Transition to Soot-Free Heavy-Duty Vehicles and Fuels: Regional Workshop for Southeast Asia (25-26 August 2021) Workshop Highlights

Workshop Background

Heavy duty diesel vehicles move a large share of people and goods, yet this reliance on diesel technology comes with significant environmental and health cost. HDVs are responsible globally for 86% of on-road diesel NOx emissions and 78% of on-road diesel black carbon (BC) emissions, despite accounting for less than a quarter of the diesel vehicle fleet. The disproportionate contribution of HDVs to air-quality issues is a key reason for their prioritization by the Climate and Clean Air Coalition (CCAC) Heavy Duty Vehicles Initiative (HDVI).

In the case for Southeast Asian region, coordinated actions to harmonize technical regulations in trade blocs such as ASEAN could potentially enable a group of countries to progress faster than if each country were to develop technical regulations individually. Alignment of vehicle emission standards, fuel quality standards, and used vehicle import policies among countries with strong economic ties could have added benefit of eliminating or reducing barriers to progress, such as competitiveness concerns, cross-border traffic, used vehicle markets, limited access to cleaner fuels, and limited availability of vehicle models meeting local design specifications.

Day 1 – Training

In day 1, the purpose of the event is to train country representative to understand the urgency to transition from soot-free vehicles. Some keypoints to be delivered are the understanding of health impacts, technology changes, and learning from other countries that have achieved its goal to transition from soot-based vehicles. The list of trainers are:

1. Lingzhi Jin. Topic: Air quality and health impacts of HDVs in ASEAN countries
2. Francisco Posada. Topic: Opportunities for a transition to soot-free and zero emission heavy duty vehicles and fuels
3. Anup Bandivadekar. Topic: Case study: transition to Euro VI vehicle emissions and fuel quality standards in India

Q&A Session

- Lesson learned to accelerate the transition to Euro VI standard in India

Anup: People always make excuses in emerging market everywhere trying to delay the implementation for years. Those excuses have been used by our industries and the key is to go after the fuel quality part of it first and make sure it will come, once the ministry and oil companies realized they want to invest billion dollars improving fuels, why should the vehicle companies go part of the way not all the way of Euro IV and make the best of it? That was one but you were right, our manufacturers think in two ways. It took twice effort for us to

demonstrate, the other side of it also help this story was scheme of retiring of other vehicles, if we retire old dirty vehicles, there will be market support for demand of new vehicles even though they cost a little bit higher.

- Lesson learned on transitioning to Electric Vehicles

Anup: One thing that Euro VI emission standard provide many small chemical plans on board and you have to do maintenance properly et cetera. If CNG is available that will make it easy maintenance and could be an alternative option. Now we have certain cities in India committing only buy electric buses from 2024 and beyond and I think the main story here is getting the depos ready for electrifications and make sure the buses can meet the operation schedule and functional requirement. We've already saw more than 300 electric buses in India include transit buses within the city and intercity electric buses operating as well.

Day 2 – Workshop

In day 2, most of the agenda's is to understand where the position of each ASEAN countries is on achieving Euro VI. Roundtable discussion and questionnaire are conducted to get the challenges and opportunity that each country faces. Cambodia, Indonesia, Philippines, and Vietnam are presenting their works:

1. Cambodia

- Existing regulation:
  - Sub-decree of Air Pollution and Noise Disturbance, July 10th, 2000
  - Standard of Sulfur, Lead, Benzene, and Hydrocarbon Permitted in Fuel and Coal (no EURO standard being applied)
- Planned regulation:
  - For motorcycles and Tricycles = EURO 3 in 1st January 2023
  - For Vehicles= EURO 4 in 1st January 2022 and EURO 5 in 1st January 2027
  - For upgrading sulfur content contained in Fuel, Euro 3 in 2020, Euro 4 in 2021, and EURO 5 in 2024
- Electrification for HDV:
  - Has not yet developed a low carbon vehicle policy or strategy, but a study has been conducted for a low carbon development plan towards 2050
  - GGGI Cambodia and GGSD issues a report on a Promoting Green Mobility Through Electric Motorcycle

2. Indonesia

- Existing Regulation:
  - Motorcycle: Euro III
  - PV and HDV: Euro IV
  - Fuel standard (ranging from Euro 2-Euro IV)
- Planned Regulation:
  - It requires all stakeholders to provide the quality of fuel and also to provide the test. The use of biodiesel is also will contribute to reduce carbon also. Regarding to regulations, ministry of transportation currently still drafting the roadmap and targeted around 90% of transport to be electric by 2030.
- Electrification for HDV:
  - No information

3. Philippines

- Existing Regulation:

  - Euro III: Motorcycle/tricycles and mopeds
  - Euro IV: Passenger vehicle
  - Euro IV: Heavy duty vehicle
  - Fuel standard EURO IV (Diesel and Gasoline)
- Planned Regulation:
  - Adopt higher vehicle emission standards by 2024 (EURO 5 or EURO 6)
  - Upgrade fuel standard by 2024 (10 ppm Sulphur)
  - Modernization of Public Utility Buses by 2022
- Electrification for HDV:
  - 10% penetration rate of EV for road transport (includes motorcycle, cars, etc)
  - Deployment of E-bus in Davao city (7 units) and Manila (50 units)
  - Adoption and Implementation of low carbon transport plan in 7 cities under UNDP project – LCUTS, (to operate 15-20 new hybird or EVs for mass transit in pilot LGUs by 2022)

4. Vietnam

- Existing Regulation:
  - Moped: Euro II
  - Motorcycle: Euro III
  - PV and HDV: Euro IV
  - Fuel standard: Euro V
- Planned Regulation:
  - Plan for vehicle emission standard (Euro VI) by 2024
  - Plan for HDV scrappage program in 2022 for old trucks
- Electrification for HDV:
  - Country level e-mobility roadmap and local level e-buses roadmap still in study phase
  - Vinbus under Vingroup will pilot test 10 routes with 150 e-buses in Hanoi, and Ho Chi Minh

Jamboard Session:

- Barriers
  - Philippines: Issuance of new policy on emission standard
  - Cambodia: economic barrier (existing used cars, high investment for purchasing new EVs)
- Opportunities
  - Cambodia: importing diesel and there are no refinery factory, no update on fuel quality standard also
- Way Forward
  - Philipinnes: Create concept paper regarding the reduction of short-lived pollutants by transitioning to soot-free HDV and fuels for future cooperation with ASEAN member states
- Next workshop should be held on 16/17th November with the topic of Vehicle emission control technologies and regulations (Based on survey result)

Table 1. Summary on Vehicle Emission Standard and Fuel Standard of ASEAN Countries (Existing and Planned)

	Vehicle Emission Standard (Euro)						Fuel Standard (Euro)				
	Motorcycle/Moped		Passenger Vehicle		Heavy Duty Vehicle/Diesel		Gasoline		Diesel		Electrification Goals
	Existing	Planned	Existing	Planned	Existing	Planned	Existing	Planned	Existing	Planned	Description
Philipinnes	III	V/VI by 2024	IV	V/VI by 2024	IV	V/VI by 2024	IV	V/VI by 2024	IV	V/VI by 2024	10% penetration rate for road transport, deployment of E-bus in Davao and Manila, and LCUTS UNDP in 7 cities
Cambodia	N/A	III by 2023	N/A	IV by 2022; and V by 2027	N/A	IV by 2022; and V by 2027	N/A	III in 2020; IV by 2021; V by 2024	N/A	III in 2020; IV by 2021; V by 2024	Still in study phase for low carbon vehicle policy
Vietnam	III and II	VI by 2024	IV	VI by 2024	IV	VI by 2024	V	N/A	V	N/A	Vinbus under Vingroup will pilot test 10 routes with 150 e-buses in Hanoi, and Ho Chi Minh
Indonesia[12]	IV	N/A	IV	N/A	II	IV by 2022	II to IV	N/A	II	Euro IV by 2022 (CN 51) Euro IV by 2025 (CN 48)	Ministry of transportation currently still drafting the roadmap and targeted around 90% of transport to be electric by 2030.

[1] https://migas.esdm.go.id/uploads/regulasi/regulasi-kkkl/2020/146.K-10-DJM-2020.pdf
[2] https://migas.esdm.go.id/uploads/regulasi/regulasi-kkkl/2020/kepdirjen-minyak-tanah---2020.pdf