

UCDAVIS

SUSTAINABLE TRANSPORTATION ENERGY PATHWAYS

An Institute of Transportation Studies Program

Fiscal Fuel Economy Measures

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Fiscal Measures

Fiscal policy type	Characteristics
Fuel taxes, CO2 taxes	Set by fuel type; paid upon refueling
VMT taxes	Typically paid at annual registration; could be CO2-adjusted
Road pricing	Paid by km of driving or when passing a cordon line
Vehicle purchase taxes/feebates	Paid at time of purchase; can be differentiated by fuel economy or CO2

Role of fiscal policies in promoting fuel efficiency

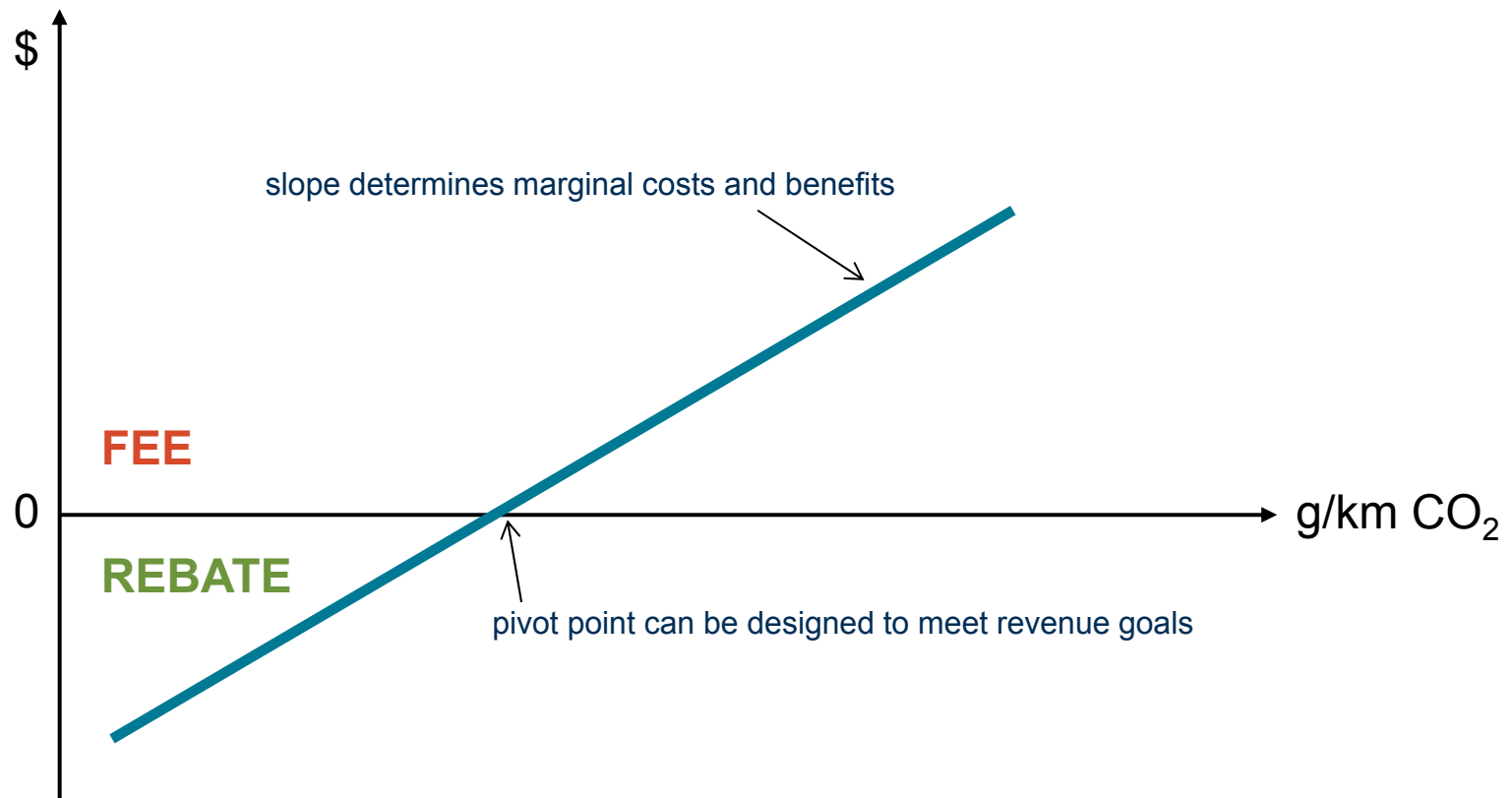
- Encourage manufacturers to adopt technologies to improve fuel efficiency and reduce emissions
- Send consumers appropriate price signals to purchase fuel-efficient and low carbon vehicles
- Support fuel efficiency and emission regulatory targets
 - Regulatory standards set the minimum requirement and need to be strengthened overtime
 - Fiscal policies provide continuous incentive to improve
 - Easy to establish, does not require detailed knowledge of vehicles and technology costs, only needs to establish “rate, or value of fuel or GHG savings”, “revenue target”, and “test method and enforcement”

What is a Feebate?

Feebate = Fee + Rebate

- Market-based policy that shifts consumer purchases (and potentially manufacturer production) by encouraging GHG reductions by placing a fee on higher-emitting vehicles and providing a rebate to lower-emitting vehicles
- Based on fuel economy or CO2 differential between vehicles
- Could also take into account vehicle attributes like size or weight

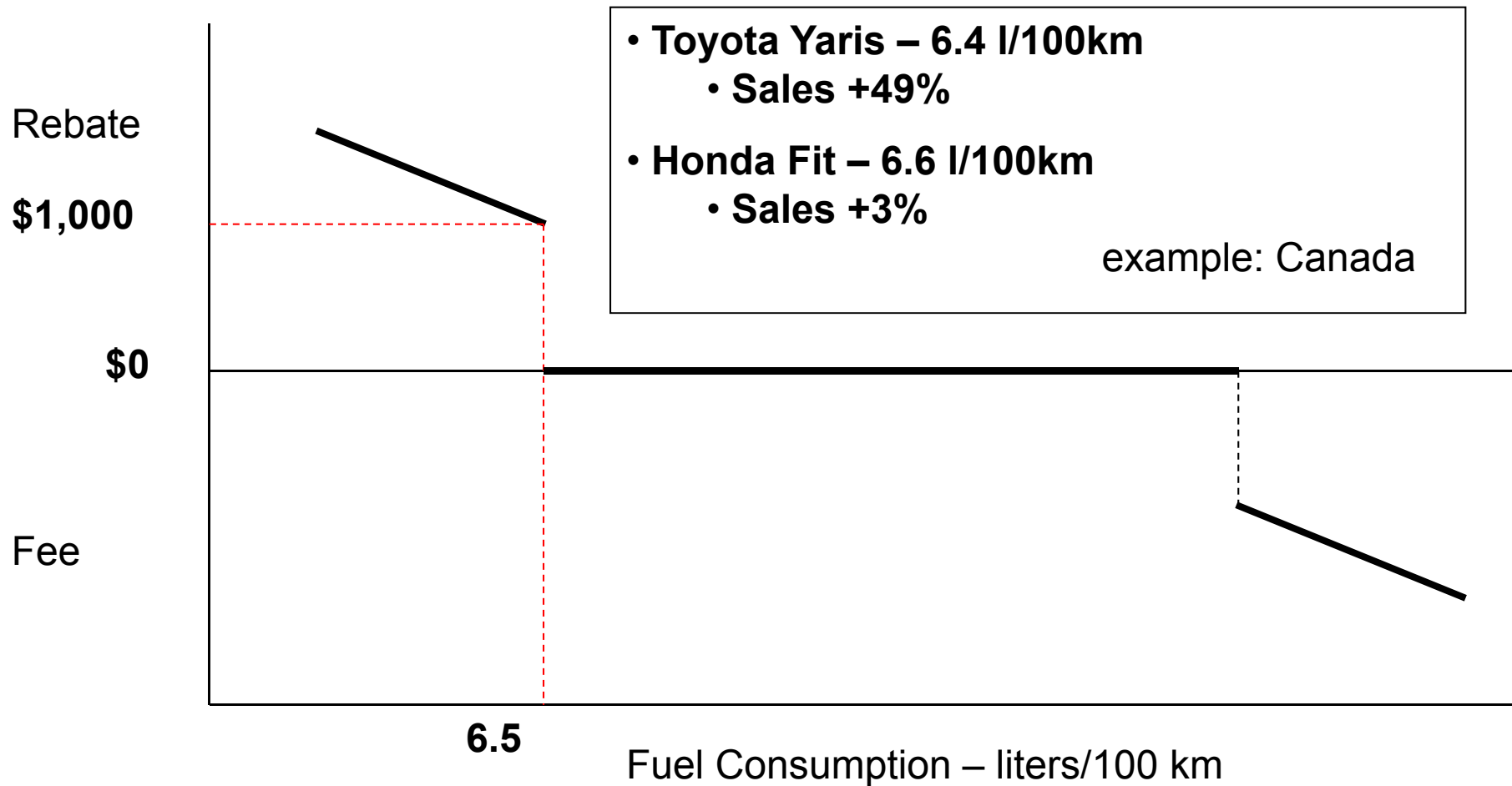
How to design a feebate system?



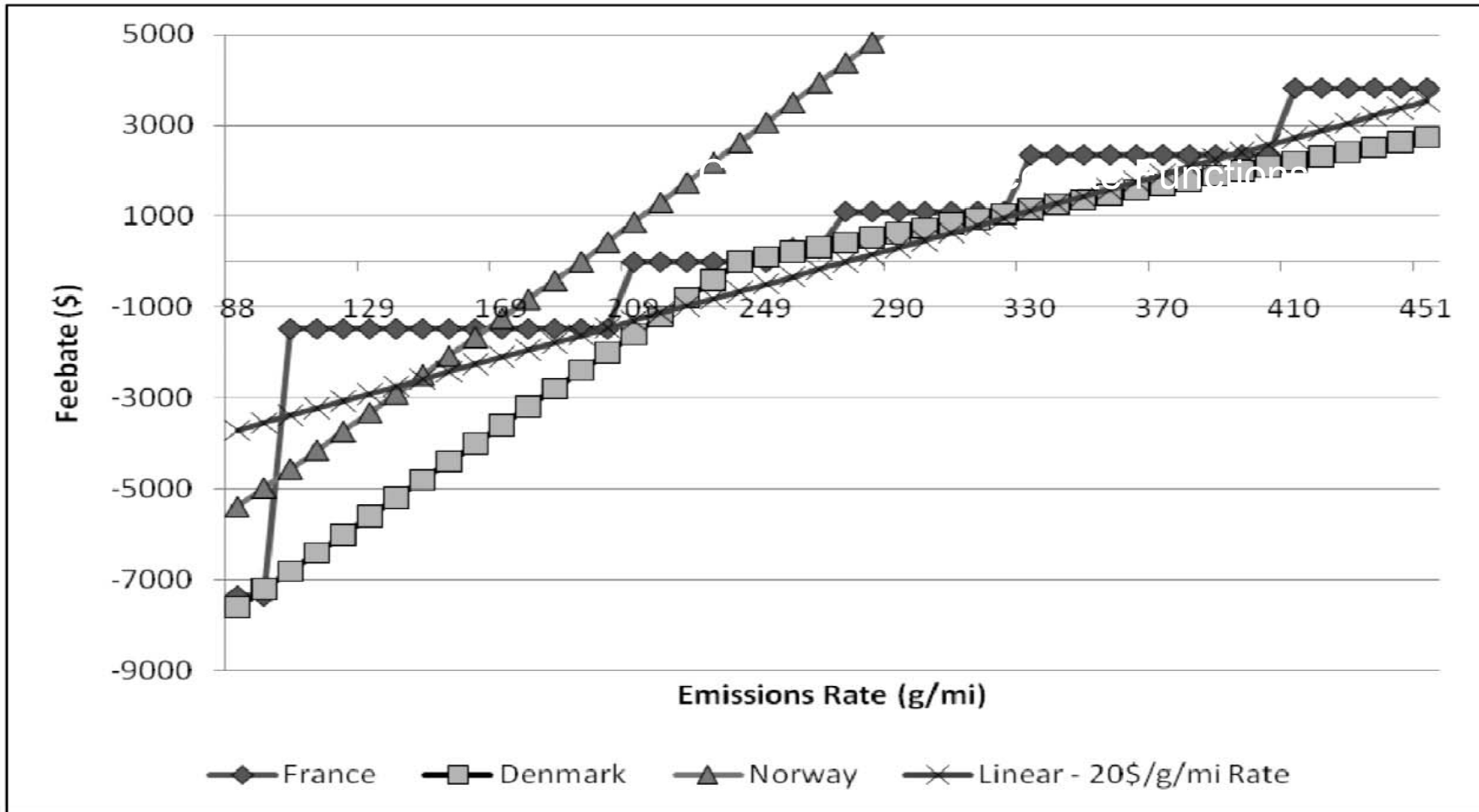
Design Elements For Effective Incentives

- Base fiscal charges directly on vehicle fuel consumption levels, instead of vehicle physical attribute, avoid fixed charges.
 - Mandatory labeling for fuel consumption is an enabler.
- Apply the incentive widely across fleet, instead of limiting to a portion of the fleet.
- Provide continuous incentive on every fuel consumption or fuel consumption level.
- Targeted incentive programs should also be linked to fuel consumption.
 - A targeted incentive program refers to incentive provided to vehicles with special features (such as a certain fuel type, or vehicles equipped with certain technologies).

Important to have a continuous slope, no steps

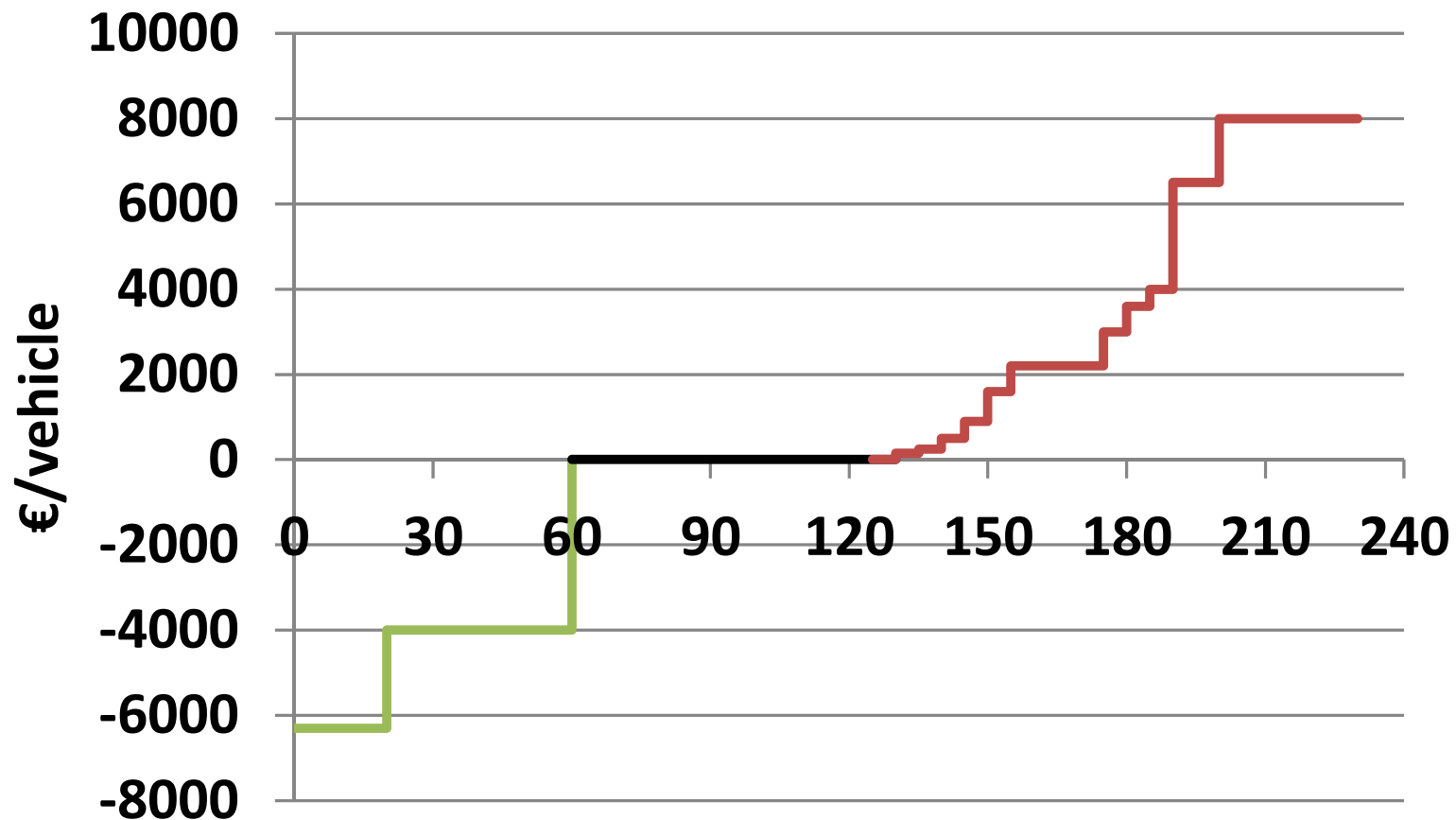


Feebates around Europe – many systems



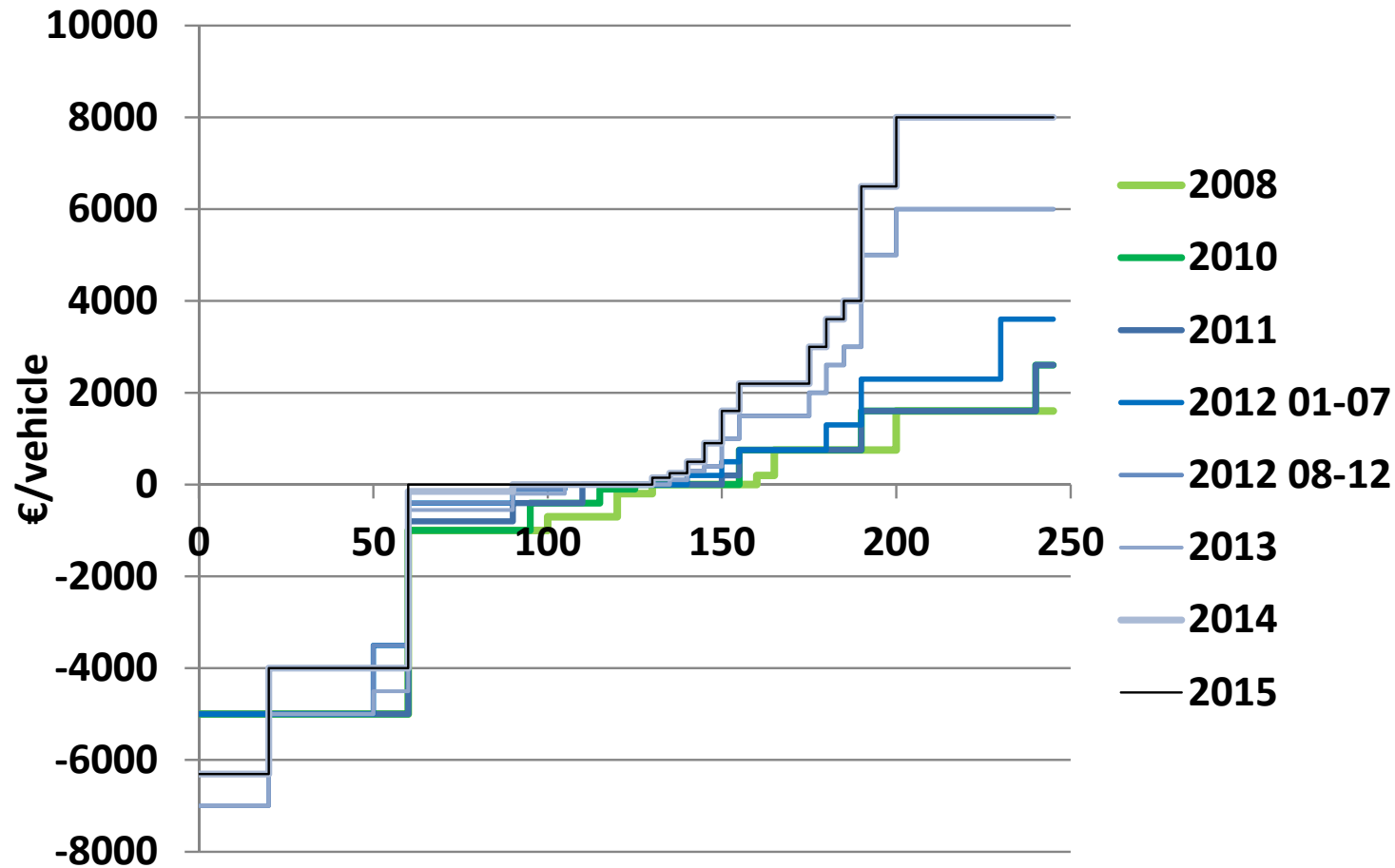
French feebate schedule, 2015

- The only vehicles receiving rebates have 60 g/km or below



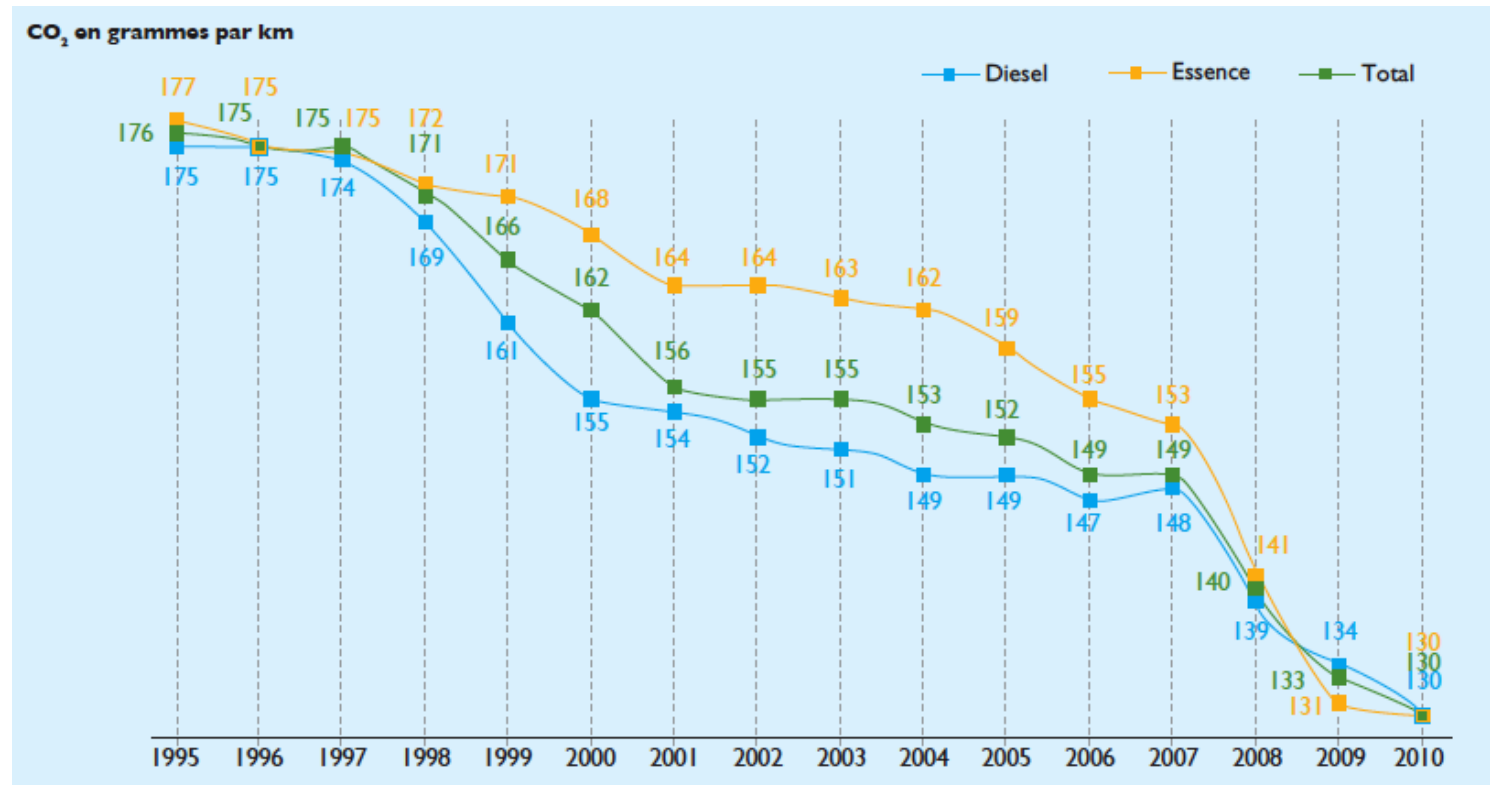
French feebate schedule over time

- The fees have risen and the rebates declined...



French feebate system led to significant drop in CO₂ emissions

- 2001–2007 avg. reduction new vehicle CO₂ = 1 g/km per year
- 2008: emissions drop 9 g/km and 2009 by 7 g/km, Ministry of Transport attributes to introduction of bonus/malus system



Source: Les véhicules particuliers en France (Ademe), March 2011

Standards v. Feebates

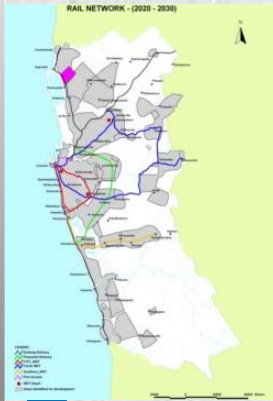
Standards	Feebates
"Guarantee" a minimum level of fuel economy	Do not guarantee level
No incentive to go beyond minimum	On-going incentive
Must be regularly updated to maintain pressure	Must be regularly updated to meet revenue targets
No cap on costs	Provide a cap on cost
Could ban some vehicles	Wouldn't ban any vehicles
No clear price signals	Clear price signals to consumers and producers

Chile Proposal to use feebates to Promote Cleaner Vehicles

Emission of NOx	Type of Vehicle	Incentive	Disincentive
NOx < 0.02	Electric/Fuel Cell, some hybrids	\$1000	--
0.02 < NOx < 0.1	Euro 5/6 gasoline Euro 6 diesel	\$500	--
0.1 < NOx < 0.2	Euro 4 gasoline Euro 5 diesel	0	0
0.2 < NOx < 0.3	Euro 3 gasoline Euro 4 diesel	0	\$500
0.3 < NOx < 0.5	Euro 2 gasoline Euro 3 diesel	0	\$1000
0.5 < NOx < 0.8	Euro 2 diesel	0	\$1500

Case Study:

Sri Lanka Experience on Vehicle Taxation



THANKS TO:

DON S. JAYAWEERA,

TRANSPORT AND IT CONSULTANT

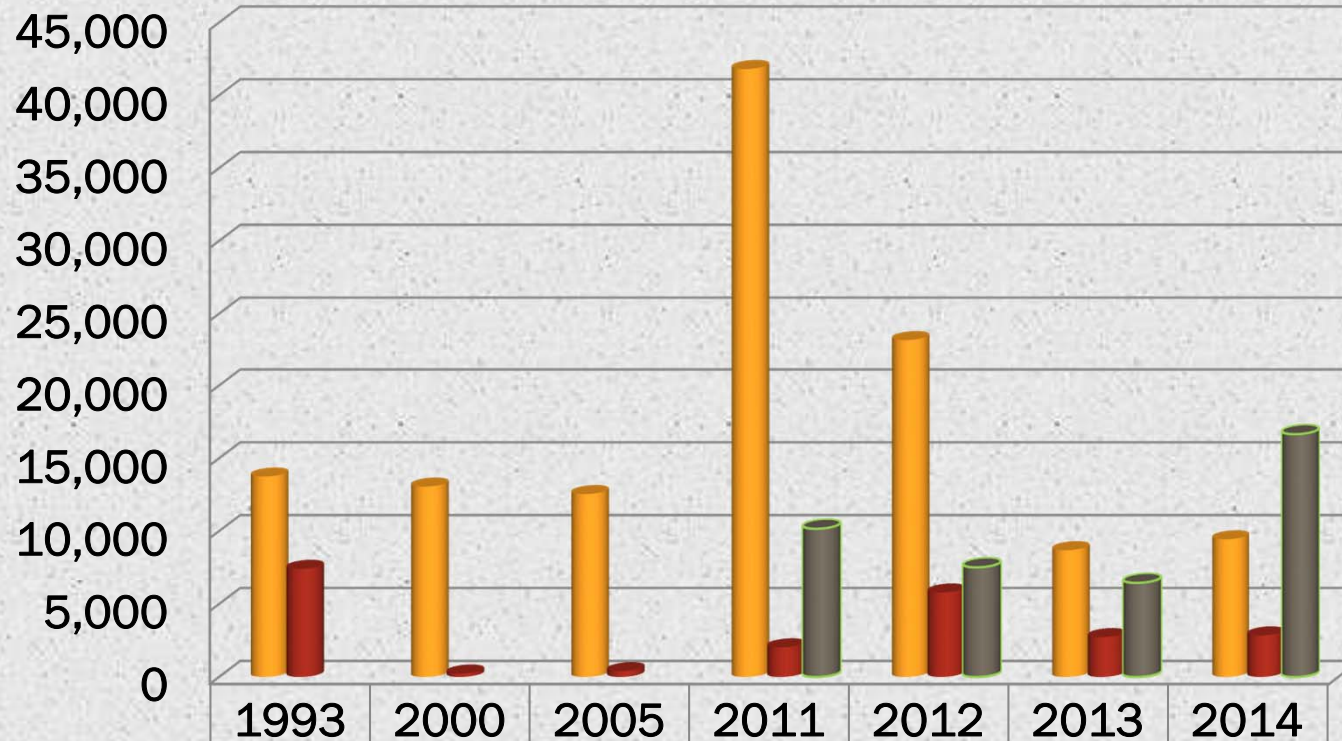
BAQ-2014 Seminar on "Training on Developing Fuel Economy Standards and Policies", November, 2014, Colombo Sri Lanka

Taxes Introduced in April, 2012 on Vehicle Importation

ITEM	Duty Rate						Total tax as % of CIF
	CID	Cess	PAL	Excise	VAT	NBT	
3 Wheeler - Petrol/LP gas	15%	0%	5%	15%	12%	2%	70%
- Diesel	15%	0%	5%	25%	12%	2%	90%
Car - Petrol - <1000 cc	30%	0%	5%	38%	12%	2%	120%
1000 cc-1600 cc	30%	0%	5%	43%	12%	2%	128%
1600 cc-2000 cc	30%	0%	5%	47%	12%	2%	136%
Exceeding 2000 cc	30%	0%	5%	58%	12%	2%	154%
Exceeding 3000 cc	30%	0%	5%	78%	12%	2%	189%
Car - Hybrid - <2000 cc	15%	0%	5%	8%	12%	2%	50%
2000 cc-3000 cc	15%	0%	5%	24%	12%	2%	75%
Exceeding 3000 cc	15%	0%	5%	40%	12%	2%	100%

Number of Vehicles added to the fleet

Actual response from the customers for Hybrid Cars



	1993	2000	2005	2011	2012	2013	2014
Car (Petrol)	13,746	13,054	12,541	41,806	23,184	8,683	9,436
Cars (Diesel)	7,406	234	393	2,028	5,787	2,730	2,846
Car (Hybrid)				10,164	7,514	6,451	16,658

Thank You!

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