EPA
United States
Environmental Protection
Agency

EPA's May 2019 Reference Case

May 25, 2019

EGU WG Call

EPA's Power Sector Modeling Update

- EPA's Power Sector Modeling Update
  - IPM v6 May 2018
  - IPM v6 November 2018
  - IPM v6 May 2019
- Updates in the IPM v6 May 2019 Reference Case incremental to IPM v6 November 2018 Reference Case
- Comparison of 2030 outputs using Results Viewer
- We will post in June 2019
  - Unit level results for 2023 and 2030 (geared towards 2028)
  - May 2019 version of NEEDS (with comment tracker)
  - Incremental documentation
  - Updated PM post-processing methodology documentation
- Please check our website and get in touch with us with any questions
  - We will provide an "opt-in" button on our website to subscribe for notification e-mails when we post anything new
  - https://www.epa.gov/airmarkets/clean-air-markets-power-sector-modeling

EPA projections are not predictions of what will happen, but rather modeled projections of what may happen given certain assumptions and methodologies.

Updates in IPM v6 May 2019 version

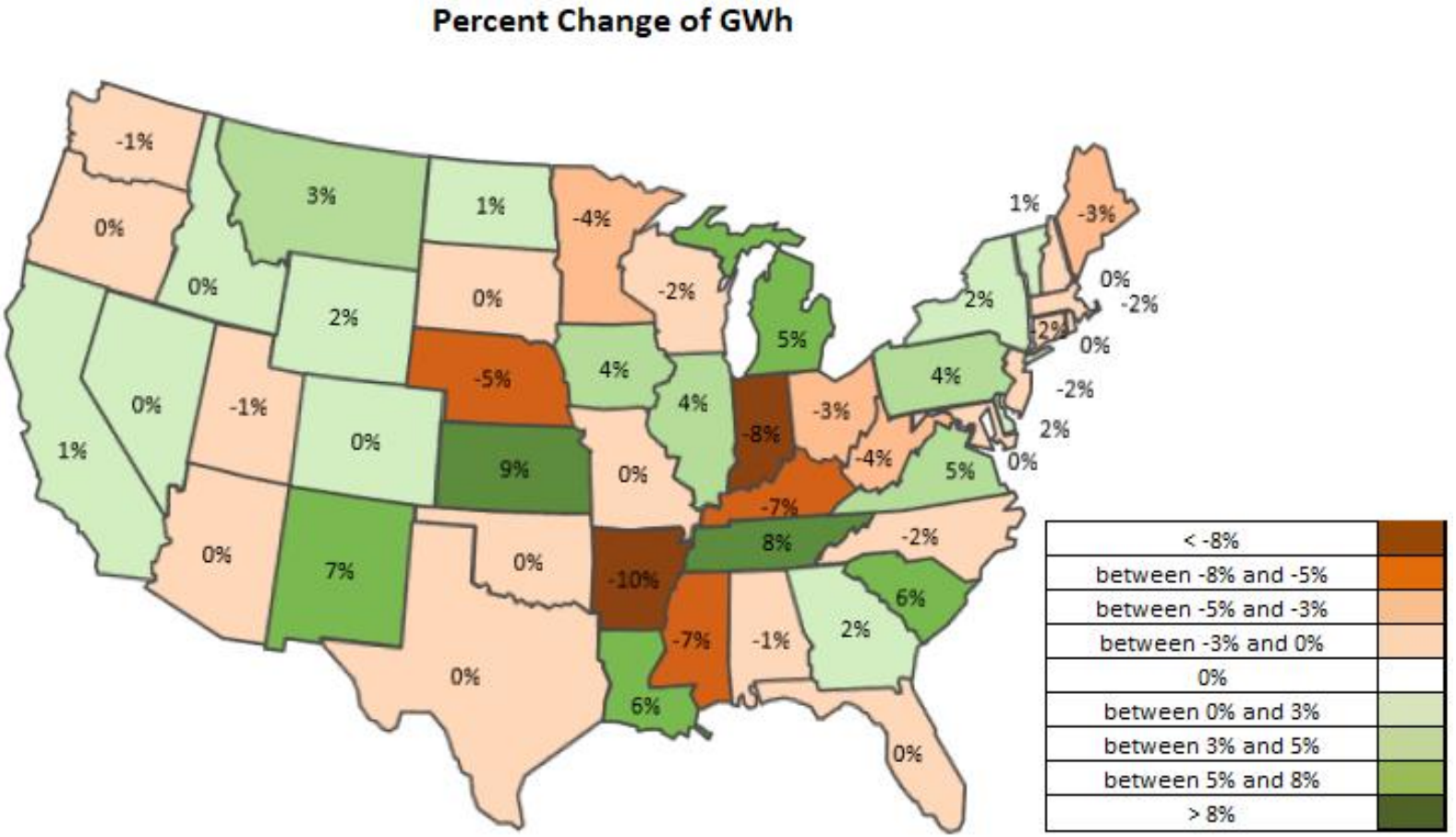
- Updated NEEDS (retirement and non-retirement)
  - Hardwired firm committed units and retirements based on a comparison of February 2019 and October 2017 versions of EIA Form 860M. Included all incremental fossil units and non-fossil units > 25 MW.
  - More than 16 GW of retirements, almost all occurring by 2022
  - More than 35 GW of new, firm committed capacity. Roughly half combined cycles; remainder split among solar, wind, and combustion turbines
  - Added back the units that had “unretired”.
  - Adjusted 2030 IPM outputs to reflect 2028 for units with scheduled retirement years of 2029 and 2030
- Calculated the SO_2 rate floor values based on historic data for existing coal units with FGD’s
  - Dry FGD minimum (0.08, minimum reported ETS SO_2 rate for the 2014-2018 period)
  - Wet FGD minimum (0.06, minimum reported ETS SO_2 rate for the 2014-2018 period)
- Updated the SO_2 removal efficiencies based on reported data for existing coal units with FGD’s (as reported in 2017 EIA Form 860). The FGD removal efficiencies in South Carolina are based on efficiencies realized during the 2015-2018 period.
- Storage mandates in CA, MA and NY.
- Modeled the recent New Jersey ZEC bill by disabling the retirement options for Salem Harbor 1 & 2 and Hope Creek nuclear power plants in 2021.
- Updated PM emissions post-processing to be largely consistent with NEI 2016.

Overview of IPM v6 May 2019 version Results

- NEEDS
- Slightly lower SO2 and NOx emissions at the national level, both in 2023 and 2030
  - Change in NOx emissions are due to updated NEEDS
  - Change in SO2 emissions are largely due to updated emission rates in scrubbed coal units
- Coal capacity remaining on the ground is lower, NG, solar, wind higher
- State by state results vary.

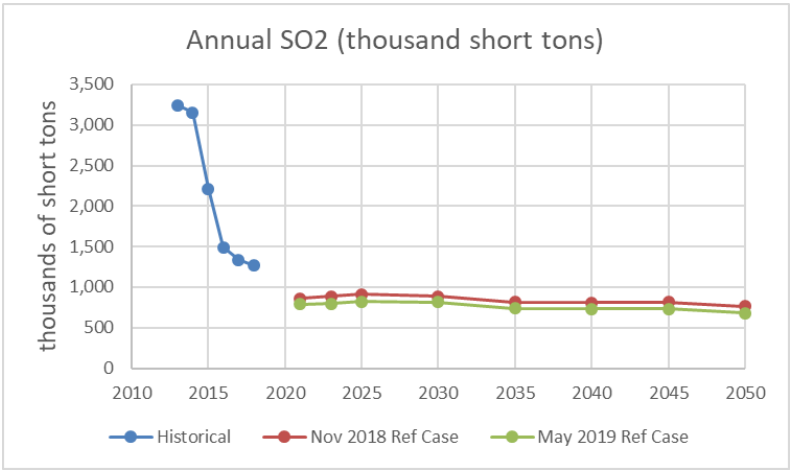
Using Results Viewer for IPM Projections

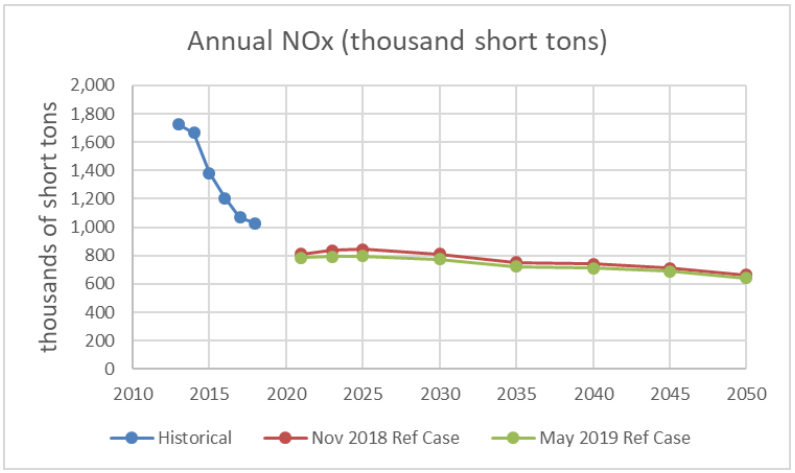
Percent Change in Generation (2030) from the Nov 2018 Ref Case

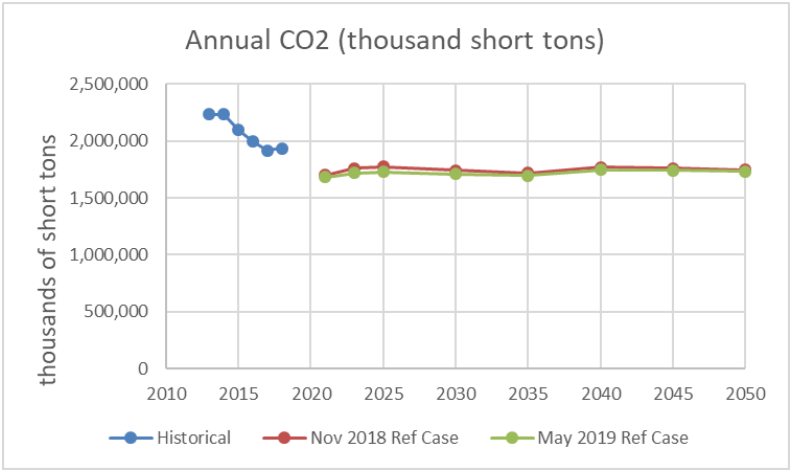


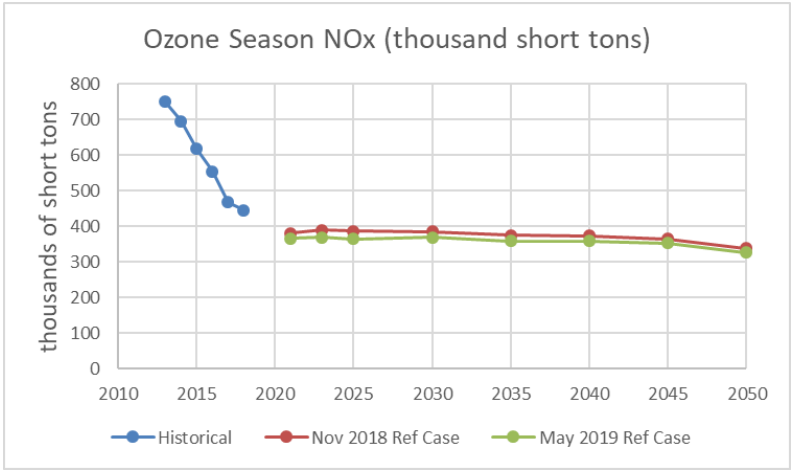
Total National generation did not change much between the Nov 2018 and the May 2019 Ref Cases, but there were difference in state level generation

Emissions



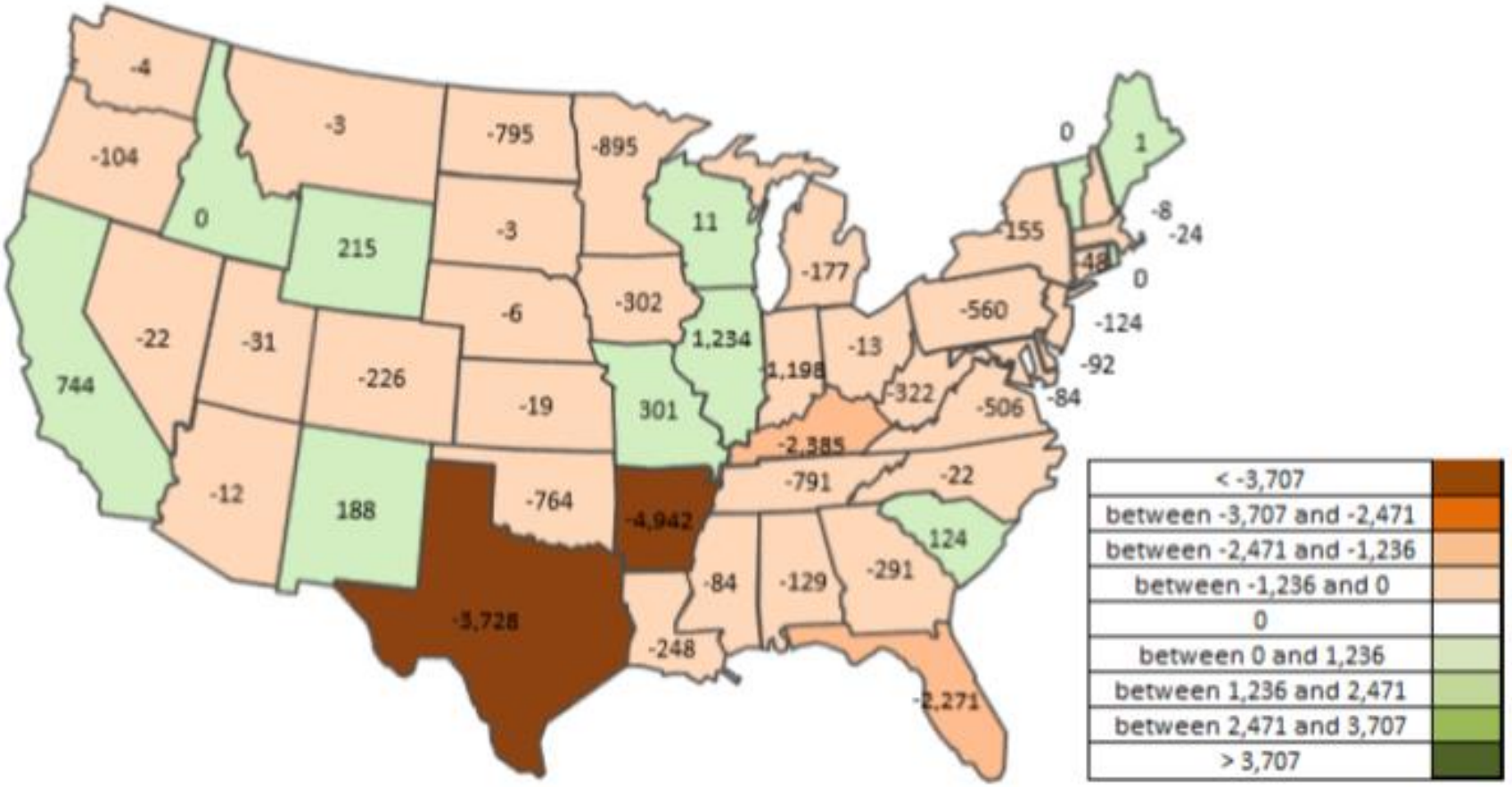




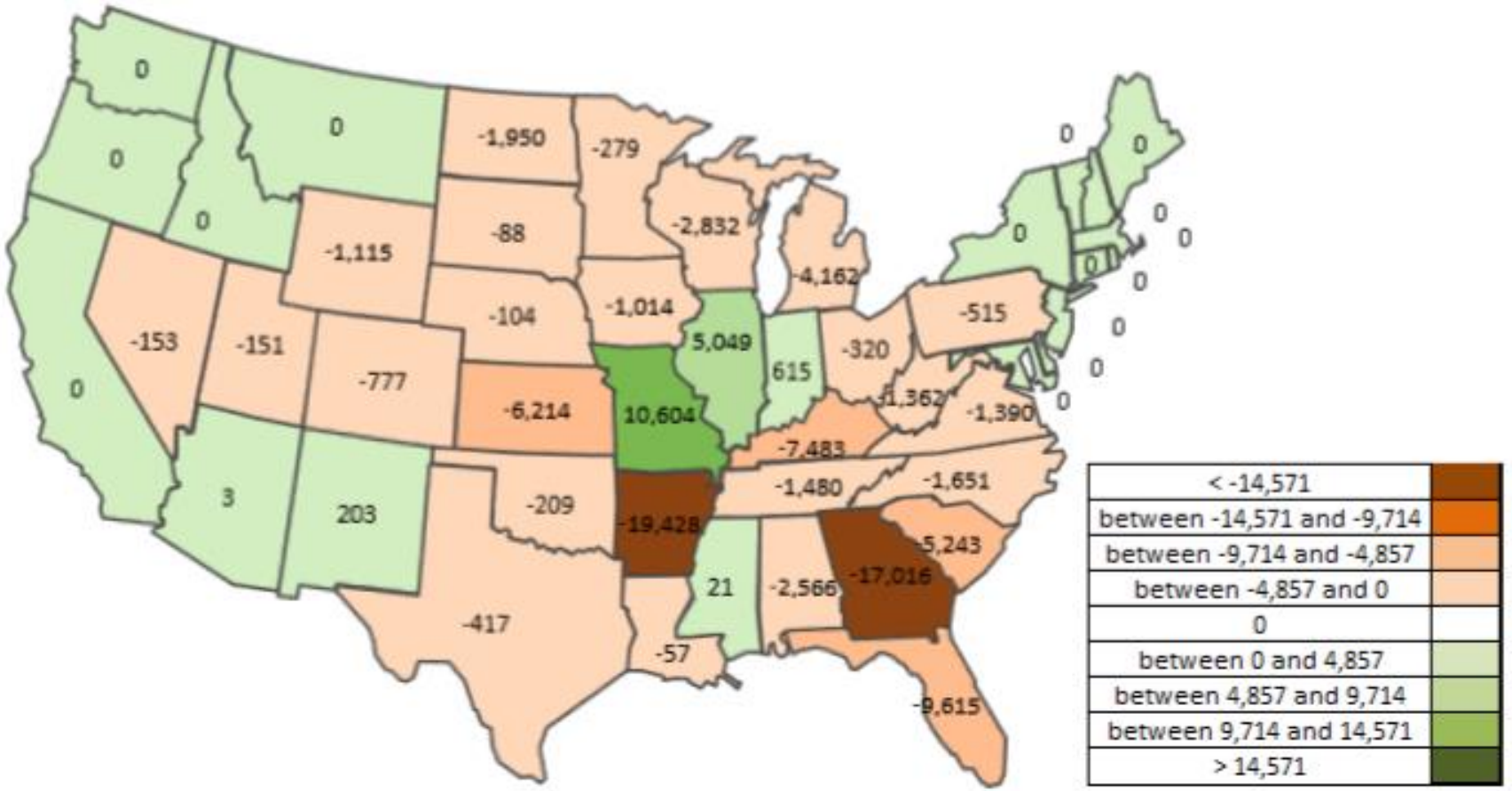


Total national emissions decreased slightly from the Nov 2018 Ref Case to the May 2019 Ref Case.

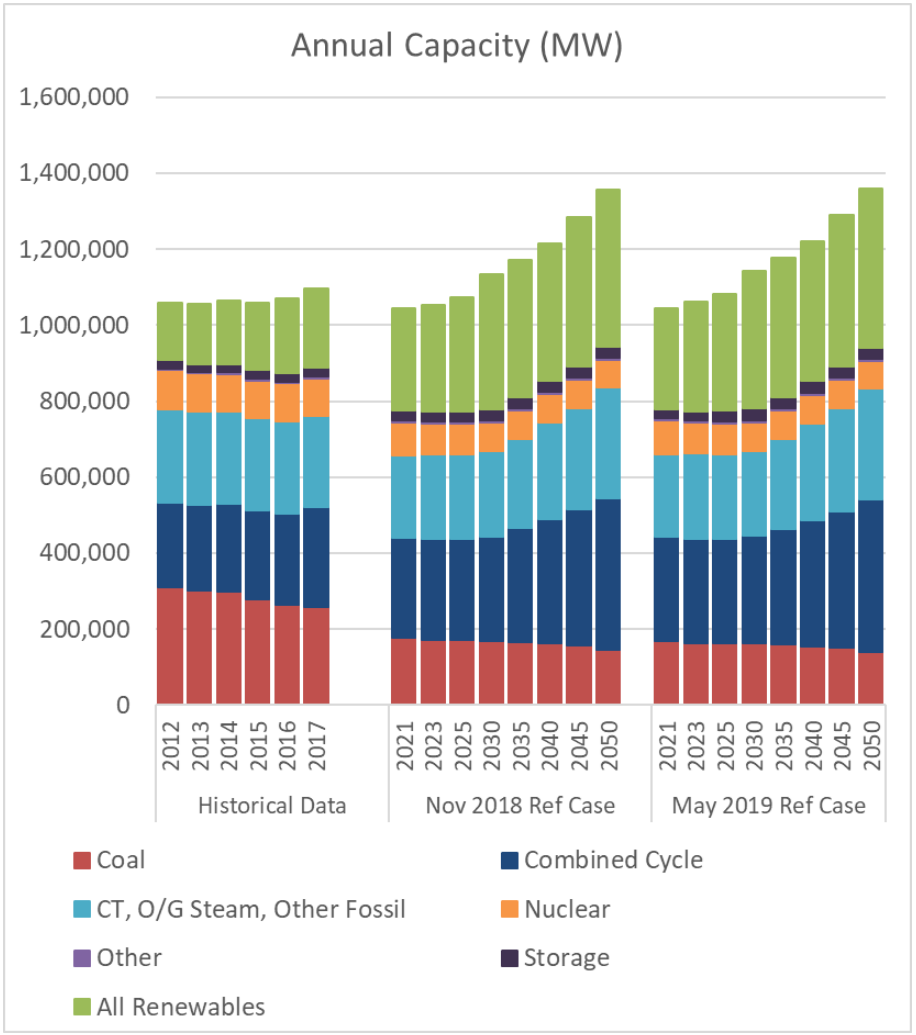
Change in Ozone Season NOx Emissions (2023, tons) from the Nov 2018 Ref Case

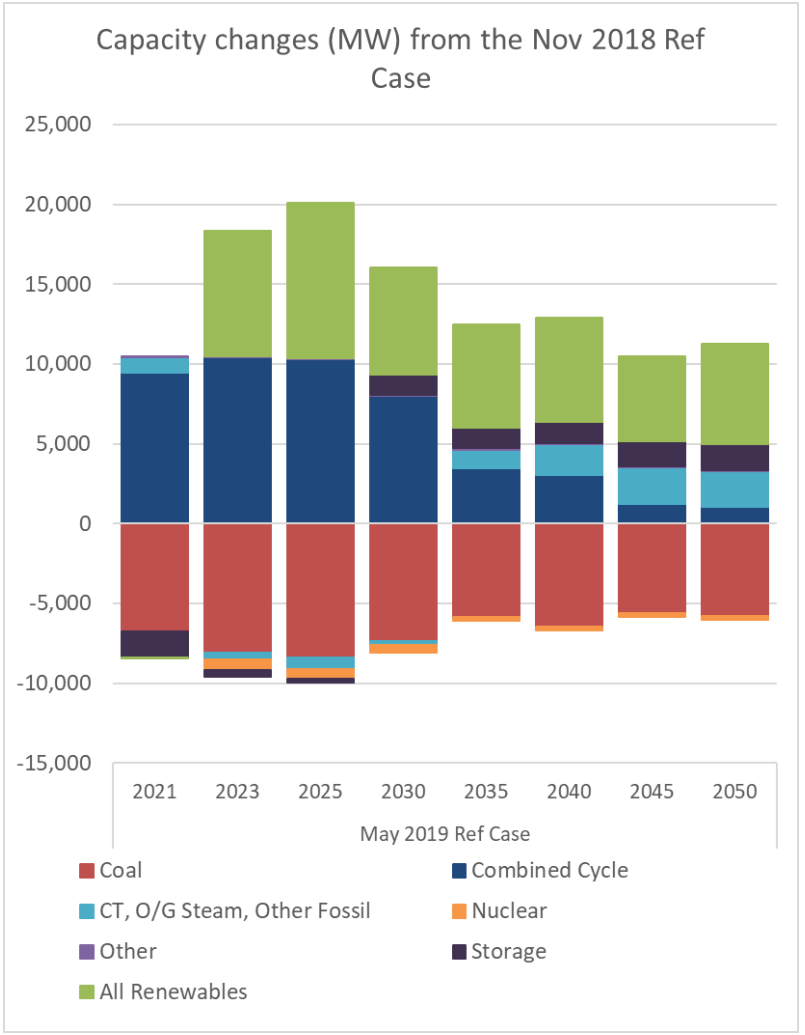


Change in Annual SO2 Emissions (2030, tons) from the Nov 2018 Ref Case



Capacity and Capacity Changes compared to the Nov 2018 Ref Case





Generation and Generation Changes compared to the Nov 2018 Ref Case