

Overview of Recent State Climate Change Mitigation Actions

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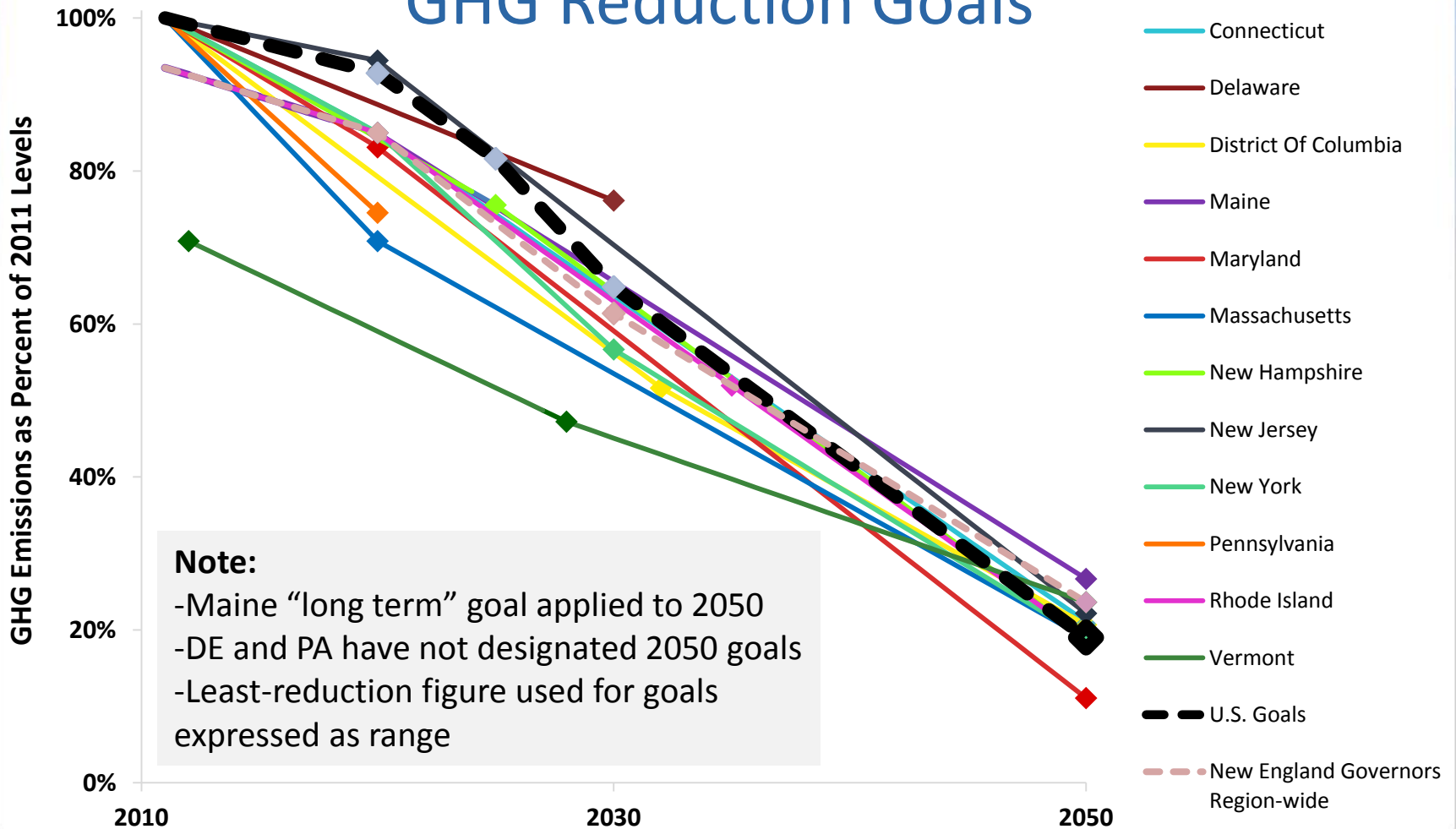
November 1, 2016
Pennsylvania Climate Change Advisory Committee

Georgetown Climate Center: Mitigation Focus is on Transportation & Power Sectors

- Facilitate the Transportation & Climate Initiative
- Work with states as a convener and resource around Clean Power Plan
- Convene states working to meet state climate goals



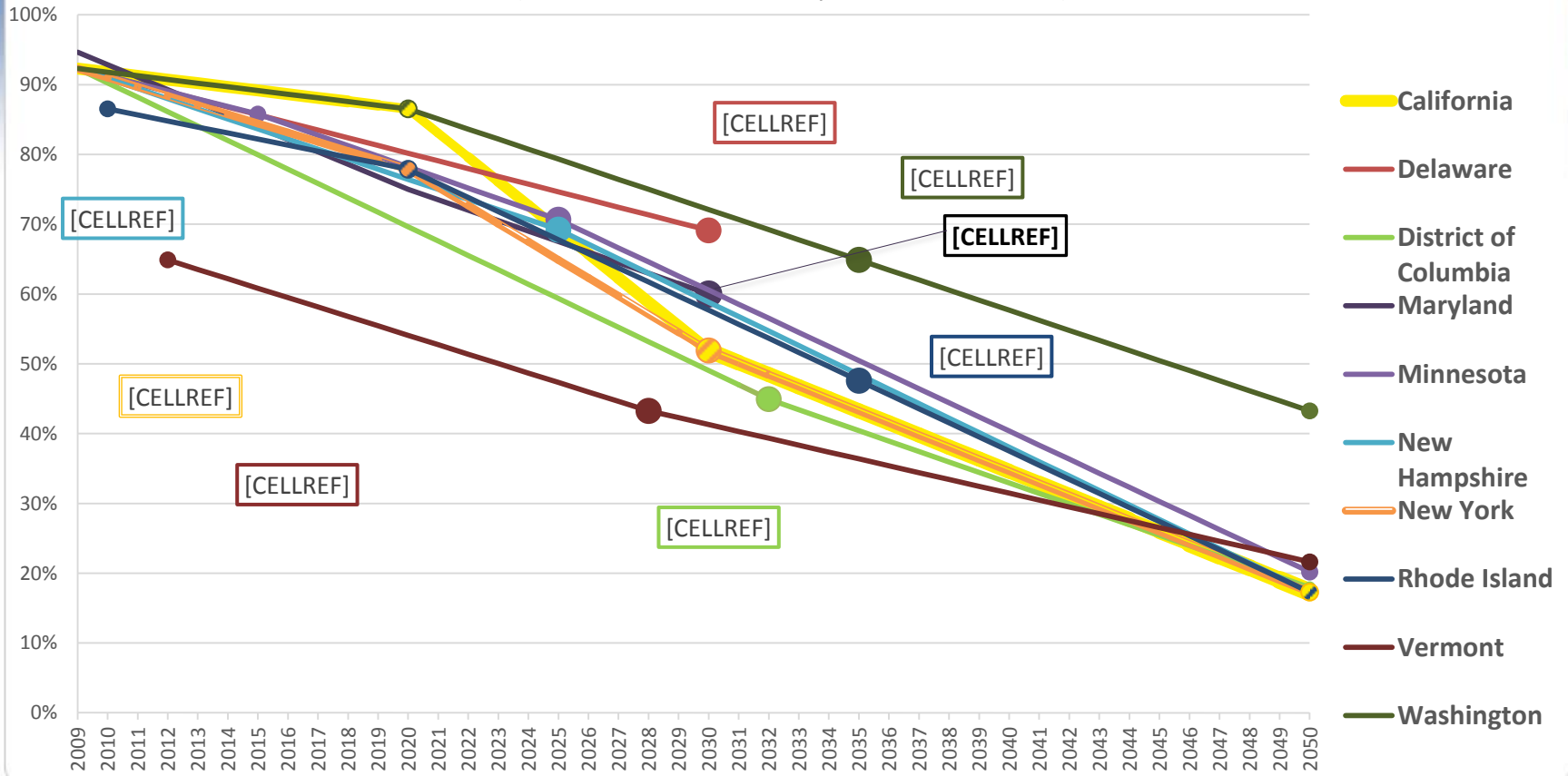
U.S, States Have Set Economy-Wide GHG Reduction Goals



Recent Action to Set Mid-Term Goals

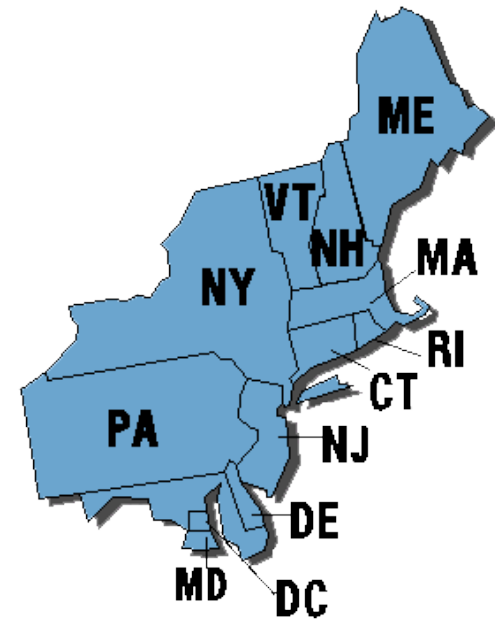
States with Interim 2025-2040 GHG Reduction Goals

(normalized to U.S. economy-wide 2006 emissions)



Transportation and Climate Initiative

- 11 northeast and mid-Atlantic states and the District of Columbia
- TCI launched in 2010
- Working together to reduce energy use and GHG emissions from transportation



Analysis Developed to Inform TCI

In 2015, GCC and Cambridge Systematics published report to inform states participating in TCI. Report analyzed:

- What are regional emission trends?
- What are opportunities for GHG reductions?
- What are economic impacts of clean transportation strategies?



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A Leading Resource for State and Federal Policy

November 2015

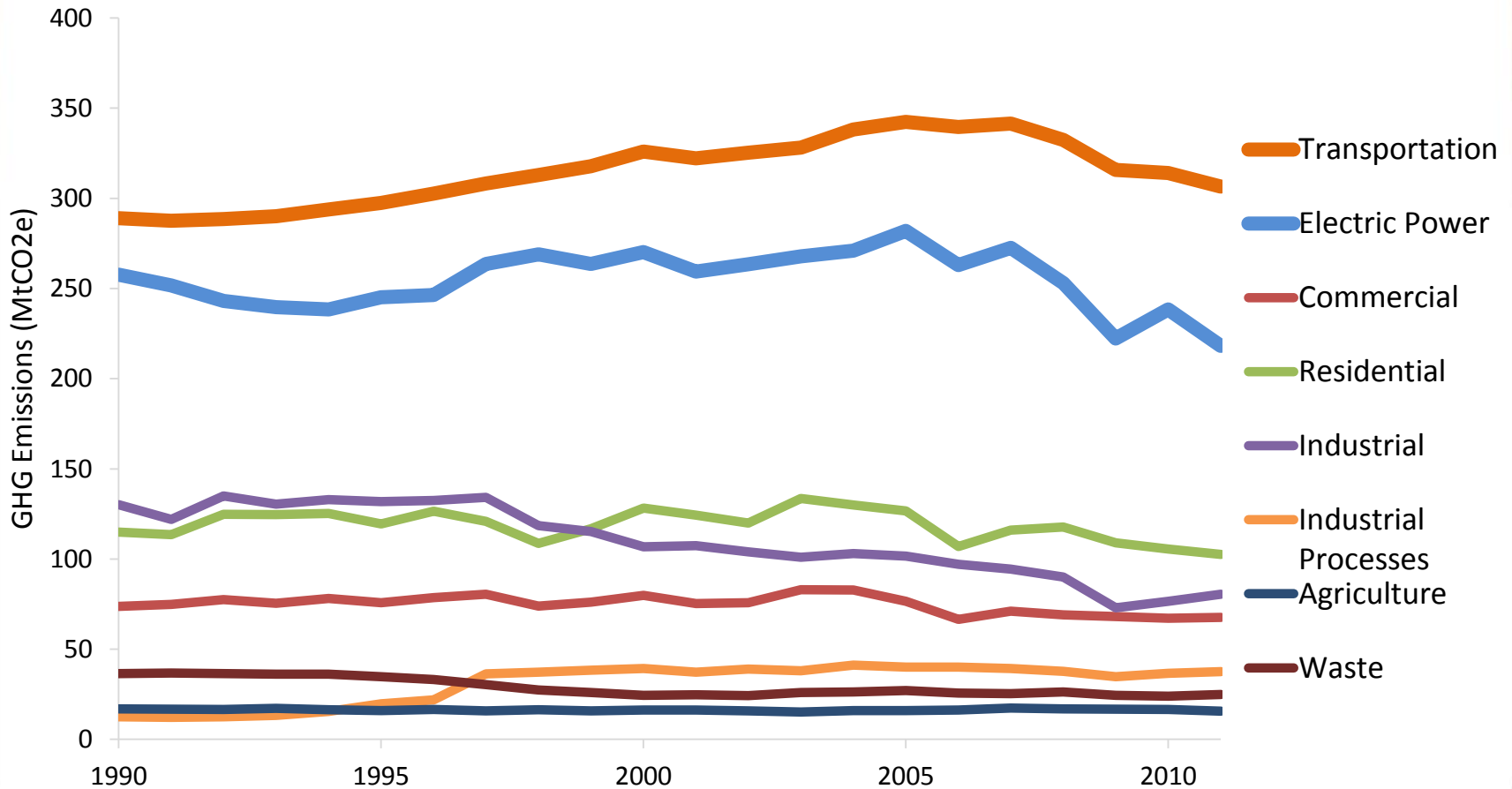
Gabe Pacyniak, Kathryn Zyla, Vicki Arroyo, and Matthew Goetz, Georgetown Climate Center

Christopher Porter and David Jackson, Cambridge Systematics

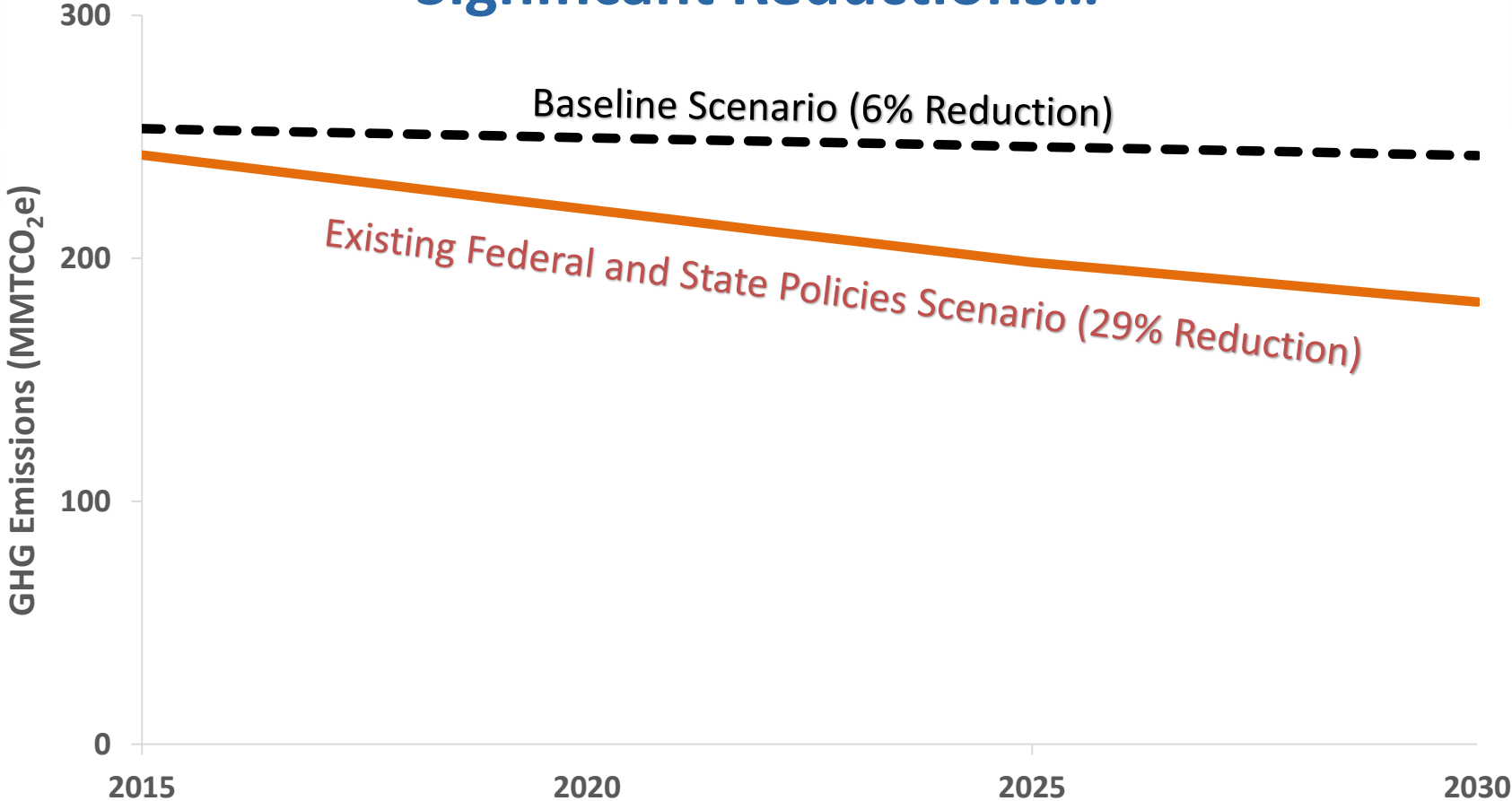
With additional research help by Suseel Indrakanti, Cambridge Systematics

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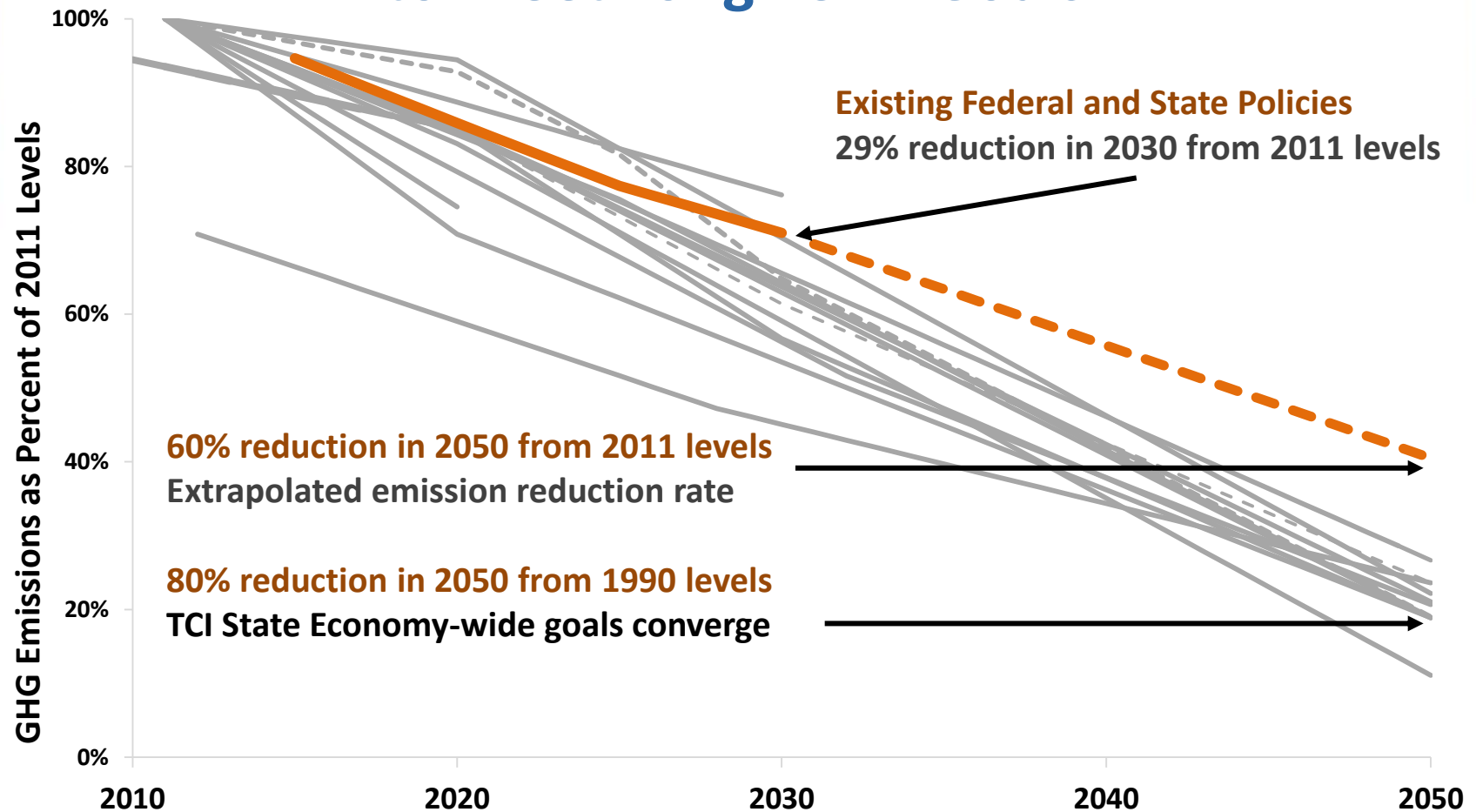
Transportation is the Largest Source of Regional GHG Emissions



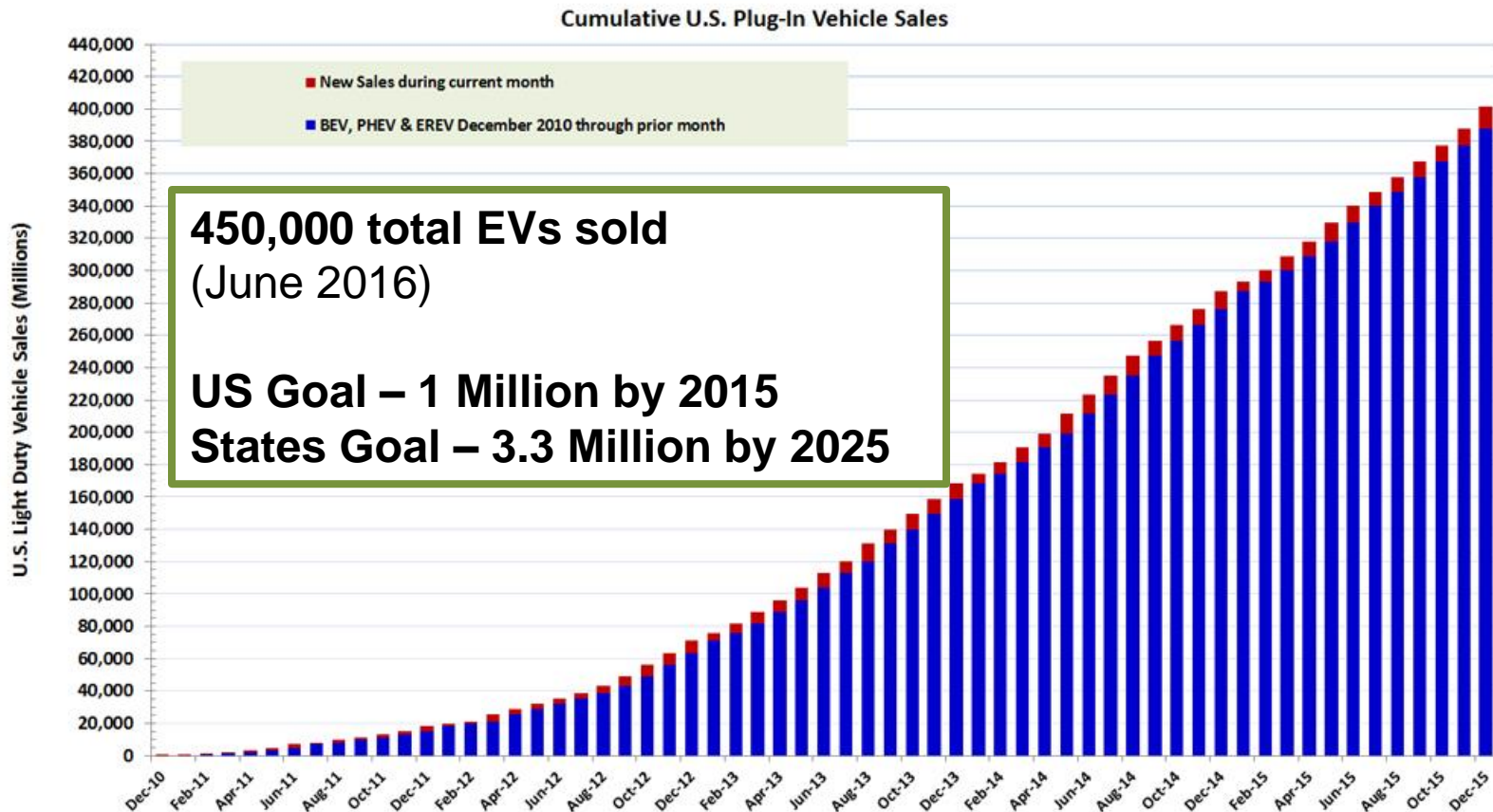
Existing Federal and State Policies will Achieve Significant Reductions...



...But Will Not Put States on Track to Meet Long-Term Goals



Electrification is a Key Strategy, but Additional Action is Needed

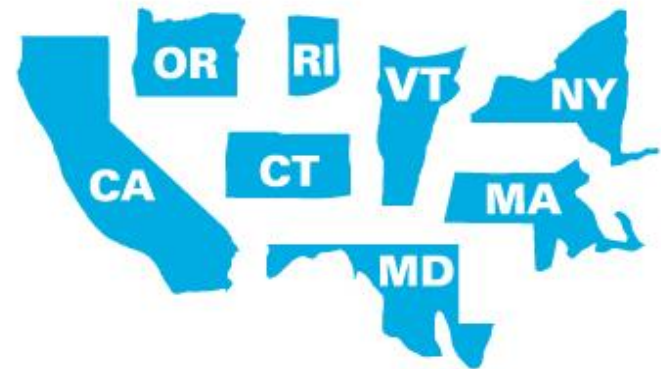


Source: Argonne National Laboratory

10 States Have Adopted Zero-Emission Vehicle Standards

- **ZEV standards**
 - 10 states
 - 15% of new vehicles must be ZEVs by 2025
- **State ZEV deployment goals**
 - California goal of 1.5 million vehicles by 2025
 - ZEV MOU pledge
- **Fleet adoption goals**
- **International ZEV Alliance**

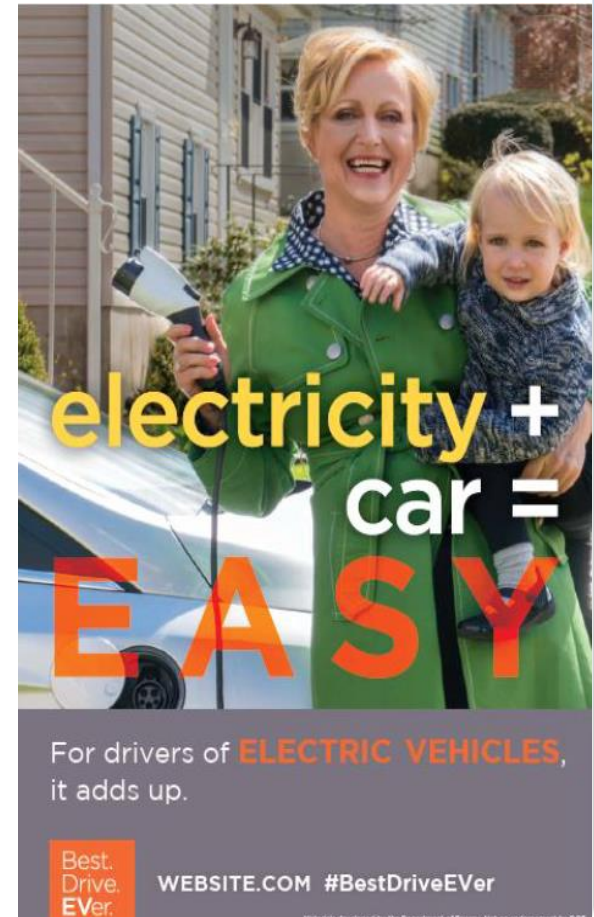
3.3 MILLION
ZERO-EMISSION VEHICLES
BY 2025



California Air Resources Board

Additional Supports Include Purchase Incentives, Education

- **Purchase Incentives**
 - Vehicle prices are dropping, but federal, state tax credits are still critical to making vehicles cost competitive
 - Other incentives like HOV lane access are also important
- **Consumer Education**
 - Studies show consumers unfamiliar with vehicles, undervalue fuel economy benefits
 - Dealers are often not incentivized to sell vehicles
 - DOE, states, launching public information campaigns, ride and drives



electricity +
car =
EASY

For drivers of **ELECTRIC VEHICLES**,
it adds up.

Best.
Drive.
Ever.

WEBSITE.COM #BestDriveEver

Materials developed by the Department of Energy. Not an endorsement by DOE.



- **Multi-state electric vehicle procurement**
 - National Association of State Procurement Officials ValuePoint Program
- **Leverage the purchasing volume of multiple public sector fleets:**
 - reduced purchase prices
 - access to a wider range of models
 - best possible contract terms
- **Explore leasing and alternative purchasing models**
- **Open to all state and local governments**

Project Partners



CALSTART
calstart.org



Ross Strategic
rossstrategic.com



Northeast States for
Coordinated Air Use
Management
nescaum.org



California Department
of General Services
dgs.ca.gov



Georgetown
Climate Center
georgetownclimate.org



Atlas Public Policy
atlaspolicy.com

Greater New Haven Clean Cities Coalition
Ocean State Clean Cities Coalition
Sacramento Clean Cities
Western Washington Clean Cities



Columbia-Willamette Clean Cities Coalition
Denver Metropolitan Clean Cities Coalition
Granite State Clean Cities Coalition
Long Beach Clean Cities Coalition
New Jersey Clean Cities Coalition

Project Timeline



Summer/ Fall
2016

- Outreach to state and local fleets
- Formation of Automaker Advisory Group

Winter 2016/
2017

- Development of solicitation

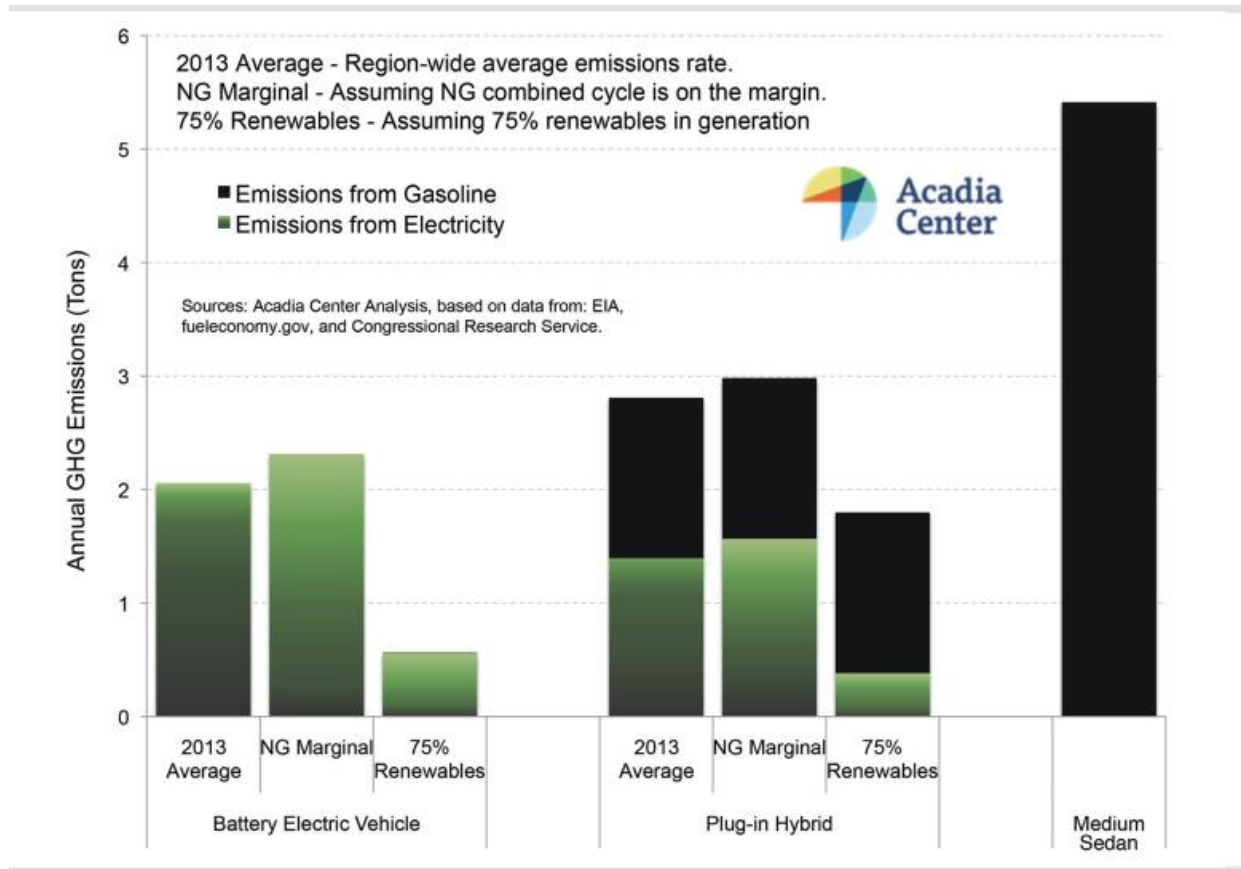
Summer 2017

- Issuance of solicitation to dealer networks

Winter 2017

- Dealer responses and fleet orders

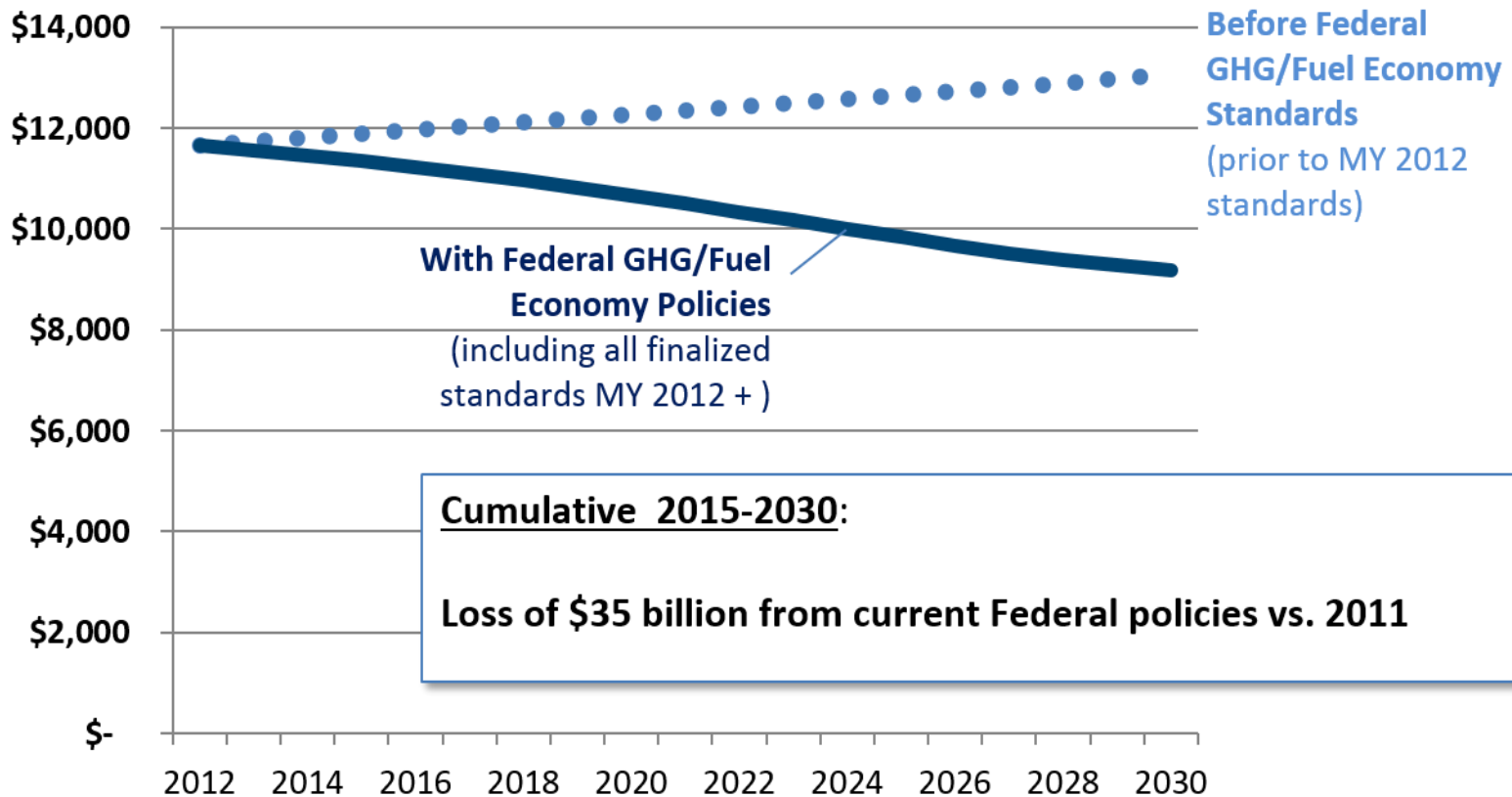
EV Benefits are Tied to Progress on Decarbonizing Electricity Grid



Source: Acadia Center

Existing Federal Vehicle Standards will Result in Reduced Transportation Revenue

TCI Region Federal + State Motor Fuel Tax Revenue (\$ millions)



GCC Analysis Evaluated Potential for GHG Reductions

Reducing Greenhouse Gas Emissions from Transportation
Opportunities in the Northeast and Mid-Atlantic



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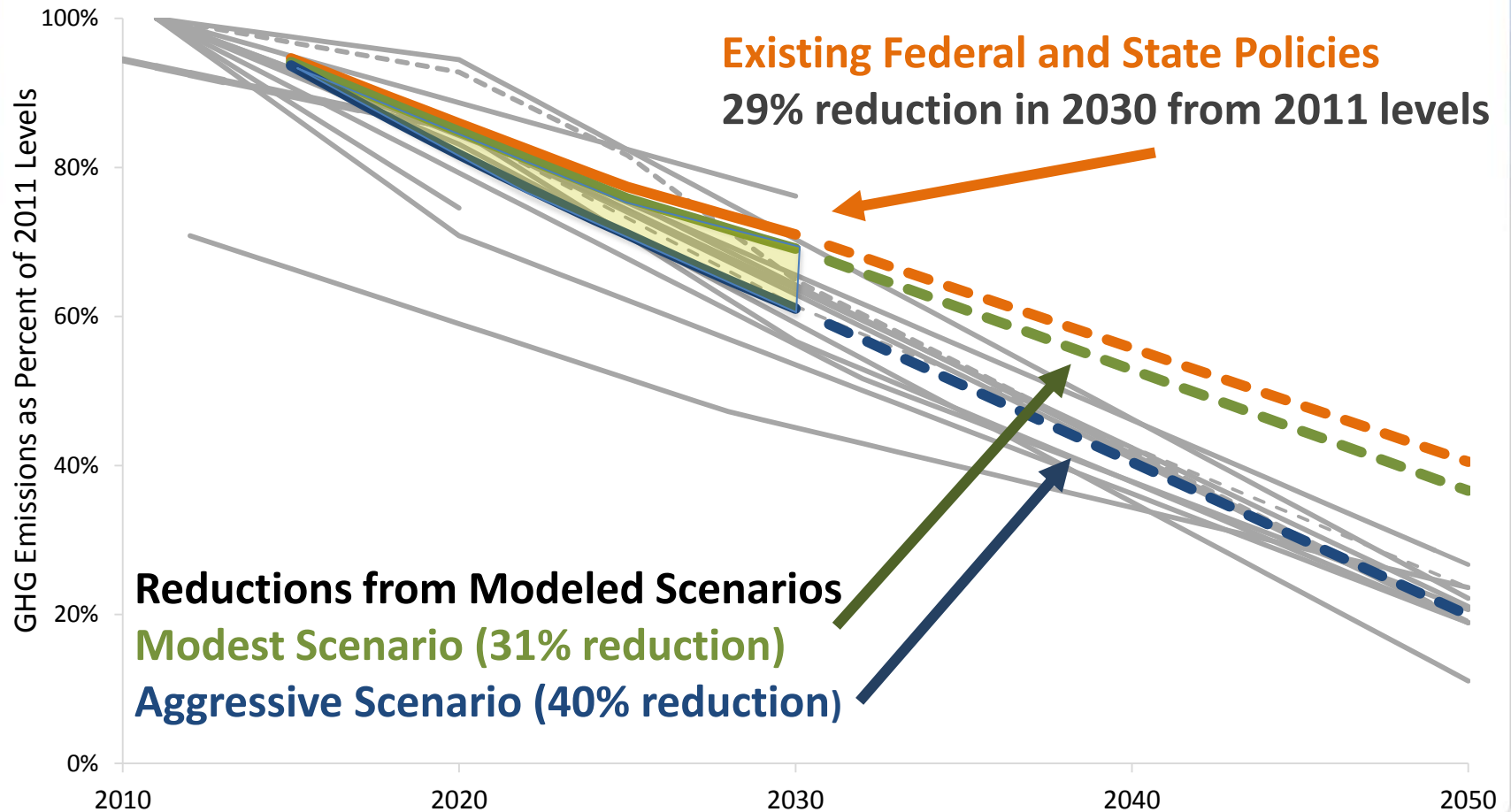
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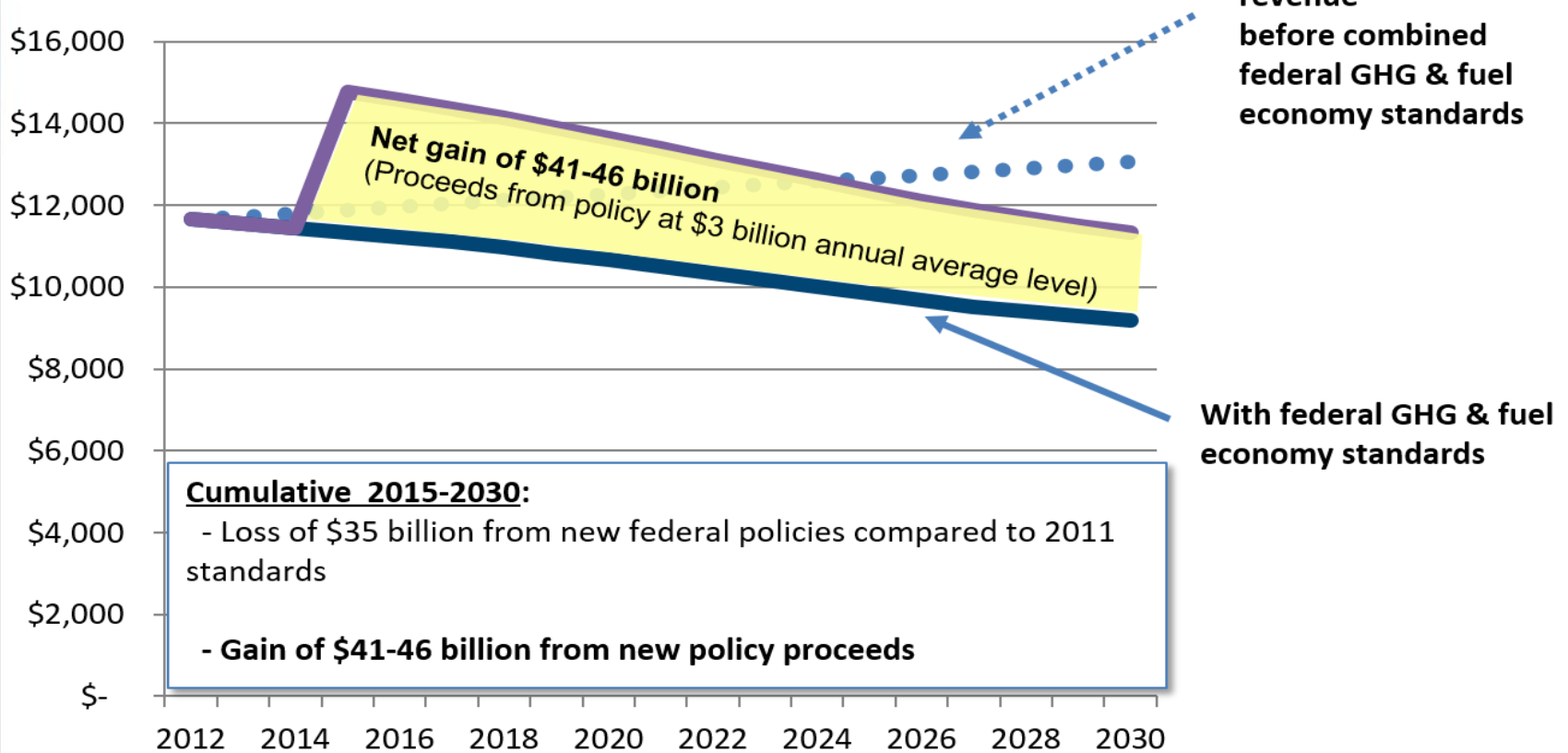
- **Report evaluated scenarios that combined pricing policy with investments into clean transportation**
- **Combined policies can drive both emission reductions and generate economic benefits by 2030:**
 - GHG reductions of 32 to 40%
 - Gross regional product increases of \$11.7 billion to \$17.7 billion
 - 91,000 to 125,000 new jobs
- **Pricing policies could also more than make up for revenue loss**

Resulting Reductions Would Help States Achieve 2050 Goals



Comprehensive Policy Proceeds Could be Used for Transportation

TCI Region Federal + State Motor Fuel Tax Revenue (\$ millions)



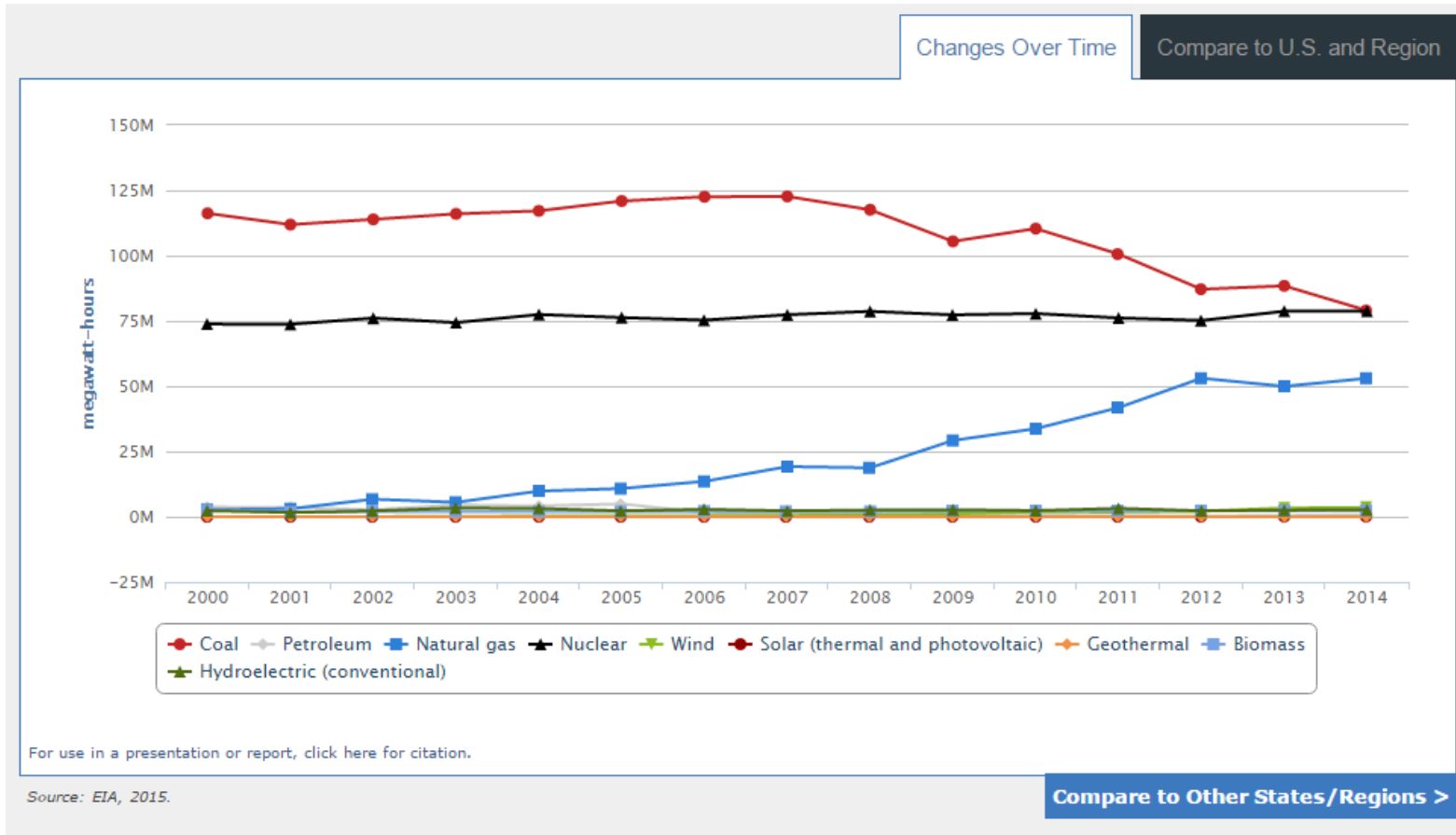
Six TCI Jurisdictions Announced Work on Market-Based Policies to Reduce GHG Emissions

In November, 2015, CT, DE, DC, NY, RI, VT announced that they will:
“work together through TCI to develop potential market-based policies that are targeted to achieve substantial reductions in transportation sector”

We know that regional climate change partnerships can lead to real reductions in emissions. The Regional Greenhouse Gas Initiative launched by nine eastern states including Vermont has been responsible for half of the power sector emissions reductions in our region ... I hope our efforts in moving to a cleaner transportation system can build on this successful model.

- Vt. Governor Peter Shumlin

Power Sector Strategies

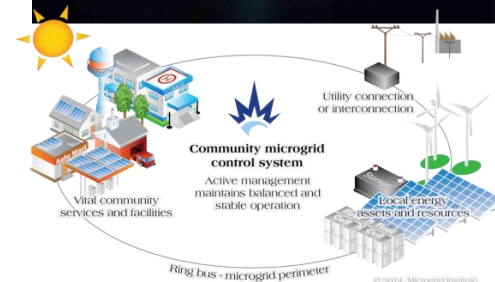


Renewable Energy Developments

- **7 states and DC have recently increased Renewable Portfolio Standards, including**
 - Hawaii set a RPS of 100% by 2045
 - Vermont set a RPS of 75% by 2032
 - California set a RPS of 50% by 2030
 - New York set a Clean Energy Standard of 50% by 2030
- **Other states are promoting RE through other strategies**
 - Connecticut DEEP has authority to contract up to approximately 15% of the state's electricity demand through long-term clean energy contracts
 - Massachusetts distribution companies must solicit long-term contract proposals for 9.45 million MWh annually from clean sources
 - Nevada's Renewable Energy Tax Abatement program has helped support the construction of 29 large-scale renewable energy projects
 - Virginia executive order calls for at least 8% of state government energy needs to be met through renewable energy

Harnessing Dramatic Changes to Electricity Sector

- Increasing distributed renewable energy
- Challenges presented by increasing variable energy sources (wind, solar)
- Emerging energy storage solutions
- Interest in microgrids for both resilience and distributed energy benefits
- Electrification of transportation, heating



Addressing Methane Leakage

- Like Pennsylvania, other states are concerned about methane emissions
- For example, MD is required to assess GHG emissions from electricity imports under its climate change law
 - Currently, MD Commission on Climate Change considering whether and how to account for methane leakage
 - Potential opportunities for regional coordination

Thank You

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Additional materials available at the Georgetown Climate Center
website: <http://www.georgetownclimate.org>