

National Metal and Materials Technology Center  
National Science and Technology Development Agency

MTEC

## Progress of LCI Database Development in Thailand

Assoc. Prof. Dr. Thumrongrut (RUT) Mungchaoren  
National Metal and Materials Technology Center (MTEC)  
National Science and Technology Development Agency  
and  
Faculty of Engineering, Kasetsart University  
Thailand

International Open Workshop: Worldwide efforts on LCA databases 8 Feb 2010, Tokyo

National Metal and Materials Technology Center  
National Science and Technology Development Agency

MTEC

### Thailand, one of the 10 ASEAN countries

International Open Workshop: Worldwide efforts on LCA databases 8 Feb 2010, Tokyo

National Metal and Materials Technology Center  
National Science and Technology Development Agency

MTEC

## Content

- History of LCA in Thailand
- Capacity Building on LCI/LCA & EcoDesign
- Establishment of Thai LCI Database
- Current status and future plan

International Open Workshop: Worldwide efforts on LCA databases 8 Feb 2010, Tokyo

National Metal and Materials Technology Center  
National Science and Technology Development Agency

MTEC

### Brief History: LCA Concept in Thailand

- ✓ 1997 Officially introduce LCA Concept (Thailand Environment Institute)
- ✓ 2001 Thai LCA network (Chiangmai University) / LCA in Education: Teaching LCA at Asian Institute of Technology and Kasetsart University
- ✓ 2003-2007 GMTAP under Green Partnership Plan- LCA/EcoDesign technology transfer from Japan + LCI Database in 2005 (MTEC)
- ✓ 2005 LCA/ EcoDesign in EE sector (Electrical & Electronics Institute: EEI)/ Textile sector (Thailand Textile Institute: TEI)
- ✓ 2007 5 org. (MTEC/ Dept. of Industrial Works/ Thailand Research Fund/ Federation of Thai Industry/ TEI) signed MOU to drive Thai National LCI database project
- ✓ 2007 Thai Green Design network (TGDN)..... MTEC
- ✓ 2008 (Jan.) Government Green Procurement Policy
- ✓ 2008-2010 SMThai+ project under GPP: LCI/LCA applications + dissemination to ASEAN
- ✓ 2009 Carbon Footprint Pilot Project ..... TGO + MTEC

International Open Workshop: Worldwide efforts on LCA databases 8 Feb 2010, Tokyo

National Metal and Materials Technology Center  
National Science and Technology Development Agency

MTEC

### LCA Conferences in Thailand

- 2001 Establishment of Thai LCA Network
- 2003 1<sup>st</sup> Thai LCA workshop and seminar
- 2005 International Workshop- Capacity Building on LCA in APEC Economies
- 2006 1<sup>st</sup> International Conference (ICGSI 2006): 150 participants/ 95 technical paper presentations + posters
- 2007 2<sup>nd</sup> Thai LCA workshop and seminar
- 2008 3<sup>rd</sup> Thai LCA workshop and seminar  
1<sup>st</sup> ASEAN LCA workshop (AOTS+MTEC)
- 2009 2<sup>nd</sup> International Conference (ICGSI 2009):~200 participants/~150 technical paper presentations + posters  
2<sup>nd</sup> ASEAN LCA workshop (AOTS+MTEC)

International Open Workshop: Worldwide efforts on LCA databases 8 Feb 2010, Tokyo

National Metal and Materials Technology Center  
National Science and Technology Development Agency

MTEC

## Content

- History of LCA in Thailand
- Capacity Building on LCI/LCA & EcoDesign
- Establishment of Thai LCI Database
- Current status and future plan

International Open Workshop: Worldwide efforts on LCA databases 8 Feb 2010, Tokyo



MTEC  
a member of NSTDA

## Content

- History of LCA in Thailand
- Capacity Building on LCI/LCA & EcoDesign
- Establishment of Thai LCI Database
- **Current status and future plan**

A Driving Force for National Science and Technology Capability

National Metal and Materials Technology Center  
National Science and Technology Development Agency

MTEC  
a member of NSTDA

### Current Status of Thai LCI Database

WG1: Natural Gas	7	WG7: Agriculture/Agro-products	
WG2: Refinery	7	Rubber	6
WG3: Petrochemical	25	Feed mill	14
WG4: Ferrous & Non-ferrous		Livestock	16
Ferrous	9	Rice	>15
Non-ferrous	5	Pulp & Paper	8
WG5: Infrastructure/Transportation		WG8: Basic chemicals	
Electricity Grid Mix/ Water	1/ 5	Paints	6
Road Transportation: Truck	188	Basic chemicals	15
WG6: Construction Materials		WG9: Recycle/Waste Management	
Ceramics	7	Incinerations	8
Glass & Mirror	7	WG10: Others	38
		<b>TOTAL</b>	<b>&gt;387</b>

More agriculture data: Palm oil, Jatropha (Bio-diesel), Cassava, Sugar cane, Molasses (Bio-ethanol)  
**Finished 307 and On-going > 80 data sets**

International Open Workshop: Worldwide efforts on LCA databases 8 Feb 2010, Tokyo

National Metal and Materials Technology Center  
National Science and Technology Development Agency

MTEC  
a member of NSTDA

### Critical Review System: Panel Reviewers

**Review Triangle**

- Top Executives:** MOI, TGO, TRF, F.T.I
- Reviewers**
- Technical advisory boards:** Experts from
  - Universities
  - Industrial sectors
  - Publics
  - NGOs
- Communication and Cooperation**
- Organizations responsible for data collection (PTIT/ ...):** Practitioners, Commissioners

ISO 14044: 2006 Environmental management – Life cycle assessment – Requirements and guidelines.

International Open Workshop: Worldwide efforts on LCA databases 8 Feb 2010, Tokyo

National Metal and Materials Technology Center  
National Science and Technology Development Agency

MTEC  
a member of NSTDA

### Website of Thai National LCI Database

<http://www.thaiLCIdatabase.net>

International Open Workshop: Worldwide efforts on LCA databases 8 Feb 2010, Tokyo

National Metal and Materials Technology Center  
National Science and Technology Development Agency

MTEC  
a member of NSTDA

### Carbon Footprint Projects in Thailand:

1. TRF Research Project (KU & JGSEE) 2008
2. EU Funded Project (KU & JGSEE) 2008-2009
3. Thailand Carbon Footprint Project (TGO & MTEC + TEI/ FTI/ Universities) 2009

### Thailand Carbon Footprint Projects

~25 pilot products (start Apr 2009)

**25 Pilot products:**

T-shirt (100% cotton), Nylon yarn, Carpet, TULC can, Ceramic tiles, Paper, Paper container, Sterile food packaging, Plactic-fiber pellet, Copying machine, Air conditioner, Tyre, PP cup, Coke can, Rice flour, Jasmine rice (2), Teriyaki chicken meat, Fresh chicken meat, Meat stick, Instant noodle, Canned tuna, Pineapple juice, Airline food, Chicken feed mill. (Food 12/25)

(Technical support by Japanese government under Green Partnership Plan)

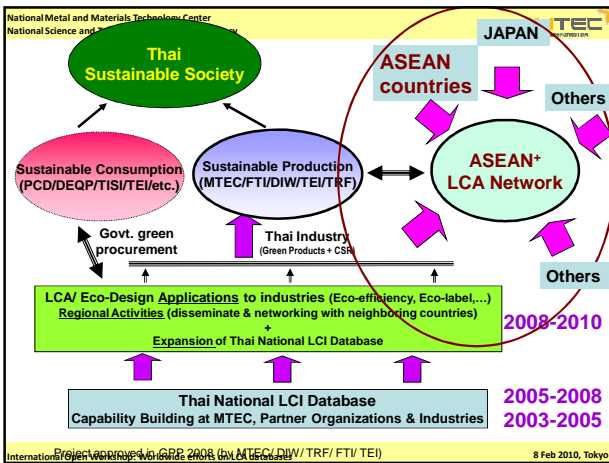
International Open Workshop: Worldwide efforts on LCA databases 8 Feb 2010, Tokyo

National Metal and Materials Technology Center  
National Science and Technology Development Agency

MTEC  
a member of NSTDA

### Critical Review & Certify of Thai National LCI database + Officially launch of the 1<sup>st</sup> Carbon Footprint (21 products-16 companies) on 25 December 2009

International Open Workshop: Worldwide efforts on LCA databases 8 Feb 2010, Tokyo



National Metal and Materials Technology Center  
National Science and Technology Development Agency

## Activity Plan 2010-2012

**Main Objective: Promotion of LCA applications**

- Extension of LCI Database on Agriculture, Construction materials, and Waste Management
- LCA Software Development
- LCA Applications in CFP, Eco-Efficiency, Eco-label Type III, etc.
- Life Cycle Impact Assessment Methodology for Thailand
- Joint projects with other ASEAN countries
- Strengthening ASEAN+ Network on LCA & EcoDesign

International Open Workshop: Worldwide efforts on LCA databases 8 Feb 2010, Tokyo

National Metal and Materials Technology Center  
National Science and Technology Development Agency

## Acknowledgement

- **Japanese Government:** Technical Support through Green Partnership Plan (METI, JETRO, AOTS, JODC, JEMAI.....)
- **Prof. Atsushi Inaba** and other experts from Japan
- **Royal Thai Government:** Financial Support through MTEC, Ministry of Industry, etc.
- **Thai Partner Organizations:** MOI, TRF, FTI, TEI, and TGO
- Thai Industrial Specific Institutions/ Associations
- Several Universities and Industries
- **Staff at LCA & Eco-Product Development Labs/ MTEC**
- etc.

International Open Workshop: Worldwide efforts on LCA databases 8 Feb 2010, Tokyo

National Metal and Materials Technology Center  
National Science and Technology Development Agency

**Assoc.Prof.Dr. Thumrongrut (RUT) Mungcharoen**

Expert, National Metal and Materials Technology Center (MTEC)  
National Science and Technology Development Agency (NSTDA)  
Tel: (662) 564-6500 ext. 4853-57 Fax: (662) 564-6404

or

Director, CT and Eco-Design Research Unit, Kasetsart University (KU)  
Tel: (662) 942-8555 ext.1203,1204 Fax: (662) 561-4621

E-mail: [thumrong@mtc.or.th](mailto:thumrong@mtc.or.th), [fengtrm@ku.ac.th](mailto:fengtrm@ku.ac.th)

International Open Workshop: Worldwide efforts on LCA databases 8 Feb 2010, Tokyo