



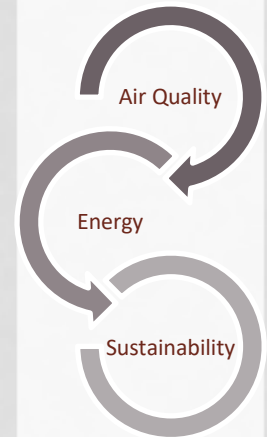
STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION



DIVISION OF AIR QUALITY
AIR QUALITY, ENERGY, AND SUSTAINABILITY

NJ GHG STATIONARY
SOURCE PACT RULE

PHASE OUT OF HEAVY OILS



INTRODUCTION

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- Environmental Engineer Trainee
- Bureau of Stationary Sources
Division of Air Quality
NJDEP



QUICK RECAP

FIGURE 4.

New Jersey Emissions Today

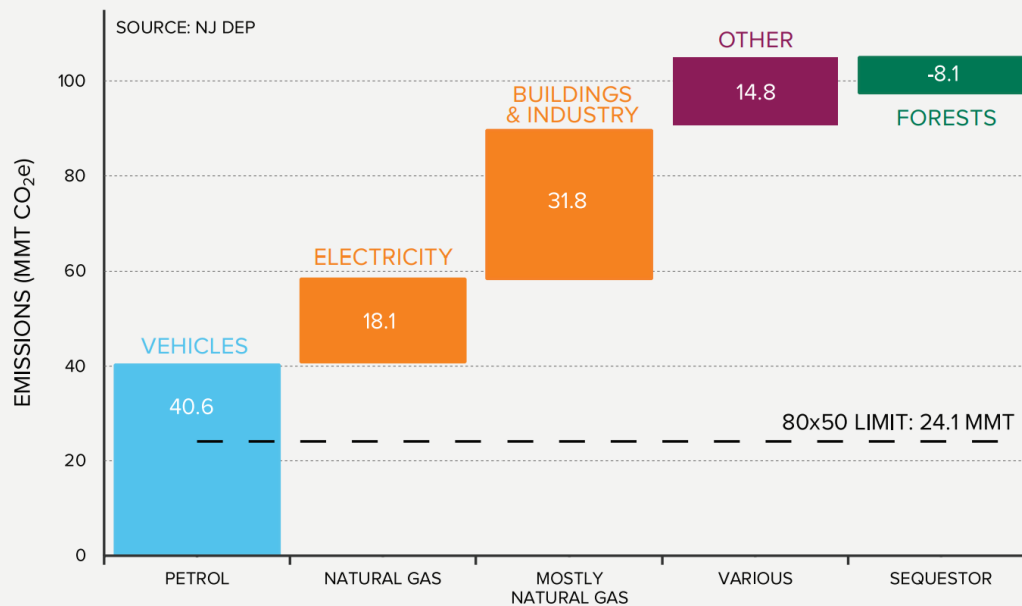


Figure 4 from 2019 NJ Energy Master Plan (EMP): New Jersey carbon emissions today largely come from gasoline use in vehicles and natural gas use in buildings and power plants. Source: New Jersey Department of Environmental Protection.

80x50 goal

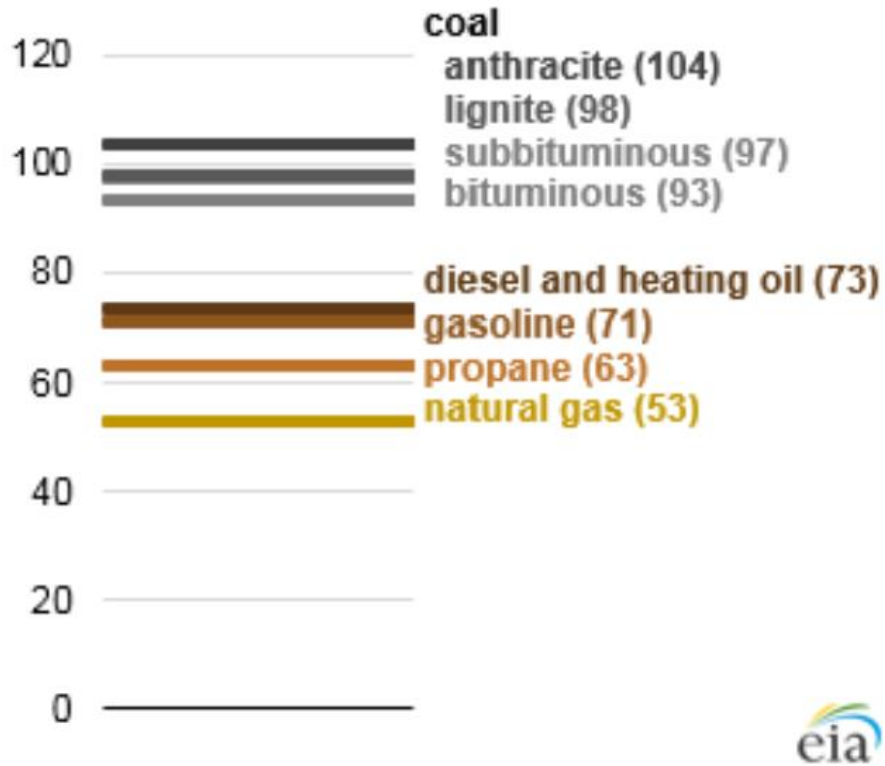
Reduce economy-wide emissions to 80% below 2006 levels

100% Clean Energy

NJ electricity sector is carbon-neutral by 2050.

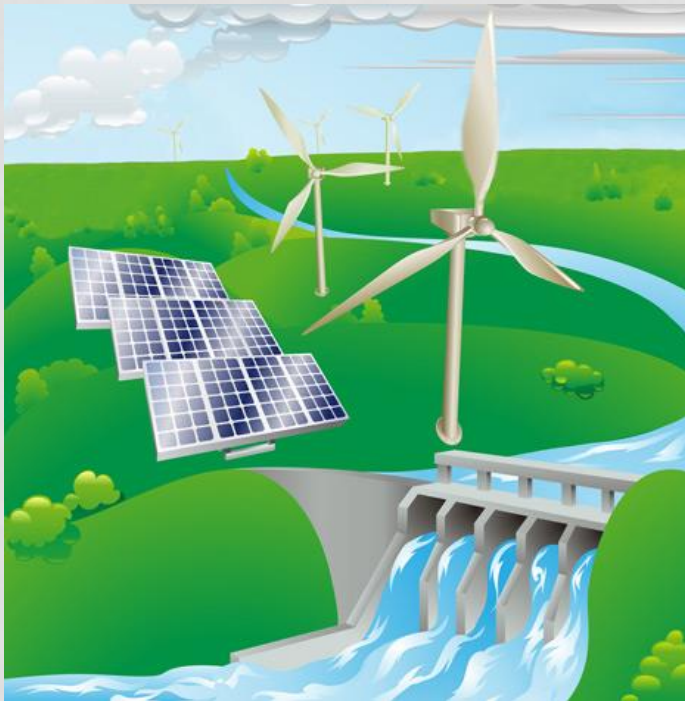
Carbon intensity of selected fuels

kilograms CO2 per million British thermal units



Source: U.S. Energy Information Administration, Monthly Energy Review and Carbon Dioxide Emissions Coefficients

ELIMINATION OF HIGH CARBON INTENSITY FUELS



- NJDEP is considering ways to gradually eliminate high carbon intensity fuels.
- Proposed phasing out heavy fuels such as No. 6 and No. 4 fuel oil, as well as solid fuels and other dirty liquid fuels.
- Over time, NJDEP will consider increasing stringency on other fuel types (e.g., No.2 fuel oil, gasoline, diesel, etc.)

ENERGY MASTER PLAN (EMP) STRATEGIES

- There are 7 Strategies outlined in the 2019 EMP
- By phasing out higher carbon intensity fuels, NJDEP hopes to encourage industry to embrace 4 out of the 7 strategies:
 - Strategy #1: Reduce Energy Consumption and Emissions from the Transportation Sector
 - Strategy #3: Maximize Energy Efficiency and Conservation and Reduce Peak Demand
 - Strategy #4: Reduce Energy Consumption and Emissions from the Building Sector
 - Strategy #6: Support Community Energy Planning and Action with an Emphasis on Encouraging and Supporting Participation by Low- and Moderate-Income and Environmental Justice Communities

CURRENT STANDARDS

- The Department does not have an existing carbon intensity standard for fuels
- The Department is not aware of other jurisdictions that impose a carbon intensity standard for fuels used in stationary sources.
- The Department is not aware of an existing carbon intensity standard for fuels as imposed by the EPA or any other Federal Agency

DISCUSSION TOPIC: FUEL TYPE

- Which fuel types should the Department consider phasing out?
- How do we create a balance of the various carbon intensity fuel types and green energy?



DISCUSSION TOPIC: TIMING



- Which fuel sources can we phase out now, and which should we phase out later?
- What should the projected timeline be for phasing out each fuel type?

DISCUSSION TOPIC: HOW?

- Ultimately, how will we make this happen?
- Which sources can/should be covered?
- Should there be any exemptions (for resilience; to accommodate certain engines that cannot be electrified?)
- How can we successfully implement these ideas?



IDEAS UNDER CONSIDERATION

- Goal: Reduce the carbon intensity of fossil fuels combusted within the State
- New Rule Consideration: Phasing out the sale/use of fossil fuels that do not meet specified carbon intensity (CO_2/Btu) standards



CARBON INTENSITY OF FUEL

Table 1.3-12. DEFAULT CO₂ EMISSION FACTORS FOR LIQUID FUELS^a

EMISSION FACTOR RATING: B

Fuel Type	%C ^b	Density ^c (lb/gal)	Emission Factor (lb/10 ³ gal)
No. 1 (kerosene)	86.25	6.88	21,500
No. 2	87.25	7.05	22,300
Low Sulfur No. 6	87.26	7.88	25,000
High Sulfur No. 6	85.14	7.88	24,400

^a Based on 99% conversion of fuel carbon content to CO₂. To convert from lb/gal to gram/cm³, multiply by 0.12. To convert from lb/10³ gal to kg/m³, multiply by 0.12.

AP-42 VOL. I: 1.3: Fuel Oil Combustion

Costs:

- No anticipated new capital costs
- Only if necessary, to upgrade equipment, capital costs would be between \$255 to \$345 per horsepower
- However, any initial cost will be offset by savings in operation costs

Benefits:

- Estimated net reductions in emissions
 - **92 metric tons/per year CO₂**
 - **1.19 metric tons/year NO_x**
 - **2.66 metric tons/year SO₂**
 - **0.198 metric tons/year PM_{2.5/10}**
 - **Reductions of other pollutants, such as HAPS**

QUESTIONS?



REQUEST FOR COMMENTS

- By September 17, 2020, please send comments and/or technical support information to:

NJairrulesstationary@dep.nj.gov

- Please use the following heading in the Subject Line of the email:

“NJ PACT: EGUs”