

# Policy Options

1. **Cap and Trade:** A market based system where the *right to pollute is either sold or given away to industry by government* and then those *rights can be traded in a free market*.
2. **Cap and Dividend:** A cap is placed on emissions and polluters pay a fee to the government for the right to pollute that is then redistributed to the public through federal programs
3. **Carbon Tax:** Those that mine or develop carbon sources and release carbon into the atmosphere *pay a tax to the government on their production or release in proportion to the amount of carbon produced or released*.

# Politics

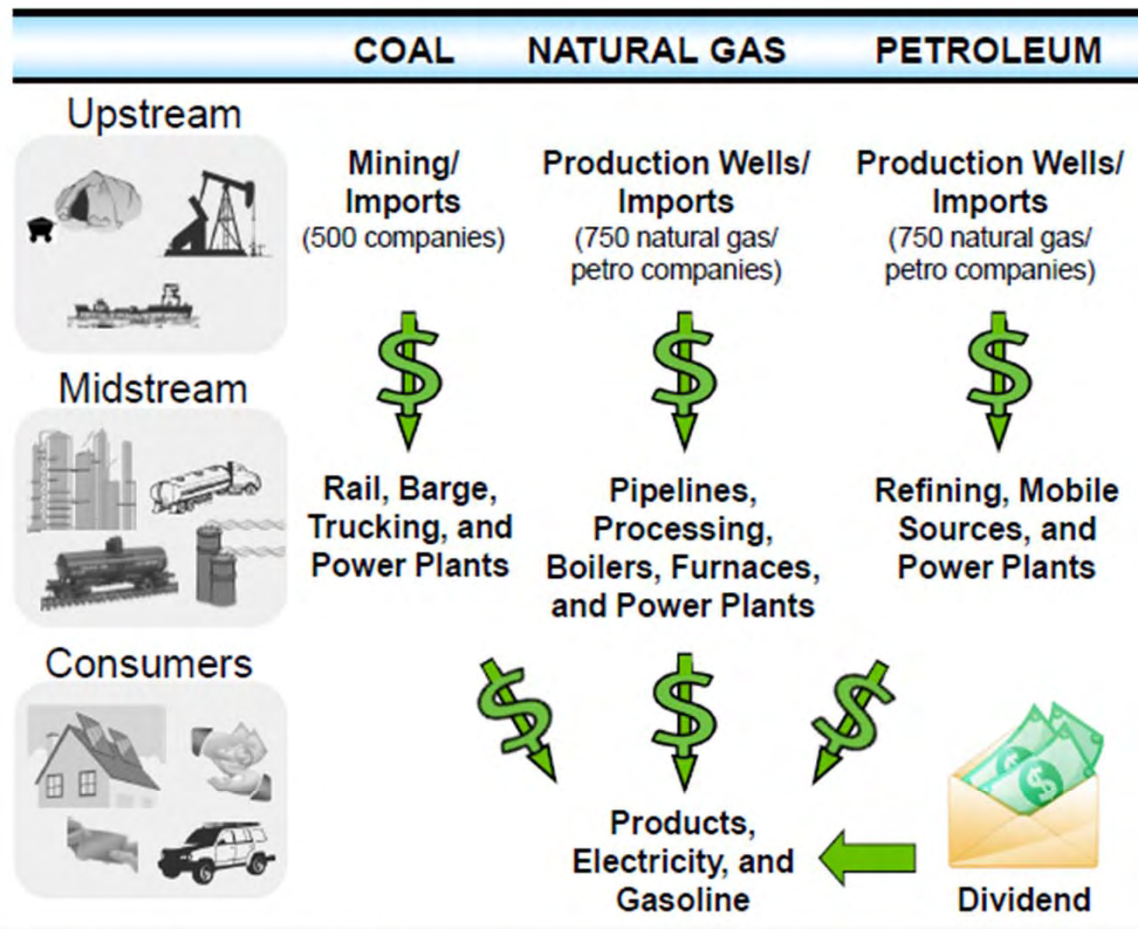
- Taxes are VERY unpopular
- Free market mechanisms have bi-partisan support
  - Appeal to conservatives
  - Promise reductions
  - Create a new industry: carbon traders

Therefore, cap and trade has dominated the discussion

# Upstream vs. Downstream

Bill	Van Holland 2009	Waxman- Markey 2009	Cantwell- Collins 2010	Obama Admin. 2009
Upstream or Downstream	Upstream and downstream- Mining companies and fossil fuel production companies	Partial upstream and full Downstream- Refiners and manufacturers covered in addition to utilities	Upstream	Unknown

# Upstream Cap on Fossil Carbon



Upstream cap covers all fossil carbon entering the economy, completely and equitably

Only a few thousand entities with compliance obligation ensure minimal and accurate regulation

Price signal passed downstream, leaving all midstream user revenue neutral

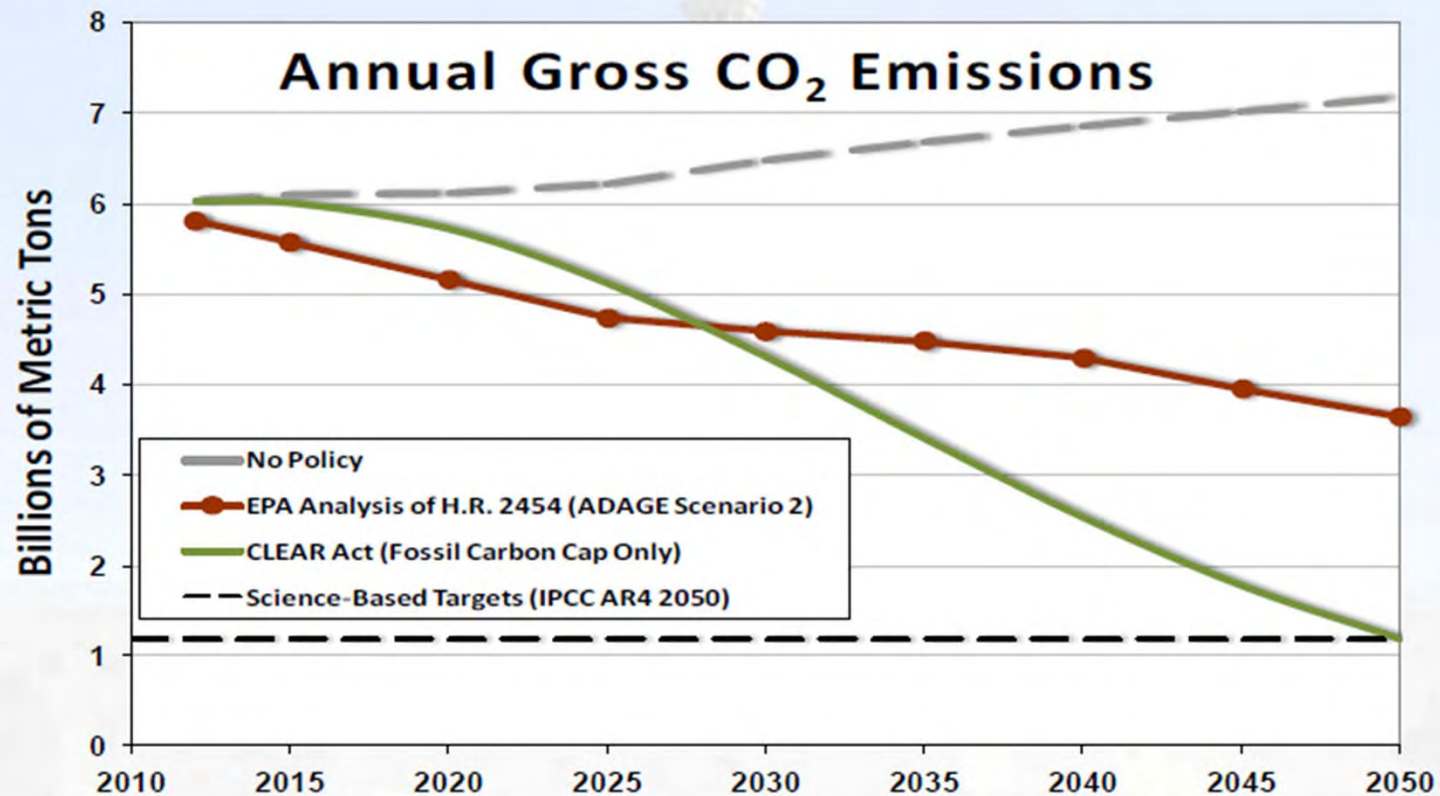
Price signal passed through to end consumers who are reimbursed with dividend



# Allocation Options

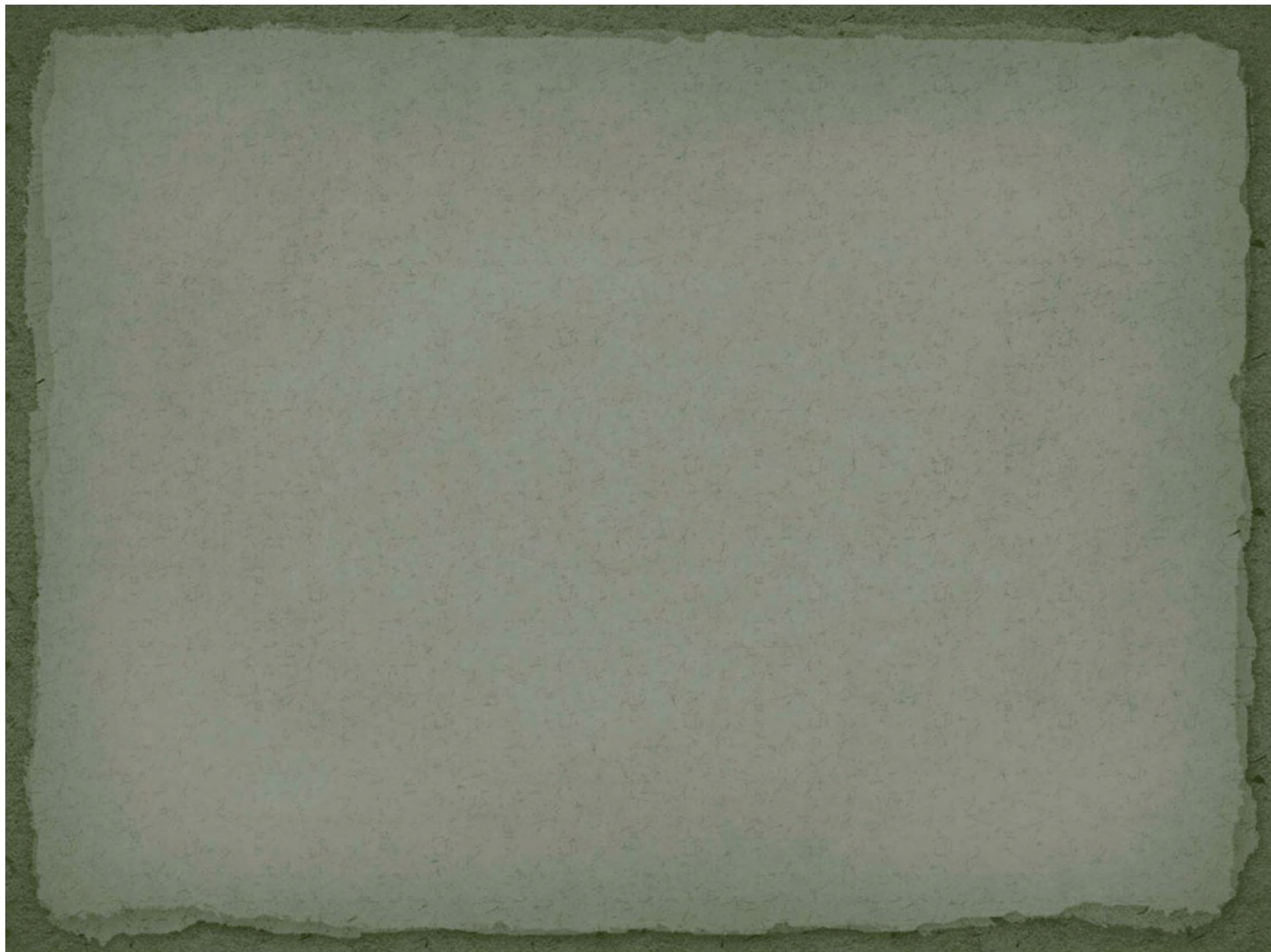
Bill	Van Hollen 2009	Waxman- Markey 2009	Cantwell- Collins 2009	Obama Admin. 2009
Allocation	100% auction	Mixed	100% Auction	100% auctioned- revenue to federal govt- \$646 billion revenue rebated to consumers

# Fossil Carbon Limits

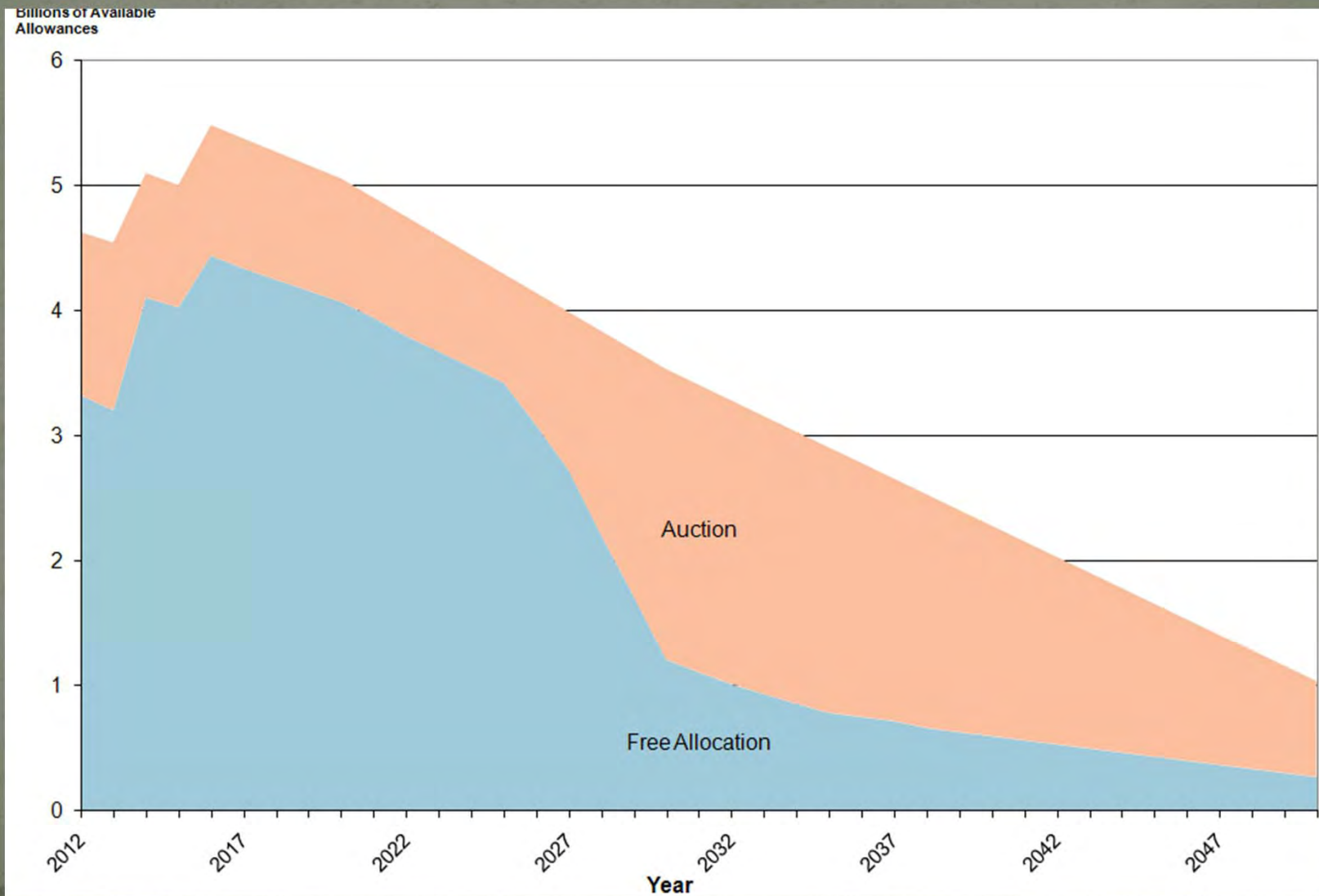


- Reasonable and knowable emission reduction curve allows time for technological breakthroughs and avoids premature dismantling of capital investments.
- Emissions still decline by 80+ percent of 2005 levels by 2050.





# ACESA Allocation scheme





# Banking

- Banking allows emitters to carry over unused allowances into the next cap period
- Emitters can either reduce emissions below the cap and hold the allowances that they generate if there is free allocation OR
- Emitters can buy extra allowances gambling that the price is lower now than it will be next period- this reduces the allowances available on the market for others

# Banking Proposals

Bills	Van Hollen 2009	Cantwell- Snowe 2010	Markey- Waxman 2009
Banking	Allowed- unlimited	Allowed -10 years	Allowed- unlimited

# Borrowing

- Borrowing is allowing emitters to borrow from future years to satisfy current allowance needs
- Allows higher emissions now, with the presumption that emissions will be reduced in the year borrowed from
- Likely that there will be appeals for relief in years borrowed from- delays compliance

# Borrowing

Bill	Van Hollen 2009	Cantwell- Collins 2009	Waxman- Markey 2009
Borrowing Provisions	Auction price goes up 100%+ triggers sale of additional allowances that are borrowed from 2030-2050 and cap reduced accordingly in those years (8% of cap limit)	No borrowing	15% borrowing 5 year limit- 8% interest

# Safety Valve

- Places a cap on the price of allowances=price controls
- Converts from cap and trade to a flat tax in reality
- Reduces the internalizing of emission costs and allows less cost efficient emitters to persist

# Safety Valve Provisions

Bill	Van Hollen	Waxman- Markey 2009	Cantwell- Collins 2009
Safety valve provision	See borrowing provision	Reserve price of \$28 in 2012	Reserve price of \$7-21

# Offsets

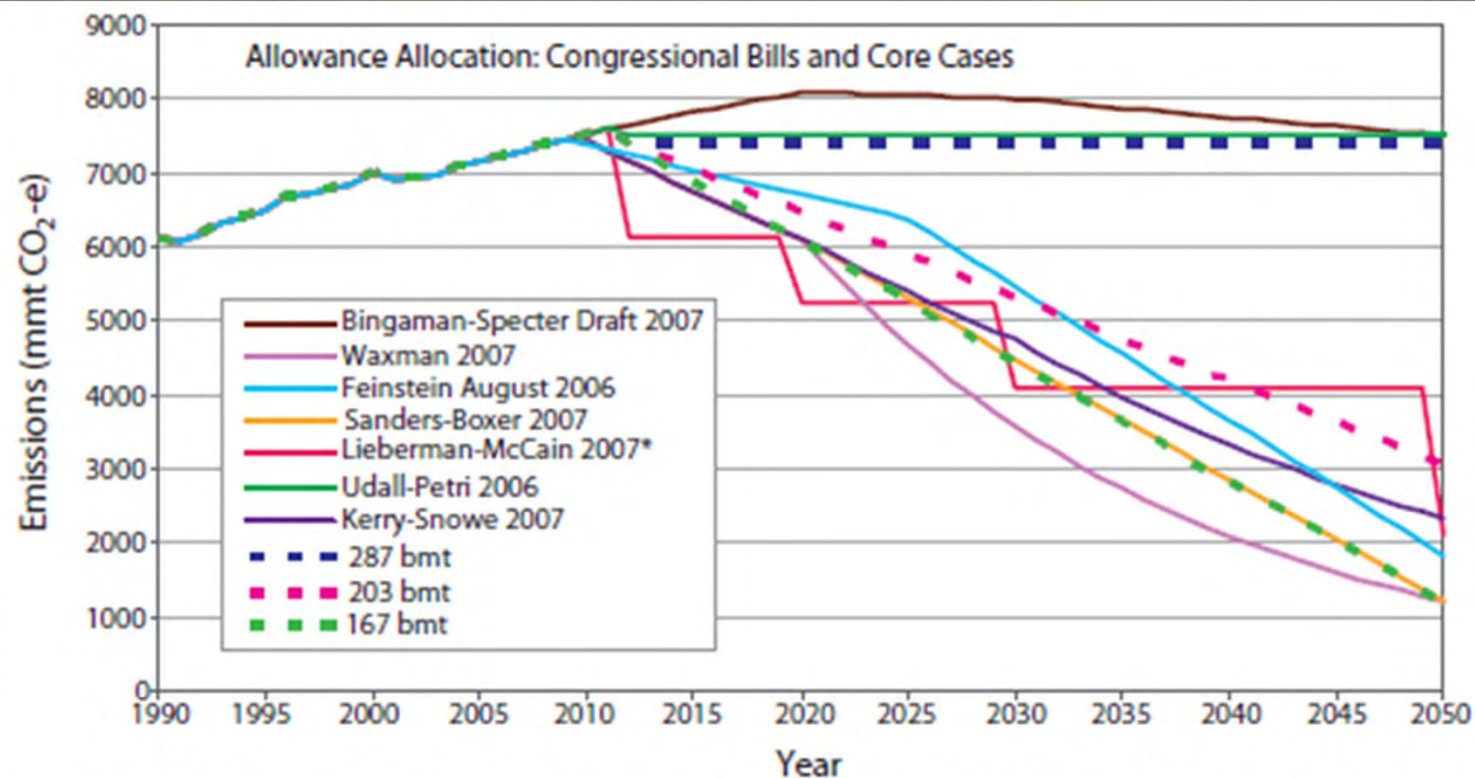
- Allows substitution of credits for reducing emissions in uncovered sectors
- Issue is verifying that the reductions would not have happened without the investment and that the reductions do indeed occur

# Offset Provisions

Bill	Van Hollen 2009	Cantwell- Collins 2009	Waxman – Markey 2009
Offset provisions	Carbon capture credit (1 for 1)	No direct offsets- separate funding for mitigation projects	ceiling of 2 billion credits, 1 billion domestic and 1 billion international, though international can substitute for domestic up to 1.5 total international credits.



# Last Session Bills



**Figure 1.** Scenarios of allowance allocation of Congressional bills and core cases over time.  
[\*For Lieberman-McCain, this is the allowance path for covered sectors only.]

# Current Session

- American Clean Energy and Security Act
  - Waxman and Markey developed
  - Cap and trade system:
    - Regulates electric utilities, oil companies, large industrial sources that emit 25,000+ tons of CO<sub>2</sub> equivalent (85% of GHG emissions)
    - 3% below 2005 by 2012, 17% below 2005 by 2020 and 80% below 2005 in 2050
    - Allows banking and borrowing
    - Offsetting allowed( 5 tons offset/4 tons credit)

# ACESA continued

- Energy Efficiency: incentives, harmonization and rebates
    - Utility energy efficiency: companies must demonstrate customer savings (1% by 2012 to 15% by 2015 for electricity)
  - Clean Energy
    - Renewable Energy: retail energy suppliers must have 6% renewable in 2012- 25% in 2025
    - Carbon Capture: demonstration program, incentives and performance standards for new coal plants 1,100 tons per megawatt limit on GHG, then 800 tons
    - Clean Fuels and Vehicles: low carbon fuel standard
- And more! Adaptation, consumer assistance, green jobs/training, rebates for additional costs over other countries

# Boxer Climate Principles

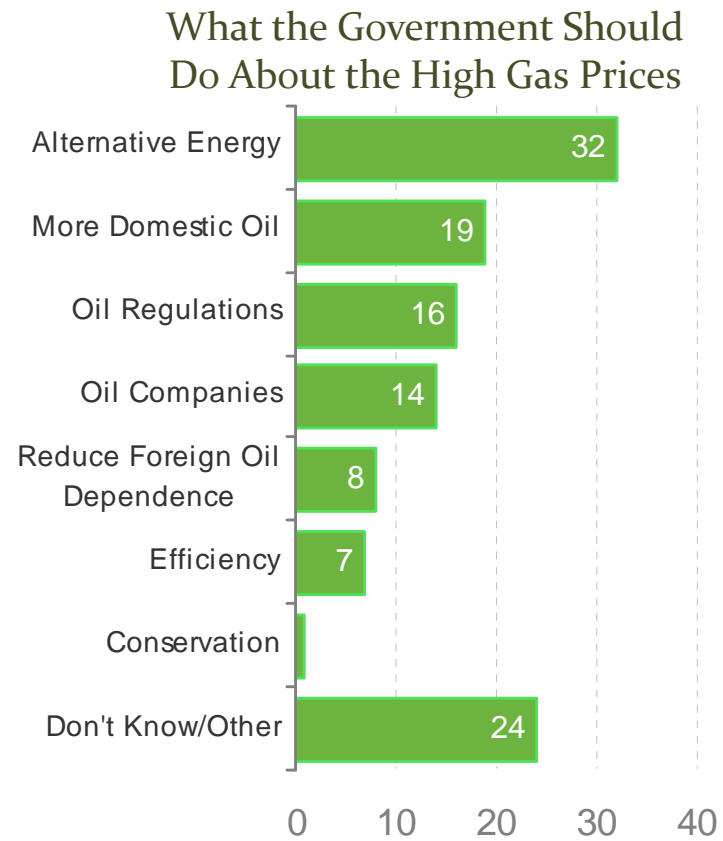
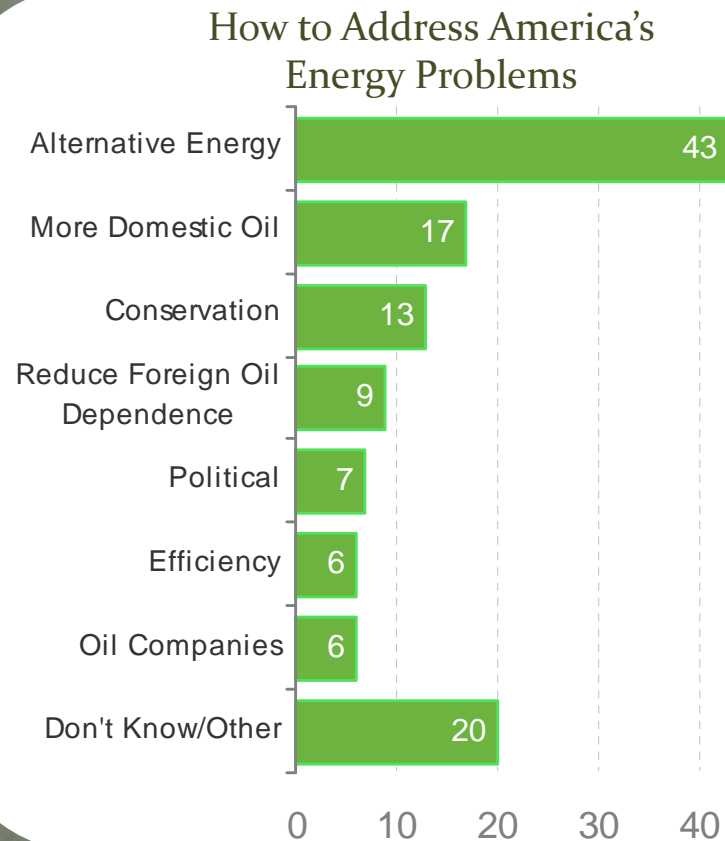
1. Reduce emissions to levels guided by science to avoid dangerous global warming.
2. Set short and long term emissions targets that are certain and enforceable, with periodic review of the climate science and adjustments to targets and policies as necessary to meet emissions reduction targets.
3. Ensure that state and local entities continue pioneering efforts to address global warming.
4. Establish a transparent and accountable market-based system that efficiently reduces carbon emissions.

# Public Attitudes

- Constituent perceptions drive political decisions- need to be re-elected
- Special interest group lobbying does as well, but without public support there is risk to politicians

# Voters View Renewable Energy as the Best Solution

*What are the ONE or TWO most important things that can be done to solve America's energy problems and high gas prices?*



Greenburg Quinlan Rosner Research Survey, June 2006

# Recent Perception

- Has it changed?

Now I'd like to ask you about some specific energy proposals being considered by Congress. For each, please tell me whether you favor or oppose including this in an energy bill. . . ."

Favor %    Oppose%    Unsure%

Requirements that utilities produce more energy from wind, solar or other renewable sources

July 2010	78	17	5
June 2010	87	9	4



Now I'd like to ask you about some specific energy proposals being considered by Congress. For each, please tell me whether you favor or oppose including this in an energy bill. . . ."

	Favor %	Oppose%	Unsure%
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Limits on carbon dioxide and other greenhouse gas emissions			
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July 2010	65	28	7
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June 2010	66	29	6
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Now I'd like to ask you about some specific energy proposals being considered by Congress. For each, please tell me whether you favor or oppose including this in an energy bill. . . ."

	Favor %	Oppose%	Unsure%
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Expanded exploration for coal, oil and gas in the US			
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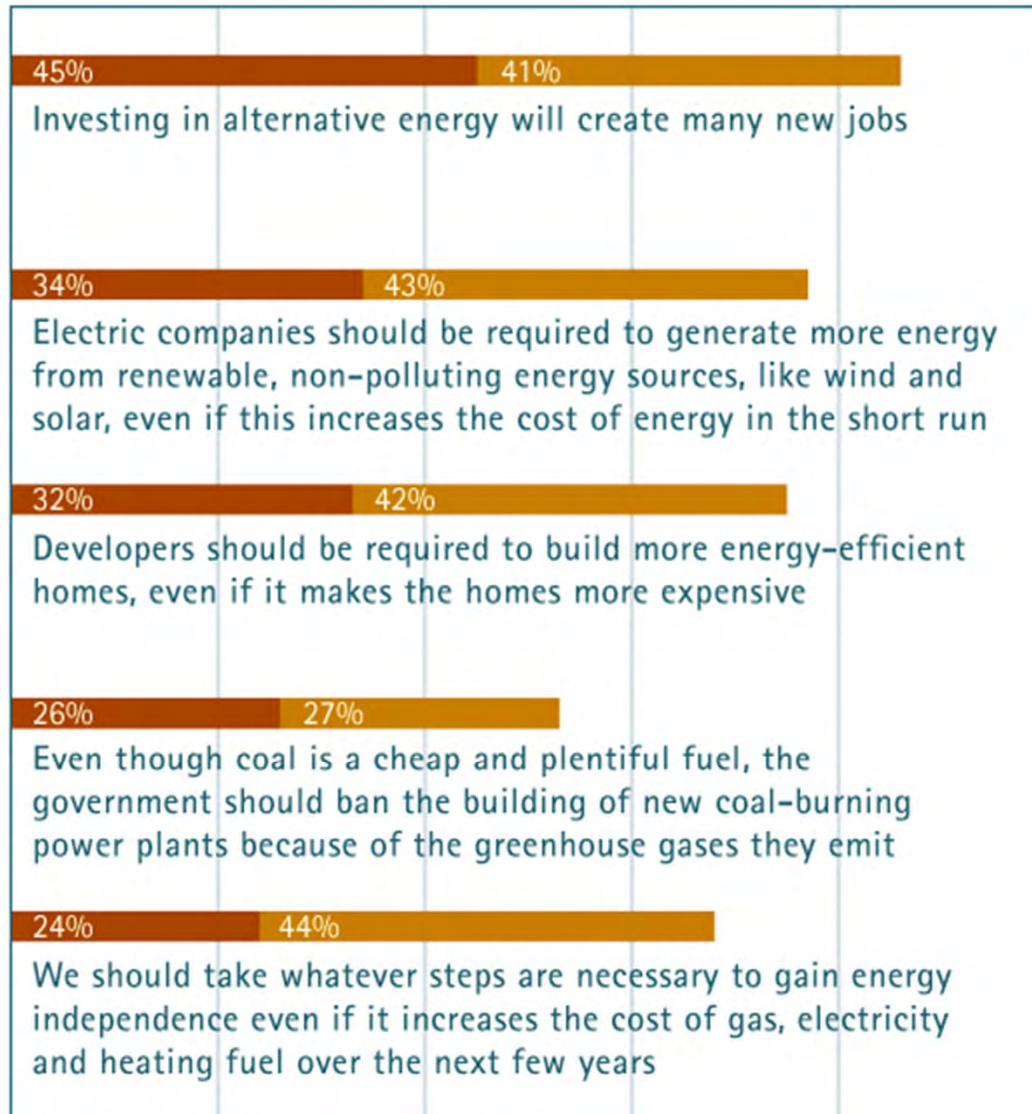
July 2010	72	23	5
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June 2010	68	26	5
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## Many proposals receive high support, including ones that involve investing in alternative energy sources

■ Percent who say they agree with the following statements:

■ Strongly agree      ■ Somewhat agree



"And please tell me if you approve, disapprove or neither approve nor disapprove of the way Barack Obama is handling each of the following issues. How about [see below]?" If unsure: "If you had to choose, do you lean more toward approving or disapproving of the way Barack Obama is handling [see below]?"

	Approve %	Disapprove %	Neither %
<b>"Energy"</b>			
8/11-16/10	47	43	10
6/9-14/10	52	36	12
5/7-11/10	52	36	11
4/7-12/10	51	36	13
<b>"Gas prices"</b>			
8/11-16/10	39	40	21
6/9-14/10	40	37	23
5/7-11/10	33	47	19
4/7-12/10	33	46	21

"Do you favor, oppose, or neither favor nor oppose increasing drilling for oil and gas in coastal areas around the United States?"

	Favor %	Oppose %	Neither %	Unsure %
8/11-16/10	48	36	15	1
6/9-14/10	45	41	13	1
5/7-11/10	50	38	10	1

## Many proposals receive high support, including ones that involve investing in alternative energy sources

■ Do you favor or oppose the following energy-related proposals:

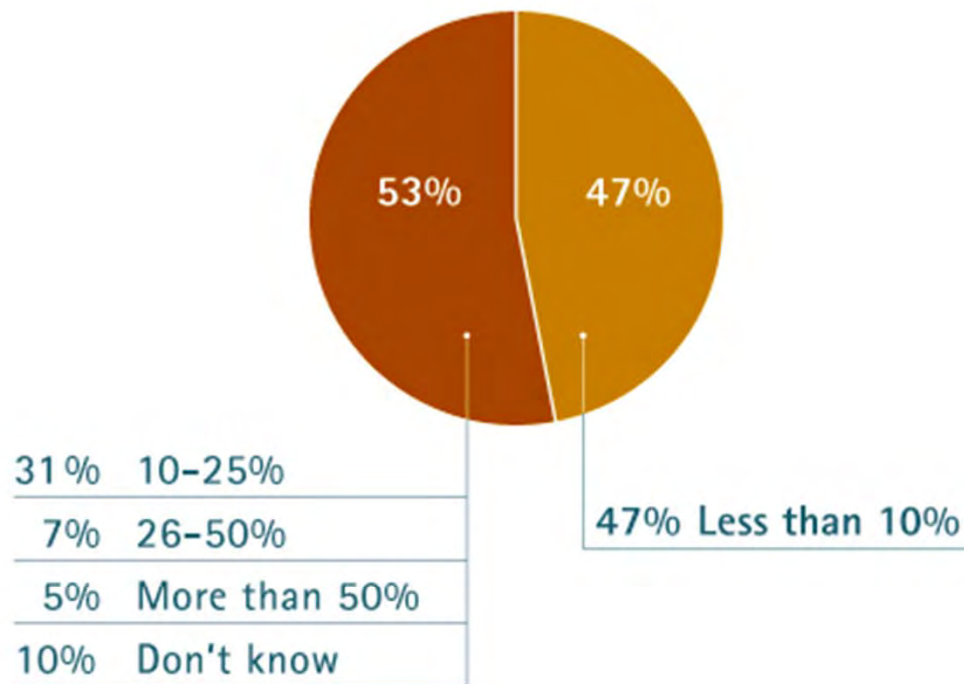
■ Strongly favor    ■ Somewhat favor



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## More than half don't know that less than 10 percent of the United States' energy comes from renewable sources

Percent who say the percentage of the energy that the United States now uses comes from renewable sources is:



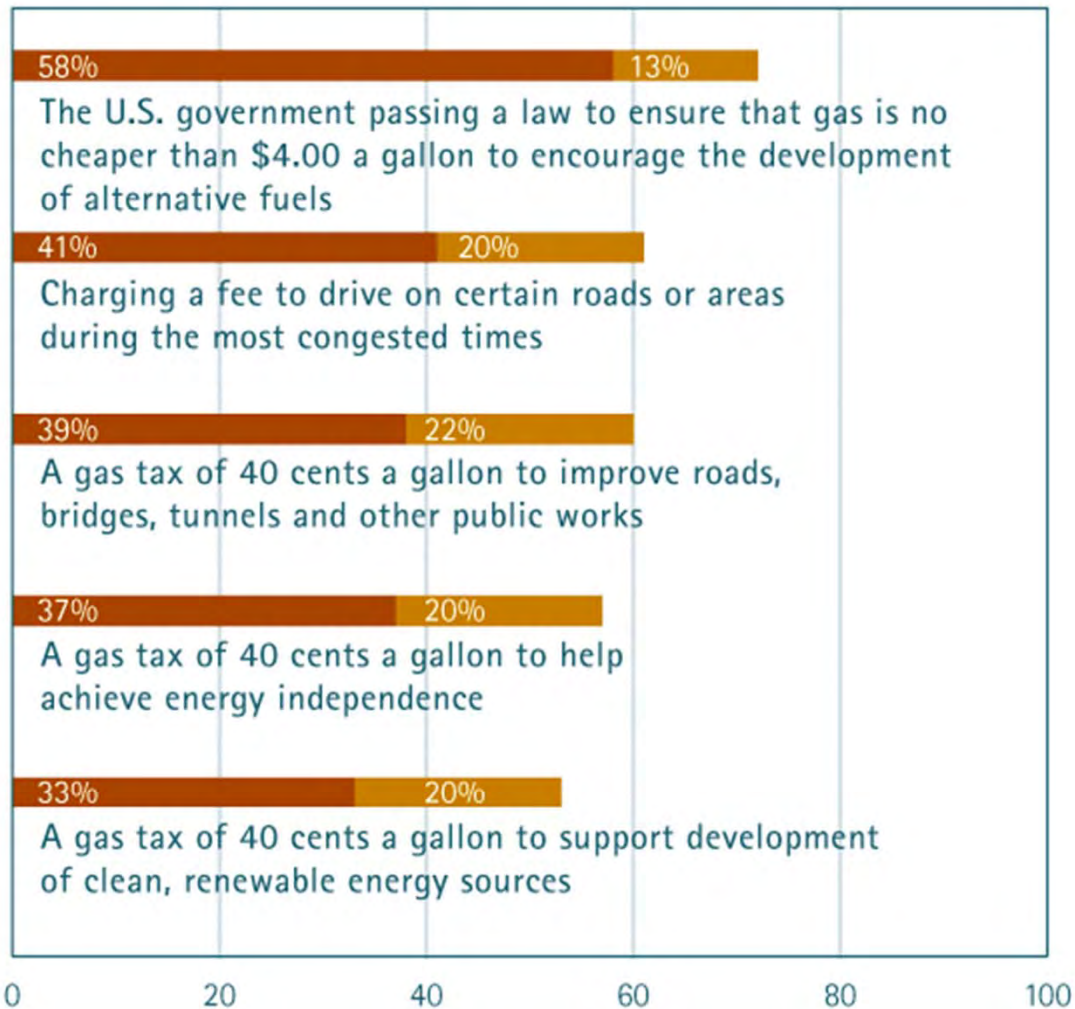
# Solutions-Personal

- Cut back on leisure driving Very 39% Somewhat 39%
- Have a 55 mph speed limit Very 37% Somewhat 27%
- $>1/2$  the time:
  - Carpool Very 32% Somewhat 23%
  - Use public transit Very 25% Somewhat 19%
  - Bike or walk Very 20% Somewhat 20%

## ...but they don't want to be forced to do so

Percent who oppose these energy-related proposals:

■ Strongly oppose      ■ Somewhat oppose

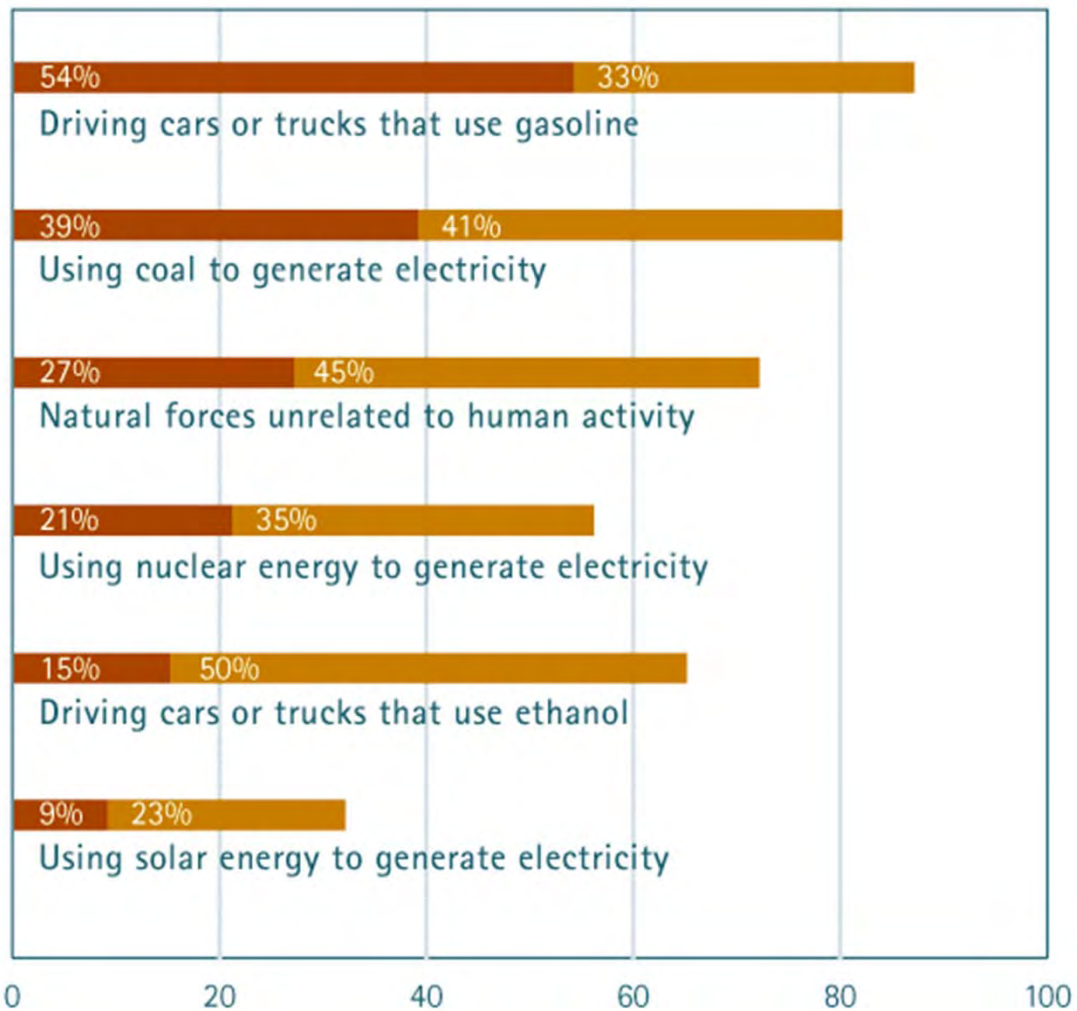




## Many are unsure what causes global warming and what doesn't

Percent who say the following contributes to global warming a lot or a little:

■ A lot ■ A little



# Major Public Attitude Groups

- Disengaged (19%): not connected to energy issue
- Climate Change Doubters (17%): reject idea
- The Anxious (40%): know enough to be worried (91% worry “a lot” about cost of electricity)
- The Greens (24%): worry about all elements of the energy problem

# Common Ground?

- Both the Anxious and the Greens support alternative energy, but for entirely different reasons
- The Anxious believe with heavy investment alternative energy could be a major part of our energy consumption in 10 years or less (85%)
- The Greens believe we need to find alternative energy sources even if gas stays low (>90%, 77% strongly)