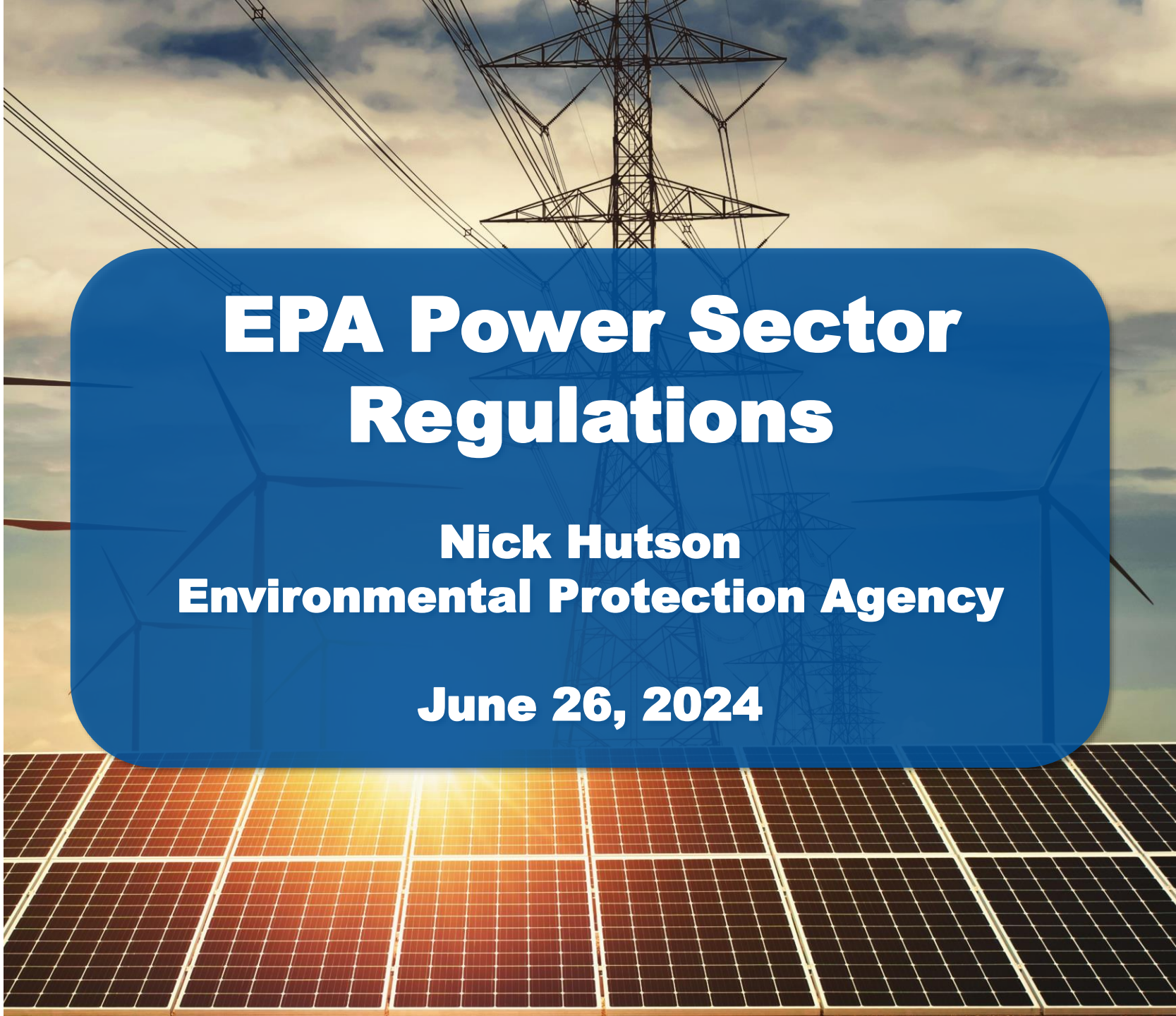

# EPA Power Sector Regulations

**Nick Hutson**
**Environmental Protection Agency**

**June 26, 2024**

TEXAS RE

# Antitrust Admonition

**Texas Reliability Entity, Inc. (Texas RE) strictly prohibits persons participating in Texas RE activities from using their participation as a forum for engaging in practices or communications that violate antitrust laws. Texas RE has approved antitrust guidelines available on its website. If you believe that antitrust laws have been violated at a Texas RE meeting, or if you have any questions about the antitrust guidelines, please contact the Texas RE General Counsel.**

**Notice of this meeting was posted on the Texas RE website and this meeting is being held in public. Participants should keep in mind that the listening audience may include members of the press, representatives from various governmental authorities, and industry stakeholders.**

# Upcoming Texas RE Events

**June 27, 2024**

Supply Chain Series

**July 9, 2024**

Cybersecurity Threats

**July 18, 2024**

Zero Trust Architecture

TEXAS RE
Ensuring electric reliability for Texans

# Cyber and Physical Security Workshop
# August 28, 2024

# Upcoming ERO Enterprise Events

**May - July, 2024**

GADS Wind & Solar Template and Application Training

**June 27, 2024**

Regional Summer Assessment Webinar

**July 16-18, 2024**

Physical Security Workshop

**August 13-15, 2024**

Power Systems Security Conference

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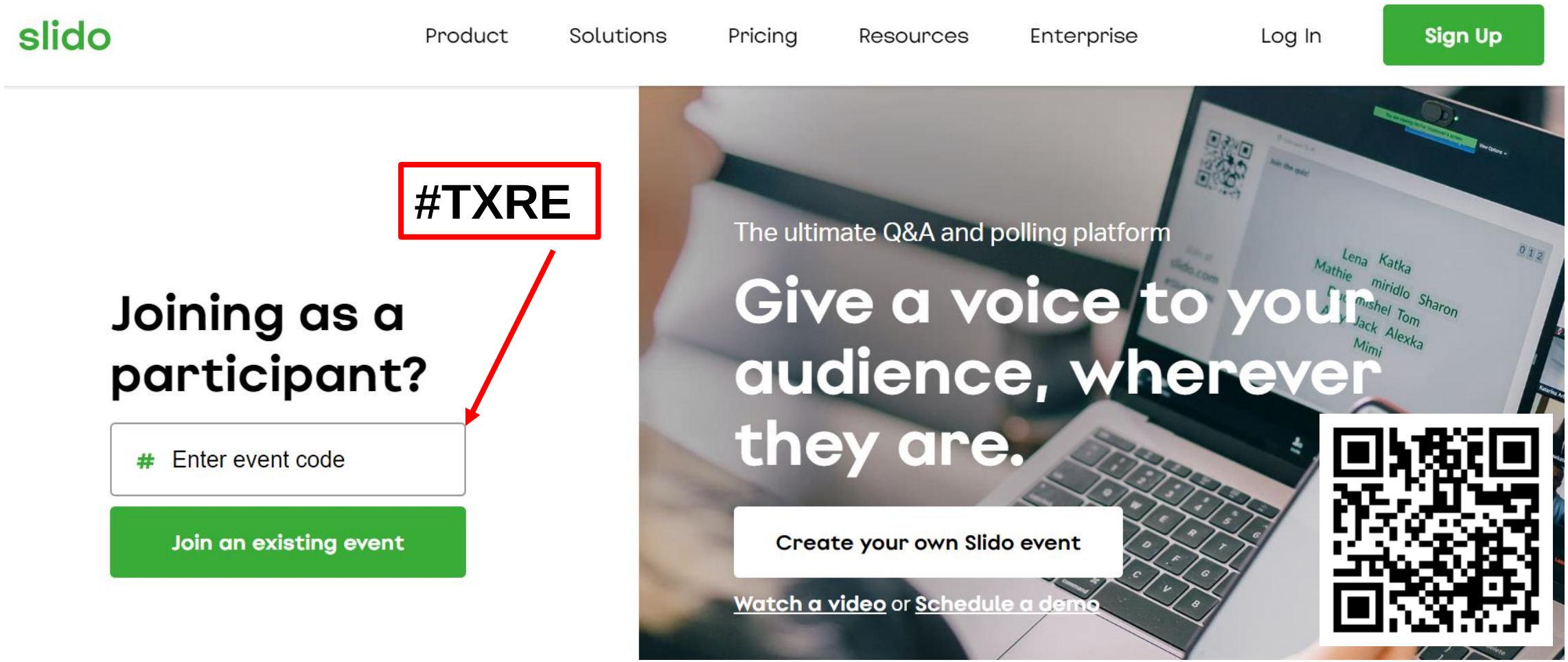
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# EPA Actions to Address Air Pollution From the Power Sector: Update and a Look Ahead

June 26, 2024

Nick Hutson

Group Leader, Energy Strategies Group

Office of Air Quality Planning and Standards, US EPA

# Overview

- Overview of Recent Power Sector Actions
- EPA's Carbon Pollution Standards
- Updates to Mercury and Air Toxics Standards
- Looking Ahead

# EPA Power Sector Actions

- On April 25th EPA announced a suite of final rules to reduce pollution from fossil fuel-fired power plants
  - Final Clean Air Act rule addressing GHG emissions from existing steam electric generating units and new natural gas-fired combustion turbines
  - Updated Mercury and Air Toxics Standards for coal-fired power plants
  - Final Clean Water Act rule to reduce pollutants discharged through wastewater from coal-fired power plants
  - Final rule for safe management of coal ash under the Resource Conservation and Recovery Act
- Finalizing these four rules delivers on the Administration's commitment to securing important climate, health and environmental protections, while providing a long-term planning horizon and regulatory certainty to support the continued delivery of affordable and reliable electricity
- Transparency and engagement with stakeholders – including grid operators and power companies – is central to EPA's approach and will continue to be important going forward

# EPA's Carbon Pollution Standards - Introduction

**Types of fossil fuel-fired power plants covered by this final rule**

- New and reconstructed gas-fired combustion turbines (111(b))
- Existing coal, oil, and gas-fired steam electric generating units (111(d))

**Technology-based standards**

- Traditional Clean Air Act standards based on proven and cost-effective control technology that can be applied to individual power plants to improve their emissions performance ("best system of emissions reduction")
- Emission guidelines for the longest-running existing coal units and standards for heavily-utilized new gas units are based on carbon capture and sequestration/storage (CCS)
- Standards for other types of plants based on natural gas co-firing or efficient operation

**Reduces climate and other health-harming pollution**

- The climate and health benefits of this rule significantly outweigh the compliance costs
- Between 2024 and 2047, the regulatory impact analysis projects net climate and health benefits systemwide of $370 billion, which is an annualized net benefit of $20 billion
- Expected to avoid up to 1.38 billion metric tons of CO2 systemwide through 2047

# EPA's Carbon Pollution Standards - Introduction

**Builds on decades of technology advancements and momentum from the Inflation Reduction Act and the Bipartisan Infrastructure law**

- Leverages the clean energy incentives and opportunities provided in the Inflation Reduction Act
- Implementation will work with and reinforce changes in the sector already under way

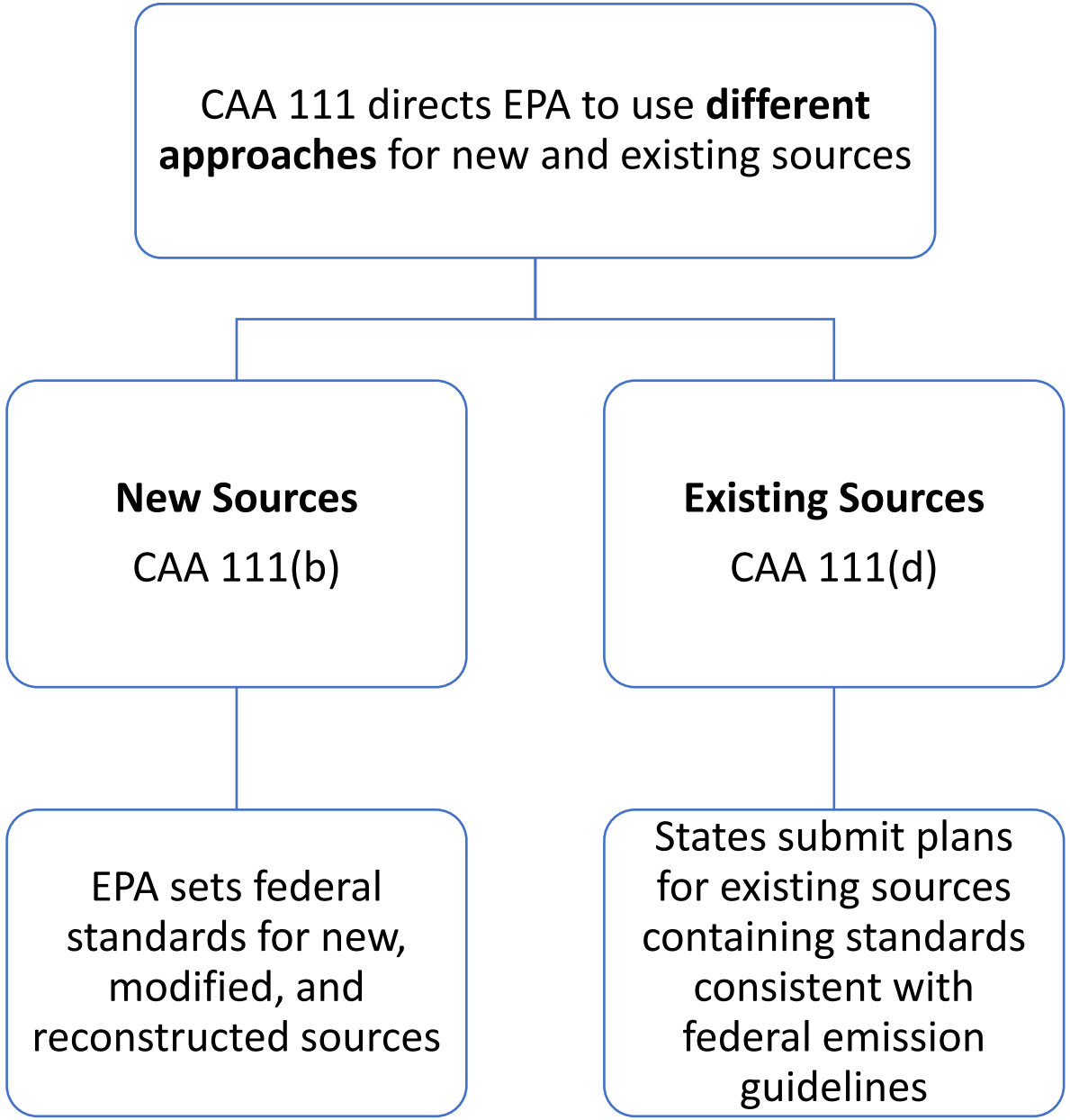
**Provides utilities options for meeting these standards as well as the time needed to plan for compliance and continue delivering reliable and affordable electricity**

- Extended compliance deadlines, particularly for plants installing CCS
- Ample optionality for investment in new generation and operation of existing assets
- Includes multiple mechanisms to provide compliance flexibility where needed for installation of controls, to support reliability, and to address source-specific circumstances

**State planning process provides important flexibilities and opportunities for public input**

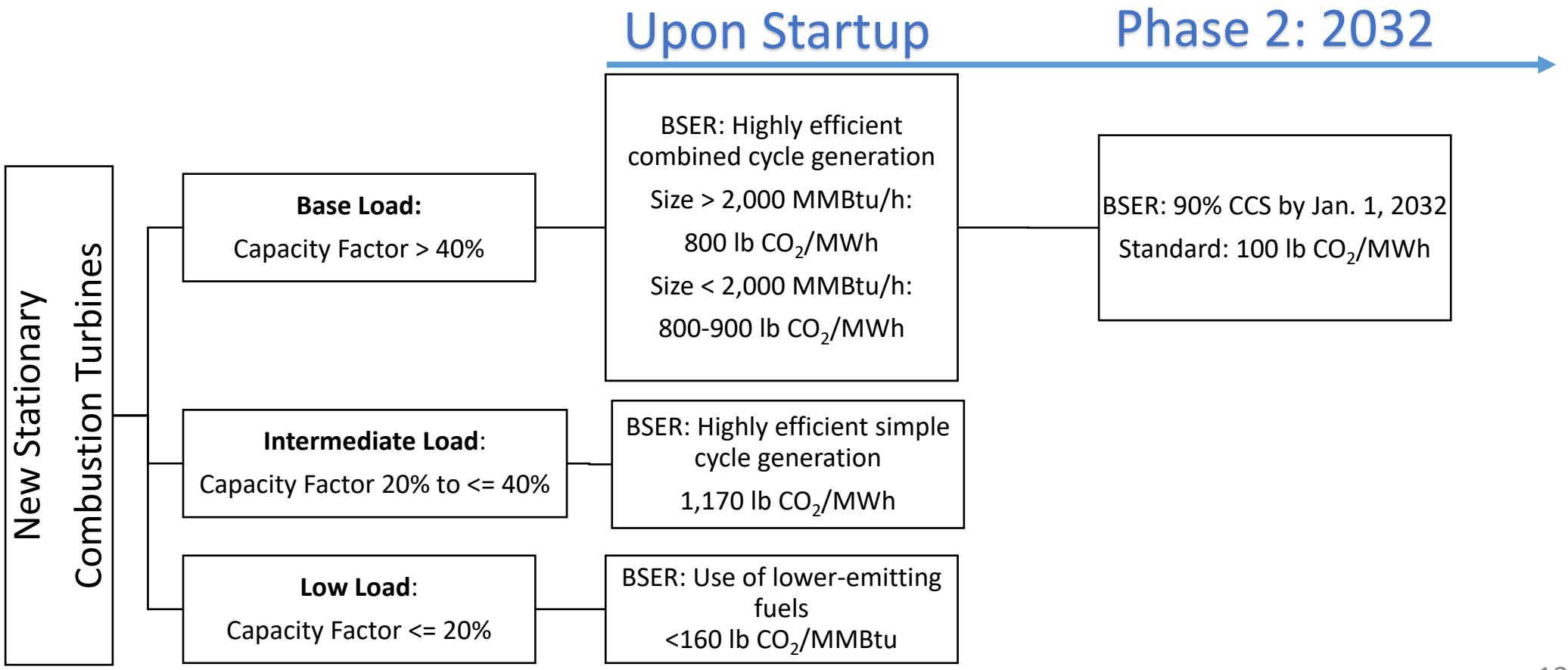
- Transparent process with notice and comment
- Engagement with stakeholders, including power companies and grid operators, is essential part of the state planning process

# Clean Air Act Section 111



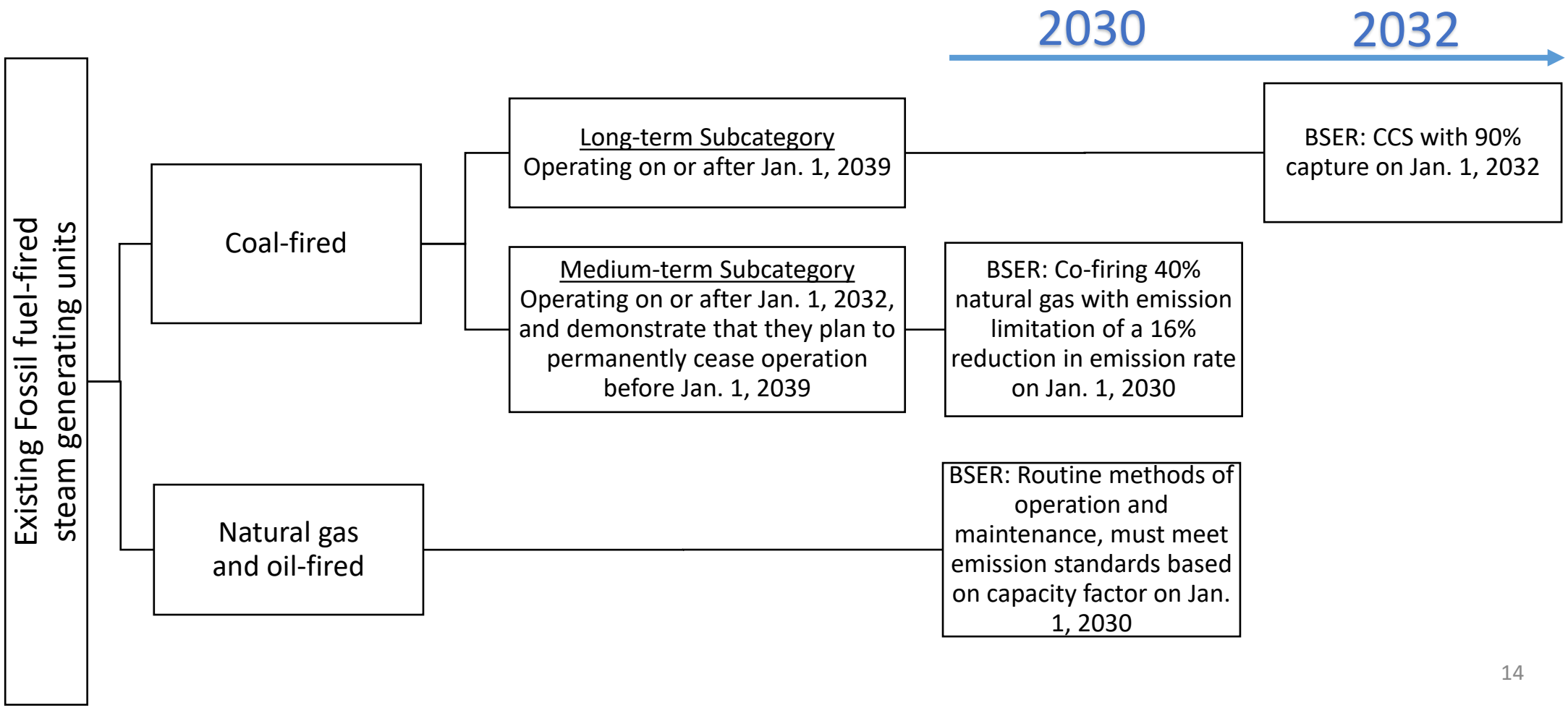
# Final Standards for New Stationary Combustion Turbines

- Standards effective from date of proposal publication (May 23, 2023)
- Three subcategories: base load, intermediate load, low load
- Standards are **technology neutral -** affected sources may comply by co-firing hydrogen



# Final Emission Guidelines for Existing Steam Generating Units

- Two subcategories for existing coal-fired units, depending on operating horizon: (1) Units operating on or after Jan. 1, 2039, and (2) Units that are operating on or after Jan. 1, 2032, and demonstrate they plan to permanently cease operation before Jan. 1, 2039
- Units that demonstrate they plan to permanently cease operations before Jan. 1, 2032, are not subject to these standards



# State Plans for Final Emission Guidelines

## State Plan Submission Deadline

- Submission within 24 months after publication of the final emissions guidelines – May 2026

## Meaningful Engagement

- States must describe their meaningful engagement with pertinent stakeholders, including communities affected by power plant pollution, energy communities, power plant owners/operators, grid operators

## State Plan Components

- Requirements specific to these emission guidelines to ensure transparency, including a website hosted by EGU owners/operators to publish documentation and information related to compliance with the state plan

## Compliance Deadlines

- January 1, 2030, or January 1, 2032, depending on subcategory
- Compliance must be demonstrated annually
- States may extend the compliance date by up to 1 year for power plants that experience a delay in installing controls due to factors outside of the owner/operator's control (e.g., permitting- or construction-related)

# State Plans for Final Emission Guidelines

## Presumptive Standards of Performance

- For each subcategory, EPA is providing a methodology for establishing presumptively approvable standards of performance based on its determinations as to the "best system of emission reduction"
- Expressed as rate-based emission limitations (i.e., limitations on the amount of a regulated pollutant that can be emitted per unit of output, per unit of energy or material input, or per unit of time)

## States May Consider Remaining Useful Life and Other Factors (RULOF)

- Under certain circumstances, states may apply a less stringent standard to a particular source based on that source's remaining useful life and other factors
- RULOF is intended as a limited flexibility to address unusual circumstances at particular facilities
- Final rule provides clarity on how states may consider reliability-related concerns in applying RULOF

## Increments of Progress (IoPs) and Reporting Obligations

- Will serve as clear, transparent, and enforceable implementation checkpoints between state plan submittal and the compliance dates. Similarly, reporting obligations for affected EGUs that have demonstrated they plan to permanently cease operating provide transparency to stakeholders
- States may generally choose the calendar dates for their IoPs

# State Plans for Final Emission Guidelines

## Compliance Flexibilities

- States may incorporate certain compliance flexibilities, such as emission averaging, trading, and unit-specific mass-based compliance, into their state plans
- Final rule provides detail on how states may incorporate these flexibilities, and how EPA will evaluate state plans that include these mechanisms
- Key requirement: states must demonstrate that these mechanisms are at least as stringent as the technology-based standards in EPA's emission guidelines
- EPA believes that the use of compliance flexibilities, within the parameters specified in the emission guidelines, can create an incentive for overperformance and may also provide some additional operational flexibility to states and affected EGUs in achieving the required level of emission reduction

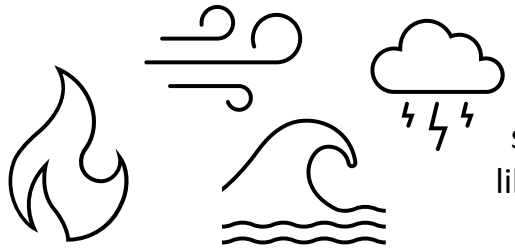
# Support for Reliability

Based on input from commenters and outreach to each of the balancing authorities that submitted comments, EPA developed a four-point approach to address reliability:

1) **Rule Structure**. Additional time to install CCS at existing coal units; subcategory structure that recognizes that opportunities to reduce GHG emissions vary across units.
2) **RULOF Provisions**. EPA articulated how states can consider reliability in state plans, as well as in state plan revisions, should circumstances change. Flexibility for states to address unusual source-specific circumstances.
3) **Compliance Flexibilities**. Flexible annual average compliance period; option to incorporate emissions trading/averaging, and mass-based compliance; and a one-year compliance extension for installation of controls.
4) **Reliability Mechanisms**. Two reliability-related instruments: a short-term mechanism for units responding to grid Cumulative impact analysis emergencies, and a reliability assurance mechanism for units that need to extend retirement dates for reliability.

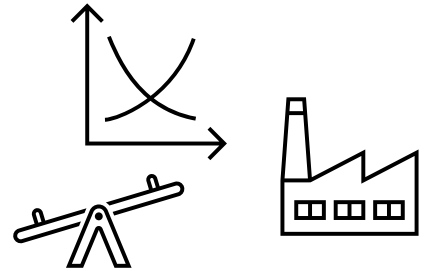
EPA sensitivity analyses

- Examined higher electricity demand (load growth) and impact of the EPA's additional regulatory actions affecting the power sector (MATS, 111, ELG)
- Sensitivity analyses indicate that the power sector has available pathways to meet growing demand for electricity, comply with environmental requirements, and meet NERC resource adequacy constraints



# Two Additional, Optional Mechanisms to Support Reliability

EPA's approach to supporting reliability is multifaceted, as it has always been. We listened to stakeholders and included adjustments to key provisions that will support planning and reliability -- like subcategories and time to meet the standards. We also added two reliability-related mechanisms that are voluntary for states to include in state plans for existing sources.



| Short Term Mechanism | | Reliability Assurance Mechanism |
|---|---|---|
| New or existing units during certain specified grid emergencies, like extreme weather events which can include hurricanes, wildfires, and winter storms. | **Who** | Existing units with cease operations dates. |
| Units responding to emergencies have access to greater compliance flexibility for those time periods. | **What** | Extensions can be granted extensions where there is a documented reliability need but is insufficient time for a state plan revision. |
| Short-lasting, mostly occurring over a few hours and in some rare instances can last for a few days. | **When** | Units have access to up to a 1-year extension – but no longer than what is substantiated through documentation. |
| A unit must submit documentation, for annual compliance purposes, demonstrating the hours in which it operated out of schedule due to a qualified grid emergency. | **How** | A unit must substantiate that is needed to maintain reliability and have fulfilled all reporting requirements. |
| Grid emergencies that qualify for flexibility under this mechanism are energy emergency alerts (EEA) as defined by the North American Reliability Corporation. EEA levels 2 and 3 qualify for flexibility under this mechanism | **More Details** | Extensions exceeding 1 year in duration must be addressed through a state plan revision. EPA will seek the advice of Federal Energy Regulatory Commission (FERC) for extensions longer than 6 months. |

# Emissions changes, benefits, and costs

- The Regulatory Impact Analysis projects reductions of 1.38 billion metric tons of CO2 systemwide over the 2028 to 2047 timeframe along with tens of thousands of tons of PM2.5, SO2, and NOx – harmful air pollutants that are known to endanger public health.
- In 2035 alone, EPA estimates the rule will avoid:
  - Up to 1,200 premature deaths
  - 870 avoided hospital and emergency room visits
  - 360,000 avoided cases of asthma symptoms
  - 48,000 lost school days and 57,000 lost work days
- Over the years from 2024 to 2047, EPA estimates net benefits of **$370 billion**. This includes:
  - **$270 billion** in climate benefits
  - **$120 billion** in health benefits (PM and ozone)
  - **$19 billion** in compliance costs
- For a single year, the net benefits are **$20 billion**

# Final MATS Rule – Key Provisions

- First significant updates to Mercury and Air Toxics Standards (MATS) since 2012
- Designed to ensure that MATS keeps pace with developments in monitoring and control technologies
- Three key provisions:

1. More protective standard for filterable particulate matter (fPM), to reflect performance of modern controls for non-mercury metals such as arsenic
   - Approximately 93% of coal-fired power plants currently meet the revised limit of 0.010 lb/MMBtu
2. Enhance transparency and compliance assurance by requiring all sources to use Continuous Emissions Monitoring Systems (PM CEMS) to demonstrate compliance with PM standard
   - PM CEMS are highly cost-effective and in use at approx. one-third of coal-fired power plants
3. Reduce mercury (Hg) standard for lignite-fired EGUs to align with standards that have applied to other coal-fired power plants since 2012
   - Lignite-fired power plants are largest emitters of Hg in the power sector

# Final MATS Rule – Benefits and Costs

- Benefits over the 10-year period from 2028-2037
  - $300 million in health benefits
  - $130 million in climate benefits
- Compliance costs over the 10-year period
  - $860 million
- These monetized benefits do not include benefits associated with reductions of HAP such as mercury, lead, arsenic, chromium, nickel, and cadmium.
- In addition, the benefits of the additional transparency provided by the requirement to use PM CEMS for communities that live near sources of HAP, and the assurance PM CEMS provide that the standards are being met on a continuous basis are not monetizable.

# Looking Ahead

- EPA is engaging with stakeholders to develop a new proposed rule under section 111(d) of the Clean Air Act to address GHGs from existing gas-fired combustion turbines
  - EPA seeks to develop an approach that covers the entire existing gas fleet, achieves significant climate and public health benefits, and enables the industry to continue providing affordable and reliable electricity
  - Nonregulatory docket and framing questions to gather input (closed May 28)
  - Policy Forum in Washington, DC, that included RTO/ISO representatives (held May 17)
  - EPA continuing robust engagement with a broad range of stakeholders
- EPA is also developing proposed rules to review standards for: 1) ozone-forming nitrogen oxides from new gas-fired combustion turbines and 2) hazardous air pollutants from new and existing gas-fired combustion turbines
- Implementation of final carbon pollution standards for existing steam electric generating units
- EPA-DOE Memorandum of Understanding on Electric Reliability – an additional platform for engagement on reliability issues
- EPA will continue to engage extensively with reliability related authorities on actions that impact the power sector

# Thank You