

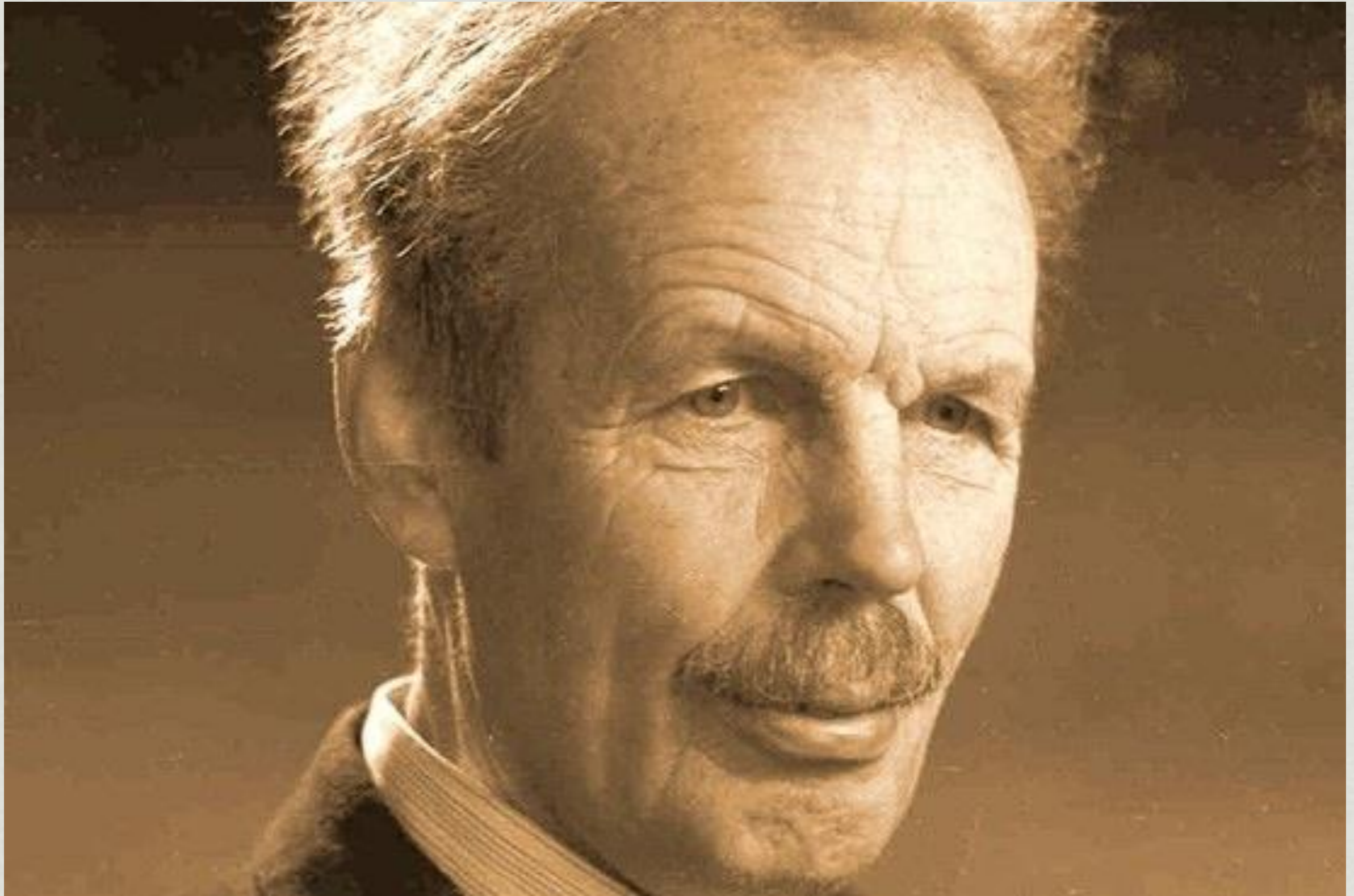
THE CASE FOR: ECONOMY-WIDE CARBON PRICING

Marc Breslow, Ph.D
Policy & Research Director, Climate Xchange

Jessica Langerman, M.Ed.
Co-Founder, Board Member, Climate XChange

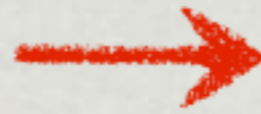






ARTHUR PIGOU, 1877 - 1959

EXTERNALITY



PRICE ASSIGNED
TO EXTERNALITY

FUNDS USED FOR
COMPENSATION



PRESSURE TO PAY MOTIVATES
REMEDIATION



EXTERNALITY



PRICE ASSIGNED TO EXTERNALITY

\$10 a ton =
9¢ a gallon increase

\$40/ton fee =
35¢/per gallon
increase

FUNDS USED FOR COMPENSATION



Families

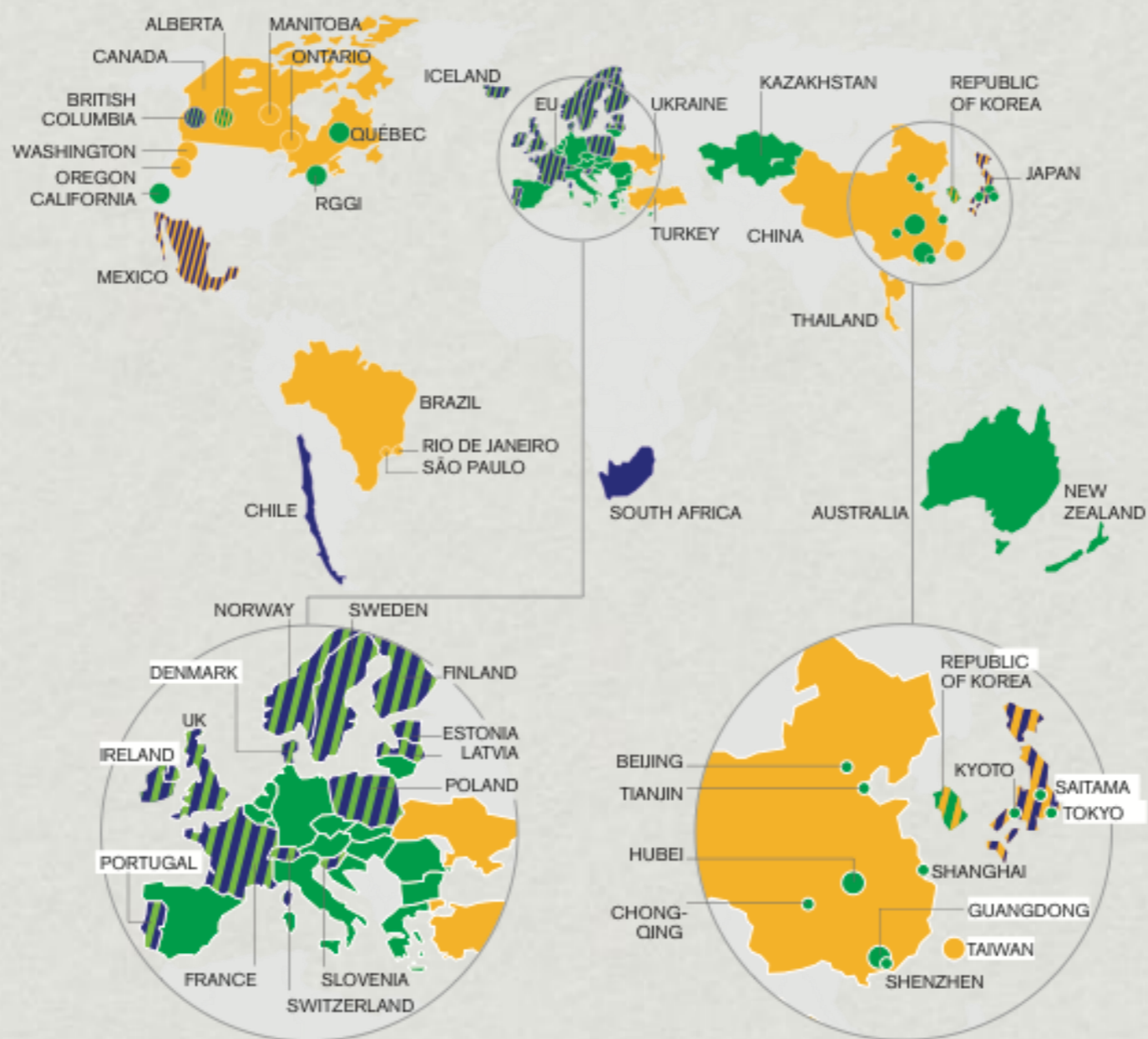


Businesses

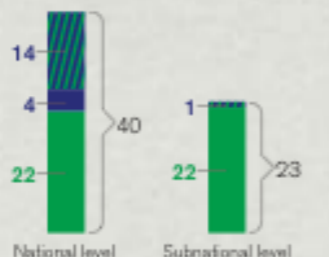
PRESSURE TO PAY MOTIVATES ALL OF US TO REMEDIATE



Figure 1. Summary map of existing, emerging and potential regional, national and subnational carbon pricing initiatives (ETS and tax)



Tally of carbon pricing initiatives



- ETS implemented or scheduled for implementation
- Carbon tax implemented or scheduled for implementation
- ETS or carbon tax under consideration
- ETS and carbon tax implemented or scheduled
- ETS implemented or scheduled, tax under consideration
- Carbon tax implemented or scheduled, ETS under consideration

The circles represent subnational jurisdictions. The circles are not representative of the size of the carbon pricing instrument, but show the subnational regions (large circles) and cities (small circles).

Note: Carbon pricing initiatives are considered "scheduled for implementation" once they have been formally adopted through legislation and have an official, planned start date.



Citizens' Climate Lobby



Climate
× Change

www.climate-xchange.org



*MODELING THE ECONOMIC,
DEMOGRAPHIC, AND CLIMATE IMPACT OF
A CARBON TAX IN MASSACHUSETTS*

PREPARED BY

Regional Economic Models, Inc. (REMI)

PREPARED FOR

Committee for a Green Economy (CGE)

Supported by



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THURSDAY, JULY 11, 2013

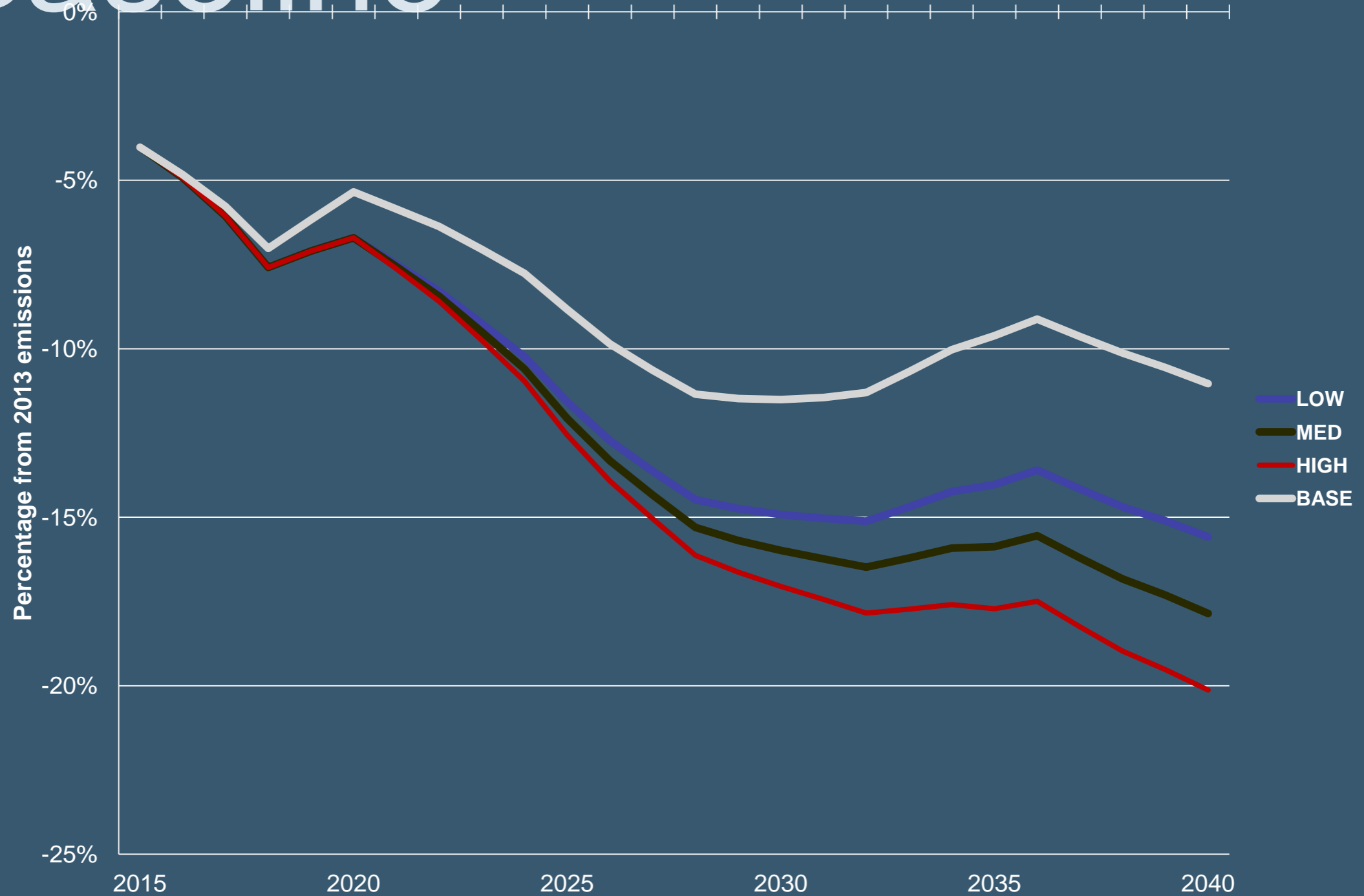
Analysis of a Carbon Fee or Tax as a Mechanism to Reduce GHG Emissions in Massachusetts

**Prepared for the Massachusetts
Department of Energy Resources**

Marc Breslow, Ph.D., Hamel Environmental Consulting
Sonia Hamel, Hamel Environmental Consulting
Patrick Luckow, Synapse Energy Economics
Scott Nystrom, Regional Economic Models, Inc.

December, 2014

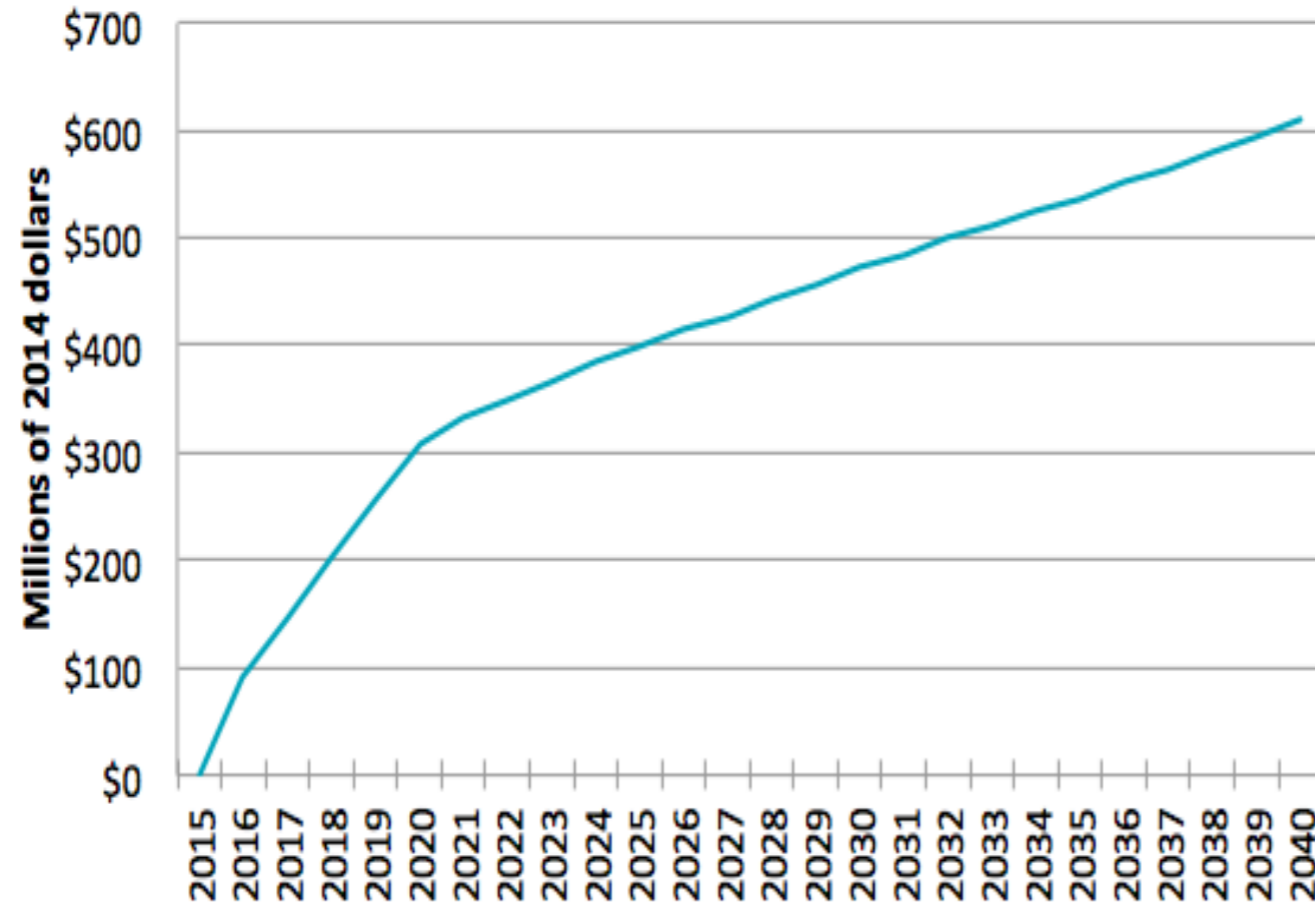
CO2 Emissions Vs. Baseline



MA Business Impacts

GSP Growth in MA under Carbon Pricing

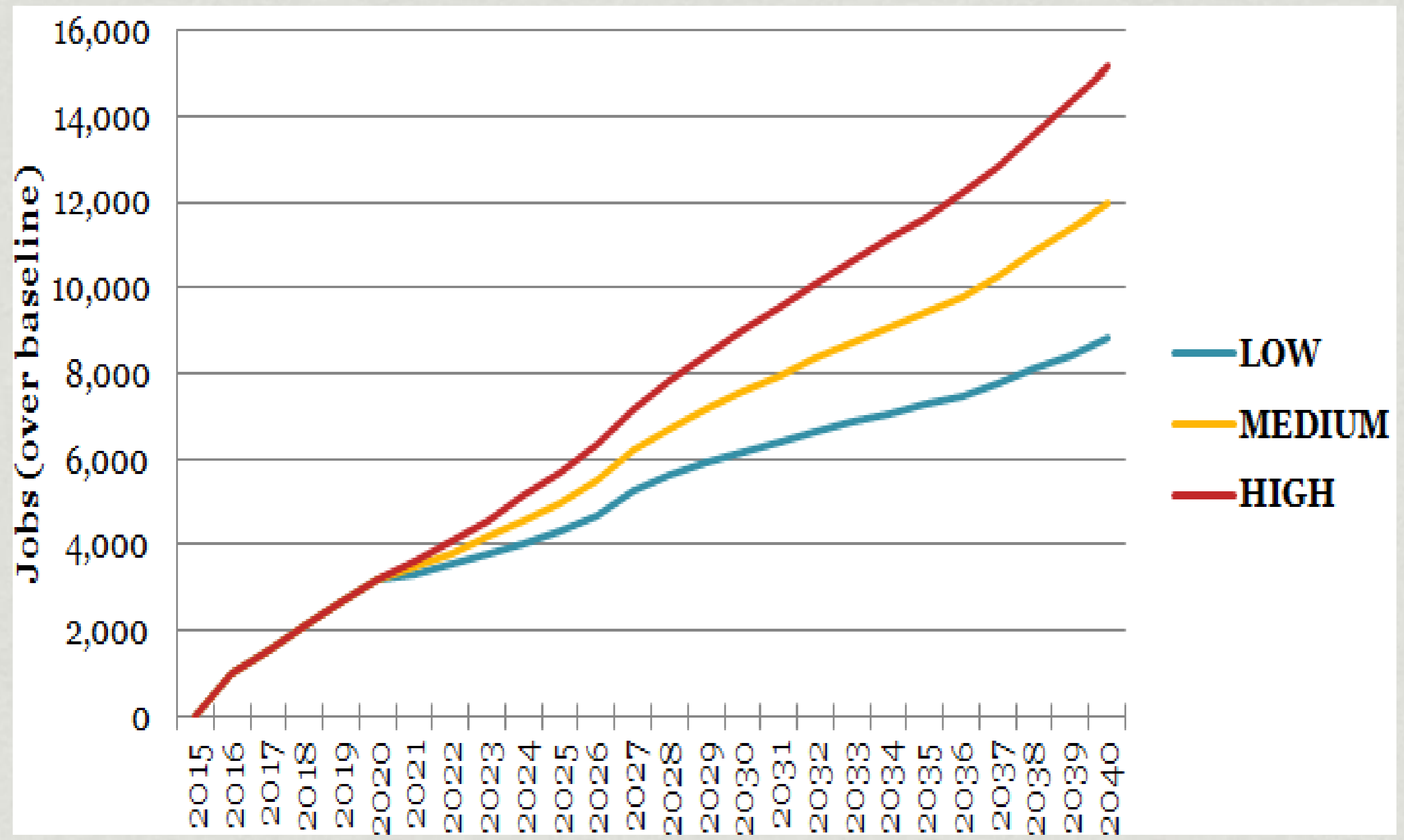
GSP Growth



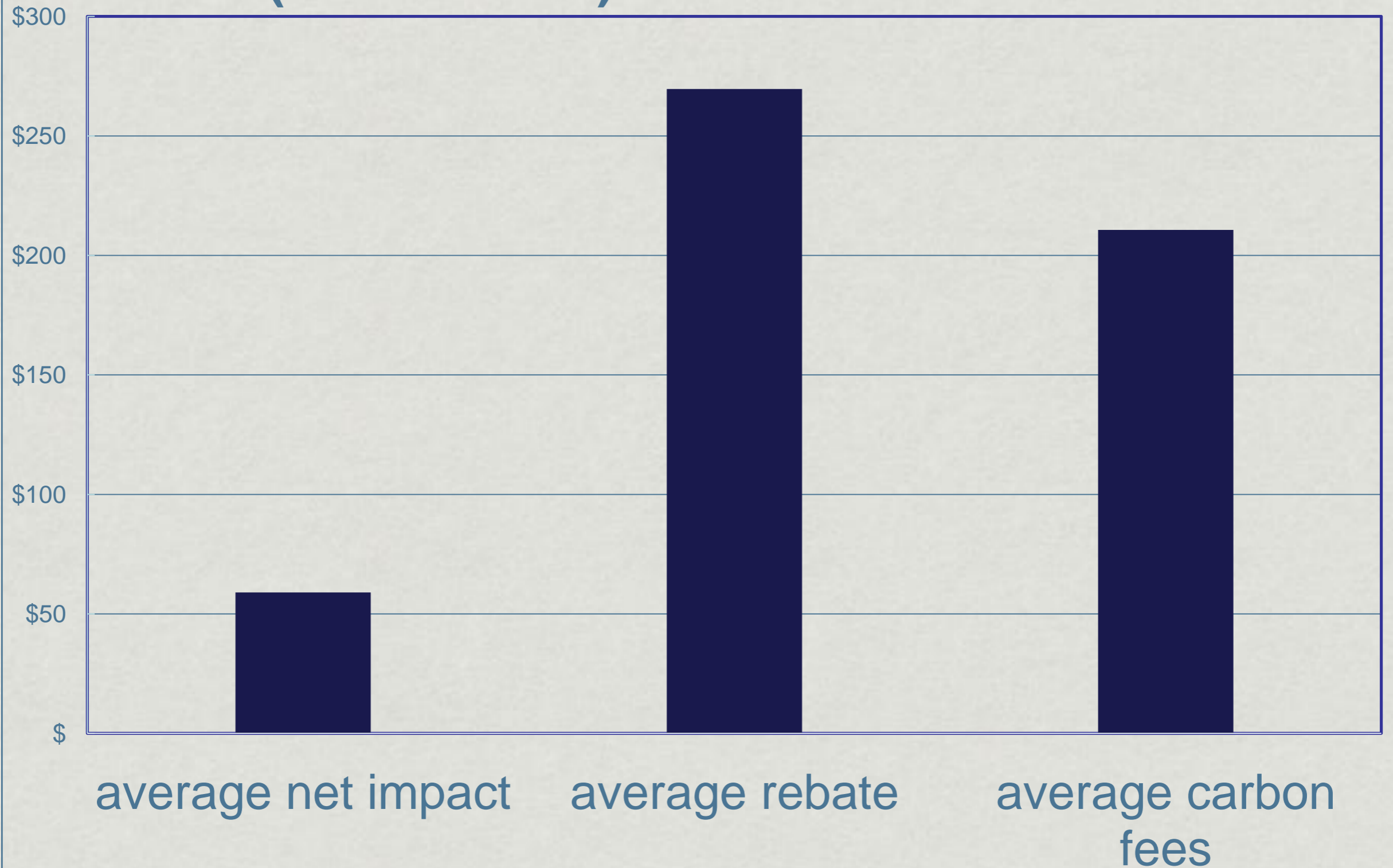
Gross State Product (GSP) Growth in Dollars, in Massachusetts, under CO2 fee and rebate system

what does REMI say? sm

Employment Change Vs. Baseline



Net gain per low-income household (bottom 20%) in Senate 1825



Massachusetts Carbon Pollution Pricing Bills

- House 1726 and Senate 1821
- Both bills based largely on study done for state Dept. of Energy Resources in 2014
- Fee starts at \$20/ton CO₂ in H1726, \$10/ton in S1821. Rises \$5 a year until reaches \$40/ton (about EPA's current "social cost of carbon")

Returning revenues to households

- In S1821 all funds are rebated. Every state resident gets an equal rebate in the form of a personal check.
- In H1726, 80% of funds rebated, 20% go to Green Infrastructure Fund. Rebates concentrated on lower 60% of households
- Because low-income households use less energy than high-income ones, they tend to come out ahead



Employer Rebates

- In both bills, employers get rebates based on number of full-time equivalent employees
- Employers include for-profit companies, non-profits, and government agencies
- Dept. of Energy Resources has authority to give additional rebates to industries “at risk of serious negative impacts”



#1. Give most or all back to public, possibly small portion to GHG reduction programs.

#2. Impose the fee gradually. It begins low and increases every year in a slow and predictable way.

#3. Ensure low and moderate income households come out ahead or even. One way to do this is to give every person an equal rebate.

#4. We give rebates to vulnerable businesses and other employers, such as small non-profits and government agencies. Could be based on their number of full-time employees.

Maryland state law:

- 25% reduction by 2020 (2009 law)
- 40% reduction by 2030 (2016 law)
- Must support a healthy economy and create new jobs
- Must not directly cause the loss of existing jobs in the manufacturing sector;
- Must consider impact on rural communities of any transportation-related measures

With all reductions currently “on the books” or “on the way,” by 2030 Maryland is still projected to be between 6 to 18 MMtCO₂e BEHIND.

We believe carbon pricing can get us to our goals while meeting the state’s requirements for social and environmental justice.

SUGGESTED CARBON PRICING RECOMMENDATION FOR MITIGATION WORKING GROUP:

“Carbon pricing can provide market-based incentives towards reducing greenhouse gas emissions, facilitating clean energy goals and promoting economic growth. The Mitigation Work Group plans to study how carbon pricing, including a revenue neutral carbon fee and dividend program, can provide provide incentives necessary to help meet the 40 by 30 goals.”

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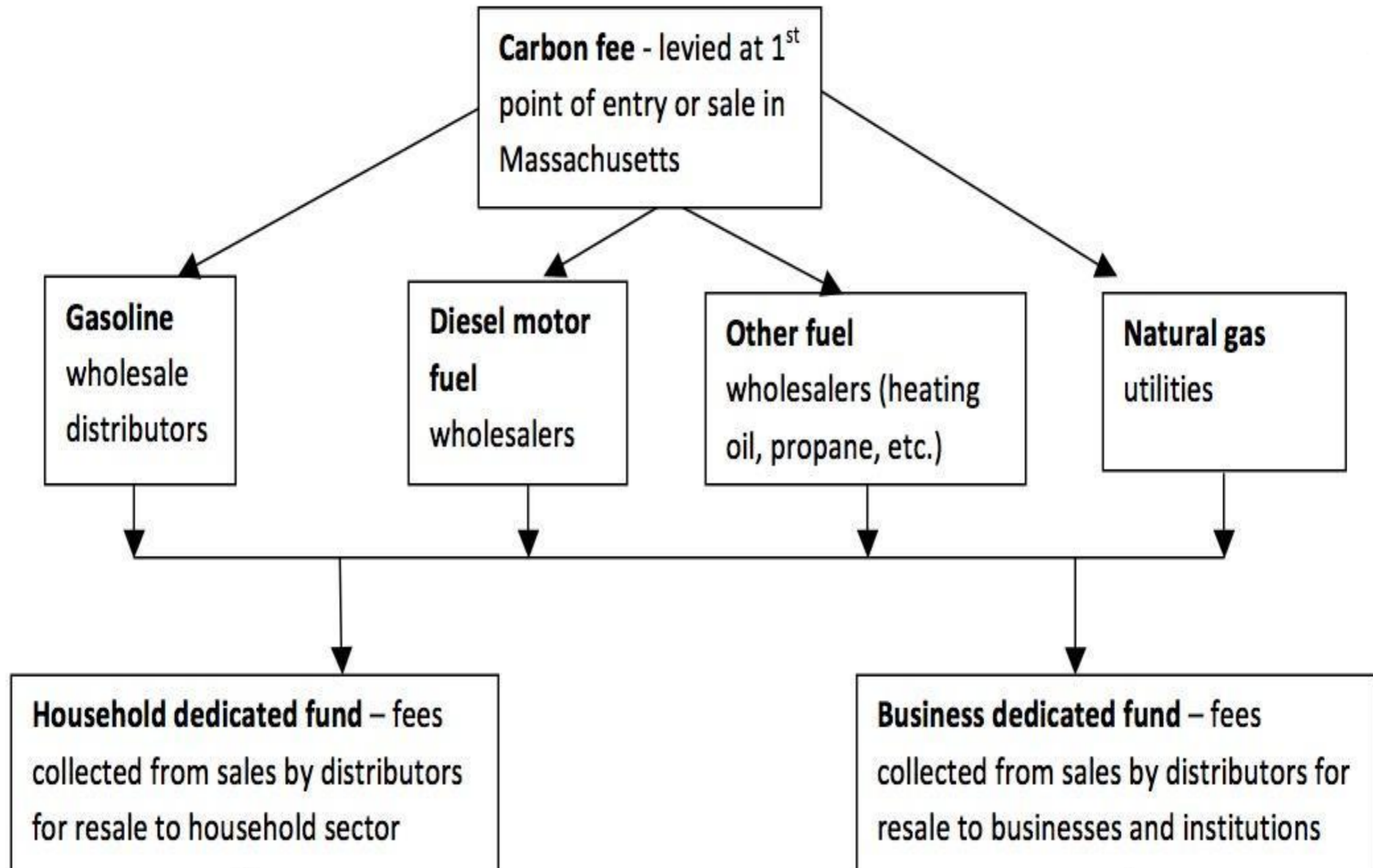


**Charge Polluters.
Return the revenue to people and businesses.
Help solve the climate crisis.**

Extra Slides

Not for use in this
presentation unless in
response to questions

Carbon Fee and Rebate Flow Chart



Maryland Employers that could be Vulnerable to Carbon Pricing

Industry	2015 GDP\$mill	% of all employers total	% of total MD carbon tax on employers, no fees on electric generation	% of total MD carbon tax on employers (electric generation included)
trade-sensitive industries	\$21,862	6.0%	9.5%	14.4%
Agriculture, forestry, fishing, and hunting	\$791	0.2%	1.8%	1.7%
Mining	\$344	0.1%	0.2%	0.3%
Manufacturing	\$20,727	5.7%	7.5%	12.3%
other vulnerable industries				
Non-profits (below a certain size?)				
State & local government	\$30,629	8.4%	11.1%	15.3%
total vulnerable industries	\$52,491	14.3%	20.6%	29.7%

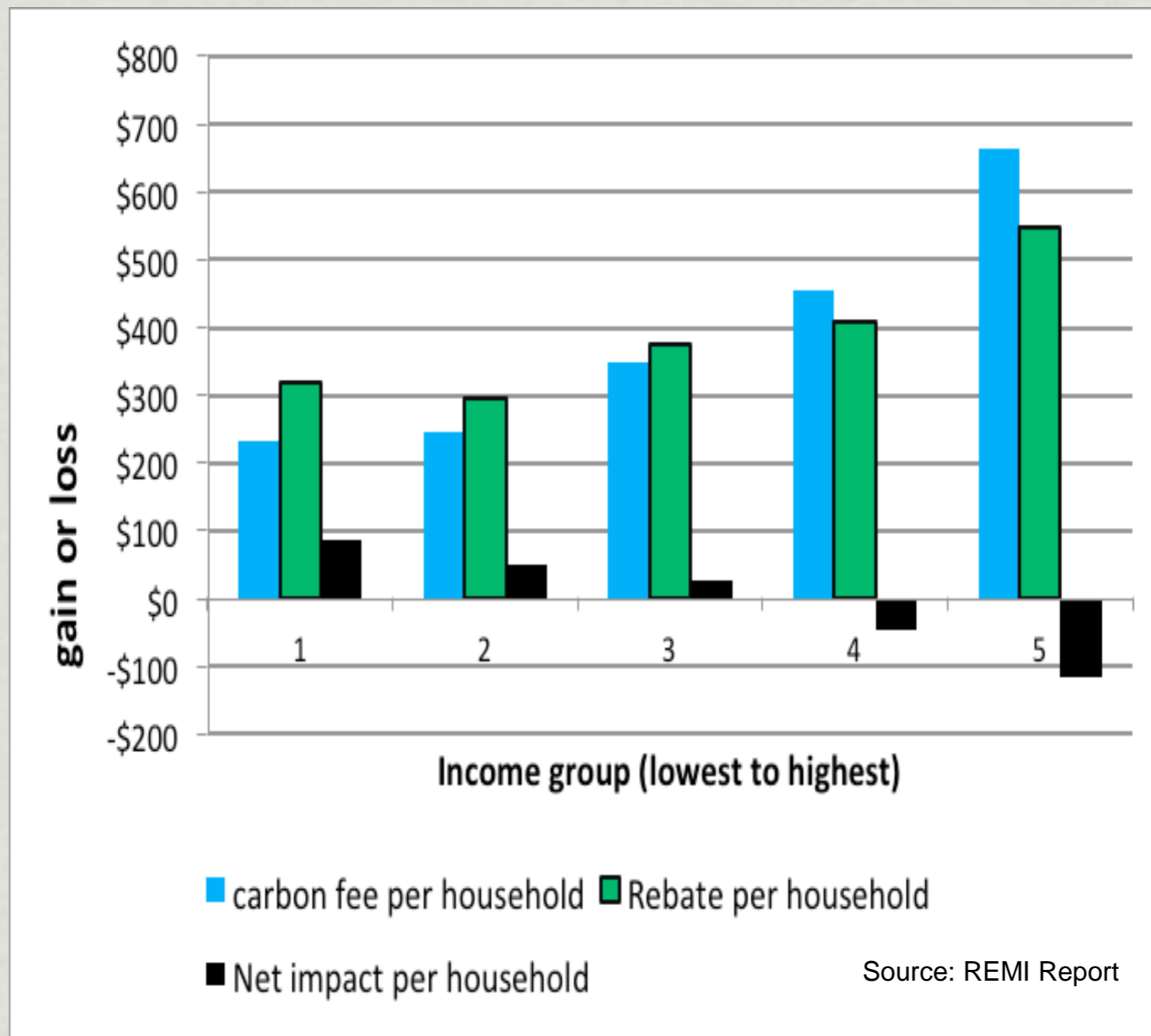
“At-risk Sectors”

- In both bills, households in rural or high-driving mileage towns get a 30% extra rebate on funds derived from gasoline sales

➔ DOER may give extra benefits to industries “at risk of serious negative impacts”



MA Individual Impacts



Average impact per household, divided into fifths of the population by income level (1=lowest income, 5=highest); \$30 fee per metric ton CO₂e emissions, electricity exempt, equal rebate per person



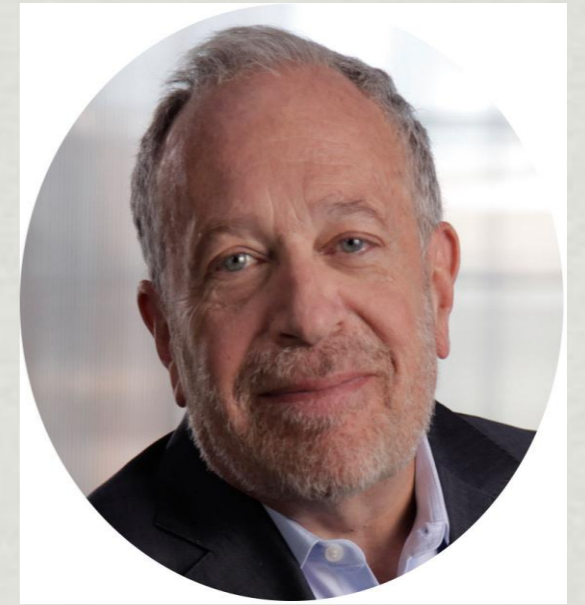
Nicholas
Stern



Joseph
Stiglitz



Jeffrey
Sachs



Robert
Reich



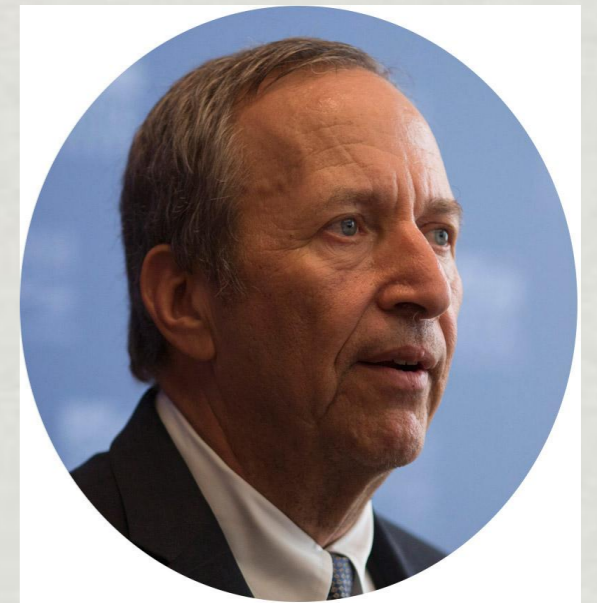
Gregory
Mankiw



Art
Laffer

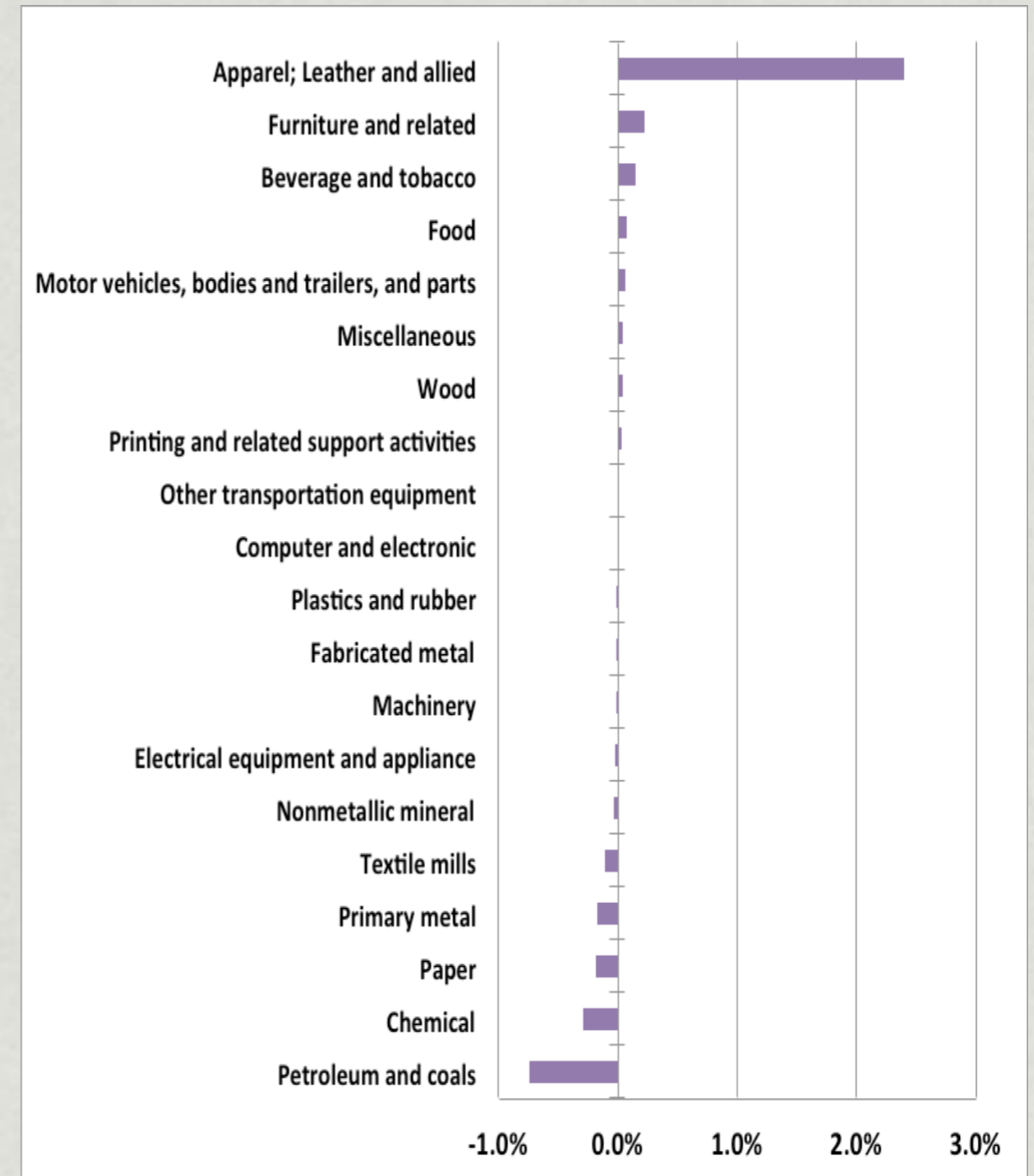
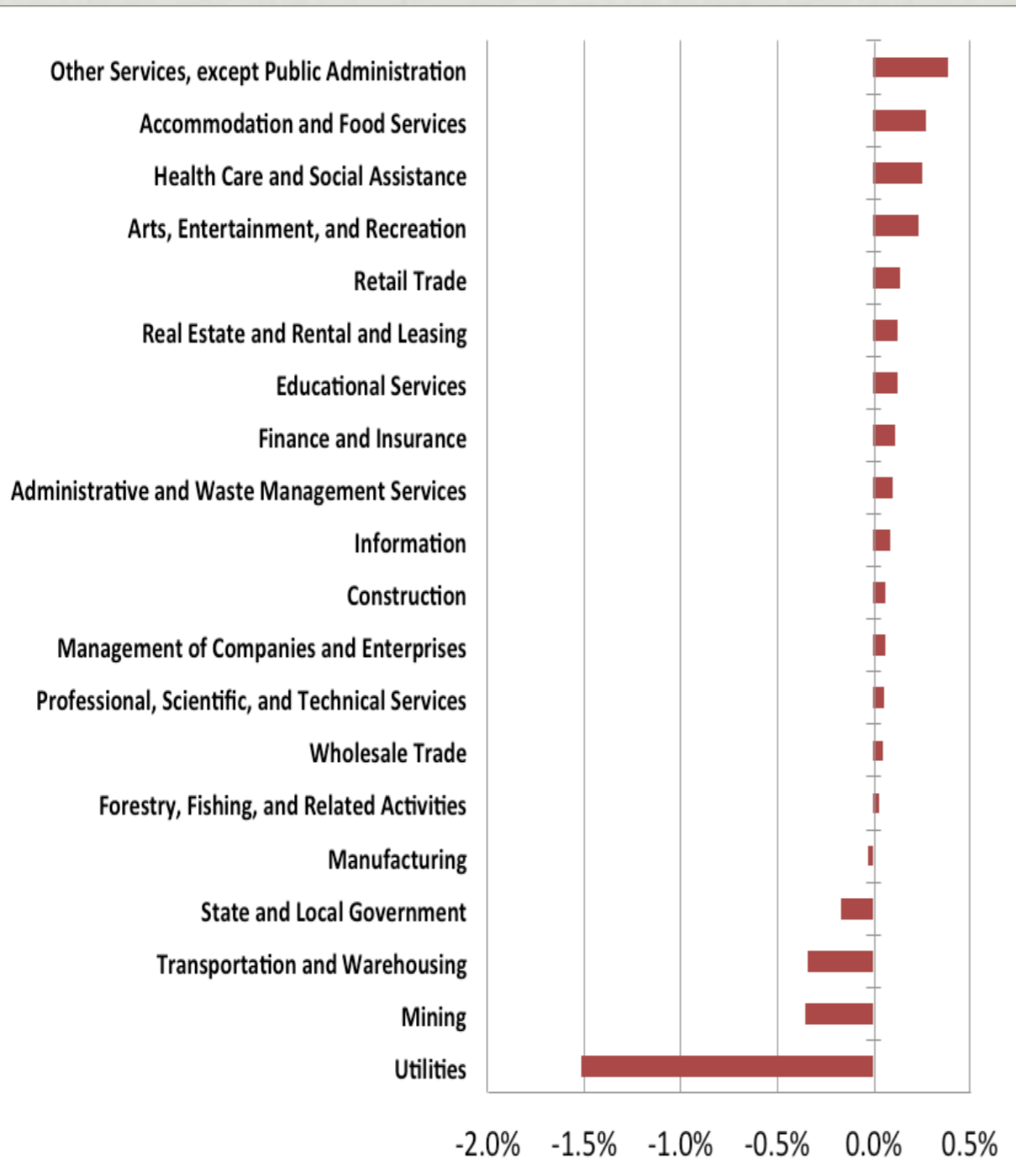


Milton
Freidman



Larry
Summers

MA Business Impacts by Industry



Percentage Change in Gross State Product due to Carbon Fee and Rebate

Percentage Change in Gross State Product by Manufacturing Industry

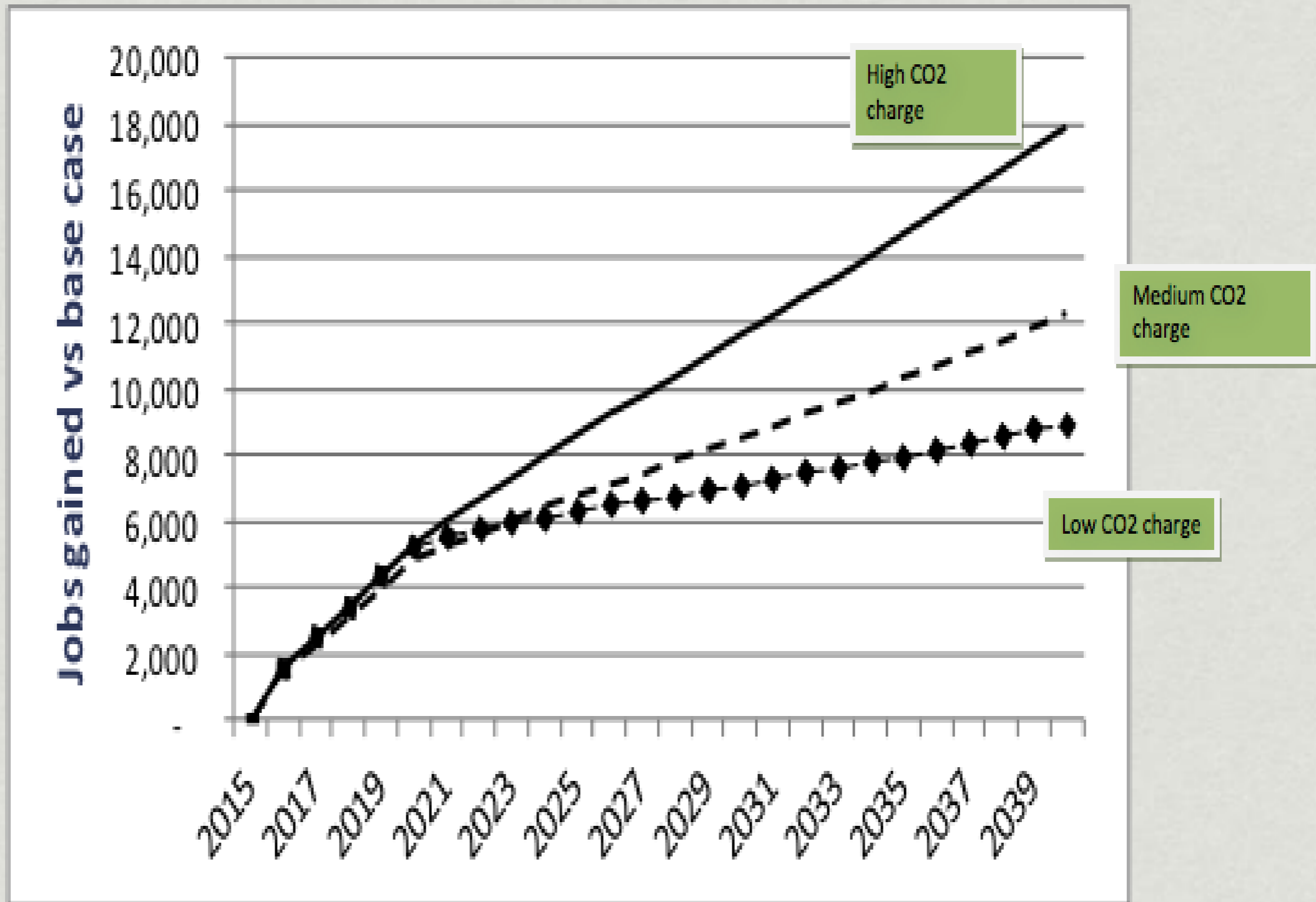
Source: REMI Report

\$30/ton carbon fee



Employment Change Versus Baseline

With three scenarios for the rate of increase in the carbon fee after year five: the low scenario reaches \$50/ton in 2040, the medium scenario \$75/ton, and the high scenario \$100/ton.

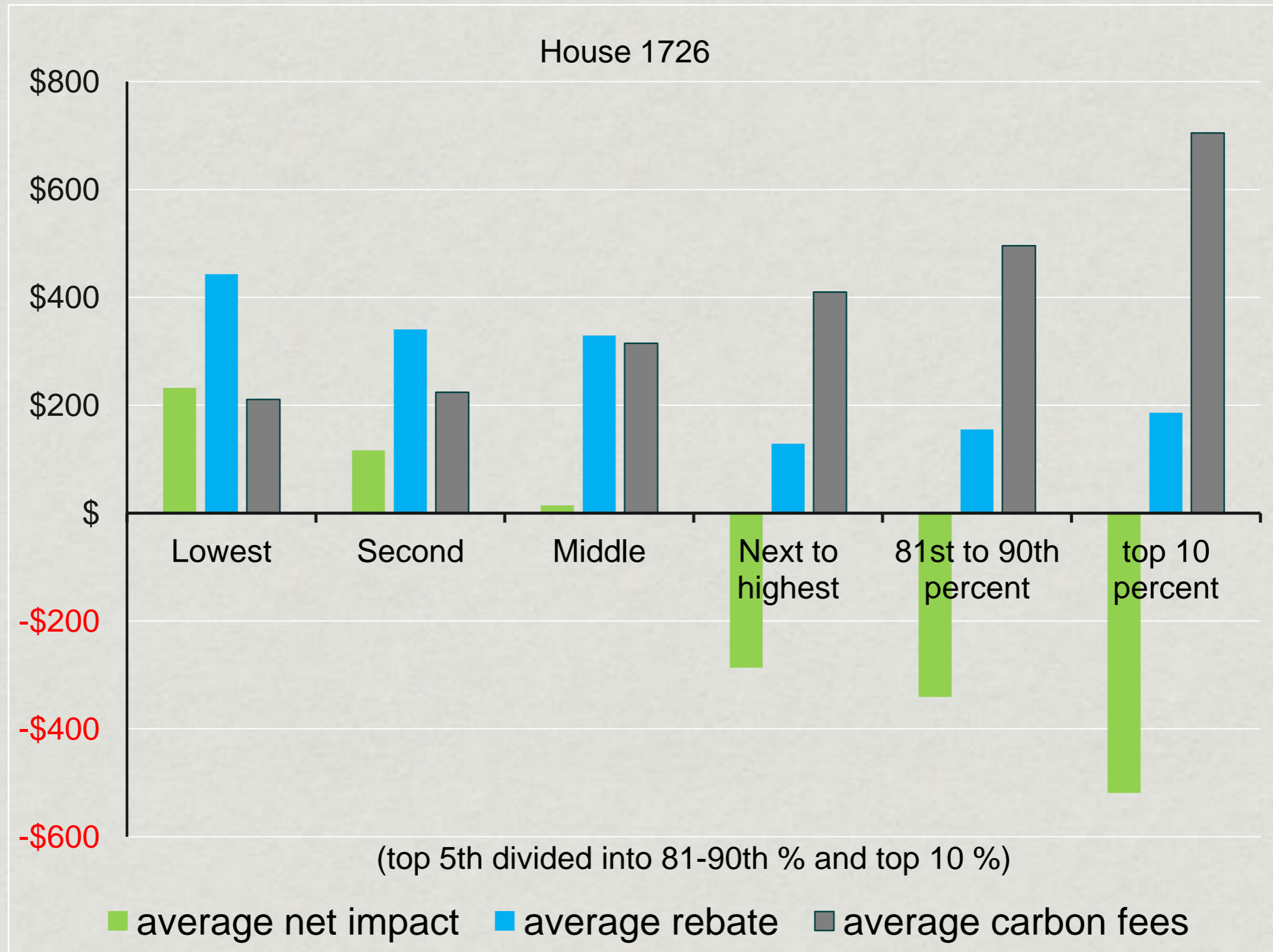


Economy-Wide Carbon Pollution Pricing

- The state puts a fee on all fossil fuels, in proportion to how much carbon dioxide (CO₂) pollution they release when burned
- Money is returned to public and/or used for programs to reduce pollution

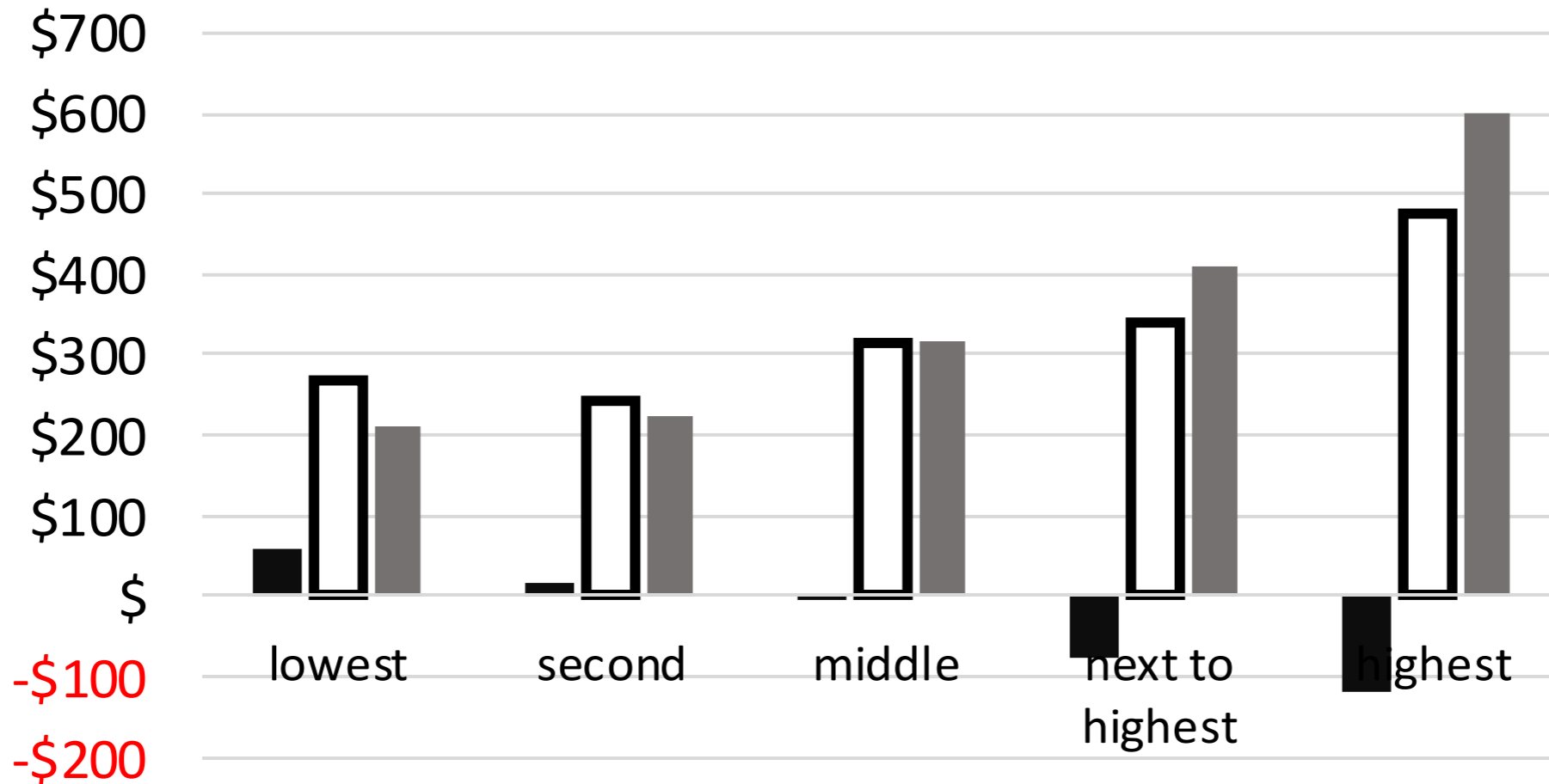


Impact on Each 5th of Households



Impact by Household Income Level

S.1825



5ths of total households,
lowest to highest income

- average net impact
- average rebate
- average carbon fees

British Columbia example

- Started 2008
- Fee \$30 Canadian (~ \$22.50 U.S.)
- Cut fuel use 10% to 15%
- Revenue-neutral
- Gave rebates at start of 1st year, by borrowing money
- Politically popular

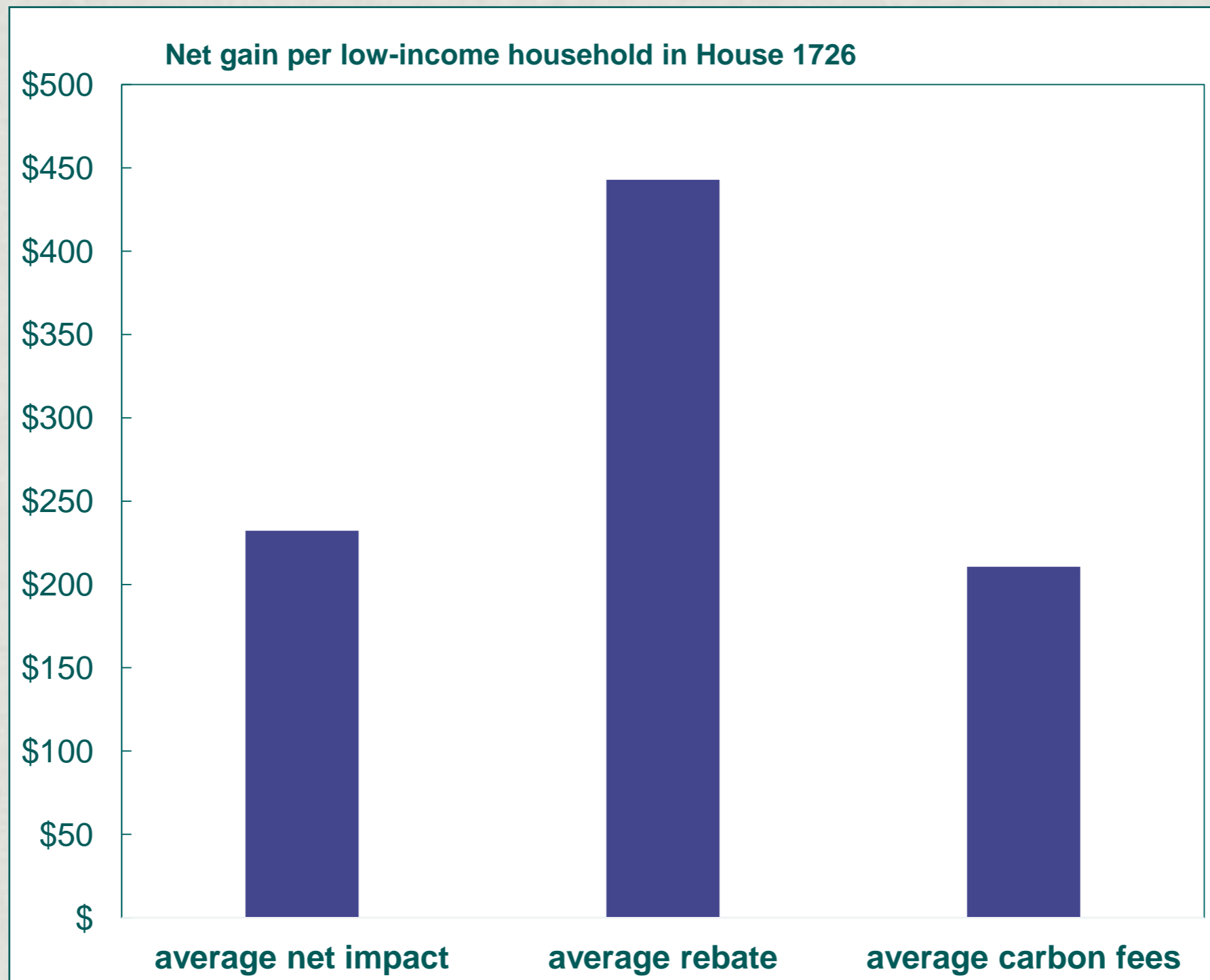


Green Infrastructure Fund

- Supports clean energy, resilience to climate change, green transportation, energy efficiency programs for renters
- Cities, towns, and regional agencies apply to state agency for grants
- Revenue ~ \$240 million 1st year, \$480 million 5th year in H1726 (versus \$14 million in Green Communities grant program)

Impact of fees and rebates on poorest 20% of households – H1726

At \$30/ton carbon fee (year 3 under the bill)



Carbon Fee Rate 2016-2040 in DOER study

