

RECAP:
**Accelerating Climate Action in the
United States:
What are we doing & what more can be done?**

Judi Greenwald

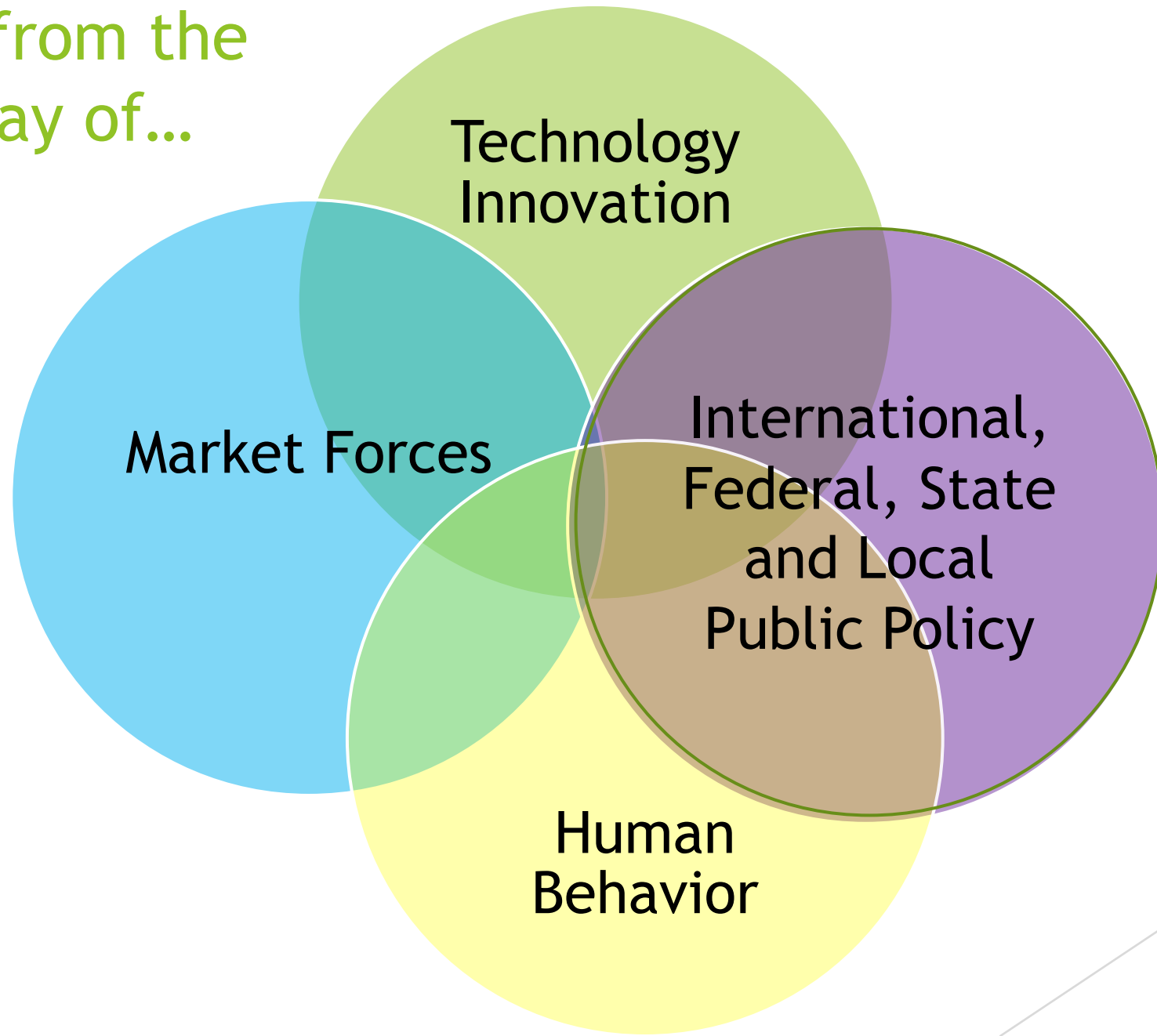
Fellow, Andlinger Center for Energy and the Environment

Andlinger Center Annual Meeting

Princeton University

November 9, 2018

Greenhouse gas (GHG) emissions - and reductions - result from the interplay of...



Key players in climate and energy: international, federal, state, local

Government

Private sector

Research/Analysis
Action
Advocacy

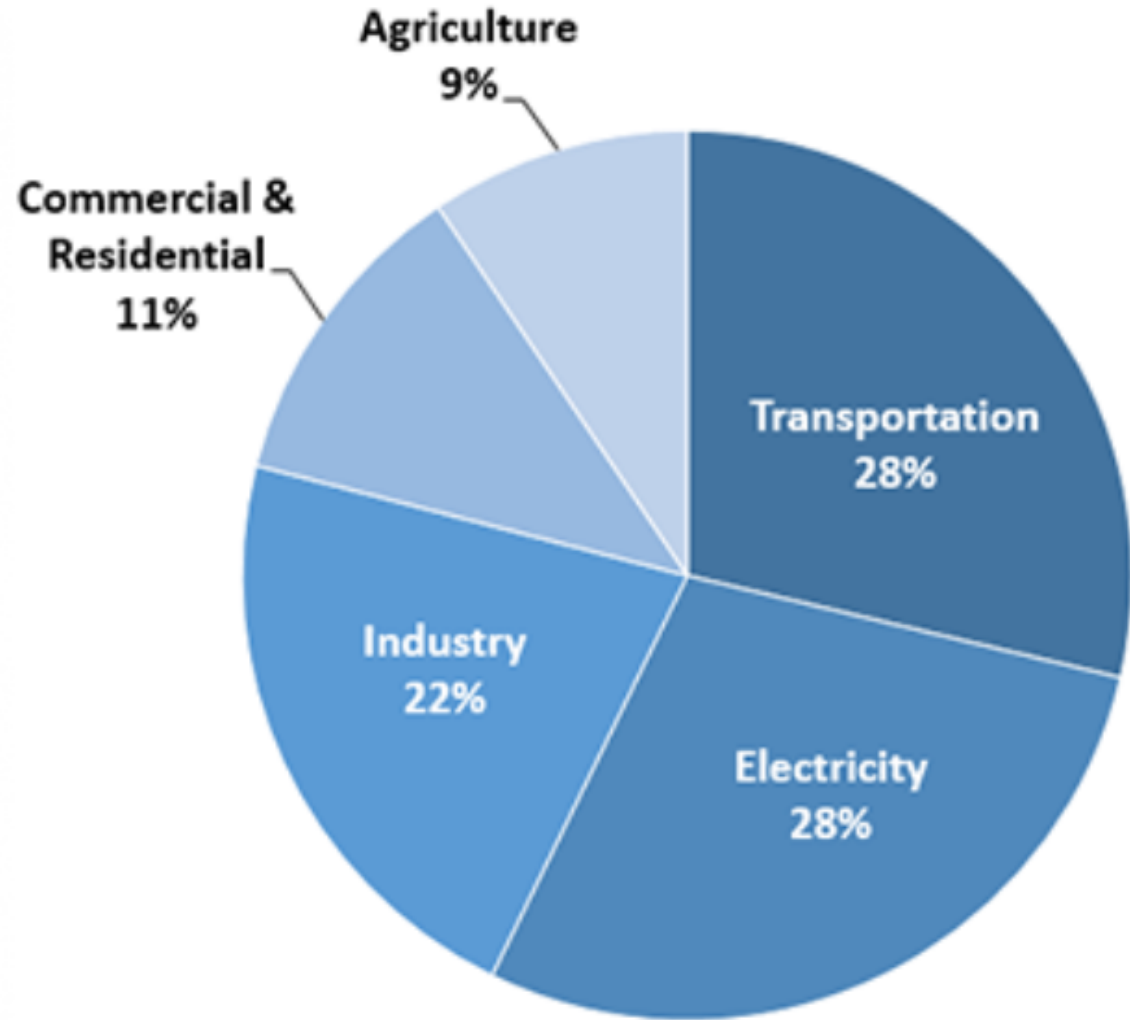
NGOs

Academia

Transportation
and Electricity:

The two U.S.
sectors with the
highest GHG
emissions

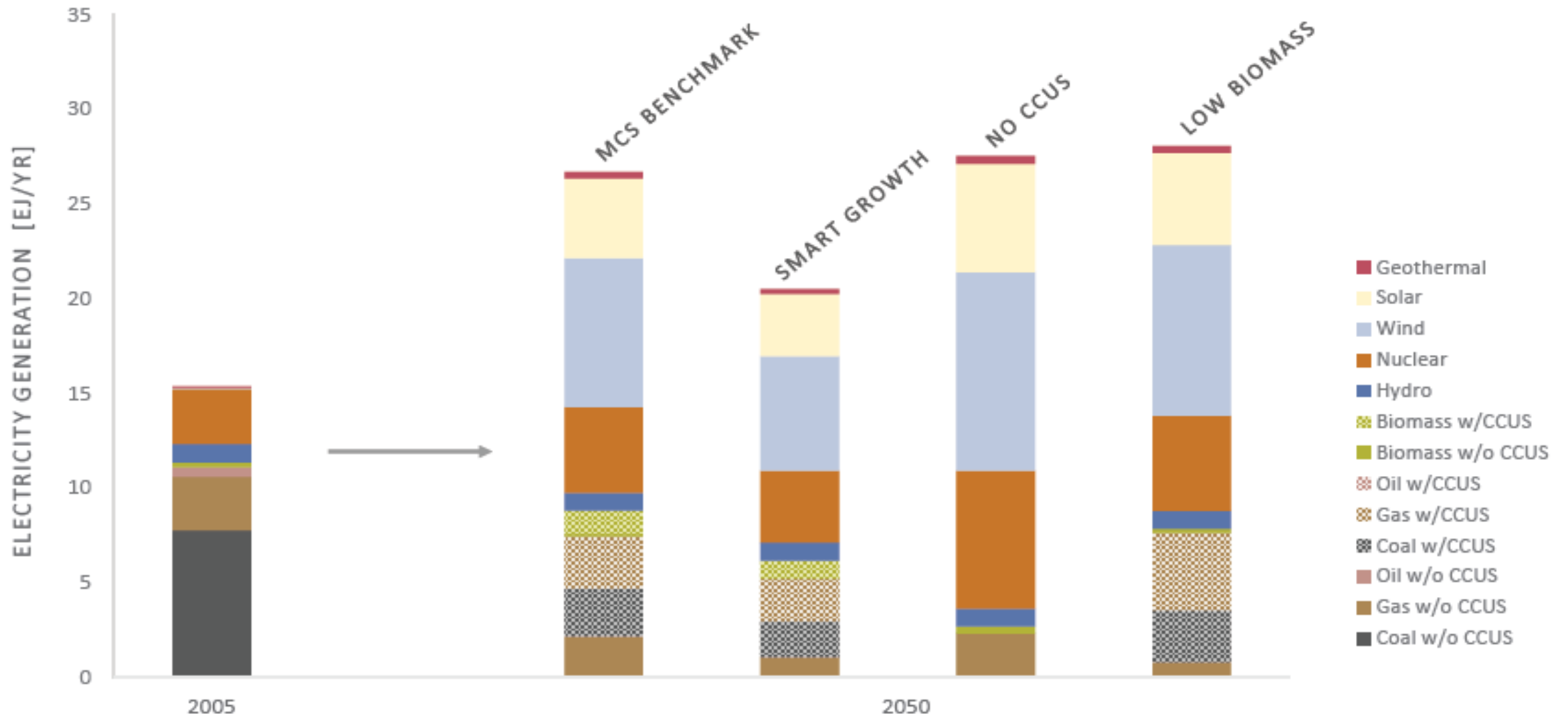
Sources of Greenhouse Gas Emissions in 2016



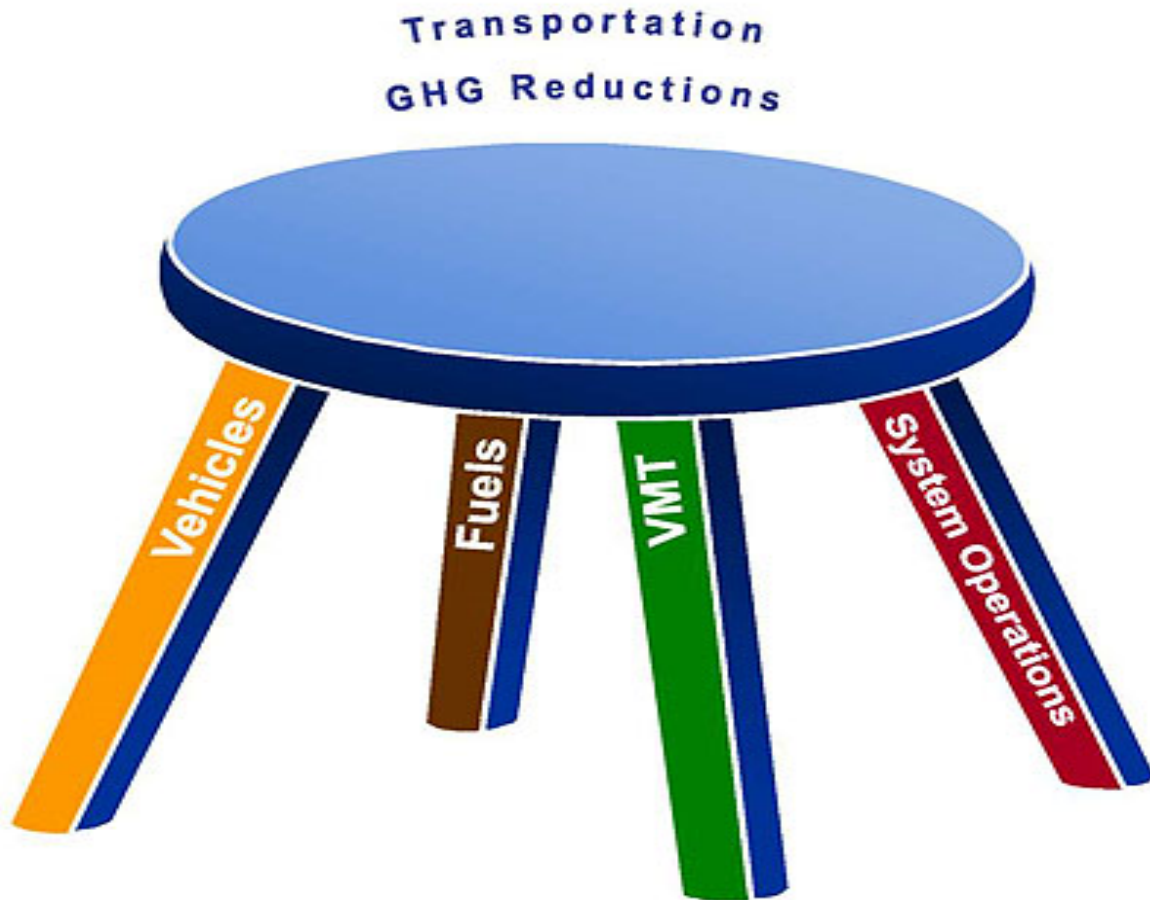
U.S. Environmental Protection Agency (2018). Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016

Electricity Sector:

- Portfolio of decarbonizing electricity supply solutions
- Energy efficiency and grid modernization
- Innovation across the board



The 4-legged stool driving transportation fuel use and emissions



- ▶ Low oil prices are a challenge
- ▶ Most historical progress has been through vehicle efficiency standards
- ▶ Other legs more difficult
- ▶ Three revolutions could be game changers: electrification, mobility-as-a-service, and automation

GHG Emissions could go either way with vehicle automation: from 60% reduction to tripling of LDV energy use by 2050

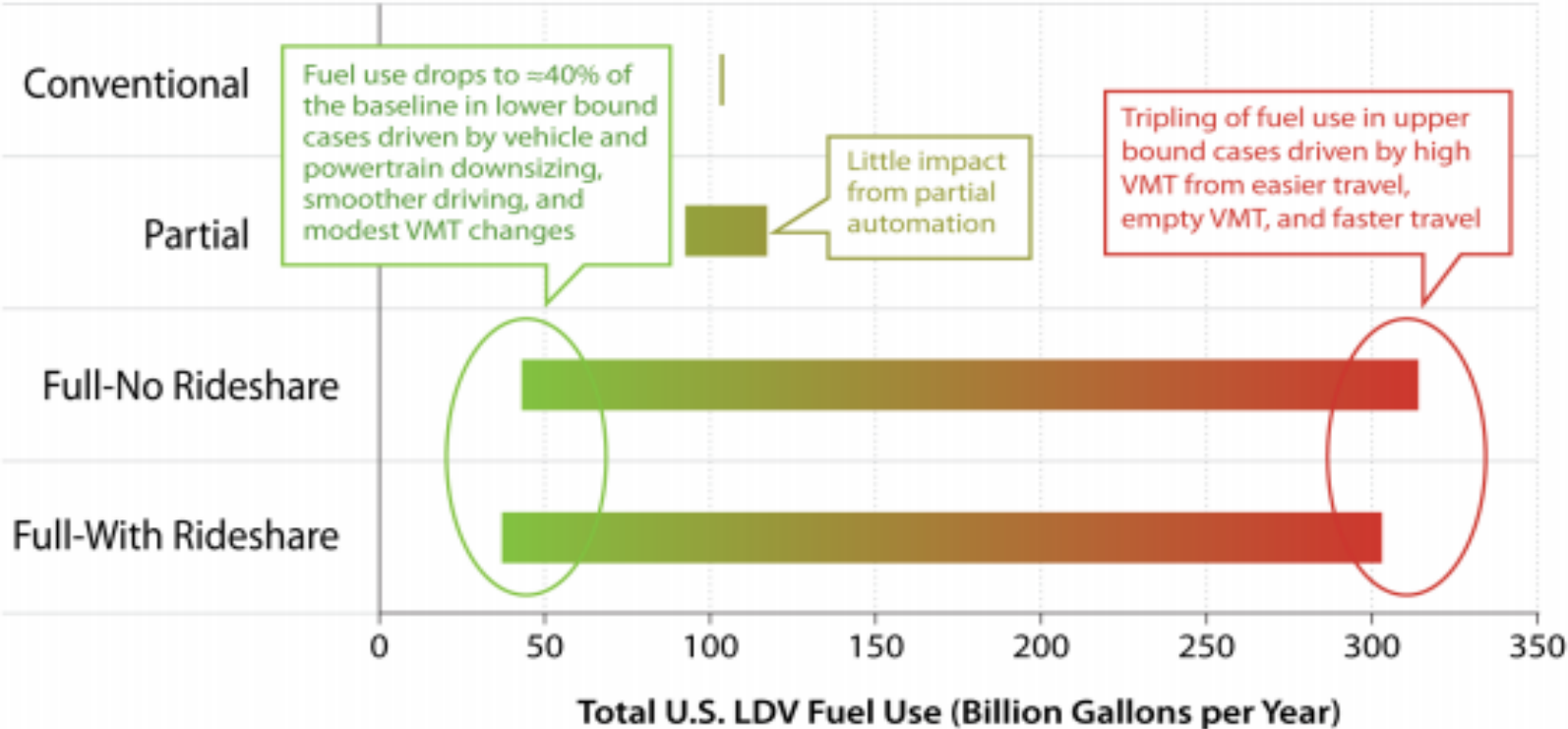


Figure ES-2. Estimated bounds on total U.S. LDV fuel use per year under the base (Conventional) and three CAV scenarios, based on the study's synthesis approach from CAV feature impact ranges reported in existing literature

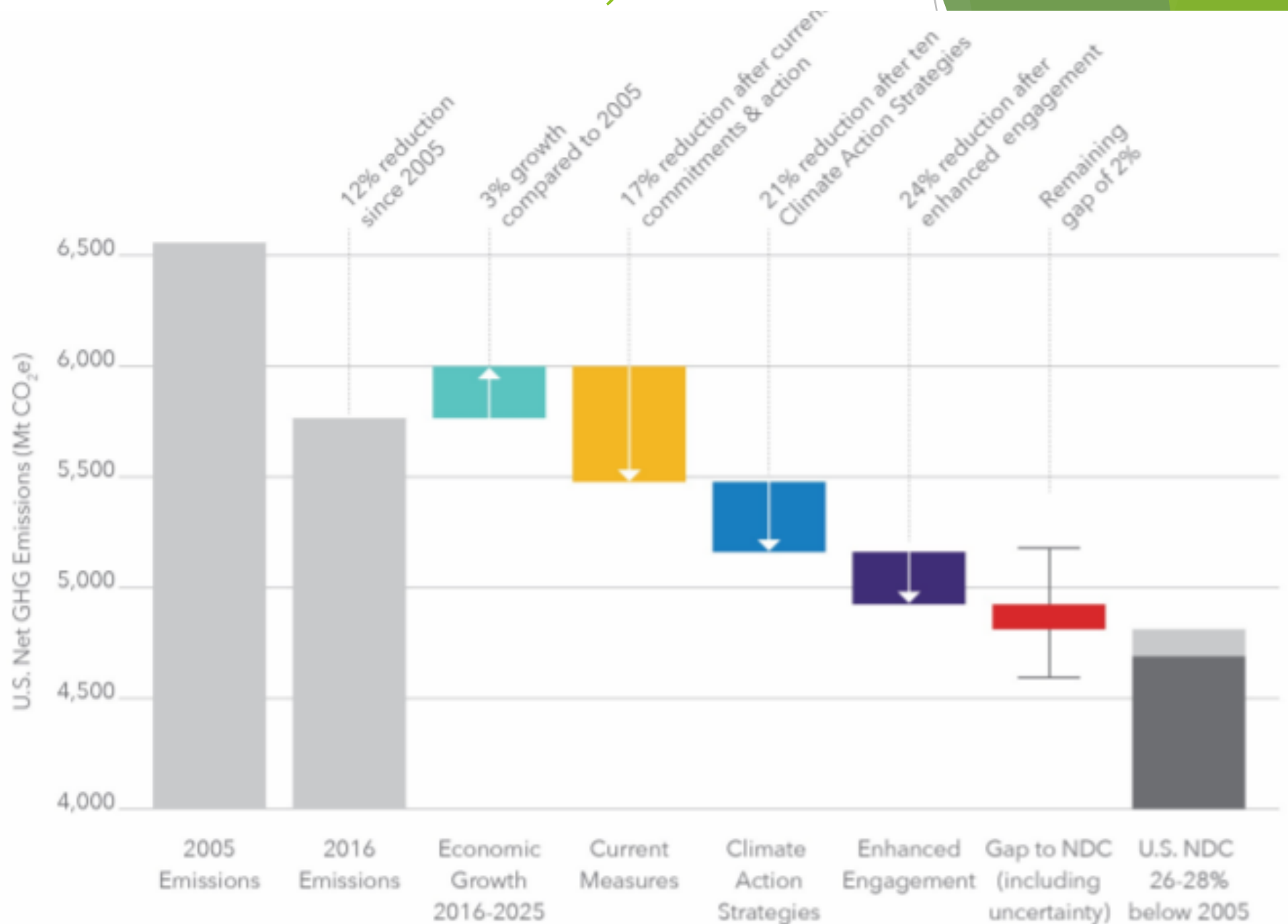
Source: Joint study by NREL, ANL, and ORNL;
<http://www.nrel.gov/docs/fy17osti/67216.pdf>

Scaling state, local and business action; Adding it all up

► Demonstration and deployment:

- inspires
- reduces costs
- achieves incremental reductions,
- lays the groundwork for future progress

► Subnational action could get an additional 8 percentage point GHG reduction



Outcomes

- ▶ Foster external connections and partnerships
- ▶ Inform other convenings
- ▶ Inform research
- ▶ Inform curriculum

Jmg.Greenwald@gmail.com

Backup slides

Climate Action Strategies:



#1: Double down on renewable energy targets



#2: Accelerate the retirement of coal power



#3: Encourage residential and commercial building efficiency retrofits



#4: Electrify building energy use



#5: Accelerate electric vehicle (EV) adoption



#6: Phase down super-polluting hydrofluorocarbons (HFCs)



#7: Stop methane leaks at the wellhead



#8: Reduce methane leaks in cities



#9: Develop regional strategies for carbon sequestration on natural and working lands



#10: Form state coalitions for carbon pricing

Source: Historical emissions data is from the U.S. EPA "Inventory of GHG Emissions and Sinks: 1990-2016"; projected emissions based on modeling from the America's Pledge research team