The Energy Innovation and Carbon Dividend Act of 2019

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AIAA ASAT Conference
November 9, 2019
Is the increase in carbon in the atmosphere due to human activity?
Models Show Effects

Global average surface temperature change (relative to 1986–2005)

Global mean sea level rise

Year

Mean over 2081–2100

RCP2.6
RCP4.5
RCP6.0
RCP8.5

39
32
Carbon 14: “Smoking Gun”*

*Dr. Stephen Chu, Reines Lecture, Univ. CA, Irvine

- Carbon is mostly Carbon 12
- Carbon 14 is radioactive; half-life 5700 years
- Useful for carbon dating organic objects
- Created from space radiation + nitrogen 14
- Migrates down through atmosphere
- Taken up in organic items with carbon 12
- Fossil fuel: all carbon 14 decayed away
- Burning fossil fuel increases atmospheric carbon 12 without increasing carbon 14; carbon 14 fraction down
$^{14}$C (produced in the upper atmosphere by cosmic rays) mixes with the bio-sphere. The decay lifetime is $\sim 5,700$ years. Organic matter sequestered $> 100,000$ years has no $^{14}$C.
Jetstream

Reference:
What is a Jet Stream?
By Kim Ann Zimmermann, Live Science Contributor | March 11, 2013 07:22pm ET

The jet stream, in purple, separates cold air over the Rocky Mountains from warm air over the Midwest in this forecast map for the weekend of March 8, 2013.

Credit: AccuWeather.com
Previous Successes

• Sewage
  - Pay for disposal

• Trash
  - Pay for disposal

• Bald eagles
  - Banned DDT

• Acid rain
  - Wash sulfur from coal; sell sulfur at a profit

• Ozone hole
  - Changed from CFC's for air conditioners

• Los Angeles basin (and other places) smog
  - Unleaded gasoline, vapor guards on pumps, car pollution control, etc.
Altruism

- Useful
- Not a solution
Economics
Supply and Demand

Diagram showing the relationship between price and quantity for supply and demand.
Real Supply and Demand

Graph showing the relationship between price and quantity for demand and supply. The demand curve slopes downward, indicating that as price increases, quantity demanded decreases. The supply curve slopes upward, indicating that as price increases, quantity supplied increases. The real supply curve is shown as a dotted line, intersecting the demand curve at a certain price and quantity.
Real Supply and Demand

Price

Demand

Real supply

Supply

Societal cost

Paid cost

Quantity
The Best Solution - **Carbon Fee & Dividend**

- **Oil, Gas, and Coal Fossil Fuel Companies**
  - Pay $100/ton at extraction point

- **US Treasury Department**
  - 100% refund

- **US Households**
  - Expensive
  - Cheap

**Fossil fuel-based products**

**Non fossil products**

**VIDEO**
http://vimeo.com/105254387
Carbon Fee and Dividend

Proven Success in Canada

- Started in 2008
- $30/ton
- Fuel use down
- GDP up
- Jobs up
- Popular

Sales of petroleum fuels subject to BC carbon tax

Source: Statistics Canada, author calculations
REMI: Report Summary

- **Employment**: 2 million more jobs
- **Climate**: Reduces carbon dioxide
- **Fiscal**: Increases household incomes
- **Humanitarian**: Saves Lives
- **Economic**: $1.3 trillion more GDP
Politics Progress (2)

- Climate Leadership Council
- Plan similar to Citizen’s Climate Lobby

![Book Cover](image.png)

**THE CONSERVATIVE CASE FOR CARBON DIVIDENDS**

How a new climate strategy can strengthen our economy, reduce regulation, help working-class Americans, shrink government & promote national security

James A. Baker, III  Henry M. Paulson, Jr.
Martin Feldstein  George P. Shultz
Ted Halstead  Thomas Stephenson
N. Gregory Mankiw  Rob Walton
Conservation

- Potential to reduce carbon pollution from conservation may exceed effects from renewable fuels
  - Home and building insulation; passive solar design
  - Water-based heat pumps (heat and air conditioning)
  - Lighter, smaller vehicles
  - Reduction of stop-and-go traffic; demand toll rates
  - Electric grid and local generation effects
Innovation

- Impossible to predict
- Economic incentive WILL drive innovations