

Fuel Economy Trends and Tools

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UNEP's role in the GFEI

- Co-founder GFEI
- Leader in the UN on Climate Change and Transport
- Support to countries to develop fuel economy policies
- Focus on middle and low income countries
- Technical, Policy, Financial, Networking support



Global Fuel Economy Trends



The Contribution of Transport

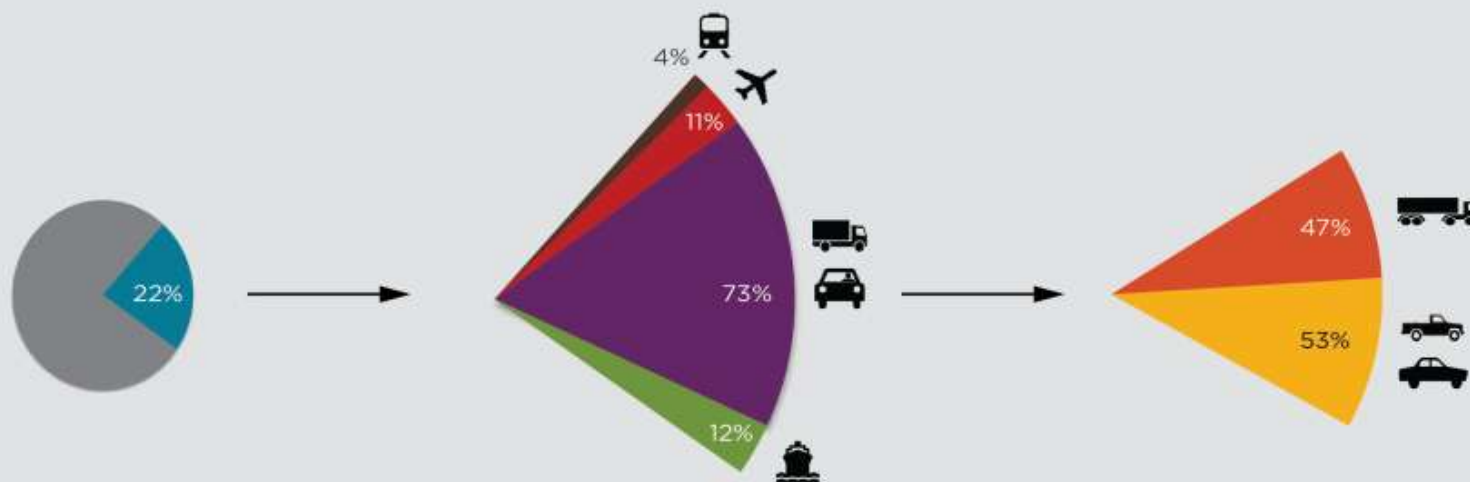
THE TRANSPORTATION SECTOR

A major contributor to global energy-related CO₂ emissions

GLOBAL ENERGY-RELATED
EMISSIONS
≈ 30 Gt CO₂

TRANSPORT EMISSIONS
≈ 7 Gt CO₂

ROAD TRANSPORT
EMISSIONS
≈ 5 Gt CO₂



LEGEND

RAIL

AIR

ROAD

SEA

HEAVY-DUTY
VEHICLES

LIGHT-DUTY
VEHICLES



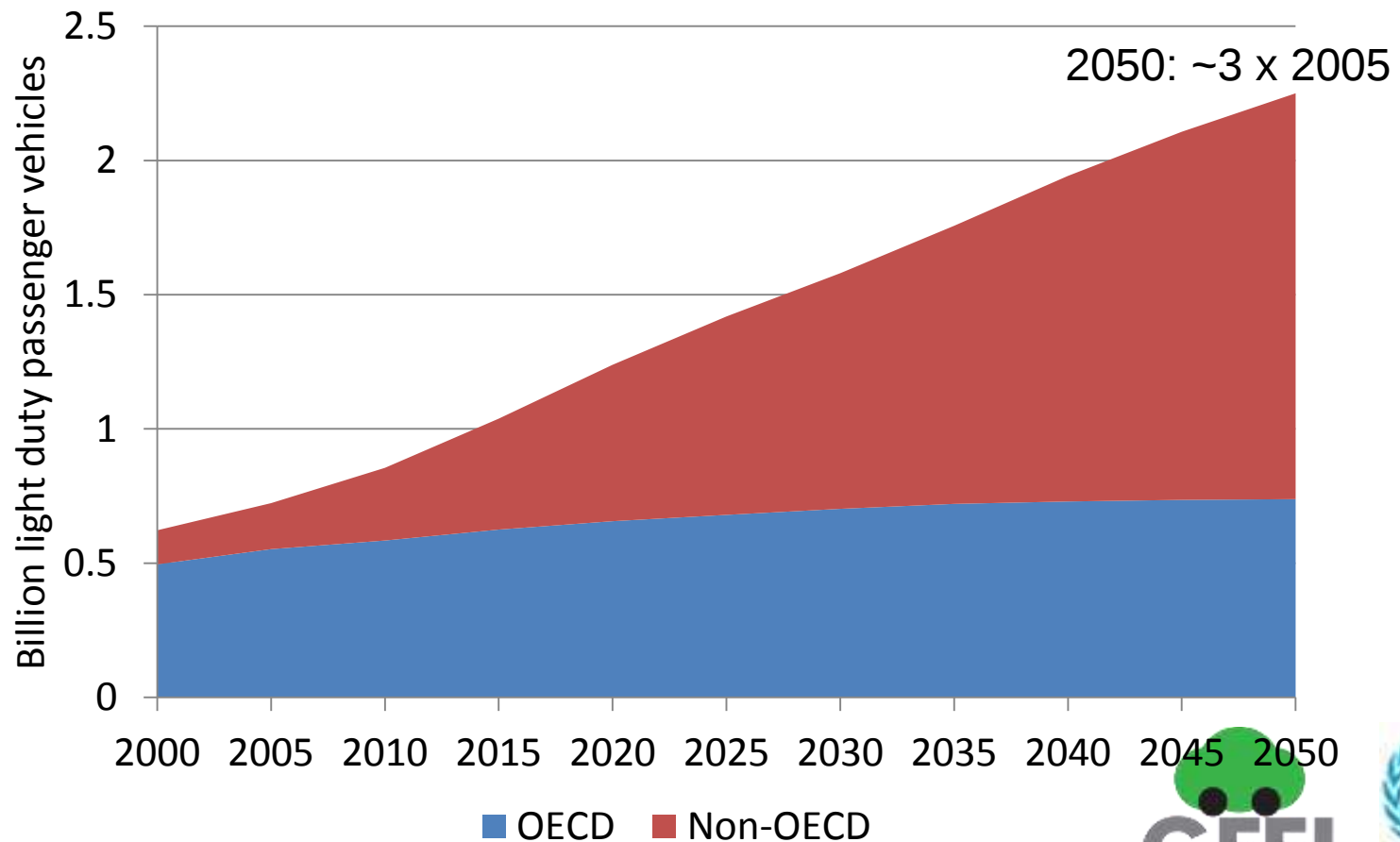
Sources:

ICCT (2014). Global Transportation Roadmap Model. Version 2.0. More information available at <http://www.theicct.org/global-transportation-roadmap-model>.

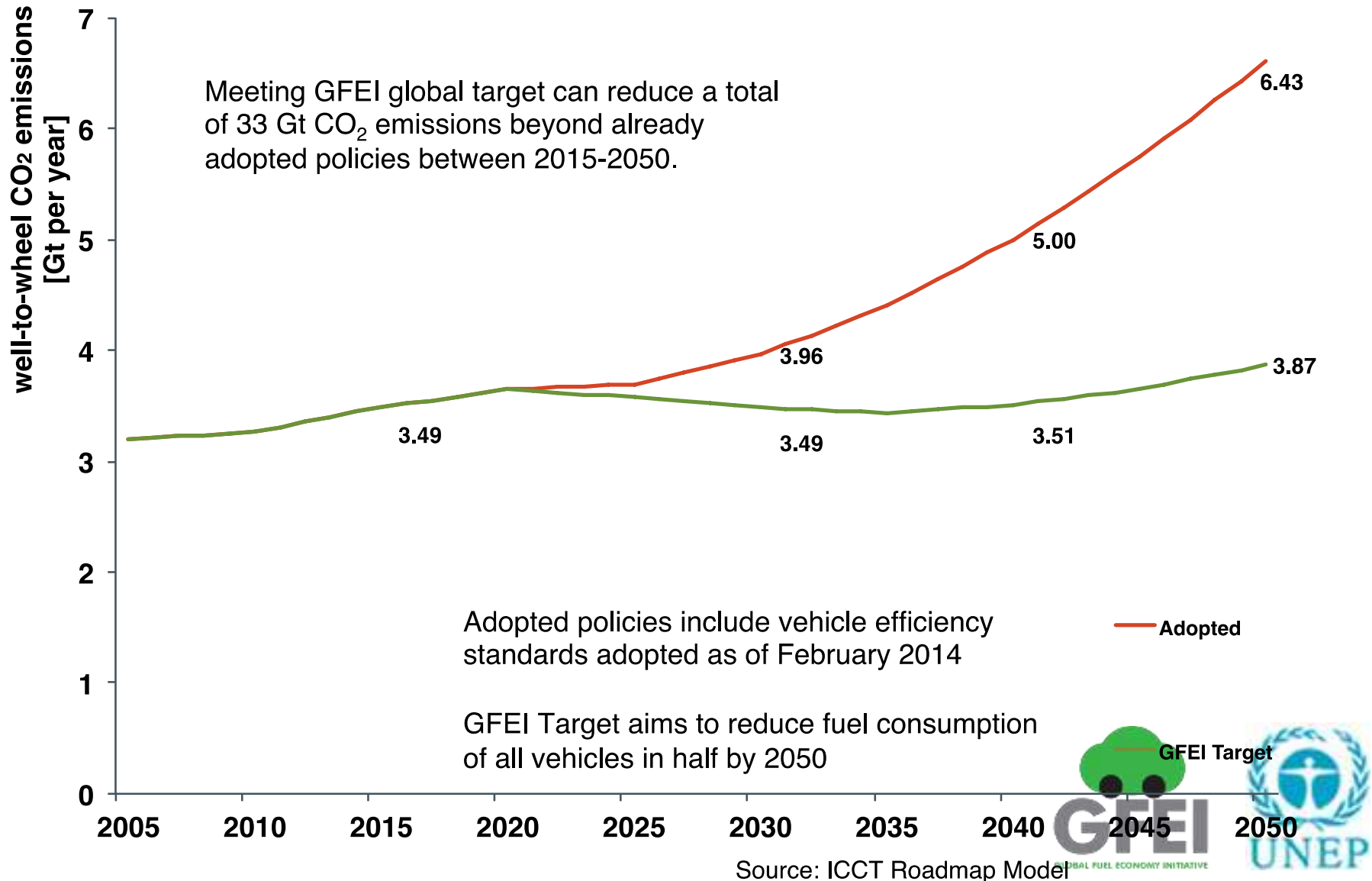
IEA (2012). CO₂ Emissions from Fuel Combustion: Highlights. 2012 edition. Retrieved from <https://www.iea.org/co2highlights/co2highlights.pdf>.

Growth light-duty vehicles between 2005 and 2050

Almost all growth is in developing countries

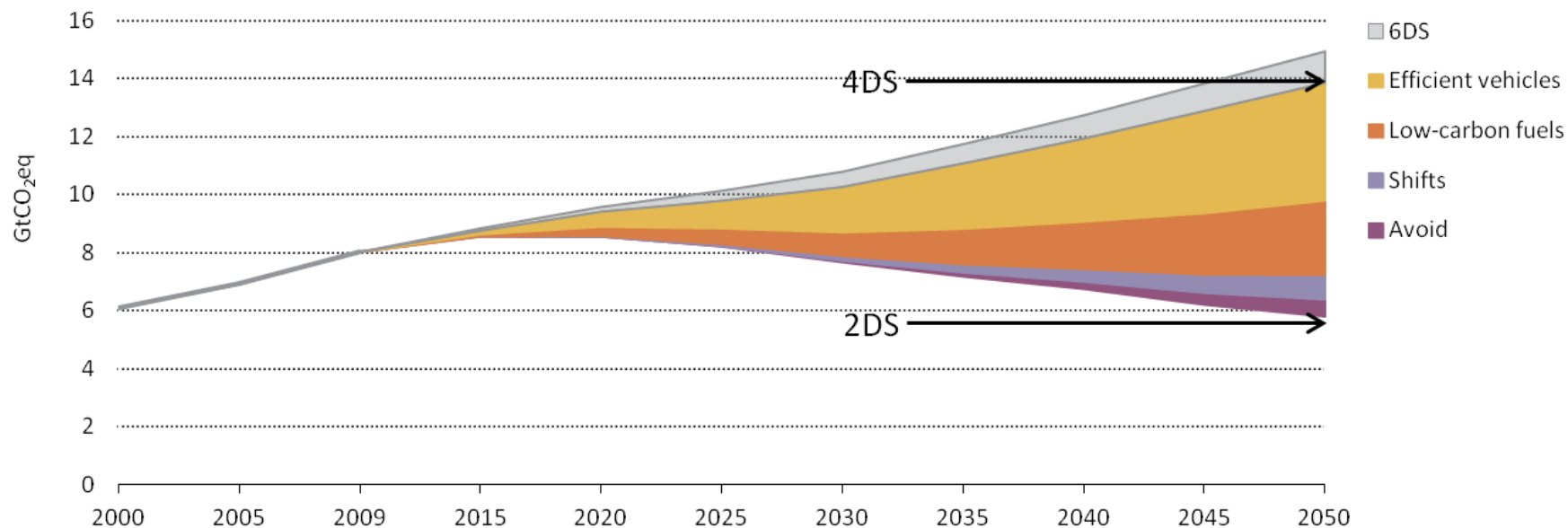


Meeting GFEI targets can stabilize global light-vehicle CO₂ emissions, despite a near tripling of vehicle fleet



Deep Transport CO₂ Reductions in ETP-2012 2 Degree Scenario (2DS)

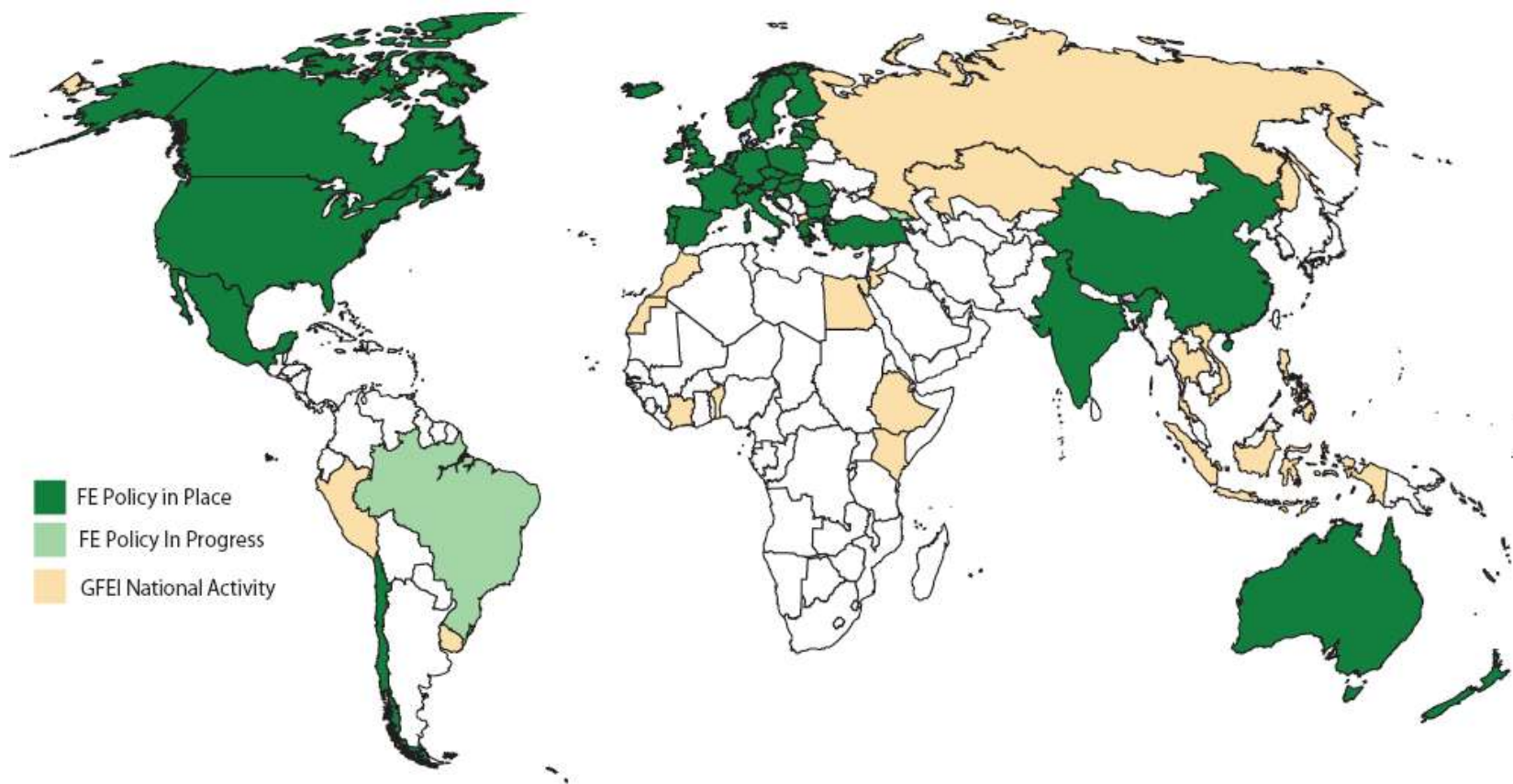
Fuel economy improvement plays largest role, particularly through 2030



Global Trends in FE Improvements

	2005	2008	2011	<i>Trend%</i>
OECD	8.1	7.6	7	<i>-2.4</i>
non-OECD	7.5	7.6	7.5	<i>-0.1</i>
Global	8	7.6	7.1	<i>-1.8</i>

Fuel Economy Policies in Place

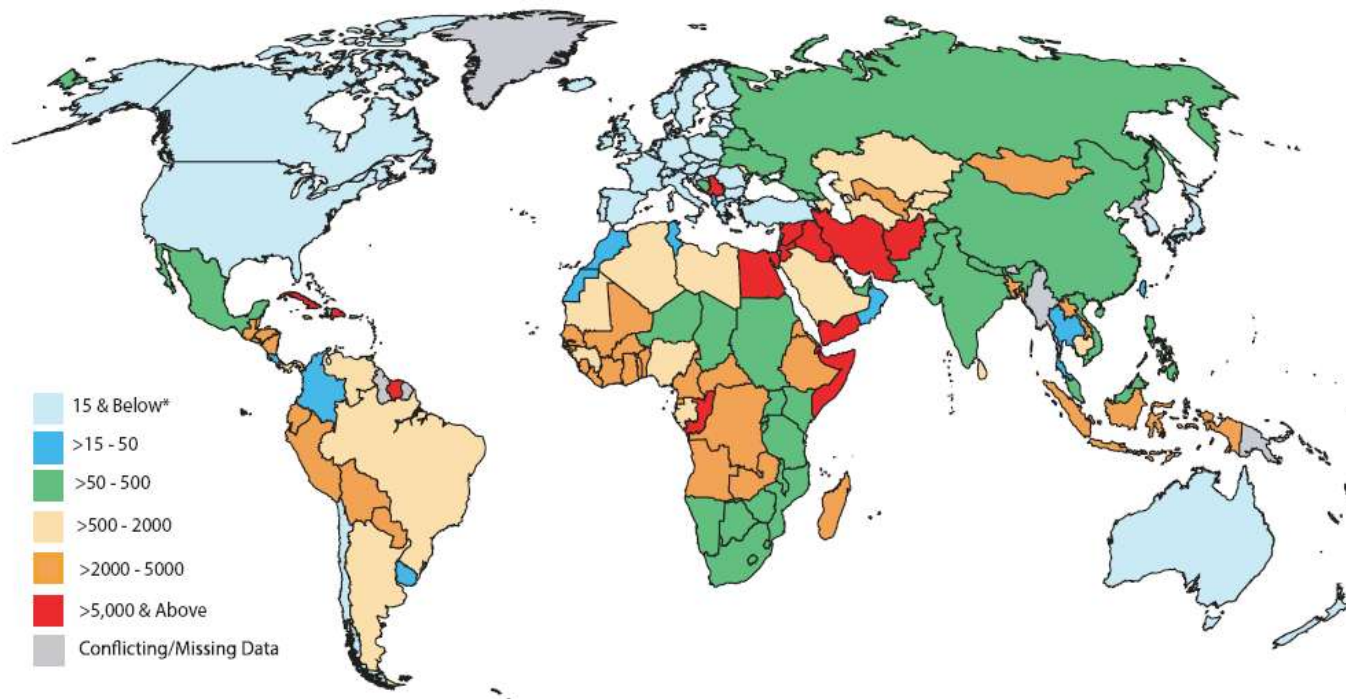


August 2014 Update. For additional information visit www.globalfueleconomy.org

The Need for Cleaner Fuels



Diesel Fuel Sulphur Levels: Global Status
April 2014



* Information in parts per million (ppm)

For additional details and comments per country, visit www.unep.org/transport/pcfvl/



Developing National Fuel Economy Policies



Why Countries Improve Fuel Economy

- Reduce pollutant emissions
- Reduce oil dependence
- Improve balance of payments
- Reduce transport cost consumers and companies
- Reduce cost public transport
- Reduce greenhouse gases
- Promote domestic economies/jobs



Developing Automotive Fuel Economy Policy at the National Level:

Areas of GFEI Support

I. Plan & Design

- **Build National Partner Capacity re: Auto Fuel Economy Issues and Approaches**
- **Auto Fuel Economy Baseline + Projection**
 - Data gathering and analysis
 - Communication and publication of data results
 - Identification of trends
- **Coalition Building and Consultation**
 - Private sector participation
 - Intra-governmental working group(s)
 - National working sessions
- **Policy Choice and Design**
 - Consideration of feasible policy options:
 - Standards (yes/no?)
 - Fiscal instruments (e.g. feebate)
 - Information (e.g. labeling)
- **Propose and Communicate National Plan**
 - Drafting of plan
 - High Level consultation
 - Presentation to relevant government agencies

II. Implement

- **Continued Support for National Discussions on Fuel Economy**
 - Sustained political pressure and lobbying for fuel economy
- Introduction of Draft Plans to National Committee(s), Working Groups
- Adoption into National Policy
- Adoption into Law, Official Gazette
- Development of Standard by Standards Body

III. Monitor

- Yearly National Auto Fleet Fuel Economy Measurements
- Oil use, import data and road transport (LDV) use

IV. Evaluate

- Refinement of national policy, standards according to evidence and trends

GFEI:

Technical
Expertise

Financial
Support

Global
Networking



How GFEI Can Help

- Tools
 - Baseline setting
 - Overall GFEI toolkit
 - Policies impact tool
 - Fee bate tool
- Expert Network & Regional Partners
- Sharing Best Practices
- Publications
 - State of the World Fuel Economy
- Financial support
 - GEF, EU, GFEI Partners,



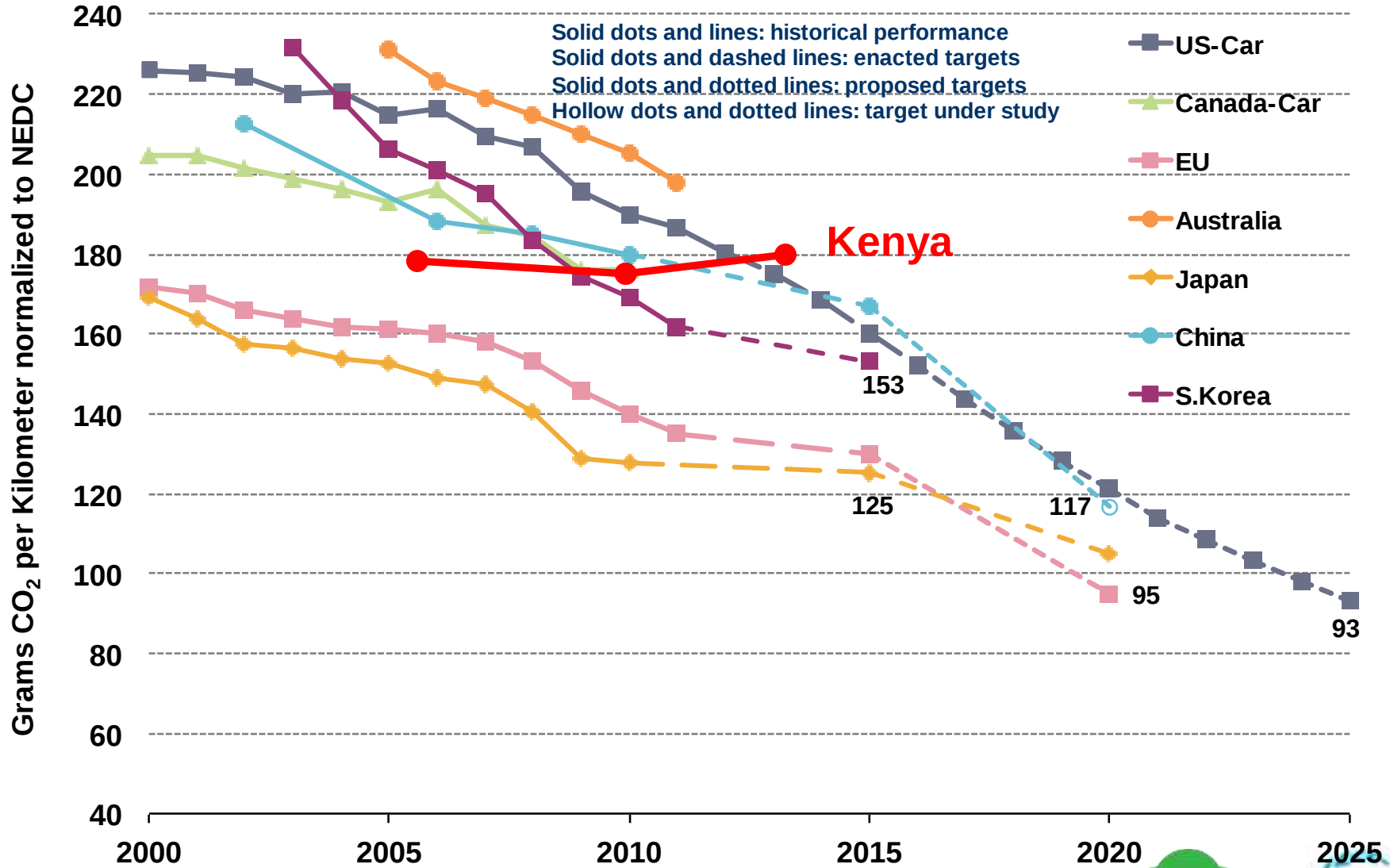
Setting a Baseline

Setting Fuel Economy Baselines

Ethiopia	2005	2008	2010
Average (l/100km)	8.4	8.4	7.9
Diesel	9.3	9.4	9.0
Petrol	7.8	7.4	6.9

Kenya	2005	2008
Average (l/100km)	7.69	7.6
Diesel	8.67	9.09
Petrol	7.52	7.2

Comparison of passenger vehicle GHG standards



*China's target reflects gasoline vehicles only. The target may be lower after new energy vehicles are considered.

Technical Information and Policy Options

GFEI Toolkit



CLEANER, MORE EFFICIENT VEHICLES



ABOUT GFEI



USER'S GUIDE



COUNTRY INFO



QUESTIONNAIRE



CONTACTS



The information contained on this website is intended as practical guidance coupled with examples of auto fuel economy policies and approaches in use around the world. It is not a complete collection of all national examples, nor does it track national and global progress on improving auto fuel economy. It is a work in progress and is updated regularly. This website does not support IE 5 and below.



Download Flash Player

www.unep.org/transport/gfei/autotool



GFEI Toolkit (2)

- Examples of Auto Fuel Economy Policies
- Policy Briefs (fee bates, imports, labels)
- Technical Guides (fuels, vehicles, calculating emissions)
- www.unep.org/transport/gfei/autotool



Technical Information and Policy Options

Fuel Economy Policies Impact Tool (FEPIt)

- simulation tool that assists users in setting auto fuel economy targets
- by estimating the impact of fuel economy policies
- Estimates what a set of fuel economy policies (and their level of ambition, low-high) can deliver in terms of average auto fuel economy in 5-10 + years
- Available with User Guide from:
www.unep.org/transport/gfei/autotool/nextsteps/estimating_policy_impacts.asp



FEPI example: Georgia

1. Baseline auto import fuel economy data for 2008, 2010, 2012
2. Baseline FE policy situation as of 2012:
 - Moderate fuel tax in place
 - No fuel economy label
 - No registration / ownership tax based on CO₂
 - No restriction on used imports (age)
 - No FE standard

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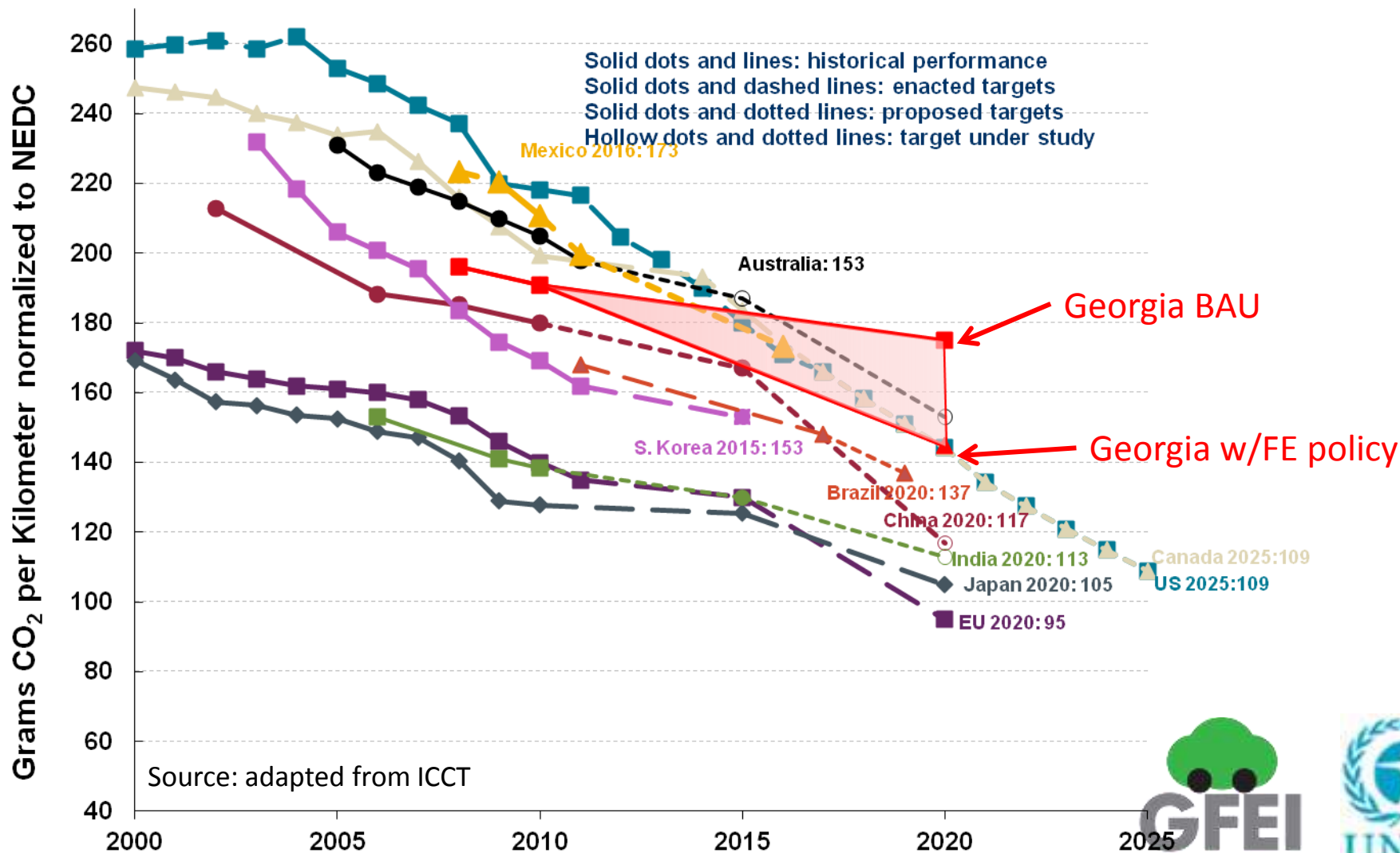
RESULTS:



Policy Options		Today	To be deployed by 2020	
Choose your country		Georgia		Policy Impact
Fuel Options				
Fuel Tax		Moderate	High Tax	Important
Fuel tax differentiation (lower tax for diesel)		None	High	Important
Vehicle Options				
Labelling		None	High	Important
CO ₂ -Based Vehicle acquisition tax		None	High	High
CO ₂ -Based Vehicle ownership tax		None	High	Very High
Used Imports restriction		Low	High	Small

	2020 expected FE
if policy status quo	175 gCO₂/km
if policies implemented	145 gCO₂/km

Where is Georgia heading?



Using Economic Instruments

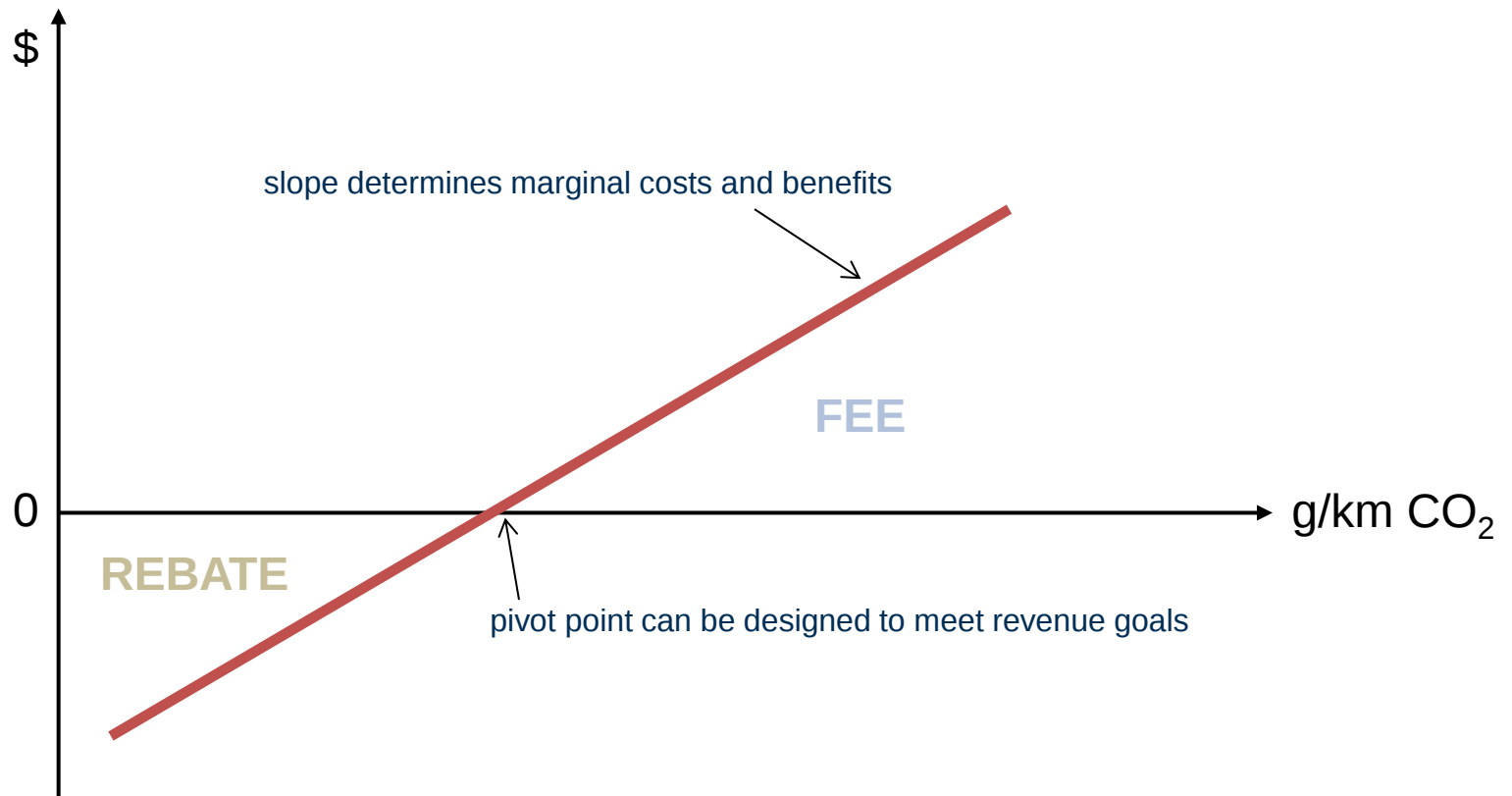
The screenshot displays the 'FEEBATE FUNCTION CONTROL PANEL' with several interactive elements:

- QUICK START:** Includes a 'Choose country' dropdown set to 'Germany', a 'Submit' button, a 'Start year' dropdown set to '2014', and 'Run' and 'View Results' buttons.
- PIVOT POINT CONTROL ?** Features two green boxes: 'Annual adjustment based on observed changes' and 'Revenue neutral system'.
- METRICS ?** Includes a 'CO2 Emissions' label, a 'UNITS' dropdown set to 'Liters' (with 'Kilometers' also visible), and an 'Update' button.
- FEEBATE FUNCTION SHAPE CONTROL:**
 - 'Shape examples' dropdown is set to 'Linear'.
 - 'Pivot Poir 168' (likely a typo for 'Point') is displayed.
 - A table titled 'How many sections?' shows configurations for 4 sections:

How many sections?	4	1	2	3	4
Mid-section values	0	96	192	288	385
Shape of the individual section	SLOPED	SLOPED	SLOPED	SLOPED	SLOPED
Reference CO2	N/A	N/A	N/A	N/A	N/A
Rate USD per g of CO2 / Kilometer	30	30	30	30	30
 - An 'Advanced Controls' button is located at the bottom left.
 - A graph on the right plots 'Rebate, USD' (y-axis, -8000 to 6000) against 'CO2 Emissions, grams of CO2 / Kilometer' (x-axis, 0 to 385). The graph shows a downward-sloping blue line starting at approximately (0, 5000) and ending at (385, -7000).

The bottom navigation bar includes tabs for 'Start Here', 'Feebate Design', 'Results', 'Input Data', 'Feedback', 'Budget Control', 'Consumer Behaviour', and 'Manufacturer Behaviour'.

Design of a feebate system



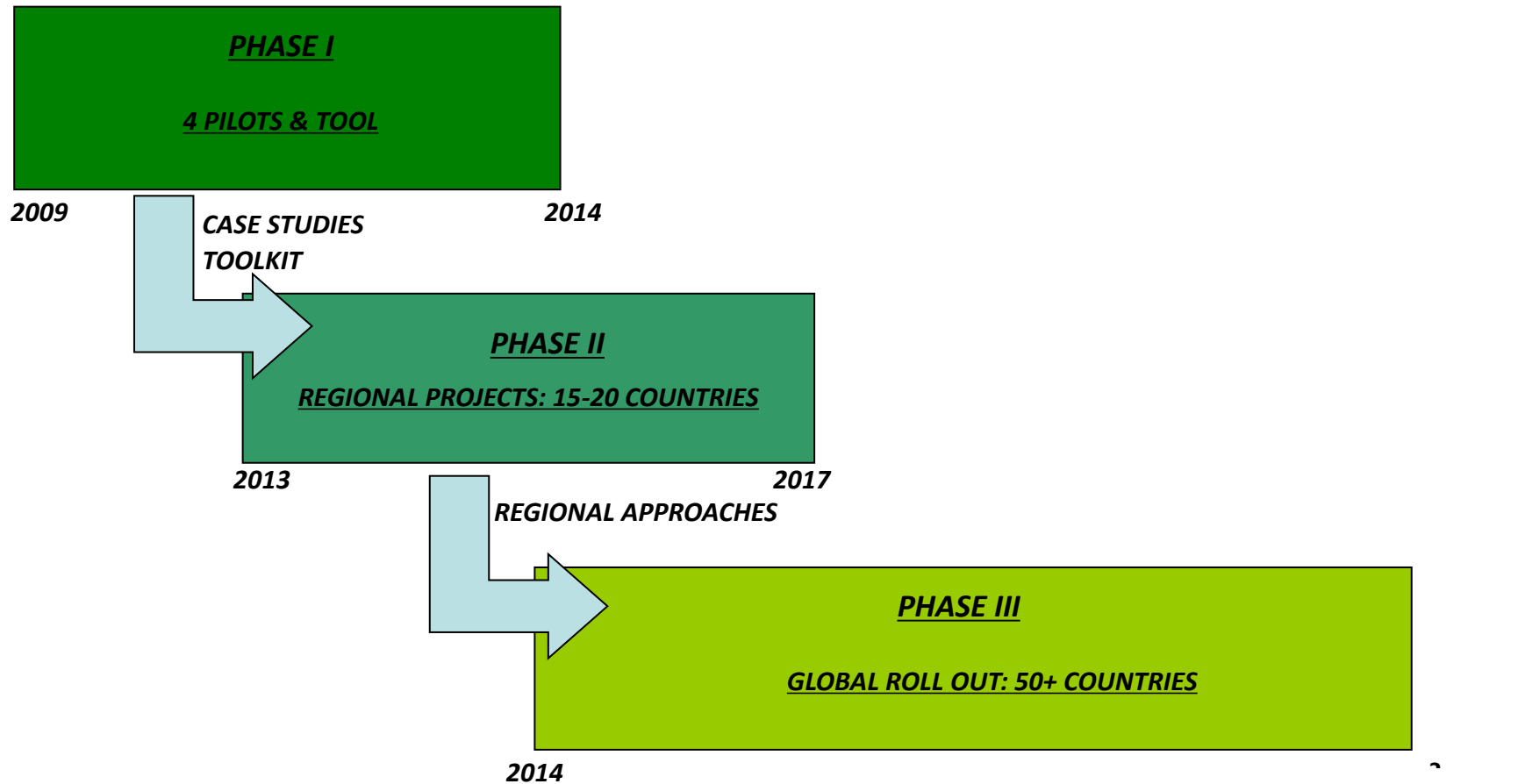
Example : Mauritius

- Increasing fleet – almost doubled in 10 years; increasing need for petroleum imports; increasing air pollution
- Introduced cleaner fuels - unleaded and low sulfur fuels (50 ppm)
- Introduced a carbon tax:
 - FEE: 159 CO₂ gr/km: Rs 2,000 per gm/km going to Rs 5,000 above 290 gm/km
 - REBATE: 158 gm/km: Rs 1000 going to Rs 3,000 below 90 gm/km
 - Now further tightened to 150 gm/km

GFEI Country Activities



GFEI Phases



GFEI Country Engagement

Pilot Countries

Chile

Ethiopia

Indonesia

Kenya

Second Phase Countries

Bahrain

Côte d'Ivoire

Egypt

Georgia

Jamaica

Jordan

Macedonia

Mauritius

Montenegro

Morocco

Peru

Philippines

Thailand

Uruguay

Vietnam

Under Discussion

Serbia

Barbados

Benin

Russia

St Lucia

Countries Expressing Interest

Armenia

Azerbaijan

Bangladesh

Guatemala

Mali

Mozambique

Nigeria

Paraguay

Sri Lanka

Syria

Togo

Uganda

Zambia

Colombia

Costa Rica

Malaysia

Nepal



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