

Feebates – Critical Points

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Impact of Feebates on Consumers

Feebates have relatively little impact on consumers

- Market shifts:
 - Real fuel prices are low
 - And will decline further in the future as CAFE increases
 - Most customers only value 2 to 3 years of fuel savings
- Fuel economy technology:
 - Customers are largely indifferent to increases in technology penetration*:
 - More technology will increase cost and improve fuel economy
 - Even at \$1.00/gal, customers value the fuel savings roughly the same as the cost increase - little net change in present value
 - **Both cost increase and fuel savings minor compared to other choices facing purchasers**

* Greene, David, Transportation & Energy, 1996, p. 97-99

Impact of Feebates on Manufacturers

- Very efficient incentive to implement FE technology
- Manufacturers will install **all** technology that costs less than the fixed change in the CO2 incentive
 - Reduces the overall cost of producing the vehicle
 - Increases mpg, which has some value to customers
- Engineers love technology: feebates are a tool to get cost effective technology past the accountants
- DOE modeling (1995 & 2005) found about 90% of the impact was due to manufacturer response

Can make feebates transparent to customers and dealers with little impact on overall effectiveness

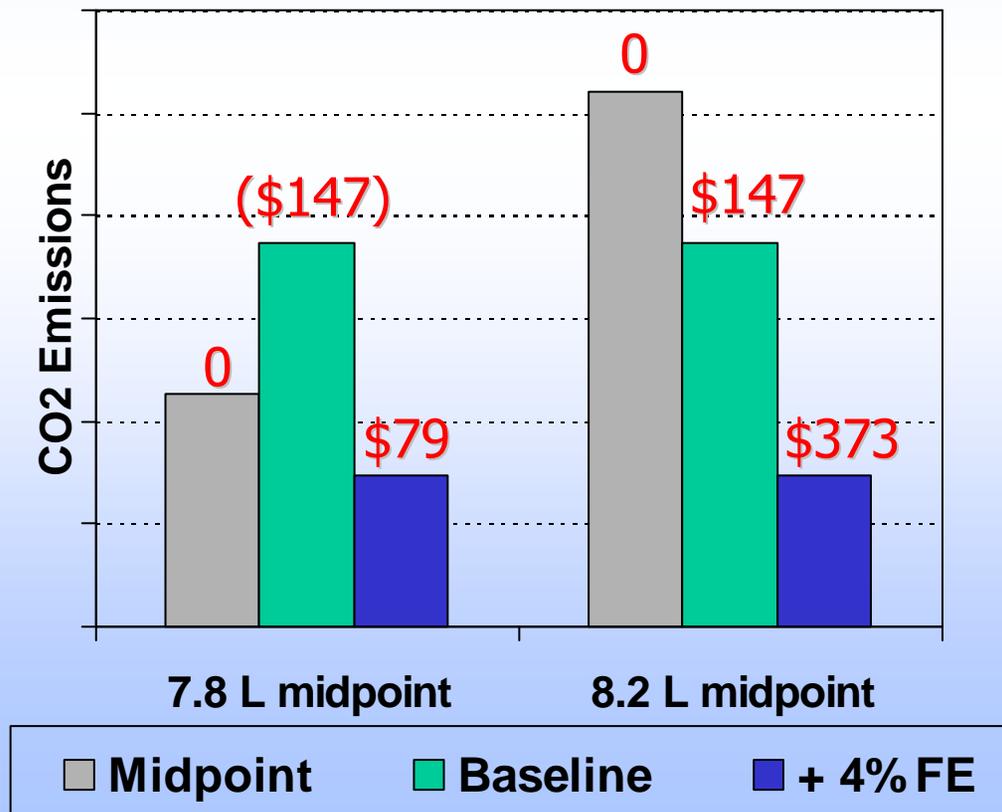
Mid-Point Doesn't Matter for Technology

Vehicle & emissions

- Baseline efficiency – 8 L/100km
- In-use FE shortfall – 15%
- Lifetime travel – 240,000 km
- Lifetime CO2 emissions – 58.7 tons
[5.2 # CO2 per Liter of gasoline]

Add technology

- Improve FE by 4% @ \$150 cost
- Feebate valued at \$100/ton CO2
 - \$27.27 / ton C
 - About \$1 / gallon gasoline
 - About \$0.26 / liter gasoline



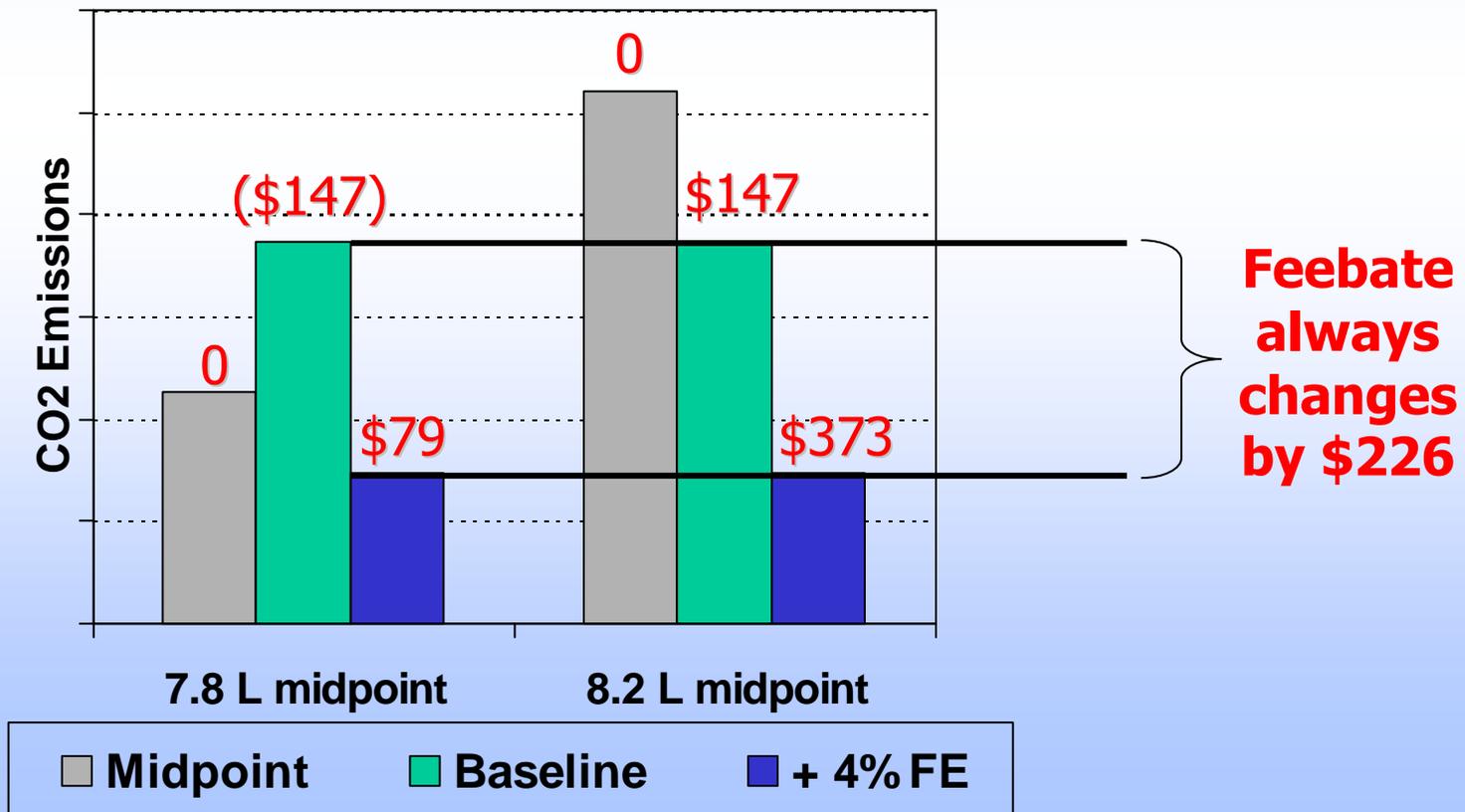
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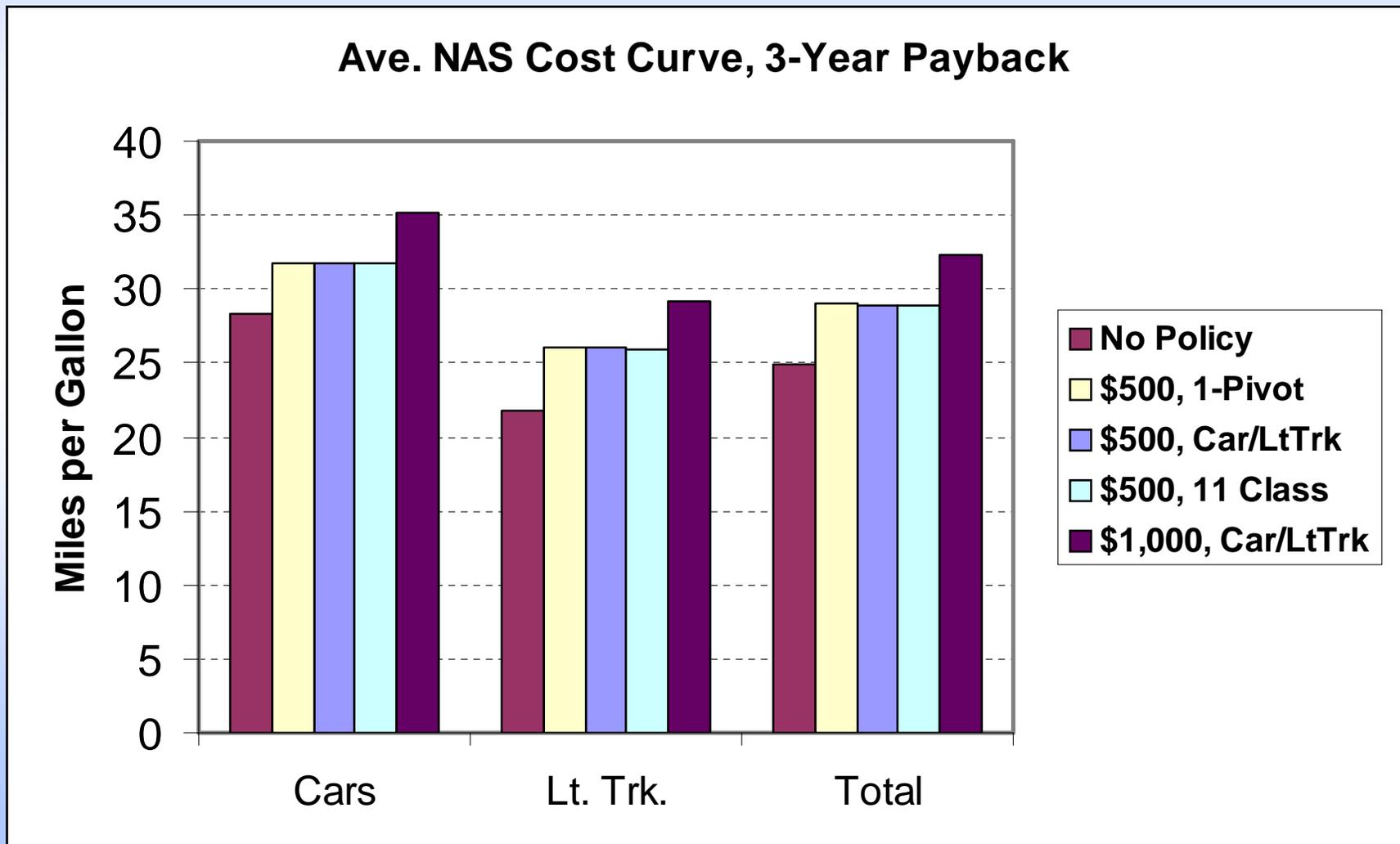
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**The number and placement of pivot points have little influence on the level of fuel economy achieved.
The rate (R) matters.**



Perception Problems

- Feebates are generally misunderstood, due to preconceived ideas about design. Proper design can address all of the claimed problems:
 - Is not effective
 - Transfer of wealth to non-domestic manufacturers
 - Reduction in vehicle sales
 - No better than CAFE
 - Burden on consumers
- A justified criticism is the complexity of the structure and the difficulty in overcoming misconceptions - **requires large expenditure of “political capital”**



California Clean Car Discount

- **Single Class, \$0-Band Feebate Program**
- **Assessed once at time of purchase of a new vehicle**
- **\$2,500 Maximum**
- **Self-financing—surcharges pay for rebates**
- **Program ensures that 20-25% vehicles of all types have no surcharge**
- **In process of being redesigned**

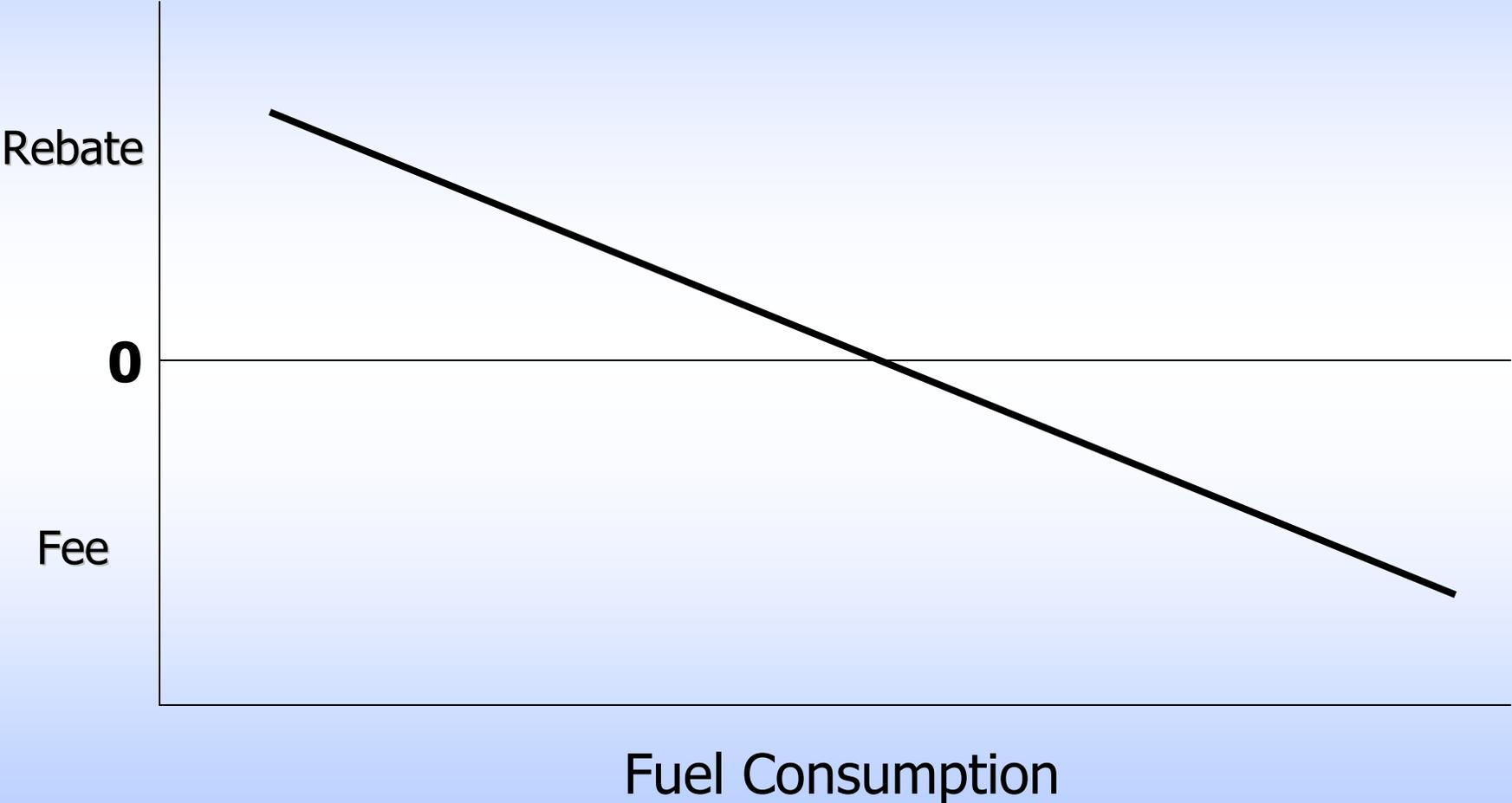
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Discussion Slides

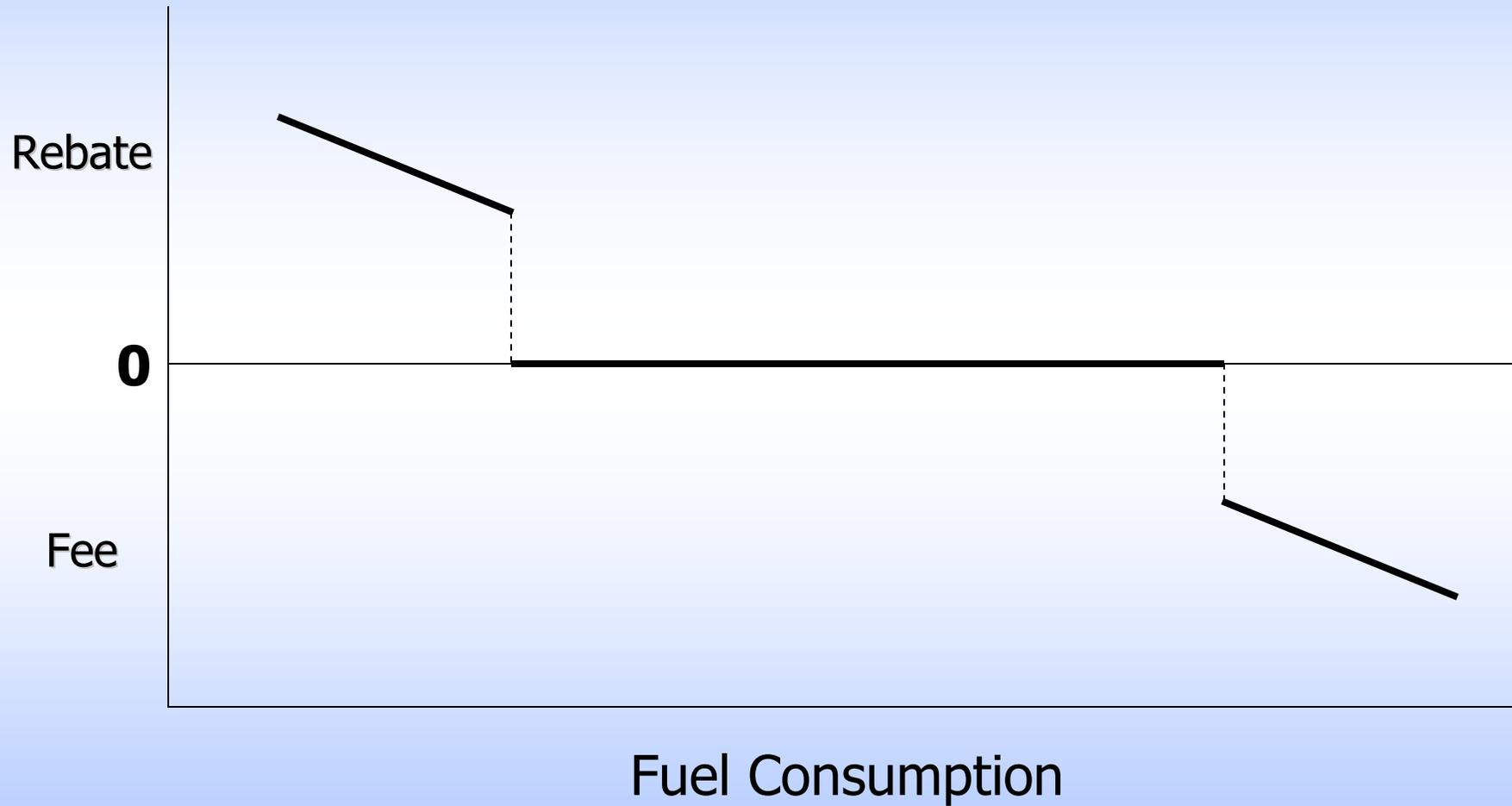
Conclusions

- We ***should*** have a higher tax on gasoline
 - Beneficial for many problems
 - Signals market of need to curb petroleum demand
 - Helps reclaim some monopoly rent on oil
- Feebates have relatively little impact on customers
 - Handling fees and rebates at the manufacturer level maintains almost all benefits while minimizing burdens on dealers and consumers
- Feebates offer continuous incentive to improve
- State systems would likely be less effective
 - Same customer impact
 - Technology benefits affected by ties to national sales
- A California feebate system would be far more effective if it could serve as a “model” program for adoption by states and the Federal government

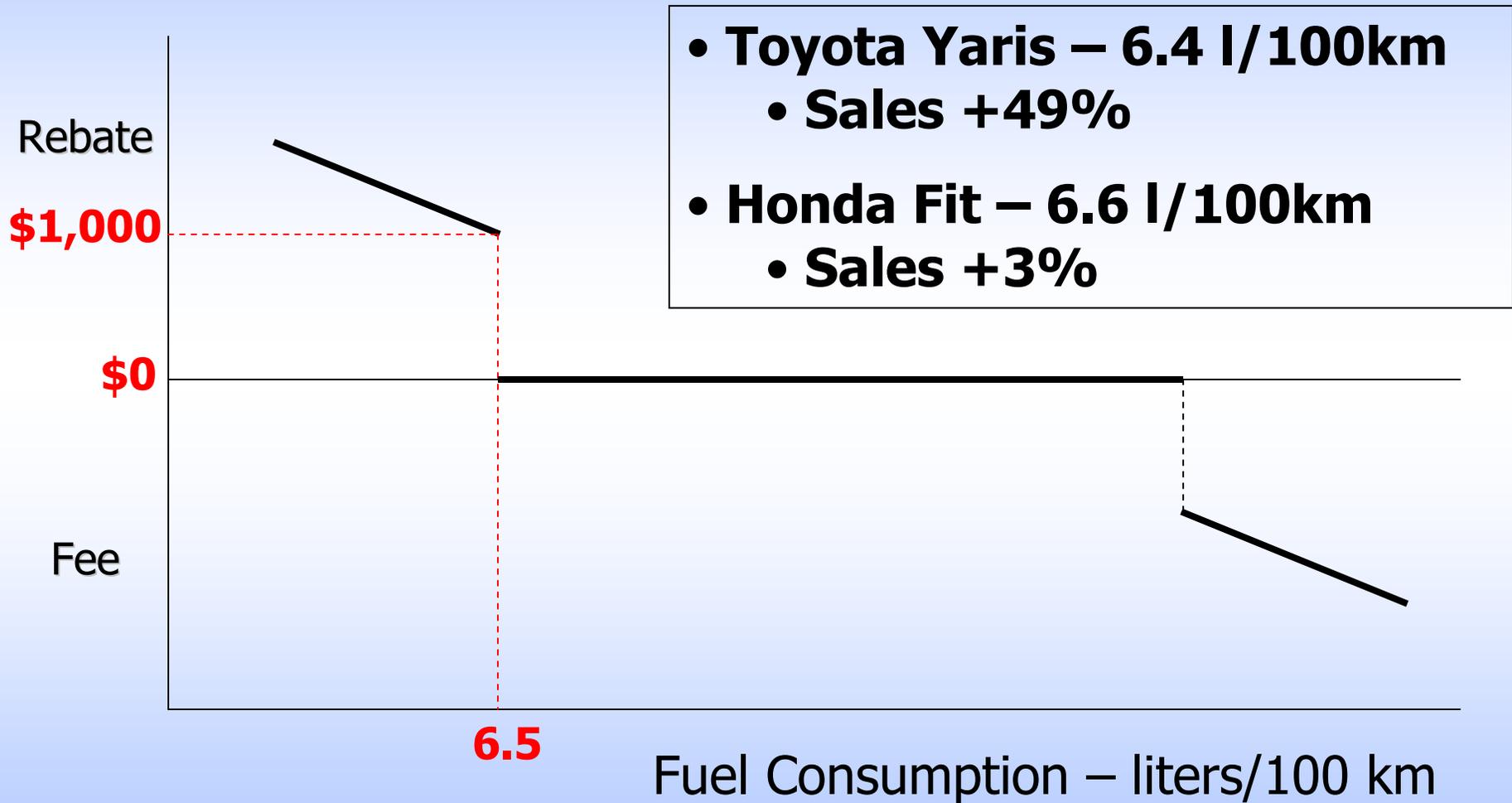
This is a Feebate Program



This is NOT a Feebate Program



Canadian Incentives



European Vehicle gCO₂/km Taxes

- France – adopted

<= 60	5000 euro credit
<= 100	1000 euro credit
101-120	700 euro credit
121-130	200 euro credit
131-160	0
161-165	200 euro tax
166-200	750 euro tax
201-250	1600 euro tax
>250	2600 euro tax

- Austria – proposal

< 120	300 euro credit
120-160	0
>160	25 euro per g/km tax

All European countries are supposed to convert their vehicle taxes to a CO₂ basis, in support of 2015 gCO₂/mi standards

- Ireland – adopted

0-120	14% tax
121-140	16% tax
141-155	20% tax
156-170	24% tax
171-190	28% tax
191-225	32% tax
> 225	36% tax

- Spain – proposal

< 120	0
121-160	4.75% tax
161-200	9.75% tax
> 200	14.75% tax

- Finland – adopted

< 60	10% tax
60-360	(g/km)/10 + 4% tax
> 360	40% tax

Adding Feebates to CAFE

- Although technology pull is largely redundant, are some incremental benefits to adding feebates
 - 10% direct customer impact
 - Continuous incentive – continues to operate when CAFE runs out
 - Incentive to manufacturers to exceed requirements
- Sends appropriate price signals to customers
 - Although direct effect on customers is minor, the price signals should help customers accept the changes mandated by CAFE and GHG requirements

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