



International Forum for Sustainable Asia and the Pacific (ISAP 2012)
 @ Pacifico Yokohama, Conference Center 5F, Japan on 25 July 2012

Establishment of MRV System for TVERS and TVETS in Thailand

タイ自主削減クレジット制度 (TVERS) 及び
 タイ自主参加型排出量取引制度 (TVETS) に
 おけるMRVシステムの構築に向けて

Pongvipa Lohsomboon

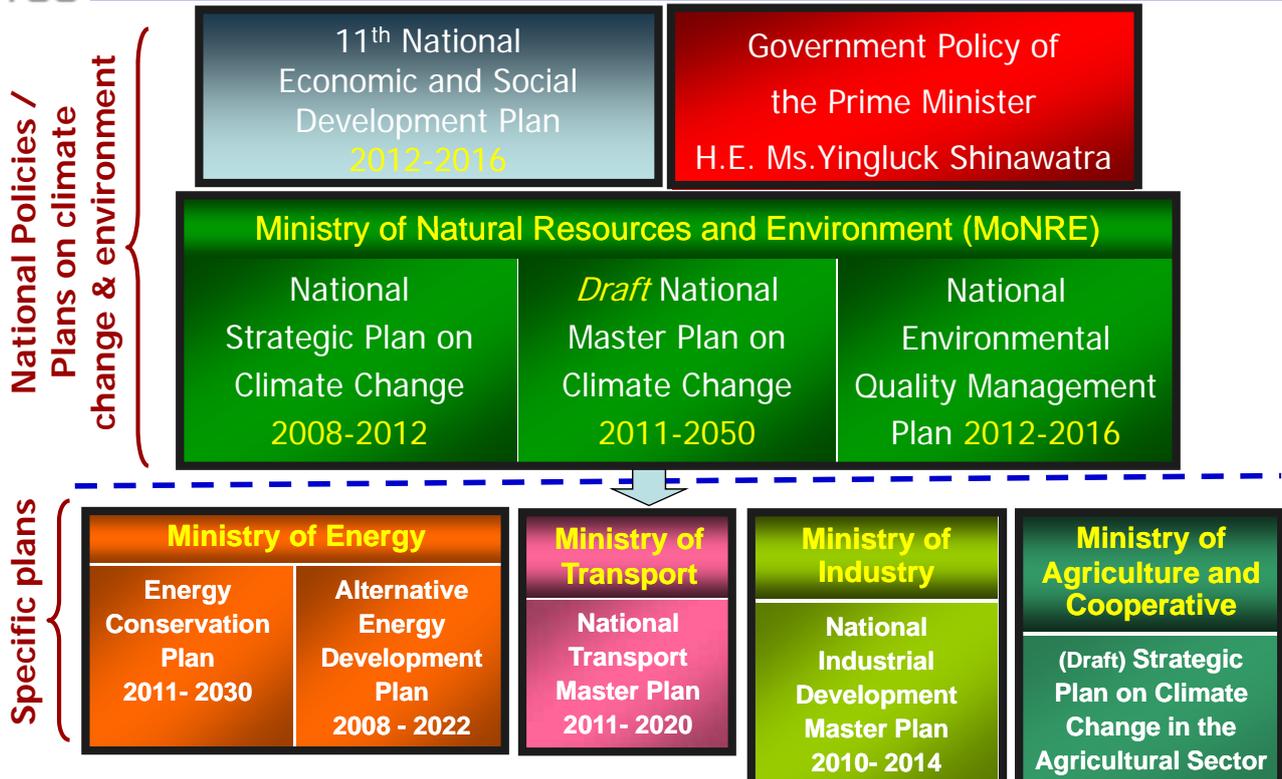
Carbon Business Office

Thailand Greenhouse Gas Management Organization

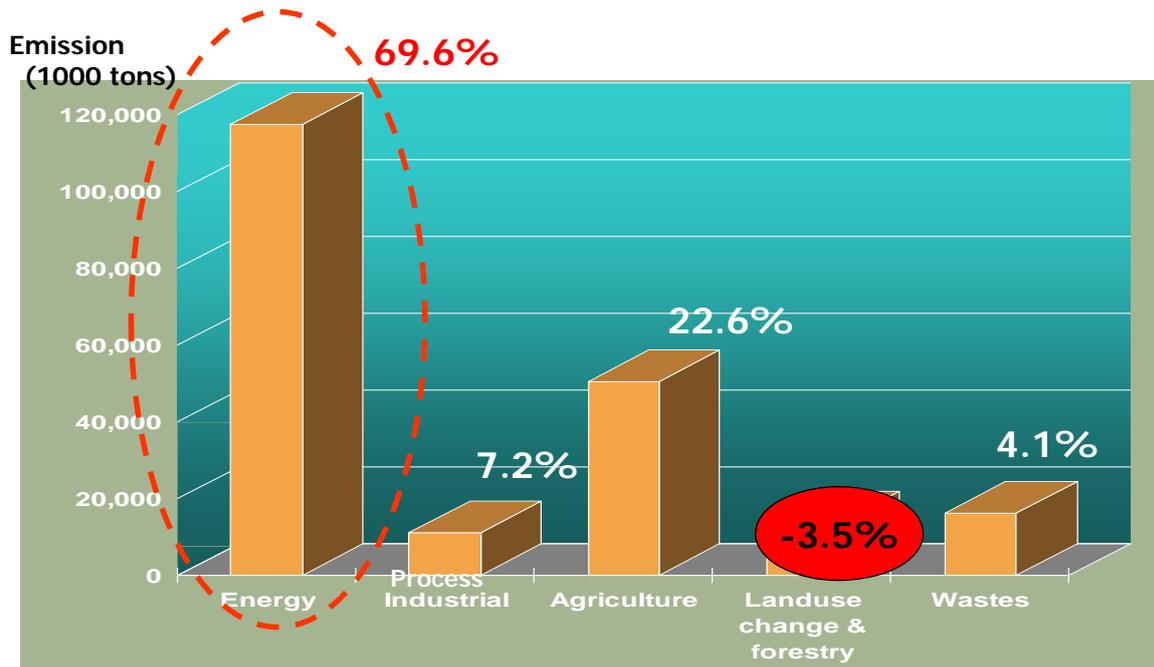
Thailand Greenhouse Gas Management Organization (Public Organization) (TGO)



Overview of Thailand Policy on Climate Change タイの気候変動対策概要



Thailand GHG Emission in 2000 タイの温室効果ガス排出量(2000年) ~ 229.08 MtCO₂e



Sources of emission by sector

Source: Thailand 2nd National Communication (www.tgo.or.th)

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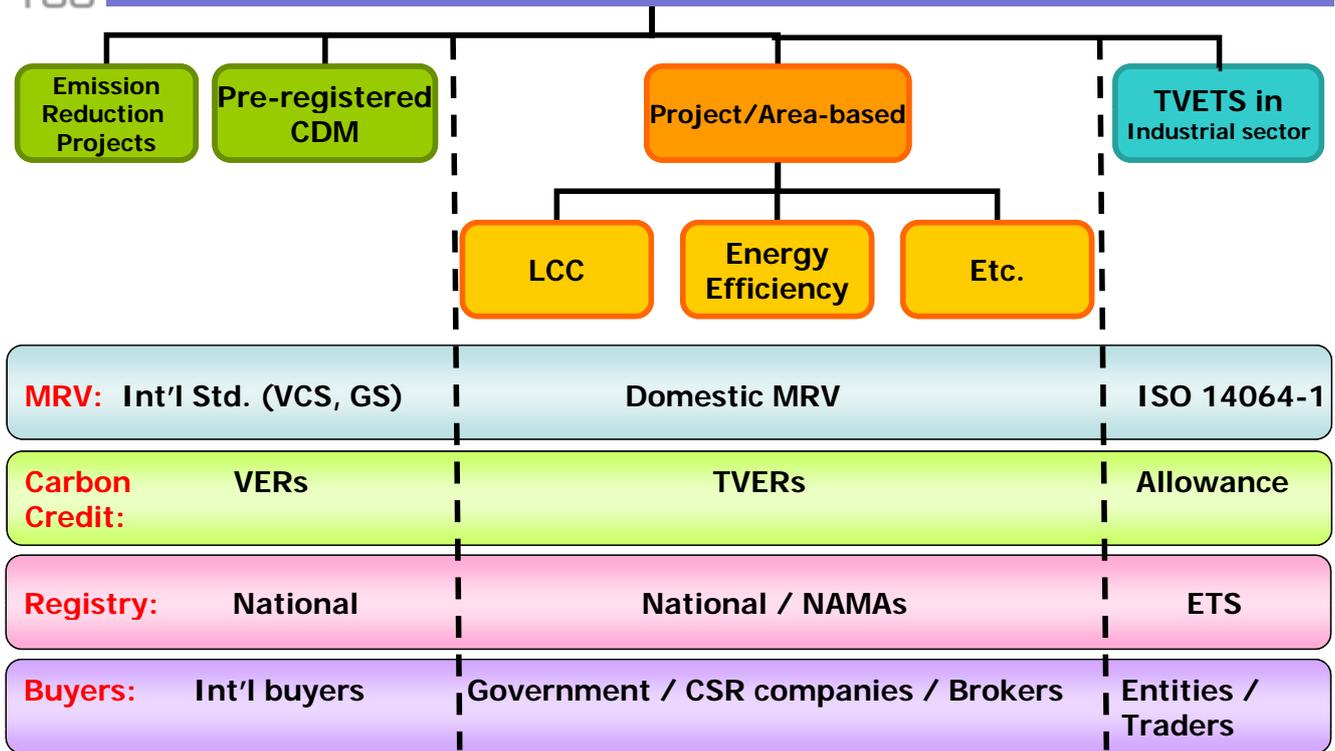
Objectives of Establishing Voluntary Domestic Carbon Market 自主的な国内炭素市場を構築する目的

- Currently, there is no domestic market established in Thailand, but Clean Development Mechanism (CDM) was achieved in which carbon offsets are sold to external buyers in international compliance markets.
- **Objectives of Establishing Voluntary Domestic Carbon Market**
 - Support voluntary GHGs reduction activities
 - Achieve cost-effective GHGs reduction
 - Learn how to manage domestic emission trading / carbon offsetting
 - Encourage private companies who attempt to reduce their GHG emissions with their own targets on voluntary basis by giving economic incentive

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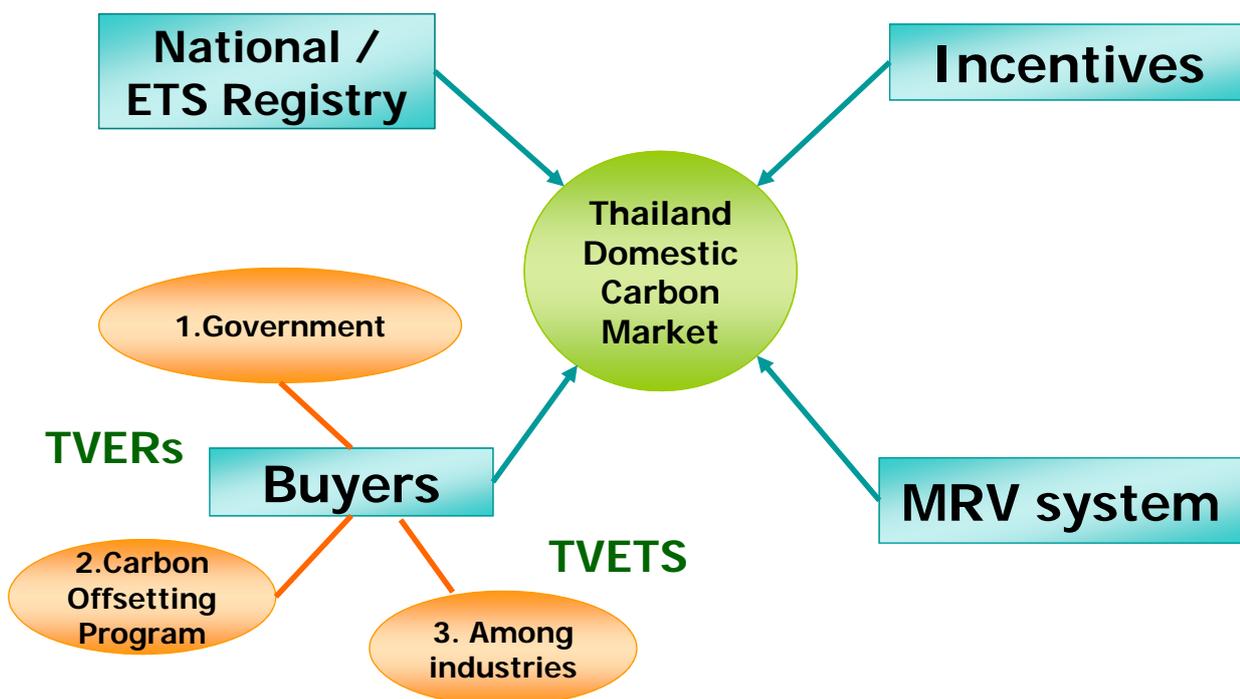
Structure of VCM in Thailand

タイにおける自主的国内炭素市場の構造



Development of Infrastructure for VCM

自主的国内炭素市場のためのインフラ整備





International Cooperation on Development of VCM in Thailand タイにおける自主的炭素市場の構築に向けた国際協力

- Capacity Building and Consultation on Establishment of Thailand Voluntary Emission Reduction (T-VER) Program and Thailand Voluntary Emission Trading Scheme (TVETS) – Implemented by IGES and supported by MoEJ (2011-2012)
- The Project for Dissemination of Korea Voluntary Emission Reduction Program (KVER) to Thailand (Phase I-II) – Implemented by Korea Energy Management Corporation (KEMCO) and supported by Global Green Growth Institute (GGGI) (2011-2012)



Development of Thailand Voluntary Emission Reduction (TVER) Scheme タイ自主削減クレジット制度 (TVER) の開発

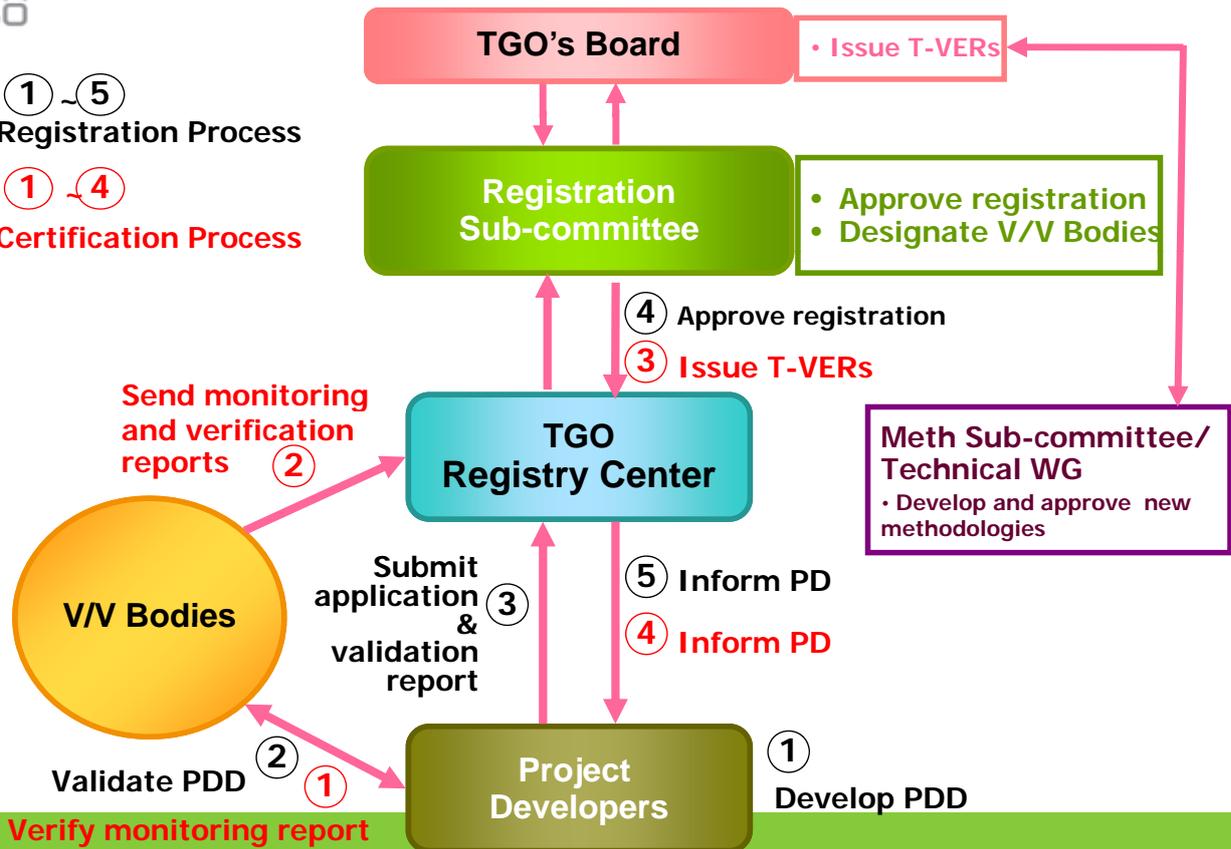
- Domestic Voluntary Carbon Offset
 - Baseline-and-credit system
- Eligible project types
 - energy efficiency, fuel switching, landfill, reforestation
- Use of TVERs
 - By domestic companies, public institutions and other entities for Corporate Social Responsibility (CSR) purposes and for offsetting emissions.
- Methodologies
 - under development

T-VER Scheme Framework

TVER制度の枠組み

①~⑤
Registration Process

①~④
Certification Process



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Pilot Project to Establish MRV System for TVERS

TVERにおけるMRVシステム構築のためのパイロット事業

- Sector chosen for trial MRV: building
- "A Pilot Project for Increasing Energy Efficiency and Reducing GHG in Building Sector"
 - supported by TGO in collaboration with Department of Alternative Energy Development and Efficiency (DEDE) and KBank PLC and implemented by KMUTT
- Trial MRV to be conducted with 10 participating buildings and shorter monitoring period (1/2 yr)
- Comparison of various PDD format (J-VER, CDM, etc) to be done to select the most appropriate one for TVER
- develop MRV guidelines that can be integrated or in line with the Monitoring and Measuring (M&V) guideline in energy audit in buildings.

Long-term Schedule for TVER Scheme Development

TVER制度開発のための長期スケジュール

Target for starting T-VER:
Oct 2013-

		FY2011	FY2012				
		Jan.-Mar. (2012)	Apr.-Jun.	Jul.-Sept.	Oct.-Dec.	2013	
Establishment of the scheme	TGO	Preparation of administration, IT system					
		PDD format	Decisions on issues for full operation				
	Kmutt Univ.	Developing guidelines & meths			<ul style="list-style-type: none"> •Modification of rules & guidelines based on the results of trial MRV • Providing instructions to participants 		
		Researches and decisions on issues for full operation					
IGES	Review of guidelines & meths						
Trial MRV	TGO	Recruitment of participants					
	KMUTT Univ.						Implementation of trial MRV
	IGES	Consultation for implementation of trial MRV and related issues					



Development of TVETS

タイ自主参加型排出量取引制度(TVETS)の開発

- Consultation meetings with industry
- Research Studies
 - “A Pilot Project on Voluntary Carbon Market Development in Industrial Estates” – TGO, IEAT and Faculty of Natural Resources and Environment, Mahidol University
 - “Development of Voluntary Emissions Trading Scheme in Thailand for Industries, Phase II” – TGO and Faculty of Economics, Thammasart University
 - “Development of Voluntary Emissions Trading Scheme in Thailand for Industries, Phase III” – TGO and Faculty of Economics, Thammasart University
- Consultation meetings with IGES experts

- Calculation of GHG Emissions from Industries
 - GHG emissions of each industry are categorized into direct emissions (Scope 1) and indirect energy emissions (Scope 2)
 - comparing GHG emission sources of the 11 manufacturer groups from 2000 to 2005
 - 5 biggest emitters are the manufacturers of **non-metallic products, manufacturers of food and beverages, the chemical industry, other manufacturing industries, and manufacture of metal products.**
- GHG Emission Reduction Potentials of Thai Industries
 - Bottom-Up approach, are lower than 10%
 - Benchmarking approach, are in the range of 20%-70%
- Selection of Target Industries (3 approaches)
 - select sectors with high GHG emissions
 - select a subsector(s) from each production sector
 - **allow the firms to enter the carbon market voluntarily without identifying target industries.**

- **Determination of Emission Baselines**
 - 5 approaches: grandfathering, benchmarking, self-determination, negotiation and auction/sale of allowances.
 - benchmark is very difficult to set and although grandfathering approach is simple, the issue of how to treat early action remains.
 - **grandfathering for trial phase** and further consider this issue later on.
 - include **both Scope 1 and Scope 2**, but it is necessary to discuss with participants on how to avoid double counting.
- **Determination of Reduction Targets**
 - **absolute reduction target, site-based** will be set for the trial phase.
 - **allowances will be allocated free** for the participating industries
- **Gas coverage**
 - GHG emissions from agricultural sector account for 22% of the total emissions. Industry can also significantly reduce GHG emissions by improving waste water treatment. On the other hand, there is high uncertainty in measuring CH₄ and it is difficult to guarantee a consistency between CO₂ and CH₄ emissions in terms of the quality of data.
 - Based on discussions between IGES and TGO experts and responses from the industry, it was decided to **include only energy related CO₂.**

Monitoring and reporting guidelines

- Equivalent to JVETS Monitoring and Reporting Guidelines (?)
- Suggest appropriate CO₂ emissions monitoring and reporting by participants

Emission verification guidelines

- Encourage appropriate emissions verification for the third-party verifiers

- Ensure consistency with International standards such as ISO 14064 series and ISO 14065
- Secure high accuracy in emissions calculation and verification
- Achieve cost-effective verification which contributes to total cost cut of emissions reduction for participants

Adapted from presentation of the Office of Market Mechanisms, Climate Change Policy Div, MoEJ (Jan 2011)

National Guideline for Accounting Carbon Footprint of Organizations

組織のカーボン・フットプリント算定のための国家ガイドライン



โปรแกรมคำนวณคาร์บอนฟุตพริ้นท์ขององค์กรสำหรับองค์กรธุรกิจในประเทศไทย

Intro Scope 1.1 Scope 1.2 Scope 1.3 Scope 1.4 Scope 1.5 Scope 2.1

โปรแกรมคำนวณคาร์บอนฟุตพริ้นท์ขององค์กรสำหรับองค์กรธุรกิจไทย
Tool for Calculating Greenhouse Gas (GHG)

TGO C-PGROUP

จัดทำโดย:
องค์การบริหารจัดการก๊าซเรือนกระจก (องค์การมหาชน) ร่วมกับ สำนักพัฒนาความยั่งยืนองค์กร เครือข่าย

โดยมีวัตถุประสงค์เพื่อเผยแพร่และสนับสนุนให้องค์กรธุรกิจของไทยใช้เป็นเครื่องมือในการประเมินผลที่เกิดขึ้นจากการดำเนินงานต่าง ๆ ทั้งการผลิตและค่าบริการ รวมถึงช่วยเสริมสร้างศักยภาพให้กับผู้ให้สามารถแข่งขันได้ในตลาดโลก และเป็นเครื่องมือความพร้อมของภาคธุรกิจให้เป็นสิ่งมีรายงานปริมาณ (Greenhouse Gas Reporting) ขององค์กรต่าง ๆ เพื่อใช้เป็นแนวทางบริหารจัดการการปล่อยก๊าซเรือนกระจก

Cover.Page Intro Scope 1.1 Scope 1.2 Scope 1.3 Scope 1.4.1 Scope 1.4.2 Scope 2.1 Scope 3.1.1

References

- **ISO 14064-1: 2006**, Greenhouse Gases – Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals
- **ISO/PDTR 14069: 2012**, Greenhouse Gases - Quantification and reporting for GHG emissions for organizations - Guidance for the application of ISO 14064-1
- **GHG Protocol** Corporate Accounting and Reporting Standard (The GHG Protocol), published in 2001, revised in 2004)



October 2010 – July 2011



Bangkok Aviation Fuel Services
Public Company Limited



2011 => 4 pilot municipalities
2012-13 => 23 municipalities

Long-term Schedule for TVETS Development

TVETS開発のための長期的スケジュール

Finalization of
guidelines

Long-term goal:
• 2013: trial trading
• 2014 (to be decided):
start TVETS

		FY2011	FY2012			
		Jan.-Mar. (2012)	Apr.-Jun.	Jul.-Sept.	Oct.-Dec.	2013
Establishment of the scheme	TGO	Developing M&R guidelines	Amendment of implementation rules			Decisions on issues for full operation
			Preparation of administration, IT system			
	IGES	Investigation on practice of monitoring	Developing verification guideline		<ul style="list-style-type: none"> • Modifying rules & guidelines • Instructing participants 	
			Review of guidelines	Considering how to supplement the current monitoring		Review of guideline
Thammasart Univ.	Researches and decisions on issues for full operation					
Trial MRV	TGO	Consultation with stakeholders			Recruitment of participants, instruction	Implementation of trial MRV
	IGES	Consultation for implementation of trial MRV				



Thank you
ありがとうございました



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