

# Climate Policy and Transportation Fuels

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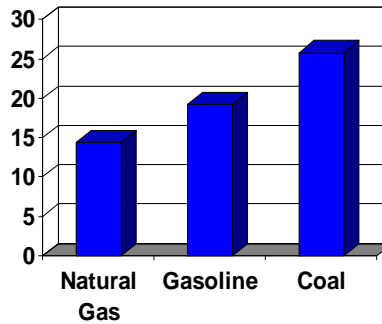
## Climate Change is a Market Failure

- Prices for fossil fuels don't reflect damage to the environment.
- Damages are *externalities*.
- A price on carbon can internalize those external costs.

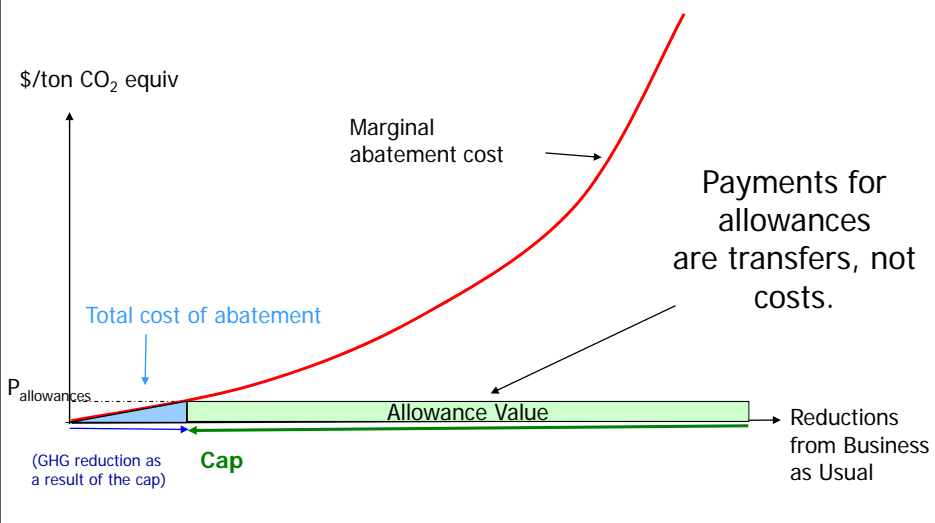
## A price on carbon changes the relative prices of fuels

- *A carbon price is unlike other taxes in that revenue is not its economic purpose.*
- It changes relative prices of inputs and outputs based on carbon content of energy
- Economic activity incorporates cost of emissions.

Emissions in Kg C/mBTU

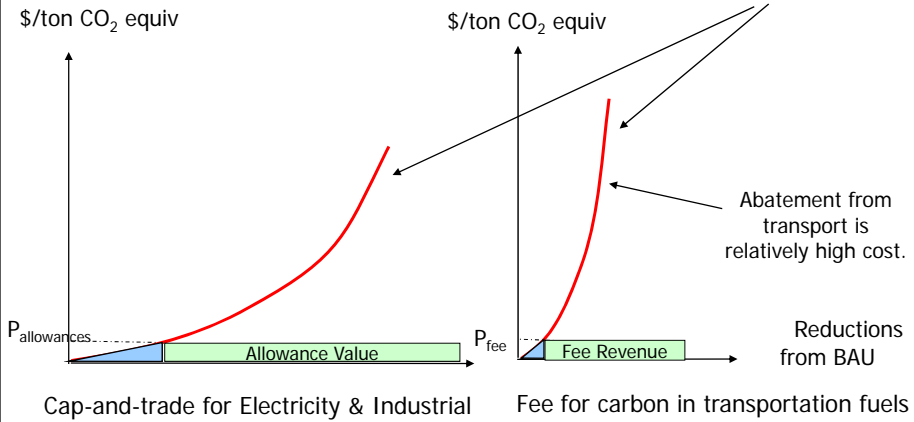


## Cap-and-Trade to Reduce Emissions Economy-Wide

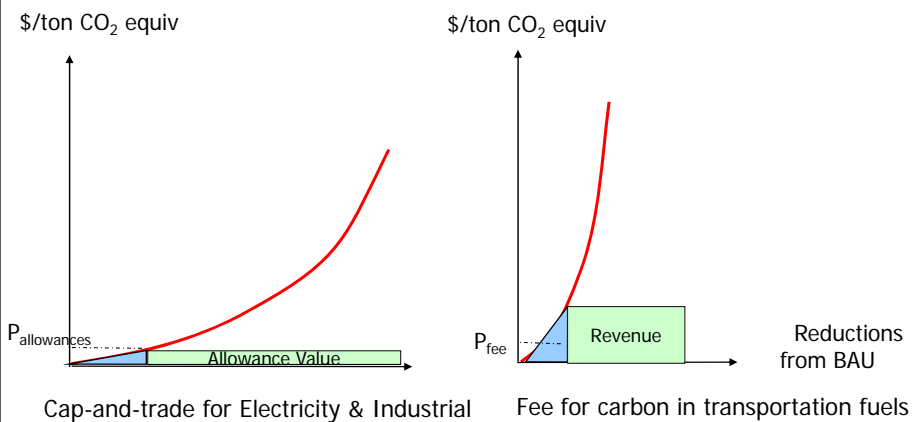


### How a two-part policy could work

Total cost (blue area) is minimized when carbon prices are the same in both sectors



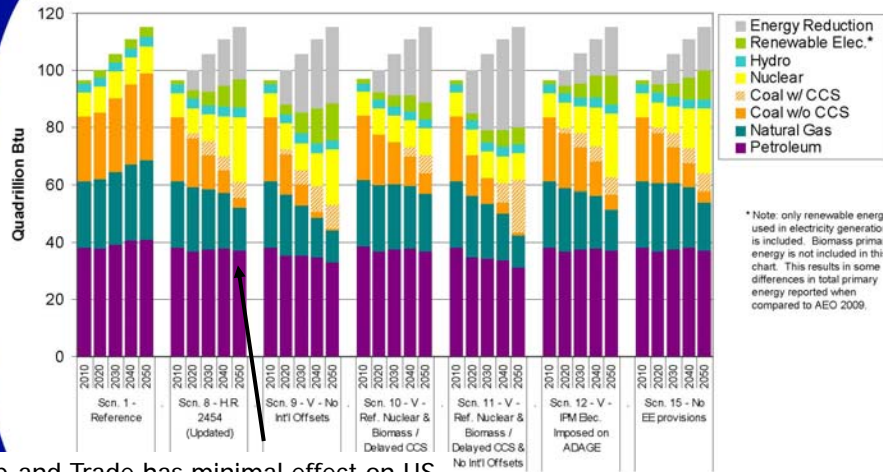
Unequal price signals raise total costs for same environmental benefits. It doesn't make economic sense for all sectors to "do their part."





Waxman  
Markey

## Primary Energy H.R. 2454 Scenario Comparison (ADAGE)

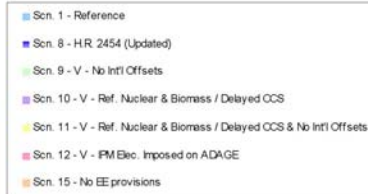
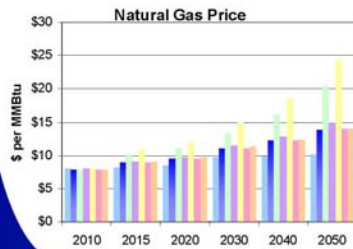
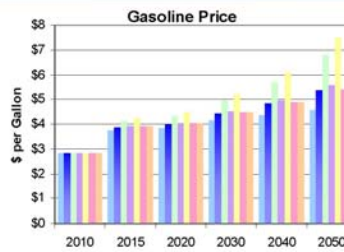
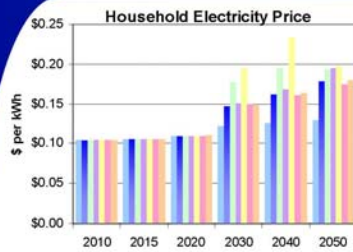


Cap-and-Trade has minimal effect on US oil consumption through 2050.

Supplemental EPA Analysis of H.R. 2454



## Energy Prices H.R. 2454 Scenario Comparison (ADAGE)



- Gasoline and natural gas prices are inclusive of the allowance price (i.e. they represent the price faced by consumers, not the price received by producers which would be exclusive of the allowance price).
- The gasoline price is obtained by multiplying the petroleum price index in ADAGE by the 2010 price of gasoline from the AEO 2009 projection.
- The allocations to electric local distribution companies (LDC's) prevent the household electricity price from increasing until the allocations phase out beginning in 2025.

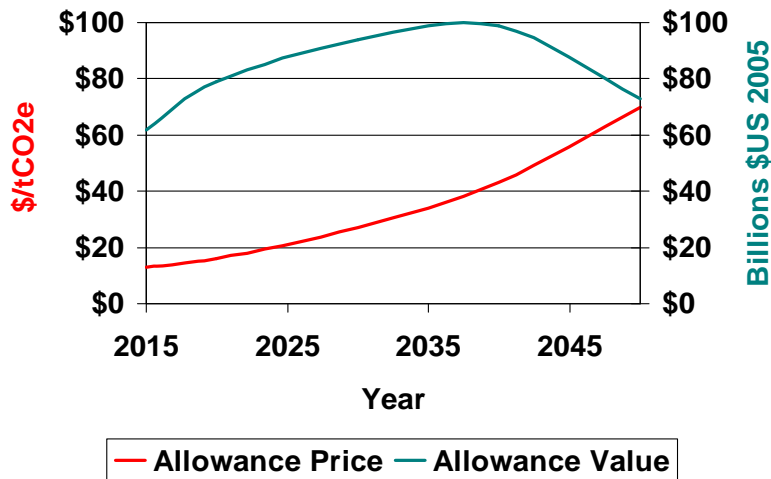
Supplemental EPA Analysis of H.R. 2454

### Other Market Failures in Transport\*

1. Congestion externalities
  2. Traffic accidents
  3. Local air pollution
  4. Oil dependency
  5. The transport system has public good qualities. Some argue that funding is inefficiently low.
- *None of these is best addressed by a price on carbon.*

\*See more at: Winston Harrington, Ian Parry, and Margaret Walls, "Automobile Externalities and Policies" *Journal of Economic Literature*, 2007, Vol. XLV, pp. 374-400. Related RFF Discussion Paper [06-26](#).

There's no logical relationship between the total value of allowances and an optimal transport budget



Data Source: EPA Analysis of HR 2454