

Fuel Economy Policies in Transport

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About Clean Air Asia

Mission: to promote better air quality and livable cities by translating knowledge to policies and actions that reduce air pollution and greenhouse gas emissions from transport, energy and other sectors.



**Air Quality and Climate
Change Program**



**Low Emissions Urban
Development Program**

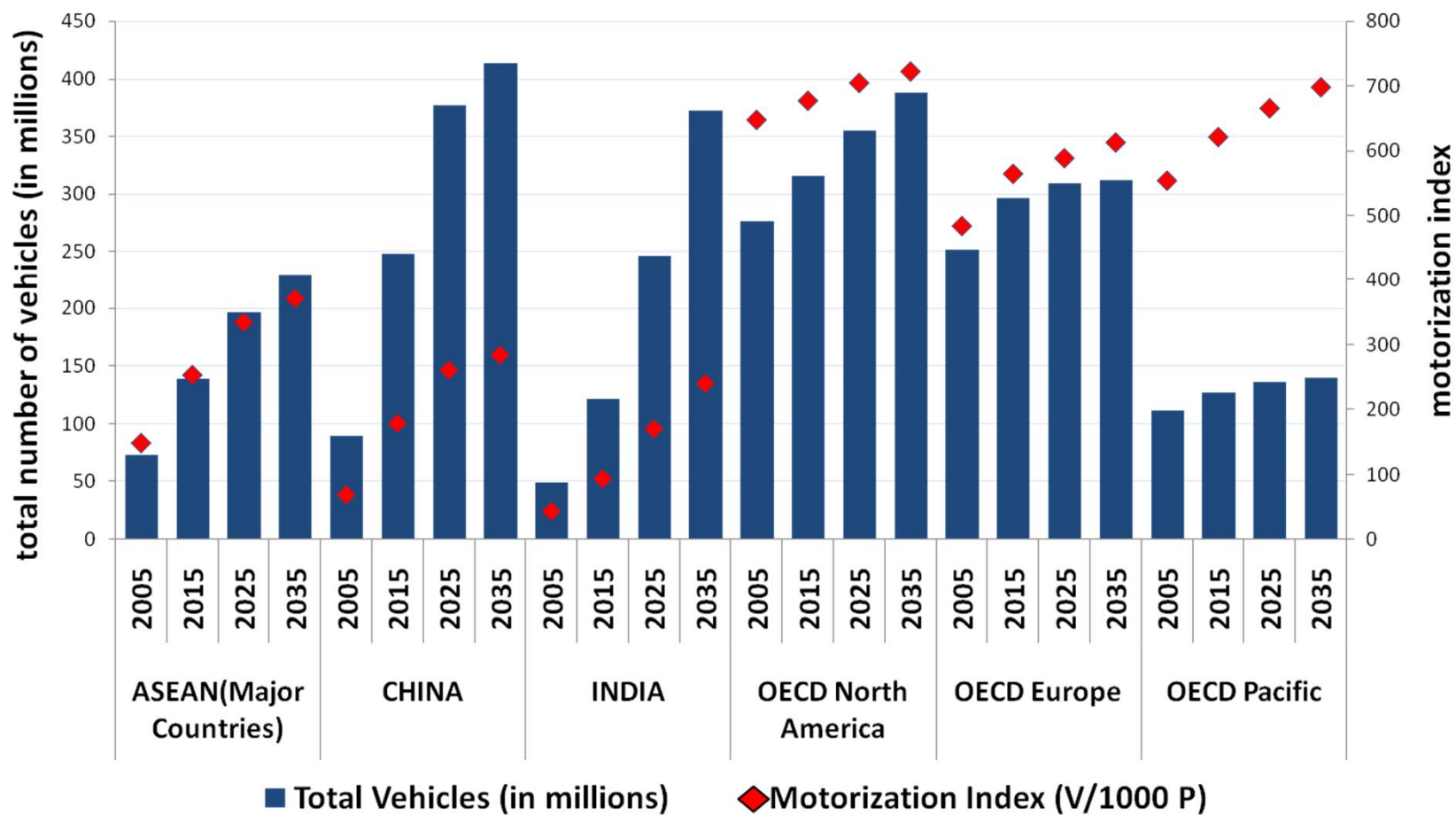


**Clean Fuels and
Vehicles Program**



**Green Freight and
Logistics Program**

Why Fuel Economy? Rapid Motorization Rate

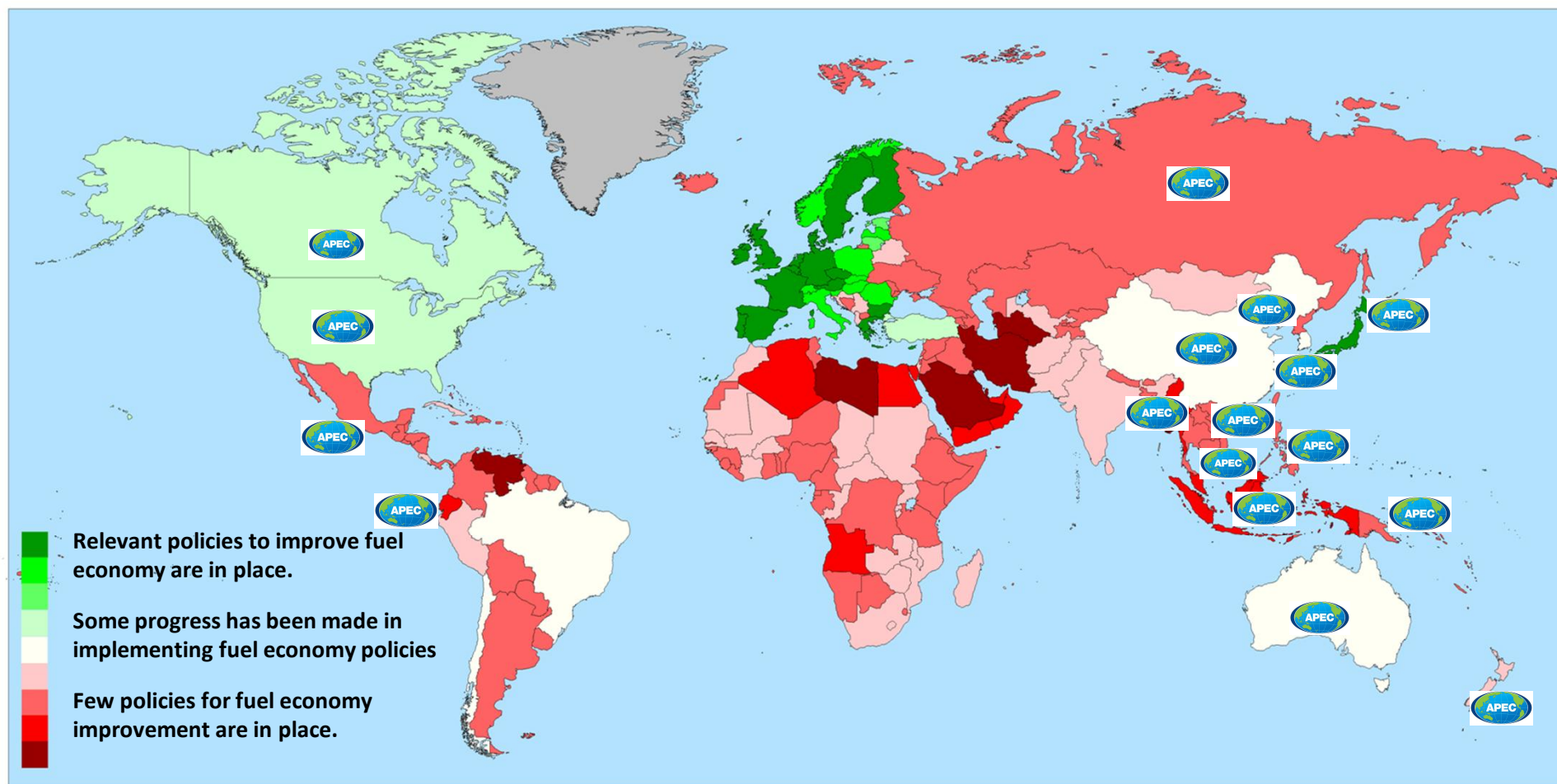


Typical national objectives related to transportation/fuels policies



- Reduce oil dependence (diversify fuels)
- Improve balance of payments
- Reduce pollutant emissions
- Reduce greenhouse gases
- Promote domestic economies/jobs

State of Fuel Economy Policy in APEC Member Countries



Source: IEA Fuel Economy Roadmap, July 2012

GFEI Targets

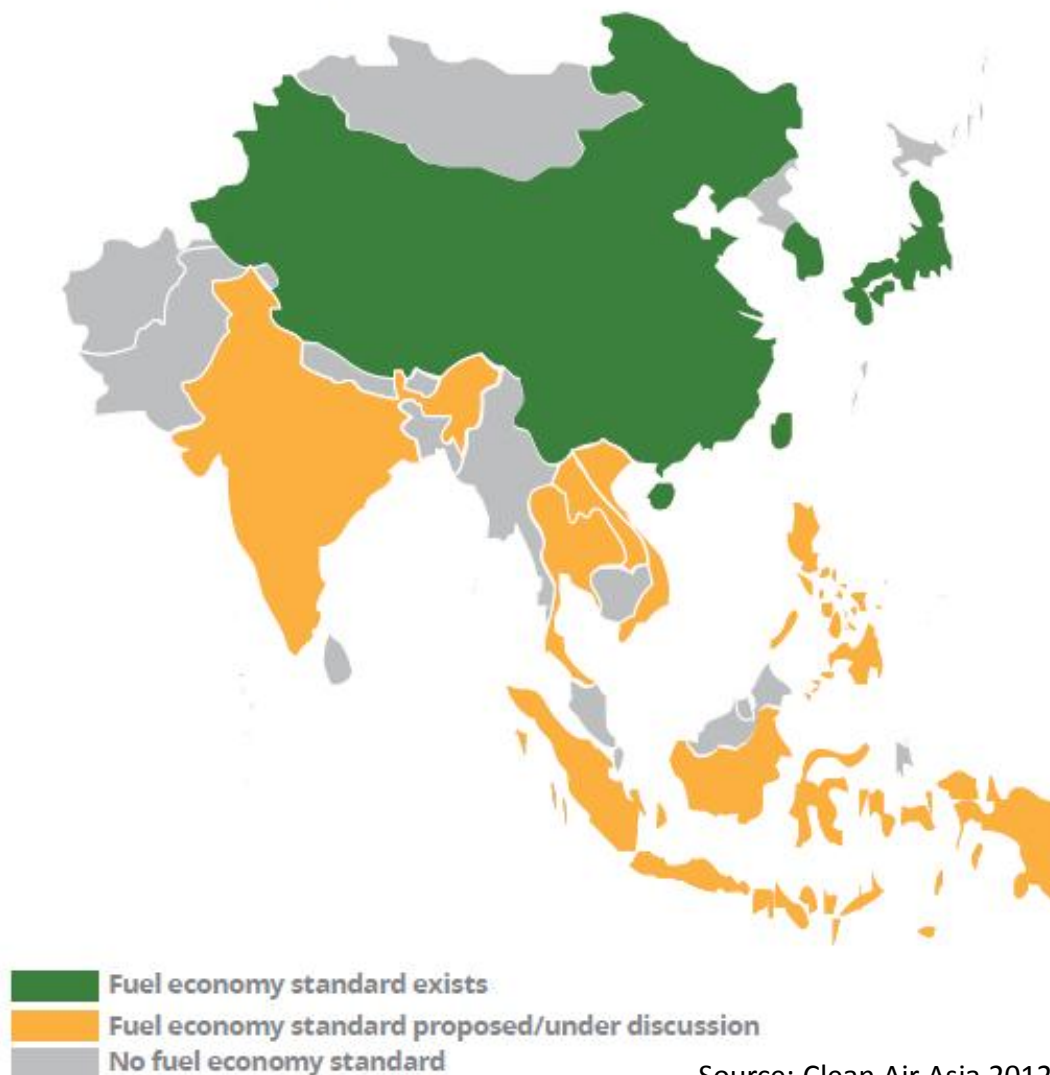


	2020	2030	2050
New Cars	<p>30% reduction* in L/100km compared to 2005</p> <p>Engines, drive- trains, weight, aerodynamics.</p>	<p>50% average improvement globally</p> <p>Hybridisation of most models.</p>	<p>50% + globally</p> <p>Significant contributions from Plug-in vehicles</p>
Total fleet	<p>20% reduction</p> <p>With lag time for stock turnover; includes eco-driving, maintenance</p>	<p>35% reduction</p>	<p>50by50</p>

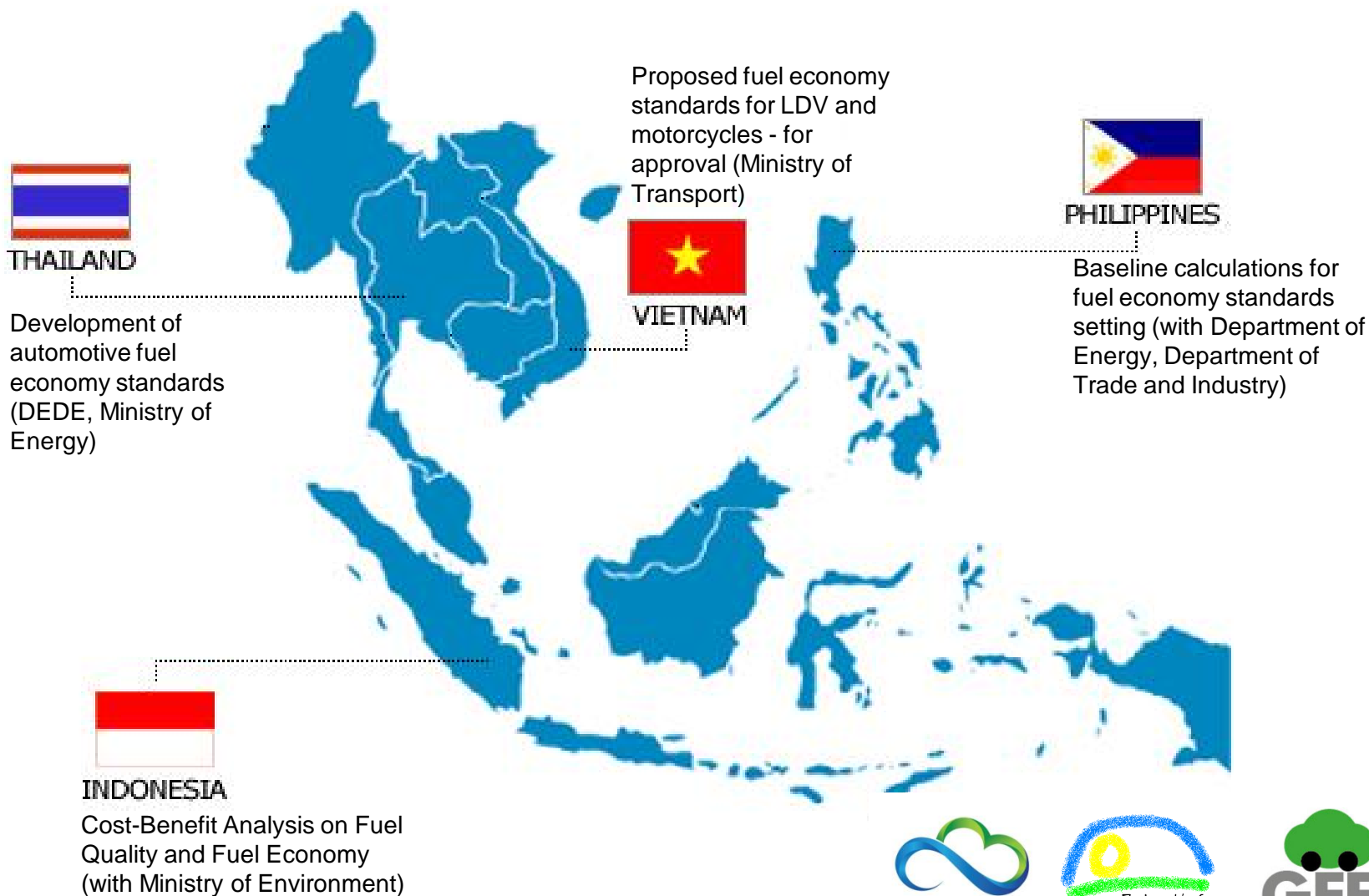
Fuel economy standards in Asia

2012 Asian Fuel Economy Standards

- Few Asian countries have fuel economy standards
- LDV standards given priority; currently being developed in Indonesia, Philippines, Thailand, Vietnam
- HDV standards: Japan, China



National initiatives in the ASEAN Region

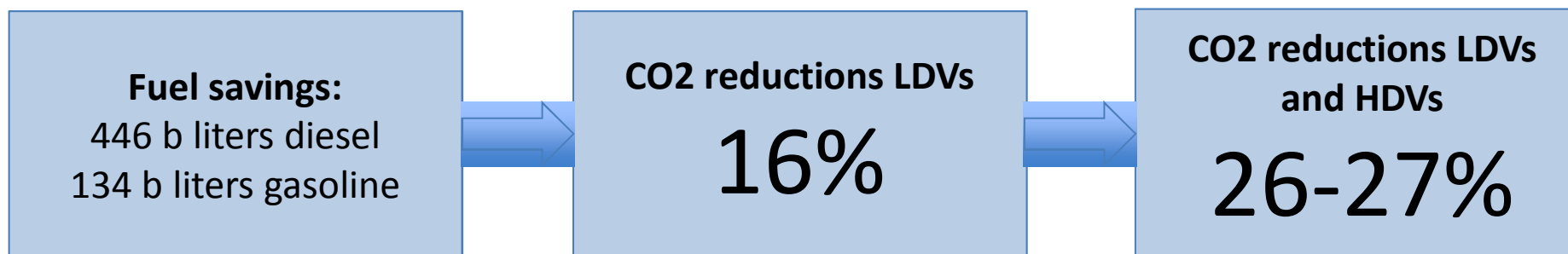
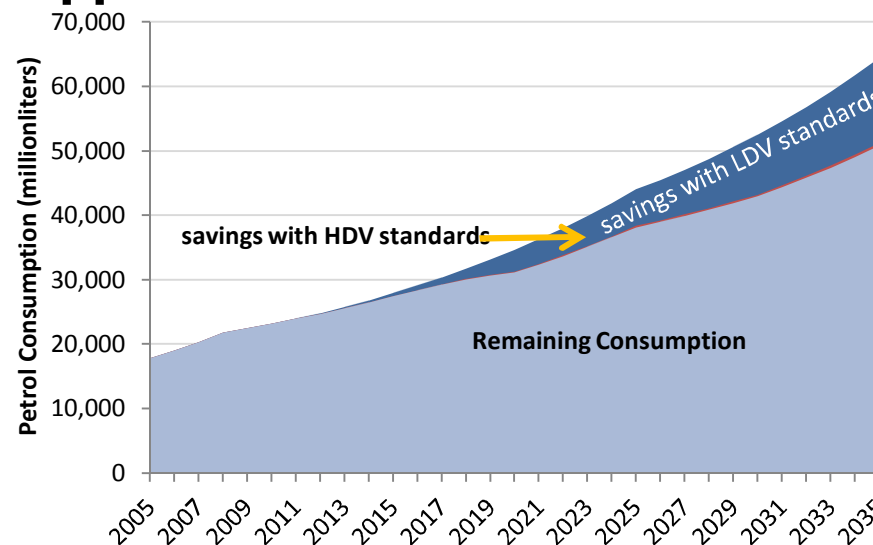
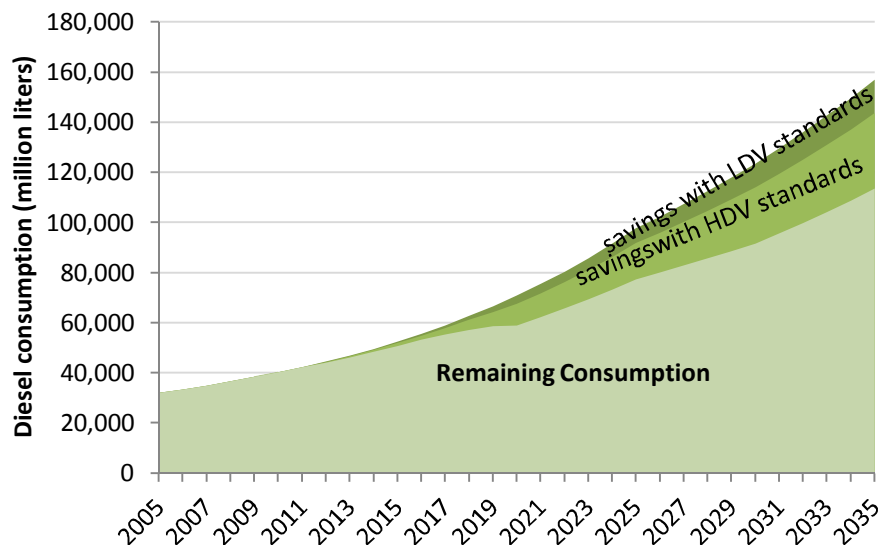


Fuel economy standards in ASEAN



Impact potential 2012 – 2035 compared to BAU

Indonesia, Thailand, Philippines, Vietnam



Fuel Economy is Improving Slowly



		2005	2008	2011	2030
OECD average	average fuel economy (Lge/100km)	8.1	7.6	7.0	
	annual improvement rate (% per year)	-2.2%	-2.7%	-2.4%	
Non-OECD average	average fuel economy (Lge/100km)	7.5	7.6	7.5	
	annual improvement rate (% per year)	0.4%	-0.6%	-0.1%	
Global average	average fuel economy (Lge/100km)	8.0	7.6	7.2	
	annual improvement rate (% per year)	-1.7%	-1.8%	-1.8%	
GFEI target	average fuel economy (Lge/100km)	8.0			4.0
	required annual improvement rate (% per year)		-2.7%		
		2012 base year →			-3.0%

COUNTRY	Fuel Economy Baseline Calculations	Fuel Economy Standards	Type of Vehicles Covered	Fuel Quality and Vehicle Emissions Standards	Fuel Economy Vehicle Labeling	Fiscal incentives and/or other Tax Instruments	Public Information programs
Indonesia	Baseline calculations and Cost-Benefit Analysis completed in 2012. Legal drafting of fuel efficiency policies and standards (km/l) underway		Light-duty vehicles 2-wheelers	2000ppm sulfur diesel Currently, Euro 2 (LDVs) and Euro 4 by 2016	Voluntary based on Conformity of Production	Low Cost Green Car (LCGC) Program	Eco-driving programs and intensive policy dialogues (2013)
Malaysia	National Automotive Policy 2014: Implementation of Energy-Efficient Vehicles (EEV) will be based on fuel consumption specification (l/100km) and carbon emission (gCO₂/km) will only be used once the EURO 4 fuel quality standard is introduced.		LDVs particularly passenger vehicles 2-wheelers	500ppm sulfur diesel Euro 2 (LDVs)	None but under discussion	Import tax and excise duty exemption for CKD hybrid (from 1 January 2014 until 31 December 2015) and CKD EVs (from 1 January 2014 until 31 December 2017)	Government developing Malaysia as the regional automotive hub for Energy Efficient Vehicles (EEVs)
Philippines	Baseline calculations underway and scheduled to be completed by Jan 2015. Introduction of standards planned under the proposed House Bill on National Energy Efficiency Conservation		Light-duty vehicles	500ppm sulfur diesel Euro 2 (LDVs) and Euro 4 by 2016	Voluntary based on fuel economy runs	Senate proposing bill to incentivize fuel-efficient vehicles	Eco-driving programs and fuel economy runs
Thailand	Draft MEPS & HEPS (km/l) established for diesel and gasoline vehicles in 2013 by DEDE – Ministry of Energy with Thailand Automotive Institute		Light-duty vehicles 2-wheelers	50ppm sulfur diesel Euro 4 (LDVs) since 2012 and Euro 5 for Eco-Car Programme	None	CO ₂ taxation policy based on engine size	
Viet Nam	TCVN issued by the Ministry of Science and Technology: fuel consumption limits (l/100km) of passenger cars (Aug 2013) and for 2-wheelers (Sep 2014)		Light-duty vehicles 2-wheelers	500ppm sulfur diesel Euro 2 (LDVs) and Euro 4 by 2017	Voluntary from 1 Jan 2014 and <u>mandatory</u> from 1 Jan 2015		

How can fuel economy be improved?



- Technical changes to vehicles
- Changing the types of vehicles bought
- Improving vehicle maintenance
- Changing the way vehicles are driven (ecodriving)
- Reducing traffic congestion

Breaking Down the Transport Sector Impacts



A

Transportation **A**ctivity

How much travel is happening?

S

Structure of the transportation system

What modes are being used?

I

Intensity of the transportation modes

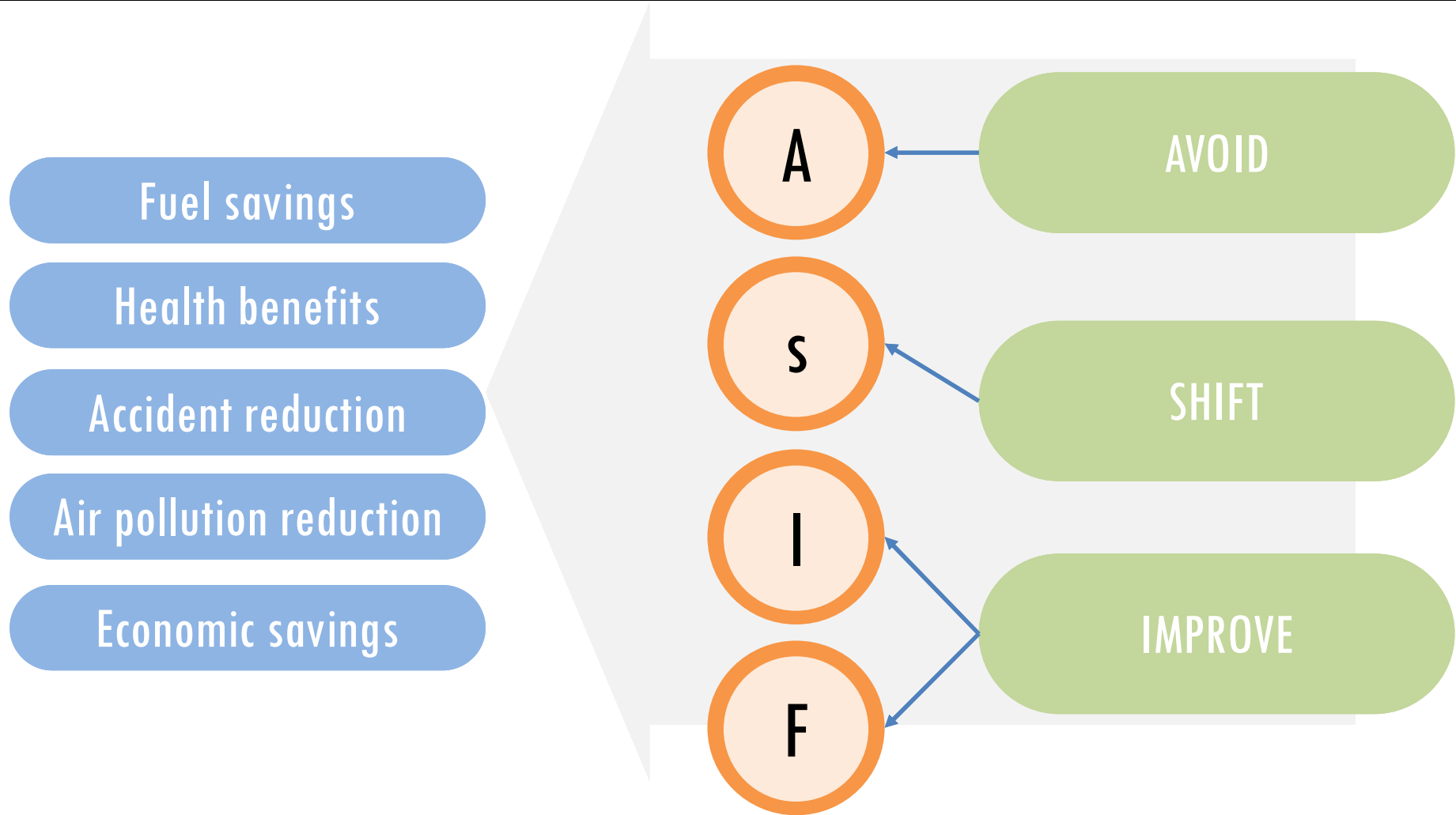
How efficient are these modes?

F

Emission **F**actors

How much do they emit per unit of transport activity?

Dealing with Transport



General fuel economy policies



Fuel economy labeling

- Based on tested fuel economy
- Need to make available to consumers before purchase (internet, car window stickers)

Fuel pricing

- Taxation system should at least internalize externalities
- CO2 tax will help differentiate fuels as well as encourage fuel economy

General fuel economy policies



Fuel Economy Standards

- Typically corporate average standards
- Typically either vehicle mass or size based
- Could be applied to 2nd hand vehicles

Vehicle purchase taxes

- Sales tax, registration tax, import duties
- Can be differentiated by fuel economy or CO₂ emissions
- Germany also differentiates by pollutant emissions levels

Moving Fuel Economy Forward in the ASEAN Context



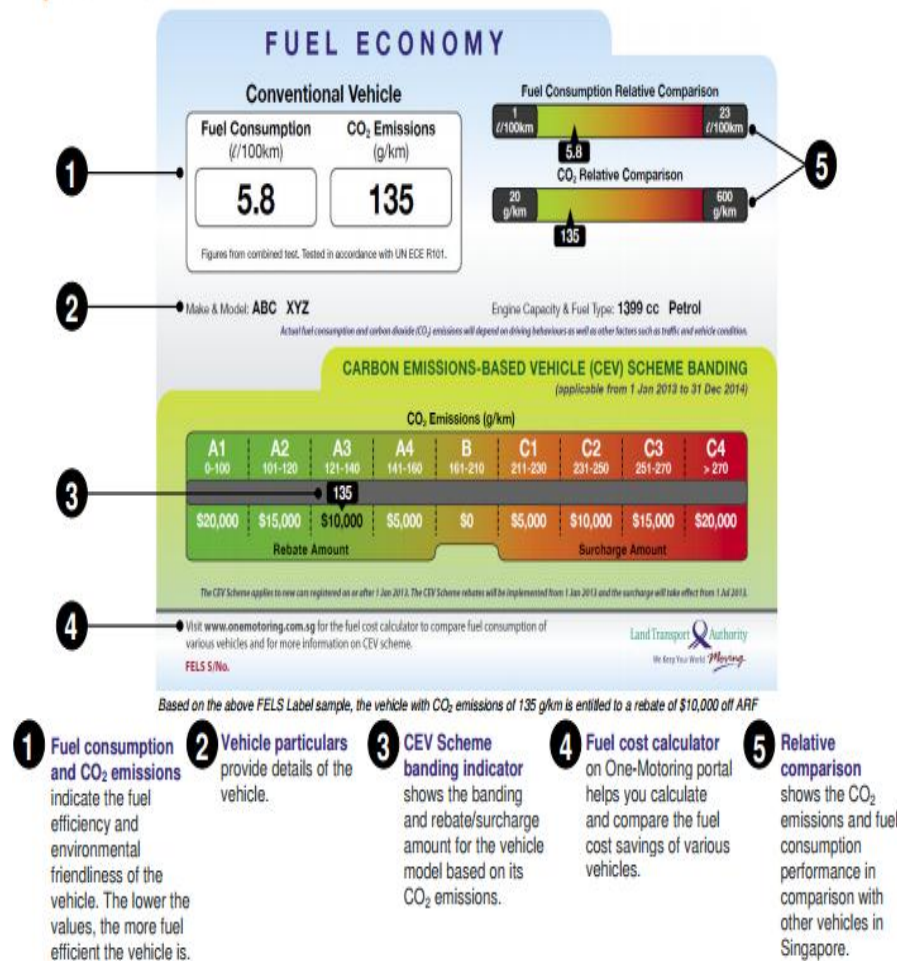
- Lead the discussions on fuel economy policy harmonization with ASEAN member countries
- Conduct of the Better Air Quality Conference
- Support activities for fuel economy baseline setting in the ASEAN member countries
- Lead the work on developing the roadmap for Vehicle Fuel Economy Labeling schemes in the ASEAN member countries

Philippine Study : New Light-duty Vehicles



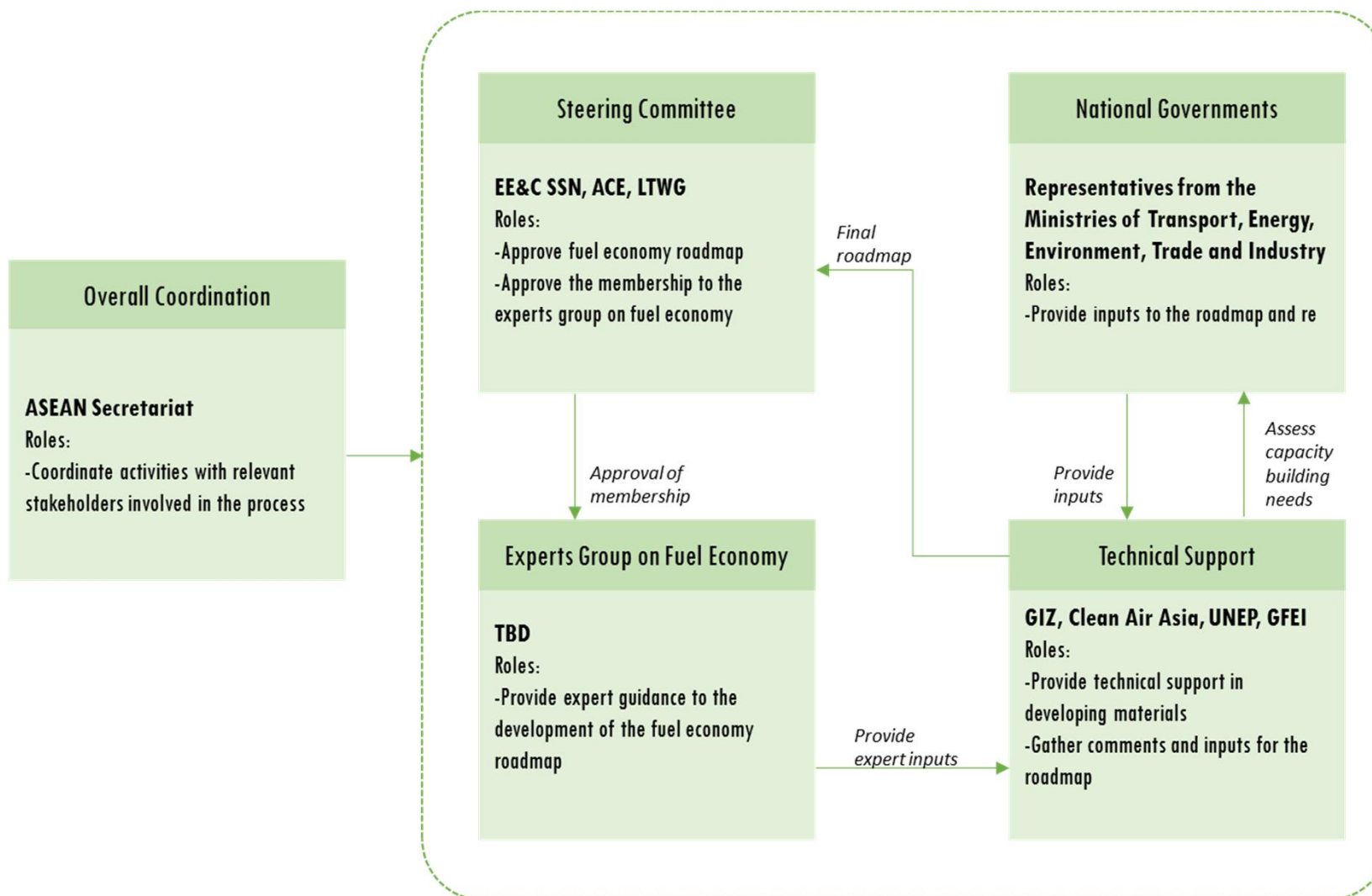
- The 2013 fleet-wide fuel economy estimates for each vehicle type were computed based on the combined tested fuel economy of each vehicle model. Philippine 2013 new LDVs have an average fuel economy of **7.8 Lge/100 km**.
- Non-OECD average is **7.2 Lge/100 km**
- Given 160 thousand new vehicles sales in 2013, if we have had a 7.2 Lge/100 km fuel economy baseline, that would have saved us **289 million pesos** in fuel or **7.2 million liters** of gasoline equivalent, **3 thousand tons of CO₂**

Vehicle Fuel Economy Labelling



- “ Fuel economy labelling
 - “ Communication / Implementation Strategy
 - “ Accompanying measures
- “ Fuel economy standards/Energy performance standards
- “ Economic instruments based on fuel economy ratings (e.g. incentives/price differentiation, CO₂-based tax)

Roadmap to Vehicle Fuel Economy Labeling



Barriers to fuel economy policy

- Fuel economy not an issue in isolation: air pollution, fuel costs, fuel security
- Fuel subsidies in several countries
- Potential conflict with other policies
- Varying standards in integrated market
- Resistance of industry and other stakeholders
- Multiple agencies with overlapping responsibilities
- Lack of monitoring for many countries

ASEAN Countries	Vehicle Emissions Standards	Fuel Quality	Vehicle Tariffs/ Taxes; Fuel Subsidies /Taxes	Energy Efficiency and Fuel Economy
Indonesia	Environment	Energy	Finance	Energy
Malaysia	Environment	Energy	Finance	Energy
Philippines	Environment	Energy	Finance	Energy & Industry
Singapore	Environment	Environment	Finance	Environment
Thailand	Environment	Energy	Finance	Energy
Vietnam	Transport	Industry	Finance	Transport & Industry

Summary



- Currently, fuel economy policy and improvements are slow for majority of the APEC member countries
- While the options
- Implementation of fuel economy policy can be accelerated by developing a clear roadmap for the APEC member economies

For more information: www.cleanairasia.org



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