

Energy & Environmental Economics and US Politics

Gernot Wagner





Would you choose the standard or hybrid version?

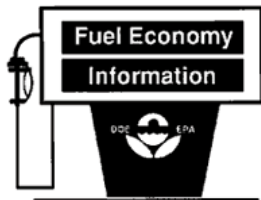
The “rational” view of car-buying behavior

You walk into a dealership, choose a car based on brand, color, cylinders, looks and general feel and then start comparing prices among different options. You also look at gas mileage, today’s price per gallon, form an opinion about future gas price trends, attach probabilities to them, calculate expected total gas costs over the lifetime of the car, balance all of that information against expectations over future inflation rates and interest paid were you to just leave your money in the bank, take into account how your preferences for driving will evolve over time, make a few assumptions about how future buyers will perceive your choice when you are ready to sell the car, and do all that (and probably a few things I’m missing), while the car salesman at the dealership explains to you the awesome industry-leading warranty and zero-down loan program offered through the end of the month...



Compare this vehicle to others in the **FREE FUEL ECONOMY GUIDE** available at the dealer.

CITY MPG
23



HIGHWAY MPG
30

Actual Mileage will vary with options, driving conditions, driving habits and vehicle's condition. Results reported to EPA indicate that the majority of vehicles with these estimates will achieve between

19 and 27 mpg in the city and between 26 and 35 mpg on the highway.

1993 CANARY 2.0 LITER
L4 ENGINE FUEL INJECTED
AUTO 3 SPD TRANS CATALYST
FEEDBACK FUEL SYSTEM

Estimated Annual Fuel Cost:

\$850

For Comparison Shopping, all vehicles classified as **COMPACT** have been issued mileage ratings ranging from 11 to 31 mpg city and 16 to 41 mpg highway.

EPA DOT

Fuel Economy and Environment

Gasoline Vehicle

Fuel Economy

26 MPG

combined city/hwy

22 city

32

highway

3.8 gallons per 100 miles

Small SUVs range from 16 to 32 MPG. The best vehicle rates 99 MPGe.

You save \$1,850

in fuel costs over 5 years compared to the average new vehicle.

Annual fuel cost

\$2,150

Fuel Economy & Greenhouse Gas Rating (tailpipe only)

7

This vehicle emits 347 grams CO₂ per mile. The best emits 0 grams per mile (tailpipe only). Producing and distributing fuel also creates emissions; learn more at fuel economy.gov.

Smog Rating (tailpipe only)

6

Best

Actual results will vary for many reasons, including driving conditions and how you drive and maintain your vehicle. The average new vehicle gets 22 MPG and costs \$12,600 to fuel over 5 years. Cost estimates are based on 15,000 miles per year at \$3.70 per gallon. MPGe is miles per gasoline gallon equivalent. Vehicle emissions are a significant cause of climate change and smog.

fuel economy.gov

Calculate personalized estimates and compare vehicles

Smartphone QR Code™

New fuel economy labels
are here to help

Table 6: Alternative Discount Rates and Time Horizon

Dependent variable: Vehicle price

Specification	(1) Primary	(2) $r = 5\%$	(3) $r = 18\%$	(4) $r = 27\%$	(5) 5 yr horizon
G_{jat}	-0.61	-0.52	-0.81	-1.02	-0.79
$[-\gamma/\eta]$	(0.07)	(0.06)	(0.09)	(0.11)	(0.09)
$\ln(\text{market share})$	-2372	-2442	-2248	-2168	-2029
$[-(1 - \sigma)/\eta]$	(723)	(720)	(726)	(728)	(726)
$\ln(\text{nest share})$	-1807	-1804	-1816	-1825	-1842
$[-\sigma/\eta]$	(655)	(663)	(640)	(630)	(612)
Observations	1,053,058	1,053,058	1,053,058	1,053,058	1,053,058
ja groups	37,794	37,794	37,794	37,794	37,794
F (excl inst)	29.1	30.1	27.6	26.7	25.4

Notes: Sample includes monthly observations Jan 1999 - Mar 2008 of all passenger cars and light trucks age 0-25. Model*age fixed effects, monthly time dummies, and model year dummies are included. Column (1) is the primary specification from Table 3, column (1). Nest share is the share of all vehicles in the same class. A 9% annual discount rate is assumed in the calculation of gas costs. Columns (2)-(4) use a 5%, 18%, and 27% discount rate in the calculation of gas costs, respectively. Column (5) uses a 9% discount rate but only accounts for the next 5 years of gas costs. Standard errors are robust and clustered by ja (model * age).

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For every \$1 in fuel savings later, car buyers spend \$0.61 more today

Car buyers are “60% rational” in most traditional, standard economic sense

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Federal carbon reduction policies

Criteria

Policies	Emissions				Economics				Equity		Overall Rating	
	Potential reductions within sector*	Coverage	Potential reductions in economy*	Reductions certainty	Flexibility	Innovation	Cost-effectiveness	Cost certainty	Potential for reallocation	Social equity		
	Cap & Trade											High
	Cap & Dividend	=		=								Medium
	Carbon tax	=		=								Low
	Gas Tax	>>	Transport	~25%								
	Clean Energy Standards	70%	Power	60%								
	Feed-In Tariffs	70%	Power	60%								
	Harnessing private capital	20-50%	Cross-sector	20-50%								
	EPA power regulations	20%	Power	20%								
Fuel economy standards	600%**	Transport	25%									

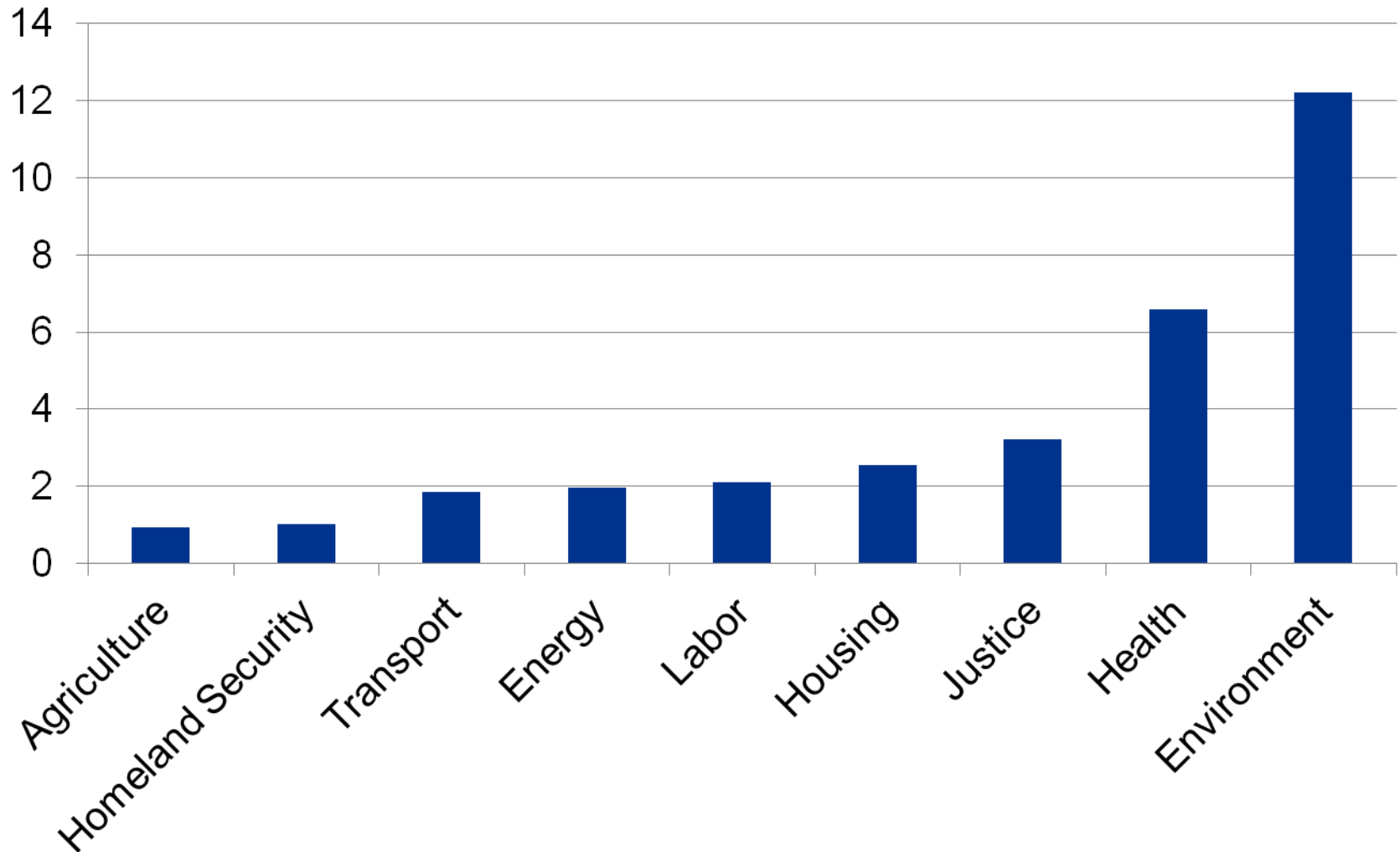
* Relative to covered Waxman-Markey emissions reduction targets of 42% below 2005 baseline by 2030.

** Road transport emissions increase under Waxman-Markey by 2030.

30 : 1

1.5%

EPA tops benefit-cost comparison across agencies



Source: OMB's "2011 Report to Congress on the Benefits and Costs of Federal Regulations"

Once you put capital to work, jobs are created.

Michael Morris
CEO, American Electric Power

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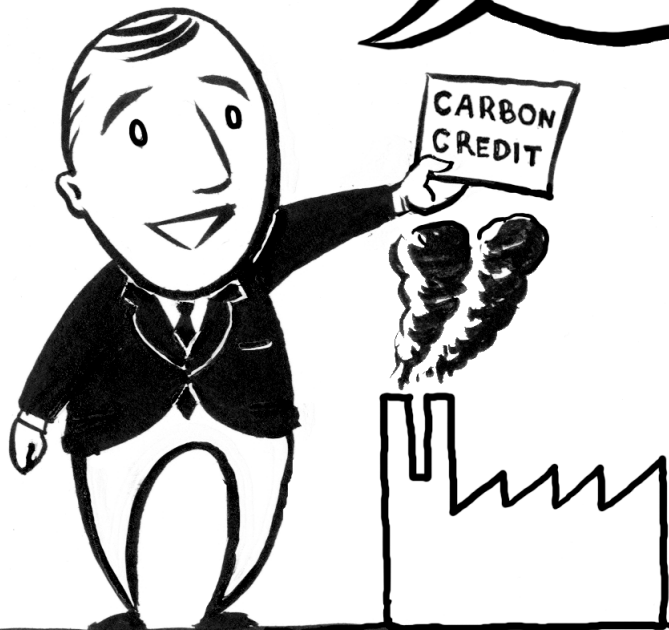
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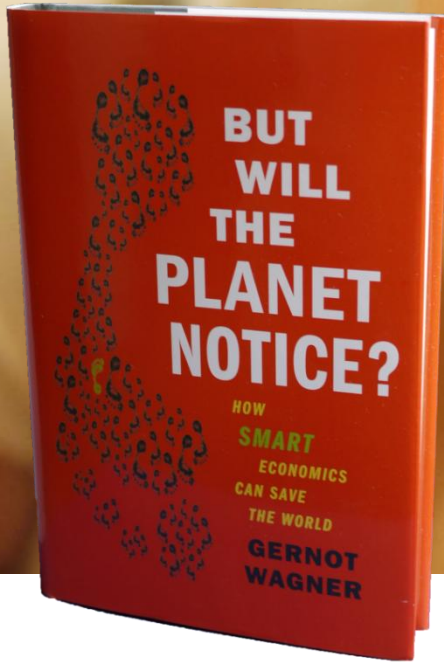
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POLLUTION CAP

I'LL GLADLY
TAKE YOUR
MONEY

CARBON
CREDIT





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