Experts Group Meeting on Accelerating Fuel Economy Policies in the ASEAN Region

3 March 2016, The Richmonde Hotel, Ortigas, Philippines

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The Transport and Climate Change (TCC) project of GIZ invited 21 representatives from national government agencies and research institutions from ASEAN Member States and international institutions to an informal expert dialogue on accelerating fuel economy policies in the ASEAN Region.

Group photo of the workshop participants

The Meeting specifically aimed to: (1) discuss the Kuala Lumpur Transport Strategic Action Plan and the ASEAN Plan of Action for Energy Cooperation (2016 – 2025) by charting the course for fuel economy policy discussions among ASEAN Member States; (2) identify existing initiatives and policy pathways for fuel economy discussions in the ASEAN region; as well as (3) work with the Philippines to discuss high-priority items such as fuel economy labelling and minimum energy performance standards.

Agenda

Time	Item	Presenter / Facilitator
8.30	Registration and coffee	
9.00	Opening of the workshop and introduction	Mr. Tali Trigg, GIZ
9.30	Global snapshot of the progress around fuel economy policy development	Mr. Dr. Lewis Fulton, Global Fuel Economy Initiative (GFEI)
9:50	Fuel economy status in ASEAN	Mr. Mark Tacderas, Clean Air Asia
10:00	Q&A and discussion	
10:05	Overview of the Kuala Lumpur Transport Strategic Action Plan	Ms. Hon. Sherielysse Bonifacio, DOTC Assistant Secretary, L-TWG Member
10:20	Overview of the ASEAN Action Plan for Energy Cooperation	Mr. Christopher Zamora, ASEAN Centre for Energy
10:35	Q&A and discussion	
10:45	Coffee / tea break	
11:00	ASEAN overview of key policies and actions related to fuel economy • Philippines • Thailand • Indonesia • Vietnam • Malaysia	Country representatives • Mr. Artemio Habitan, DOE, Philippines • Mr. Asawin Asawutmangkul, DEDE, Thailand • Mr. Ahmad Safrudin, KPBB, Indonesia • Ms. Phan Ngoc Bich, Vietnam Register • Mr. Madani Sahari, Malaysia Automotive Institute
11:45	Mapping fuel economy stakeholders across ASEAN	Mr. Tali Trigg, GIZ
12:15	Lunch	
13:15	Best practice in vehicle fuel efficiency labelling	Ms. Zifei Yang, International Council on Clean Transportation (ICCT)
13:45	Key topic: addressing institutional changes	Mr. Bert Fabian, UNEP
14:15	Scenario-building breakout session: where are we in 2020?	Mr. Friedel Sehlleier, GIZ
15:00	Coffee / tea break	
15:15	Activities by an ASEAN expert group on fuel economy	Mr. Friedel Sehlleier, GIZ
16:20	Implementing a fuel economy roadmap for the ASEAN	Mr. Friedel Sehlleier, GIZ
17:00	Summary of discussions by GIZ and next steps	Mr. Tali Trigg, GIZ

Background and rationale

GIZ has been supporting the ASEAN and its member countries in promoting and developing fuel economy policies since 2010, in coordination and cooperation with initiatives by Clean Air Asia, UNEP and the Global Fuel Economy Initiative. As the ASEAN region is the world's fifths largest automotive market, there is a huge potential to enhance vehicle energy efficiency and reduce emissions through the implementation of fuel economy policies.

The meeting was a follow-up activity to previously organised activities by the TCC project of GIZ, UNEP, and CAA on fuel economy, which include for example the:

- Clean Fuels and Vehicles Forum in 2013;
- BAQ side-event in 2014;
- Indonesian fuel economy dialogue; and
- Thailand fuel economy workshop.

In his opening remarks**, Mr. Tali Trigg**, Team Leader of GIZ-TCC, highlighted the Kuala Lumpur Transport Strategic Action Plan (2016-2025) (KLTSP) and the ASEAN Plan of Action for Energy Cooperation (2016-2025) (APAEC) as leading strategies to drive forward regional action on fuel economy. Efforts need to focus on linking action plans and strategies at the national level to the regional level. In a broader context, developing fuel economy initiatives contribute to the realisation of national climate change and energy efficiency goals.

Global and Regional Contextual Overview

Mr. Dr. Lewis Fulton, international expert on transportation and energy policies of the University of California, provided a global fuel economy snapshot. 65 countries, including ASEAN Member Countries, have pledged to support the "50by50" Global Fuel Economy Initiative (GFEI) target, which seeks to improve the average fuel economy of all light duty vehicles globally by 50% in 2050. Significant developments worldwide, which include the recent efforts of Thailand and Vietnam, mainly involve setting fuel economy standards and targets, vehicle labelling programs, and the adoption of tax incentives that promote fuel economy. Despite a global average annual improvement rate in fuel economy of about 2.0%, countries need to accelerate actions and consider electrification in order to reach the GFEI target, which requires an annual improvement rate of about 3.1%. The G20 Energy Efficiency Action Plan is a key framework that enables participating countries to collaborate in improving vehicle fuel economy.

Mr. Mark Tacderas, Transport Researcher at Clean Air Asia, provided the highlights on fuel economy efforts in the ASEAN region. Labelling schemes have been the predominant action on fuel economy in the region, which have been adopted or under development in Singapore, Thailand, Vietnam and the Philippines. However, no countries have yet introduced mandatory fuel economy standards as existent in other world regions. Stronger collaboration and dialogues between stakeholders on fuel economy policies and research, inputs from key actors at the regional level, and the formulation of an ASEAN roadmap are

needed to guide the various stages of fuel economy development at the national level. The inclusion of fuel economy in the post-2015 KLTSP, the establishment of an ASEAN Expert Group on fuel economy, and the designation of a champion within the ASEAN structure could anchor the development of the needed regional fuel economy roadmap.

Mr. Bert Fabian (UNEP) during the Q&A session

Ms. Corina Alcantara, Program Manager of the Department of Transportation and Communications, in the Philippines, presented the specific goals and actions for 2016-2025 outlined in the KLTSP. The integration of sustainable transport in the KLTSP proves the growing recognition of the transport sector as a crucial component of sustainable development. A regional framework that supports energy efficient and low carbon transport is the overall approach for advancing sustainable transport. On fuel economy, the KLTSP proposes a platform to enable discussion and knowledge sharing, the formulation of a regional fuel economy roadmap, and the development of nationally appropriate policies.

Mr. Christopher Zamora, Manager of the APAEC Programme of the ASEAN Centre for Energy (ACE), introduced the ACE as the ASEAN dedicated centre for energy that serves as the knowledge-hub or depository of information developing in the region, further catalysing and aligning efforts of ASEAN countries. The APAEC predicts an energy demand growth of 5% per year. Indonesia, Malaysia, the Philippines, Thailand, and Vietnam are the five major countries that are projected to top the total energy requirement in the ASEAN by 2035. Policies and programs for energy efficiency need to be scaled up in all sectors including

transport in order to reach the APAEC energy intensity reduction target of 20% in ASEAN by 2020 and a 30% reduction by 2025. Moreover, a regional roadmap needs to be drawn and formulated inclusively, with the consensus of at least 10 ASEAN Member States. As a next step, the ACE is to collaborate with GIZ to guide the formulation of the regional roadmap in consultation with the transport sector of the ASEAN Secretariat, and also to consider ASEAN SHINE, an EU-funded initiative that aims to increase the use of energy efficient products in ASEAN, as a model for moving forward.

Discussion Highlights

- Information on the progress of fuel economy in each country is available. However, many gaps remain. A regional roadmap can support closing these gaps in a way that ensures increasingly harmonised approaches across countries.
- Fuel economy is a topic for both the energy and transport policy community as well as ministries of trade and finance, especially when it comes to financial incentives, and thus requires inter-ministerial coordination. Moreover, further development of policies would benefit from a single agency taking a leading role and steering coordination with others. At the moment, a lack of clear ownership within the government is a barrier for catalysed action. At the ASEAN- level, energy and transport bodies need to coordinate likewise.

Country key policies and actions on fuel economy

Mr. Artemio Habitan, OIC-Division Chief of the Energy Efficiency and Conservation Division of the Department of Energy (DoE) in the Philippines, focused on the energy efficiency and conservation roadmap that started in 2014 and that seeks to achieve a 40% reduction of energy intensity, a 1.6% annual decrease of energy consumption, and savings of about 10,665 KTOE by 2030. Success has been achieved through the completion of the baseline assessment on the efficiency of new light duty vehicles. Fuel economy runs are also being conducted with the industry since 2005 and an action plan for the introduction of a vehicle fuel economy labelling scheme has been developed. Mr. Habitan welcomed TCC's support for DoE's action plan on energy efficiency.

Mr. Asawin Asawutmangkul, Senior Engineer of the Department of Alternative Energy Development and Efficiency, of the Ministry of Energy in Thailand, discussed the establishment of energy performance standards for vehicles in 2013, enforcement of Euro IV emission standards for new passenger and light duty vehicles in 2012, the successful continuation of the eco-car program that requires Euro 5 standards for cars in 2013, the CO_2-based taxation policy, and the eco-sticker labelling program as major success stories in Thailand.

Mr. Ahmad Safrudin, Executive Director of KPBB Indonesia, a sustainable transport NGO in Indonesia, highlighted the challenges of the minimal share (2.3%) of the transport sector in the national GHG emission profile, which compromises government priorities to mobilise action; and the limited fuel supply and quality that hampers setting vehicle emission standards at Euro 4-levelsand hinders advancements in vehicle technology. Strategic plans

for Indonesia include further tax benefits for passenger cars with certain low carbon specifications (in addition to the existing Low Cost Green Car scheme), annual evaluation of emissions and fuel consumption, and investments on hybrid vehicles. The Ministry of Industry of Indonesia also attended, and gave positive feedback on such an event.

Ms. Phan Ngoc Bich, official of the Environment, Science and Technology Department of the Vietnam Register, outlined the progress on fuel economy initiatives in Vietnam, which stems from laws that mainstreamed the significance of energy efficiency and progressed energy efficiency labelling on vehicles and implementing fuel consumption standards.

Prof. Le Anh Tuan (Hanoi University of Science and Technology) contributing to the discussion

Mr. Madani Sahari, CEO of the Malaysia Automotive Institute, highlighted that a low carbon and fuel-efficient vehicle are key priorities of the national automotive policy. Evident and fast developments are visible for Malaysia wherein: measures to promote the production of energy efficient cars have started; OEMs only pay low average excise duties ranging from 0-30%; 80% of cars produced in 2015 were compliant with the national automotive policy's specification for fuel efficiency in 2015; and Euro 5 Diesel has been introduced nationwide by the end of 2015, which is a stark progress from a predominantly Euro 2 Petrol and Diesel-lead market in 2014.

Discussion Highlights

The discussion among all participants revealed the following conclusions:

- All major automotive markets in the ASEAN region have introduced policies on fuel economy. Motivations are predominantly related to industrial policy, whereas energy and environment policies are also important, but secondary. There are leaders and laggards.
- The design of policies differs across countries. A more mutual exchange of experiences among countries is needed. Opportunities should be used to align approaches across borders (e.g. in terms of label design) and work together rather than in parallel, which wastes resources and leads to a fragmented picture instead of the wanted ASEAN market integration.
- The understanding of fuel economy policies can be further improved as there is often confusion between fuel economy standards (e.g. km/l), fuel quality standards (e.g. EURO 4), and financial incentives based on fuel economy benchmarks.
- Below a table of key fuel economy policies and actions across countries (table 1) as well as roles and responsibilities in individual countries (table 2) have been drafted by the workshop participants.

Table 1: Fuel economy roles and responsibilities across ASEAN countries (Version 1.0)

Roles & Responsibilities	Philippines	Thailand	Vietnam	Indonesia	Malaysia
Taking the lead on FE	DoEnergy	DEDE	MoT		
Convener					
ASEAN link	DoTC	MoT	MoT	MoT	MoT
Labelling	Bureau of Product Standards	OIE	MoT		
Standards		TISI	MoST		
Modelling and scenarios	Academia	EPPO	MoT		
Data collection		OIE	VR		
Fiscal policies		Excise Tax Department	MoF	MoF	
Implementation			MoT		
Enforcement			MoT		
Type approval		Thailand Automotive Institute	VR		
Fuel quality		DOEB	MoIT	MoEnv	
Research	Academia				
Testing	Academia	TAI / PTT			

Table 2: Key fuel economy policies and actions across ASEAN countries (Version 1.0)

COUNTRY	Fuel Economy Baseline Calculations	Fuel Economy Standards	Type of Vehicles Covered	Fuel Quality and Vehicle Emissions Standards	Fuel Economy Vehicle Labelling	Fiscal incentives and/or other Tax Instruments	Public Information Programmes
Indonesia	Baseline calculations and Cost-Benefit Analysis completed in 2012.		Light-duty vehicles 2-wheelers	2000ppm sulphur diesel Currently, Euro 2 (LDVs) and Euro 4 by 2016	Voluntary, based on Conformity of Production	Low Cost Green Car Program: Zero luxury sales tax (LST) for 120ccm vehicles (diesel: 150 ccm) with 20km/land or 128 gCO2/km Low Carbon Emission Vehicles Program (planned for 2017): 50% LST reduction For advanced technology vehicles (e.g. hybrid, alternative fuels) with >28 km/l; and 25% LST reduction for20-28 km/l.	Eco-driving programs and intensive policy dialogues (2013)
Malaysia	National Automotive Policy 2014 defines fuel consumption standards as a basis for incentives to OEM. Technical specification for fuel consumption (l/100km) is based on international benchmarking. gCO2/km to be used once EURO4 is introduced nationwide		LDVs particularly passenger vehicles 2-wheelers	End of 2015, introduction of Euro 5 Diesel across Malaysia. Euro 2 production remains permitted Gasoline, RON97 on Euro nation wide	Labelling preparation on-going, but requires validation of OEM's provided information UNECE drive cycles not considered suitable to Malaysian or ASEAN	Customized incentives for local OEMs to produce energy efficient vehicles as defined in the National Automotive Policy 2014 All manufacturers now produce	Government developing Malaysia as the regional automotive hub for EEVs

COUNTRY	Fuel Economy Baseline Calculations	Fuel Economy Standards	Type of Vehicles Covered	Fuel Quality and Vehicle Emissions Standards	Fuel Economy Vehicle Labelling	Fiscal incentives and/or other Tax Instruments	Public Information Programmes
				RON94 still on Euro2, but refinery upgrades on-going	drive cycles. First develop national drive cycles, then develop energy efficiency rating /labelling	EEVs, benefitting from lower duties. In 2015, 80% cars produced are EEV	
Philippines	Baseline calculations completed in 2015. Fuel efficiency standard proposed in DOE Energy Efficiency roadmap Development of National technical regulation on Automobile Fuel consumption tentatively planned for 2018		All vehicles	500ppm sulphur diesel Euro 2 (LDVs) and Euro 4 by 2016	Roll out of labelling scheme for passenger cars by 2017 Extension to other vehicles tentatively planned for 2018	Tax incentives foreseen by EE roadmap	Re-launch fuel economy run initiative in 2016 Driver Training programme
Thailand	Draft MEPS & HEPS (km/l) for diesel and gasoline vehicles drafted in 2013 by DEDE – Ministry of Energy with Thailand Automotive Institute, but remain under discussion Voluntary MEPS for motorcycles regulated by TISI. But no one adopted		Light-duty vehicles 2-wheelers	50ppm sulphur diesel/gasoline Euro 4 (LDVs) since 2012 and Euro 5 for Eco-Car Programme Commercial biofuel blending (ethanol for gasoline & biodiesel for diesel) Eco car phase 2 programme raised benchmark for classification	Mandatory Fuel Economy and CO2 Label mandatory since January 2016 ("Eco-Sticker")	CO_2 purchase tax	www.car.go.th website showing info on every new car (from Jan 1, 2016) as Eco-sticker

COUNTRY	Fuel Economy Baseline Calculations	Fuel Economy Standards	Type of Vehicles Covered	Fuel Quality and Vehicle Emissions Standards	Fuel Economy Vehicle Labelling	Fiscal incentives and/or other Tax Instruments	Public Information Programmes
Viet Nam	TCVN issued by the Ministry of Science and Technology: fuel consumption limits (l/100km) of passenger cars (Aug 2013)		Light-duty vehicles 2-wheelers	**Fuel quality Gasoline:** Sulphur Euro 2 max 500mg/kg; Euro 3 max 150 mg/kg; Euro 4 max 50 mg/kg. **Diesel:** Sulphur Euro 2 max 500mg/kg; Euro 3 max 350 mg/kg; Euro 4 max 50 mg/kg. Euro 4 for manufactured, assembled and imported cars, mandatory from 1 Jan 2017 Euro 3 for manufactured, assembled and imported Motorcycles mandatory from 1 Jan 2017	Voluntary from 1 Jan 2014 and mandatory from 1 Jan 2015		

Best practices

Ms. Zifei Yang, Researcher at the International Council on Clean Transportation (ICCT), shared thoughts on designing and enforcing vehicle fuel efficiency labelling programs, based on country efforts inside and outside of ASEAN. Key guidelines include: conducting regular market research to determine consumer preference; promoting materials and information on fuel economy online (example of New Zealand); providing absolute fuel economy/GHG and rating; fuel cost savings; and fiscal policy information on the label design, and ensuring the ease in understanding the label. A well-established monitoring and enforcement system and periodic assessment to ensure that dealers meet regulations and to monitor the effectiveness of the program are strongly recommended.

Discussion Highlights

Participants discussed Ms. Yang's findings and agreed that:

- Fiscal incentives and standards are not pre-requisites to an effective vehicle fuel efficiency labelling program.
- Information on operation cost savings as part of fuel economy labels need to be based on the average fuel price.
- Online platforms allow countries to deliver additional information based on consumer preference and eases access for consumers on fuel saving information.
- Vehicle type approval data guides the development and supports the operation of fuel economy labelling programmes.

Mr. Ahmad Safrudin (KPBB) during his presentation

Scenario-building breakout session

Participants split into three scenario groups: Realists, Optimists and Pessimists. Their task was to imagine the future in five years from now in terms of Standards, labelling/consumer awareness and fiscal incentives. The optimistic scenario reflects the most favourable direction on fuel economy as it imagines a harmonised and ambitious fuel economy standard

for all vehicle types, universally required labelling for all vehicles and a CO_2-based feebate system. The realist's and pessimist's scenario both reflect country-centric fuel economy policy development with little or no alignment, slower progress and lower ambition.

Table 3: Fuel Economy Policy in 2020 in the ASEAN Region

	Optimistic	Realistic	Pessimistic
Fuel Economy Standards	Development of an ASEAN-Wide Driving Cycle Harmonised standards across all countries, covering all vehicle classes (2W, LDV, HDV), including new and second hand vehicles Ensuring high-level technical skills in testing, etc. in all countries Vehicles >15 years scrapped; 5 year age limit for imports 2020 LDV Target: 4.0 L/100-km (Ge) lower for diesel = 90 G/km Universal Mandatory Labelling for new and used vehicles Clean vehicle (low emission) driving zones	Number of ASEAN Member States with standards increased In the Philippines, government still convening stakeholders for the implementation of set standards Implementation: Thailand (?), Indonesia (?), Vietnam Standards constructed like in China: 5-9 L/100-km (passenger cars, gasoline) Emerging harmonisation of approaches for labels and standards Rather unequal program in policy, but increasing ambition Creation of TWG on FE in ASEAN Low capacity development on FE standards	ASEAN Policy Roadmap, but no standards ASEAN FE initiative is a priority in the APAEC 2021-2026 only Information sharing on FE policies, standards, plans and programs
Labelling and Awareness	Fiscal incentives to labelling system Universal check of FE information online before buying FE as part of school curriculum All buyers indicate FE as a top-3 factor when they buy Rising concerns of climate change Technology keeps pace with newest technologies	A number of car manufacturers agrees to participate in labelling Implement fuel economy labelling → Indonesia - Today: conformity of production (COP) - All countries	Individual country labels only Information sharing at "surface level" No harmonised monitoring or verification
Financial Incentives	CO_2-based fees on newly registered vehicles including second-hand imports – with the maximum fee at 100% for very high CO_2 cars, and the minimum fee at 10% for very low CO_2 cars Economic concerns fuel cost competitiveness	In the Philippines, government is still continuing the discussions on fiscal incentives In Indonesia: - Green Car Initiative - Ongoing development of the low carbon emission car - Excise tax exemption for low carbon	No harmonised fiscal policies More competition in ASEAN Member Countries to attract OEMs → greater fiscal incentives Reduction of government revenues

		emission car Harmonisation is unlikely, but more regional exchange	

Tasks for an ASEAN Fuel Economy Expert Group

The KLTSP asks ASEAN Member States to establish a platform to discuss matters related to fuel economy for the transport sector. In order to inspire the formulation of terms of reference for such a platform or expert group by ASEAN member states, participants were asked to brainstorm what tasks and activities an expert group should either definitely do or not do:

DO's:

- Define structure of FE regulations
- Build knowledge of FE methodology and literature
- Define technological groups, but be inclusive, including APWG, TWGs, and private sector
- Do cost-benefit analysis
- Outline fiscal policy options
- Prepare a position paper
- Communicate movement and changes
- Develop technology guidelines
- Create national & regional expert networks
- Get commitment from high-ranking people
- Raise consumer awareness through a database
- Establish an information hub and exchange platform
- Clarify the "home address" of FE on national and regional levels → establish AWGFE?

DON'T's:

- Broaden to energy policy
- Act in isolation of other relevant processes
- Make decisions as this is the prerogative of governments alone
- Carry only your own hat → don't be specific to just one automaker or one market
- Don't aim for a harmonised goal without a political lead
- Do nothing
- Be unrealistic
- Impose templates
- Have overlaps

Formulating a Fuel Economy Roadmap for the ASEAN

The KLTSP asks ASEAN Member States to formulate a fuel economy roadmap for the ASEAN region including policy guidelines. Furthermore, the APAEC proposes to conduct a feasibility study on Energy Efficiency in the Transport Sector, which would focus on financial considerations of fuel economy standards and potential harmonisation. Against this background, meeting participants were asked to share their thoughts on developing such a roadmap based on the following guiding questions:

- What should be the purpose of the roadmap?
- Who is the roadmap for?
- What should be the scope and boundaries of the roadmap?
- What are key roadmap elements?
- What is the political process for developing a regional roadmap that has public and private sector ownership?

Results:

- The harmonisation of country approaches will guide countries that are at lower points in the policy development pathway and will further narrow the development gap.
- Policymakers need to conduct dialogues and consultations with manufacturers on action plans, indicators, and targets to allow preparation and ease of transition.
- Set clear timelines, overarching vision, and milestones that encourage cooperation and allow different approaches to foster.
- Work on general principles and set specific targets.
- Revisit the definition of “transport” in the KLTSP.
- In detail, participants specified that the roadmap should include:
    - Specific dates;
    - An overarching vision;
    - Milestones;
    - Targets;
    - How-to-do’s with clear deadlines;
    - Scope of the roadmap
    - type of vehicles; and
    - The same targets for the region, but with national milestones.

In summary, the roadmap should help with integration and get everyone on the same page. A regional target is needed, but there is also a need to clearly define the purpose of e.g. a fuel economy standard in e.g. reducing oil consumption.