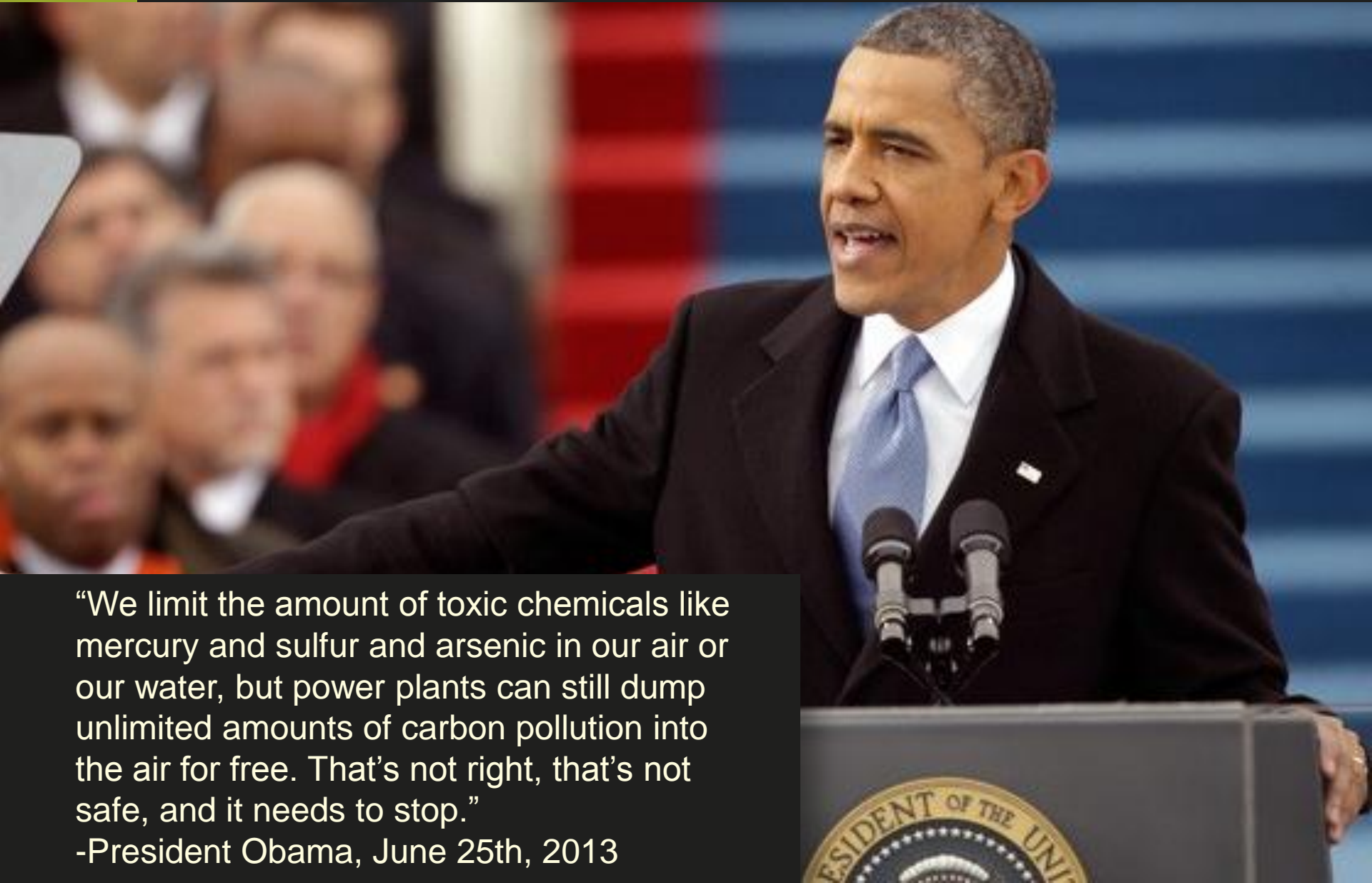




TACKLING POWER PLANT CARBON POLLUTION USING THE CLEAN AIR ACT



“We limit the amount of toxic chemicals like mercury and sulfur and arsenic in our air or our water, but power plants can still dump unlimited amounts of carbon pollution into the air for free. That’s not right, that’s not safe, and it needs to stop.”

-President Obama, June 25th, 2013

THE TIMELINE

2013

- January 20th: Start of President Obama's second term.
- **June 25th: President Obama announces Climate Action Plan.**
- September 20th: EPA proposes carbon pollution standards for future power plants.

2014

- May 9th: End of public comment period for future power plant proposal.
- **June 1st: EPA to propose guideline for carbon pollution standards for existing power plants.**
- June-September: Public comment period on existing power plant proposal.

2015

- **June 1st: EPA to finalize power plant carbon pollution standards.**

2016

- **June 30th: States to submit implementation plans for existing power plants to EPA.**
- July-December: EPA reviews state plans for compliance with its guideline.

2017

- **January 20th: End of President Obama's second term.**



THE CLEAN AIR ACT AND EXISTING POWER PLANTS

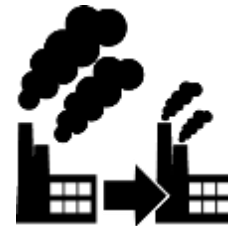
THE “101” ON 111(d)

- **EPA CO2 Emissions Guideline & State Plans**
 - EPA proposes “emission guideline”.
 - Guideline includes performance standard and compliance provisions.
 - States adopt and submit state plans.
 - If a state submits no plan, or one EPA cannot approve, EPA must issue a federal plan.
- **“Best System of Emission Reduction”**
 - “Source-based” approach limited to options plants can do “within the fenceline” (e.g. heat-rate improvements) – yields limited reductions
 - “System-based” approach includes *all options that reduce emissions* -- yields much deeper reductions
 - Signs are EPA is preparing “system-based” standards to capture deeper reductions

HOW TO CUT POWER PLANT CARBON POLLUTION



HEAT RATE REDUCTIONS



CLEANER POWER SOURCES

FLEXIBLE COMPLIANCE



MORE RENEWABLES



INVESTMENTS IN EFFICIENCY



NRDC PROPOSAL

SYSTEM-BASED, STATE-SPECIFIC STANDARDS

- **State-specific** fossil-fleet average CO₂ emission rates (lbs/MWh) for 2020 and 2025
- **Calculated** by applying benchmark coal and gas rates to each state's baseline (2008-2010) fossil generation mix
- **Averaging** allowed among all fossil units in state (including new units subject to the 111(b) standard)
- **Credit for incremental** renewables and energy efficiency (equivalent to adding MWhs to denominator in calculating emission rate for compliance purposes)
- States may opt in to **interstate averaging** or credit trading
- States may adopt **alternative plans**, including **mass-based** standards, provided they achieve equivalent emission reductions



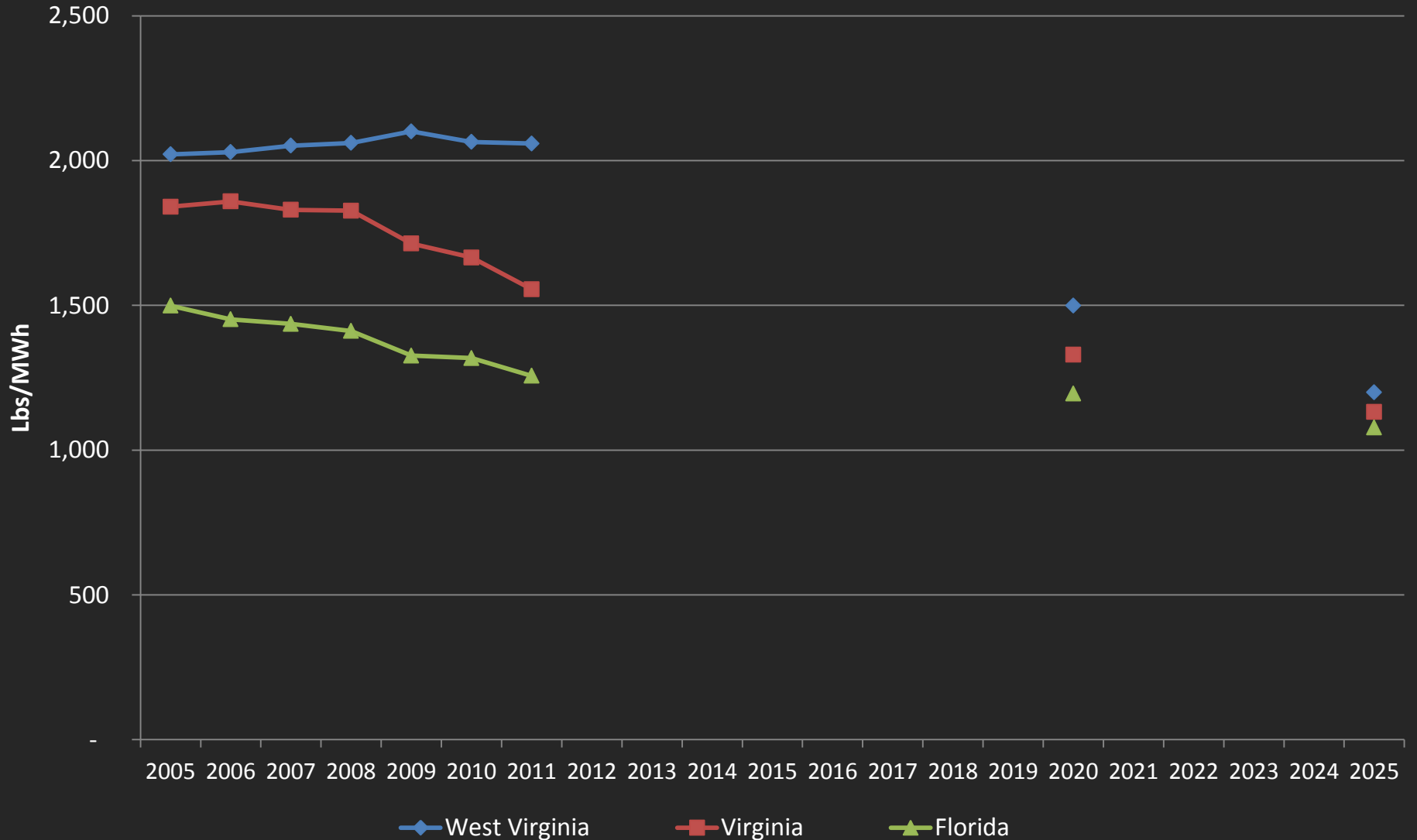
NRDC SPECIFICATIONS

LIST OF SCENARIOS

- **Reference Case**
 - AEO 2013 demand projections
 - Onshore wind costs: DOE/LBL 2012 Wind Technologies Report
 - Nuclear units re-licensed, 20-year extension
- **NRDC Policy Case**
 - 2020 National Nominal Targets: Coal = 1,500 lbs/MWh; Gas = 1,000 lbs/MWh
 - EE cost-quantity function, full Synapse EE available
- **NRDC – Half EE** (EE cost-quantity function, half Synapse EE available)
 - National Nominal Targets: Coal = 1,500 lbs/MWh; Gas = 1,000 lbs/MWh
 - EE cost-quantity function, ½ Synapse EE available in each region
- **NRDC – Stronger Standards**
 - 2020 National Nominal Targets: Coal = 1,400 lbs/MWh; Gas = 700 lbs/MWh
 - EE cost-quantity function, full Synapse EE available

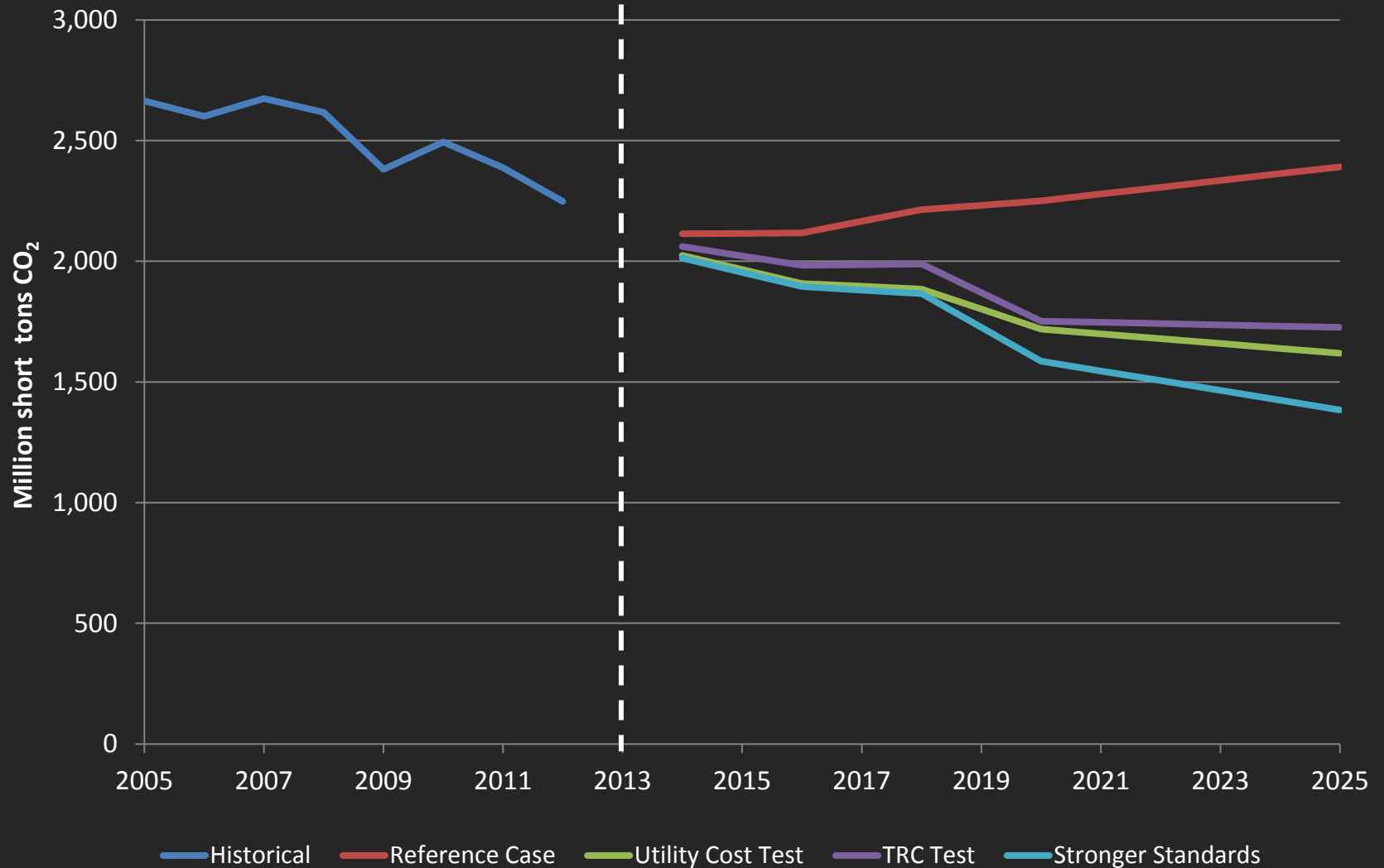


STATE EMISSION RATES TRAJECTORIES UNDER NRDC POLICY ILLUSTRATIVE 2005-2020





NRDC POLICY CASES vs. REFERENCE CASE EMISSIONS 2014-2025

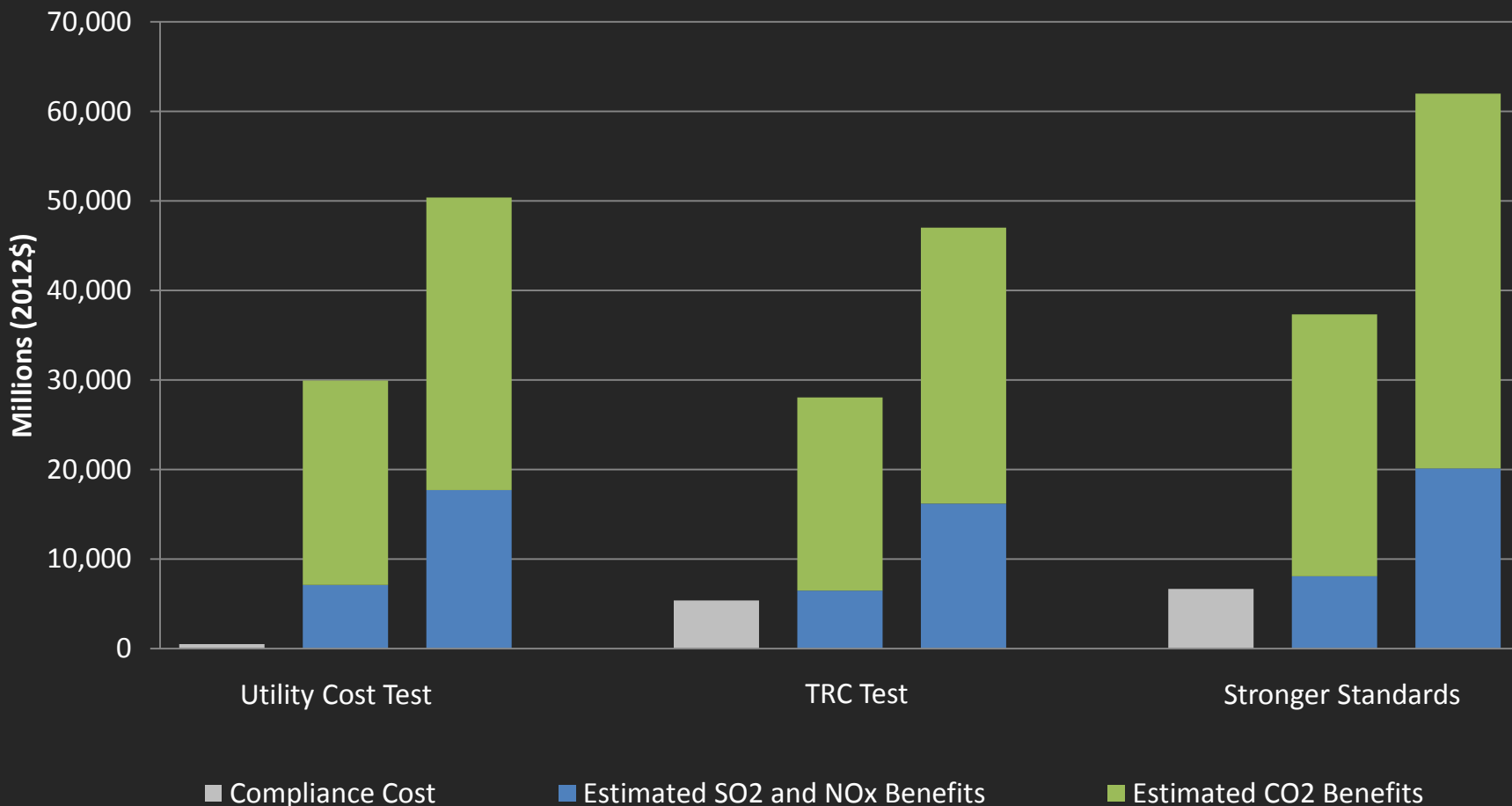


PRELIMINARY RESULTS



LARGE BENEFITS, LOW COSTS

COSTS AND BENEFITS FROM REDUCED EMISSIONS IN 2020

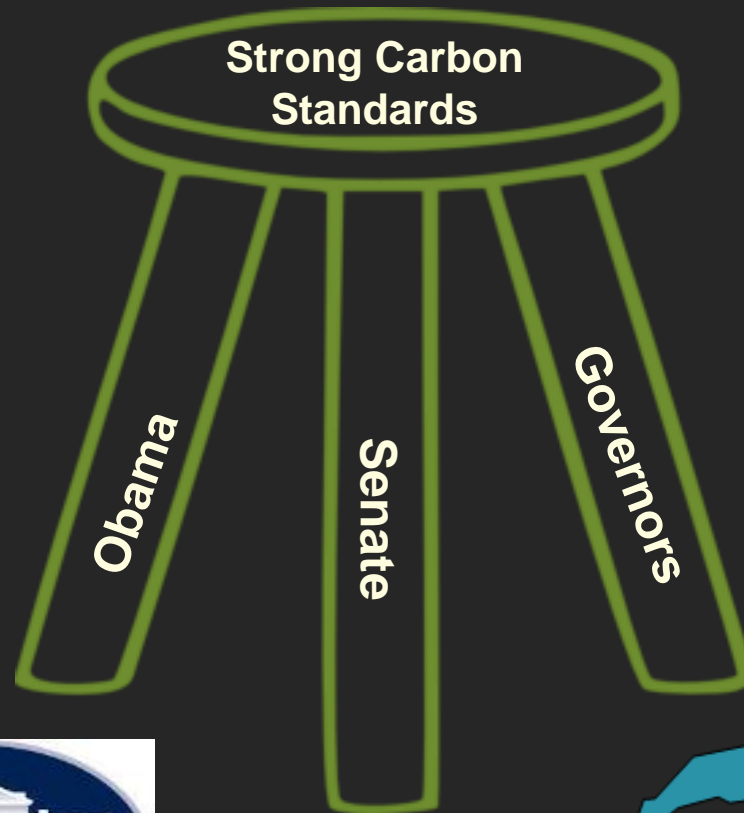


NOTE: Carbon reduction benefit (low) calculated according to Administration's updated Social Cost of Carbon (SCC) of \$43 (2012\$) per short ton in 2020, reflecting the 3% discount rate case. Carbon reduction benefit (high) calculated according to an estimate for the SCC of \$62 (2012\$) per short ton, using a 2% discount rate case. Benefits for SO₂ and NO_x reductions are preliminary estimates based on scaling previous estimates.

PRELIMINARY RESULTS

GETTING STRONG STANDARDS ACROSS THE FINISH LINE

THREE LEGS





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<http://www.nrdc.org/air/pollution-standards/>