

# Oregon Global Warming Commission:



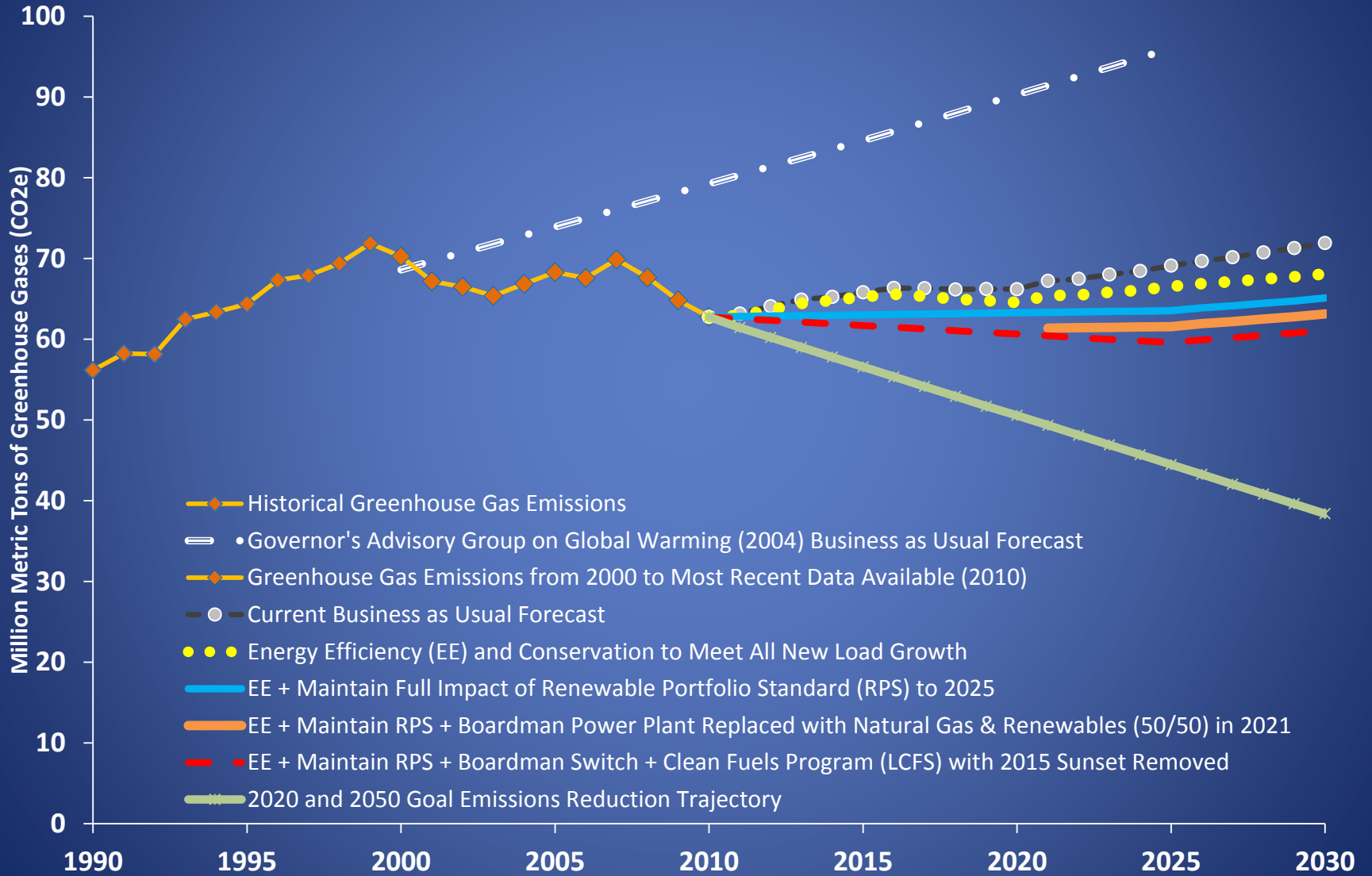
# Keep Oregon Cool

Oregon Global Warming Commission

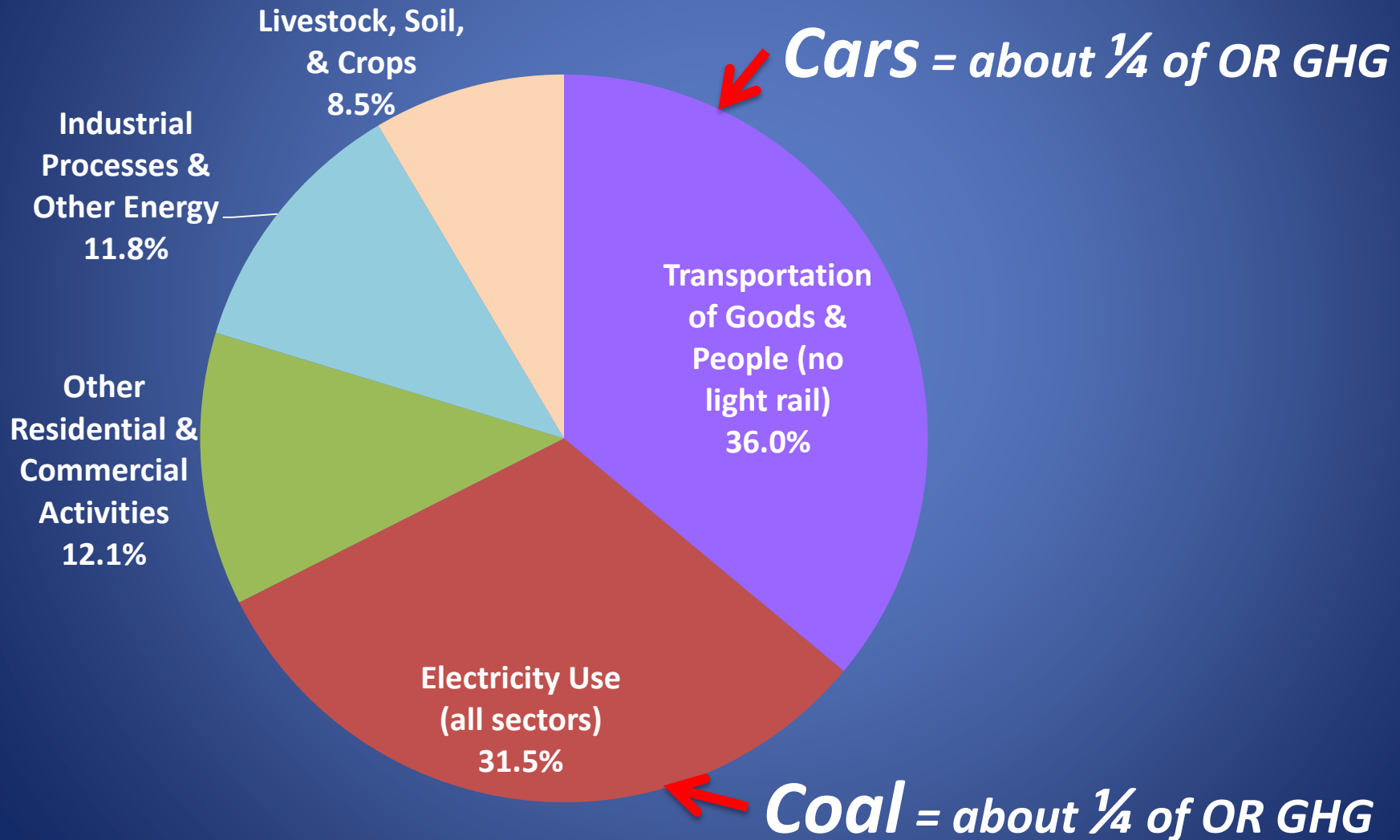
**Oregon's Roadmap to 2020**

<http://www.keeporegoncool.org/content/roadmap-2020>

# Progress Toward Oregon's Greenhouse Gas Reduction Goals



# Oregon Greenhouse Gas Emissions 2010 (with electricity broken out from sectors)



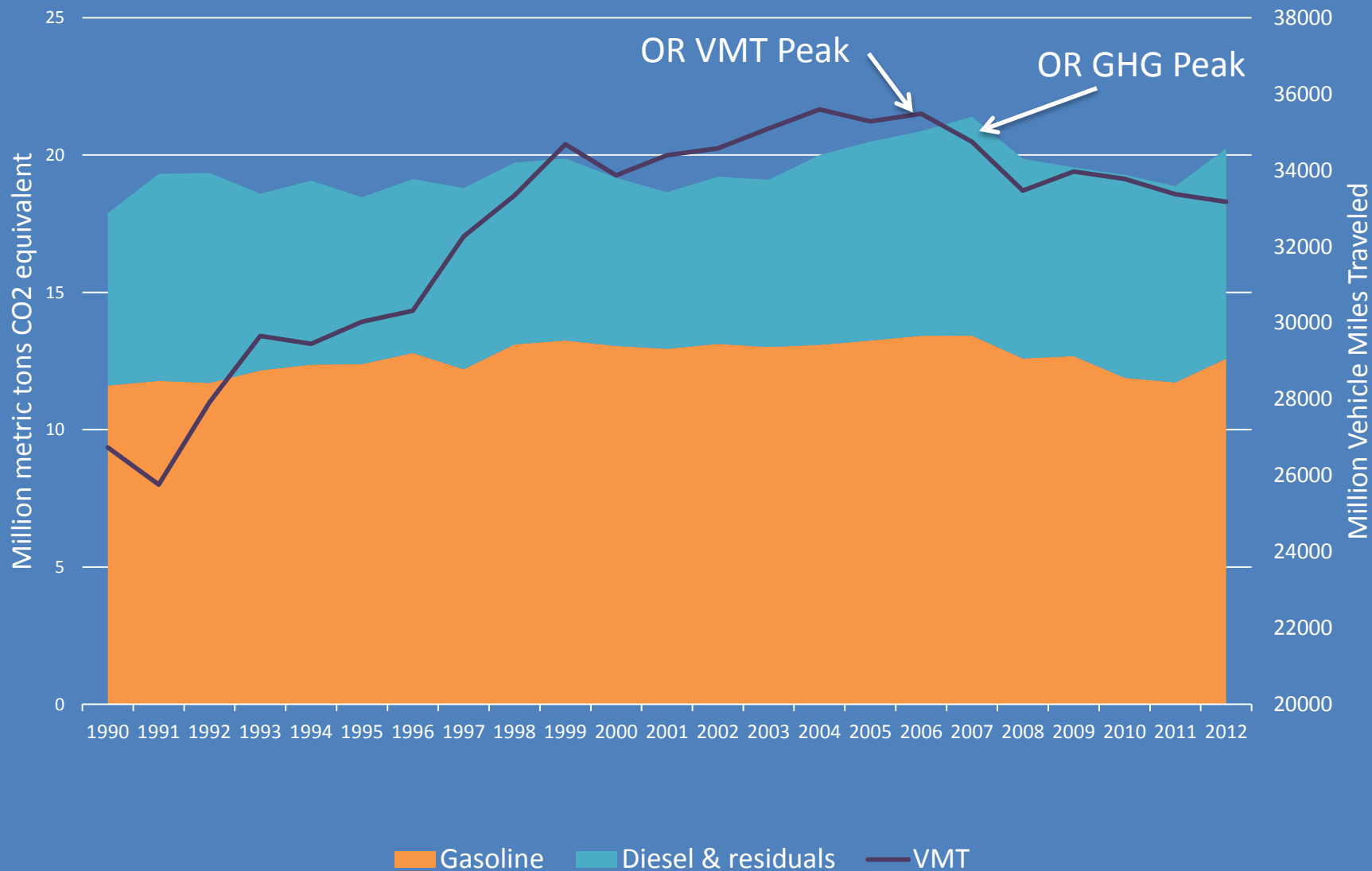


CARS + COAL

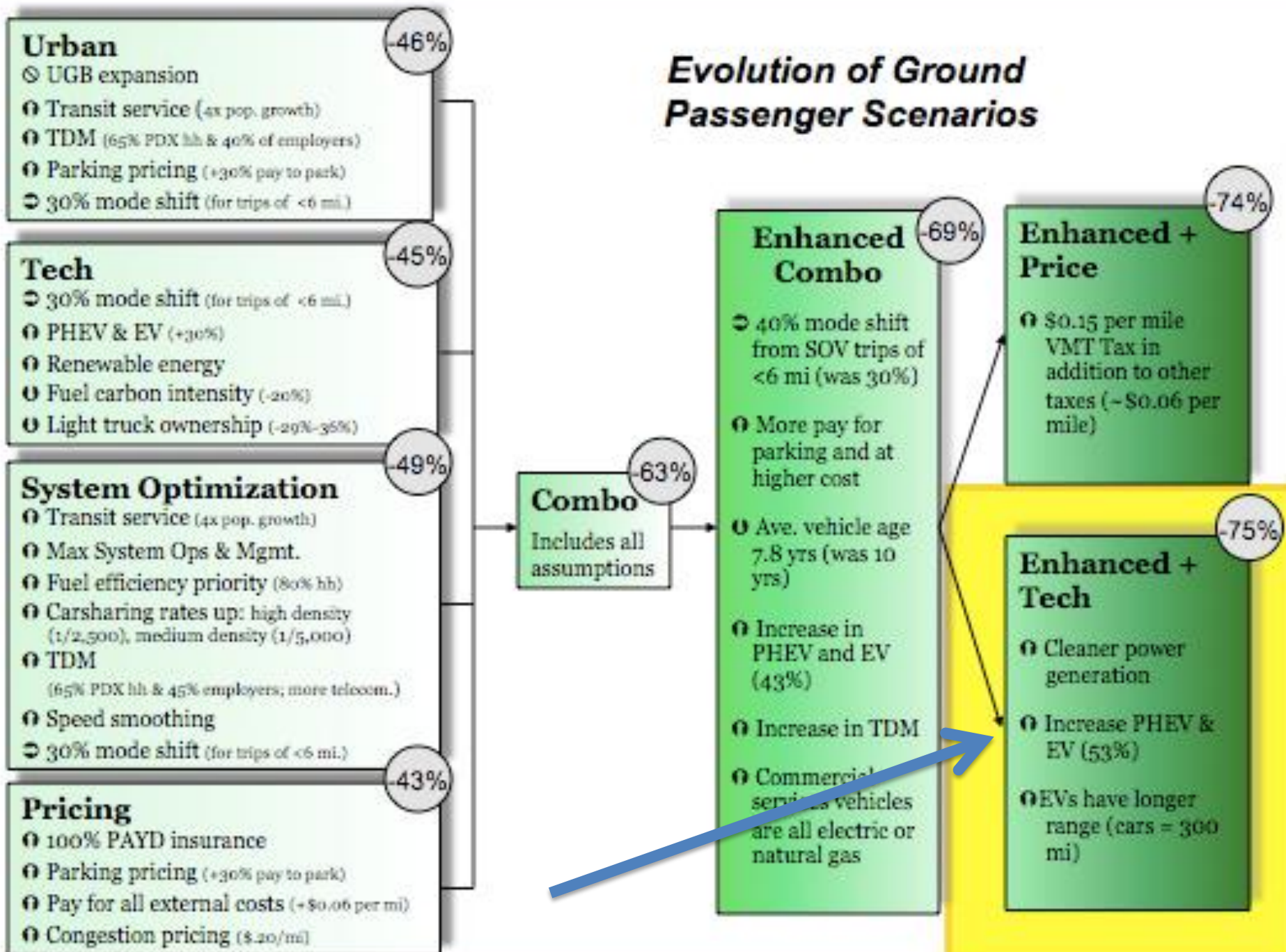


= 50% of Oregon GHG Emissions

Fig. 3: OR Emissions from Motor Gasoline and Diesel (MMT<sub>CO2e</sub>); and Statewide Total Vehicle Miles Traveled (MM)



## Evolution of Ground Passenger Scenarios



# Cars and Coal

## Est. Carbon-Equivalent MPG\*: Electric Vehicles

Wichita, KN (SWPP) – 74% coal/8% gas	= 35 mpg*
Raleigh NC (SRVC) – 45% coal/9% gas	= 55 mpg*
Seattle WA (WECC) – <3% coal/<1% gas	≥112 mpg*

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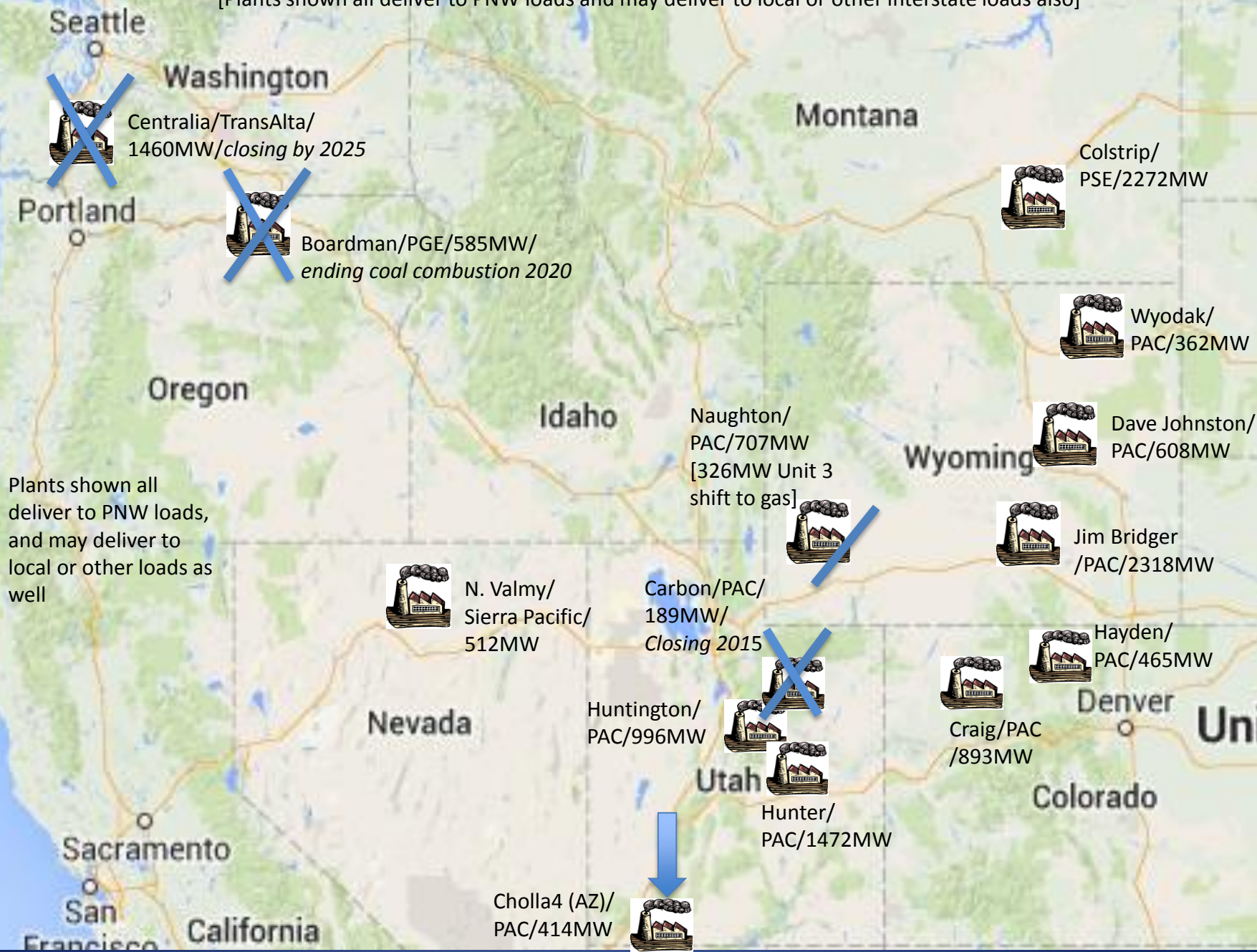
### Oregon Utilities

<i>PacifiCorp</i>	<i>±66% coal / ±17% gas</i>	<i>= ± Wichita</i>
<i>PGE (post-Boardman)</i>	<i>± 9% coal / ±63% gas</i>	<i>= ±Raleigh</i>
<i>Eugene (EWEB/COU)</i>	<i>&lt;1% coal / ±1% gas</i>	<i>= ± Seattle</i>

\*Miles per gallon equivalents per UCS

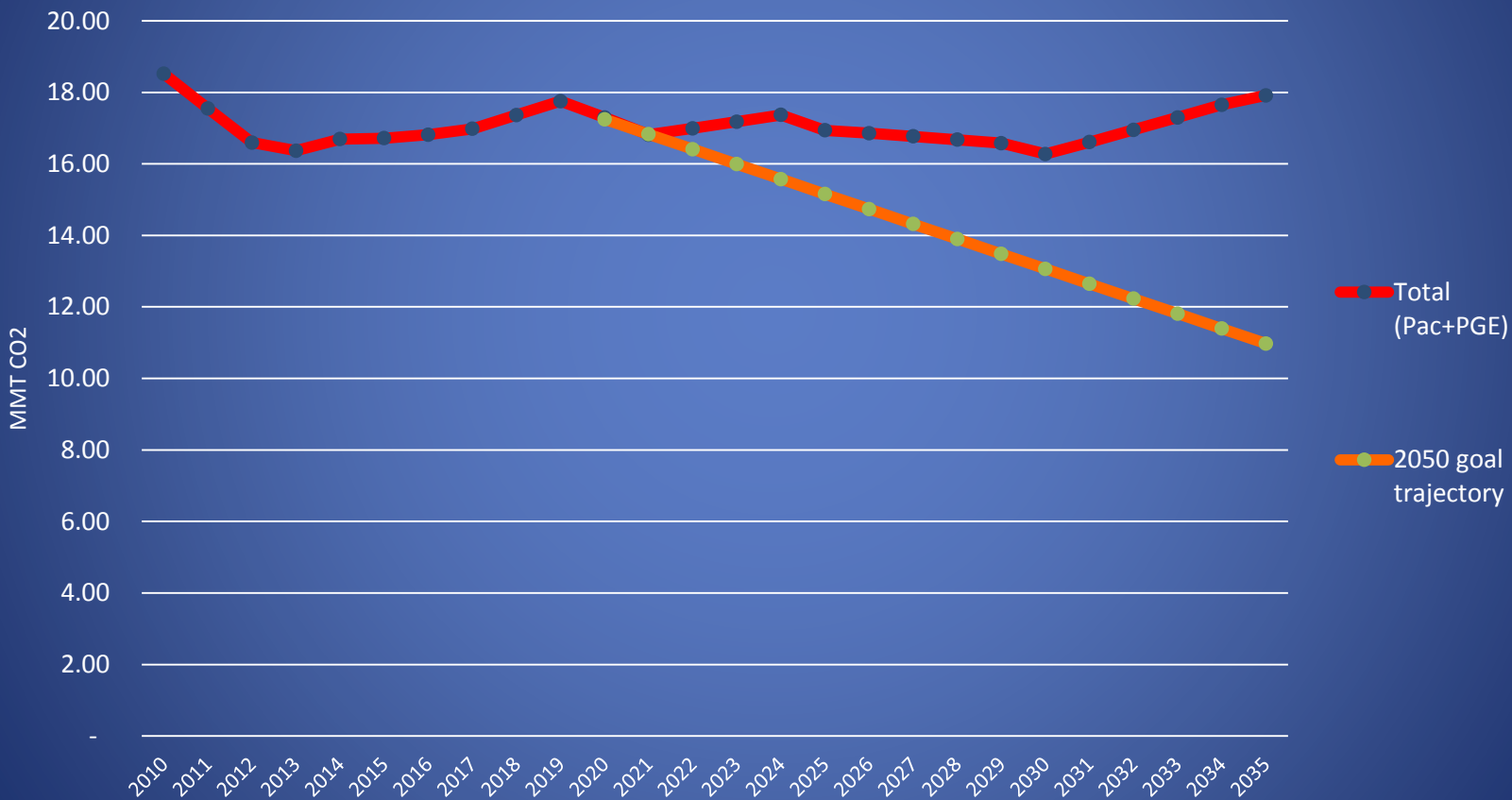
# Principal Coal-burning plants serving PNW/IW loads

[Plants shown all deliver to PNW loads and may deliver to local or other interstate loads also]



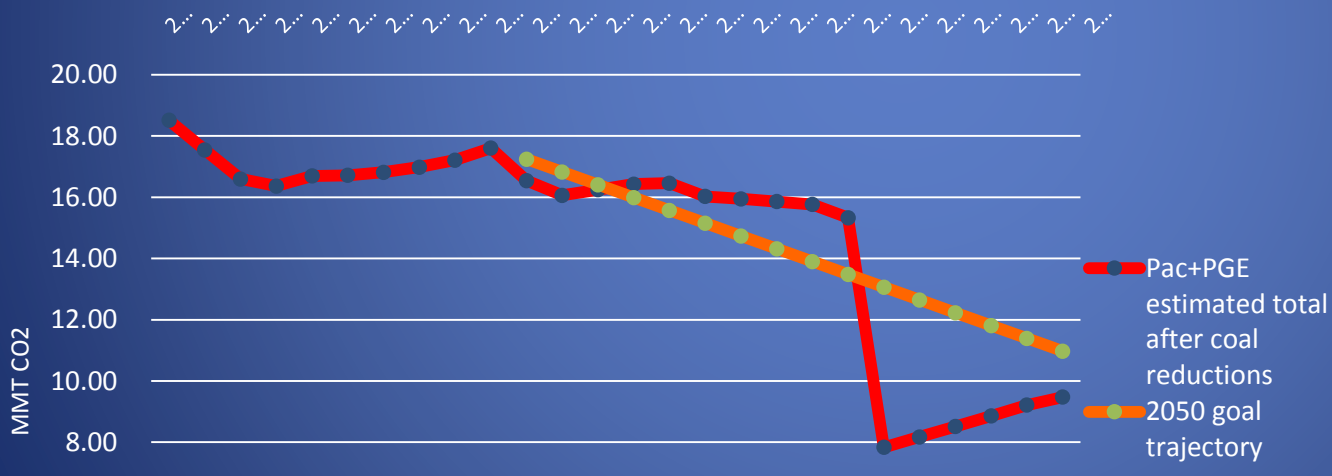
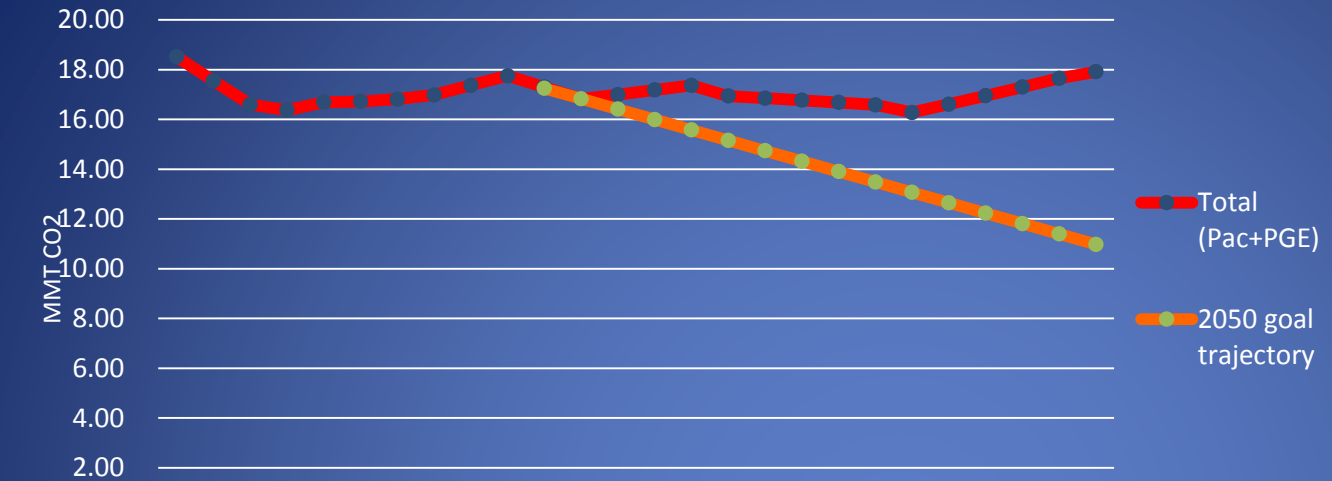


# Pacific Power and PGE Emissions in Oregon



Based on estimates of 2013 IRP projections

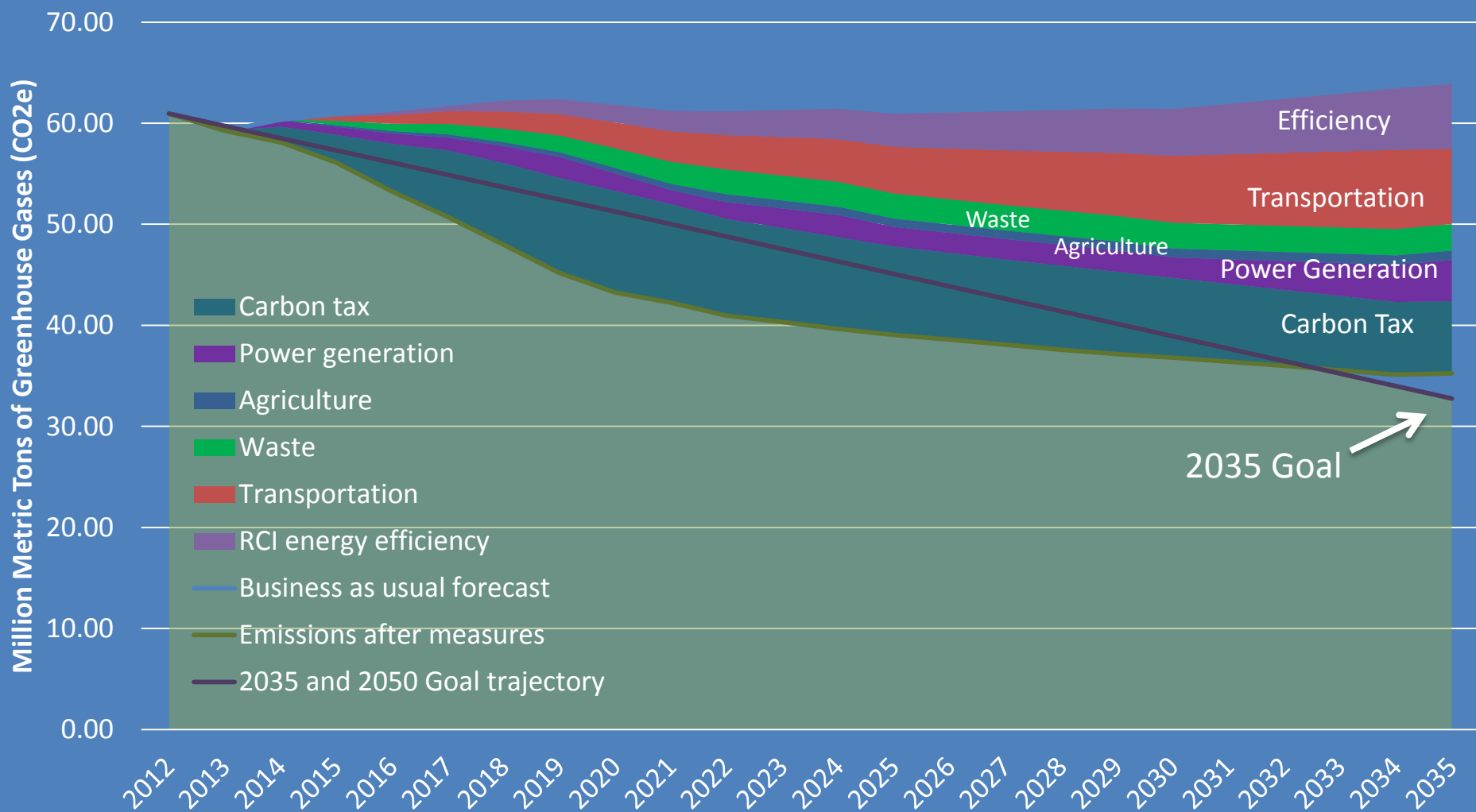
# Estimated coal-by-wire changes for PGE +Pacific Power



Baseline estimates from 2013 IRP projections

# Fig 11: OR GHG Goal Trajectory and Emission Reduction Wedges

## Case 2: Carbon tax plus statewide emission reduction measures



# Feds + State + Local Governments

- Federal
  - Vehicle Fuel Economy Standards + Clean Power Plan + Forest [Carbon] Mgnt
- State
  - Cap & Trade / Carbon Tax + State-to-State CPP Trading
  - Utility Regulation + Building/Equipment Codes + Transportation System Investments + Forests
- Local Government
  - Land Use + Transportation/Transit [MPO Planning] + Consumption/Waste Mgnt

# The Economist

**Democrats' abortion error**  
LEXINGTON, PAGE 40

**Iraq's coming election**  
PAGE 51

**Trade, farms and the poor**  
PAGES 12, 25-27 AND 81

**Books of the year**  
PAGES 93-96

DECEMBER 10TH-16TH 2005 [www.economist.com](http://www.economist.com)



# Don't despair

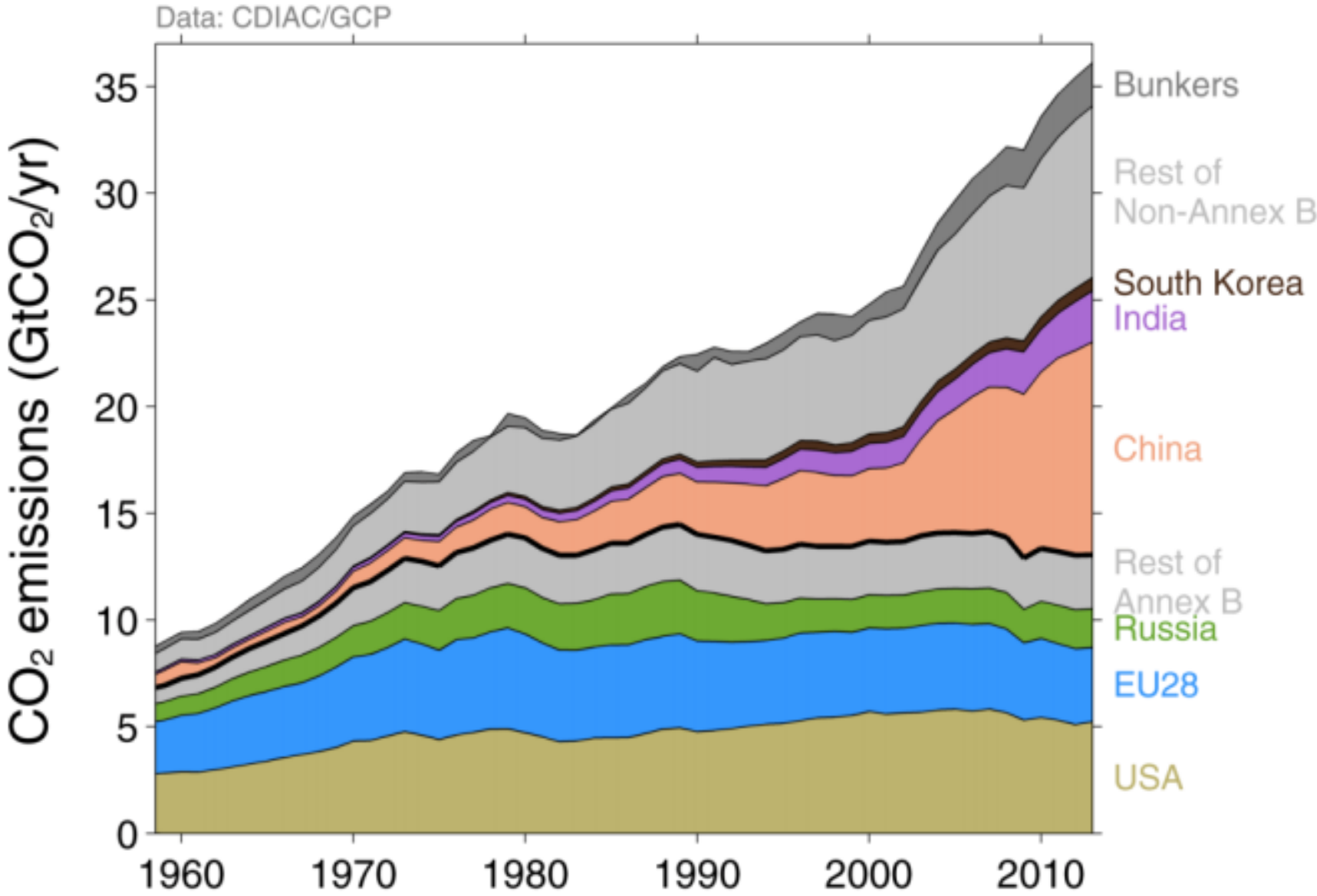
Grounds for hope on global warming



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# After Paris

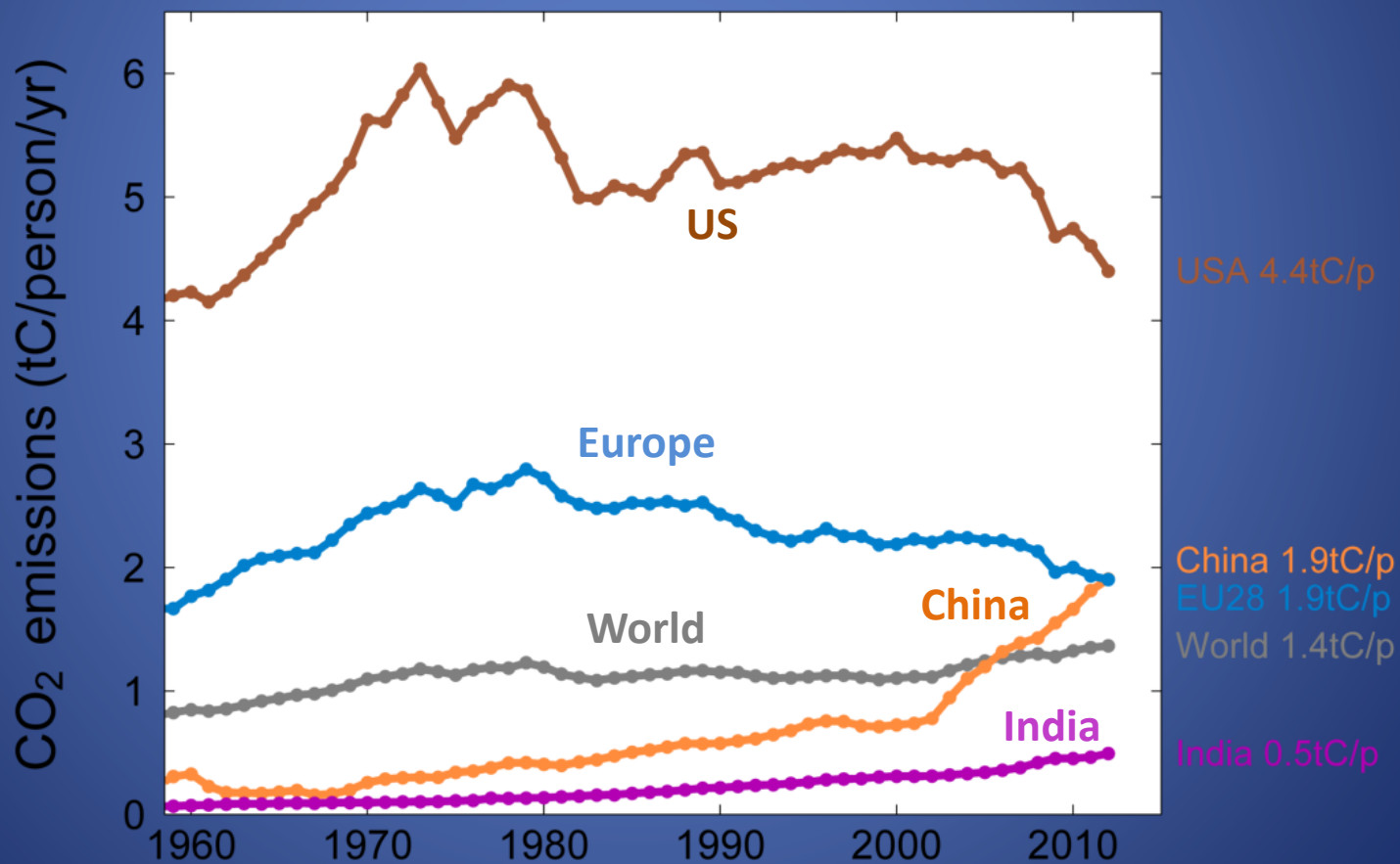
Total Emissions from Annex B countries have slightly declined since 1990  
Emissions from non-Annex B countries have increased rapidly in the last decade



# Top Per Capita Fossil Fuel Emitters

*Average per capita emissions in 2012*

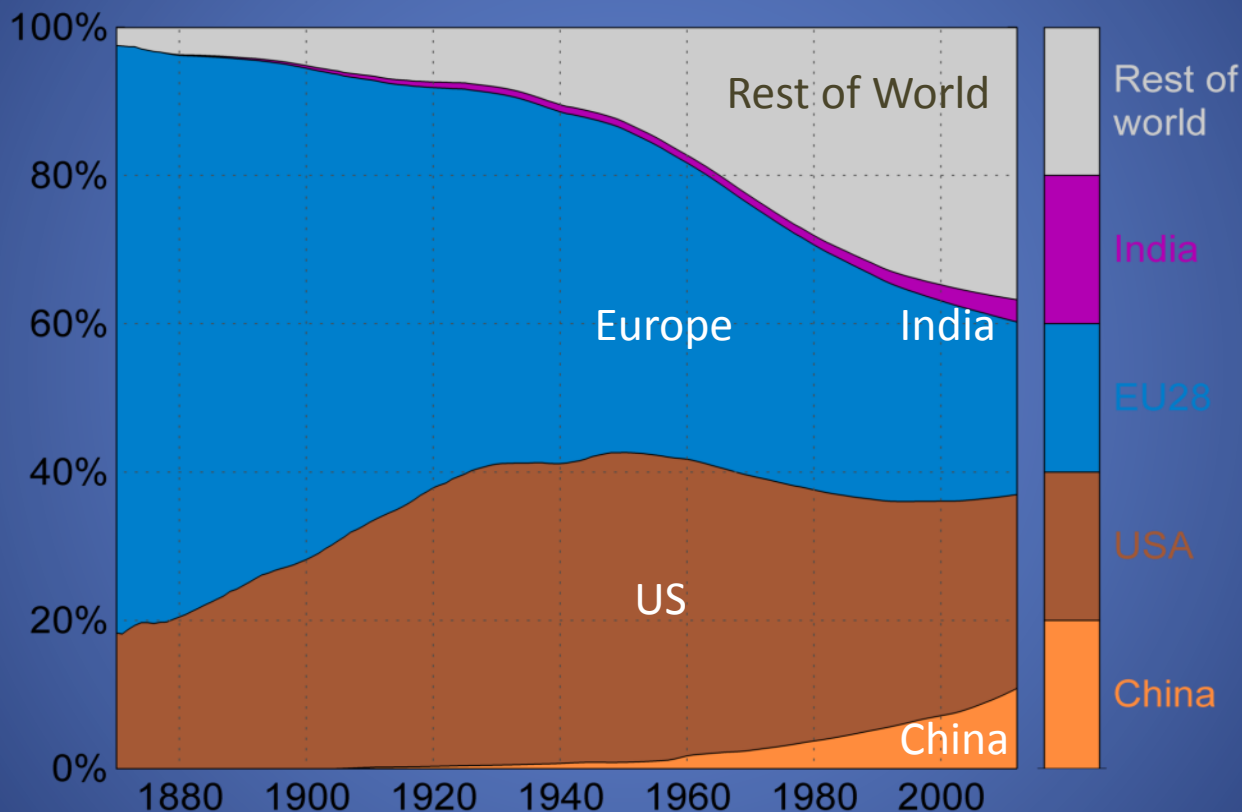
*China is growing rapidly and the US is declining fast*





# Historical Cumulative Emissions by Country

*Cumulative emissions from fossil-fuel and cement were distributed (1870–2012): USA (26%), EU28 (23%), China (11%), and India (4%) covering 64% of the total share*

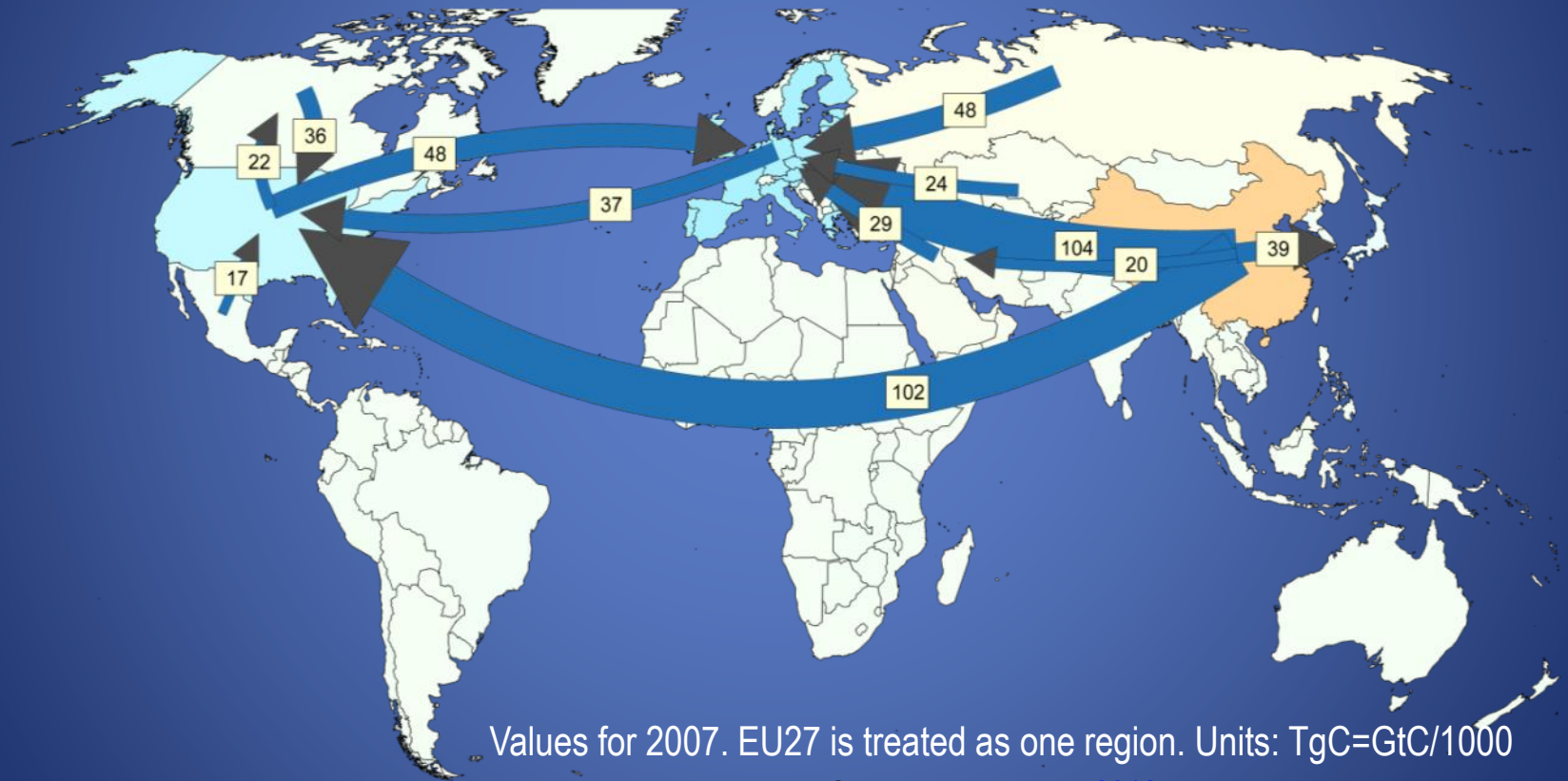


*Cumulative emissions (1990–2012) were distributed: USA (20%), EU28 (15%), China (18%), India (5%)*

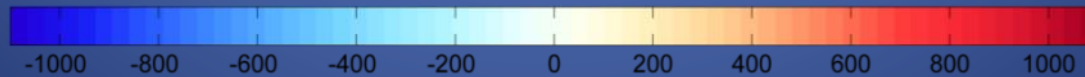
# Major Flows from Production to Consumption

*Start of Arrow: fossil-fuel combustion*

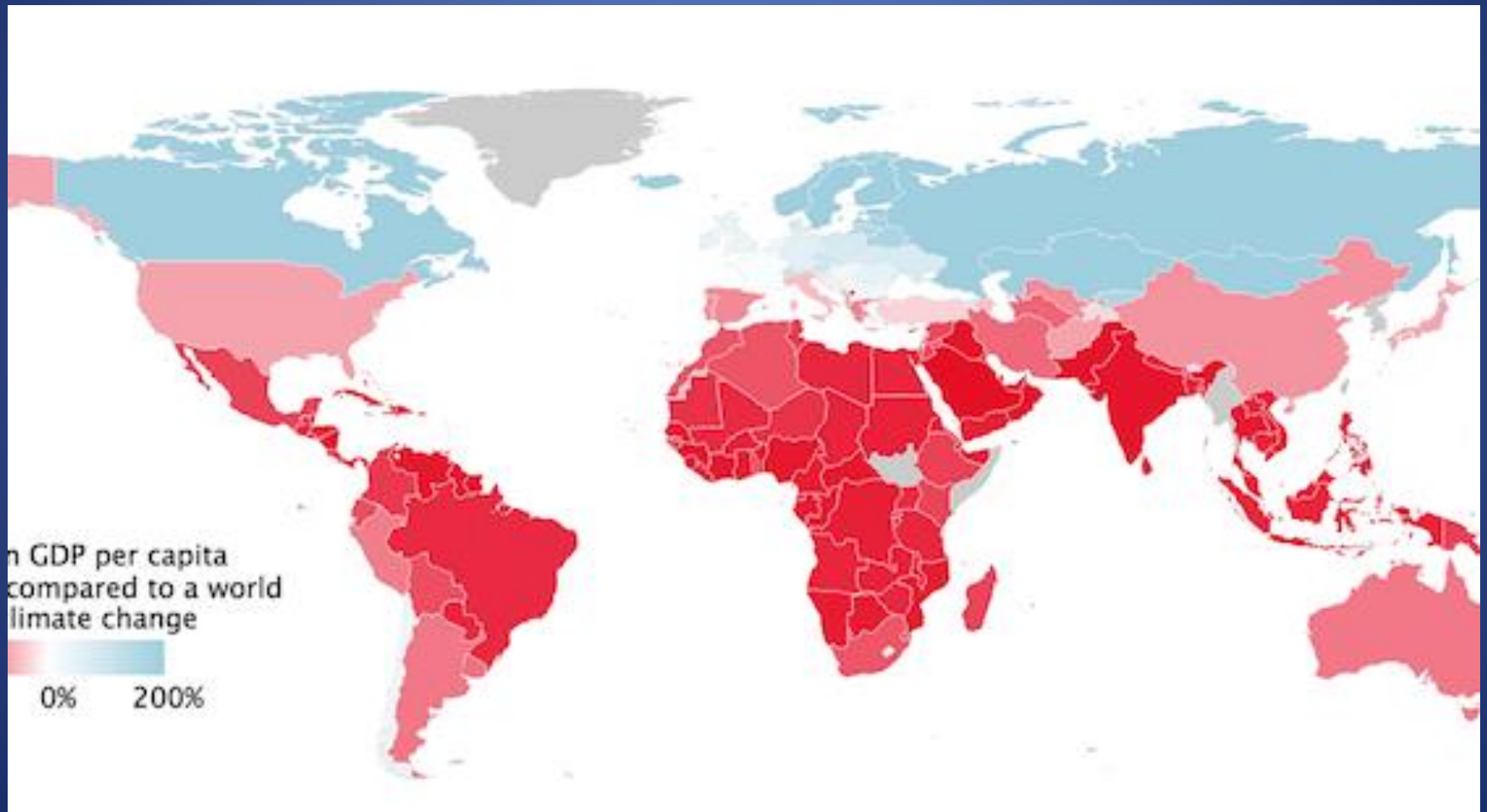
*End of arrow: goods and services consumption*



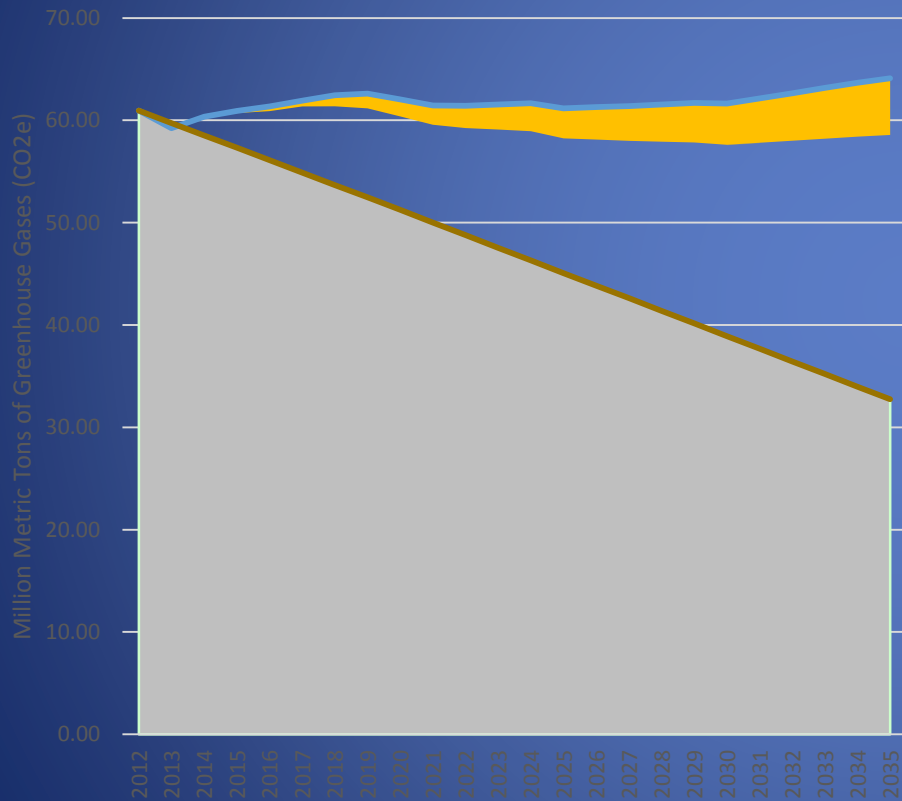
Source: [Peters et al 2012b](#)



# Economic Impact of Climate Change on the World



# Energy Efficiency (Residential, Commercial, Industrial)



- Examples of measures:
  - Residential HVAC, Weatherization, and Lighting,
  - Commercial Lighting, Daylight, and Lighting Controls,
  - Industry-specific measures