Biodiesel: Reducing Greenhouse Gas Emissions Now
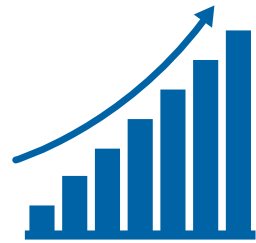
Dave Slade, Ph.D.

Chief Technologist

Renewable Energy Group

A Simple Step Today For A Better Tomorrow

Fossil fuels are the top contributor to GHG emissions
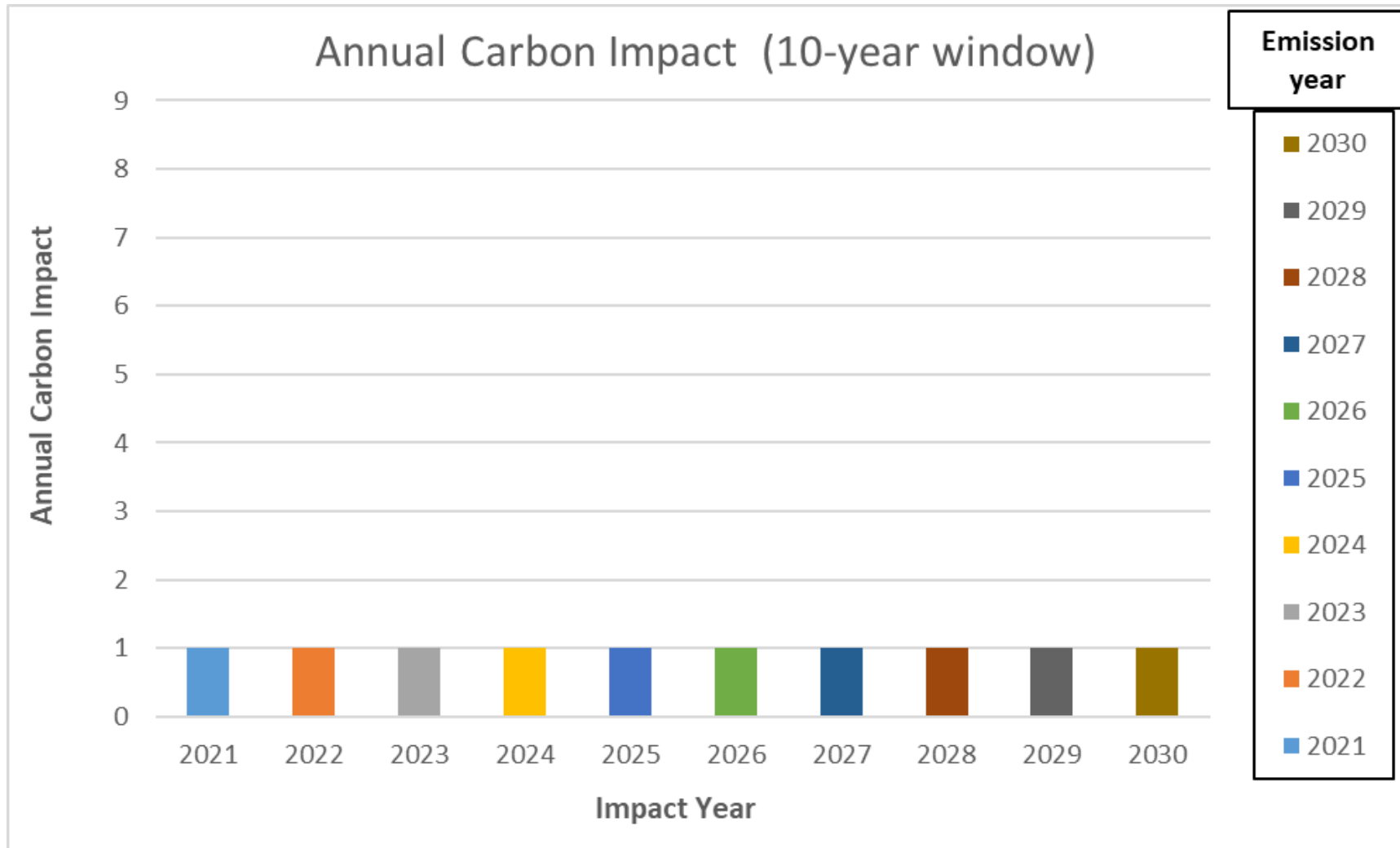
Emissions accumulate in the atmosphere

Waiting for perfection is doing harm

Biodiesel: a simple step to reduce GHG emissions today

While we plan for the long-term, we must also ask: "What can we do now?"

Renewable Energy Group

Simple Annual Carbon Accounting Is Wrong

TAKEAWAYS

➤ Fossil carbon emissions DO NOT affect the atmosphere only in the year they were emitted

➤ The total of annual fossil carbon emissions DOES NOT reflect their actual impact on the environment

Cumulative Carbon Impact is reality

Cumulative Carbon Impact (10-year window)

Cumulative Impact = 44.9 tons (from 1 new ton each year)

Emission year
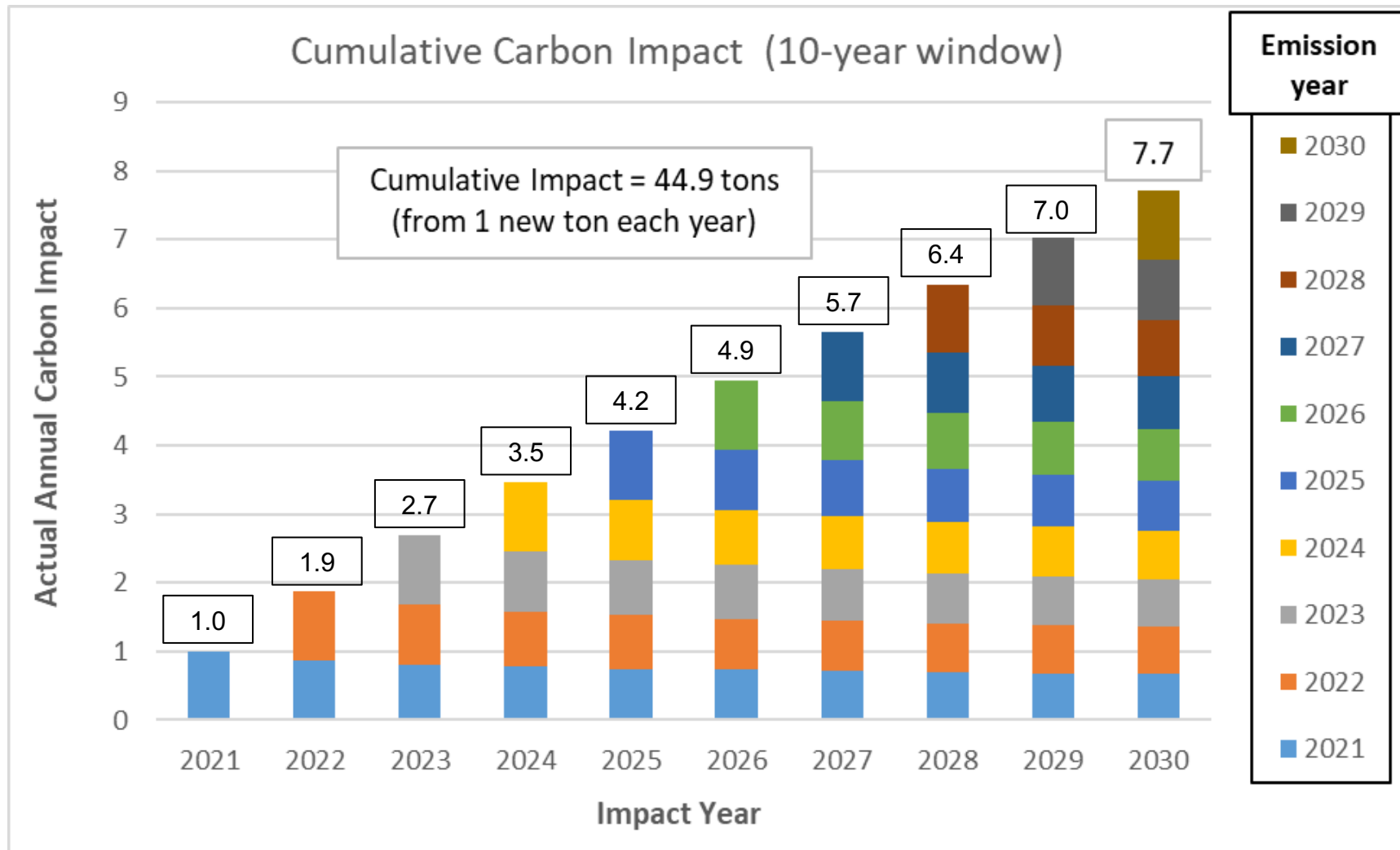
TAKEAWAYS

- New carbon impacts the atmosphere each year for many years (new carbon = fossil carbon)

- 44.9 tons of cumulative impact from only one ton per year for 10 years

* Using the Bern Carbon Cycle CO2 decay function provided in the Technical Summary of the 4th Assessment Report of the IPCC (2007) and in Kendall, et al. (2009) based on a background atmospheric CO2 concentration of 378 ppm

Oregon

Supportive Biodiesel States

B5
&
CFP
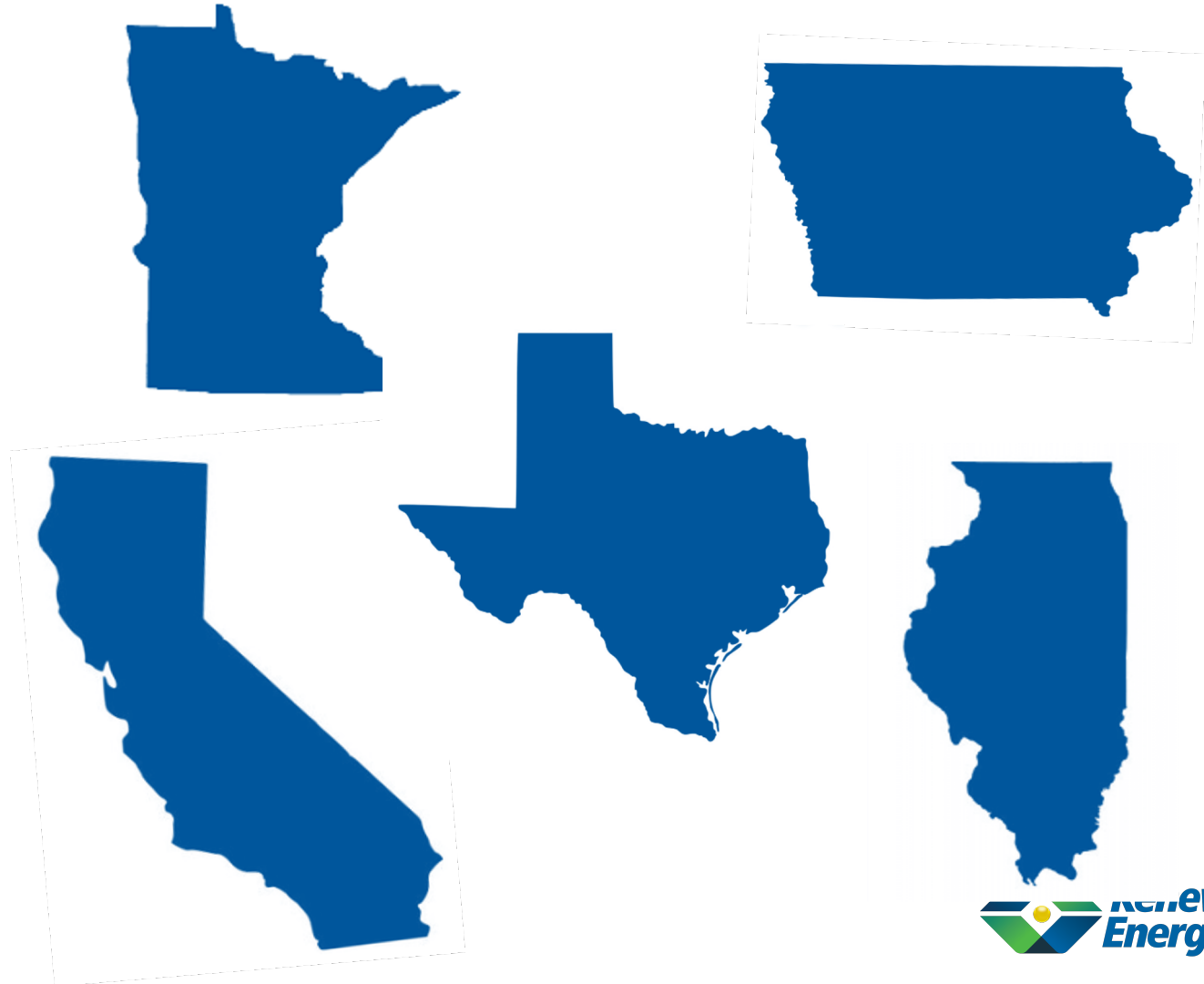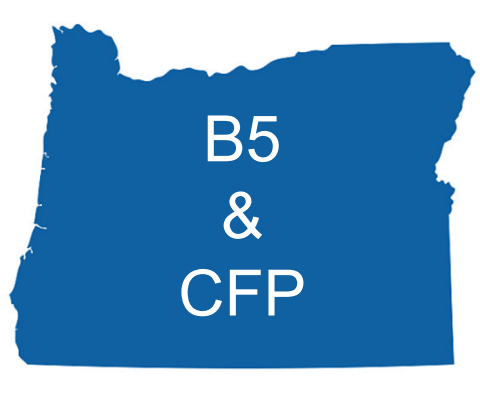
More GHG Reduction Today

Support

Support biofuel infrastructure and higher blends of bio-based diesel

- Grant funding for high bio-based diesel blend usage
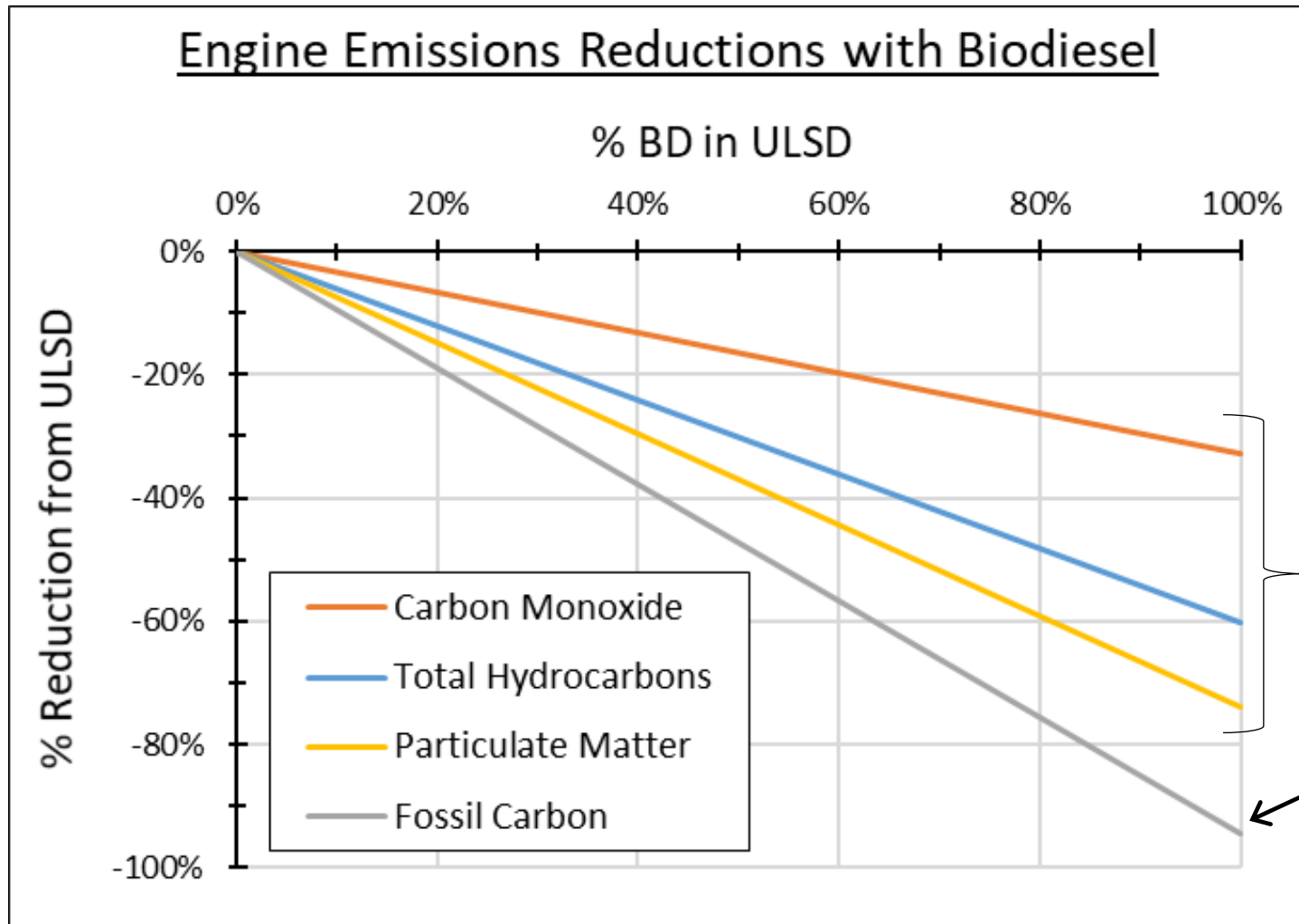- Blending and dispensing resources for retailers and fleets

Grow

Grow the Clean Fuels Program beyond 2025 10% GHG reduction by 2025

Use

Use government purchasing power to encourage B20+ support from diesel engine manufacturers

Engine Emissions Reductions with Biodiesel

Thank you.

dave.slade@regi.com

Renewable Energy Group

Cumulative Benefit Comparison Example

Cumulative Carbon Impact Reduction, 2021 - 2030

Differences in annual Cumulative Benefit between two options

Annual Cumulative Benefits for 100% reduction option

45% reduction in '22 ---- 100% reduction in '26 --- Petroleum Baseline
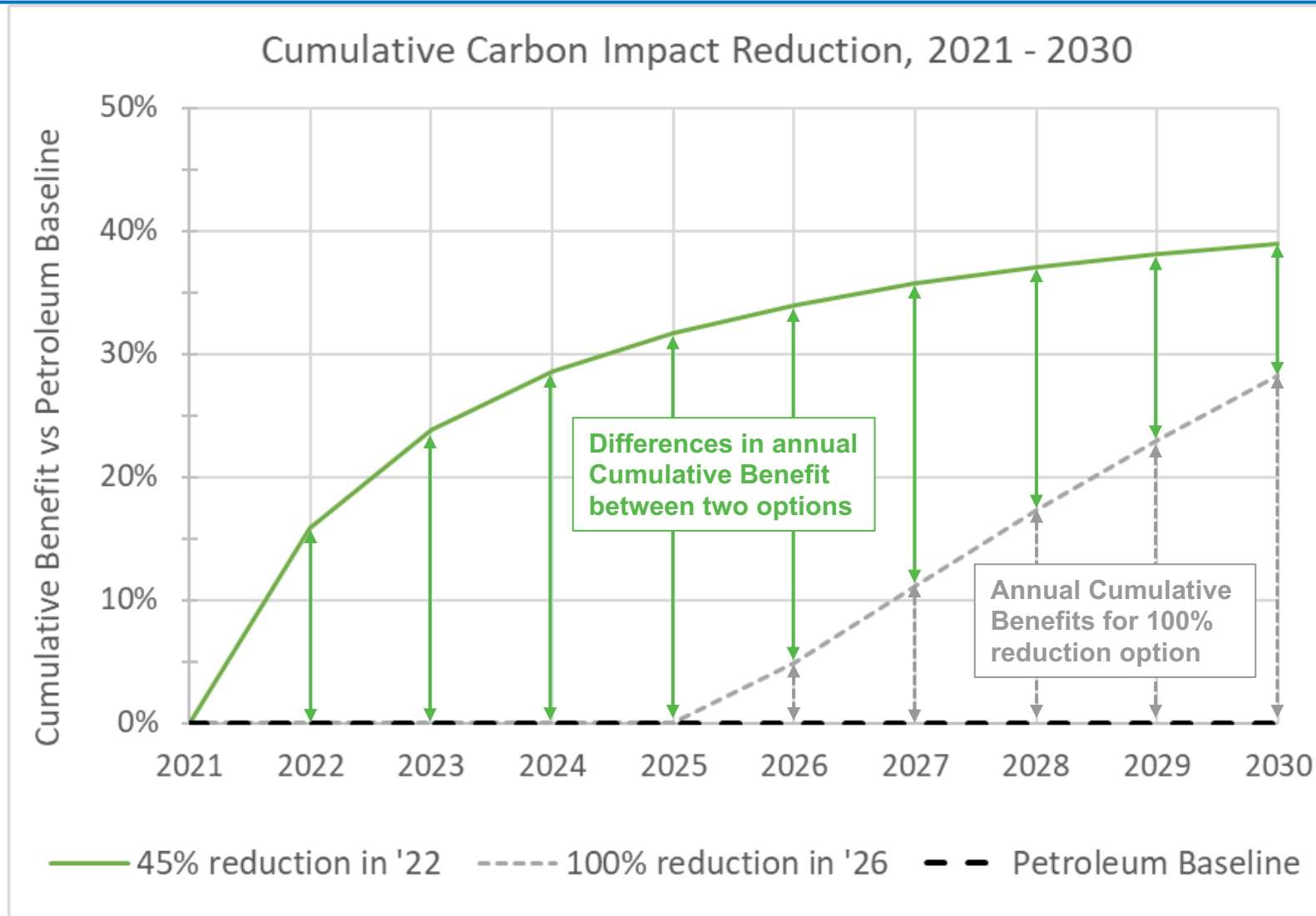
TAKEAWAYS

- Carbon impact occurs every year (not just the emission year)

- Cumulative Benefit can be estimated for each year in the time window