

Carbon Taxes First

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No More Free Dumping

“Since the dawn of the industrial revolution, the atmosphere has served as a free dumping ground for carbon gases. If people and industries are made to pay heavily for the privilege, they will inevitably be driven to develop cleaner fuels, cars and factories.”

— *Avoiding Calamity on the Cheap*, Nov. 3, 2006

New York Times editorial

Putting a Price on CO₂ Emissions

High taxes on carbon emissions from coal, oil and natural gas will:

- Reduce burning of fossil fuels and CO₂ emissions
 - Substitution of clean fuels and technology
 - More efficient use of energy
- Provide a revenue stream to enable
 - Progressive tax-shifting, or
 - Rebate to all U.S. residents

Additional Benefits of a Carbon Tax

- Carbon tax receipts may also be used to finance
 - Energy efficiency, further reducing use of fossil fuels and related emissions.
 - Energy R&D.
- Will also reduce dependence on foreign oil, with major national security benefits.
- Economically, will keep dollars in USA instead of flowing overseas.

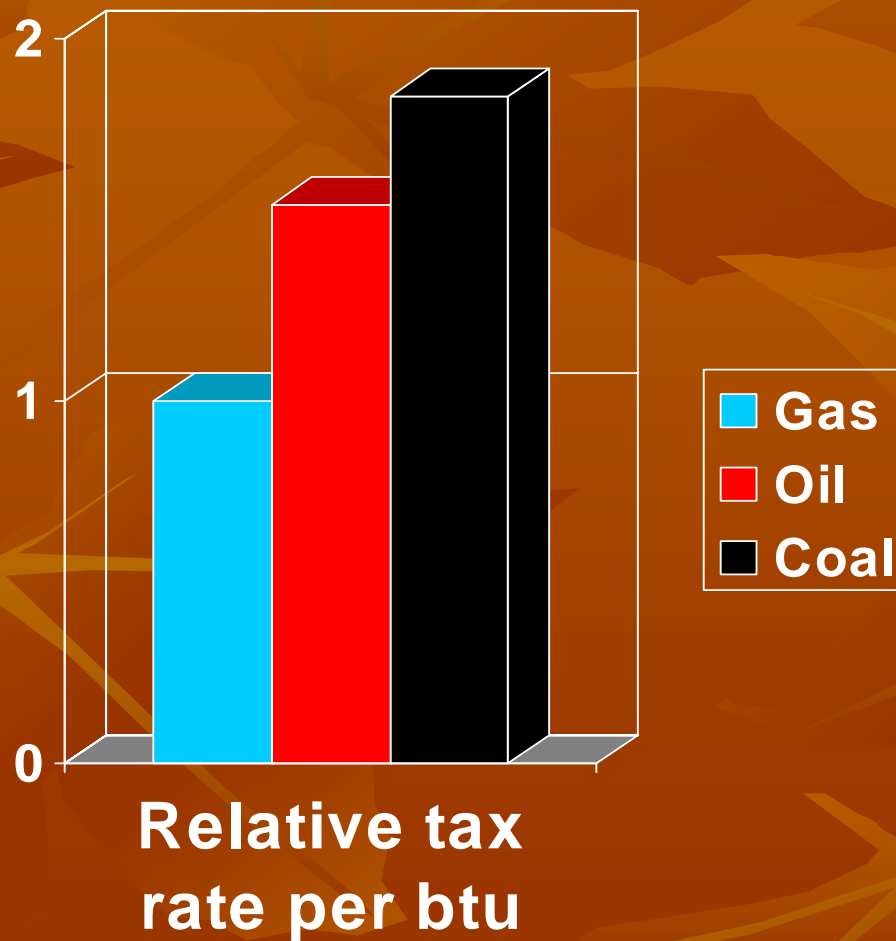
Clean-Energy Subsidies: A Limited Answer

- Selecting the next best energy technology by fiat has largely benefited lobbyists + special interests
 - Oil shale, nuclear power, synfuels, ethanol, etc.
- Many new sources also emit CO₂
- Renewable Portfolio Standards: helpful – but not enough

Efficiency Standards: Vital, but Not Enough

- Too slow
 - Corporate resistance
 - Inherently reactive
- Corporate gaming
 - (e.g., “CAFE” loophole that enabled SUV’s)
- Scattershot – impossible to regulate the hundreds of important energy-usage sectors
- 1-dimensional
 - (e.g., CAFE doesn’t affect miles driven)

Carbon Tax Proportions



Fuels are
taxed by
their
carbon
content
per btu.

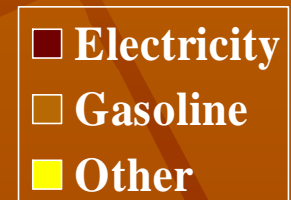
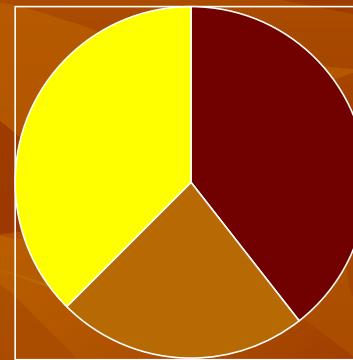
A “Starter” Carbon Tax-Shift

- \$37 / ton of carbon =
- 10¢ / gallon of gasoline, jet fuel, etc. =
- 0.72 ¢ / kWh (U.S. retail average)
- Reduces U.S. CO₂ emissions ~ 4%
- Repeat 10 X (while standards and incentives also cut emissions)

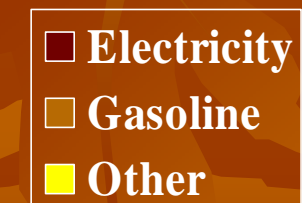
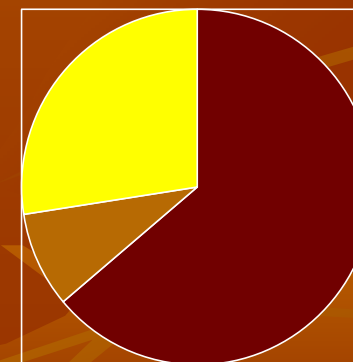
Elasticity (long-run) Assumptions

- Gasoline: -0.4
- Electricity
 - Residential (37%) -0.5
 - Commercial / Industrial (63%) -1.0
 - Fuel-switching
Leverage: 1.2 x
- “Other” – midway
bet. Gas / Electricity

U.S. CO2



Reductions



Starter Tax – Why Ramp Up?

- Win broad consensus
- Implement ASAP
- Help people and businesses adapt
- Empirical validation of efficacy
- Mid-course corrections
- Establish long-term price trajectory
- Complement w/ investment in EE and renewables

USA After “Starter Tax x 10”

- CO₂ emissions down by a third
- Oil use down by ~5 million barrels/day
- Energy
 - Coal-fired generation reduced
 - Wind and other renewable generation increased
 - Incandescents / halogens out, CFL's + LED's in
- Transportation and Land-Use
 - SUVs out, sedans in
 - Costlier air and highway travel creates market pull for 300-mph intercity rail
 - Urban trips by bicycle up 10x, to 10%
 - Urban revitalization

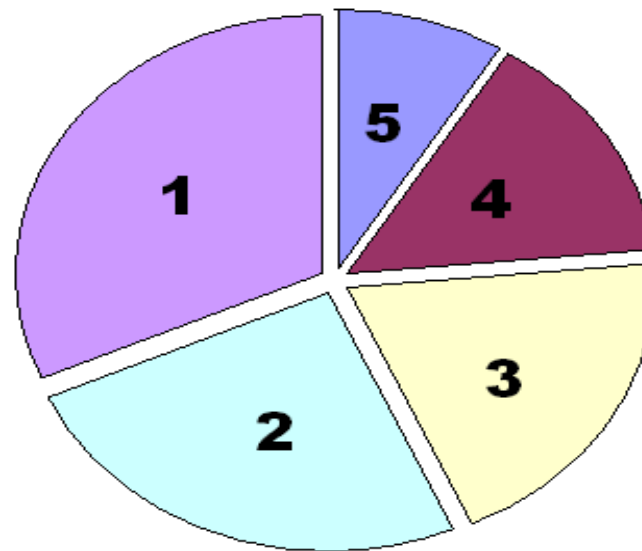
The Wealthy Will Pay More

THE RICHER YOU ARE...

1 = Richest

5 = Poorest

**Gasoline Purchases,
by Income Quintile,
B.L.S. (USA) 2005**



...THE MORE GAS YOU BURN

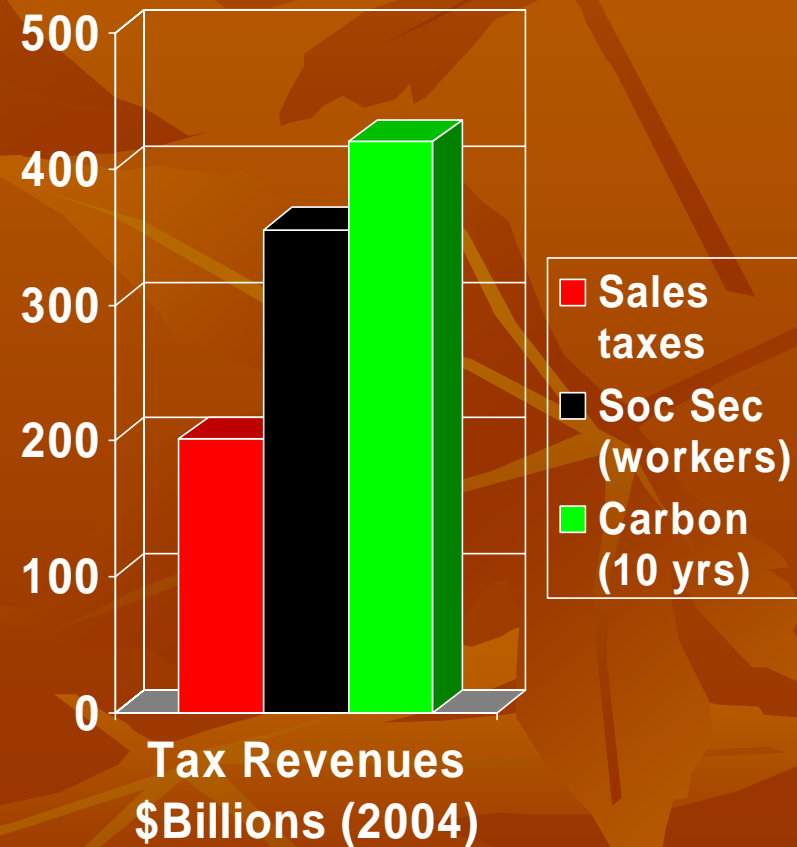
“Progressive” Use of Carbon Tax Revenues

EITHER

- Distribute pro rata to 320 million Americans (~ \$1,500 each, per year)

OR

- Tax Shift out of regressive taxes (green bar at right assumes 2.5%/yr drops in emissions (net of +1.5%/y income, - 4%/y price)



Politics?

- Concerns about carbon tax-shifting
 - Contrary to Americans' sense of entitlement to "cheap energy"
 - Anti-tax ideology of past 25 years
 - Elected officials wary of another defeat
 - Clinton's 1993 Btu tax
 - Rep. John Anderson's "50-50" program (1980 presidential campaign)

But: Growing Support for Taxing Carbon Emissions

- Opinion leaders
 - Al Gore
 - Scientists such as James Hansen (NASA)
 - NY Times op-ed columnists Brooks, Friedman, Kristof, Krugman & Tierney
 - Conservative economists including Gregory Mankiw, Harvard prof. and chair of President's Council on Economic Advisers, 2003-2005

Some Support in Opinion Polls

- Feb. 2006 New York Times poll
 - 55% would support increased tax on gasoline if it reduced dependence on foreign oil.
 - 59% would support if the increased tax would curb energy consumption and global warming.
- Oct. 2006 M.I.T. survey
 - Over three years, 50% increase in respondents' willingness to pay more for electricity to reduce global warming.

Carbon Tax v. Cap-and-Trade

- Cap-and-trade is alternative vehicle for “putting a price” on carbon
- Proposed by US CAP – coalition of large environmental groups and large corporations
- Emissions are capped at a level determined through the political process
- Allowances/permits to emit CO₂ up to the cap are distributed or auctioned
- Market participants can buy or sell as necessary

Cap v. Tax: Predictable Prices

- Carbon taxes provide predictable prices necessary to encourage investment in
 - less carbon-intensive technology
 - carbon-reducing energy efficiency
 - carbon-replacing renewable energy
- Cap-and-trade aggravates price volatility that discourages beneficial investments

Are We Over-Valuing Cap-and-Trade's Emissions Certainty?

- “Safety-valve” would authorize auctioning additional allowances if allowance prices exceed predetermined level
- Emissions cap could be politically fragile without public support
- No magic emissions level (except as low as possible)

Tax v. Cap: Timing

- C&T design and implementation: complicated, contentious, prolonged
 - Level of cap
 - Timing
 - Allowance allocations
 - Certification procedures
 - Offsets
 - Penalties
 - Permit banking
 - Inevitable requests for exemptions
- Tax can be in place promptly with quick results

Tax v. Cap: Equity

- Cap-and-trade
 - Practice has been to allocate based on past use
 - Rewards polluters with windfall
 - Perverse incentive to pollute more now to increase base for allocations
 - Allowances can be auctioned off to highest bidders
 - Proposed in RGGI program
 - Proceeds used to provide public benefits
 - Lawyers and consultants are other big winners
- Carbon tax would be revenue-neutral

Tax v. Cap: Understandability

- Carbon taxes provide direct, transparent and understandable price signals to consumers
 - Perceived political liability, but essential to transform societal climate-awareness
- Cap-and-trade is complicated and opaque
 - Perceived political asset, but limits public participation and could backfire

Tax v. Cap: Comprehensiveness

- Carbon taxes address emissions from every sector
 - All users must respond to price of carbon
- Most current cap-and-trade programs, as proposed, only target the electricity industry
 - Only 40% of emissions
 - If allowances are allocated, polluters with sufficient allowances have less incentive to reduce emissions

Summary

- Principles
 - Tax-shifting – not a tax increase
 - Full-cost pricing
 - Polluter pays
- Responds to concerns about
 - Climate crisis
 - Inequitable taxes
 - Security / Oil dependence
 - Basing economy on vulnerable energy



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