New Mexico Environment Department

Energy Transition Act Rulemaking

Robert Spillers

September 1, 2022

Photo credit Rhett Zyla #IamNMED

Energy Transition Act

- Legislature passed Senate Bill 489 in 2019
- Establishes a pathway for low-carbon energy
  - Transition away from coal toward renewable energy
  - Provided work force training and transition assistance to affected communities
- Sets statewide renewable energy standards
  - NM investor-owned utilities and rural electric cooperatives
    - 50 percent renewables by 2030
    - 80 percent renewables by 2040
  - **NMSA 1978 74-2-5(B)(1)(b)**
  - Limits Carbon Dioxide (CO_2) emissions for coal-fired power plants

Rulemaking Required by Statute

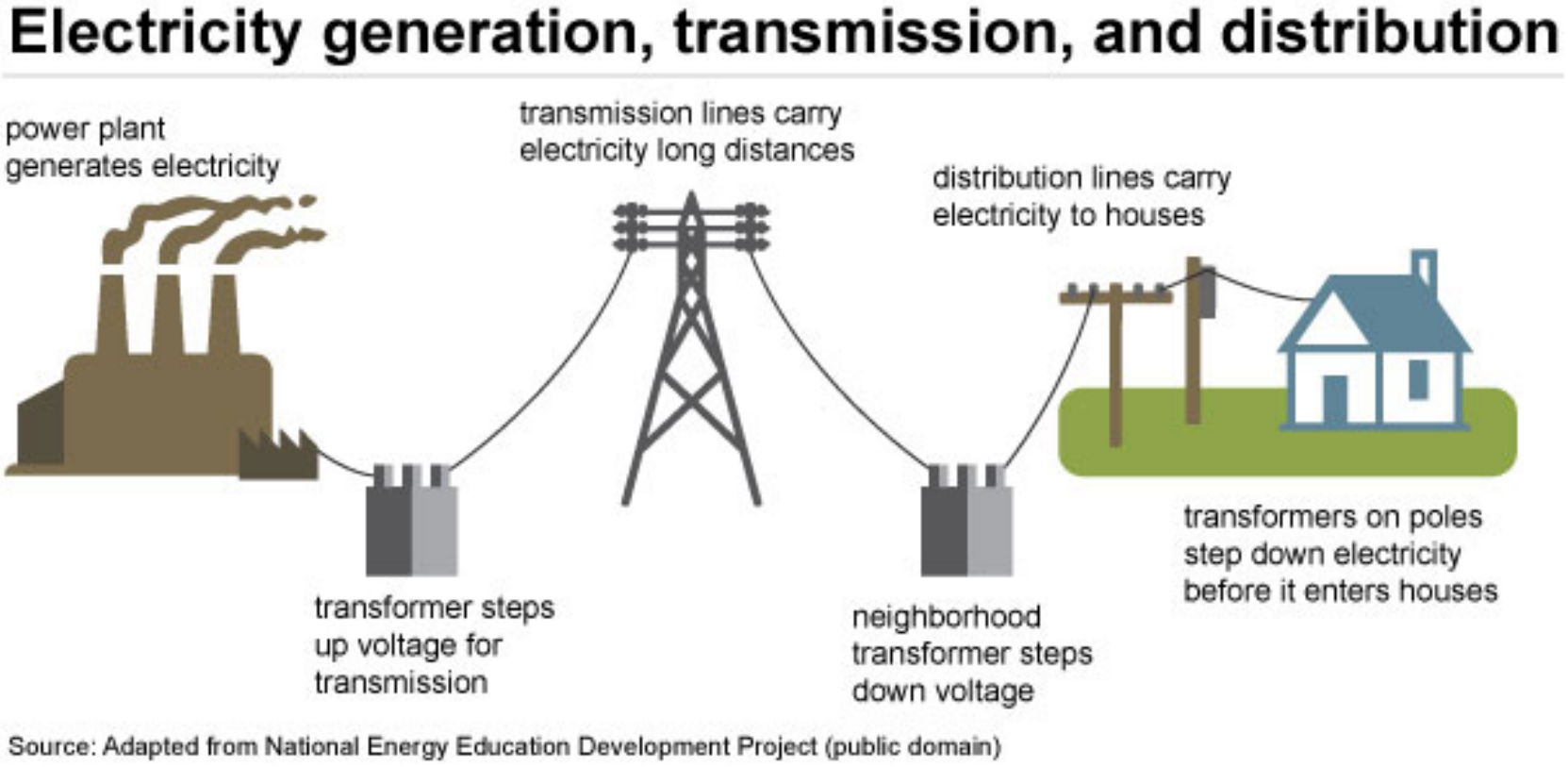
NMSA 1978 74-2-5(B)(1)(b)

(b) develop standards of performance that limit carbon dioxide emissions to no more than one thousand one hundred pounds per megawatt-hour on and after January 1, 2023 for a new or existing source that is an electric generating facility with an original installed capacity exceeding three hundred megawatts and that uses coal as a fuel source

Meaningful engagement

- Robust and meaningful public involvement in the development of a State plan or rulemaking should go beyond the minimum requirement to hold a public hearing
- Ensuring that States share information with and solicit input from stakeholders at critical junctures.
  - during plan development
  - ensures that a plan is adequately addressing the potential impacts to public health and welfare

Electric Generation



Most local grids are interconnected for reliability and commercial purposes, forming larger, more dependable networks that enhance the coordination and planning of electricity supply.

Coal-Fired Electric Generation In NM

Four Corners Generating Station – Tribal land

Units 1, 2, and 3 permanently shut down in 2014

Arizona Public Service announced it would be decommissioning the Four Corners Generating Station by the end of 2031

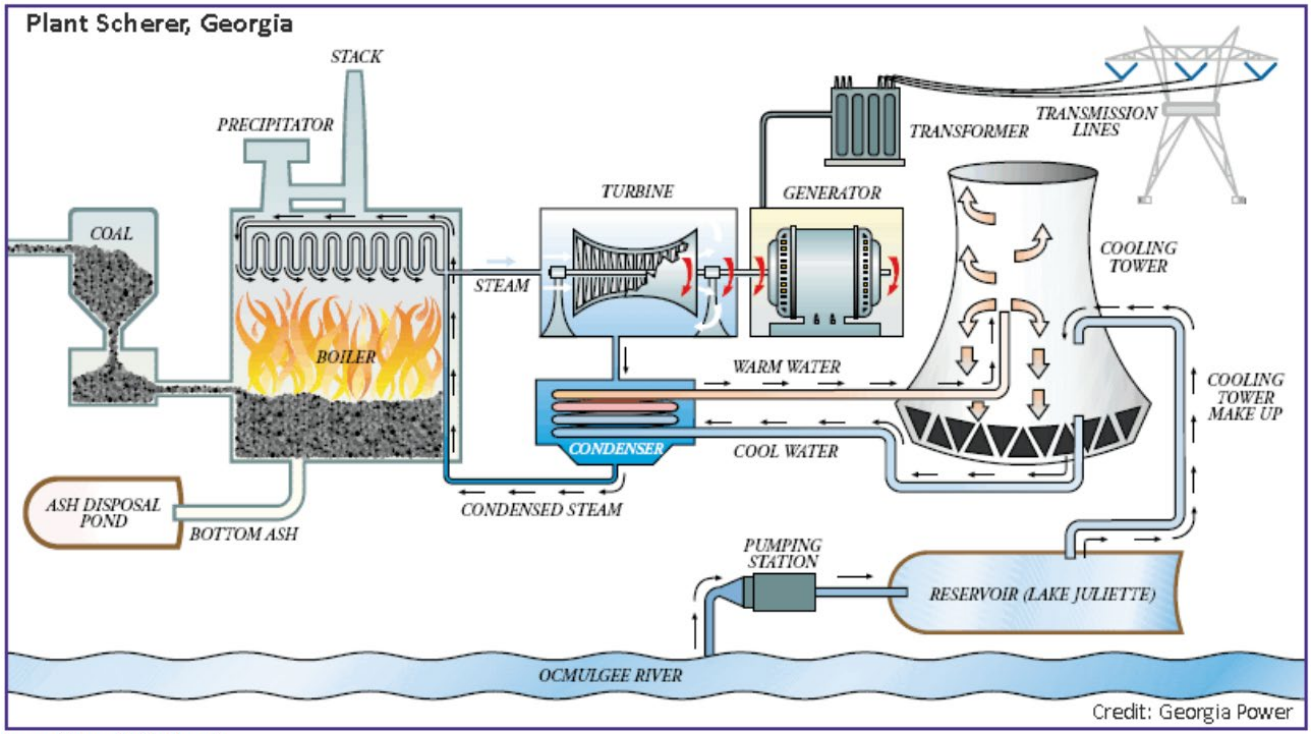
San Juan Generating Station – Unit 4 slated for closure September 30, 2022

Escalante Generation Station – Closed 2020

San Juan Generating Station

- Coal-fired electric power plant
- Coal source, the San Juan Mine, near Waterflow, New Mexico
- Units 2 and 3 (369 and 555 MW, completed in 1976 and 1979, respectively) were retired in 2017
- Unit 1 (369 MW, completed in 1973) was retired June 30, 2022
- Unit 4 (555 MW, completed in 1982) retiring September 30, 2022
- May be kept open by a new investor who would install a carbon capture and sequestration system

What equipment is in a power plant?

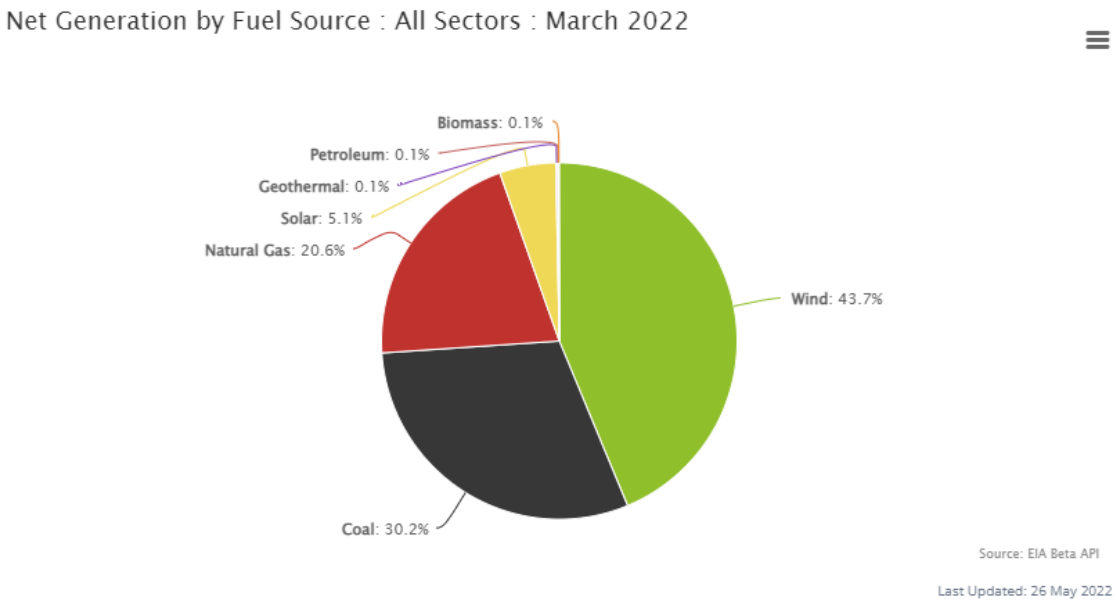


Sources/Usage: Public Domain.

Credit: Georgia Power

Diverse Energy Sources in NM

- Three major categories [1]
  1. Fossil fuels
     - coal
     - natural gas
     - petroleum
  2. Nuclear
  3. Renewables
     - Solar
     - Wind
     - Biomass
     - Hydro



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1 - https://www.eia.gov/energyexplained/electricity/electricity-in-the-us.php

Part 101 (20.2.101 NMAC)

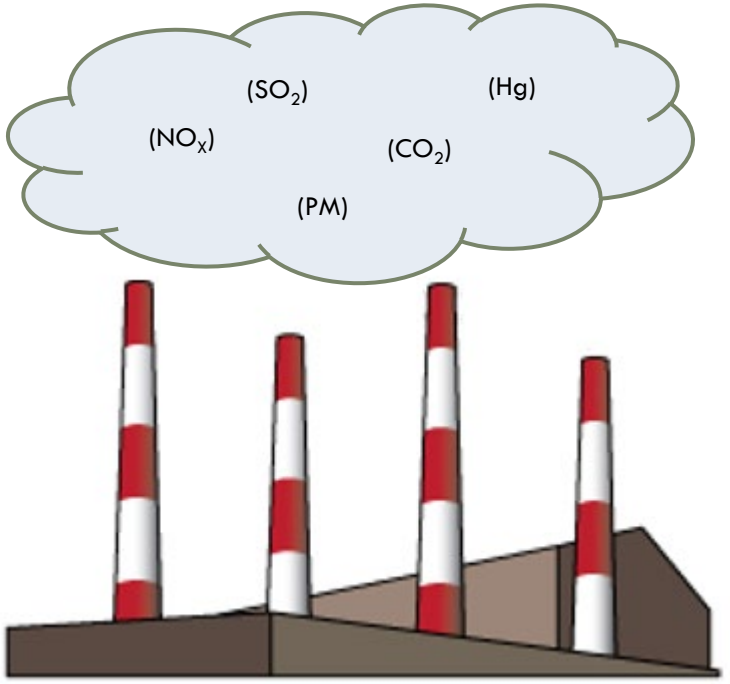
This undated image provided by Xcel Energy shows some of the turbines that make up the Sagamore Wind Project near Portales, New Mexico. (Xcel Energy via AP)

The Elephant Butte Powerplant powered lights and outlets at the surrounding campgrounds, modernizing Reclamation's recreational services. Bureau of Reclamation historic photo collection

Emissions from burning fossil fuels

Burning fossil fuels at power plants creates emissions of:

- sulfur dioxide (SO_2)
- nitrogen oxides (NO_X)
- particulate matter (PM)
- carbon dioxide (CO_2)
- mercury (Hg)
- and other pollutants



NO_X and SO_2 emissions contribute to the formation of ground-level ozone and fine PM. Exposure to mercury can increase the possibility of health issues.

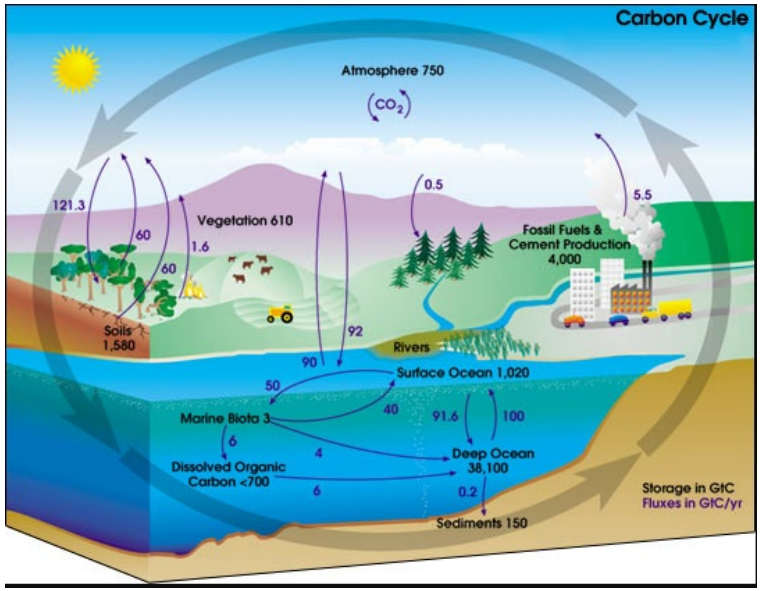
Phasing Out Coal

- Competition
  - cheaper, cleaner energy sources
- Climate Change
  - rising public awareness
  - state laws and policies
- Electric Generation – Coal*
  - 50% in 2010
  - 25% in 2021

*National figures from US EIA.

Carbon Dioxide (CO_2)

- Naturally Occurring
  - Emitted/exhaled by humans and other organisms
  - Taken in by plants
- Product of combustion of fossil fuels
  - Electric generation
  - Motor vehicles
  - Other industrial processes
- Greenhouse gas



Impacts of Climate Change

Public Health Effects

- Heat related illness and death
- Air quality degradation
- Increased vector-borne diseases
- More frequent and severe extreme weather events
- Susceptible populations may be particularly at risk

Public Welfare

- Food Production
- Forestry
- Water resources
- Sea level rise and coastal areas
- Energy
- Infrastructure
- Ecosystems and wildlife

Methods to Reduce CO_2

- There are several methods to reduce CO_2 emissions from the power sector
  - improved fuel efficiency
  - switching to lower-emitting fuels
  - increased generation share from lower-emitting sources
  - decreased loss of power via transmission and distribution systems
  - improved end-use efficiency lowering electricity demand for the same level of service provided
  - carbon capture and storage

Applicable Sections

Applicability and Emission Standards are set by statute

- 20.2.111 Applicability
  - Apply to new and existing coal-fired electric generating facilities.
- 20.2.112 Emission Standard
  - After January 1, 2023, the owner or operator of an affected EGF shall limit CO2 emissions from the EGF to no more than 1,100 pounds per megawatt-hour on a 12-operating-month rolling average basis. The calculation shall be performed within fifteen days of the end of each calendar month.

Monitoring Requirements 20.2.101.113 NMAC

As with any rulemaking, owners or operators must demonstrate compliance with the rule. They must measure or calculate emissions in the exhaust stream.

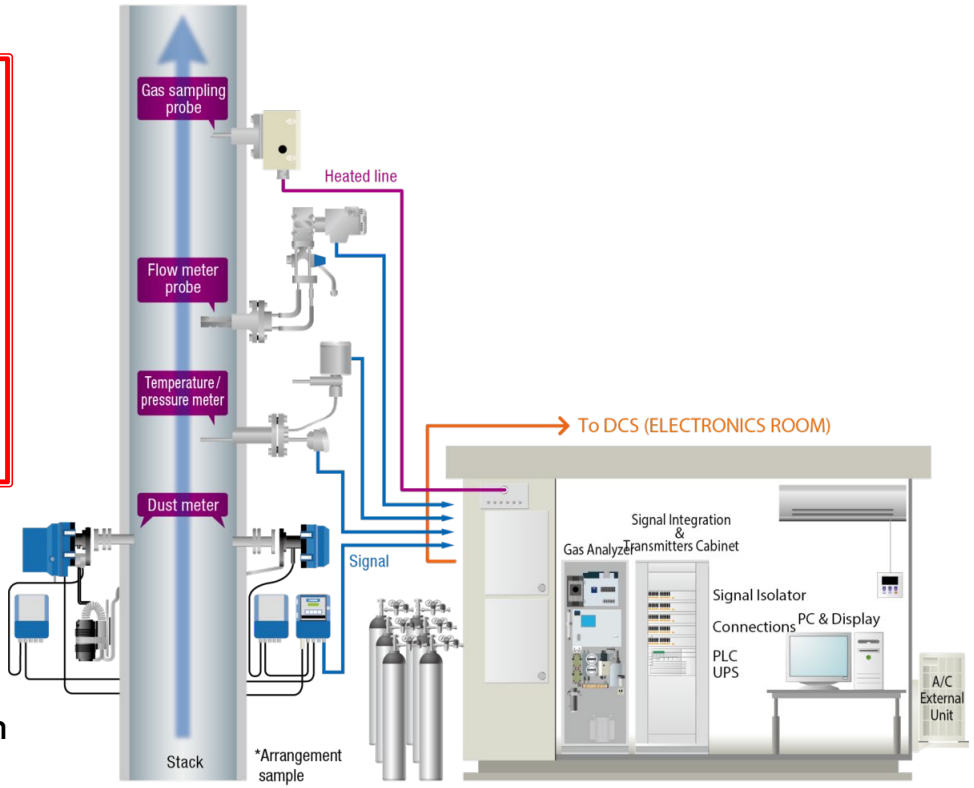
- Continuous Emission Monitoring (CEMs)
- Equipment necessary for the determination or measurement of a gas or particulate matter concentration or emission rate
- CEMs is the means to monitor CO_2 concentrations in the exhaust stream and then will be converted into pounds per hour for compliance purposes

Continuous Emission Monitoring (CEMs)

CEMs are systems used to measure gas or particulate matter emissions.
CEMs monitors gas streams resulting from combustion in industrial processes.

The main components of a CEMS are:

- a sample probe
- filter
- sample line
- gas conditioning system
- calibration gas system
- and gas analyzers



CEMS operates at all times – even if combustion processes aren't running.

Recordkeeping Requirements 20.2.101.114 NMAC

- Owners or operators are required to keep records to demonstrate compliance with Part 101.
- These records include data from the continuous emission monitoring system.
- They also include various calculations used for CO2 mass emission and energy output.

Reporting Requirements 20.2.101.115 NMAC

- Along with recordkeeping requirements, owners or operators must demonstrate compliance by submitting reports for affected facilities to the Department.
- The reports must be submitted quarterly beginning after the first twelve operating months.
- Reports must contain the CO2 emission rate, any violations of the emission standard, a statement that there were no violations, and percent of valid operating hour for the compliance period.

Part 101 Rulemaking Hearing

- Farmington, NM
- October 26th and 27th
- San Juan College Information Technology Building, Room 7103, 4601 College Blvd
- Hybrid format, in person and virtual
- Information and instructions on how to join the hearing virtually available on the Board's webpage at the following link: https://www.env.nm.gov/opf/docketed-matters/.
- Meeting and access details will also be available on NMED calendar at https://www.env.nm.gov/events-calendar

How to Provide Comments

- Email – through the end of the hearing
  - pamela.jones@state.nm.us
- NMED's electronic comment portal
  - https://nmed.commentinput.com/comment/search#
- Email
  - robert.spillers@state.nm.us
- Traditional mail
    - NMED Air Quality Bureau

      525 Camino de los Marquez, Ste. 1

      Santa Fe, NM, 87505
- Oral – through the end of the hearing
  - In-person or virtual

Feedback and Questions

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Thank You