Global Fuel Economy Initiative:
Activities at Country level

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GFEI country projects process

	GFEI progress	*Project development*	*Project signed*	*Project start meeting*	*Baseline developed*	*National workshop/ s*	*Policy assessment (e.g. FEPiT)*	*Policy developed*	*Policy submitted for decision*	*Policy adopted*
Phase I – Pilot Countries (+ Tool development)										
1	Chile									

Two major products:

- Baseline
- Adopted policies

Country Projects - progress

	GFEI progress	*Project development*	*Project signed*	*Project start meeting*	*Baseline developed*	*National workshop/ s*	*Policy assessment (e.g. FEPiT)*	*Policy developed*	*Policy submitted for decision*	*Policy adopted*
Phase I – Pilot Countries (+ Tool development)										
1	Chile	→	→	→	→	→	→	→	→	→
2	Ethiopia	→	→	→	→	→	→	→	→	
3	Indonesia	→	→	→	→	→	→	→	→	
4	Kenya	→	→	→	→	→	→	→	→	→
Phase II - Countries – Regional Leaders										
5	Mauritius	→	→	→	→	→	→	→	→	→
6	Vietnam	→	→	→	→	→	→	→	→	→
7	Thailand	→	→	→	→	→	→	→	→	→
8	Georgia	→	→	→	→	→	→	→	→	
9	Ivory Coast	→	→	→	→	→	→	→	→	
10	Costa Rica	→	→	→	→	→	→	→	→	
11	Peru	→	→	→	→	→	→	→	→	
12	Algeria	→	→	→	→	→	→			
13	Montenegro	→	→	→	→	→	→	→	→	→
14	Russia	→	→	→	→					
15	Jamaica	→	→	→	→	→	→			
16	Macedonia	→	→	→	→	→	→			
17	Morocco	→	→	→	→					
18	Bahrain	→	→	→	→					

	GFEI progress	*Project development*	*Project signed*	*Project start meeting*	*Baseline developed*	*National workshop/ s*	*Policy assessment (e.g. FEPiT)*	*Policy developed*	*Policy submitted for decision*	*Policy adopted*
19	Tunisia									
20	Benin									
Phase III – Global Roll Out										
21	Uruguay									
22	Nepal									
23	Philippines									
24	Paraguay									
25	Sri Lanka									
26	Uganda									
27	Ukraine									
28	Malaysia									
29	Bangladesh									
30	Kazakhstan									
31	Mali									
32	Nigeria									
33	Togo									
34	Tanzania									
35	Rwanda									
36	Argentina									
37	Jordan									
38	Belize									
39	Brazil									

	GFEI progress	*Project development*	*Project signed*	*Project start meeting*	*Baseline developed*	*National workshop/ s*	*Policy assessment (e.g. FEPiT)*	*Policy developed*	*Policy submitted for decision*	*Policy adopted*
40	Colombia	→	→	→	→	→	→			
41	Panama	→	→	→	→					
42	Djibouti	→								
43	Dominican Republic	→	→	→	→	→	→			
44	Guatemala	→	→	→	→	→	→			
45	Moldova	→	→	→	→	→				
46	Iran	→	→	→	→					
47	Barbados	→								
48	St. Lucia	→								
49	Zambia	→	→	→	→	→				
50	Ghana	→	→	→	→	→				
51	Malawi	→	→	→	→	→				
52	Zimbabwe	→	→	→	→	→				
53	Honduras	→	→	→	→	→	→			
54	Nicaragua	→								
55	El Salvador	→	→	→	→	→	→			
56	Botswana	→	→	→	→	→				
57	Mozambique	→	→	→	→	→				

	GFEI progress	*Project development*	*Project signed*	*Project start meeting*	*Baseline developed*	*National workshop/ s*	*Policy assessment (e.g. FEPiT)*	*Policy developed*	*Policy submitted for decision*	*Policy adopted*
58	Liberia									
59	Myanmar									
60	Kuwait									
61	Oman									
62	Egypt									
63	Samoa									
64	Gambia									
65	Uzbekistan									
66	Burundi									
67	South Africa									
68	Mongolia									
69	Fiji									
70	Bolivia									
71	Ecuador									
72	Senegal									
73	Lebanon									
74	Namibia									
75	Angola									
76	Bhutan									

	GFEI progress	*Project development*	*Project signed*	*Project start meeting*	*Baseline developed*	*National workshop/ s*	*Policy assessment (e.g. FEPiT)*	*Policy developed*	*Policy submitted for decision*	*Policy adopted*
77	Burkina Faso	→	→	→						
78	Cambodia									
79	Cameroon									
80	Cape Verde									
81	D.R. Congo									
82	Eritrea									
83	Guinea									
84	Pakistan									
85	Kyrgyzstan									
86	Laos									
87	Lesotho									
88	Marshall Islands									
89	Niger	→	→	→						
90	Papua New Guinea									
91	Sierra Leone	→	→	→						
92	Solomon Islands									
93	Tajikistan									
94	Turkmenistan									
95	Turkey									
96	Armenia									
97	Azerbaijan									
98	Serbia									
99										

Baselines

59 Country Projects to Date….

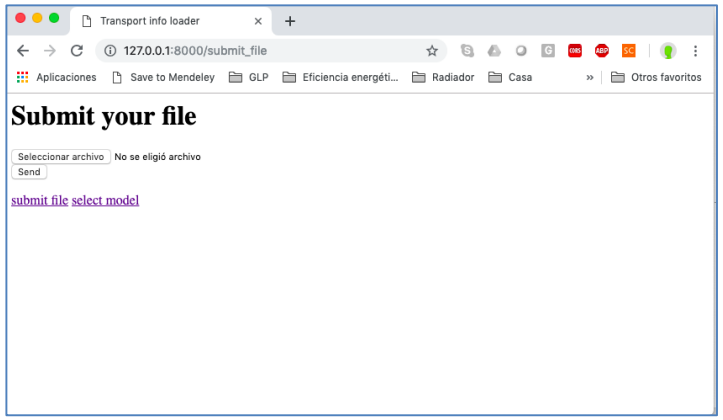
Regions	Number of countries	Progress				
		Finnished	Not starting yet	On going	Starting	Updating
Asia Pacific	11	6		5		
Central and Eastern Europe	5	5				
Latin America and the Caribbean	15	10	1	1		3
Middle East, West Asia & North Africa	7	6	1			
Sub-Saharan Africa	21	12		7	2	
Total	59	39	2	13	2	3

Building a Global Database

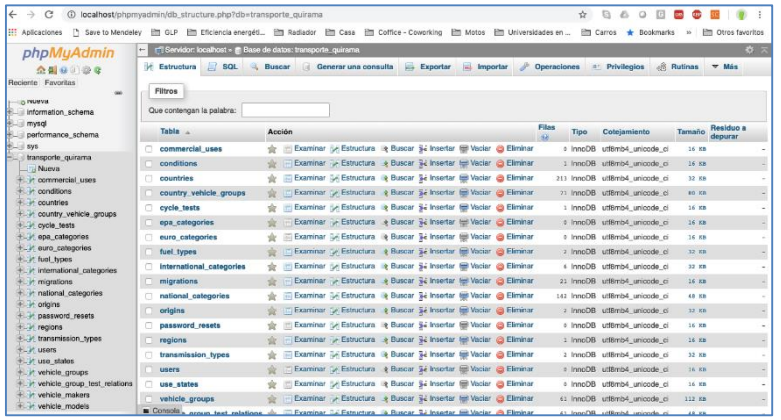
Header for excel file:

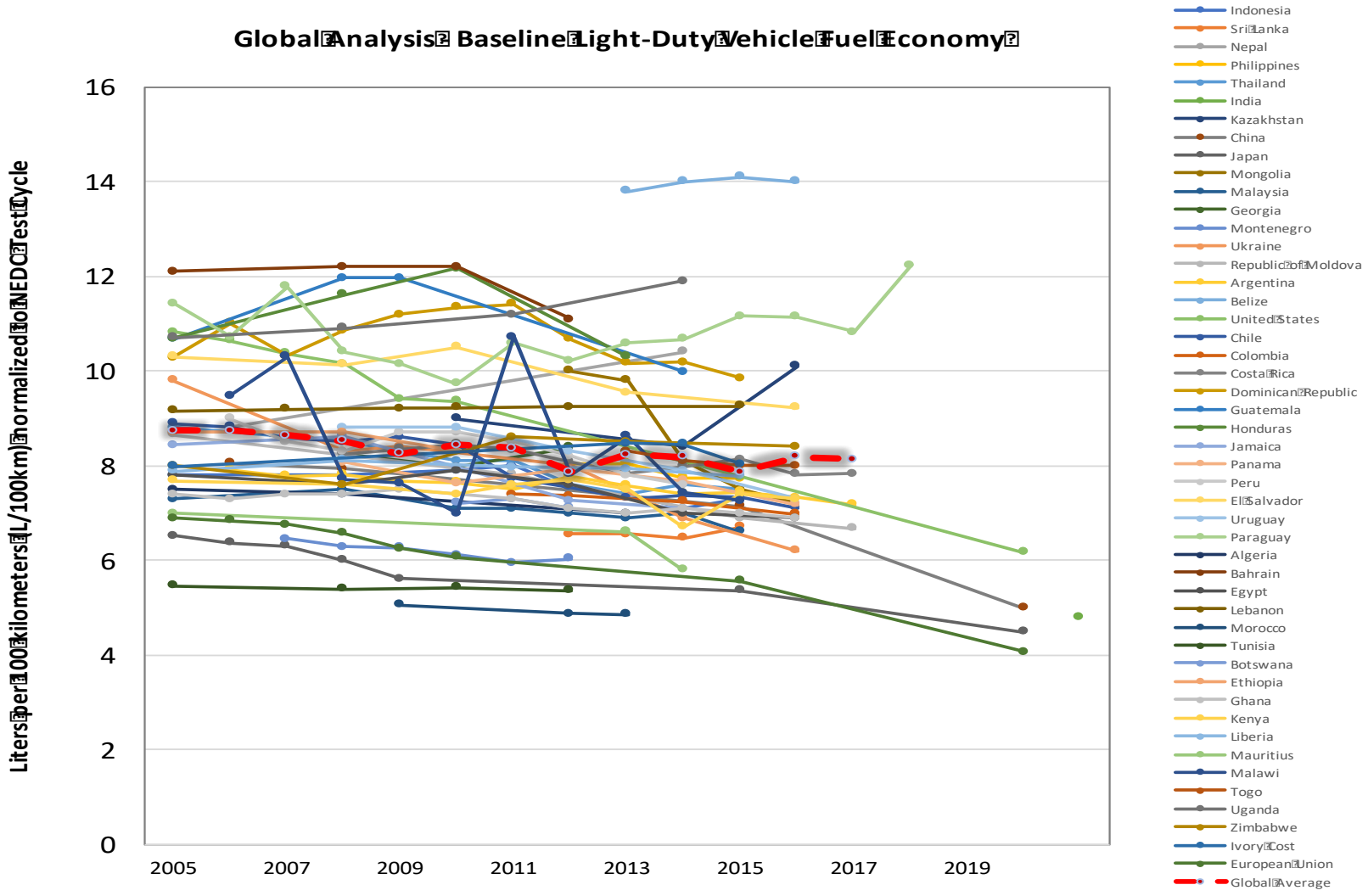
- regions
- sub_region
- countries
- vehicle_makers
- vehicle_models
- national_categories
- international_categories
- model_year
- fuel_type
- engine_displacement
- origin
- use_states
- transmission_type
- sales
- cycle_test
- Emisssion_standard
- CO2_ef
- Fuel_economy (u, e, m)
- Vehicle_references
- Source

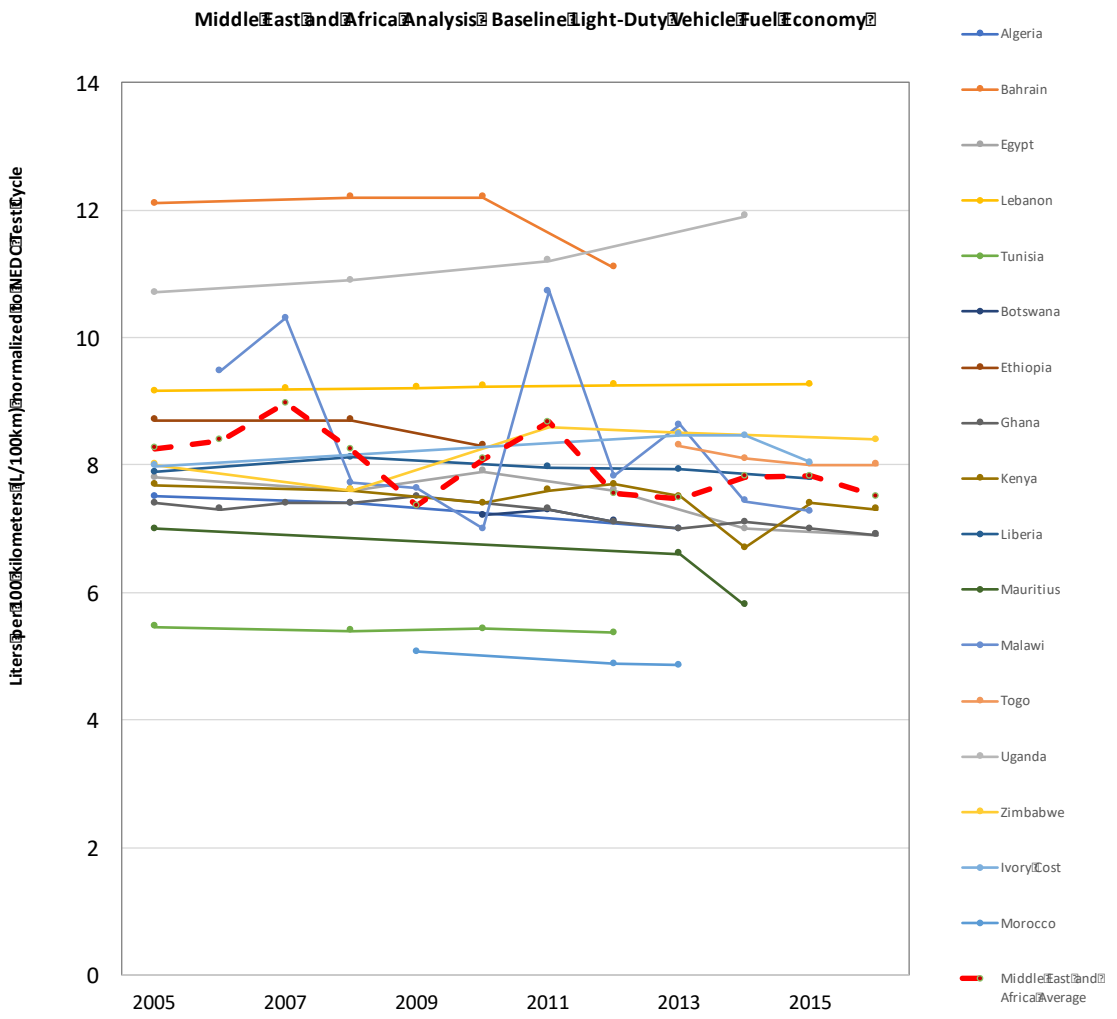
PHP Language: program the website

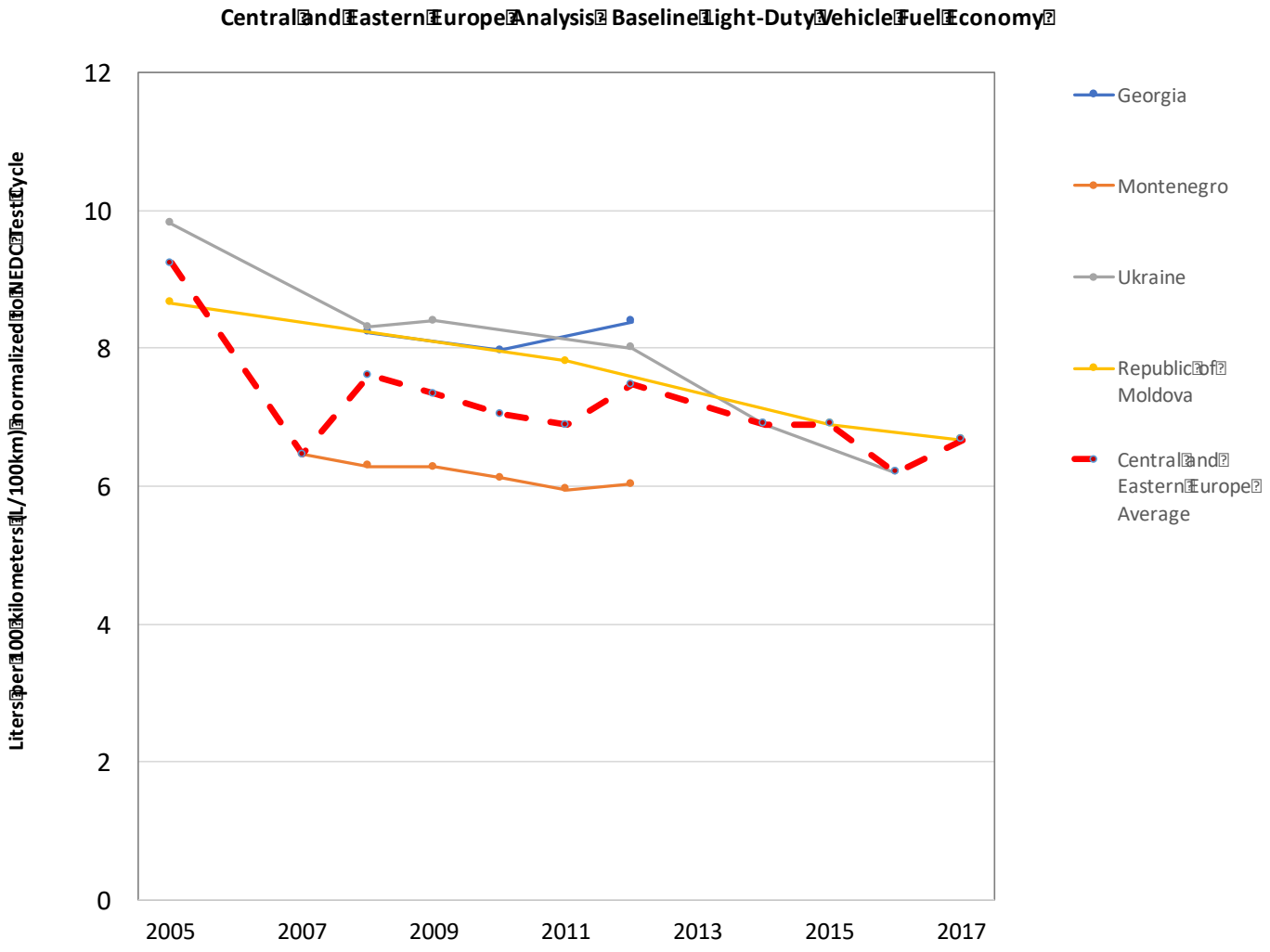


My SQL: database manager




Global Analysis Baseline Light-Duty Vehicle Fuel Economy
Liters per 100 kilometers (L/100km) normalized to NEDC Test Cycle
16
14
12
10
8
6
4
2
0
2005
2007
2009
2011
2013
2015
2017
2019
Indonesia
Sri Lanka
Nepal
Philippines
Thailand
India
Kazakhstan
China
Japan
Mongolia
Malaysia
Georgia
Montenegro
Ukraine
Republic of Moldova
Argentina
Belize
United States
Chile
Colombia
Costa Rica
Dominican Republic
Guatemala
Honduras
Jamaica
Panama
Peru
El Salvador
Uruguay
Paraguay
Algeria
Bahrain
Egypt
Lebanon
Morocco
Tunisia
Botswana
Ethiopia
Ghana
Kenya
Liberia
Mauritius
Malawi
Togo
Uganda
Zimbabwe
Ivory Cost
European Union
Global Average


Middle East and Africa Analysis: Baseline Light-Duty Vehicle Fuel Economy
Liters per 100 kilometers (L/100km) Normalized to NEDC Test Cycle
14
12
10
8
6
4
2
0
2005
2007
2009
2011
2013
2015
Algeria
Bahrain
Egypt
Lebanon
Tunisia
Botswana
Ethiopia
Ghana
Kenya
Liberia
Mauritius
Malawi
Togo
Uganda
Zimbabwe
Ivory Cost
Morocco
Middle East and Africa Average


Central and Eastern Europe Analysis: Baseline Light-Duty Vehicle Fuel Economy
Liters per 100 kilometers (L/100km) Normalized to NEDC Test Cycle
12
10
8
6
4
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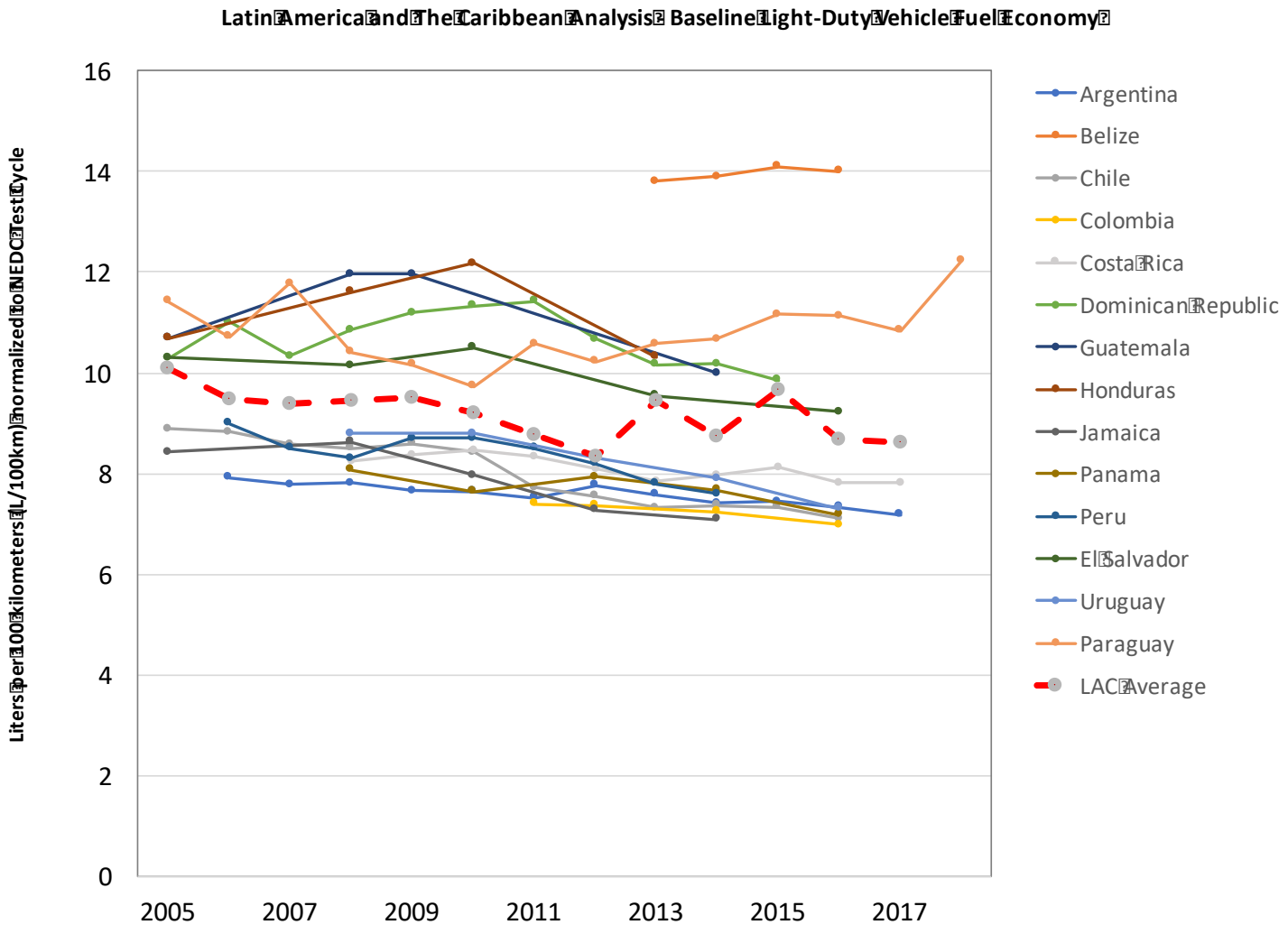
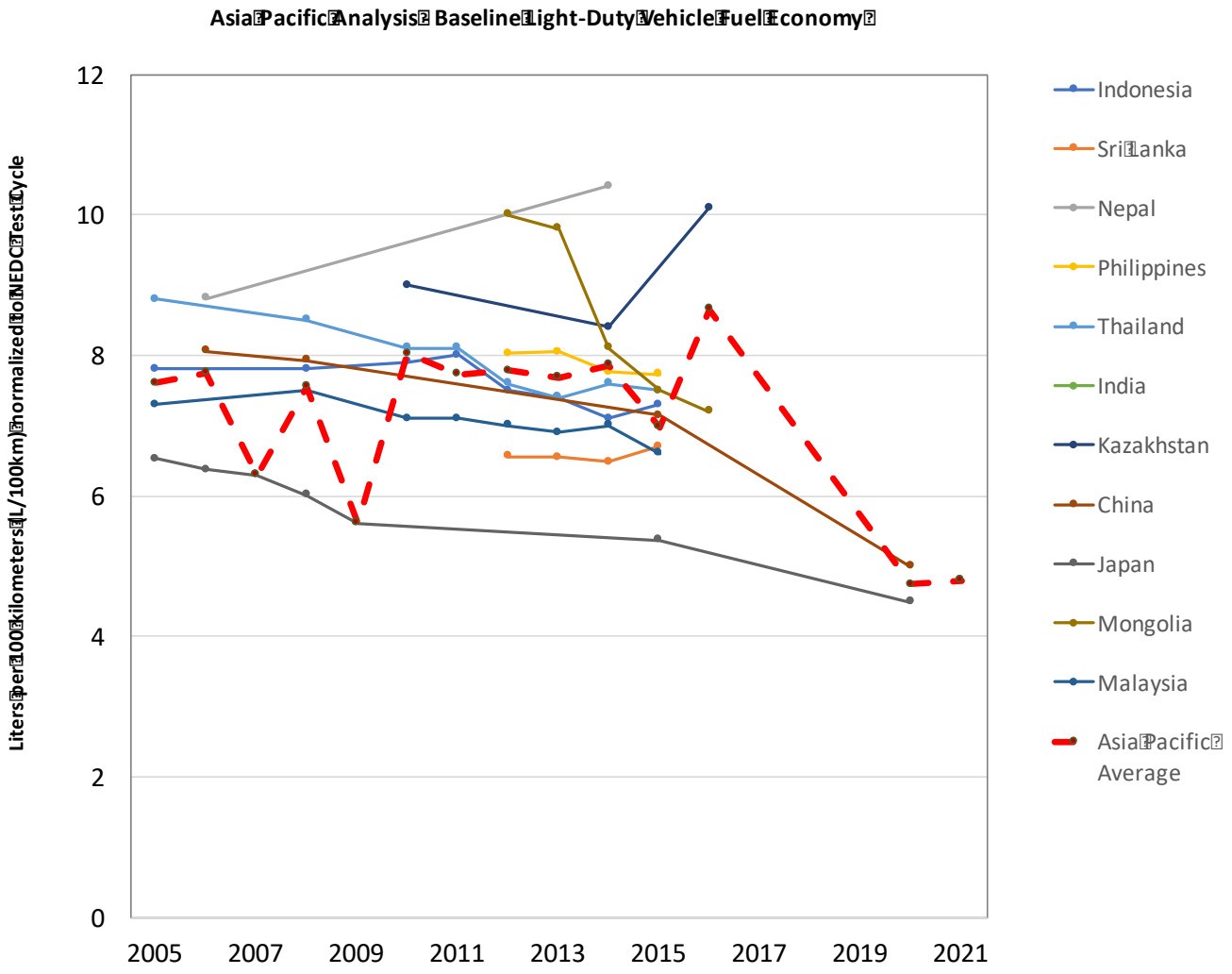
2005
2007
2009
2011
2013
2015
2017
Georgia
Montenegro
Ukraine
Republic of Moldova
Central and Eastern Europe Average


Latin America and The Caribbean Analysis: Baseline Light-Duty Vehicle Fuel Economy
Liters per 100 kilometers (L/100km) normalized to NEDC Test Cycle
16
14
12
10
8
6
4
2
0
2005
2007
2009
2011
2013
2015
2017
Argentina
Belize
Chile
Colombia
Costa Rica
Dominican Republic
Guatemala
Honduras
Jamaica
Panama
Peru
El Salvador
Uruguay
Paraguay
LAC Average


Asia Pacific Analysis: Baseline Light-Duty Vehicle Fuel Economy
Liters per 100 kilometers (L/100km) Normalized to NEDC Test Cycle
12
10
8
6
4
2
0
2005
2007
2009
2011
2013
2015
2017
2019
2021
Indonesia
Sri Lanka
Nepal
Philippines
Thailand
India
Kazakhstan
China
Japan
Mongolia
Malaysia
Asia Pacific Average

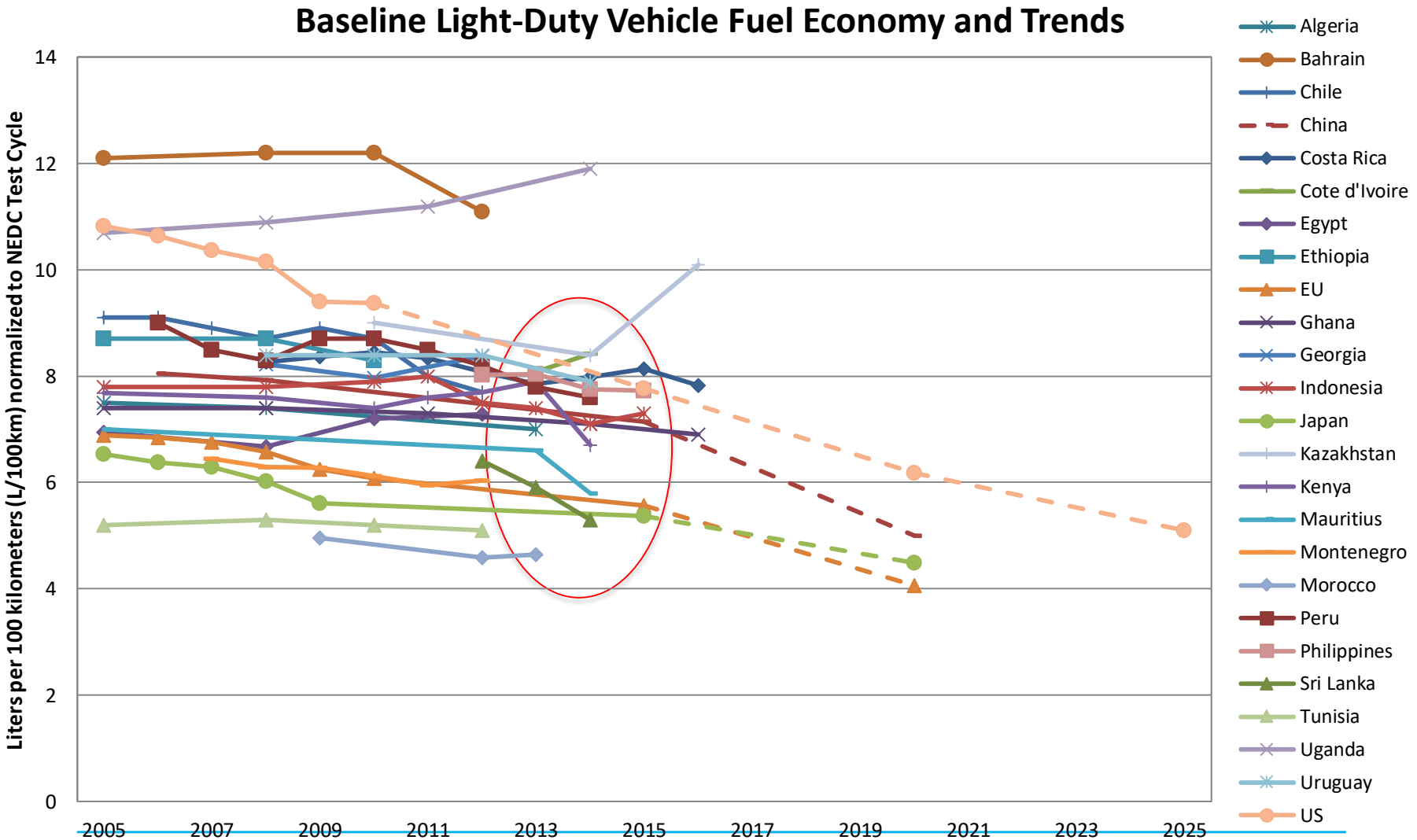
Policies

Fuel Economy Policy Options

VEHICLE FUEL EFFICIENCY STANDARDS	• Introduce and regularly strengthen mandatory standards • Establish and harmonize testing procedures for fuel efficiency measurement.
FISCAL MEASURES	• Fuel taxes and vehicle taxes to encourage the purchase of more fuel-efficient vehicles. • Infrastructure support and incentive schemes for very fuel-efficient vehicles.
MARKET-BASED APPROACHES	• Voluntary programs such as U.S. SmartWay and other green freight programs
INFORMATION MEASURES	• Vehicle fuel economy labels • Improving vehicle operational efficiency through eco-driving and other measures.

Source: ICCT

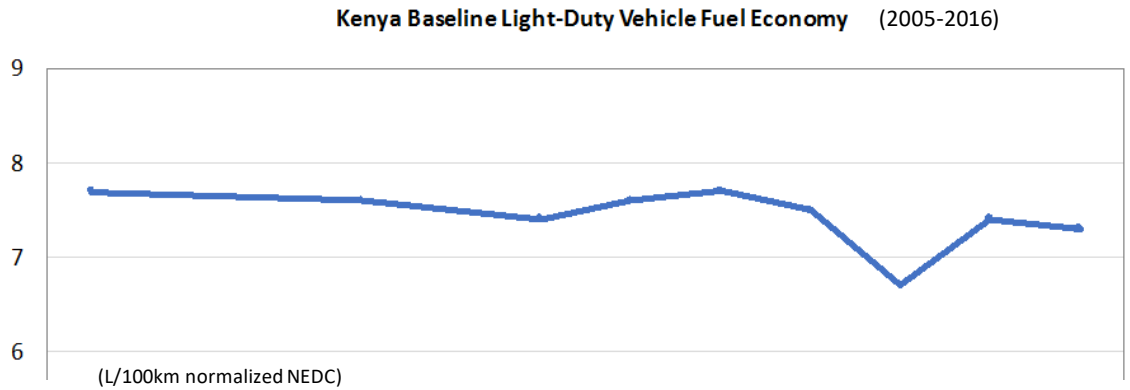
Fuel economy policies work!



Source: UNEP, 2017 (unpublished).

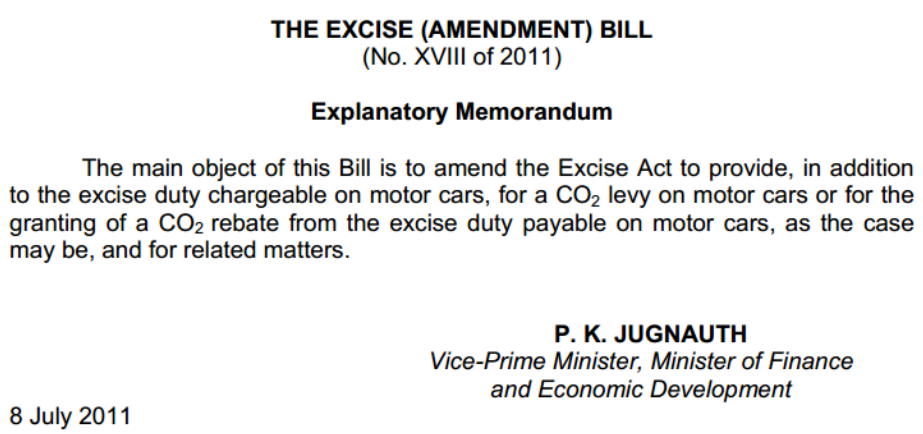
Kenya

- New fuel economy policy adopted by Government
- Adopted a progressive taxation system based on engine capacity
- Adopted an age-based taxation system that raised the tax for imported second-hand vehicles older than 3 years with an additional 2,000$ and reduced tax by 1,500$ for vehicles younger than 3 years
- Considering further restrictions to import of old used vehicles (5yrs, later total ban)



Mauritius

- Feebate scheme in 2011 = fee on cars above 158 CO2g/km starting from 55$ per g/km to 137$ per g/km for cars over 290 CO2 g/km and a rebate starting from 27$ per g/km for cars with CO2 ratings from 91 to 158 CO2g/km and 82$ for cars from 90 CO2g/km and below
- From 7l/100km in 2005 to 5.8l/100km in 2014 and rapid increase of new hybrid vehicles



THE EXCISE (AMENDMENT) BILL
(No. XVIII of 2011)

Explanatory Memorandum

The main object of this Bill is to amend the Excise Act to provide, in addition to the excise duty chargeable on motor cars, for a CO_2 levy on motor cars or for the granting of a CO_2 rebate from the excise duty payable on motor cars, as the case may be, and for related matters.

P. K. JUGNAUTH
Vice-Prime Minister, Minister of Finance and Economic Development

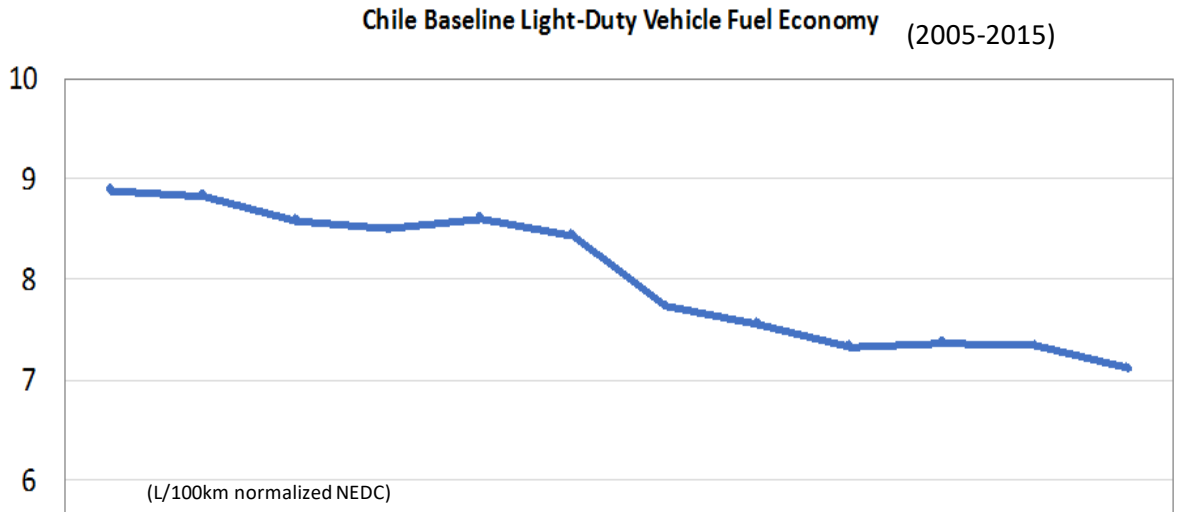
8 July 2011

Chile

Adopted a mandatory fuel economy labelling scheme (Feb 13, first Latin American country)

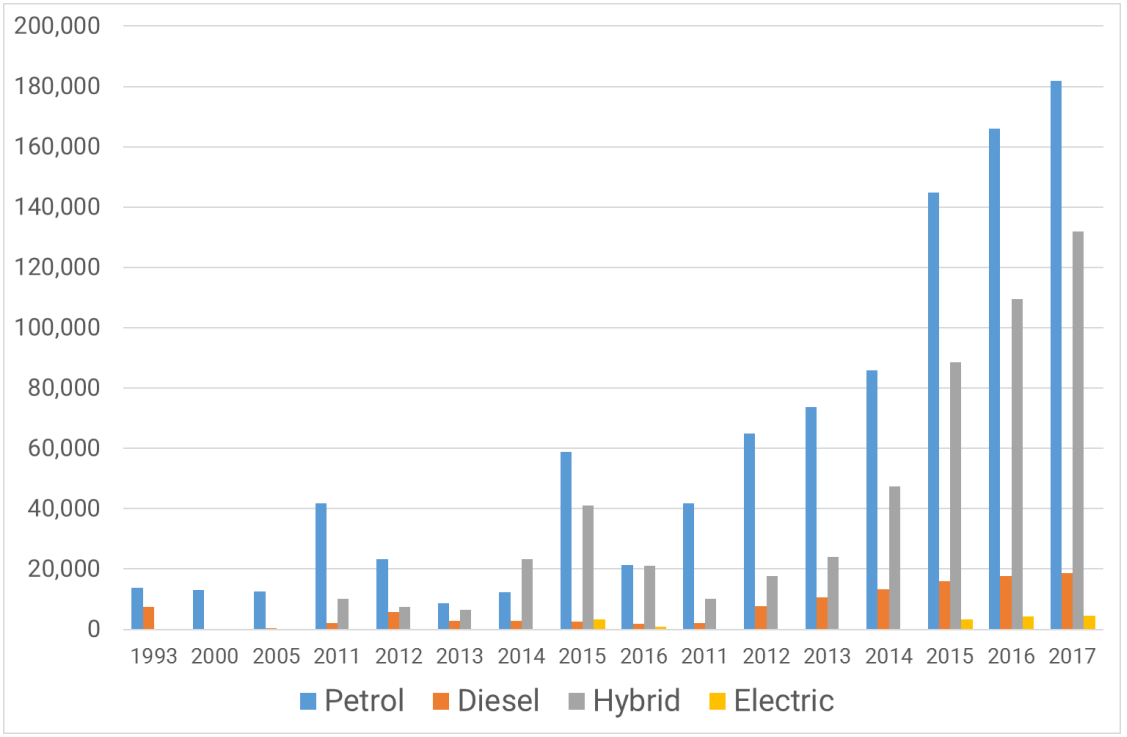
In September 2014 adopted a taxation scheme based on CO_2 and NOx ratings

In 2015 is adopting a scheme to provide subsidies for cleaner and more efficient taxis based on the fuel economy labeling scheme, with the aim to replace the 60,000 taxi fleet over the next 8 years



Sri Lanka

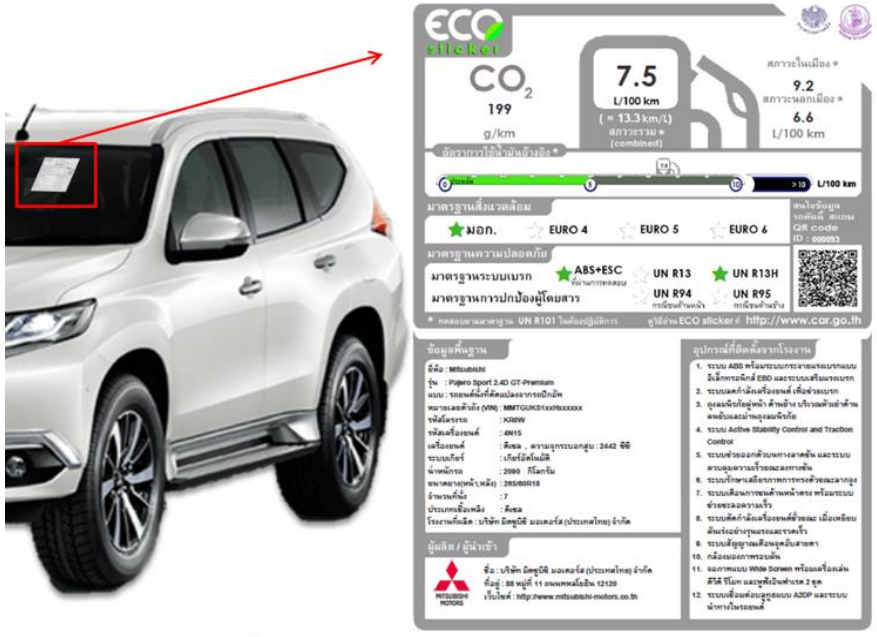
- Baseline development (2014)
- Review of existing policies
- Inclusion of fuel economy policies in national strategies and plans
- Revision of vehicle taxation scheme
- Massive uptake of HEV, now shifting to EVs



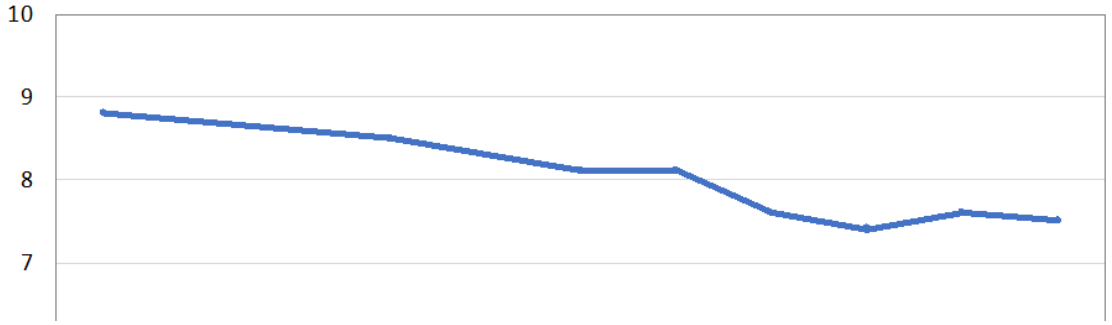
Thailand

- Baseline development (2012)
- Establishment of national multi-stakeholder process
- Review of current policies
- Fuel economy targets in national plans
- Introduction eco-sticker
- Revisions taxation structure (CO2)
- After years of deterioration FE is now improving

Eco Sticker



Thailand Baseline Light-Duty Vehicle Fuel Economy (2005-2015)



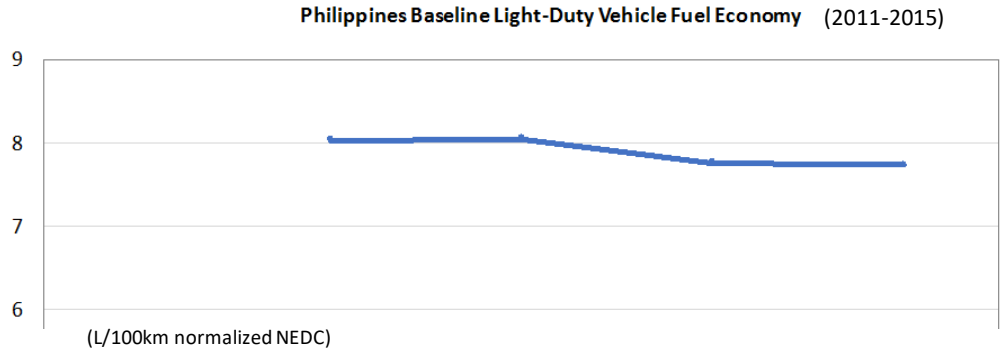
(L/100km normalized NEDC)

Philippines

- Baseline development (2014)
- Review of current policies
- Inclusion of fuel economy policies in national strategies and plans
- Revision of vehicle taxation scheme
- Development of fuel economy label
- Result: annual fuel economy improvement rate 3.2%; fuel use could be reduced by 7% in 2020 and by 17% in 2027; by 2020 1.5 MtCO2 emissions of could be saved annually, growing to 6.2 MtCO2 by 2027

Vehicle Base Price	Tax Rate
Up to P600,000	4%
Over P600,000 to 1,000,000	10%
Over P1,000,000 to P4,000,000	20%
Over P4,000,000	50%

"*Provided*, That hybrid vehicles shall be subject to fifty percent (50%) of the applicable excise tax rates on automobiles under this Section: *Provided, further*, That purely electric vehicles and pick-ups shall be exempt from excise tax on automobiles.

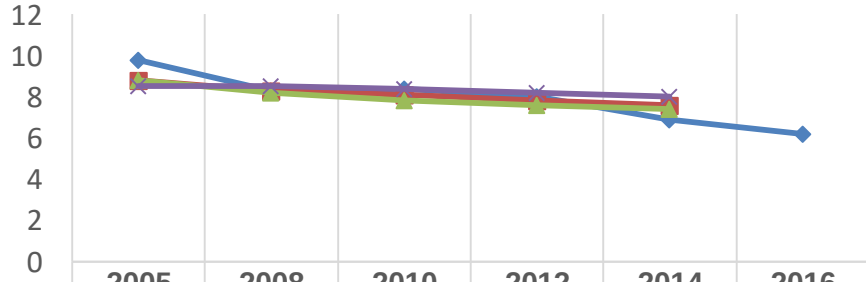


Ukraine

- Data acquired for 2005, 2008, 2010, 2012, 2014, 2016 = 1.6 million cars
- National WG Launch event, fuel economy analysis
- VAT exemption for EV's 2018, renewed to end 2022

Average fuel consumption in Ukraine

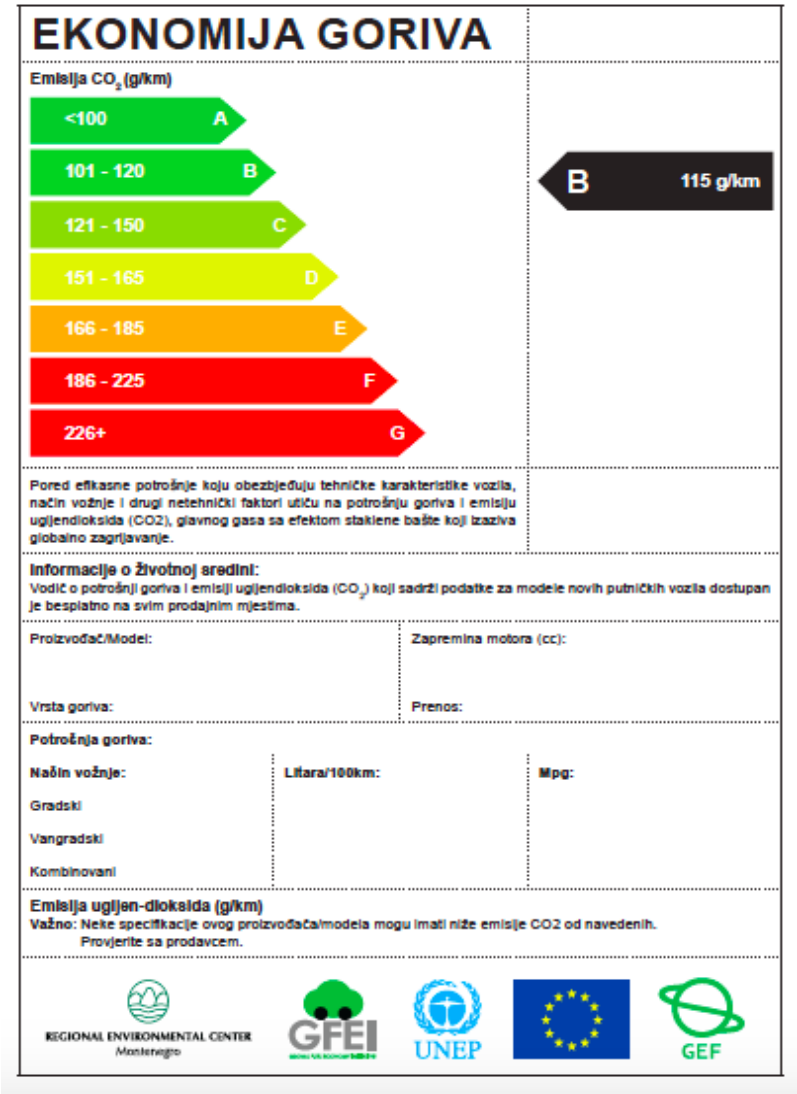
(lge/100km)



	2005	2008	2010	2012	2014	2016
Ukraine	9.8	8.3	8.4	8	6.9	6.2
Global	8.8	8.3	8.1	7.8	7.6	
OECD and EU	8.8	8.2	7.8	7.6	7.4	
Non-OECD	8.5	8.5	8.4	8.2	8	

Montenegro

- Auto data 2008, 2010, 2012 and 2014
- CBA for CO2 Tax using Croatia and Slovenia models
- Draft FE Policy doc
- Fuel Economy Label adopted
- Official Guide on Fuel Economy and Carbon Dioxide Emissions for consumers



Key Findings

- Improving FE through national processes takes time
- Developing baselines are key for countries (multiple reasons)
- Fuel economy policies work
- Preference for labeling and taxation policies
- Implementing fuel economy can substantially reduce CO_2 emissions – supporting the Paris Agreement
- With co-benefits; air quality; fossil fuel consumption reduction; national expenditures on fossil fuels imports
- Importance of multi-stakeholder and inter-government consultation processes

Key Findings - 2

- Strong vehicle taxations systems are effective in encouraging more efficient vehicles
- Fuel-efficiency based taxation works well when this is linked to awareness (fuel economy labeling)
- Put in place mechanisms to review policies and impacts on the fleet and adjust (fiscal) policies
- Jumping board to other measures – esp electrification, used vehicles issues, inspection & enforcement
- Countries want wider approach – including (P)(H)EVs

Thank you

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www.unep.org