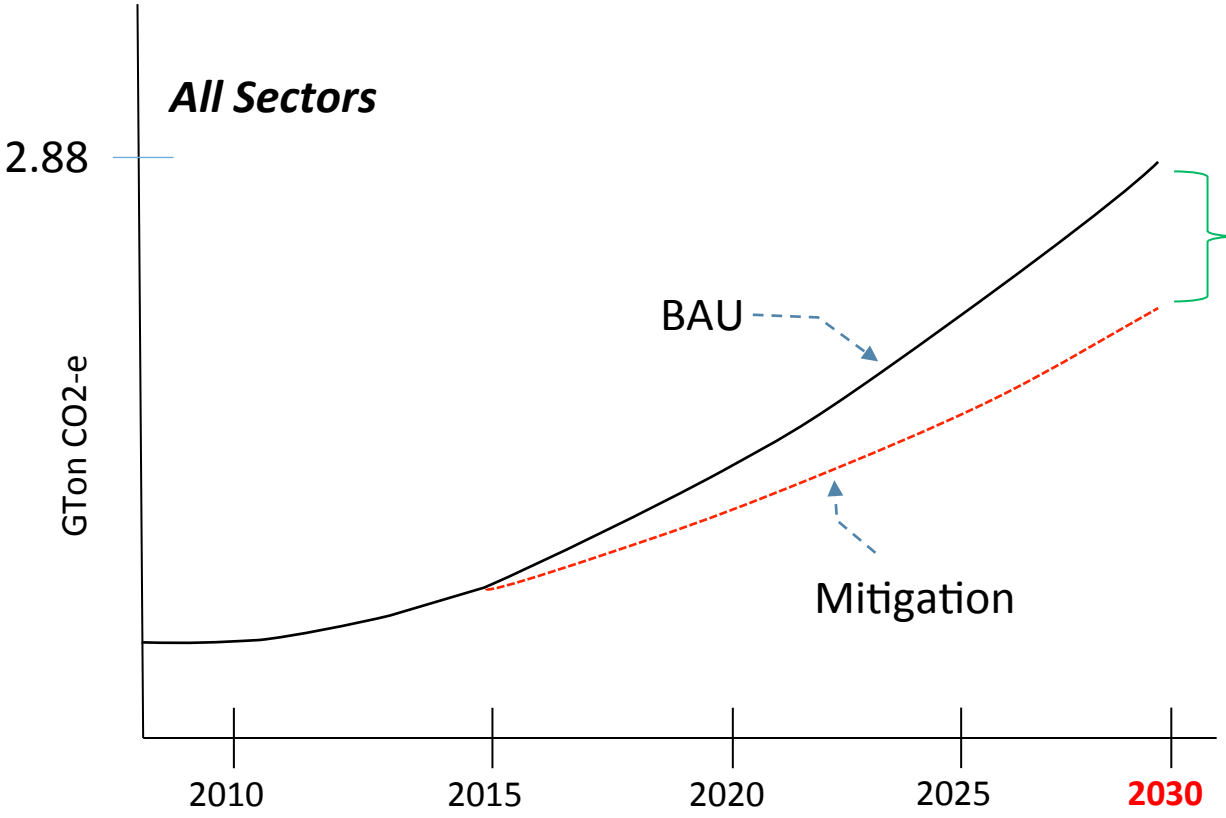
LCS goal: To limit the increase of global world average temperature of 2°C in the mid of this century

Trajectory of LCS:



Low Carbon Society

Indonesia INDC (Intended Nationally Determined Contribution)



INDC – 29%
(835 mill ton)

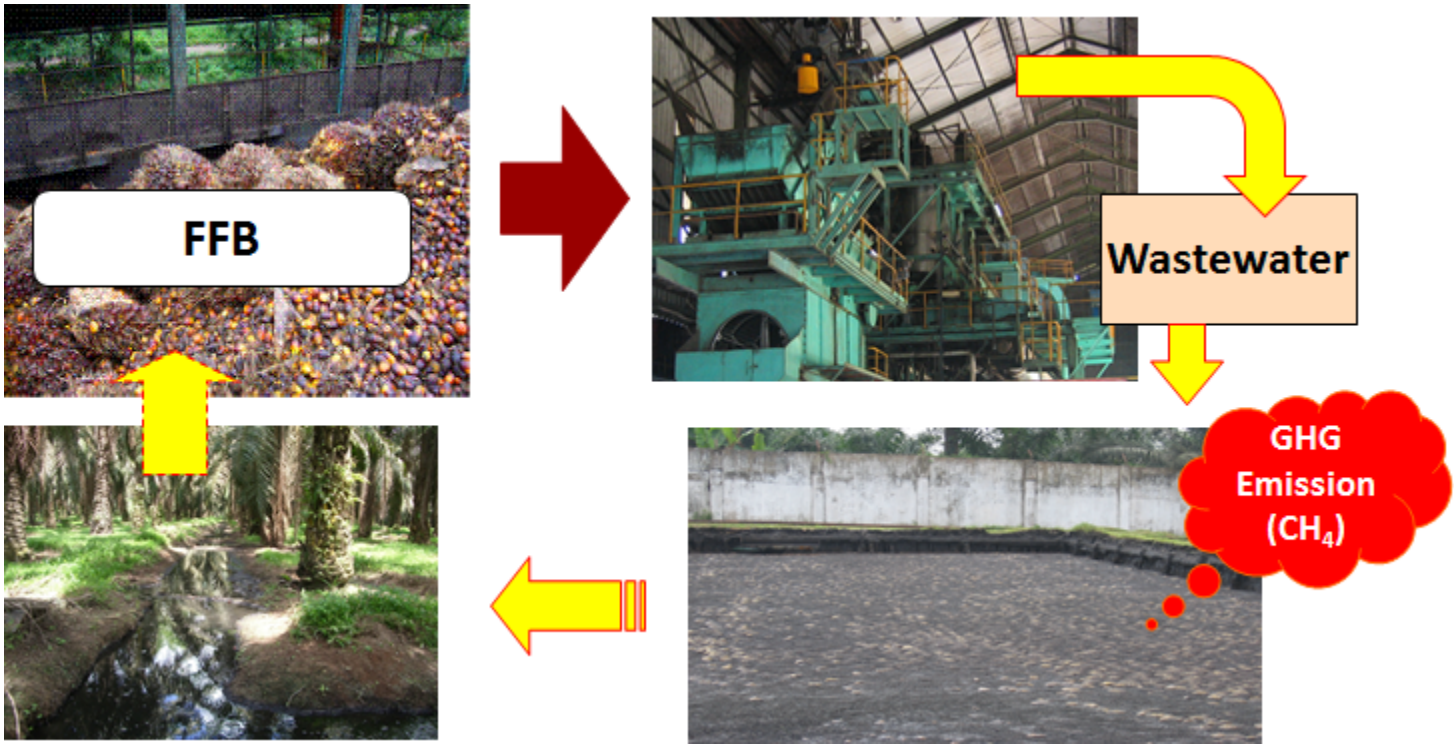
Still need delineation into specific projects. JCM is one of tool for achieving INDC target towards LCS

Potential Projects of JCM
in Indonesia

1. Palm Oil Mill Industries

Palm oil industries does not consume much fossil fuel because they use biomass. GHG emission from its effluent (POME) is large

POME Treatment and Utilization



1. Palm Oil Mill Industries

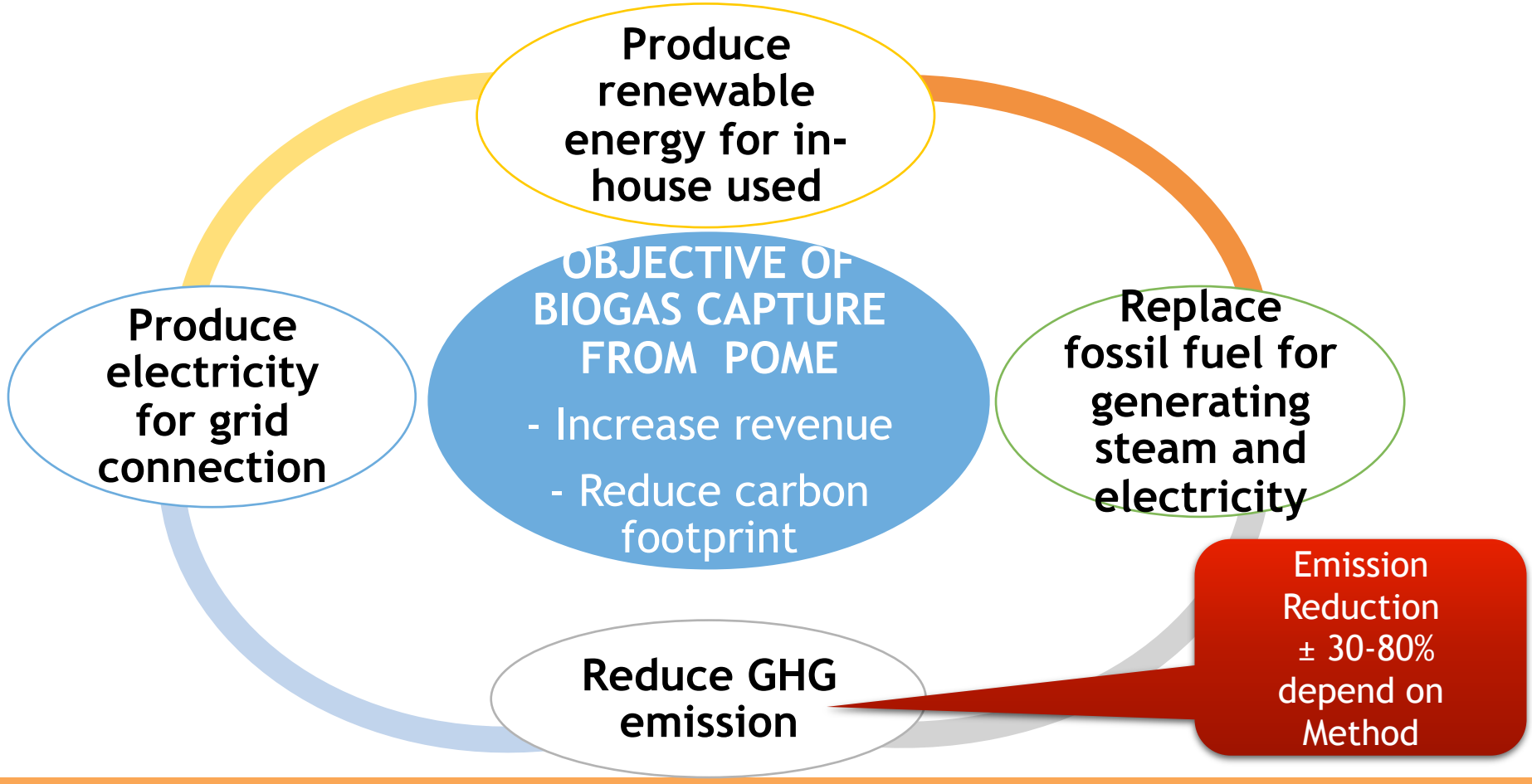
Estimation of GHG emission from POME

Parameter	Unit	Value	
		Min	Max
COD of fresh POME	mg/l	43,375	60,400
COD of treated POME	mg/l	5,500	9,000
POME production	m^3/ton FFB	0.55	0.65
COD removal	kg/ton FFB	20.83	33.41
IPCC default value*)	kg CH_4/kg COD removal	0.25	
CH_4 production	kg/ton FFB	5.21	8.35
IPCC default value*)	m^3 CH_4/kg COD removal	0.35	
CH4 production potential	m^3 CH4/ton FFB	7.29	11.69
GWP potential of CH_4*)	kg CO_2e/ kg CH_4	21	
GWP potential	kg CO_2e/ton FFB	109.41	175.35

*) IPCC, 2006

1. Palm Oil Mill Industries

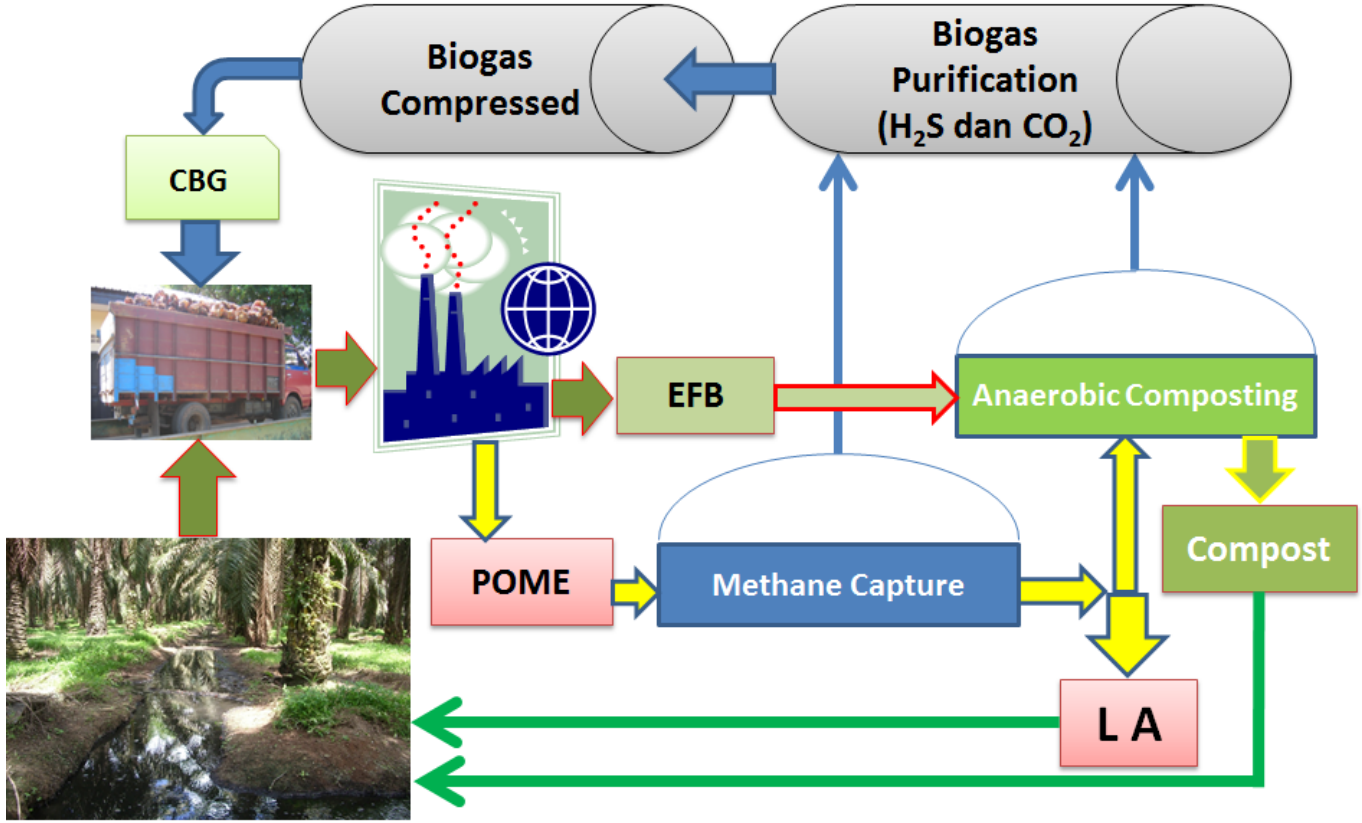
Advantages of methane captures



1. Palm Oil Mill Industries

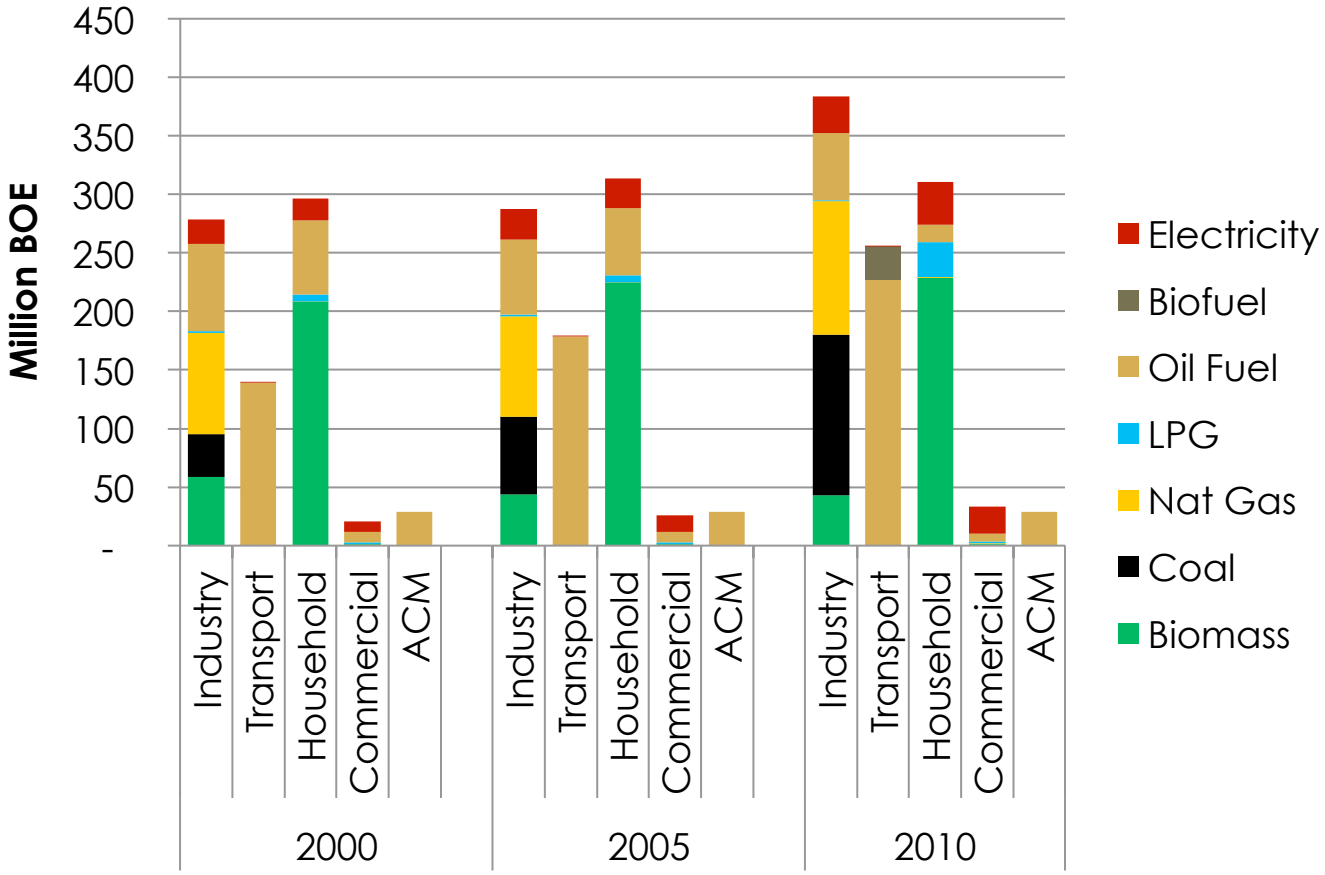
Methane capture methods: anaerobic digestion and co-composting.
By coupling these methods, emission could be further reduced.

Propose Sustainable POME treatment and Utilization



2. Energy Sector

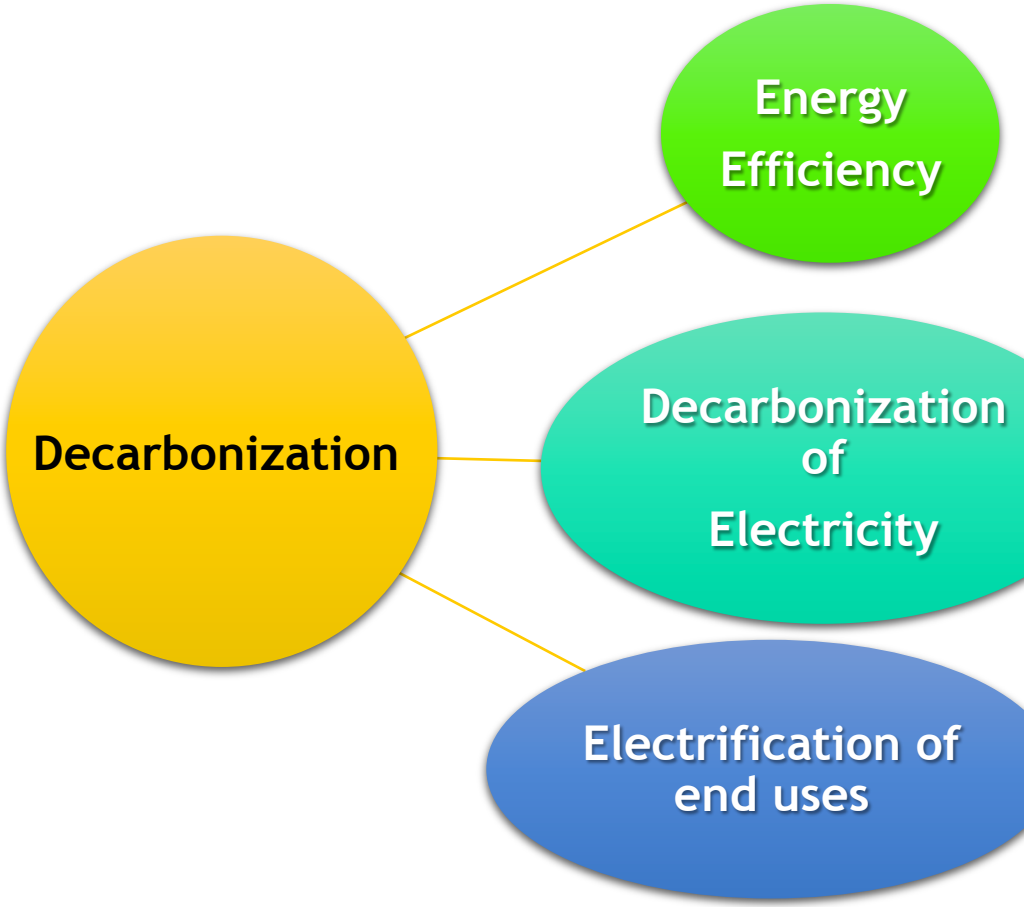
Past Development and Trend of Energy Sector in Indonesia



- *High growth in industry and transport*
- *Rapid reduction of oil fuels consumption in residential, replaced by LPG*

2. Energy Sector

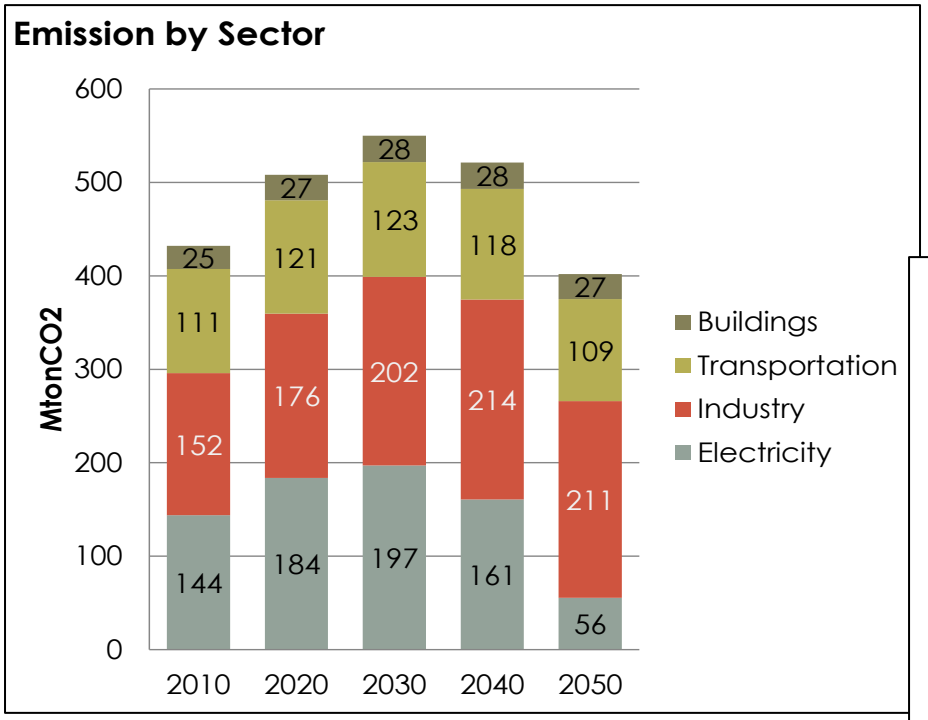
For achieving LCS, **decarbonization** pathway is required

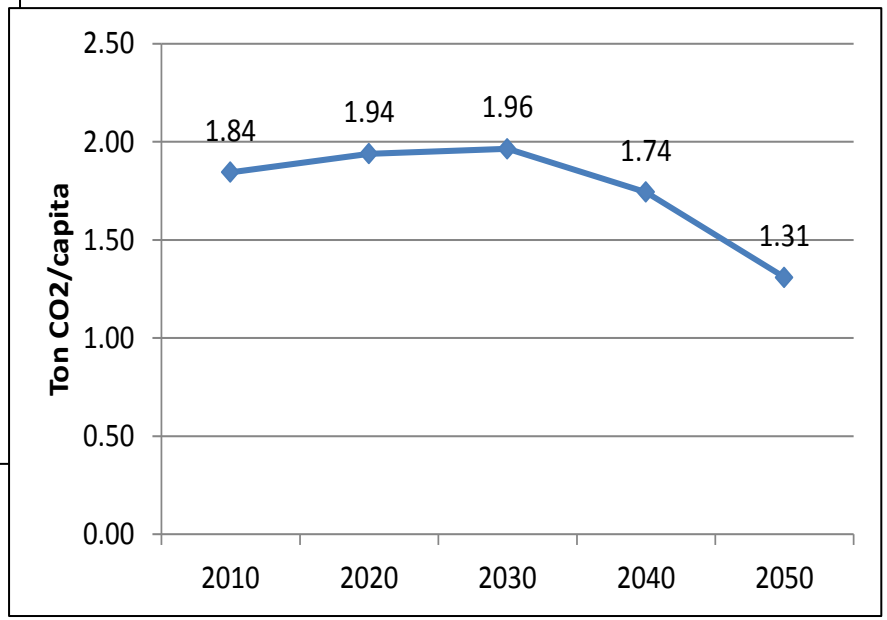


- decrease energy intensity of GDP
- would significantly reduce electricity emission intensity (gCO2/kWh)
- reduce fossil fuel combustions and reduce emission (as long as the power generation is deeply decarbonized)

2. Energy Sector

Result of Decarbonization (projection)





3. Research Mapping for Adaptation and Mitigation

Purpose: Collection of emission reduction & carbon credits data by University → ITS, Surabaya, Indonesia

Data include: adaptation, mitigation, measurement & analysis from several sectors:

- Residential CO_2 emission
- Emission from energy usage
- Solid waste burning
- Using satellites to adapt and mitigate
- Effects of climate change to water resources
- Low emission energy
- Green space
- Human behavior
- Forestation

4. Summary of JCM FS in Indonesia (2010 – 2015)

Conclusions

1. JCM is one of useful tools for achieving the low carbon society and green industry.

2. JCM is relatively new and has many weakness, cooperation between JCM secretariat, government, industries, and universities is needed.

3. JCM can be used to raise awareness among the ministries and provide methodologies for MRV.

4. There are abundant potential projects for JCM implementation in every sectors of industry in Indonesia.

5. This workshop resulted a better understanding and insight to industries, universities and government.

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West Hall

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Thank You.....