

AEO2020: Alternative Policies – Carbon Fee Cases



For

Resources for the Future

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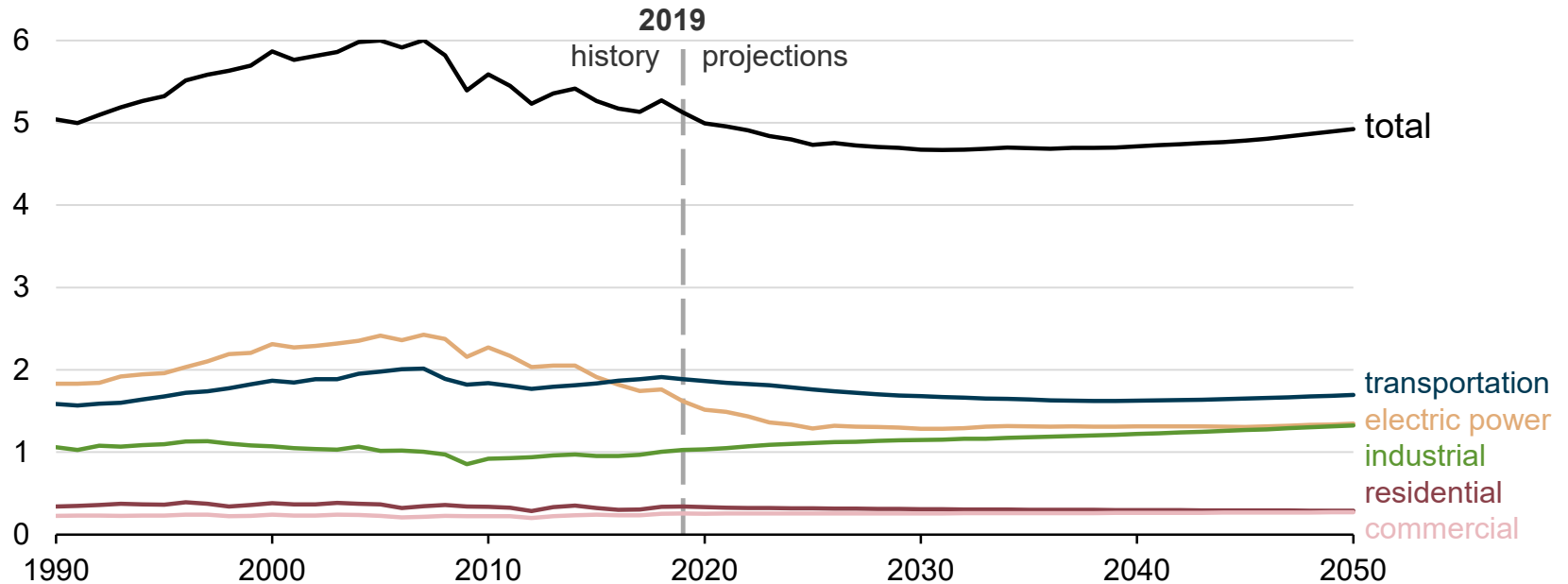
By

Thaddeus Huetteman, Team Lead

Electricity Analysis

Emissions decline with changing electricity generation fuel mix, then increase with growing consumption in industrial and transportation sectors

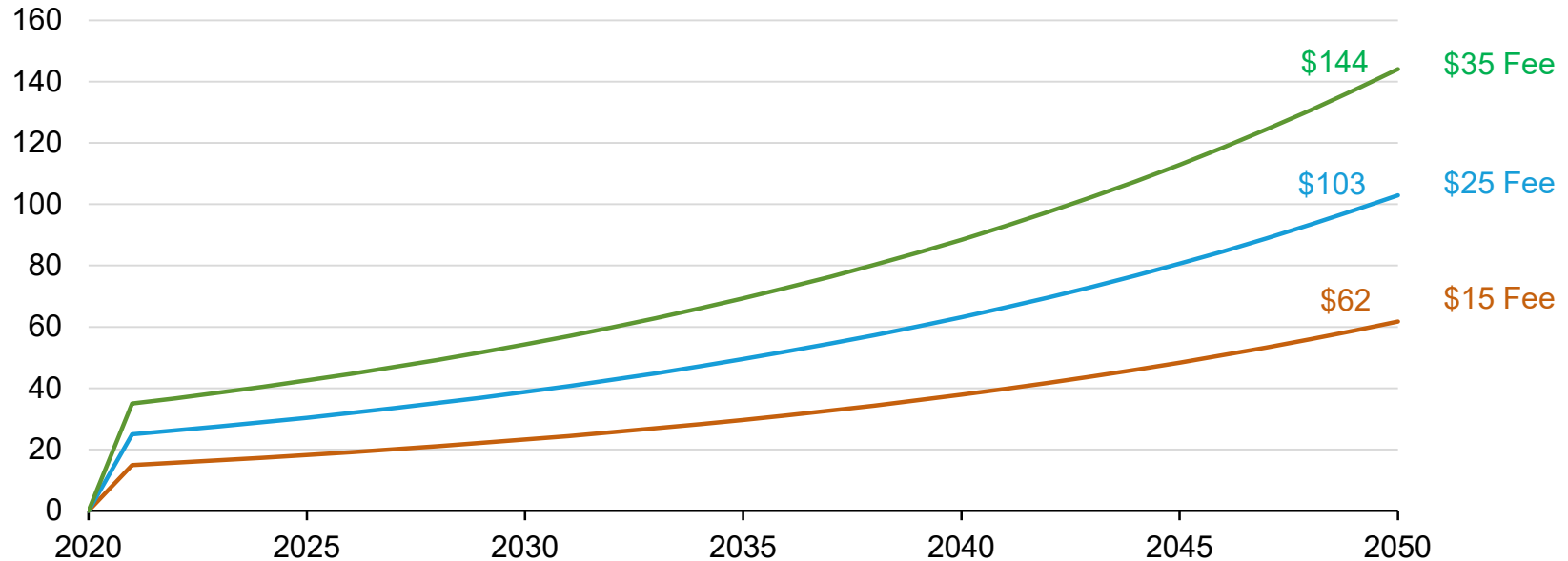
U.S. energy-related carbon dioxide (CO₂) emissions by end-use sector, Reference case
billion metric tons



Source: U.S. Energy Information Administration, Annual Energy Outlook 2020

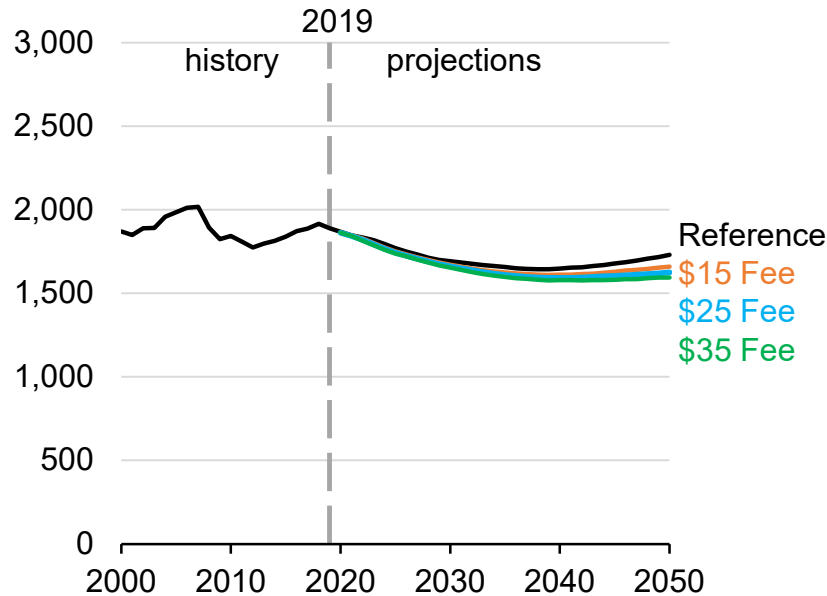
Three carbon fee assumptions grow 5% per year 2021 through 2050

Carbon fees for three scenarios
2019 dollars per metric ton CO2

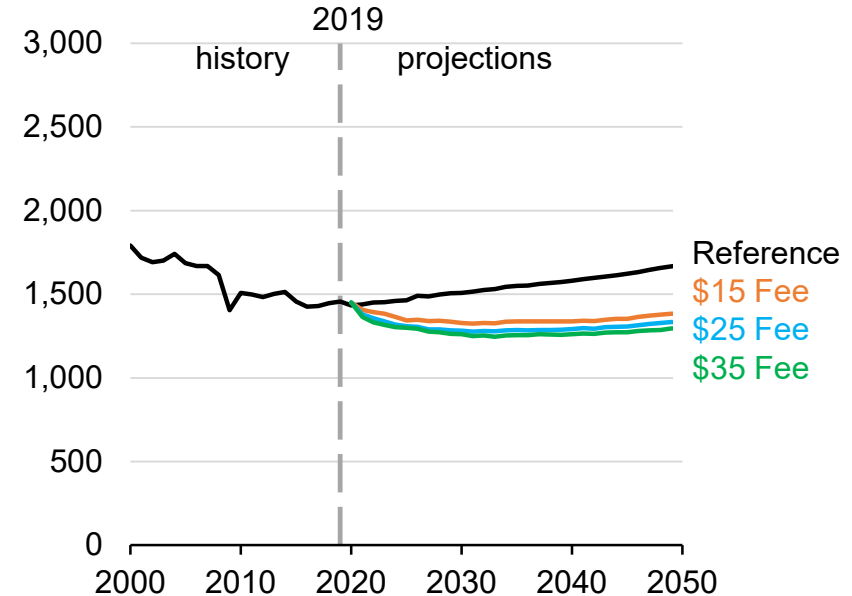


The transportation and industrial sectors have modest responses to carbon fees

Transportation sector-related CO2 emissions
million metric tons



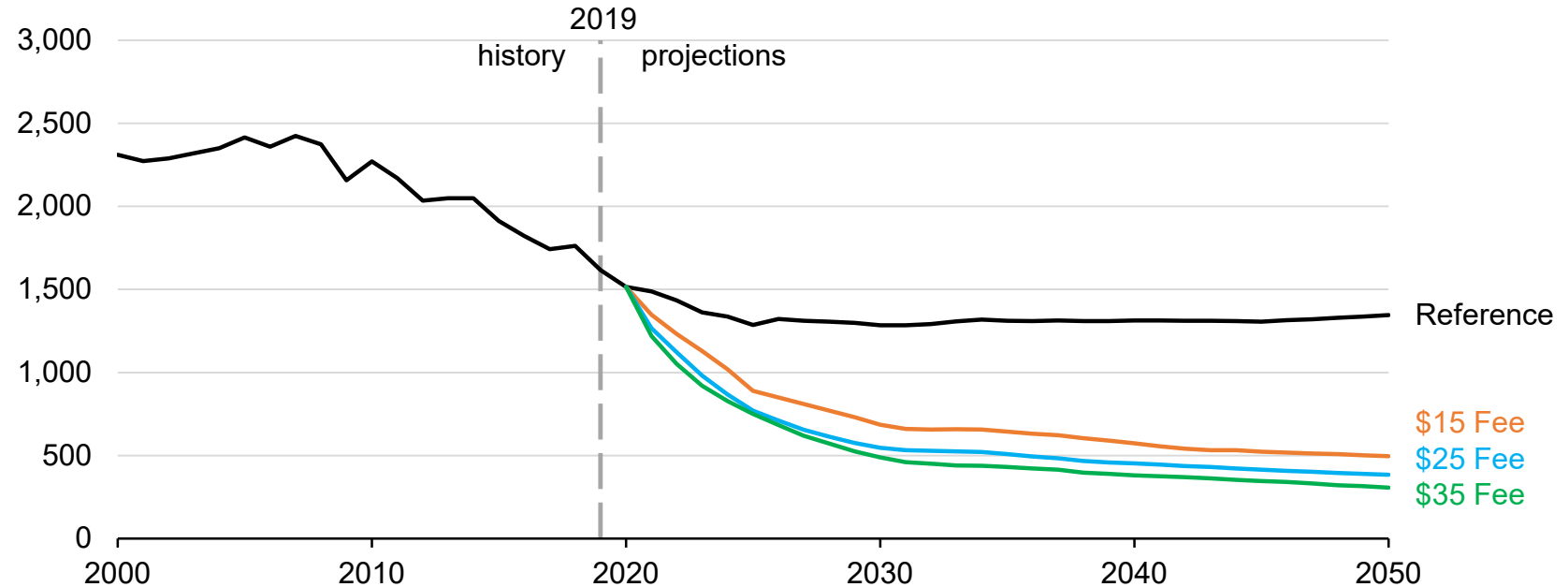
Industrial sector-related CO2 emissions
million metric tons



The electric power sector drives the decrease in emissions as the fuel mix changes

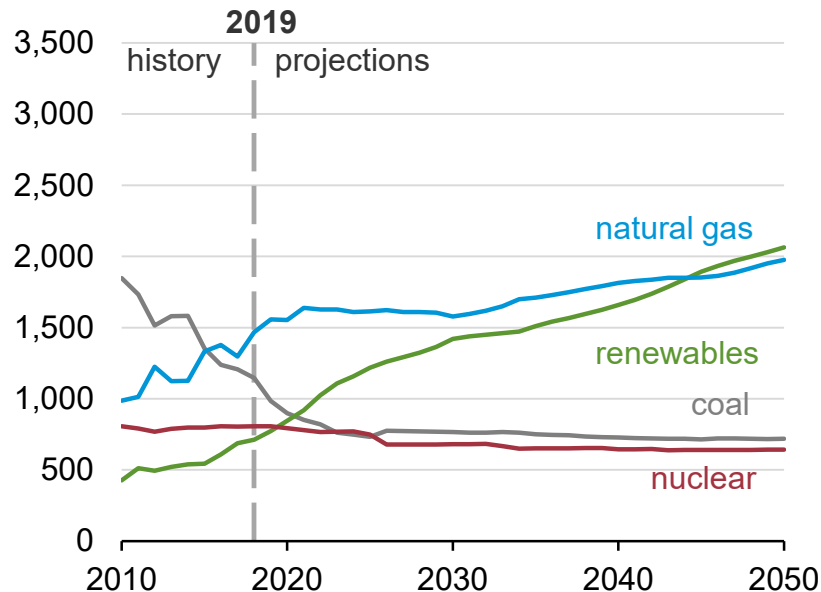
Electric power sector-related CO2 emissions

million metric tons

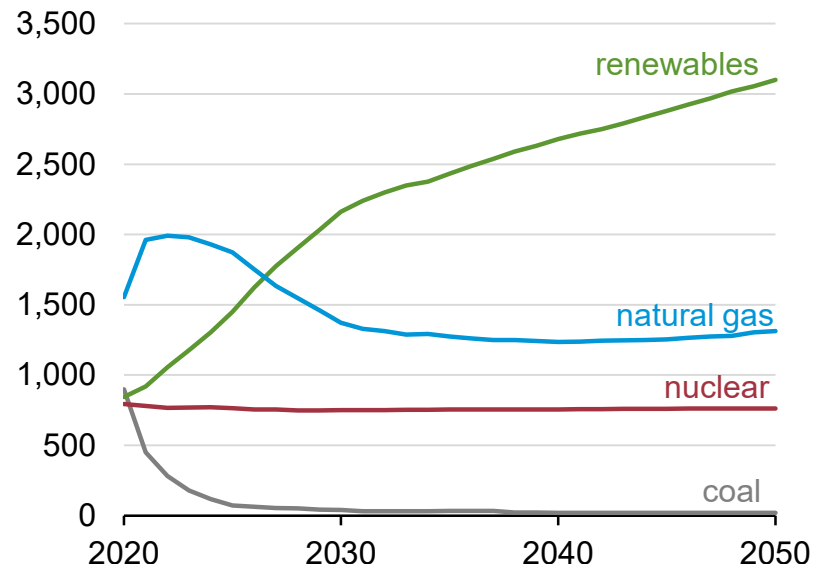


Impact of \$35 Fee case on electricity generation

**Electricity generation from selected fuels,
Reference case**
billion kilowatthours



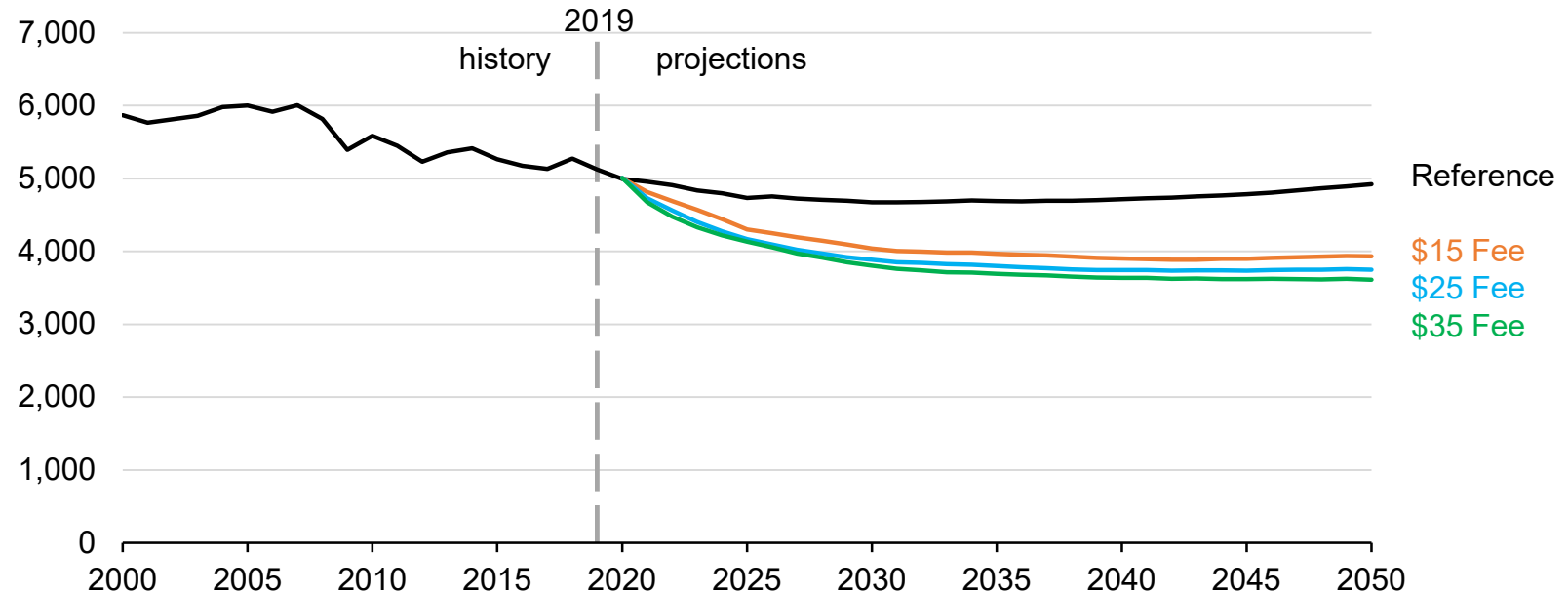
**Electricity generation from selected fuels,
\$35 Fee case**
billion kilowatthours



Most of the reductions happen in the first decade of the projection

Total energy-related CO2 emissions

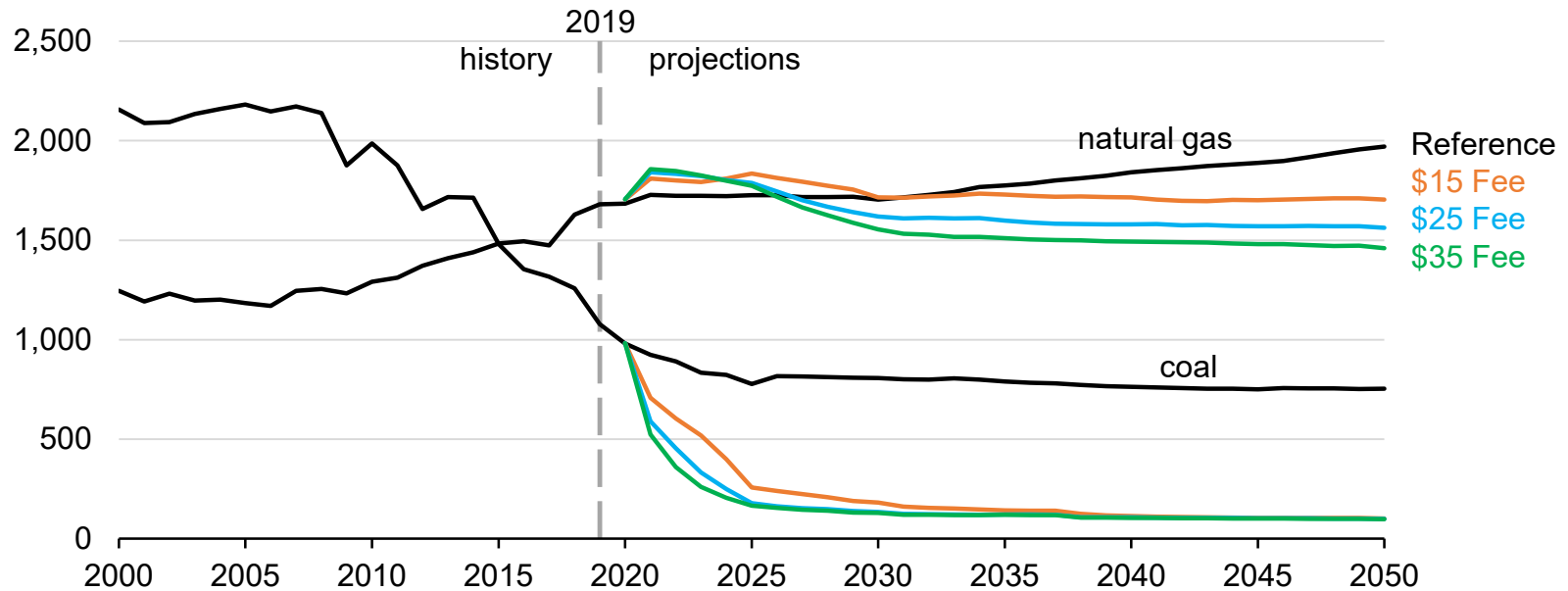
million metric tons



In the early years of the projection, higher emissions from natural gas consumption are more than offset by lower emissions from coal

Energy-related CO₂ emissions from selected fuels

million metric tons



Contact information – CO2 analysis

- Thad Huetteman, Thaddeus.Huetteman@eia.gov, (202)586-7238
- Perry Lindstrom, Perry.Lindstrom@eia.gov, (202)586-0934
- Andri Rizhakov, Andri.Rizhakov@eia.gov, (202)586-6397

For more information

U.S. Energy Information Administration homepage | www.eia.gov

Annual Energy Outlook | www.eia.gov/aeo

Short-Term Energy Outlook | www.eia.gov/steo

International Energy Outlook | www.eia.gov/outlooks/ieo/

Monthly Energy Review | www.eia.gov/mer

Today in Energy | www.eia.gov/todayinenergy