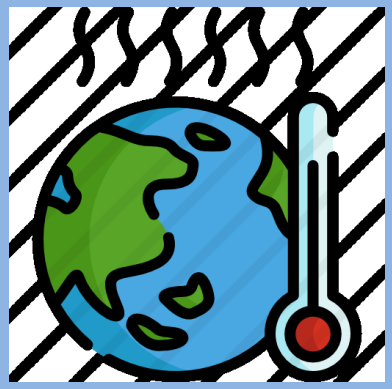
Thailand's climate change policy and status of JCM implementation in Thailand

Dr. Paweena Panichayapichet

Workshop on the Joint Crediting Mechanism (JCM)

31th January 2019, Avani+ Riverside Bangkok Hotel



JCM Joint Crediting Mechanism

Thailand's GHG Mitigation goal

Pre - 2020

Nationally Appropriate Mitigation Action (NAMA)

"Thailand will reduce GHG emission 7 – 20 percent in Energy and Transport sectors by 2020"

Renewable Energy | **Energy Efficiency** | **Biofuel** | **Sustainable transport systems**

Nationally Determined Contributions :NDC)

"**Thailand intends to reduce its greenhouse gas emissions by 20 percent from the projected business-as-usual (BAU) level by 2030.** The level of contribution could increase up to 25 percent subject to adequate international support"

Energy | **Transport** | **Industry** | **Waste** | **Agriculture**

Key National Policies and Plans

- **The 12th National Economic and Social Development Plan 2017-2021**
- **Master Plan on Climate Change 2015-2050**
- Environmental Quality Promotion Plan 2012-2016
- **Alternative Energy Development Plan (AEDP) 2015-2036**
- **Energy Efficiency Plan (EEP) 2015-2036**
- **Power Development Plan (PDP2015) 2015-2036**
- Thailand Smart Grid Development Master Plan 2015-2036
- **Environmentally Sustainable Transport System Plan 2013-2030**
- Agricultural Climate Change Strategy and Action Plan
- National Industrial Development Master Plan 2012-2031
- Bangkok Metropolitan Administration Climate Change Master Plan 2013-2020
- Waste Management Roadmap

Mitigation Actions in Thailand

Energy Efficiency Improvement

Increasing Green Space and Forest Area to absorb CO_2

Renewable Energy Development

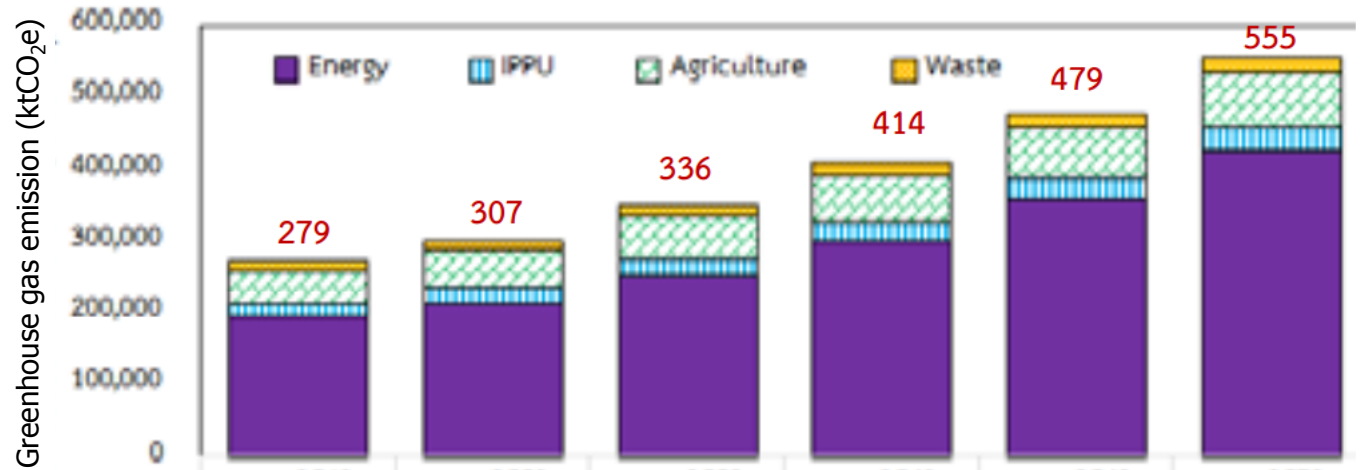
Environmentally Friendly Transport System

Waste Management

Agricultural Projects that reduce GHG emissions

Thailand's GHG mitigation goal

Nationally Determined Contributions :NDC)



	พ.ศ. 2548 ค.ศ. 2005	พ.ศ. 2553 ค.ศ. 2010	พ.ศ. 2558 ค.ศ. 2015	พ.ศ. 2563 ค.ศ. 2020	พ.ศ. 2568 ค.ศ. 2025	พ.ศ. 2573 ค.ศ. 2030
Waste	12,878	13,011	14,489	16,135	17,968	20,010
Agriculture	46,294	52,316	57,554	63,316	69,656	76,630
IPPU	19,565	21,408	23,737	26,304	29,148	32,360
Energy	194,681	214,019	254,209	301,947	358,650	426,000

111 Mt-CO_2

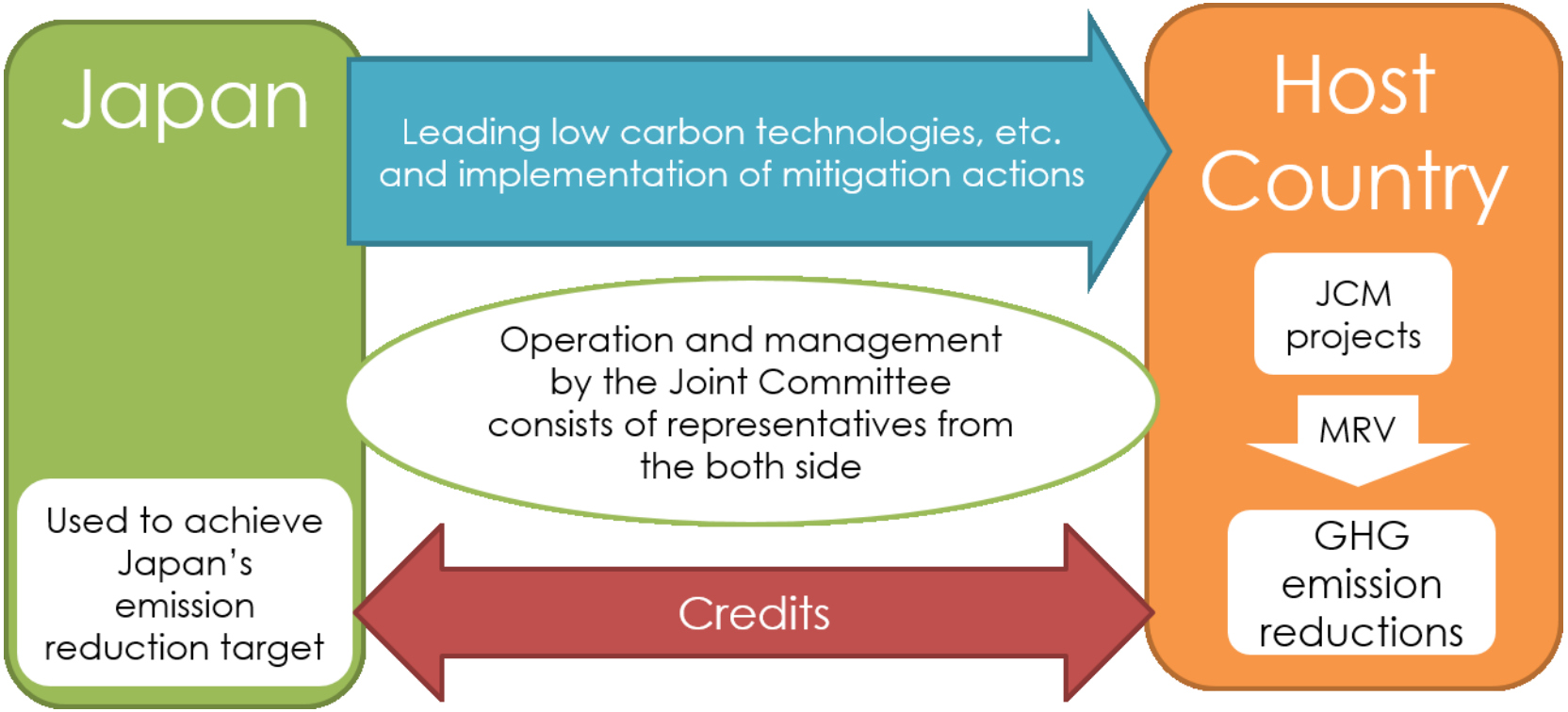
20% Reduction at 2030

coverd by Energy, transport waste and IPPU sectors

* Agriculture and Forestry sectors are under studied.

Joint Crediting Mechansim: JCM

- Implement jointly by both country
- Promote to diffuse leading low carbon technologies, products, etc.
- Evaluating GHG emission reductions by measurement, reporting and verification (MRV)



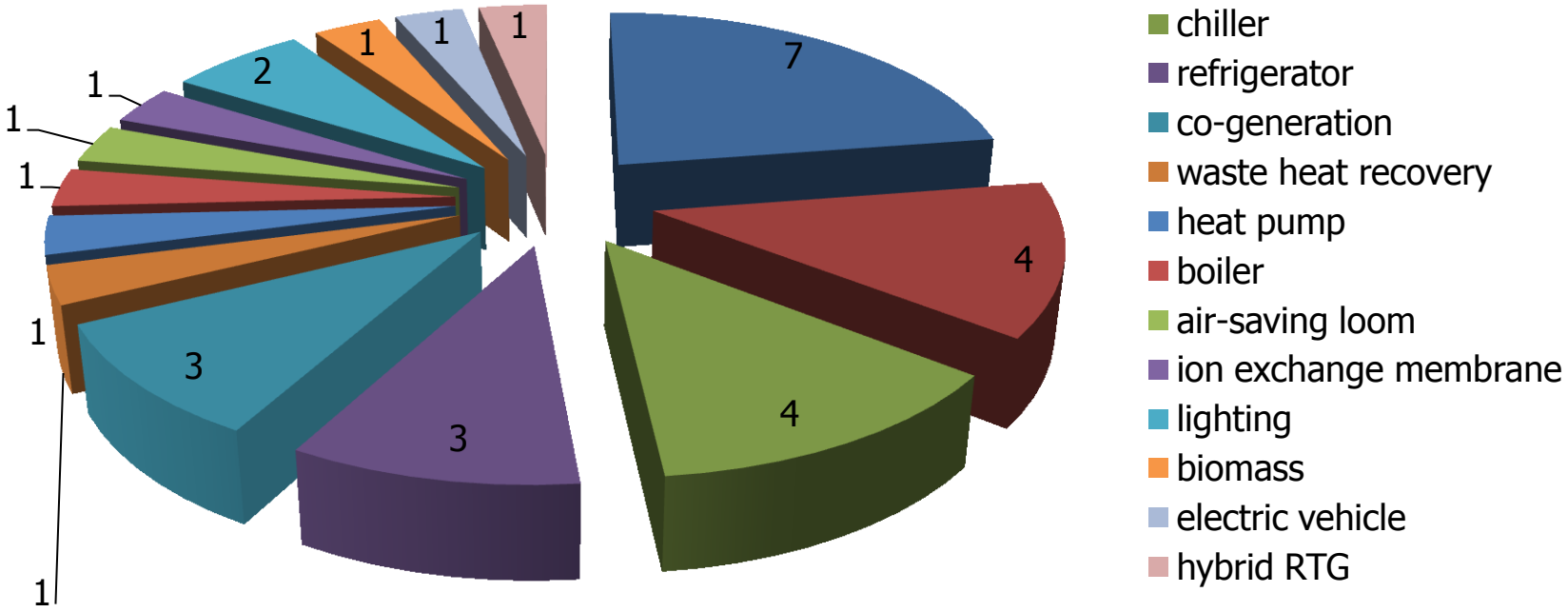
Role of JCM in achieving NDC target

<table>
<tr><th colspan="2">Environmental integrity</th></tr>
<tr><td>Robust accounting</td><td>avoid double counting by issuing credit in separate registry i.e.
<table>
<tr><th>Issued Credit (tCO_2)</th><th>Registry of the Thai side</th><th>Registry of the Japanese Side</th></tr>
<tr><td>100</td><td>49</td><td>51</td></tr>
</table>
</td></tr>
<tr><td></td><td>avoid double claiming by having a common rules that each side must follow JCM rule which is titled “Common Specifications of the JCM Registry”</td></tr>
<tr><td></td><td>can be accounted for NDC targets and emission reduction</td></tr>
<tr><td>Quality of units</td><td>- 1 tCO_2eq directly leads to an emission reduction of at least 1 tCO_2eq in the transferring country
- additional
- not over estimated
- permanent</td></tr>
<tr><td>Scope of NDC target</td><td>JCM activities is covered by Thailand’s NDC that is economy wide.</td></tr>
</table>

JCM Model Projects

Project type	Number of projects	GHG reduction (tCO_2/y)
energy demand	18	90,592
energy industries	8	39,080
	26	129,672

Number of project categorized by technology



Approved Methodologies (9 methods)

ID TH_AM	Title	Latest version	Date of approval
001	Installation of Solar PV System	1.0	23 Aug 2016
002	Energy Saving by Introduction of Multi-stage Oil-Free Air Compressor	2.0	21 Aug 2017
003	Energy Saving by Introduction of High Efficiency Inverter Type Centrifugal Chiller	1.0	21 Aug 2017
004	Installation of energy saving air jet loom at textile factory	1.0	21 Aug 2017
005	Energy Saving by Introduction of High Efficiency Non-Inverter Type Centrifugal Chiller	2.0	14 Jan 2019
006	Installation of Displacement Ventilation Air Conditioning Unit in the Cleanroom of Semiconductor Manufacturing Factory	1.0	21 Aug 2017
007	Power Generation by Waste Heat Recovery in Cement Industry	1.0	20 Apr 2018
008	Introducing heat recovery heat pumps with natural refrigerants for the food manufacturing industries	1.0	14 Jan 2019
009	Installation of gas engine cogeneration system to supply electricity and heat	1.0	14 Jan 2019

Proposed Methodologies (4 methods)

Title
Installation of Inverter-controlled Air Conditioning System for Convenience Store
Installation of Inverter-controlled Separate Type Fridge Showcase for Convenience Store
Installation of Energy-efficient Refrigerators Using Natural Refrigerant at Cold Storage
Energy Saving by Installation of an Evaporator with Mechanical Vapor Recompression

Registered Projects (5 projects)

Project Title	Expected Greenhouse Gas Emission Reduction ($tCO_2eq/year$)	Date of approval
Introduction of Solar PV Systems on Rooftops of Factory and Office Building	440	21 Aug 2017
Reducing GHG emission at Textile Factory of Luckytex (Thailand) Public Company Limited by Upgrading to Air-saving Loom	253	20 Apr 2018
Installation of High Efficiency Air Conditioning System and Chillers in Semiconductor Factory	3,327	20 Apr 2018
Energy Saving for Semiconductor Factory with High Efficiency Centrifugal Chiller and Compressor	324	20 Apr 2018
Introduction of 3.4MW Rooftop Solar Power System to Air-conditioning Parts Factories	1,071	14 Jan 2019
Total	**5,415**	

Request for registration (6 projects)

Project Title
Power Generation by Waste Heat Recovery in Cement Industry
Installation of Co-Generation Plant for On-site Energy Supply in Motorcycle Factory
Introduction of 2MW Rooftop Solar Power System for Power Supply in Factory
Energy Saving for Air-Conditioning in Tire Manufacturing Factory with High Efficiency Centrifugal Chiller
Introduction of Heat Recovery Heat Pumps to Food Processing Factory
Introduction of 27MW Rooftop Solar Power System to Large Supermarkets

Credit Issuance (1 project)

ID	Project Title
TH001	**Introduction of Solar PV Systems on Rooftops of Factory and Office Building**

Year	Credit (tCO_2)	Thai side	Japanese Side	Percentage of Support
2016	137	68	69	54.1
2017	163	81	82	
Total	**300**	**149**	**151**	
Percentage	100	49.7	50.3	

Approved on 20th April 2018

Third Party Entities

Company name	Designated date	1. Energy industries	2. Energy Distribution	3. Energy demand	4. Manufacturing industries	5. Chemical industry	6. Construction	7. Transport	8. Mining/mineral production	9. Metal production	10. Fugitive emissions from fuels	11. Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride	12. Solvent use	13. Waste handling and disposal	14. Afforestation and reforestation	15. Agriculture
Lloyd's Register Quality Assurance Limited (LRQA)	23 Aug 2016	❍ ●	❍ ●	❍ ●				❍ ●						❍ ●		
Bureau Veritas Certification Holding SAS (BVC)	23 Aug 2016	❍ ●	❍ ●	❍ ●	❍ ●	❍ ●	❍ ●	❍ ●	❍ ●	❍ ●	❍ ●	❍ ●	❍ ●	❍ ●	❍ ●	❍ ●
Japan Quality Assurance Organization (JQA)	21 Aug 2017	❍ ●		❍ ●	❍ ●	❍ ●					❍ ●			❍ ●	❍ ●	
Japan Management Association (JMA)	21 Aug 2017	❍ ●	❍ ●	❍ ●											●	
EPIC Sustainability Services Private Limited (EPIC)	10 Dec 2018	❍ ●	❍ ●	❍ ●	❍ ●	❍ ●	❍ ●	❍ ●	❍ ●	❍ ●	❍ ●	❍ ●	❍ ●	❍ ●	❍ ●	❍ ●

Seminars & Workshops

Title of Meeting	Co-organizer	Date	Number of participants
JCM capacity building in Thailand	IGES	6th Nov 2015	54
		25th Jan 2016	160
		22nd Aug 2017	68
A training for JCM TPE		26-27th Jan 2016	29
Workshop on writing PDD		30th Sep 2016	13
Japan-Thailand Joint Crediting Mechanism (JCM)	METI	6-7th Jul 2016	120
		17th Oct 2017	111
Developing JCM Projects in Thailand	ADB	27th Sep 2016	81
Opportunities and Development of JCM for the private sector	TGO	7th Apr 2016	25
		5th Oct 2016	52
		7th Apr 2017	34
		10th Apr 2018	34
JCM Implementation in Thailand: Accelerating Low Carbon Development through JCM Scheme	GEC	11th Sep 2018	212

Ready Thailand to Combat Climate Change

Thailand Greenhouse Gas Management Organization (Public Organization): TGO

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