

Executive Order 14-04: Washington Carbon Pollution Reduction and Clean Energy Action

Presentation to the:
Washington State Transportation Commission
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Rapid Warming Projected

Projected Change in Average Annual PNW Temperature
(relative to 1950-1999 average)

All scenarios indicate warming in the 21st century

2050s
(relative to 1950-1999)

Low emissions (RCP 4.5)	+4.3°F (2.0-6.7°F)
High emissions (RCP 8.5)	+5.8°F (3.1-8.5°F)

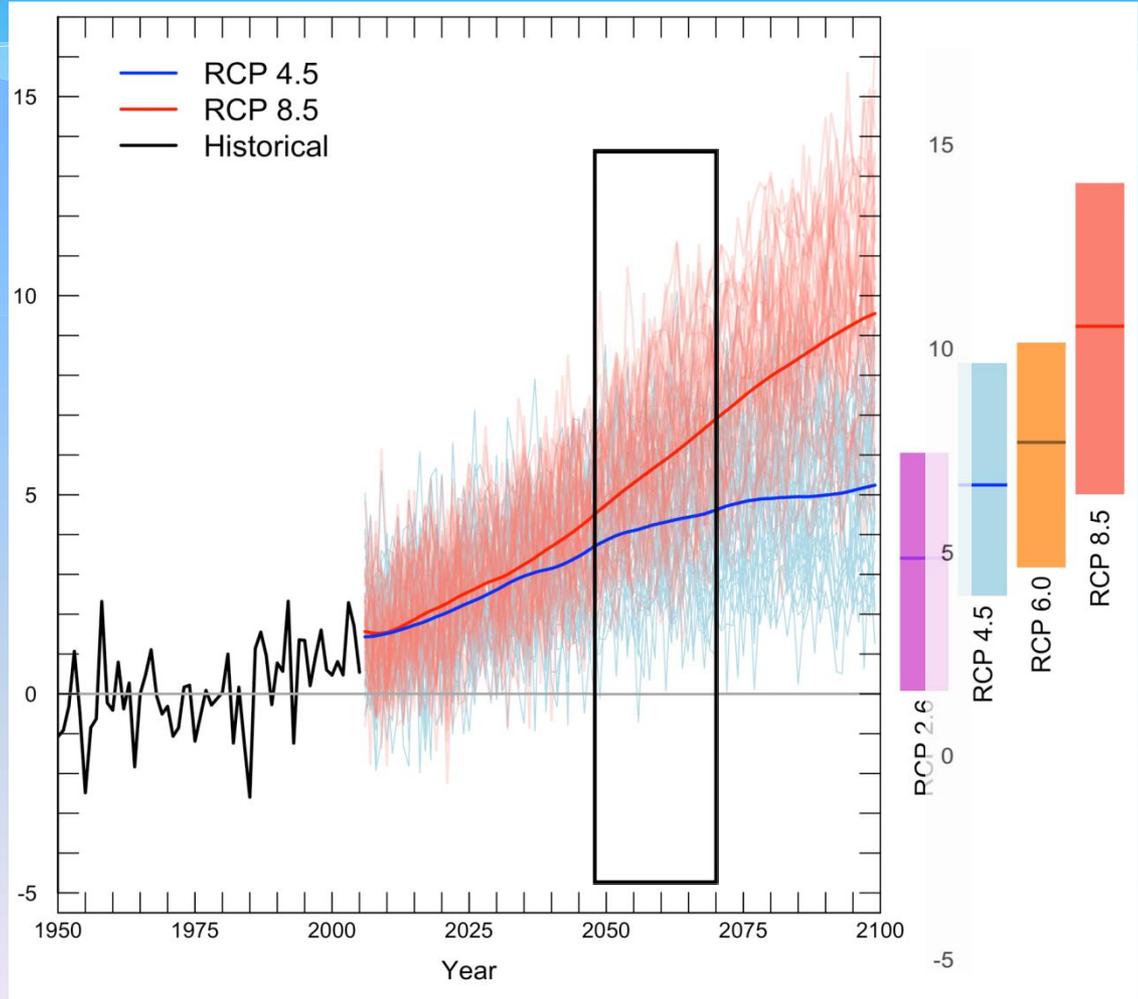
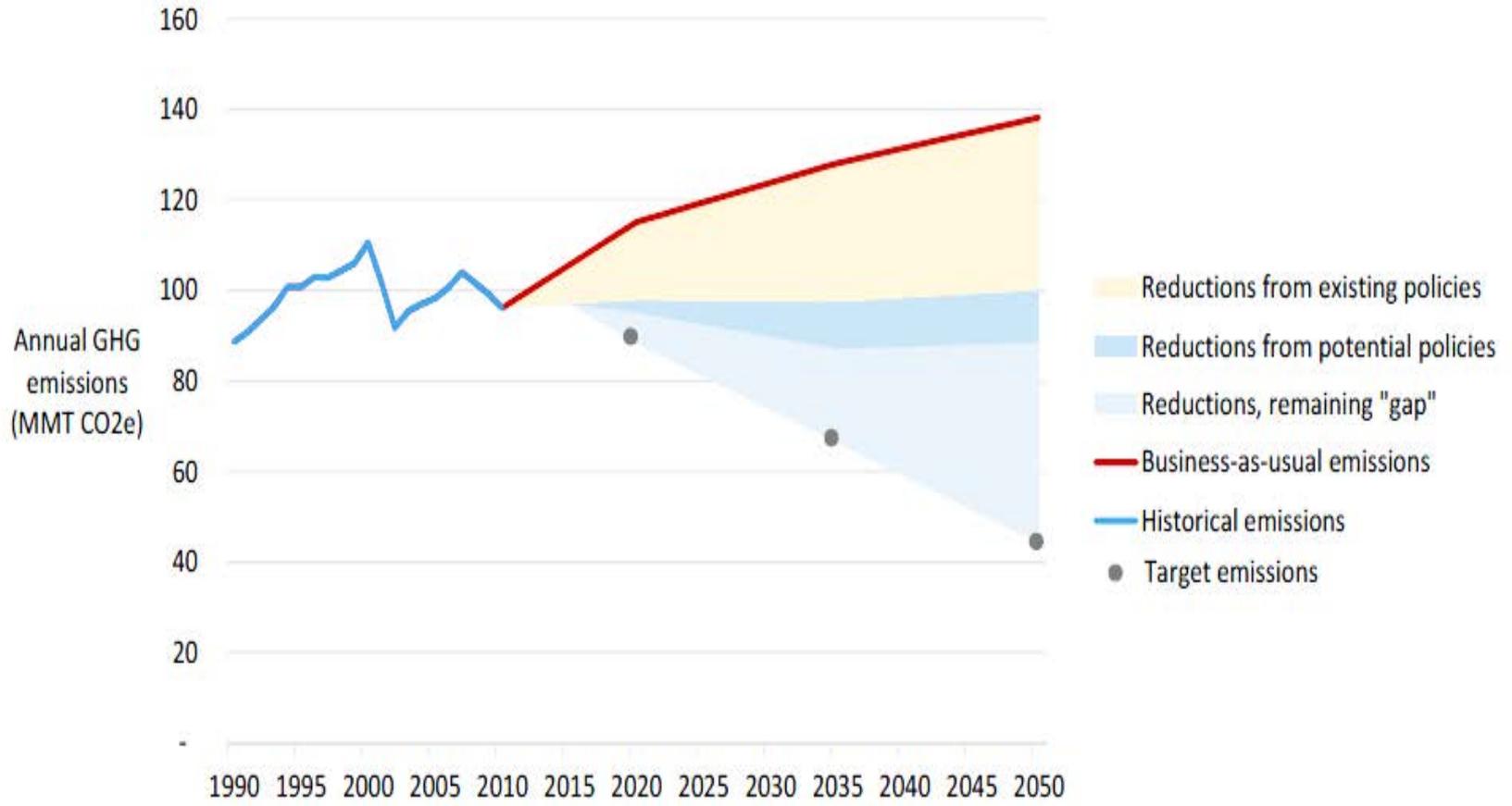
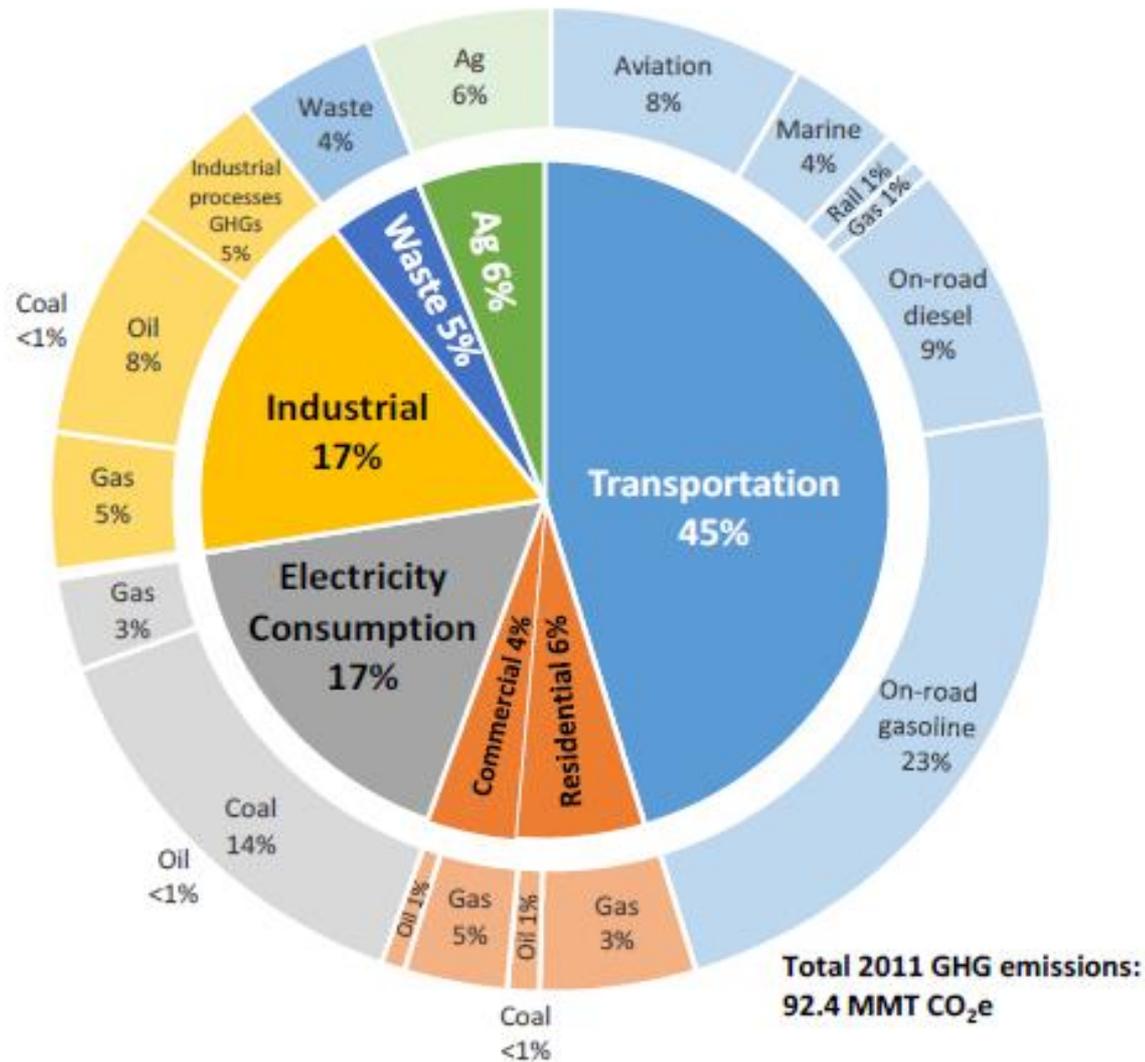


Figure source: Climate Impacts Group, based on projections used in IPCC 2013; 2050 projections from Mote et al. 2013

Washington Emissions Forecasts



Washington State Greenhouse Gas Emissions (2011)



Executive Order 14-04

Carbon emissions reduction taskforce

Coal-fired electricity

Clean transportation

Clean technology

Energy efficiency

State government

Carbon pollution limits

Carbon Emissions Reduction Taskforce

Alaska Air Group
American Lung Association
Cascadia Law Group
Chelan County Public Utility District
Climate Solutions
EDF Renewables
Energy Northwest
Green Diamond Resource Company
King County
MacDonald-Miller
OneAmerica

Puget Sound Energy
Quinault Nation
SEIU Healthcare 7775NW
US Environmental Protection Agency
United Steelworkers District 12
Vulcan
WA State Budget and Policy Center
WA State Building Trades Council
WA State Dairy Federation
WA State Labor Council

Carbon Emissions Reduction Taskforce Evaluation Framework

Reach Washington **emission reduction** targets

Carbon price signal that helps **shift investments**

Minimize **costs/competitiveness** impacts to businesses

Maximize economic development/**job growth**

Minimize **consumer costs**, protect **low income** communities

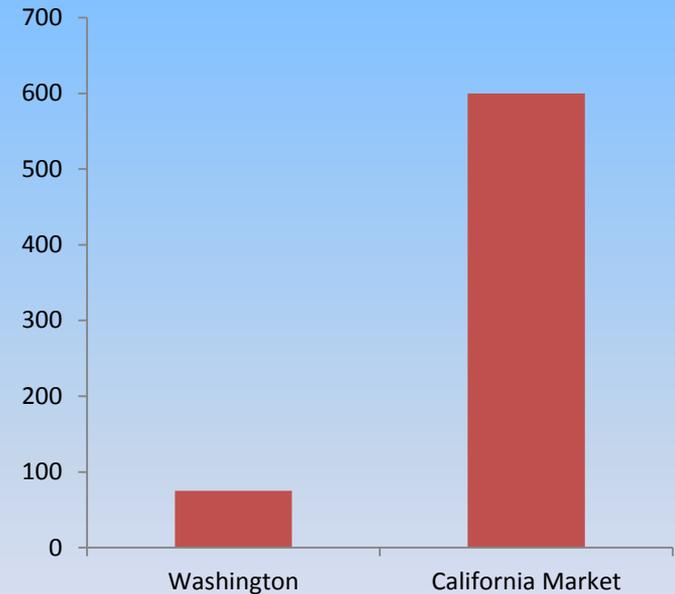
Reduce **public health** risks, especially vulnerable populations

Effective administration of program, and markets

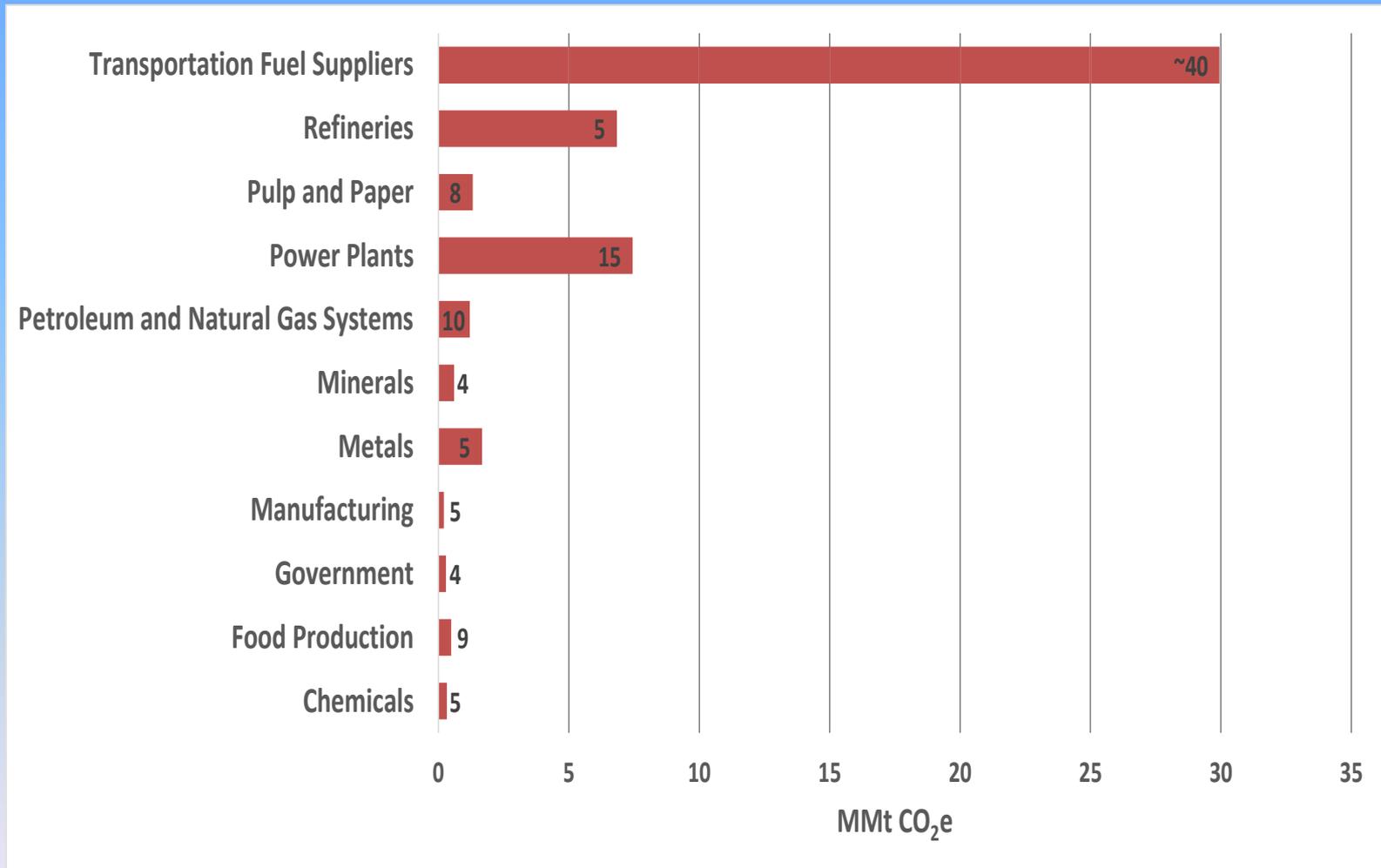
Coverage

- Electricity (generation, importers)
- Industrial sources
- Suppliers and distributors of natural gas, transportation fuels and other fuels, liquid petroleum gas providers
- Stationary sources exceeding 25,000 MTCO₂ annually

Number of Emitters over 25,000 MTCO₂



GHG Emissions from Potentially Regulated Facilities



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Coal-fired electricity:

- encouraging commercial agreement
- fiscal prudence requirement
- potential policy legislation

Clean technology:

- investing in R&D, demonstration, deployment
- solar energy incentives

Greenhouse gas emission statutory limits

EO 14-04

Energy efficiency:

- Buildings: retrofits / energy neutral code
- agriculture and industrial productivity

State government operations:

- efficient public buildings
- efficient work practices (e.g., fuel savings)
- alternative fuel vehicles

Clean transportation

- Zero Emission Vehicles
- Clean fuel standard

Implementation Plan Summary

Topic and Governor's Directive	Timeline & Deliverable
1. Carbon Market – Governor's Carbon Emissions Reduction Taskforce (CERT) will recommend the design and implementation of a carbon emission limits and market program	Nov 17, 2014 - Final CERT recommendations Dec 2014 - Policy bill/budget
2. Coal Fired Electricity – Seek agreements with key utilities and others to reduce imported coal-fired electricity consumed in the state	Oct 2014? – Draft commercial agreements between utilities Dec 2014 - Possible legislation?
CLEAN TRANSPORTATION	
3. Electric vehicles – Develop action plan, in collaboration with federal, state, and local partners, to advance electric vehicle use.	Sep 30, 2014 – Identify proposed actions Nov 16, 2014 – Draft action plan
4. Transportation Efficiency – Develop new program of technical and financial assistance to help local governments implement transportation efficiency improvement measures.	Dec 2014 – Report on local government technical/financial needs
5. Multimodal Transportation Investment – Review existing state grant programs to identify and implement opportunities to increase state investments in multimodal transportation.	Dec 2014 – Report on options to increase statewide investments Summer 2016 – Recommendations for near/long-term reforms to state grant programs
6. Planning Policies and Guidance – Adopt and implement new planning policies and guidance for multimodal transportation corridor studies.	Dec 2014 – Draft policies/guidance Spring 2015 – Final policies, guidance
7. Statewide Transportation Plan – Develop, adopt, and implement multimodal, federally compliant, long range statewide transportation plan.	Spring 2015 – Scope for transportation plan Dec 2016 – Adopt statewide plan
8. Zero Emission Vehicles – Review the state's clean car law and recommend needed updates.	Sep 2014 – Report on other states' programs, and WA impacts/benefits Dec 2014 – Policy bill
9. Clean Fuel Standard – Evaluate technical feasibility, costs and benefits, and job implications of using clean fuels in WA.	Sep 12, 2014 – Draft report Sep 26, 2014 – Final report

18 directives;
5 pertain to WSDOT

→ Electric Vehicles

→ Transportation Efficiency

→ Multimodal Transportation Investment

→ Planning Policies and Guidance

→ Statewide Transportation Plan

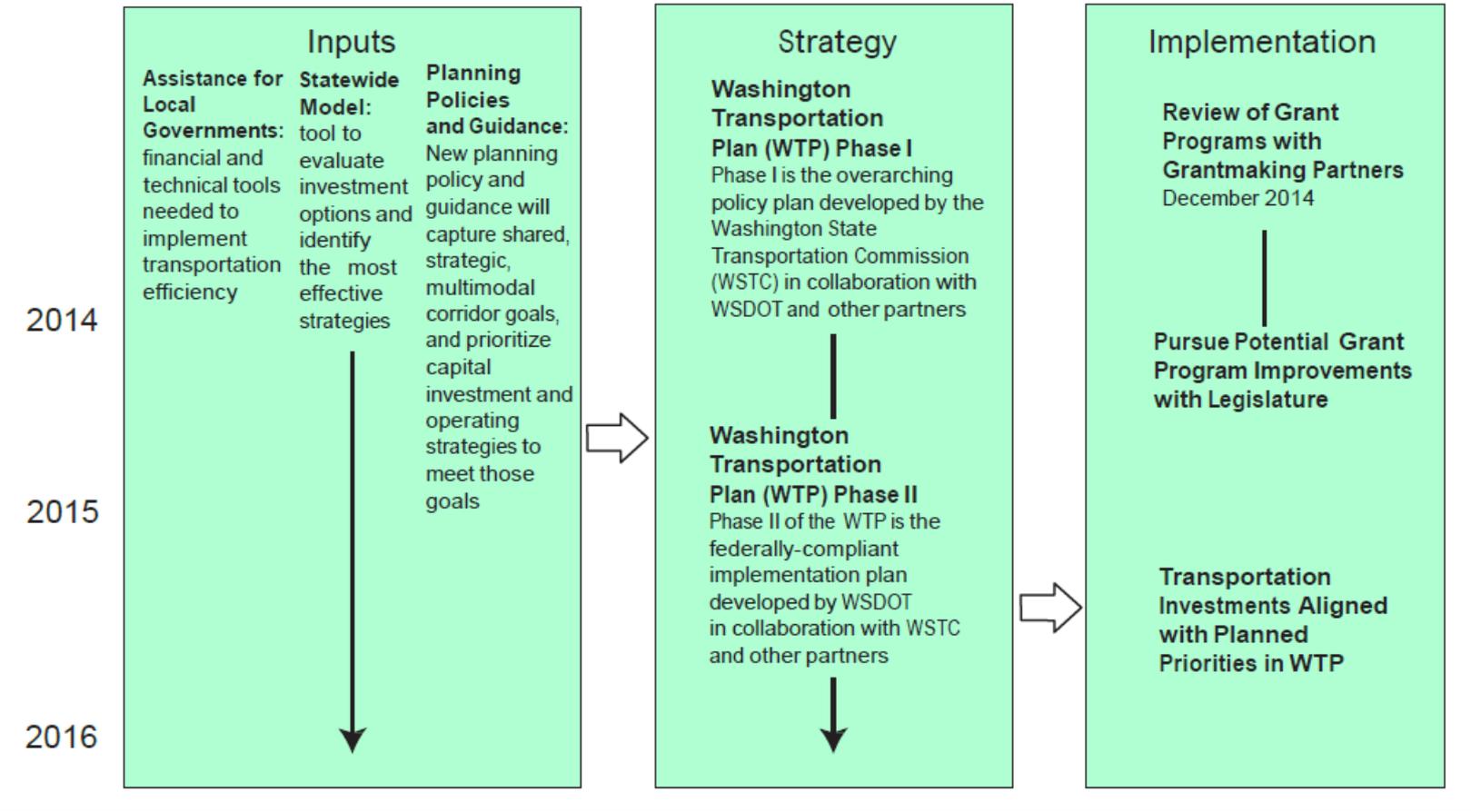
[www.wsdot.wa.gov/
SustainableTransportation/](http://www.wsdot.wa.gov/SustainableTransportation/)

WSDOT's Clean Transportation Tasks

Electric Vehicles - November 2014

Develop action plan, in collaboration with federal, state, regional and local partners, to advance electric vehicle use.

Planning - Implementation Efforts



Outreach and Collaboration To Date

- MPOs and RTPOs
- Association of Washington Cities
- Washington State Association of Counties
- Association of Washington Business
- Commerce, Ecology, TIB, CRAB, FMSIB, and others

WSDOT's Budget Request

- \$1.5 million and 0.5 FTEs to expand Washington's electric highway fast charging network by installing nine additional stations located along the Interstate 5 north-south corridor in the Puget Sound Region and the Interstate 90 east-west corridor between Seattle and Spokane
- \$2.5 million and 1.0 FTE to purchase and provide on an ongoing basis transportation investment economic impact analysis and develop a statewide travel demand forecast model

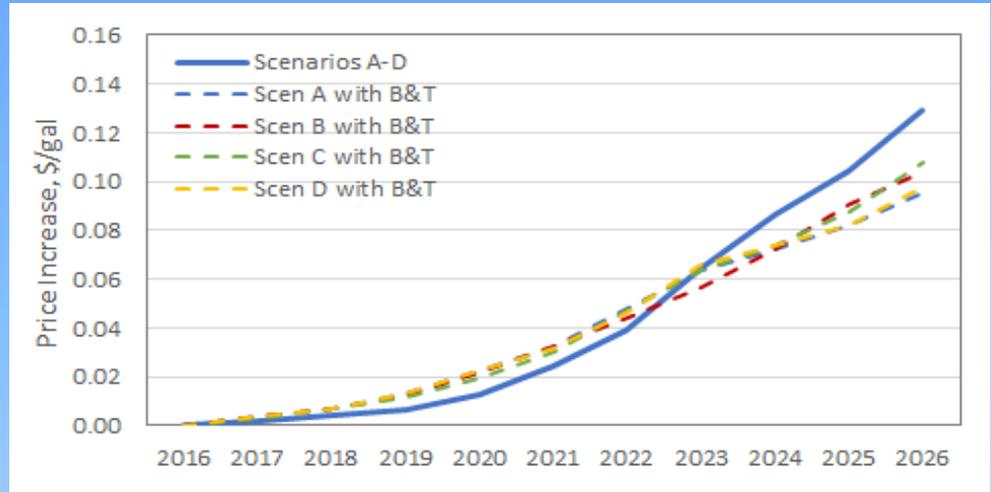
Clean Fuel Standard

Potential Cost Increases

Gasoline:

3-4 cents/ gallon by 2021

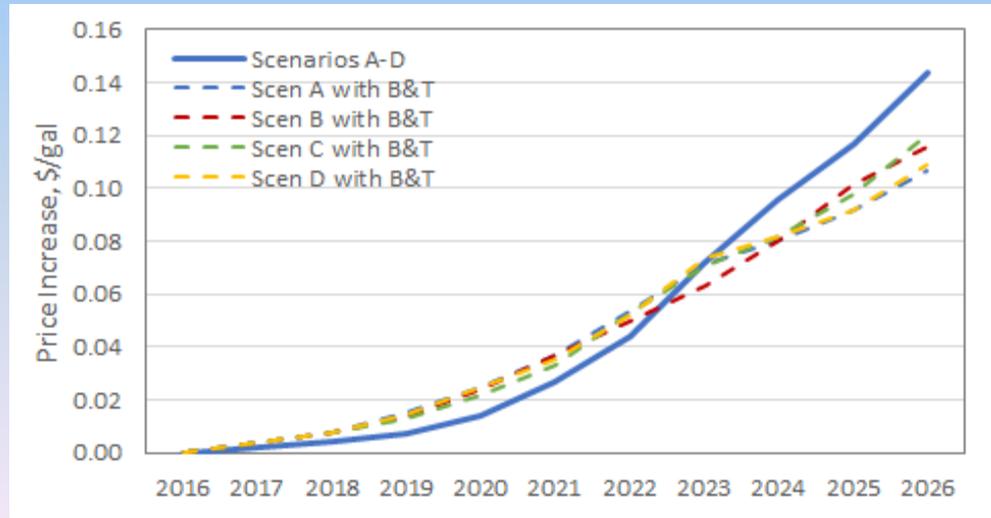
9-11 cents/gallon by 2026

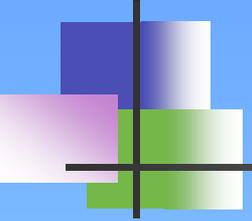


Diesel:

3-4 cents/gallon by 2021

10-12 cents/gallon by 2026



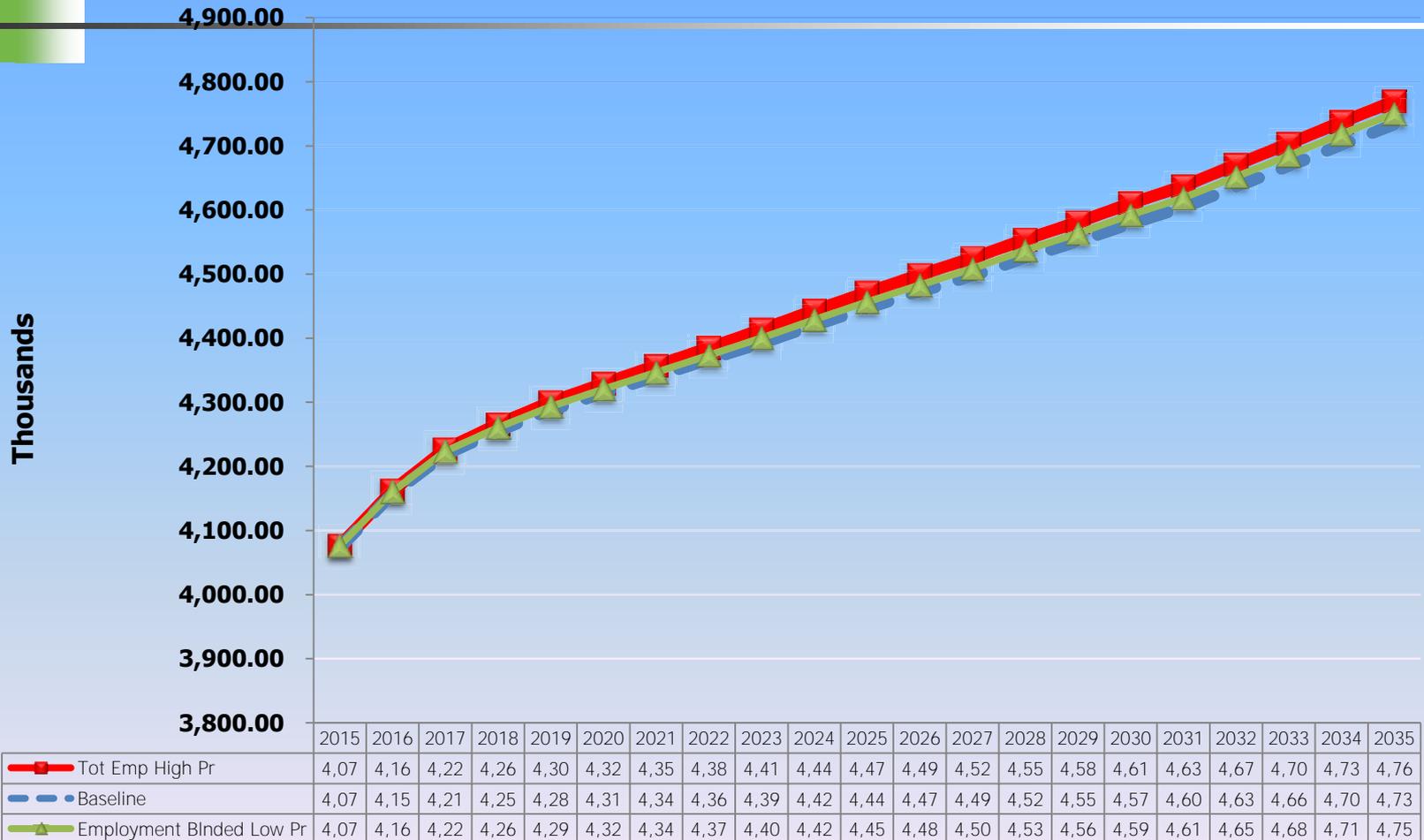


Carbon Market Program: Potential Cost of Gasoline

Baseline*	2020: \$3.25/gal
	2035: \$3.89/gal
	Net: \$0.76/gal
Low Carbon Price	2020: +\$0.13/gal
	2035: +\$0.38/gal
High Carbon Price	2020: +\$0.44/gal
	2035: +\$1.46/gal

(* EIA Pacific Region, 2012 dollars, taxes included)

Employment: High & Low Price Scenarios



Results: Economic Impact

Change from 2015-2035	Baseline	Low Price Scenario Change from Baseline	High Price Scenario Change from Baseline
Gasoline Prices	21.4%	9.8%	37.5%
Personal Income	141.7%	.6	1.3
Employment	16.2%	.3	.8
Gross State Product	60.3%	.4	1.3

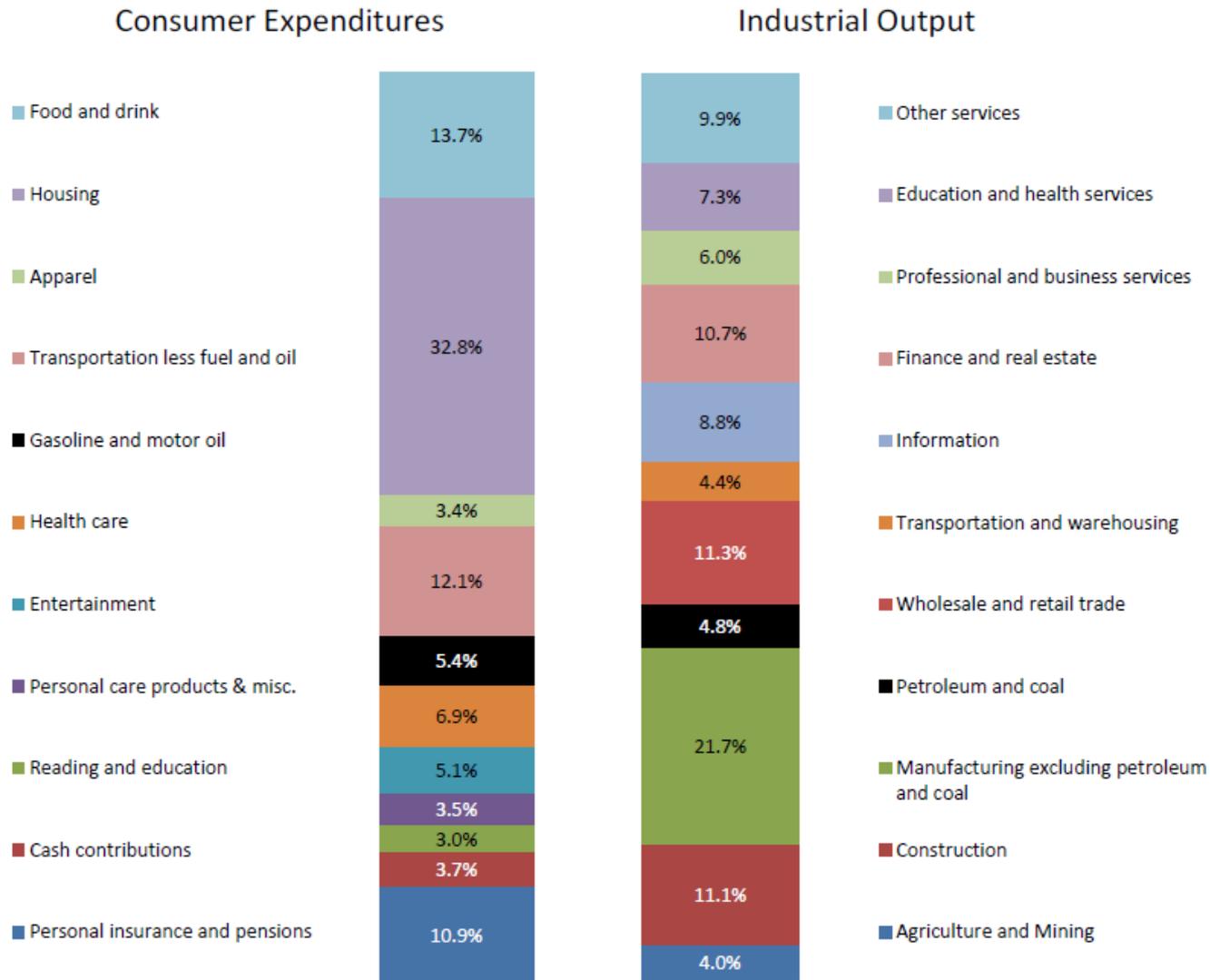
Income, Employment and GSP differences in percentage points.

Industry Employment Changes: Gains & Losses from Baseline

	Low Carbon Price 2035	High Carbon Price 2035
Top 5 Job Gains (on percentage basis)		
Basic chemical manufacturing	80	289
Electric power generation, transmission, and distribution	110	367
Support activities for mining	9	32
Iron and steel mills and ferroalloy manufacturing	11	34
Dairy product manufacturing	17	-
Construction	-	7,630
Bottom 5 Job Losses (on percentage basis)		
Natural gas distribution	-8	-19
Apparel manufacturing; Leather and allied product manufacturing	-2	2
Pipeline transportation	-1	-18
Pesticide, fertilizer, and other agricultural chemical manufacturing	0	-43
Textile mills and textile product mills	-29	-30

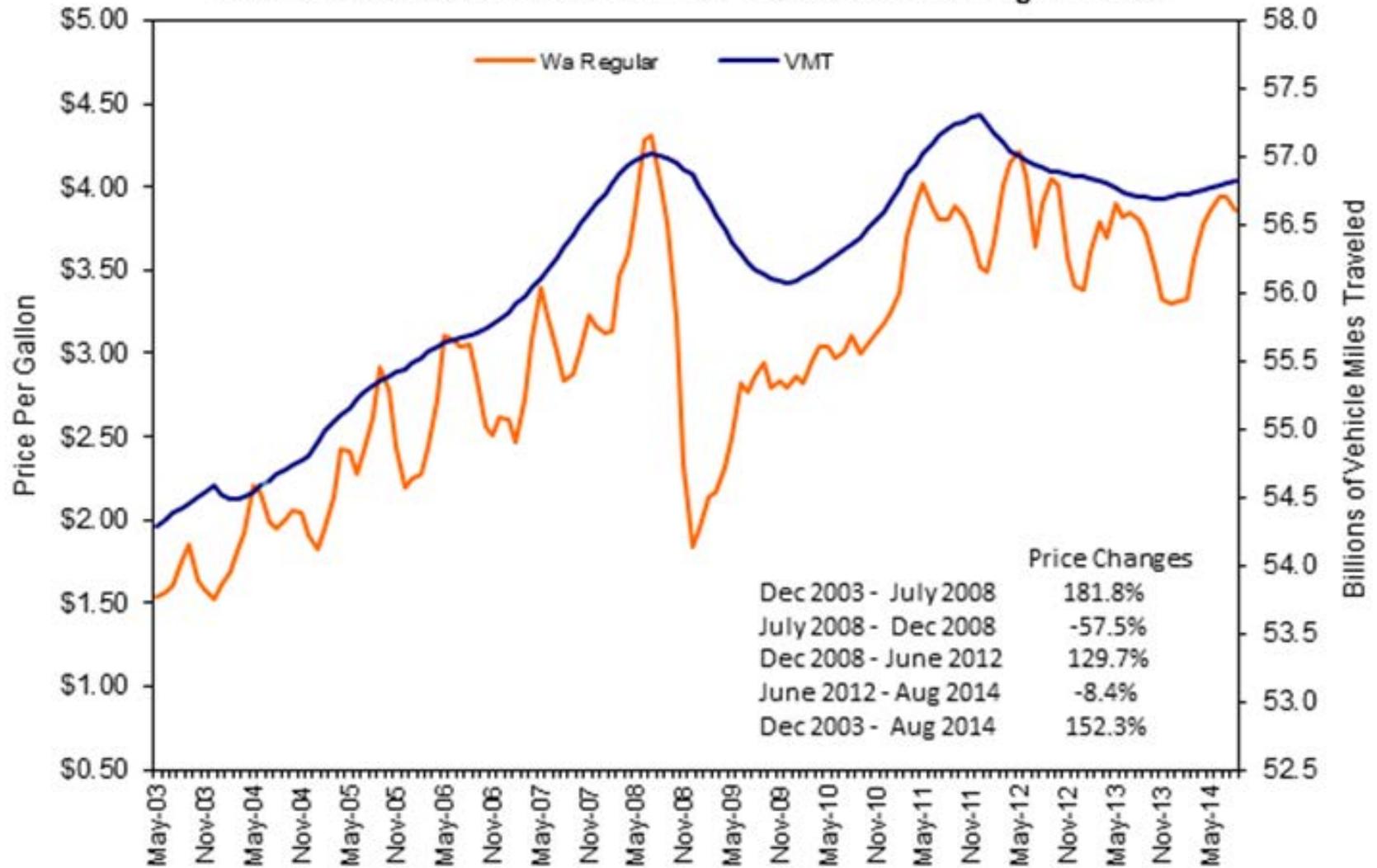
Why the Effect on Income, Output and Employment are Relatively Small

Relative Scale of Gasoline and Related Products

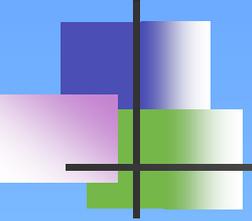


Sources: Consumer Expenditure Survey and Washington I/O Model

Cost of Gasoline and Vehicle Miles Traveled in Washington State



Sources: US Energy Information Administration and Washington Department of Transportation



Use of Carbon Program Revenues

Policy example:

- 30% -- lower income populations
- 15% -- trade exposed industries
- 40% -- transportation construction
- 10% -- renewable electricity
- 5% -- program administration/other

Costs / Benefits

Climate impacts in WA:

\$10 B / year (by 2020)

Global Commission – over next 15 years:

\$90 T + \$4 T = net savings

US budget director:

1 degree C = \$150 B (US GDP)

Carbon Pricing: Outcomes

- Emissions :** BC individual fuel consumption down 16% while Canada-wide, up 3%
- Jobs:** BC even with Canada: CA 3.6 growth over last 2 years; US = 2.8%
- Productivity:** BC out performed Canada in GDP per cap by .5%
- Leakage:** some concern in BC for cement; little evidence in CA and ETS
- Innovation:** CA seen more than \$9 billion in investment in clean energy since 06; 12,000 businesses
- Costs:** CA Consumers on track to reduce household fuel costs by 30% by 2020
- Volatility:** CA is “most boring market around”; prices at floors; limited trading

Why should WA act?

Preventing further impacts

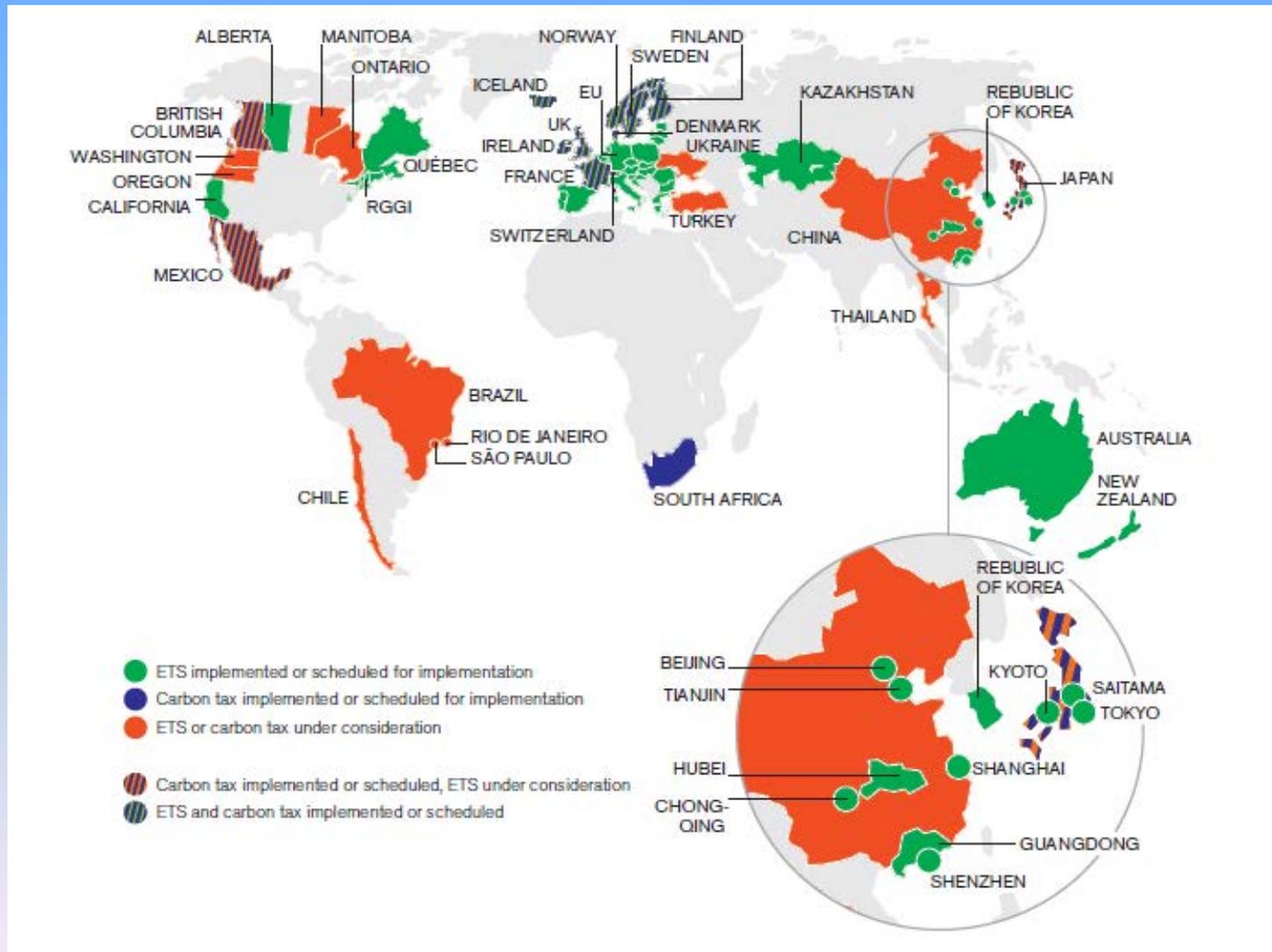
Clean energy and competitiveness

Protecting future generations

Leadership

Global Extent of Carbon Pricing

September 2014



Next Steps

- Taskforce:** Oct 28 – draft report
Nov 17 – final recommendations
- Clean Fuels:** Oct 20 – draft report
Oct 29 – final report
- Proposals:** mid Dec – Gov’s 15-17 rollout