Clean Energy Investment: Drivers and Roadblocks

SHAI SAHAY, PARTNER
BRACEWELL LLP

July 8, 2026

BRACEWELL

Roadmap

- **Drivers of Clean Energy Investment**
  - Clean Energy Tax Credits
    - Major IRA Tax Credits
    - OB3 Modifications to IRA Tax Credits
  - Corporate Commitments to Climate Goals
  - Regulatory Schemes – Federal, Regional, and State Level

- **Practical Roadblocks to Clean Energy Investment**
  - Regulatory Uncertainty
  - Permitting and NEPA

Drivers of Clean Energy Investment

BRACEWELL

Clean Energy Tax Credits

- The **Inflation Reduction Act** of 2022 (IRA) provided expansive tax credits to incentivize renewable energy development

- The **One Big Beautiful Bill Act** (OB3) significantly scaled back those tax credits through rapid phase-outs and accelerated deadlines

BRACEWELL

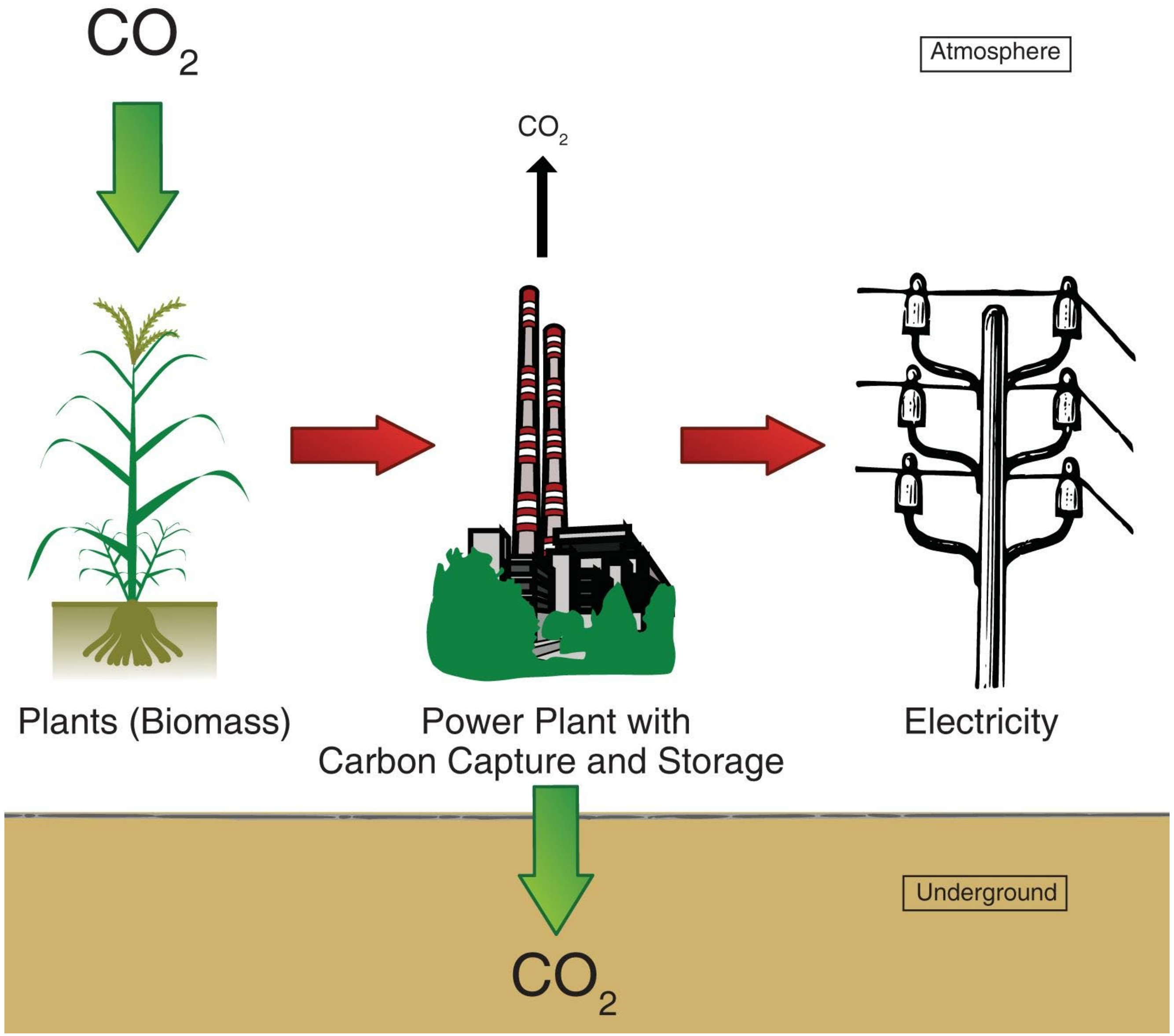
Major IRA Tax Credits: Clean Fuels

Clean Hydrogen Production Tax Credit (PTC) (Section 45V)

- 10-year production tax credit (PTC)
- Up to $3.00/kg for hydrogen produced with a lifecycle GHG emissions rate of less than 0.45 kg of CO2e per kg of H2
- Higher emission tiers (up to 4.0 kg CO_2e) scale down to a base rate of $0.60/kg before matching the lifecycle percentage multipliers

Clean Fuel Production Credit (Section 45Z)

- **Sustainable Aviation Fuel (SAF):** Higher base credit (up to $1.75/gallon depending on the CI reduction below 50%).
- **Non-aviation fuels:** Maxes out at $1.00/gallon for zero-emission fuels.



Major IRA Tax Credits: Carbon Capture

Carbon Oxide Sequestration Credit (Section 45Q)

- Lowered annual capture thresholds
- $85/metric ton for point-source capture dedicated to secure geological storage
- $180/metric ton for Direct Air Capture (DAC)

BRACEWELL

Major IRA Tax Credits: Clean Power Generation & Storage

Clean Electricity PTC (Section 45Y) & Investment Tax Credit (ITC) (Section 48E)

- **The PTC (45Y):** A per-kWh credit for electricity produced and sold (base rate adjusted annually for inflation, typically around 2.75¢/kWh when multiplied).
- **The ITC (48E):** Up to a 30% credit on the total qualified investment cost of the facility.

Standalone Energy Storage ITC

- Expanded Section 48 to allow large-scale energy storage technologies (such as batteries and thermal storage with a capacity of at least 5 kWh) to qualify for the 30% investment tax credit independently

Zero-Emission Nuclear Power PTC (Section 45U)

- Created a temporary credit of up to 1.5¢/kWh for existing commercial nuclear power plants to prevent early retirements of baseload zero-emission capacity

Major IRA Tax Credits: Clean Vehicles & Infrastructure

- **Clean Vehicle Credit (Section 30D)**
  - $7,500 credit for new electric or fuel-cell vehicles
- **Commercial Clean Vehicle Credit (Section 45W)**
  - Offers businesses up to $7,500 for light vehicles and up to $40,000 for heavy-duty commercial electric vehicles, notably bypassing the strict domestic assembly and sourcing constraints tied to consumer credits.
- **Alternative Fuel Refueling Property Credit (Section 30C)**
  - Extends and modifies the credit for installing EV charging infrastructure or alternative fuel refueling property

BRACEWELL

OB3 Modifications to IRA

45V

Requires projects to commence construction by December 31, 2027 (versus 2032), to qualify for the 10-year credit term

45Z

Extended expiration date by an extra two years, shifting it from the end of 2027 to December 31, 2029

Eligible fuels must be made from feedstocks exclusively sourced from the United States, Canada, or Mexico

45Q

Equalized the credit amount for both permanent capture and carbon utilization/Enhanced Oil Recovery (EOR) to $85/ton

BRACEWELL

OB3 Modifications to IRA

- **45Y & 48E**
  - Eliminated the tech-neutral production and investment credits for wind and solar facilities placed into service after December 31, 2027, unless they commenced construction before July 4, 2026.
  - Other technologies have until 2033 before facing elimination in 2036
  - No Specified Foreign Entity (SFE) or Foreign-Influenced Entity (FIE) (ties to China, Russia, Iran, or North Korea) can claim these credits
- **45X**
  - Ending the credit for wind energy components, scaling down payouts for items sold after 2027
  - Added metallurgical coal to the eligible minerals list
  - FEOC requirements

OB3 Modifications to IRA

- **30D, 25E & 45W**
  - Completely terminated the IRA's electric vehicle incentives early. The $7,500 consumer EV credit (30D), the used EV credit (25E), and the $40,000 commercial fleet clean vehicle credit (45W) all expired on September 30, 2025

BRACEWELL

Corporate Commitments to Climate Goals

Microsoft

- Carbon Negative by 2030
- Internal carbon tax across its business units
- $1 billion Climate Innovation Fund

Google

- 24/7 Carbon-Free Energy by 2030
- Hourly matching basis across every grid where it operates data centers

Apple

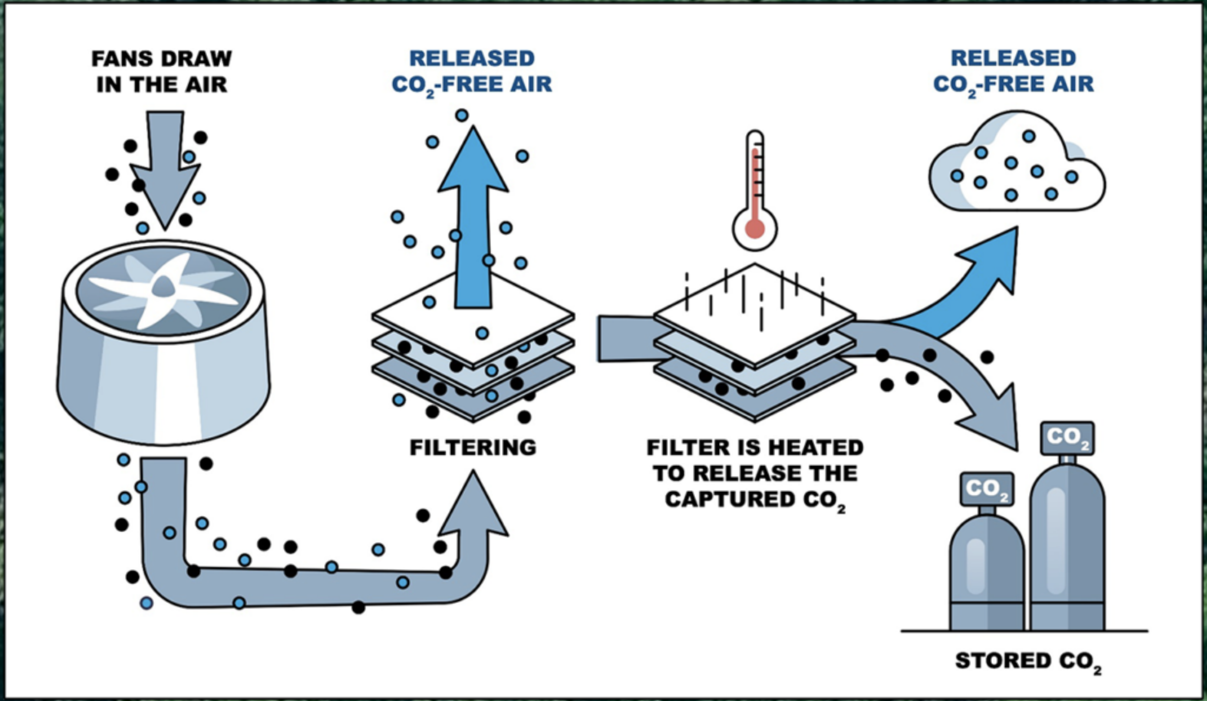
- Net-Zero across Product Lifecycle by 2030

Maersk

- Carbon Neutrality by 2040

Demand Signals from Corporate Commitments

- Carbon free electricity
- Low carbon fuels
- Carbon offsets
  - Direct Air Capture (DAC)
  - Offsets (ag, other categories)
- Carbon neutral supply chains



FEDERAL

Regulatory Schemes

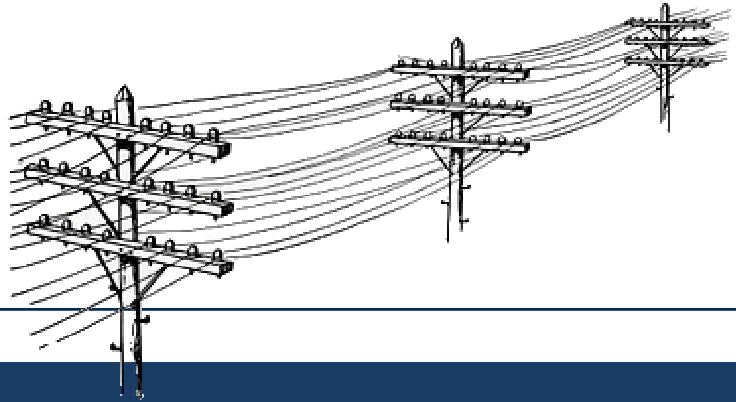
- The **Renewable Fuel Standard** requires U.S. transportation fuel to include a minimum volume of renewable fuel each year
- EPA's updated standards set record-high Renewable Volume Obligations for 2026 and 2027

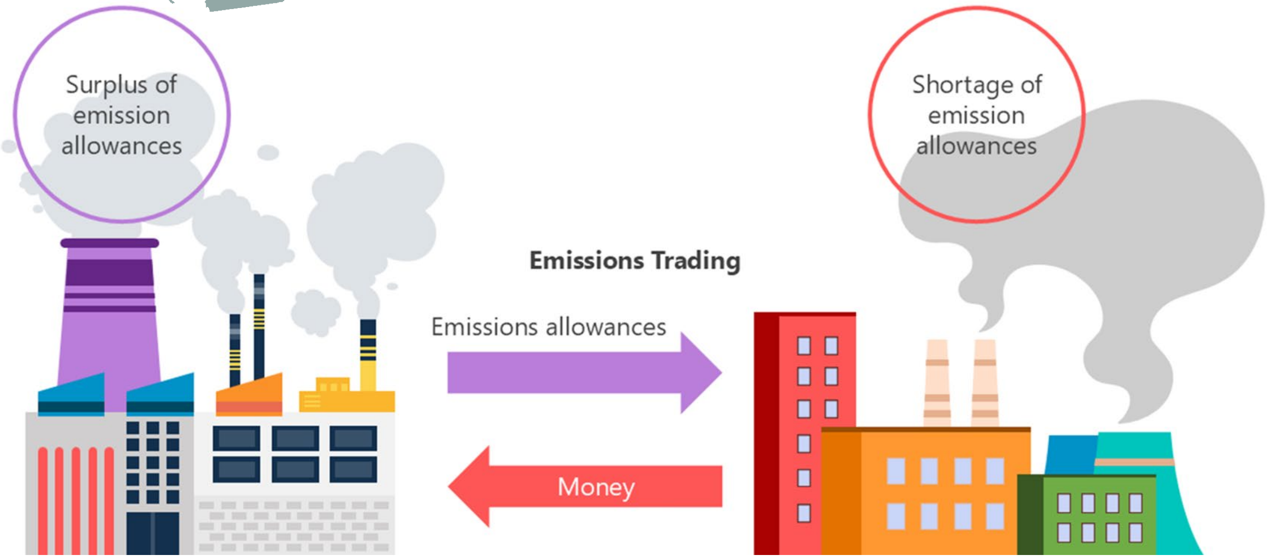
BRACEWELL

STATE/REGIONAL

Regulatory Schemes

- **Cap-and-Invest Initiatives** limit emissions in a region, requiring emitters to purchase allowances.
  - California's Cap-and-Invest Program
  - The Regional Greenhouse Gas Initiative (RGGI) – Northeast states



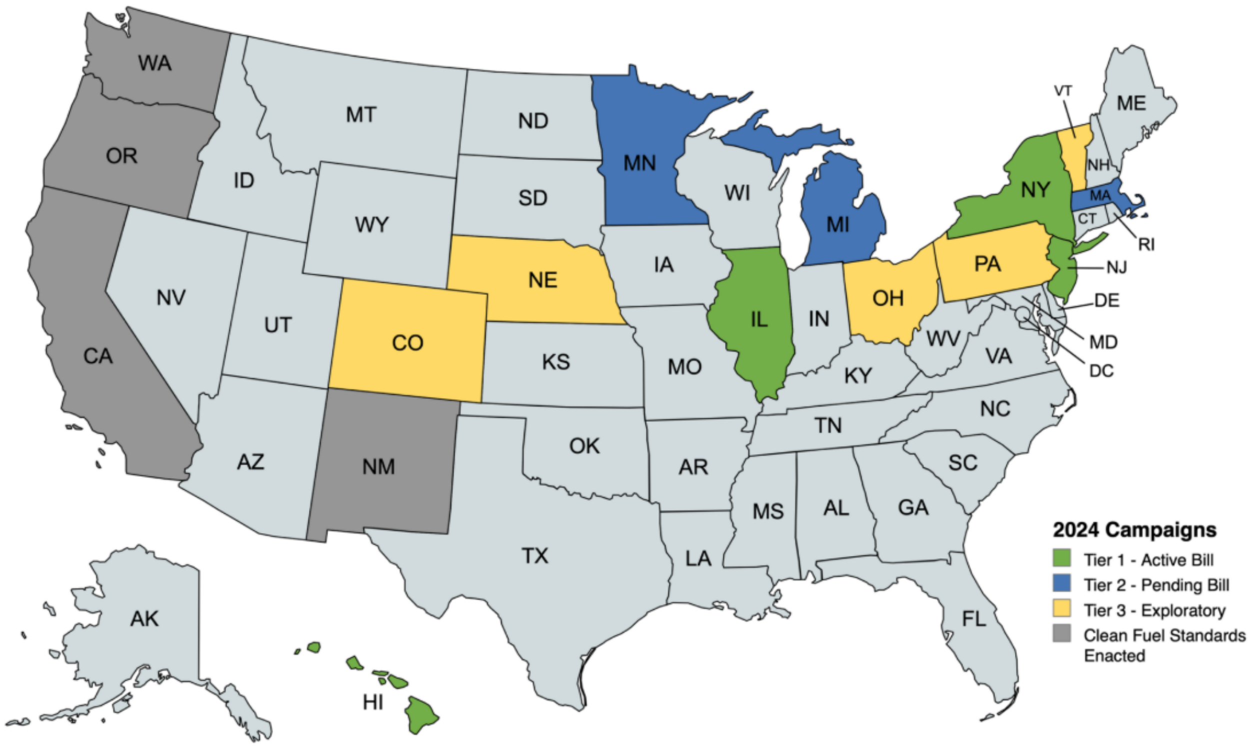


- **Renewable Portfolio Standards** require electric utilities to supply a percentage of energy using renewable sources (27 States + DC)

BRACEWELL

STATE

Regulatory Schemes

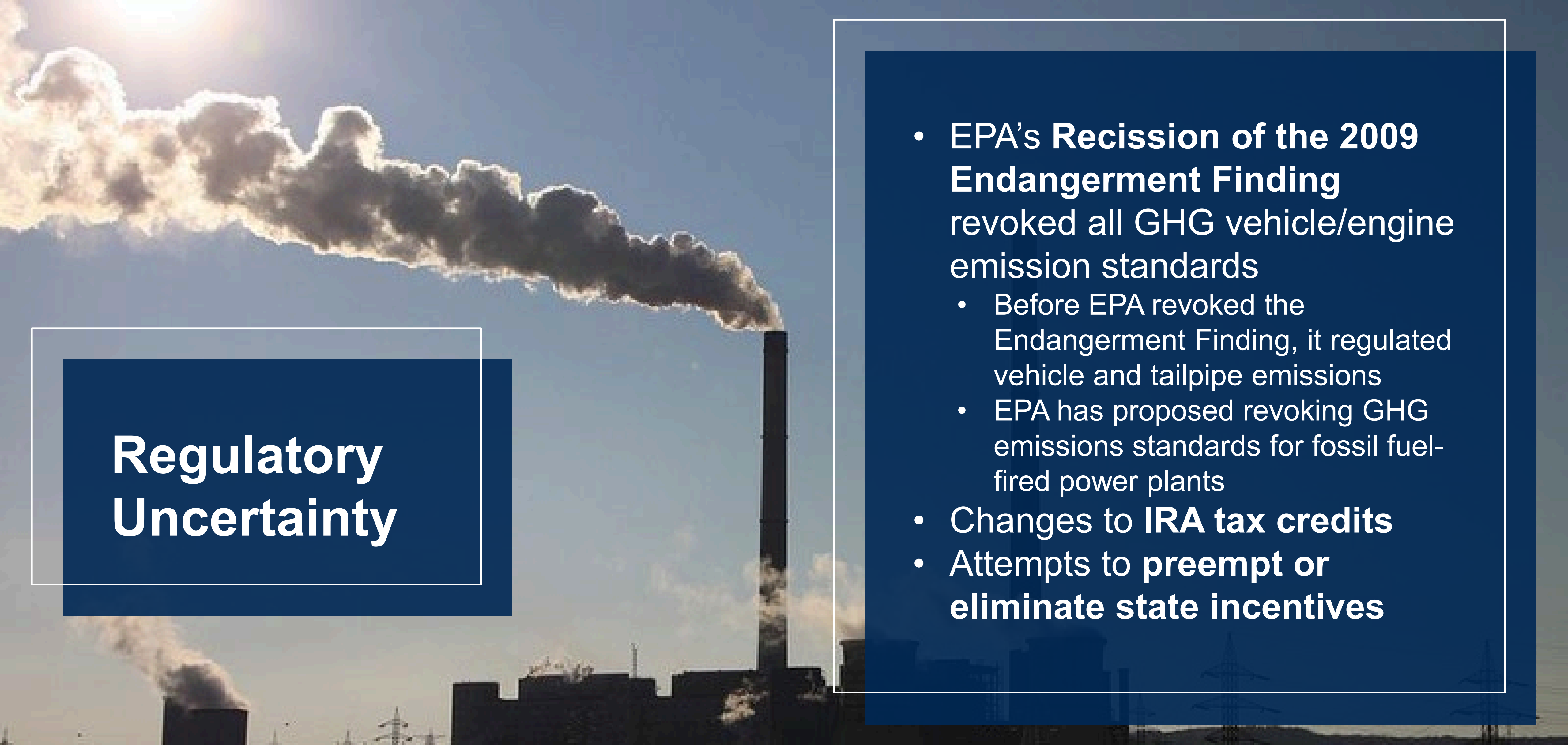


- Four states currently operate **market-based clean fuel programs** – California, Oregon, Washington, and New Mexico.
- These are generally structured around **declining lifecycle carbon-intensity (CI) benchmarks** rather than volumetric renewable fuel mandates.
- Compliance is driven largely by **renewable diesel and renewable natural gas (RNG) credit generation**, with EVs and charging as a major and growing credit source.

BRACEWELL

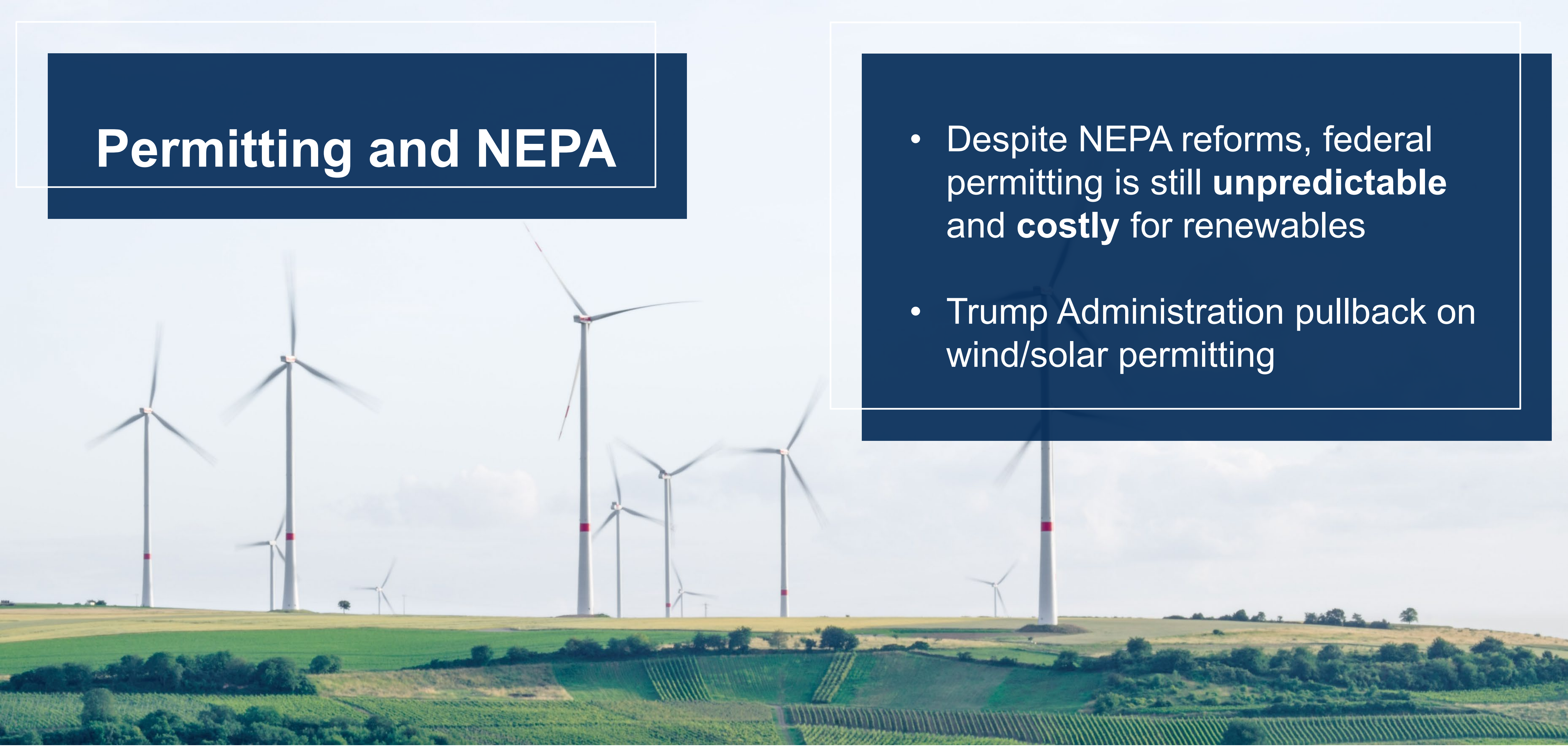
Practical Roadblocks to Clean Energy Investment

BRACEWELL



Regulatory Uncertainty

- EPA's **Recission of the 2009 Endangerment Finding** revoked all GHG vehicle/engine emission standards
  - Before EPA revoked the Endangerment Finding, it regulated vehicle and tailpipe emissions
  - EPA has proposed revoking GHG emissions standards for fossil fuel-fired power plants
- Changes to **IRA tax credits**
- Attempts to **preempt or eliminate state incentives**



Permitting and NEPA

- Despite NEPA reforms, federal permitting is still **unpredictable** and **costly** for renewables
- Trump Administration pullback on wind/solar permitting

BRACEWELL

Questions