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# **EARTH DAY CELEBRATION 2021**



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# Program Overview

April 19: The Biden Administration's 'All of Government' Approach to Environmental Policy: Climate Change, Environmental Justice, and Beyond

April 20: Regulatory and Legislative Developments in Climate Change and Renewable Energy

April 21: P-FASTen Your Seatbelts: A Look at Emerging Contaminants in 2021

April 22: Environmental Justice Under the Biden Administration

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# **Regulatory and Legislative Developments in Climate Change and Renewable Energy**

April 20, 2021

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# Presenters



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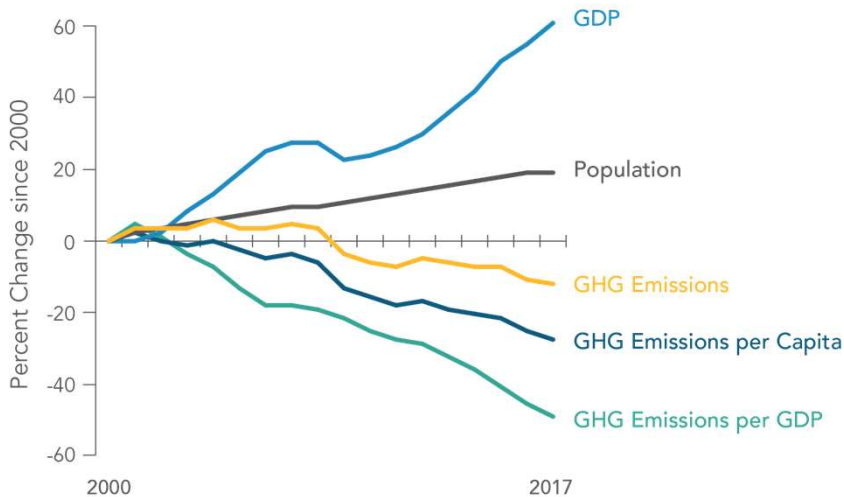
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A glass globe with a world map etched on it, resting on green grass with a bright sun in the background.

# California: On the Road to 100% Renewable: Milestones and Challenges

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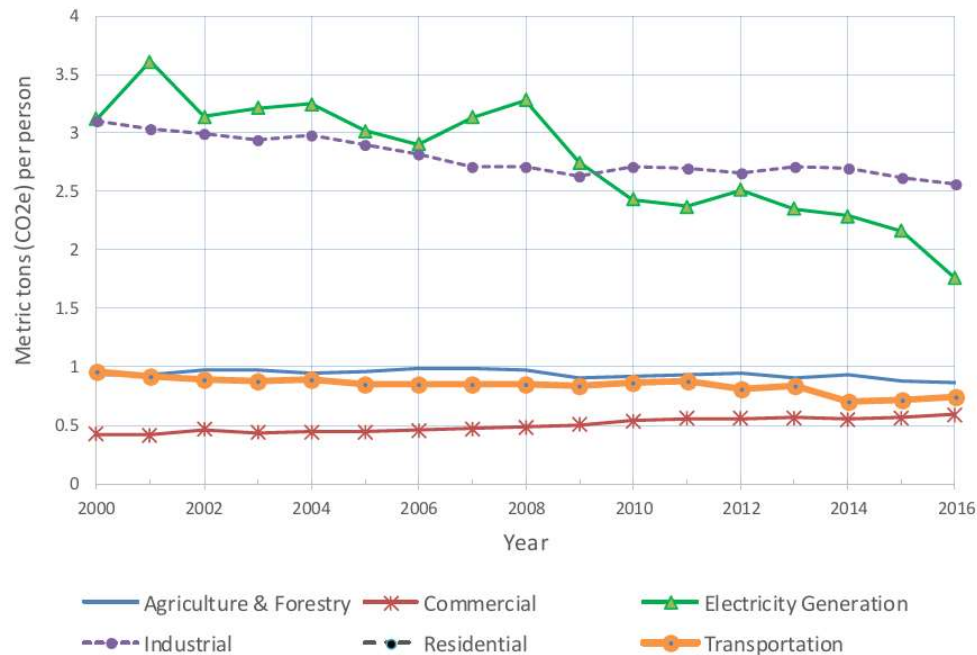
## California Progress in Reducing GHG Emissions



- In CA, since 2000
- GDP has gone up
- Population has gone up
- GHG emissions have done down
- GHG emissions per capita have gone down
- GHG emissions per GDP have gone down

Overall, GHG emissions can be reduced while maintaining growth

# California's GHG Emissions per Capita by Sector



- Most of GHG emission reductions have been in industrial sector and in electric generation
- Program to reduce emissions from electricity generation is Renewable Portfolio Standard (RPS) and SB100

# SB100 and the Road to 100% Renewables

- Starting in 2002, RPS legislation required all retail sellers to procure a minimum quantity of electricity from eligible renewable energy resources to achieve:
- 33% by December 31, 2020 (all three large IOUs surpassed this target).
- 40% by December 31, 2024,
- 45% by December 31, 2027, and
- 50% by December 31, 2030.
- SB100: “The 100 Percent Clean Energy Act of 2017.” Amended and added sections of the Public Utilities Code related to California’s Renewable Portfolio Standard Program (RPS).





# The Road to 100% Renewables: What SB100 does

- SB100 increased RPS:
  - 44% of retail sales by December 31, 2024,
  - 52% by December 31, 2027, and
  - 60% by December 31, 2030.
- States that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of retail sales of electricity to serve California end-use customers and electricity procured to serve all state agencies no later than **December 31, 2045**.
- Requires achievement of 100% policy without increasing carbon emissions elsewhere in the western grid, i.e., disallows resource shuffling.

# How is California Doing?

California ahead of schedule having hit 36% renewables by 2019 – well ahead of the 33% required for 2020. But massive amounts of new renewable resources and storage capacity will be required to ultimately achieve the state’s GHG goals under SB100 and maintain grid reliability.

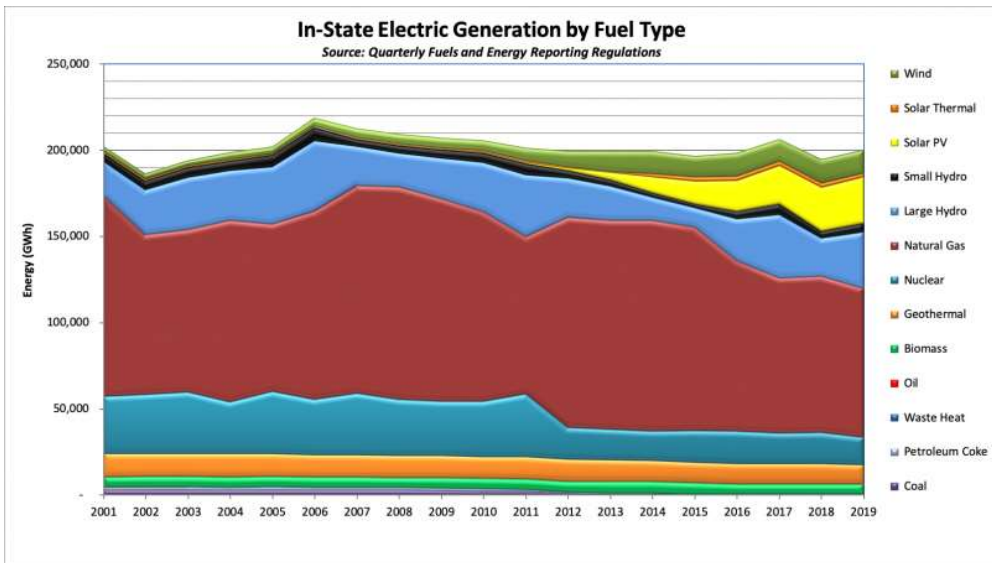
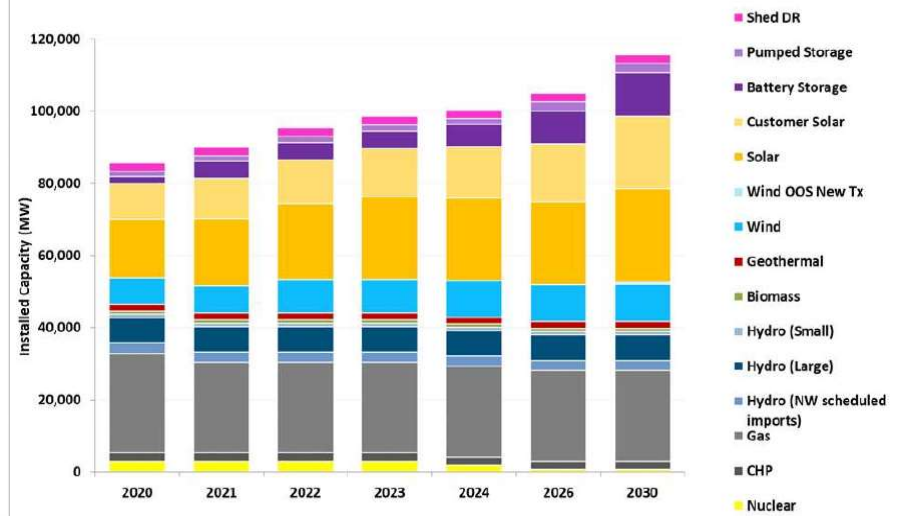


Figure 3. Cumulative Quantities of All Resources in New 2019-2020 RSP



Mid-Case using 38 MMT Target

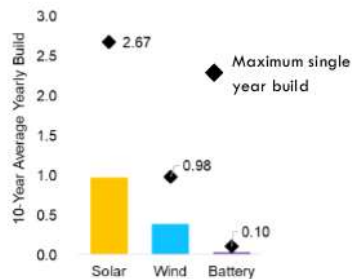
Source: CPUC

# Challenges Ahead: Massive Procurement Required

- CPUC IRP for 2045 forecasts installed electricity generation includes 8,500 MW of new wind, 75,000 MW of new solar, 25,000 MW of new behind the meter solar, 55,000 MW of new storage (Note: CA = 50,000 MW summer peak)
- Will require bringing new resources on line at a rate never before achieved.

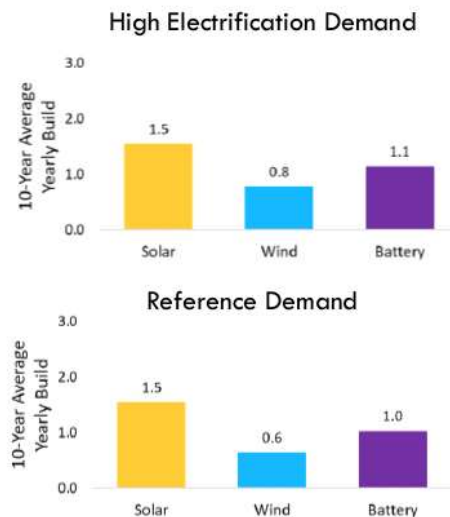
All build rates shown in "GW/year"

## Average Build Rate to Date

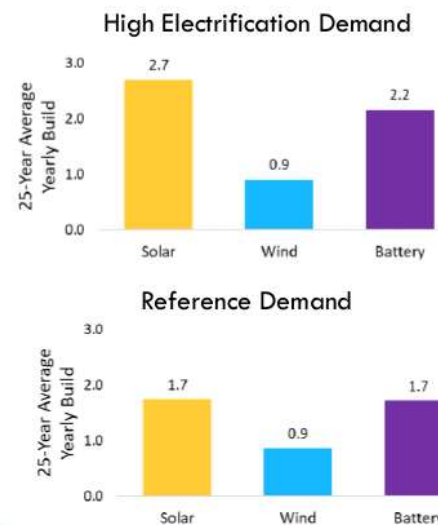


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## Average Build Rate to 2030



## Average Build Rate to 2045



Source: CEC

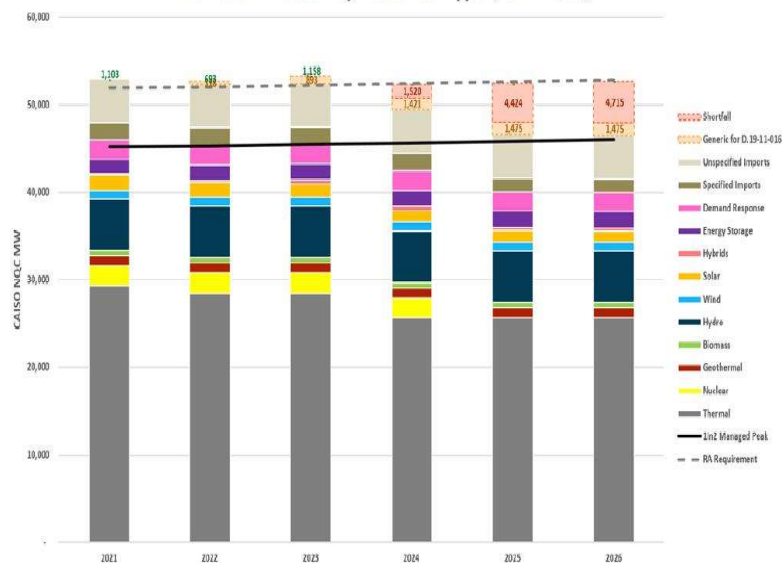
# Challenges Ahead: Maintaining Grid Reliability

- August 14-15, 2020 was a wake-up call with system-wide outages during the westwide heat storm; nationwide winter cold and Texas outages underscored future threat of climate impacts to grid reliability.
- Has underscored need to urgently bring new resources on line, particularly as older resources retire: almost 13,000 MW of gas fired and nuclear generation have retired since 2010 under once through policy. Many additional plants for economic reasons. Diablo Canyon Nuclear (2250 MW) scheduled to retire in 2024 and 2025, plus 5300 MW of older once through cooling plants in the LA Basin.
- Major reliability concerns regarding the loss of this much generation, prompting emergency procurement efforts by CPUC to bring new capacity on line in the next few years and policy discussion about keeping plants scheduled to shut down open for additional years. (Redondo Beach with 834 MW extended from 2021 until 2023.)

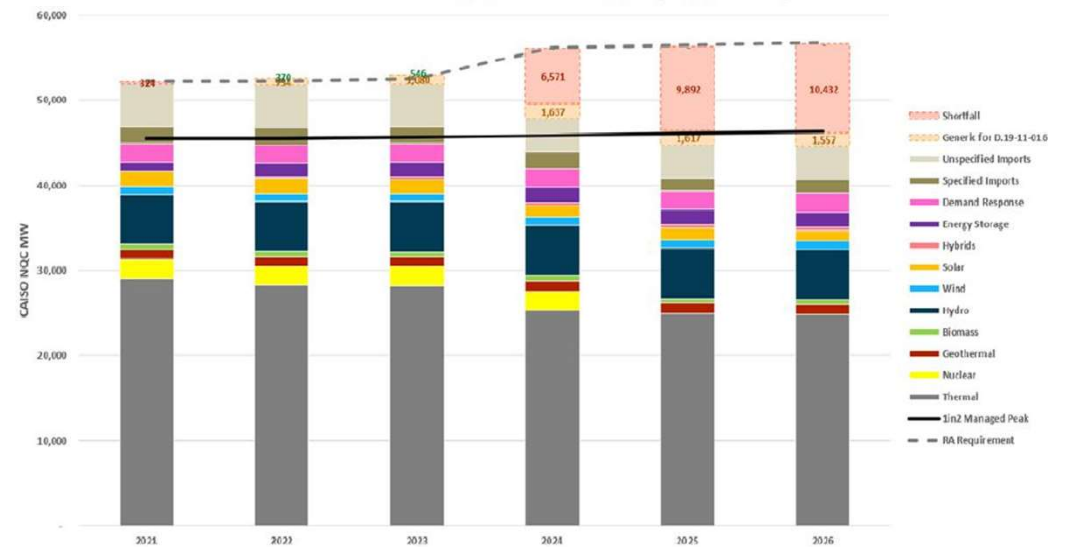
# Challenges Ahead: Maintaining Grid Reliability

Intermittent renewable resources cannot fully replace gas and nuclear retirements; batteries will be critical to filling the gap to maintain grid reliability

CAISO RA Stack by Resource Type (Low Need)



CAISO RA Stack by Resource Type (High Need)



# Challenges Ahead: Wildfires and Drought

California, August and September 2020



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# Wildfires in California: “The New Abnormal”

- 1972-2018: Five-fold increase in annual burned acres due to eight-fold increase in summer fire extent.
- 2020: more than 4.4 million acres burned in California – roughly 4% of California’s 100 million acres of land.
- Seven of the top 10 have been in the last three years, half of the top 10 in 2020.
- Total area burned in 2020 is equal to Connecticut and Rhode Island combined, or three Delawares.



# Challenges Ahead: Managing 100% Renewable in “The New Abnormal”

- Smoke from fires substantially reduced solar generation: what changes need to be made to address reduced generation to charge batteries. Currently 1000 MW – 2600 MW of long duration storage (>8 hours). Longer duration and quantity likely needed.
- Increasingly frequent PSPS – public safety power shutoffs – will necessitate more changes such as deployment of microgrids and distributed generation.
- Warmer temps, mean less snowpack, reducing hydro electric output (currently 20% of CA annual gen) will add to the formidable challenges ahead.
- Bottom line: fasten your seatbelts, it’s going to be a wild ride for the next few decades.





# Renewable Energy Under the Biden Administration

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# Biden's Infrastructure Plan and Renewable Energy

- Renewable Energy Target – Establishing Federal Clean Electricity Standard
- Tax Credits – Extension and Expansion
- Federal Procurement
- Manufacturing Incentives



# Impact of Biden's Proposal on State Regulatory Programs

- Incentivizing Grid Improvements
- Tax Credits for Energy Storage
- State Renewable Portfolio Standards and Goals
- Clean Energy Block Grants



# Regulation of Greenhouse Gas Emissions Under the Clean Air Act

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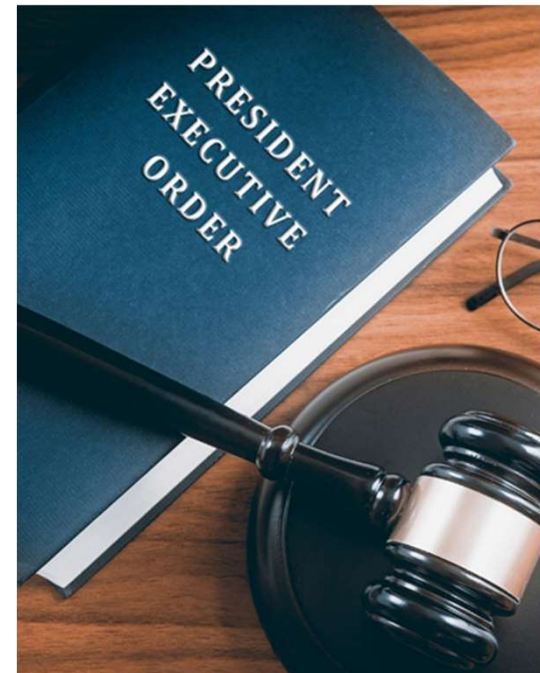


## Topics to Be Covered

- I. Biden Administration Executive Orders Relating to Regulation of Greenhouse Gas (GHG) Emissions
- II. Background Regarding Regulation of GHG Emissions Under the Clean Air Act (CAA)
- III. Development of Regulations to Limit GHG Emissions from Power Plants
- IV. Development of Regulations to Limit Methane Emissions from the Oil and Gas Sector

# New Executive Orders Relating to Regulation of GHG Emissions

- President Biden issued two key Executive Orders relating to climate change in January
- Addressing climate change is a priority of the new administration
- Biden efforts are government-wide and involve significant policy changes
- Mobile source GHG reductions a separate issue
- Focus of this presentation will be on portions of Executive Order issued January 20 addressing stationary sources, which require:
  - Review of all EPA regulations promulgated since 2017
  - U.S. DOJ to request stay in litigation in cases relating to new rules
- Impact on regulations relating to GHG emissions from power plants and methane emissions from oil and gas sector



# Background for Regulation of GHG Emissions under the CAA

## Basis for regulation of GHG emissions under CAA

- *Massachusetts v. EPA*, 549 U.S. 497, 505 (2007) – under CAA, “air pollutant” includes carbon dioxide and other greenhouse gases
- EPA made “endangerment finding” in 2009, *i.e.* EPA found “compelling[.]” evidence that emissions of greenhouse gases are polluting the atmosphere and are endangering human health and welfare by causing significant damage to the environment.” 74 Fed. Reg. at 66,497

# Types of CAA Regulations

- **New Source Performance Standard (NSPS)**

- After the EPA determines that a particular “category of sources \* \* \* causes, or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare,” it publishes regulations establishing standards of performance for new sources in that category. 42 U.S.C. § 7411(b)(1)
- The standard of performance is based on best system of emission reductions. 42 U.S.C § 7411(a)(1)
- The same standard is usually applied to sources that undergo a major modification

- **Regulation of Existing Sources**

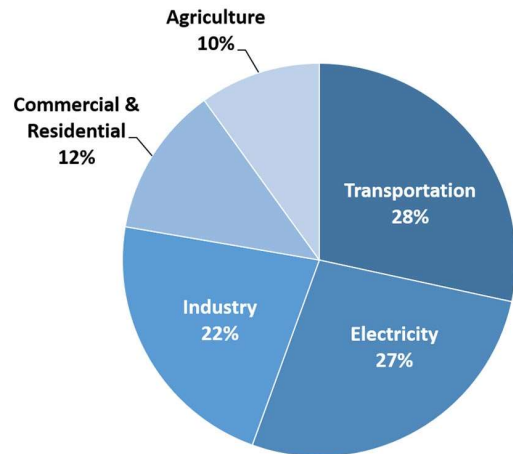
- “The statute calls for federal-state cooperation in regulating existing sources, affording distinct roles to the federal and state agencies in arriving at what Section 7411 calls “standards of performance” for the emission of air pollutants. *Id.* § 7411(a)(1), (c), (d)(1).” *Id.*



# Regulation of GHG Emissions from Power Plants

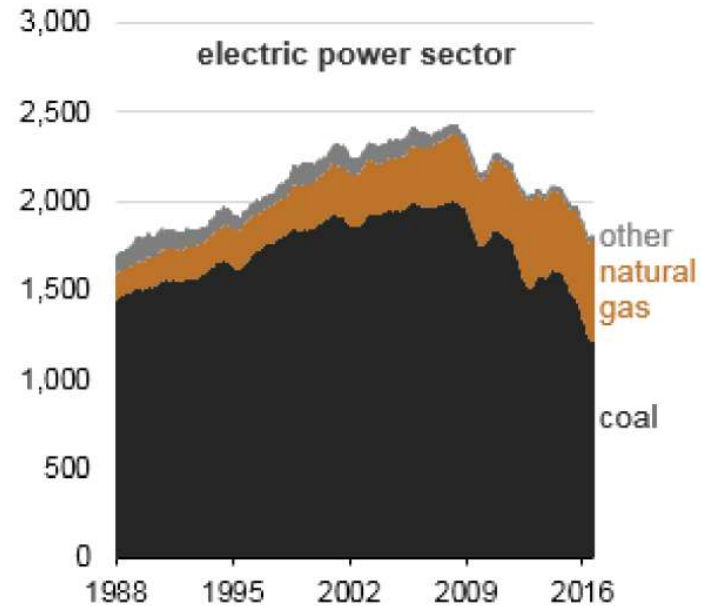
## 27% of GHG Emissions are from the Electricity Sector

Total U.S. Greenhouse Gas Emissions by Economic Sector in 2018



U.S. Environmental Protection Agency (2020). Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2018

## GHG Emissions are Primarily from Coal and Natural Gas-Fired Power Plants



Source: U.S. DOE, Energy Information Administration

# Trump Administration Approach to CAA Rules Relating to GHG

- For rules still in litigation in 2017, Trump Administration asked to review rules, as Biden Administration is doing now
- In some cases, U.S. EPA spent years identifying bases for revising or rolling back some of the more stringent rules
- By the end of the Trump Administration, efforts focused on reinterpreting the meaning of the CAA such that it would be more difficult to directly regulate GHG and other emissions

# NSPS for Power Plants

- Obama Administration published rules in 2015 which were challenged in court and stayed
- Trump Administration issued a notice in 2017 indicating that it was reviewing the rules
- In 2018 EPA proposed new rules which would have substantially increased the amount of CO<sub>2</sub> power plants are allowed to emit compared to the earlier rule
  - Backsliding problems so the proposed rule was not finalized
- **New rule published January 13, 2021**, to take effect March 15, 2021
  - Does not set a GHG emissions standard, it provides an excuse for not having a standard
  - CAA Section 111 requires a NSPS if a “category of sources \* \* \* causes, or contributes significantly to, air pollution.”
  - Final rule contains a new restriction use of Section 111 of the CAA: Can only be used to regulate GHG emissions from a source category if the amount of those emissions “**exceeds 3 percent of total U.S. GHG emissions.**” 86 Fed. Reg. at 2543.
  - Rule would apply to all source categories
  - Potential challenges based on legal basis for this rule under CAA and backsliding issues

## Fate of NSPS Issued January 13, 2021

- Suit brought January 19, 2021 by 20 states and some counties and cities in U.S. Court of Appeals for the D.C. Circuit
- At the request of the Biden Administration, litigation stayed to permit review of the rule
- On March 17, 2021, EPA filed an unopposed motion for vacatur of the new rules and a request for remand on the grounds that EPA violated the Administrative Procedures Act (APA) by failing to provide notice and comment on the new rule.  
**Vacature granted on April 5, 2021.**
- Likely will be a new rulemaking
  - Biden Administration has said that will be reexamining “significant contribution” issue as a legal matter

# Standards for Existing Power Plants

- Obama Administration finalized the Clean Power Plan (CPP) in 2015
  - Based on idea that states would come up with plan to transition away from fossil-fuel fired power plants to reduce overall GHG emissions from power sector
  - In the CPP, the EPA determined that a combination of three existing methods of emission reduction – which the CPP referred to as building blocks – formed the “best system of emission reduction.” 42 U.S.C. § 7411(a)(1)
    - Heat rate improvements
    - Substitution of increased generation from lower emitting sources, such as substituting coal with natural gas
    - Prioritizing zero-emitting renewable-energy resources
- CPP was challenged in the D.C. Circuit
  - Decision was stayed by the U.S. Supreme Court by 5-4 vote in 2016
  - No final decision was reached because rules were withdrawn by the Trump Administration

## Standards for Existing Power Plants (cont'd)

- CPP replaced by Affordable Clean Energy (ACE) Rule in 2019
  - Rule limited to existing coal-fired power plants
  - Key legal change:
    - The EPA's new reading of the statute requires the Agency, in modeling its "best system of emission reduction," to consider only emission-reduction measures that "can be applied at and to a stationary source." ACE Rule, 84 Fed. Reg. at 32,534
  - EPA acknowledged that ACE regulations would reduce GHG emissions by only about 1%
- Fate of ACE Rule
  - ACE rule struck down by D.C. Circuit Court of Appeals **on January 19, 2021**, in *American Lung Association v. EPA*, No. 19-1140 (D.C. Cir. 2021), with court finding that key legal change noted above is an improper reading of the CAA
  - CPP regulations were not reinstated, at the request of EPA

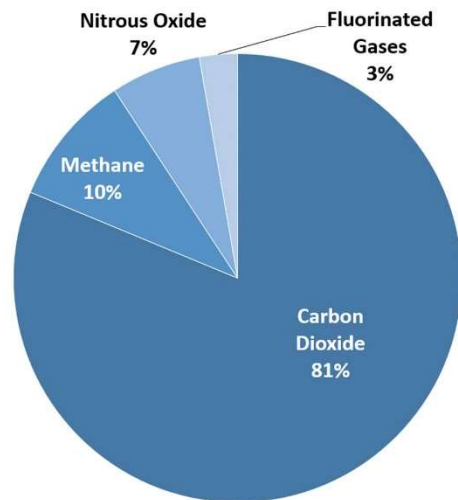
# Overall Next Steps for Rules for Power Plants

- The Biden Administration is free to start new rulemakings for GHG emissions from both new and existing power plants
- Key question is whether this means EPA will be taking a fundamentally different approach, and there are signs that it might
- Power plant CO<sub>2</sub> emissions are already on the decline for economic reasons - coal plants (and in some areas natural gas-fired power plants) are in many cases becoming more expensive than solar and wind
- It is possible there will be a Clean Energy Standard
  - Legislation which has been introduced in Congress
  - Biden Infrastructure Plan
    - Would require utilities to draw 100% of their power from zero-carbon sources by 2035
    - Also includes: programs and tax credits to encourage development of clean energy and storage; measures to encourage construction of transmission; and tax credits for carbon capture and storage
  - A Clean Energy Standard would do much of what the Clean Power Plan was designed to do
- Possible that new CAA rules for coal plants would require carbon capture and storage

# Regulation of Methane from the Oil and Gas Sector

## Methane Accounts for 10% of GHG Emissions

Overview of Greenhouse Gas Emissions in 2018



U.S. Environmental Protection Agency (2020), Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2018

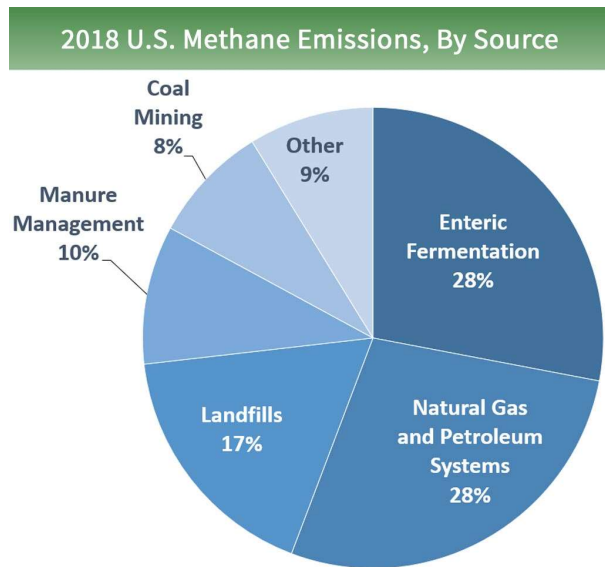
## The Global Warming Potential of Methane is Much Higher than CO<sub>2</sub>

- The Global Warming Potential (GWP) was developed to allow comparisons of the global warming impacts of different gases
- It is a measure of how much energy the emissions of one ton of a gas will absorb over a given period of time, relative to the emissions of one ton of CO<sub>2</sub>
- **CO<sub>2</sub>, by definition, has a GWP of 1**
- **Methane (CH<sub>4</sub>) is estimated to have a GWP of 28–36**, primarily because CH<sub>4</sub> absorbs much more energy than CO<sub>2</sub>



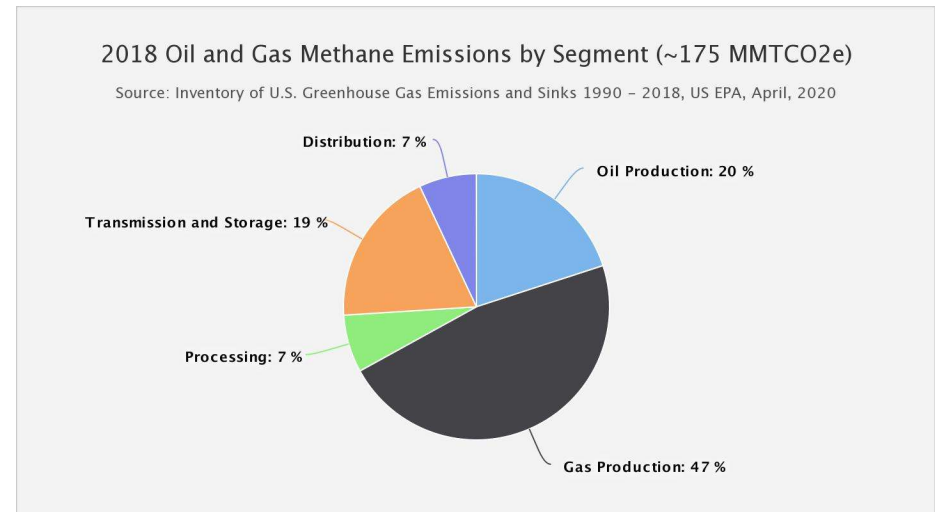
# Sources of Methane Emissions

## Large Source of Methane is Oil and Gas Sector



U.S. Environmental Protection Agency (2020). Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2018

## Most Oil and Gas Sector Emissions Occur During Production



Note: “Natural gas” consists primarily of methane

# Rules for Methane Emissions from Oil and Gas Sector

- Rules for emissions for oil and gas resources published in Federal Register on June 3, 2016, and were to take effect in 2017
  - Principle focus was methane emissions, but also included emissions of some other pollutants
- Several industry groups challenged the emissions rules in the D.C. Circuit
- In 2017, litigation was stayed at the request of the Trump Administration to reevaluate the rule
- In 2018, EPA proposed new rules which would have reduced how frequently oil and gas operators would be required to survey for methane leaks and given an extension of time for leak repair
- On September 14, 2020, EPA published new rules in the Federal Register which rescinded the rules for methane emissions from the oil and gas sector
- The new rules are being challenged in the D.C. Circuit by more than 20 states and by environmental groups

# 2020 Rule for Methane

- New legal theories
  - Definition of Source Category: Takes position that source category had been defined too broadly to include the entire oil and gas supply chain and decreased the number of types of sources subject to regulation by **eliminating transmission and storage of oil and gas** from the source category
  - Need to Establish Standard is Required for Each Source for Each Pollutant
    - Under EPA precedent, for each pollutant, once a source category is determined, EPA is to set a standard for all sources in the category
    - Position in 2020 rule is that for **each individual source have to show that standards are needed for each pollutant**
    - On this basis rescinded the methane requirements applicable to sources in the production and processing segments
- Cost-benefit analysis
  - Uses estimate for determining the social cost of methane which was subsequently vacated by a U.S. District Court judge in *California v. Bernhardt*, 474 F. Supp.3<sup>rd</sup> 573 (N.D. Calif. 2020) (appeal pending)

# Recent Actions Relating the 2020 Rule for Methane

- At the request of EPA, the litigation has been stayed
- Executive Order
  - EPA is to propose a new NSPS for methane from oil and gas resources by September 20, 2021
- The Biden Administration has issued new guidance relating to the social cost of carbon, methane, and other pollutants
  - Obama Administration did a careful study to determine the cost and provided guidance based on it; Biden Administration has reinstated guidance on interim basis
  - Trump Administration had changed it by only taking into account climate change impacts in US, not globally, which the court in *California v. Bernhardt* found violated the APA
  - Very large change in costs
    - Under the reinstated guidance the social cost for 2020 is **\$51 per ton for CO<sub>2</sub> and \$1,500 per ton for methane**
    - Under the former guidance the social cost was **\$1 to \$7 per ton for CO<sub>2</sub> and \$55 per ton for methane**

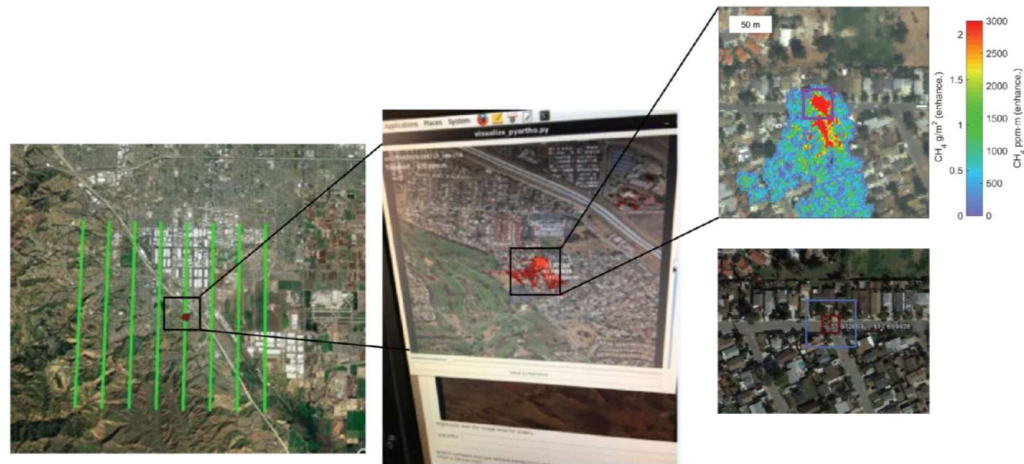
## Possible Use of the Congressional Review Act

- It is possible that Congress will nullify the 2020 methane rule by using the Congressional Review Act
- Under this Act, Congress can nullify recently adopted regulations, which for regulations adopted during the Trump Administration means regulations adopted after August 21, 2020
- The Congressional resolutions required have been introduced and would have to be passed by mid-May 2021
- There is some hesitancy since a provision in the law says agencies can't issue rules that are "substantially the same" as the nullified rules

# Prospects for New Methane Rule for Oil and Gas Sector

- Industry views are changing
  - American Petroleum Institute and several large oil companies are now in favor of regulation of leaks
  - Small independent producers are not on board, but the Biden Infrastructure Plan contains \$16 billion to stop leaks from abandoned wells which would reduce compliance costs
- Several potential reasons industry opposition is diminishing
  - Leaks mean loss of methane which can be sold
  - Natural gas producers are increasingly at risk of losing natural gas end-users
    - Natural gas has long considered the “bridge fuel,” but now there is opposition to new natural gas power plants and new natural gas hook-ups for homes and businesses
  - Patchwork of state regulation is starting to emerge
    - Several states have already imposed regulations, e.g. California, Colorado, and New Mexico
    - In some states, leaks have led to civil litigation
    - Industry may want federal regulation of methane emissions to set a level playing field
  - Leak detection is getting easier for both industry and for public with planes and satellites equipped with spectrometers that can detect methane emissions

# Example of Gas Leak Detection Using Aerial Surveillance



Left: Airborne Visible InfraRed Imaging Spectrometer – NG flight pattern

Middle: Real-time detection software on airplane

Right: Processed methane plume image and geolocation of source to within 10 meters

Source: California Energy Commission, California Methane Survey, 2020

# Conclusion

- Power Plants
  - Currently not subject to GHG emissions standards under the CAA
  - GHG emissions of power plants likely to be regulated, but not necessarily exclusively through the CAA
- Methane Emissions from Oil and Gas Sector
  - Methane emissions from the oil and gas sector are currently unregulated under the CAA
  - Regulating these emissions is a high priority for the Biden Administration
  - Should expect new regulations soon



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Since 2003, William (Bill) D. Kissinger has focused his practice on energy matters in California and nationally along with related environmental issues. He developed this practice after spending two years working as senior deputy legal affairs secretary to Gov. Gray Davis and serving as the primary legal contact for the Office of the Governor with Cal EPA, Cal Health and Human Services Agency, and the Resources Agency. Bill previously spent four years in Washington, DC working in senior positions at the White House and the US State Department.

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Ella Foley Gannon represents clients before a myriad of state and federal regulatory agencies, focusing her practice on federal and state environmental laws, natural resource permitting, and land use entitlements. Recognized as one of the leading permitting and siting lawyers in California and an authority in endangered species, wetland, water quality, and water rights issues, she assists developers and landowners who undertake complex development projects, including renewable and traditional energy and transmission projects, as well as residential, commercial, industrial, and mixed-use projects. Ella currently serves as a deputy chair of Morgan Lewis's global litigation practice.

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Rick R. Rothman focuses on environmental and energy counseling and litigation. Rick's practice encompasses a broad range of environmental and energy laws, including the laws and regulations concerning air quality (both stationary and mobile sources), water quality, power plant siting, hazardous substances, impacted properties, energy efficiency, climate change, and Proposition 65. He is recognized for his environmental work by Chambers USA, where clients describe Rick as an "expert in air quality matters" and "very smart and knowledgeable, and easy to work with."

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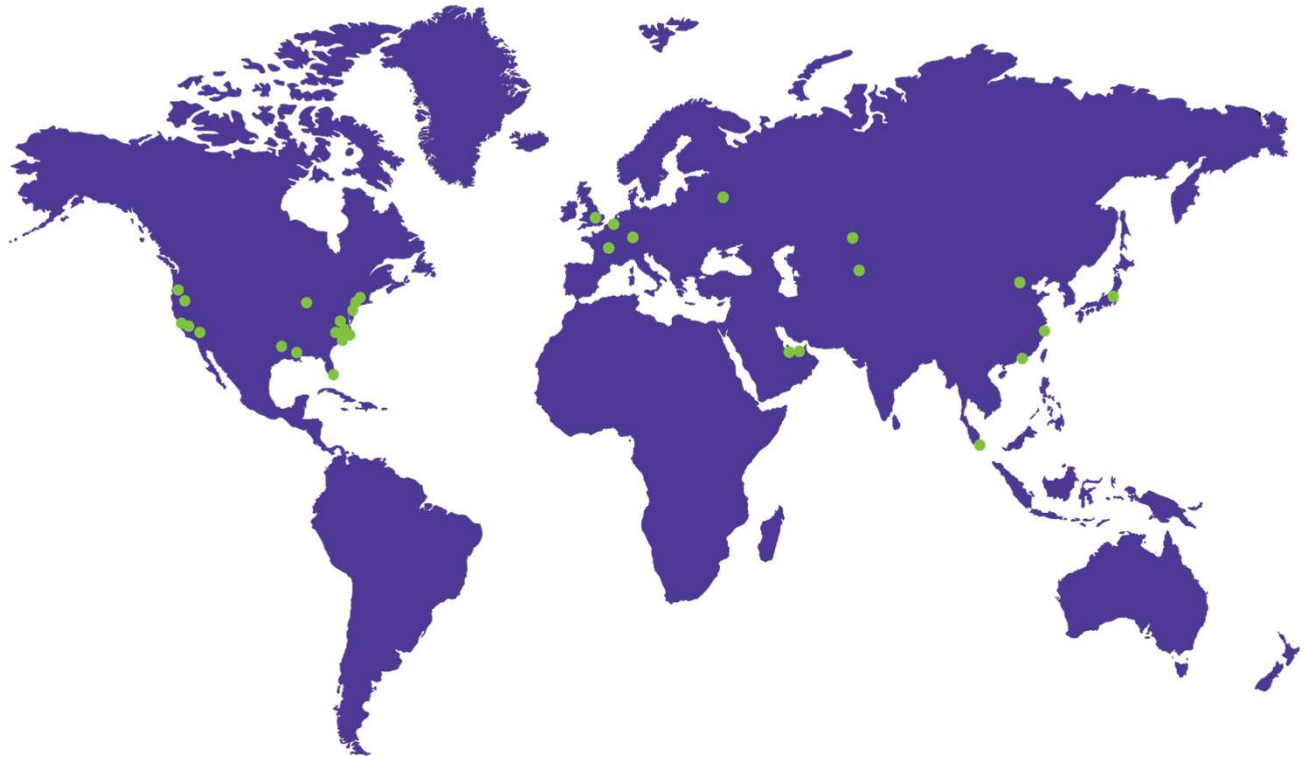
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