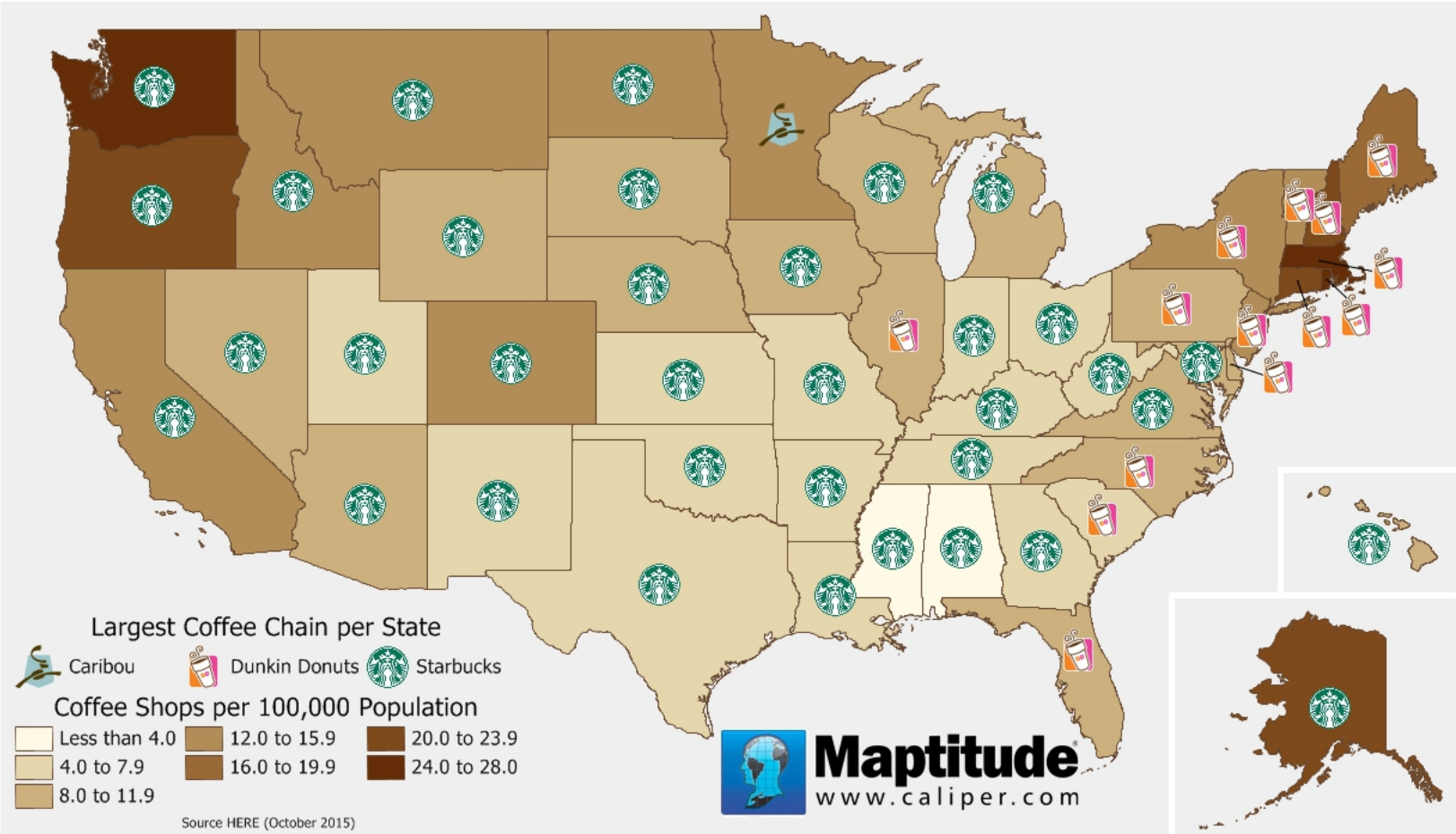


NIPPC 2016 Annual Meeting

Energy Infrastructure and Carbon Policy: Impacts & Opportunities

Ankur Tohan & Alyssa Moir

MORNING ROAD MAP



POWER PRODUCTION IN A CARBON- CONSTRAINED WORLD: DEVELOPERS, SELLERS & BUYERS



DEVELOPERS: CARBON POLICY AND ENVIRONMENTAL REVIEW

CEQ's NEPA Guidance

Clarifying
the scope
of review
for GHG
impacts

NEPA Examples

*WildEarth
Guardians
v. Jewel*

Recent
FERC
decisions

WA's SEPA

Current WA
Guidance

Implementation

DEVELOPERS: CARBON POLICY AND ENVIRONMENTAL REVIEW

CEQ Guidance:

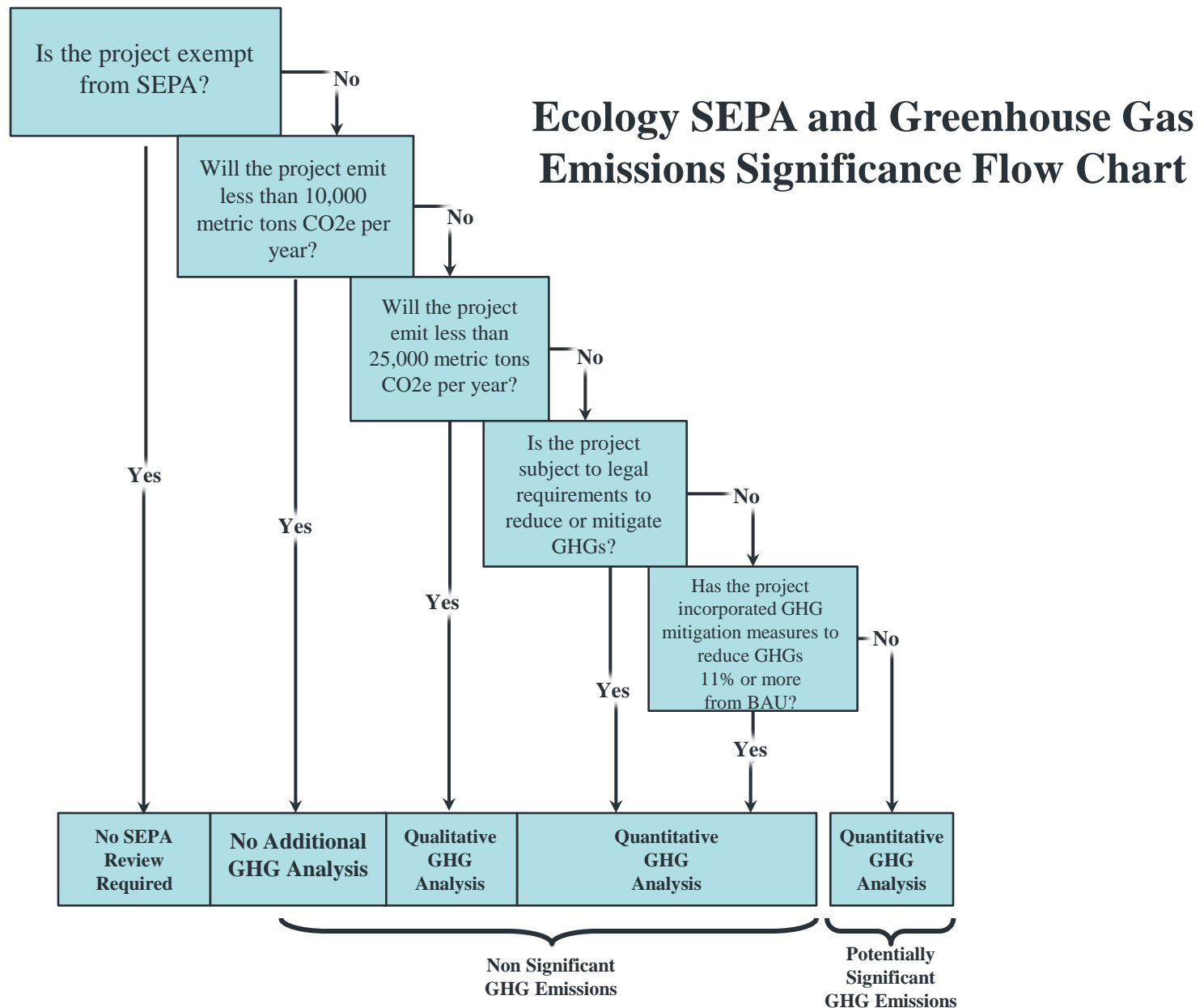
Federal agencies should include consideration of GHG emissions and climate change impacts in NEPA alternatives analyses.

Eliminated its 25,000 ton per year CO₂-e emissions threshold for triggering the guidance; instead requires that agencies consider the direct and indirect effects of all actions.

Clarified that GHG emissions from direct and indirect effects must be in a NEPA analysis.

Reduced emphasis on the cost-benefit analysis and social cost of carbon.

<http://www.klgates.com/ceq-issues-final-greenhouse-gas-guidance-directing-federal-agencies-to-consider-climate-change-in-their-nepa-reviews-08-04-2016/>



DEVELOPERS :

CARBON POLICY AND ENVIRONMENTAL REVIEW

WildEarth Guardians v. Jewel (2013)

- D.C. Circuit Court: “Because current science does not allow for the specificity demanded by the plaintiffs, the BLM was not required to identify specific effects on the climate in order to prepare an adequate EIS.”

WildEarth Guardians v. USFS (2015)

- D.C. District Court: “[o]ther unknown variables were identified which prevented more meaningful prediction of impacts of the projects on global climate change, including by way of example, unknown naturally occurring events such as volcanic eruptions and variations in solar activities, or transportation of coal by rail...”

Freeport and Sabine Pass LNG Export Terminals

- D.C Circuit Court: NEPA does not require consideration of upstream emissions of natural gas production that could contribute to climate change:
 - “potential environmental effects associated with additional natural gas production [were not] sufficiently causally related to the Freeport LNG Projects to warrant a detailed analysis,” and
 - “The Commission adequately explained why it was not reasonably foreseeable that greater production capacity at the Terminal – separate and apart from any export activity – would induce additional domestic natural gas production.”

DEVELOPERS:

CARBON POLICY AND ENVIRONMENTAL REVIEW



Impacts:

- Delayed NEPA review
- Closer scrutiny of relationship between proposed action and climate change
- Plan to mitigate carbon impacts



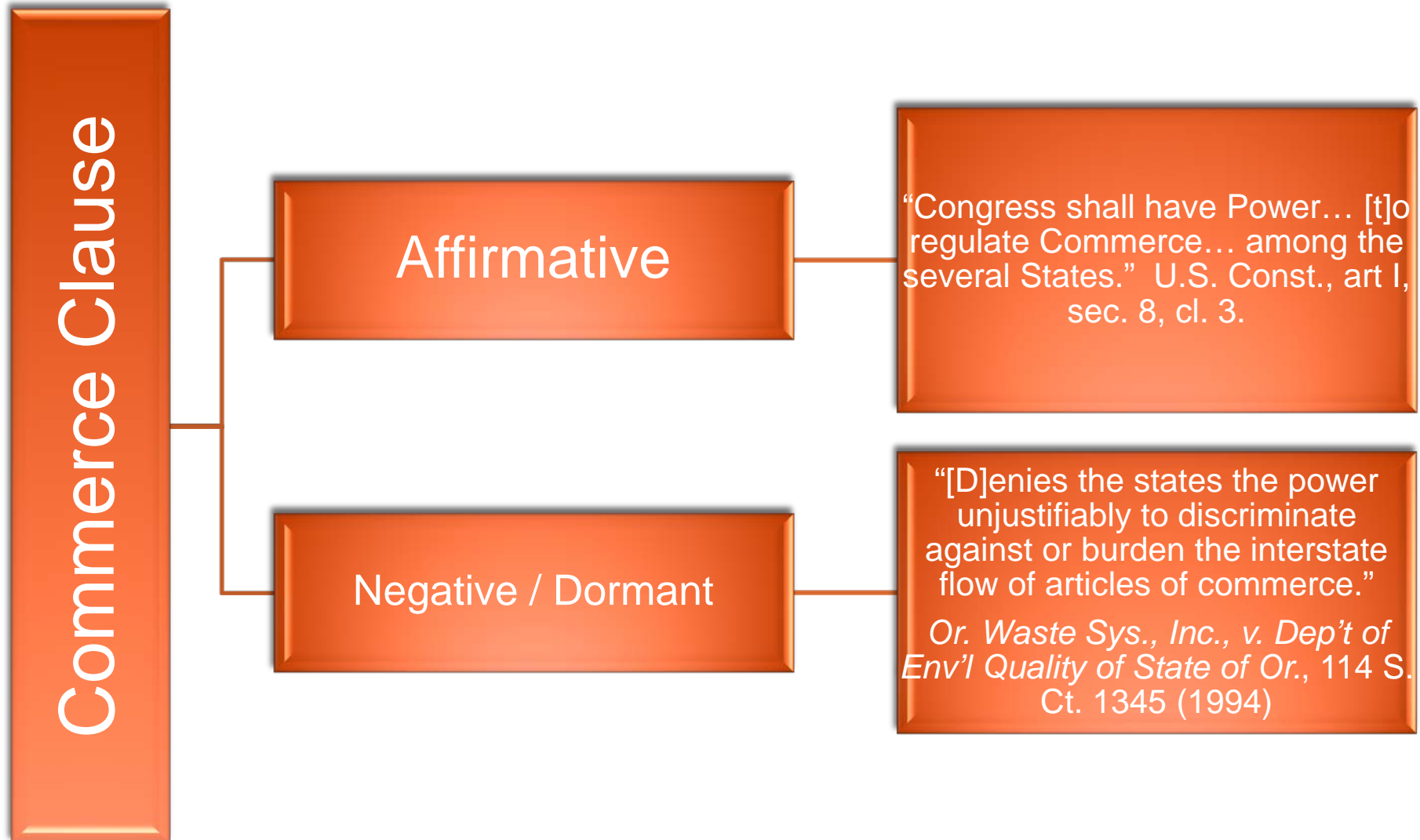
Opportunities:

- Increased need for carbon offsets from renewables.
- Develop more consistent methodologies for assessing climate change impacts

SELLING & BUYING POWER & CARBON: PATCHWORK OF CARBON REGULATION

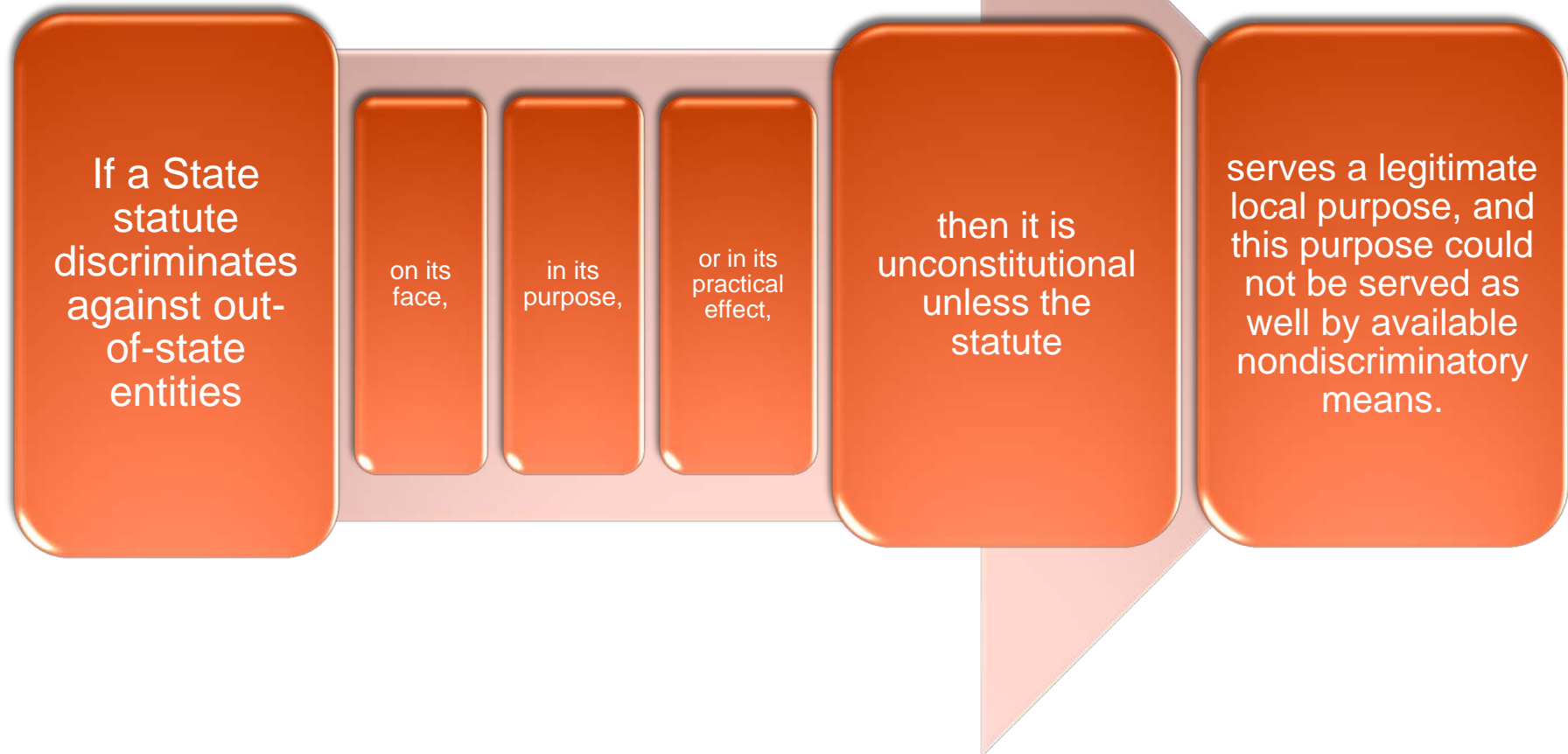


BUYER & SELLERS - POWER



BUYERS & SELLERS - POWER

Dormant Commerce Clause





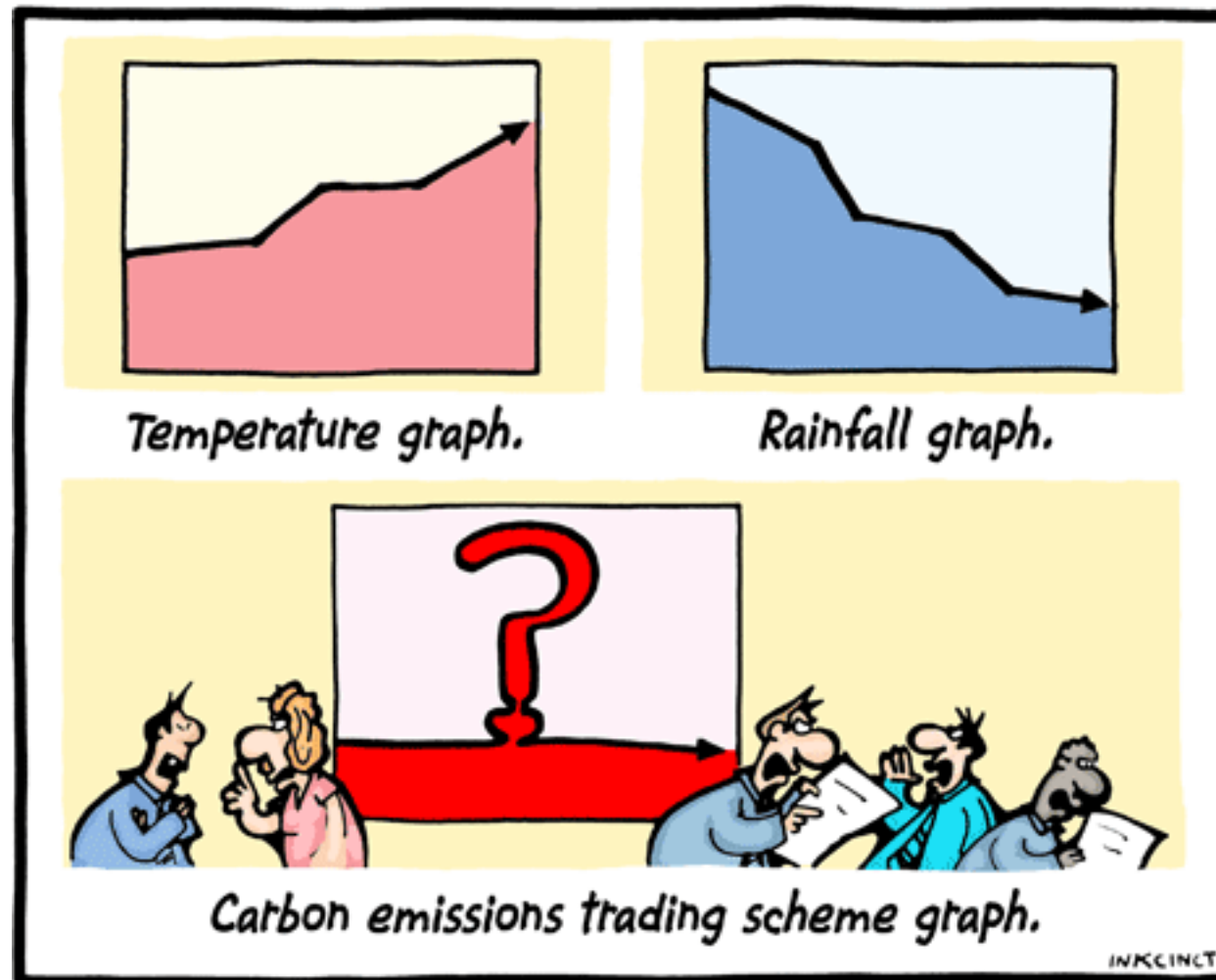
BUYERS & SELLERS - POWER

MN's "Next Generation Energy Act"

- ***North Dakota v. Heydinger* (2016):**
 - Violates Dormant Commerce Clause
 - Contravenes exclusive jurisdiction of FERC
 - Conflicts with SIP regulatory scheme under Clean Air Act.

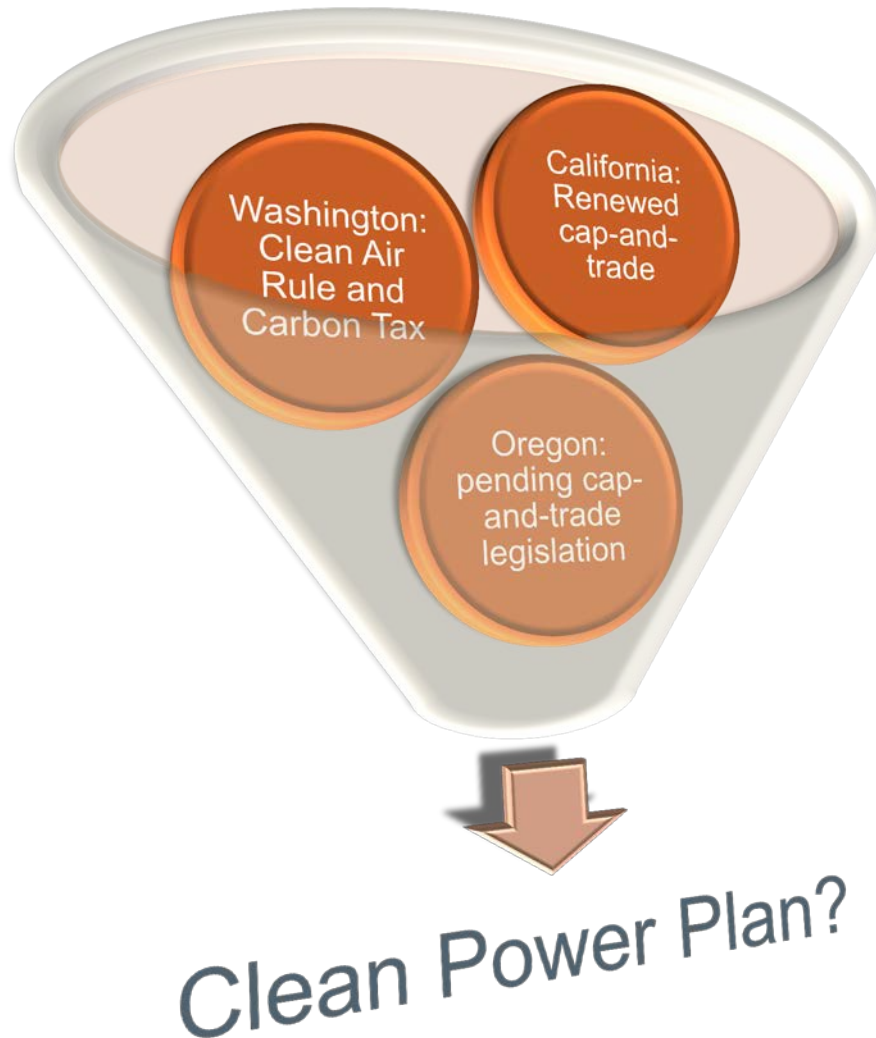
Compare CO's Renewable Energy Standard

- ***Energy & Env't. Legal Inst. v. Epel* (2015):**
Because all fossil fuel producers in the area served by the grid would be hurt equally and all renewable energy producers in the area will be helped equally, the plaintiffs failed to demonstrate how Colorado's RES "disproportionately harms out-of-state businesses."



2008-361 © INKCINCT Cartoons www.inkcinct.com.au

BUYERS & SELLERS – CARBON CREDITS



WA'S CLEAN AIR RULE COVERED CATEGORIES



Large Industrial Plants



Power Plants



Landfills



Petroleum and Natural
Gas Infrastructure



SOURCES NOT SUBJECT TO CAR



TransAlta
Coal-Fired
Power Plant



Agricultural
Practices



Emissions
associated
with imported
electricity



Industrial
combustion
of woody
biomass



CAR THRESHOLDS AND TIMELINES

2017

- Initial threshold of 100,000 MT CO₂e.
- Any non-excluded source emitting GHGs above this threshold is assigned a reduction pathway and must reduce their GHG emissions by 5% every three years.

2020

- Threshold ratchets down to 95,000 MT CO₂e.
 - Any non-excluded source enters if their 3 year average GHG emissions are above this threshold.
- Reductions begin for EITEs.
- First progress demonstration covering the 2017–2019 compliance period.
- Compliance periods every 3 years thereafter.

2023 and beyond

- Threshold ratchets down to 90,000 MT CO₂e.
- Decreases continue by 5000 MT CO₂e every 3 years until lower threshold of 70,000 MT CO₂e is reached in 2035.



CAR COMPLIANCE

Emission Reduction Measures or Carbon Offsets:

Energy efficiency above cost-effective threshold required by Energy Independence Act

Renewable energy not used for Energy Independence Act renewable portfolio standard

Purchase emissions reductions credits (ERUs) from another registered emitter that has voluntarily opted into the program.

Purchase carbon credits from external carbon market

Develop or fund a program in WA that permanently reduces carbon in an Ecology-approved manner.

CAR: PROPOSED FIX



**Recognize
early
action.**

**Allocate ERUs
equal to the
baseline
emissions value
for each covered
party.**

**Require actual
reductions of
emissions to
meet compliance
obligations
before using
ERUs for any
other purpose.**

**Require ERU
retirements in an
amount equal to
reduction
obligations.**

**No limit on
where to shop
for ERUs.**



CAR - ECOLOGY'S PROPOSED FIX

Establish an ERU
reserve.

Establish an ERU registry.

Limit use of allowances
from external programs to
50% after 2020.

No recognition of early
action except for EITEs.

I-732 CARBON TAX



I-732 CARBON TAX



If enacted, I-732 will implement a tax on each metric ton of carbon dioxide from fossil fuels sold or used within the state.



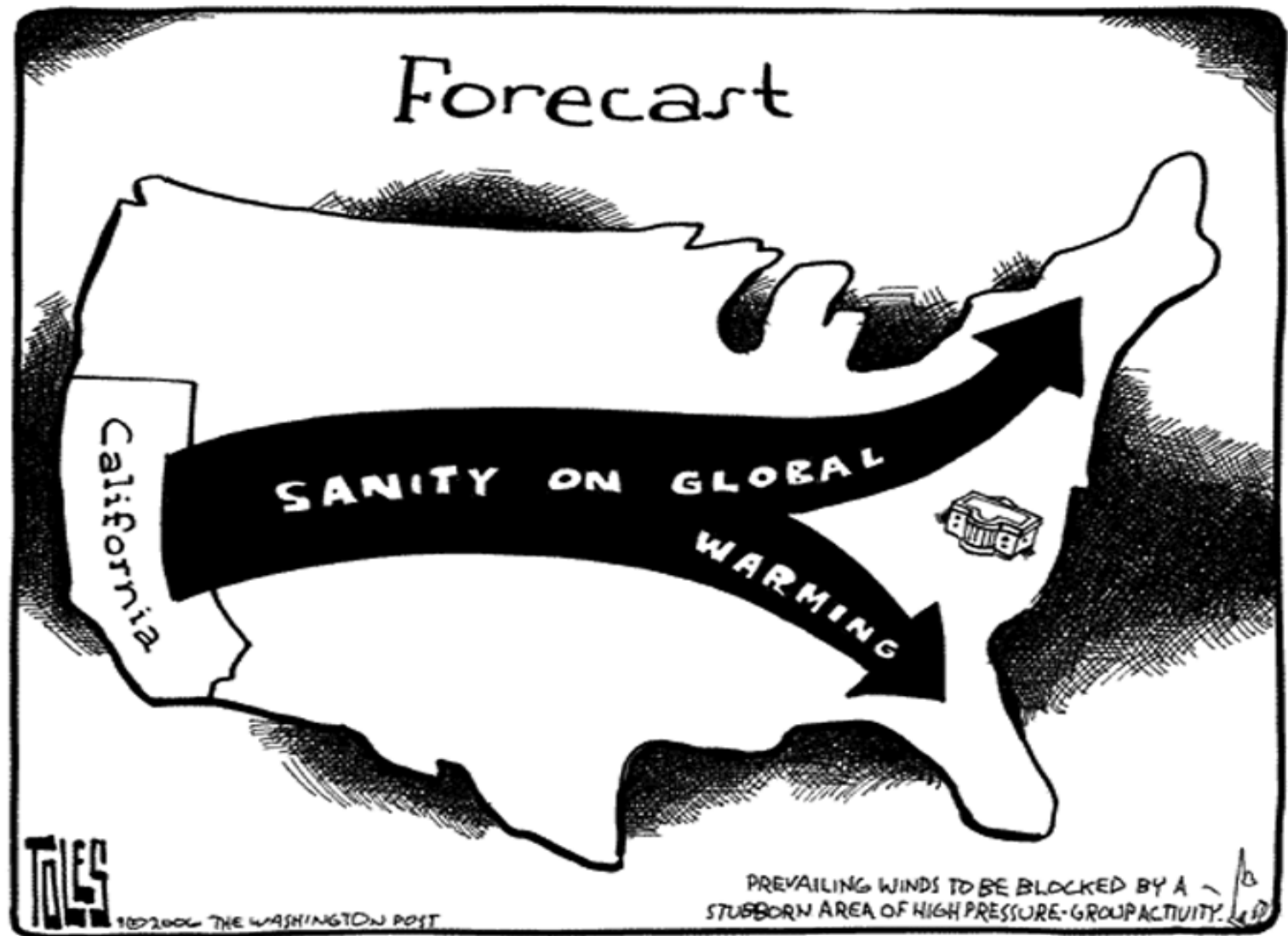
The tax would be applied to:

- Consumption of electricity (in-state utilities and direct-service industrial customers)
- Refinery operations
- Other emissions

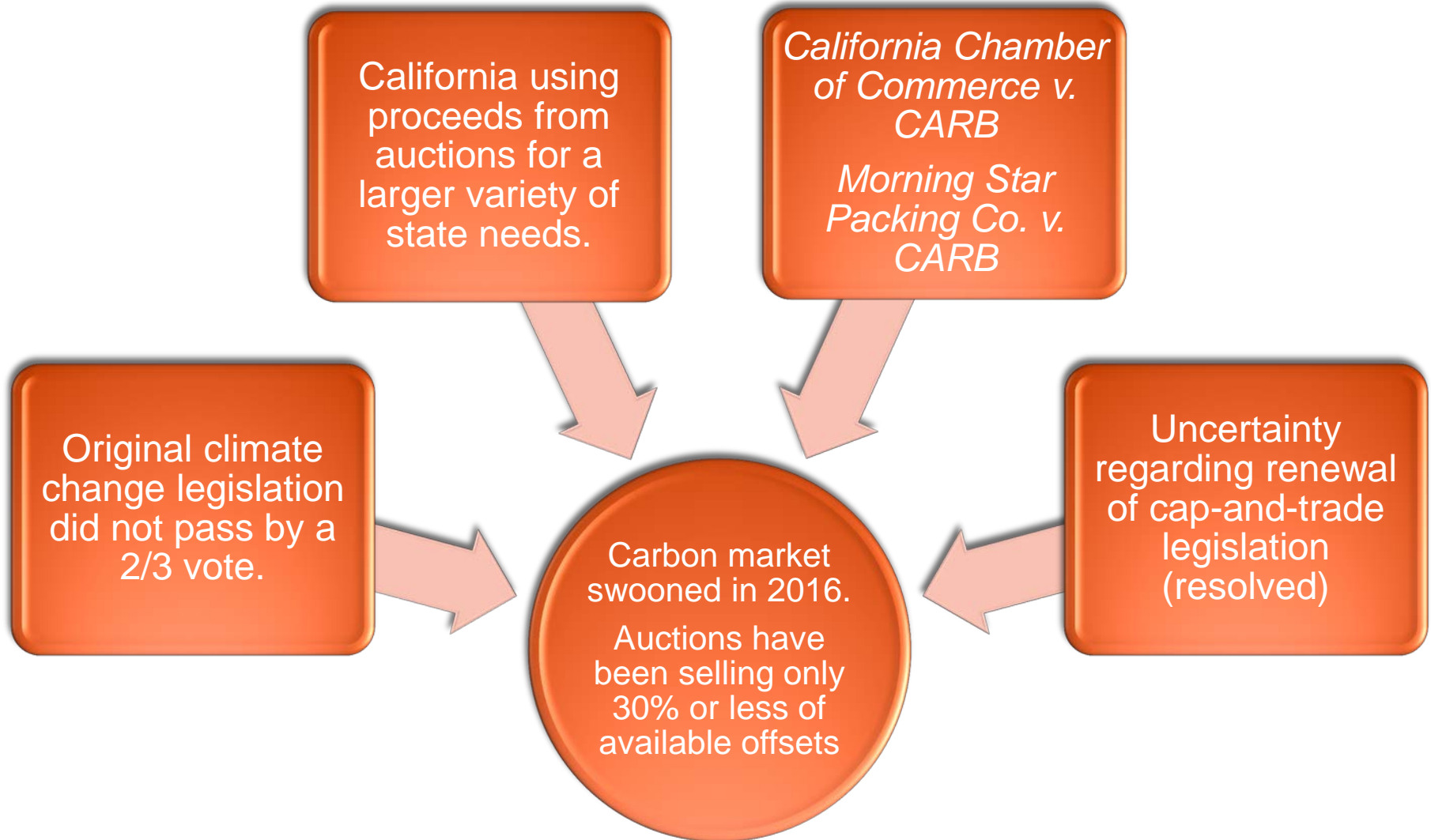


Will increase over time, from \$15/MT to \$25/MT by 2018. Not to exceed \$100/MT.

CALIFORNIA



CALIFORNIA



CALIFORNIA

Extended Climate Change Package

SB 32:

Requires GHG emissions to be 40% below 1990 levels by 2030

AB 197:

CARB must prioritize regulations that result in direct emission reductions at large stationary sources of GHGs.

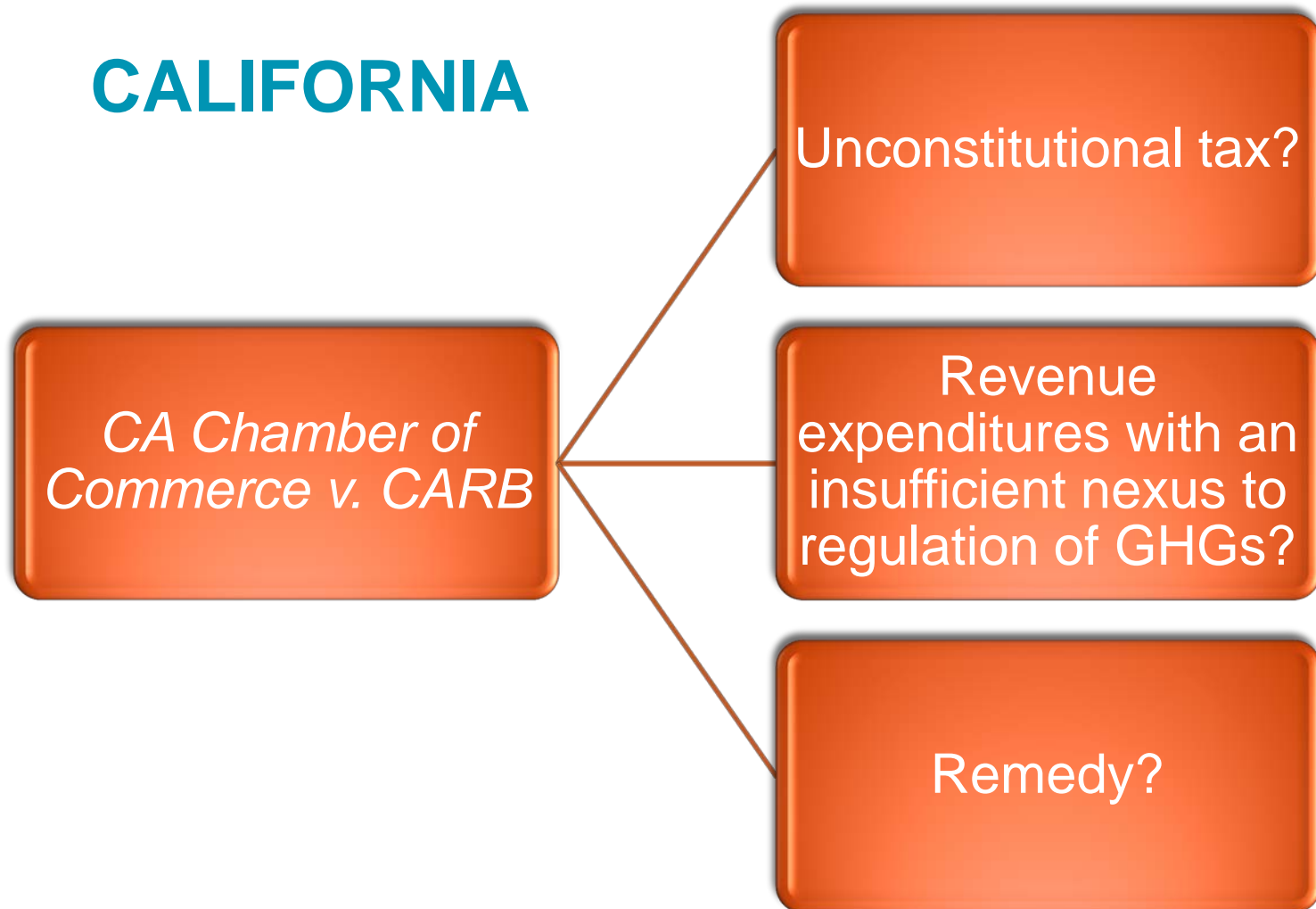
Complements SB 350:

Increases CA's renewable goal from 33% by 2020 to 50% by 2030.

Requires doubling in energy efficiency savings in electricity and natural gas end uses by 2030.

Aimed at reducing environmental justice concerns of cap-and-trade; may result in an altered carbon market if emitters must actually reduce emissions rather than buy allowances or credits.

CALIFORNIA



CALIFORNIA

Solutions Proposed by IETA:

Revenue from auctions is compensation for the use of the atmosphere;

Auction allowances are property rights, but only as between private parties, not between parties and CARB;

“Interlocutory Remand”

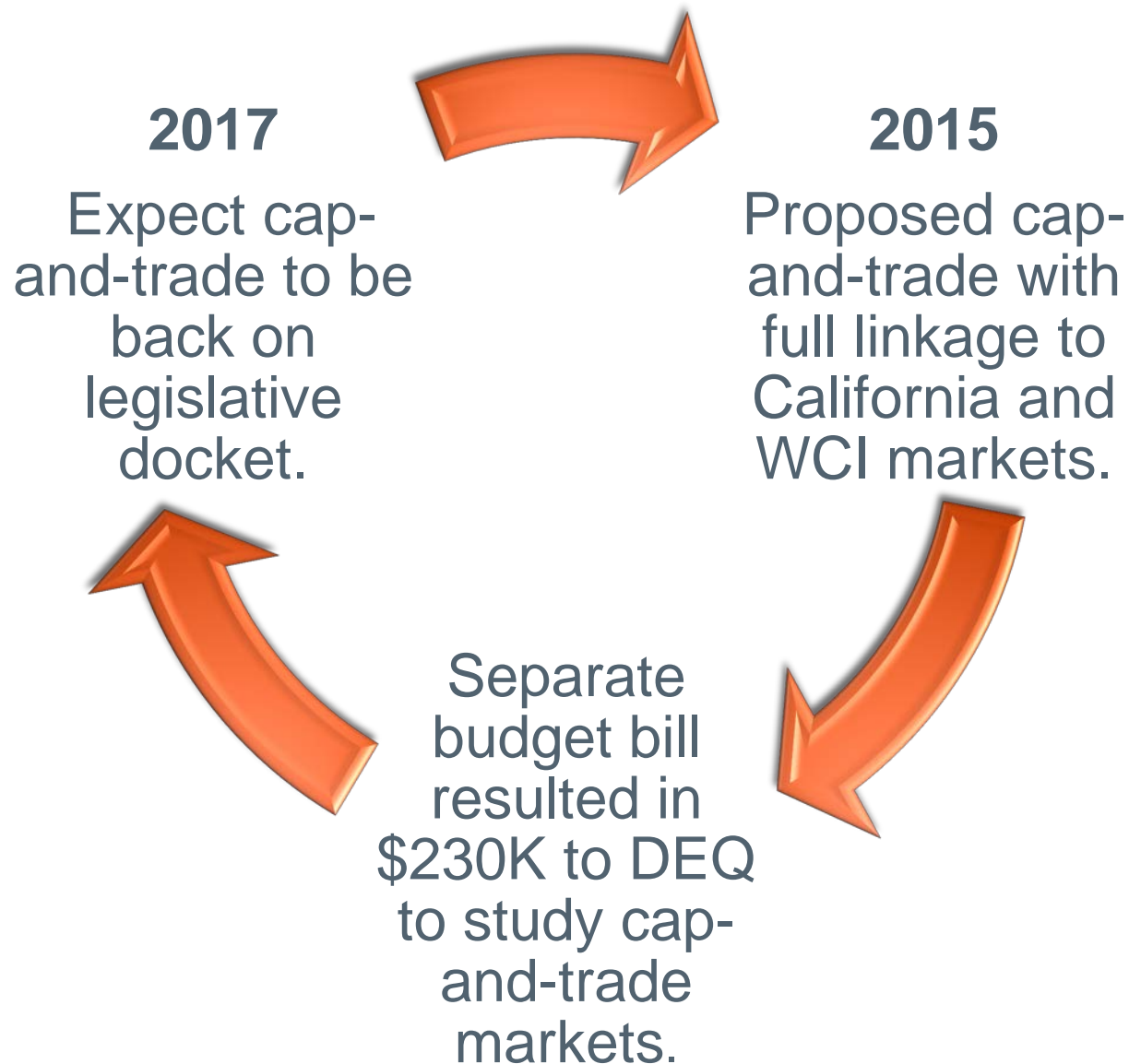
- Don’t vacate; retain jurisdiction and modify after the post-2020 program begins.

OREGON





OREGON



CASES LEADING UP TO THE CLEAN POWER PLAN

Massachusetts v. EPA (2007)

- EPA has authority to regulate GHGs as “air pollutants” under the CAA.

American Electric Power Co. Inc. v. Connecticut (2011)

- The CAA and EPA’s actions pursuant to the CAA displace any federal common law emissions claims.

Coalition for Responsible Regulation et al. v. EPA et al. (2012)

- Upholding EPA’s finding that GHGs endanger human health and welfare.



CASES LEADING UP TO THE CLEAN POWER PLAN

EPA v. Homer EME Generation LP et al. (2014)

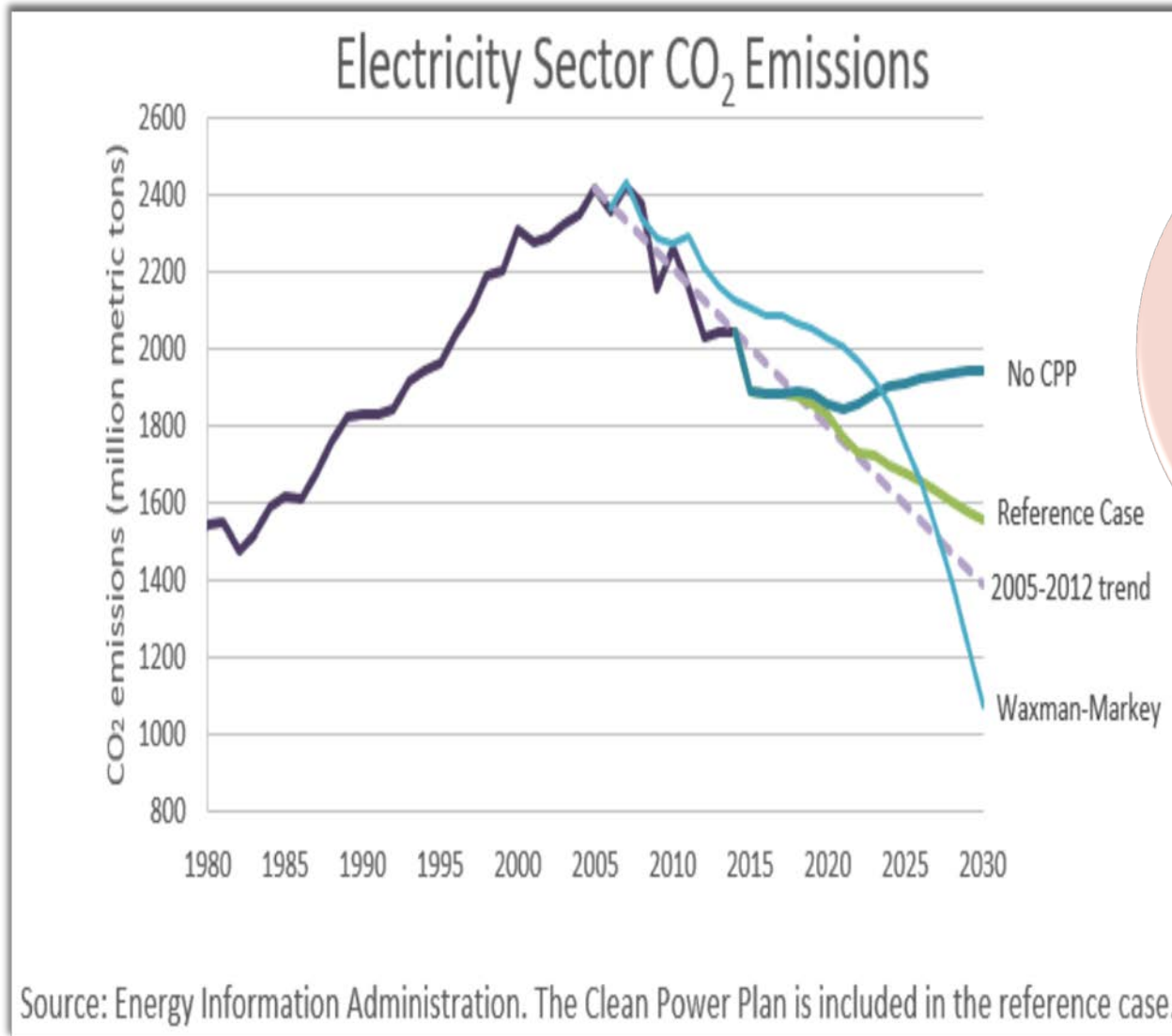
- Upholding EPA's interpretation of the "Good Neighbor Provision" of the CAA in implementing a federal scheme for emissions that cross state lines.

Utility Air Regulatory Group v. EPA (2014)

- Rejecting EPA's expansion of CAA's Title V and Prevention of Significant Deterioration permitting programs to include GHGs.



CLEAN POWER PLAN

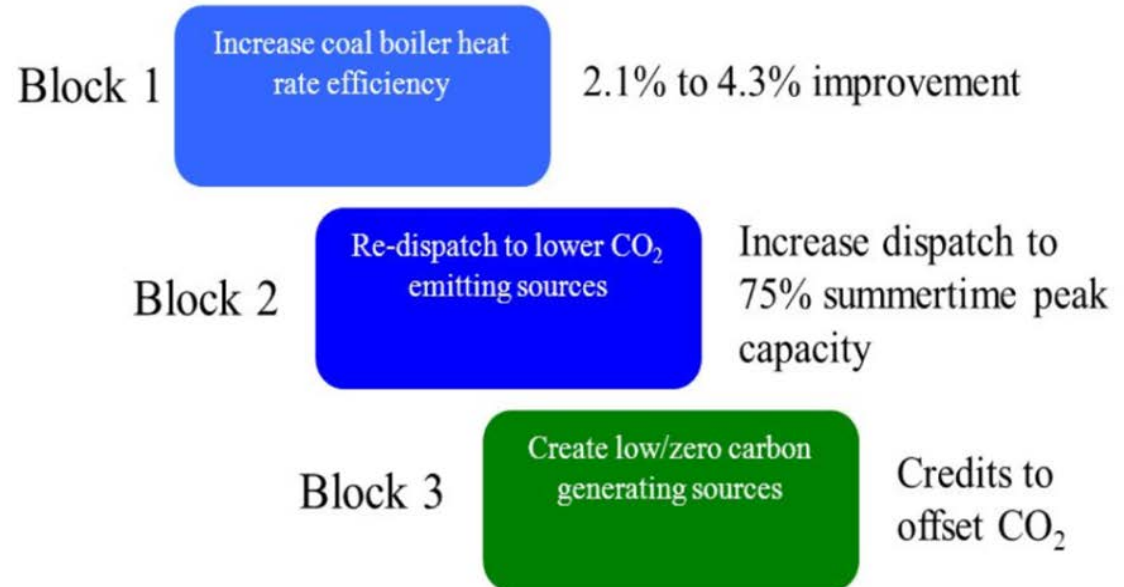


By 2030, **power sector** GHGs from existing sources are to be reduced by 32% from 2005 levels.

CLEAN POWER PLAN

Establishes state GHG targets based on baseline emissions from 2012 layered over with the three “building blocks.”

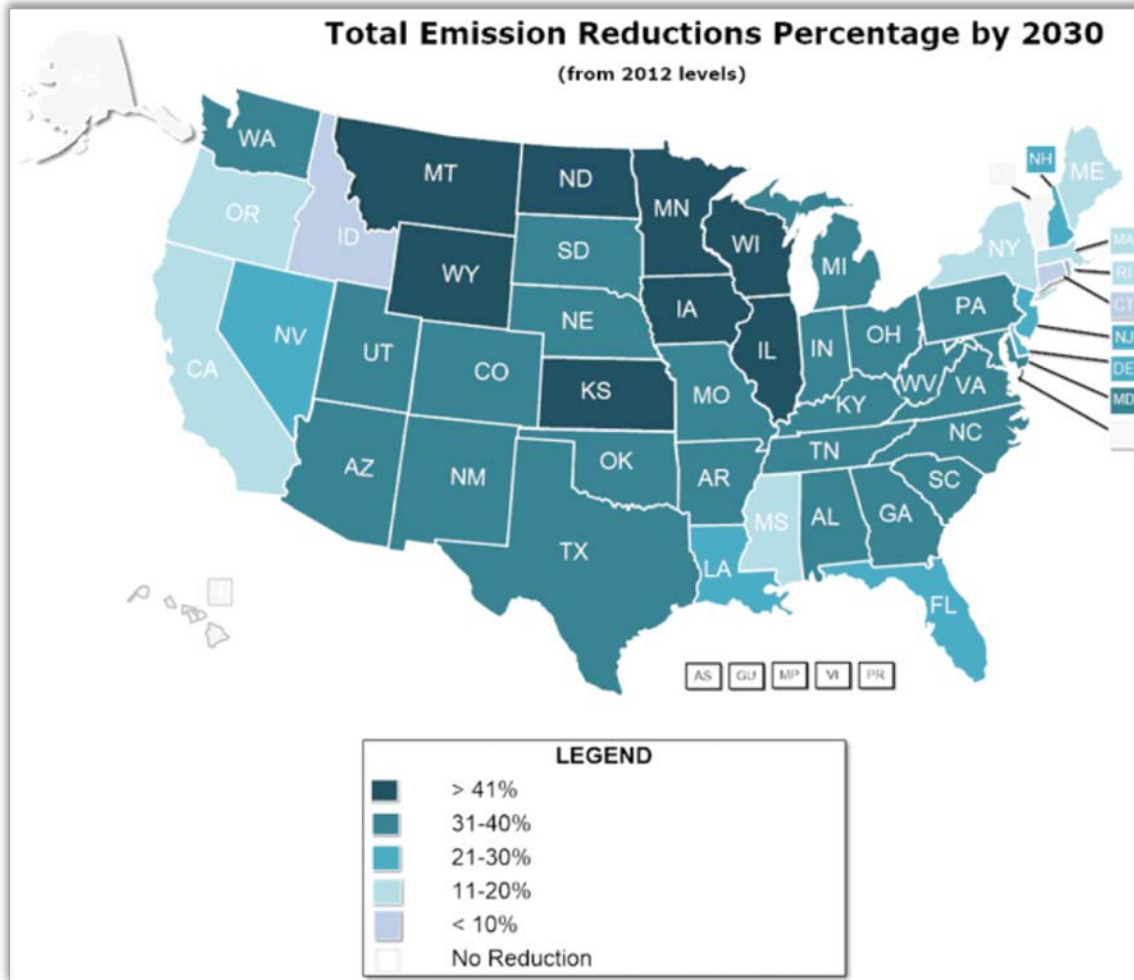
Clean Power Plan (CPP) Building Blocks— Final Regulation



National average of 32% reduction in 2005 CO₂ net emission intensity (lbs/MWh) by 2030

2

CLEAN POWER PLAN



States have broad flexibility to craft individual emissions reduction plans.



CLEAN POWER PLAN - LITIGATION

October 2015
Lawsuit filed by
27 states

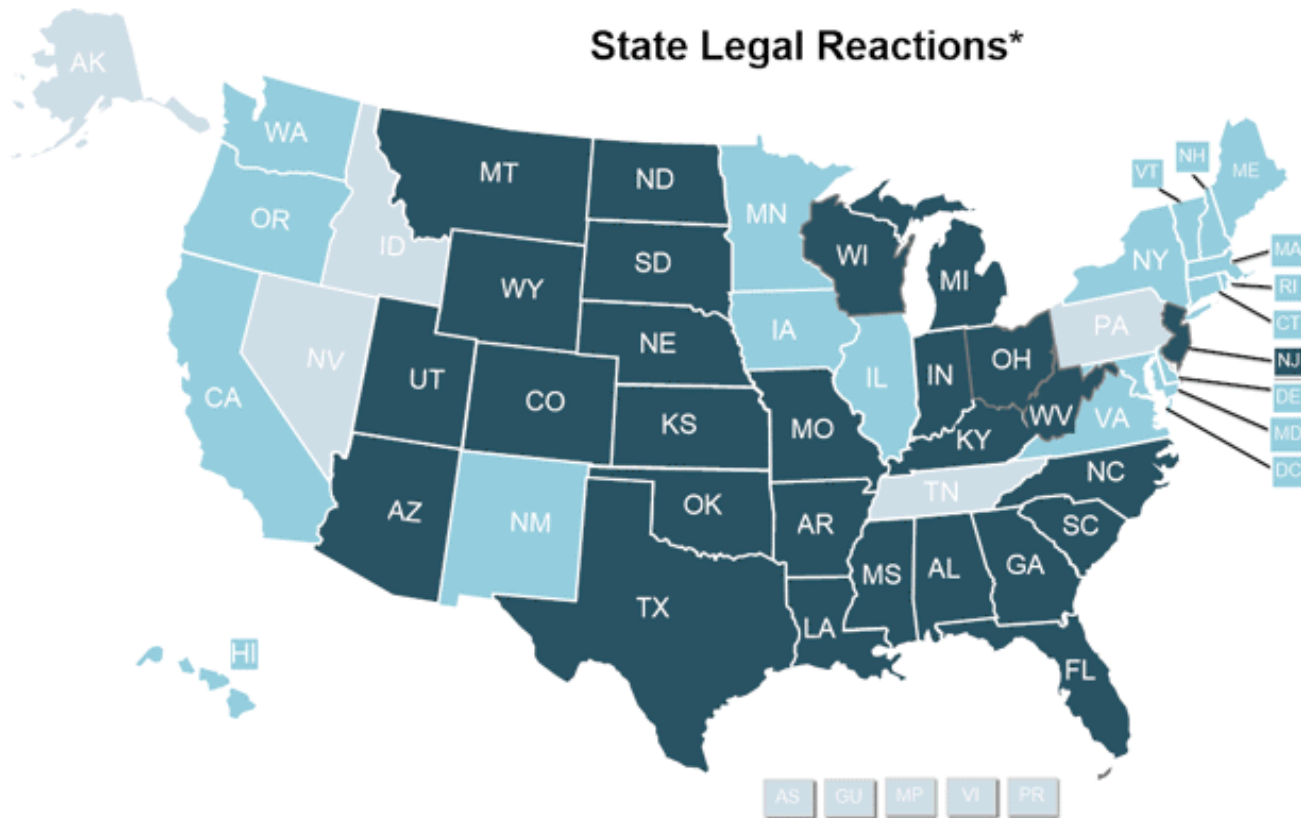
February 2016
Stay granted by
U.S. Supreme
Court

Justice Scalia
passes away
days later

September 27
Oral argument
before the D.C.
Circuit Court of
Appeals (limited
to 3 hours).



CLEAN POWER PLAN

**LEGEND**

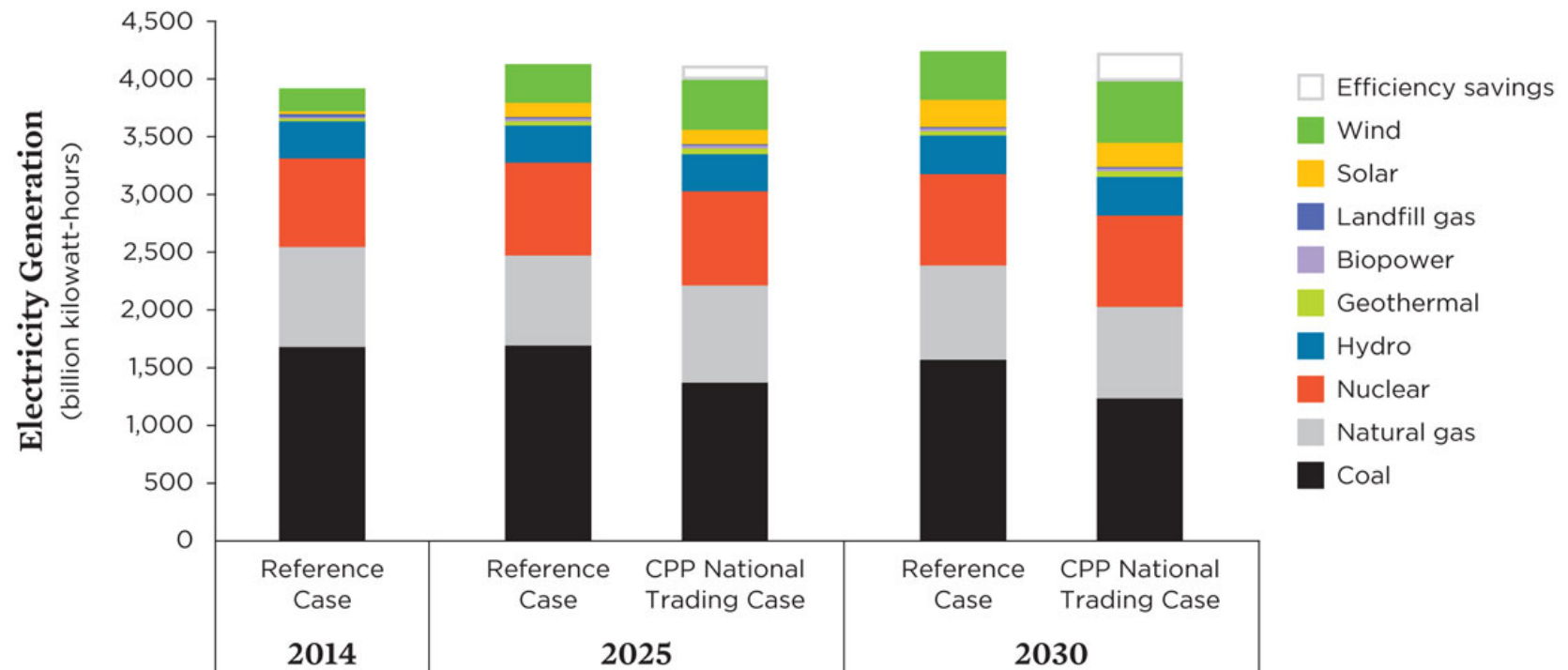
- Filed in opposition to EPA
- Filed in support of EPA
- No legal stance

*Based on U.S. Court of Appeals for the D.C. Circuit case No. 15-363 as of Jan. 21, 2016



CLEAN POWER PLAN - IMPACTS

FIGURE 1. The Clean Power Plan Diversifies Our Nation's Electricity Mix



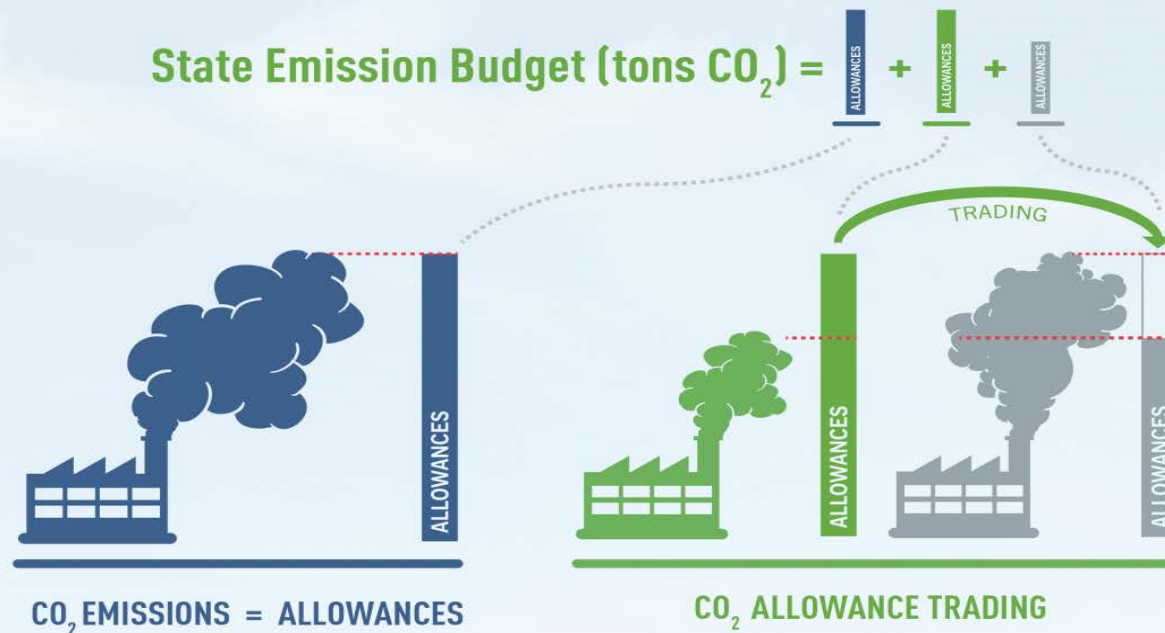
The Clean Power Plan helps accelerate our nation's transition toward a more diversified portfolio of cleaner energy sources.

© Union of Concerned Scientists 2016; www.ucsusa.org/cleanpowerplannational

CLEAN POWER PLAN - IMPACTS



MASS-BASED TRADING SYSTEM



CLEAN POWER PLAN - IMPACTS



RATE-BASED TRADING SYSTEM



Credits Produced/Needed = (ER Standard - Actual ER) * (Annual Generation)

• EGU - Electric Generating Unit

ER - Emission Rate

Alternate Credit Options



Renewable Energy



Preserved and New Nuclear



Verified End-Use Energy Efficiency



CLEAN POWER PLAN - IMPACTS

ERCs v. RECs in Renewable Energy Markets

	ERCs	RECs
Usage	Demonstrate compliance with a rate-based emission standard by adjusting its emission rate and claiming lower emissions from generation.	Used to verify compliance with RPSs and to substantiate marketing claims; a consumer uses RECs to substantiate voluntary environmental claims (e.g. support for a particular kind of energy, or a lower carbon footprint).
What they represent	Single attribute; avoided emissions at an affected EGU.	Multiple generation and environmental attributes (resource type, vintage, direct emissions, location, etc.) at renewable generators.



CLEAN POWER PLAN - IMPACTS

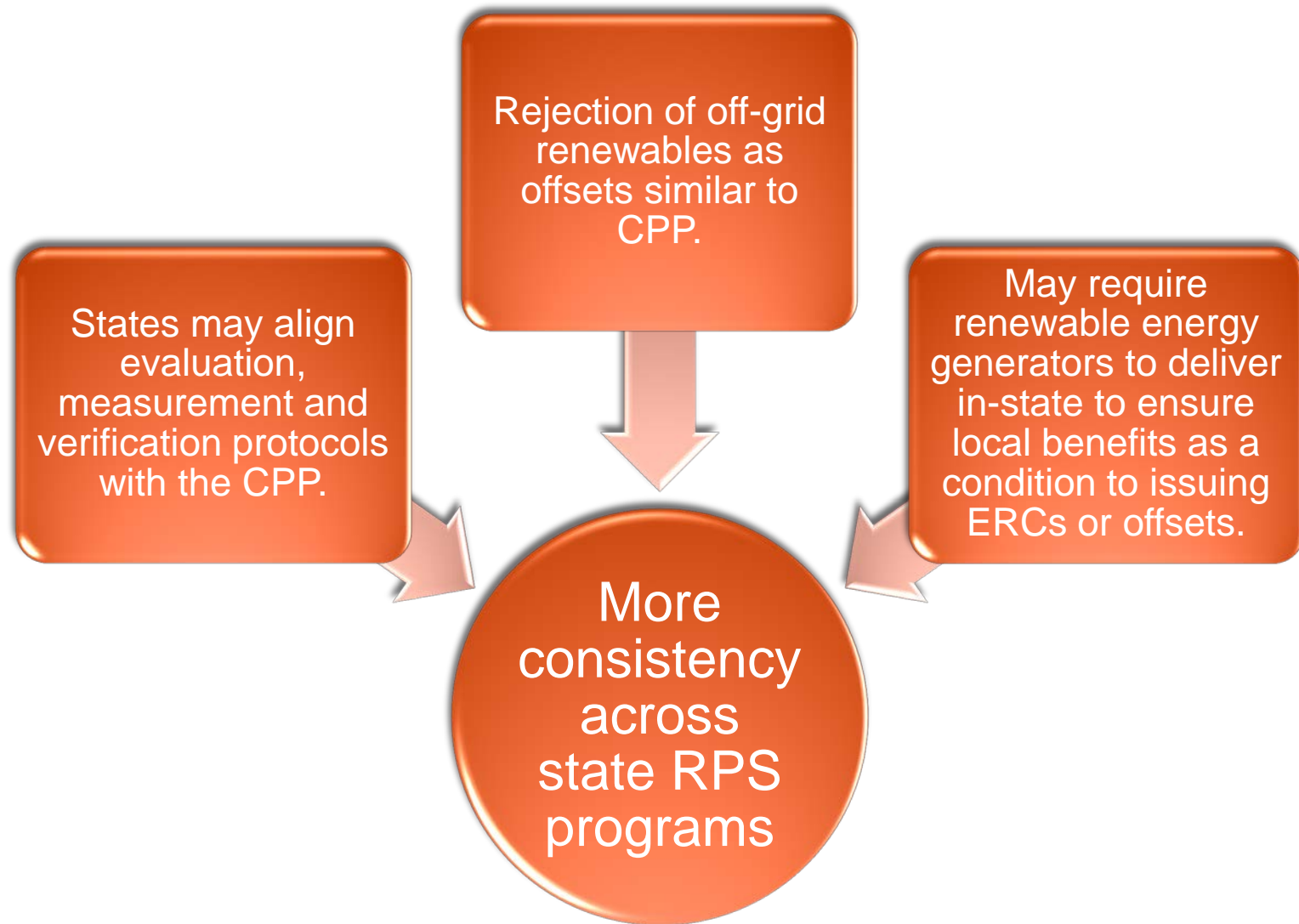
For Power Purchase Agreements in Rate-Based States:

- Broadly define “environmental attributes”
- Purchase RECs from renewable energy suppliers that began operation prior to 2013 or generation occurring up to 2022.
- Specify/attest that the renewable energy represented by the RECs is distinct from the generation supporting ERCs.

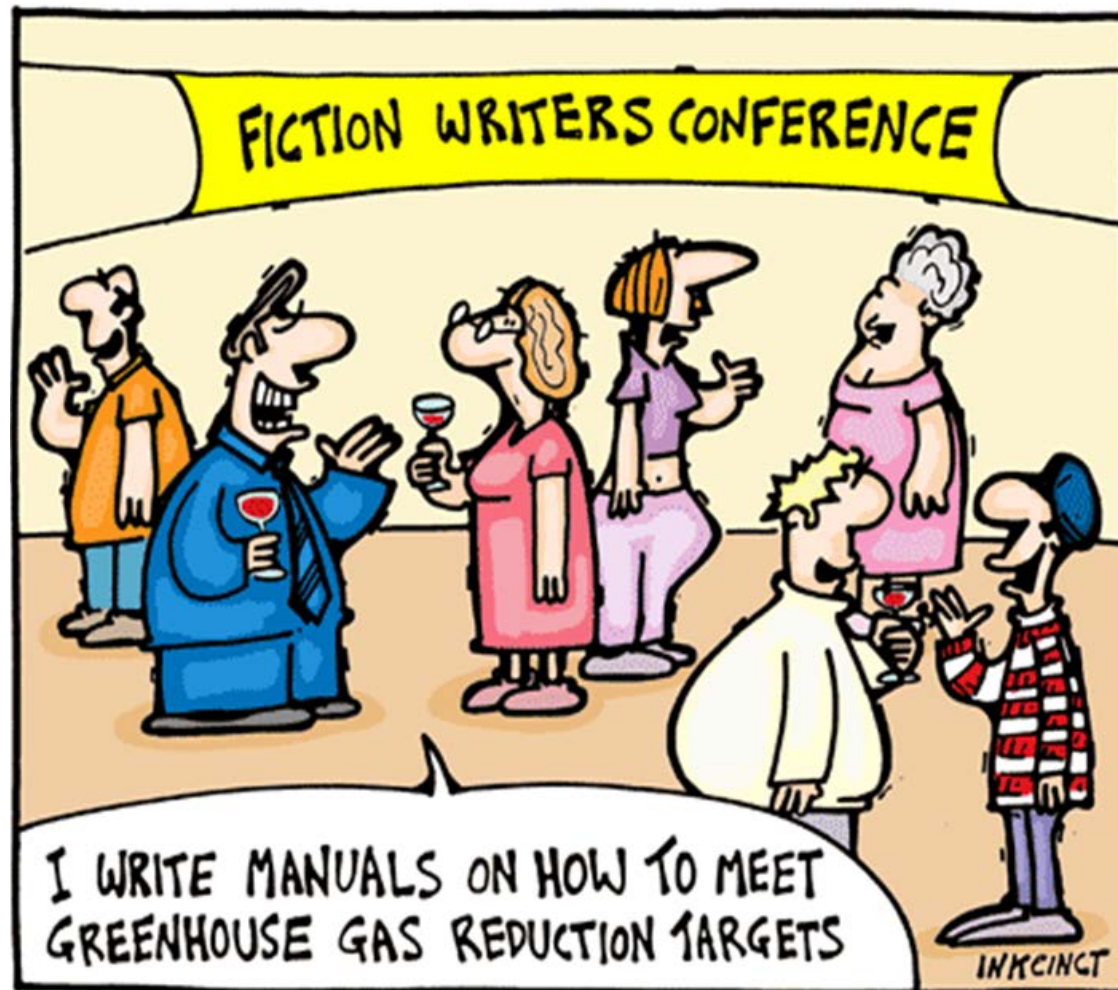
For PPAs in Mass-Based States:

- Buy and *retire* allowances equivalent to purchased RECs so that purchased renewable energy results in reduced emissions.

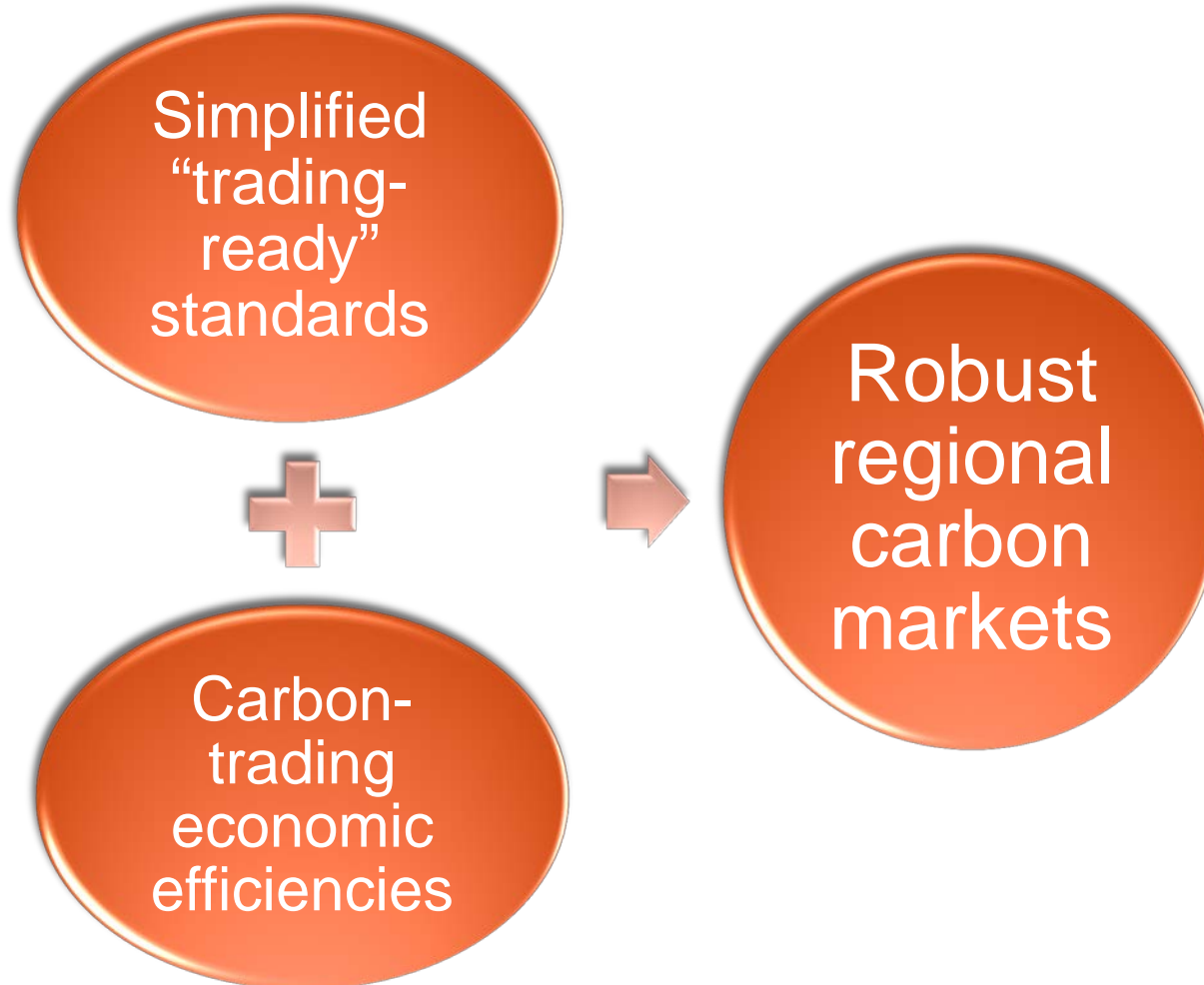
CLEAN POWER PLAN - IMPACTS



CLEAN POWER PLAN - OPPORTUNITIES



CLEAN POWER PLAN – OPPORTUNITIES



CLEAN POWER PLAN - OPPORTUNITIES

Carbon market design considerations

Statewide
emissions
budgets

Auctions
vs. free
allocation

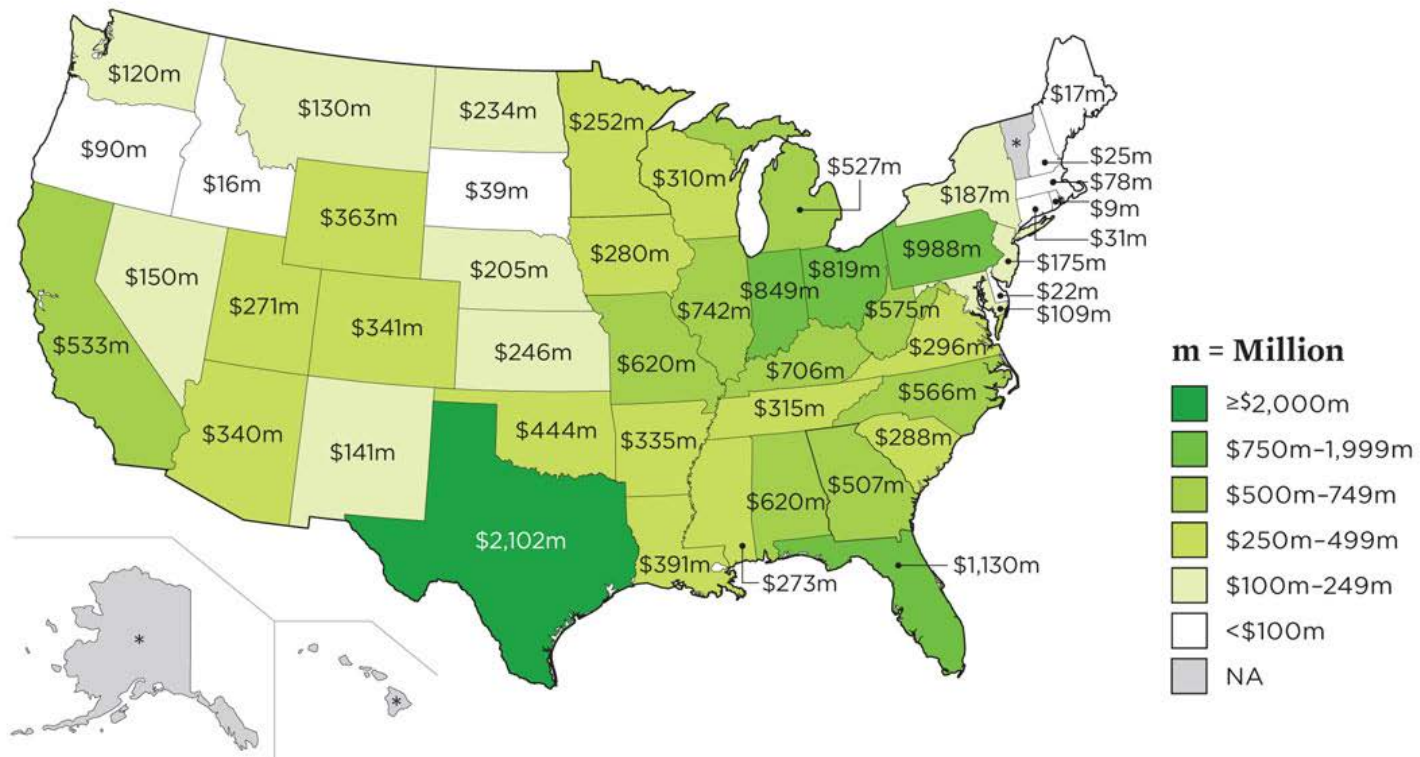
Costs to
covered
entities and
end-use
consumers

Compatibility
with state's
power
markets

Impact on
power
generation,
transmission
and
consumption.

CLEAN POWER PLAN - OPPORTUNITIES

FIGURE 2. State-by-State Average Annual Carbon Revenues from Auctioning Allowances under the CPP National Trading Case, 2022–2030

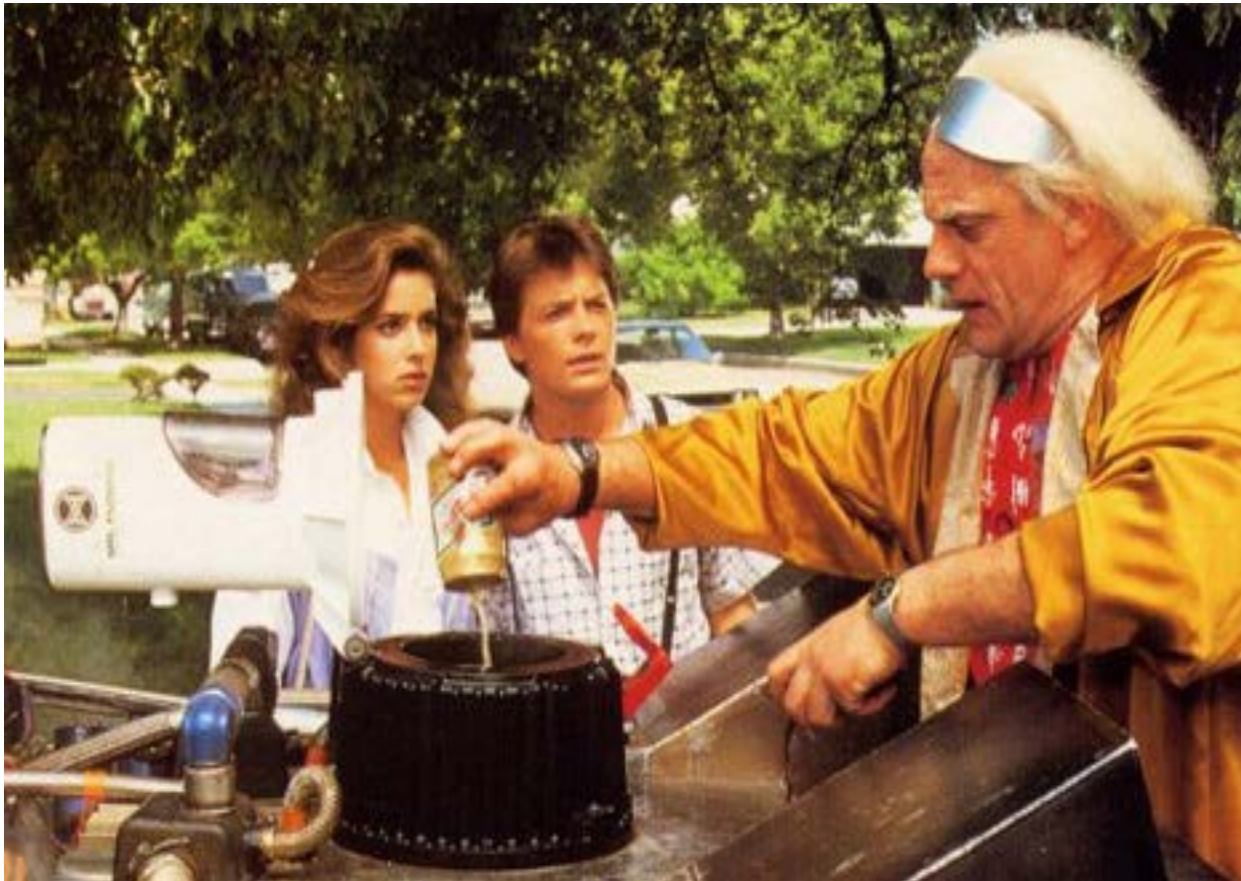


By auctioning carbon allowances and participating in an interstate carbon trading program, states could generate a combined \$17.8 billion in average annual revenues from 2022 to 2030 under the CPP National Trading Case. These carbon revenues could help offset higher consumer electricity bills or be reinvested for the benefit of each state's residents.

* The EPA has exempted Alaska and Hawaii from the CPP for now because of insufficient data to establish emissions-reduction targets for these two states. Vermont has no obligation under the CPP because there are no fossil-fuel power stations within its borders.

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BACK TO THE FUTURE



THANK YOU!



Ankur Tohan

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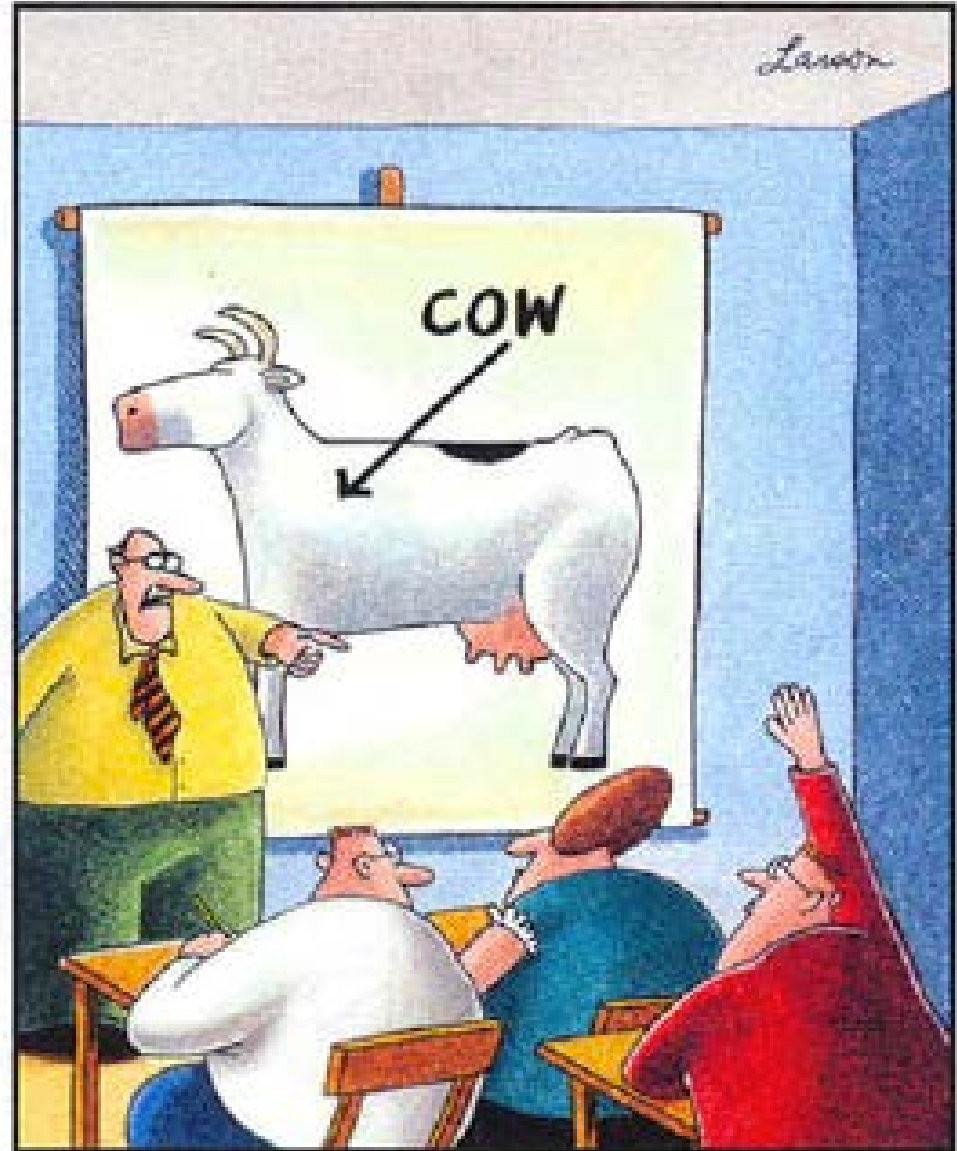
206-370-7658



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"Yes ... I believe there's a question in the back."