Fuel Economy
State of the World 2016

Drew Kodjak, Executive Director

Monday 11, January 2016
Walter E. Washington Convention Center
801 Mount Vernon Place, NW
Washington DC Room 209 C

icct
THE INTERNATIONAL COUNCIL ON CLEAN TRANSPORTATION

Overview

- Status of light and heavy-duty vehicle fuel economy and greenhouse gas emission standards
- Progress towards GFEI target of doubling new passenger vehicle fuel economy by 2030
- In-use emissions data reveals a growing gap between test cycle and real world emissions.

Fuel economy standards around the world

Table 1. Comparison of the latest adopted regulations for light- and heavy-duty efficiency in selected regions

		Light-duty vehicles			Heavy-duty vehicles		
Region[a]	Percent of world vehicle sales, 2013	Baseline model year[b]	Implementation period (model year)	Reduction in average CO_2 rate (grams/vehicle-km)	Baseline model year	Implementation period (model year)	Reduction in average CO_2 rate (grams/vehicle-km)
China[c]	25%	2011	2012-2015	9%	2012	2014-2015	11%
EU	19%	2015	2020-2021	27%			0%
US	17%	2017	2017-2025	35%	2011	2014-2018	14%
Japan	6%	2015	2020	16%	2006	2015	12%
Brazil[d]	4%	2013	2013-2017	12%			0%
India	4%	2012	2017-2021	17%			0%
Russia	3%			0%			0%
Canada[e]	2%	2011	2011-2016	20%	2011	2014-2018	14%
South Korea	2%	2011	2012-2015	9%			0%
Australia	1%			0%			0%
Mexico	1%	2012	2014-2016	13%			0%

Adopted or newly implemented between Jan. 2013 and Aug. 2014 | Adopted or implemented prior to Jan. 2013

[a] Includes eleven major vehicle markets

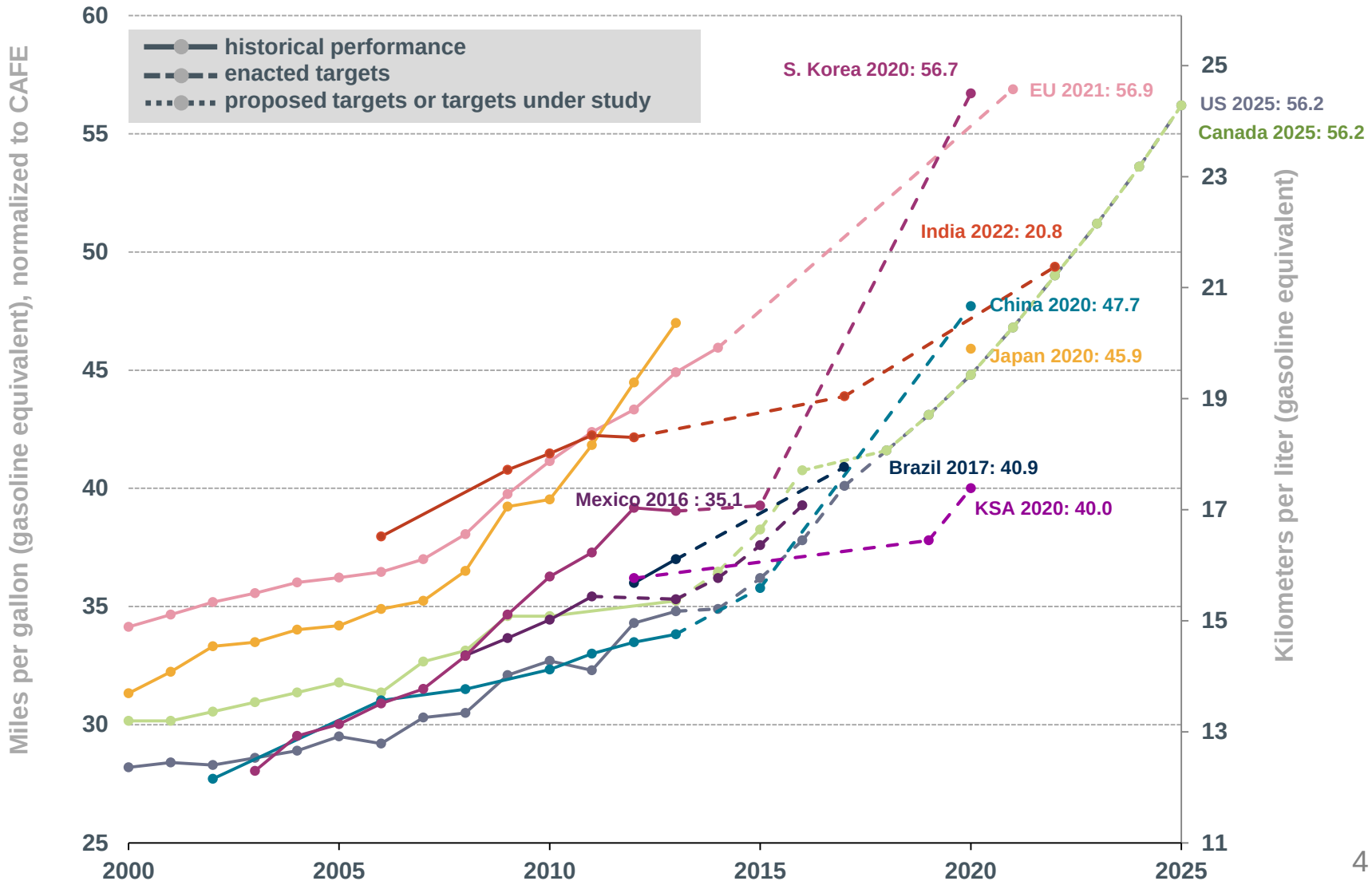
[b] Percent reduction in new fleet fuel consumption estimated from a baseline year (determined by expert judgment rather than regulatory requirement) to the final model year covered by the regulation. Reductions for HDVs are activity-weighted by vehicle type.

[c] China has adopted separate standards for passenger cars and light commercial vehicles. The latest adopted standard for passenger cars (Phase 3) is summarized here.

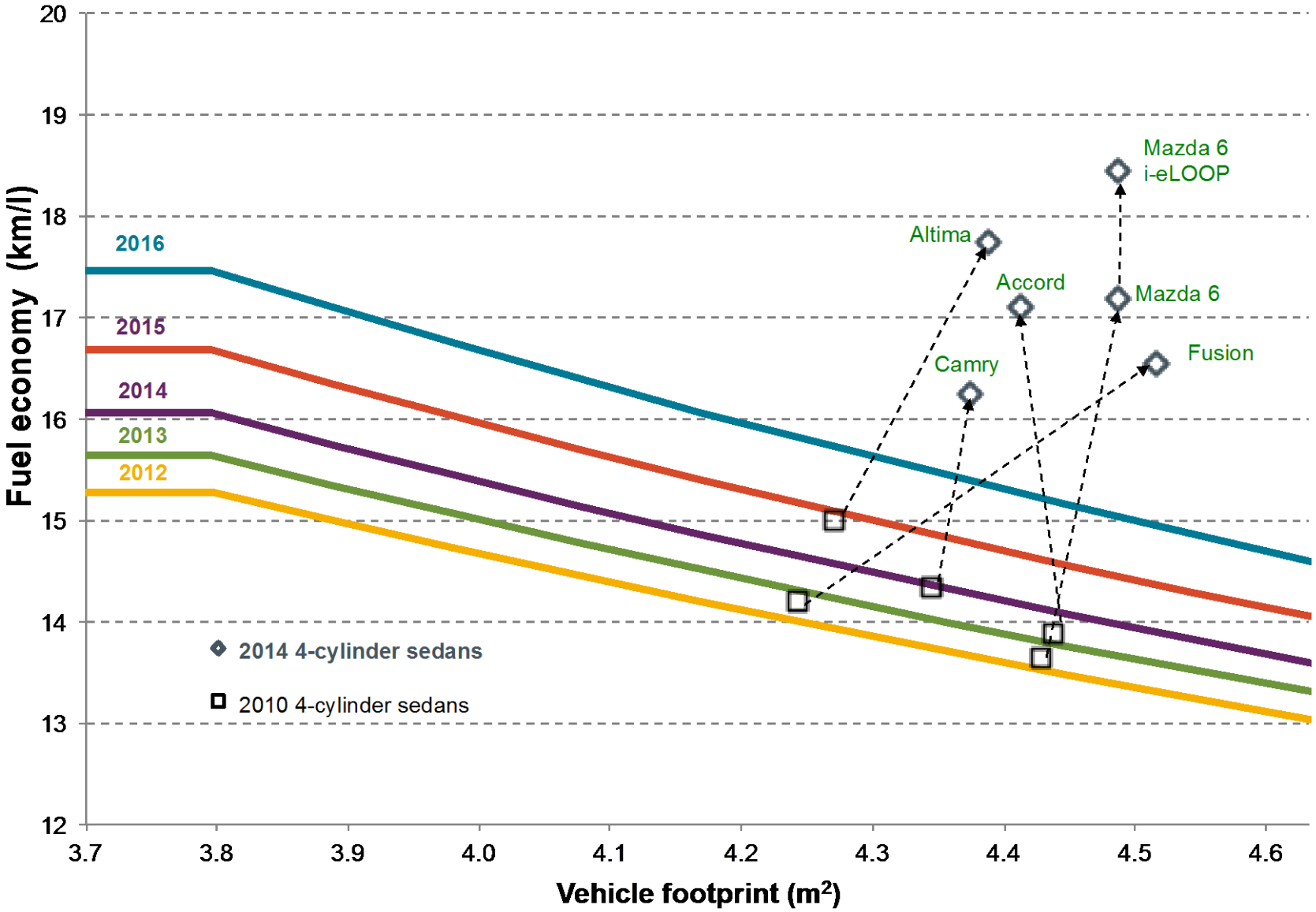
[d] Brazil's Inovar-Auto program requires a 12.1% improvement for manufacturers to qualify for a 30% reduction in vehicle sales tax.

[e] Canada has announced intention to harmonize with the US 2017-2025 GHG standards; however formal adoption has not occurred as of August 2014.

Status of LDV fuel economy standards



Compliance pathways for US 4-door sedans



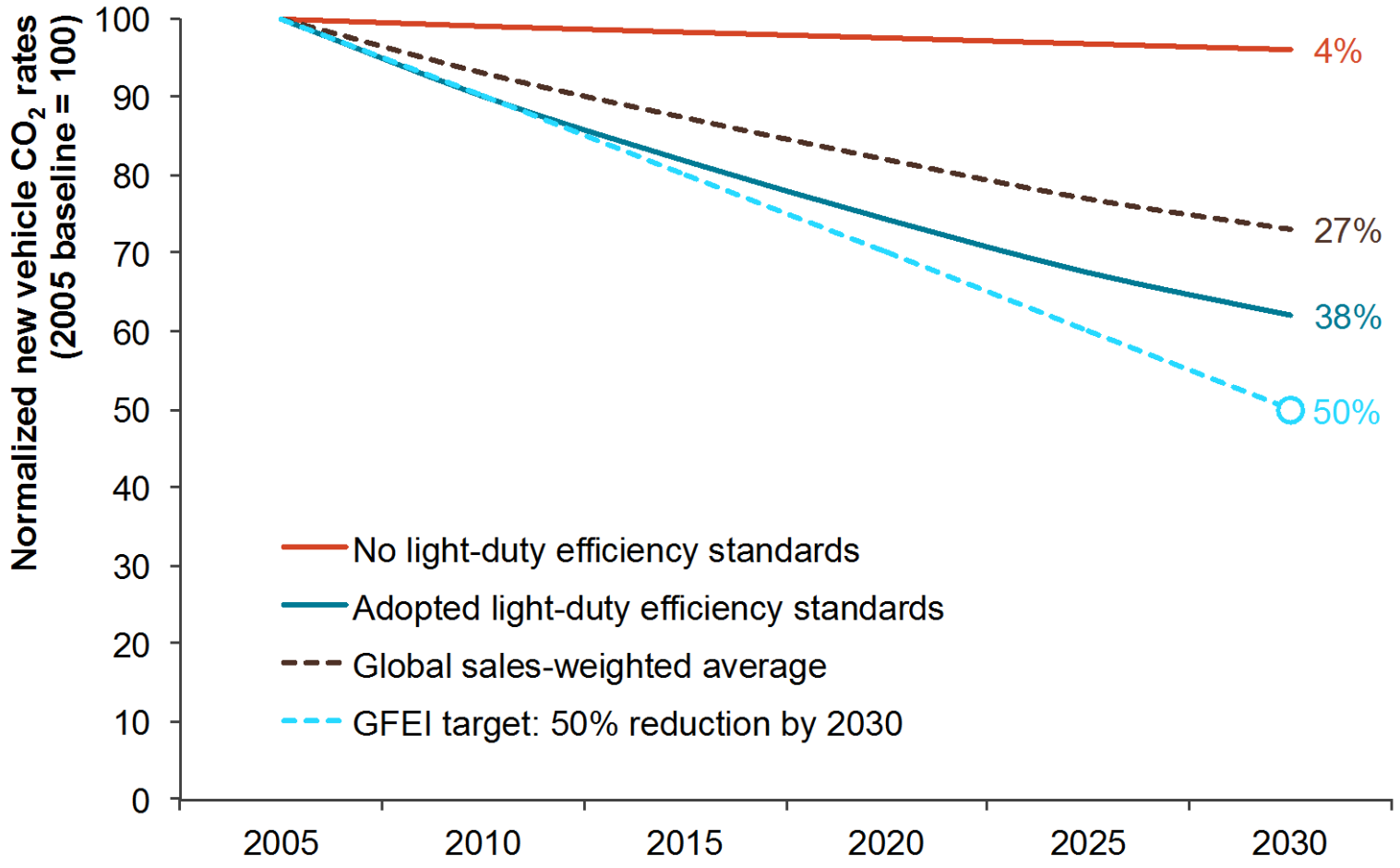
Fuel Economy Standards Consumer cost and payback

Rule	Per-Vehicle Cost	Payback Period
US LDV 2017–2025	$1,800 (avg. 2025)	3.5 years
US LDV 2012–2016	$950 (avg. 2016)	3 years
Canada LDV 2017-2025	$707 (2021); $2,095 (2025)	2 to 5 years
Canada LDV 2011-2016	$89 (2011); $1,195 (2016)	1.5 years
European 95g CO2/km Standard 2020	€1,300	4-5 years
India LDV 2020	$478 to $637	2–3 years

Global Fuel Economy Initiative
Progress towards 2030 target

icct
THE INTERNATIONAL COUNCIL ON CLEAN TRANSPORTATION

Progress towards doubling new passenger vehicle fuel economy by 2030



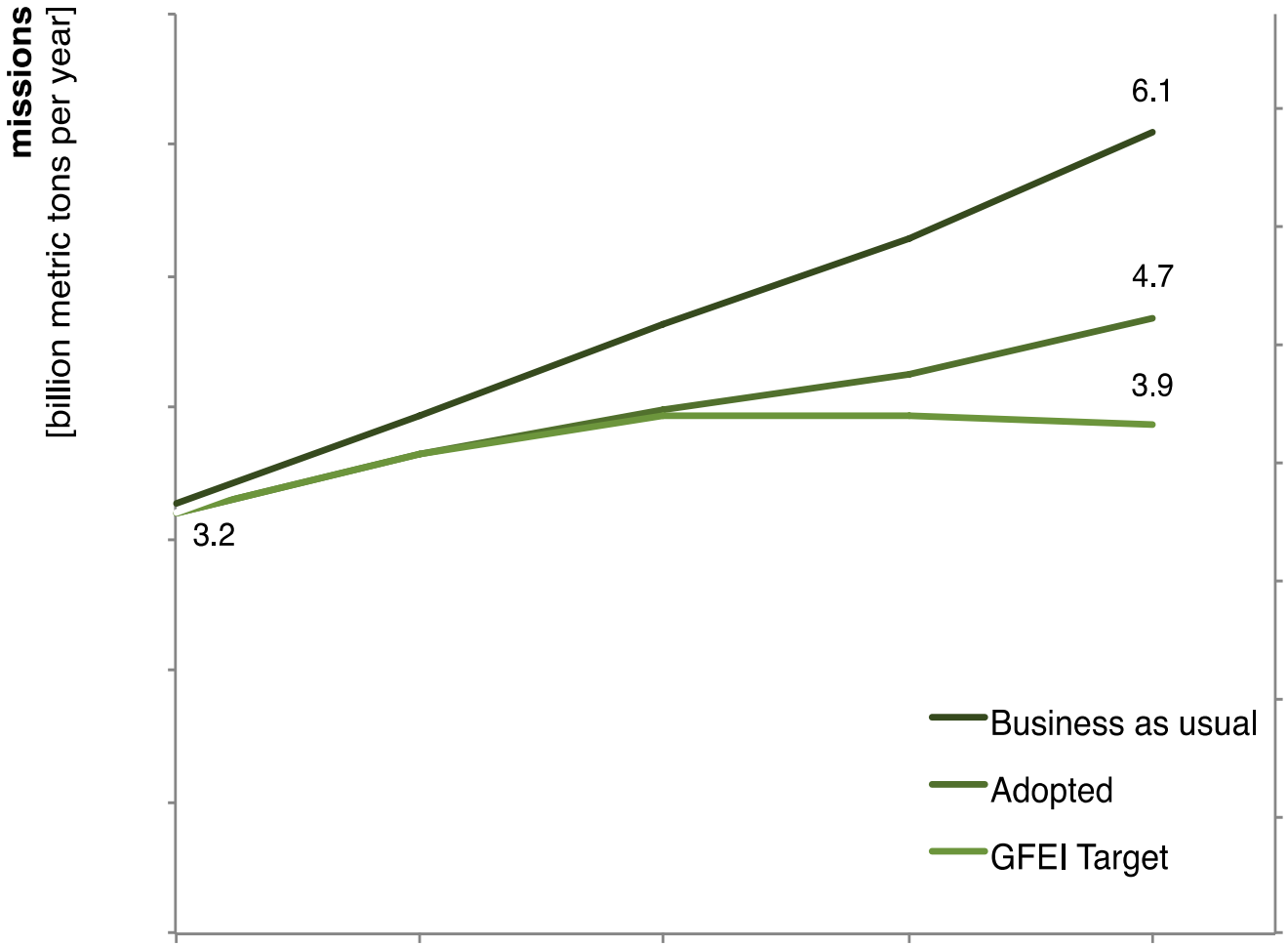
Source: Fuel Economy State of the World 2016, GFEI

Country by country progress on fuel economy

Status	Region	Projected share of global LDV sales in 2030	Reduction in new LDV CO_2 rates with adopted standards 2005-2030
Adopted LDV efficiency standards	China	29%	34%
	India	16%	26%
	US	13%	52%
	EU	12%	39%
	Brazil	3%	13%
	Japan	2%	27%
	Mexico	2%	14%
	Canada	1%	49%
	South Korea	1%	48%
	Saudi Arabia	1%	15%
	Total	**80%**	**38%**
No efficiency standards	**Total**	**20%**	**4%**
Global sales-weighted average		**100%**	**27%**

Source: Fuel Economy State of the World 2016, GFEI

Meeting GFEI target will stabilized global CO_2 emissions



Estimated using ICCT's Global Transportation Roadmap model (Facanha, et al., 2012). ***Business as usual*** *= vehicle efficiency remains at 2005 levels.* ***Adopted*** *= currently adopted policies.* ***GFEI Target*** *= countries adopt standards that reduce average fuel consumption of new vehicles to 50% below 2005 levels by 2030 (GFEI, 2014).*

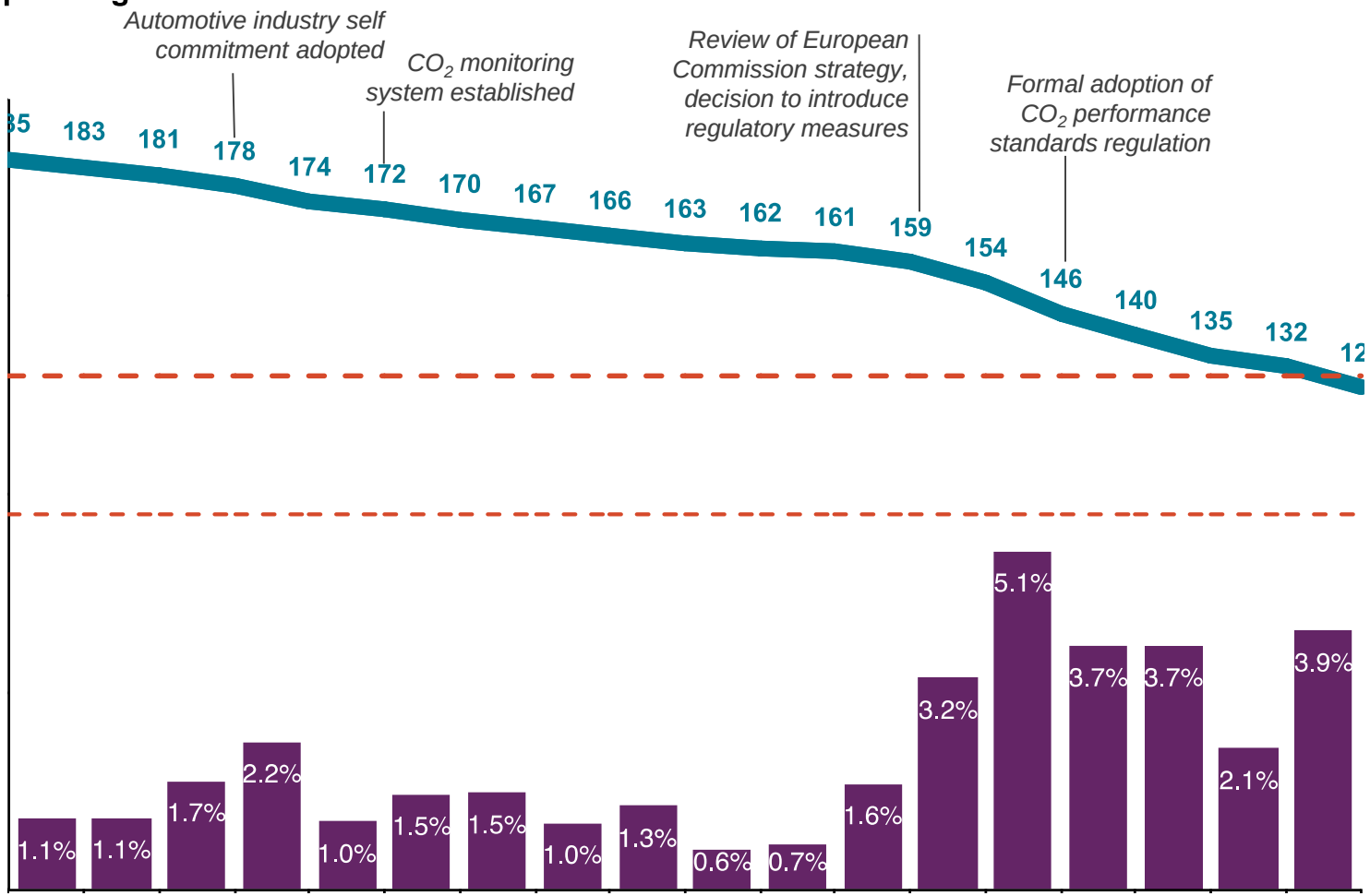
Compliance Challenges

icct
THE INTERNATIONAL COUNCIL ON CLEAN TRANSPORTATION

The importance of mandatory standards

CO_2 performance standards in the European Union

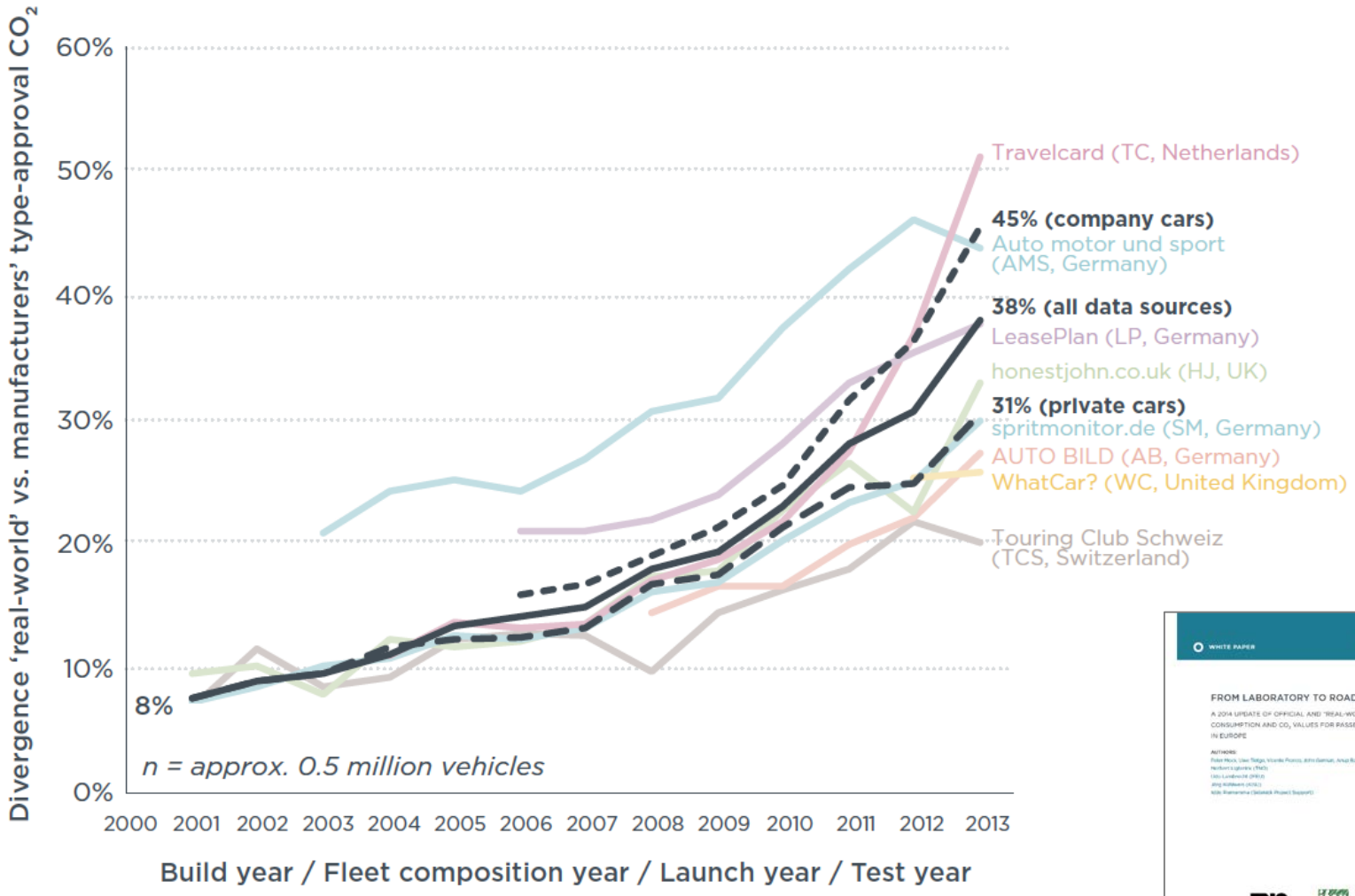
New passenger cars 1995-2013

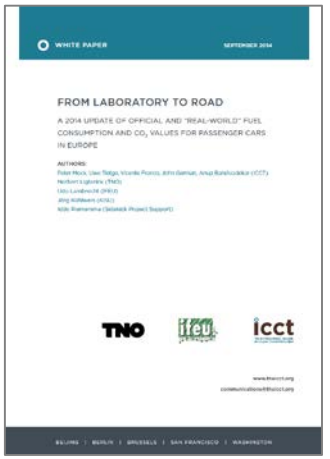


r sales numbers in the

new member states are relatively low.

Rising concern: real world emissions diverging from standards





http://www.theicct.org/laboratory-road-2014-update

Thank you!

Drew Kodjak International Council on Clean Transportation