

**EPA's IPM v6 November 2018 Reference Case:** used in RH AQM

- <https://www.epa.gov/air-emissions-modeling/2016v72-beta-and-regional-haze-platform>
- <https://www.epa.gov/airmarkets/results-using-epas-power-sector-modeling-platform-v6-november-2018-reference-case>
- <https://www.epa.gov/airmarkets/documentation-epas-power-sector-modeling-platform-v6-november-2018-reference-case>

**EPA's IPM v6 May 2019 Reference Case:** included in 2016v1 Modeling Inventory

- <https://www.epa.gov/airmarkets/results-using-epas-power-sector-modeling-platform-v6-may-2019-reference-case>
- <https://www.epa.gov/airmarkets/documentation-epas-power-sector-modeling-platform-v6-may-2019-reference-case>
- Updated NEEDS (retirement and non-retirement)
  - 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
  - Adjusted 2030 IPM outputs to reflect 2028 for units with scheduled retirement years of 2029 and 2030
- Updated SO<sub>2</sub> removal efficiencies in coal units
- Storage mandates in CA, MA and NY.
- New Jersey ZEC bill.
- Updated PM emissions post-processing to be largely consistent with NEI 2016.

**What is likely to be reflected (incremental to May 2019) in the next IPM version:** TBD

- Updated/lower storage and RE technology costs from NREL ATB 2019 mid case.
- Offshore wind mandates in MD, NJ, CT, MA and NY.
- Clean energy standards in CA, NM, NV, NY and WA.
- RPS updates in CA, DC, MD, ME, NM, NV, NY, OH and WA.
- ACE rule and 45Q.
- NEEDS updates from "NEEDS Quarterly Update for September 2019".
- <https://www.epa.gov/airmarkets/national-electric-energy-data-system-needs-v6>

**Summary of states with long-term 100% CES:**

- 1) CA: 100% CES ([SB-100](#))
  - a. Expansion of RPS through 2030:  
Generation from qualifying renewables must achieve the following share of retail sales:  
  
50% by 2026, 60% by 2030.
  - b. Transition from RPS to CES to CES:  
Generation from qualifying “zero carbon resources” must equal 100% of retail sales by 2045.
  - c. Executive order [B-55-18](#):  
100% carbon neutral statewide by 2045: Note this is not yet law.
- 2) NY: [CLCPA](#)
  - a. Generation from qualifying renewables must be 70% of retail sales by 2030.
  - b. Generation from qualifying “emissions free generation” must be 100% by 2040.
- 3) NM: [Energy Transition Act](#)
  - a. Generation from qualifying renewables must be equal to 50% of retail sales by 2030
  - b. Generation from qualifying zero-carbon must equal 100% of retail sales by 2050. Of this total, RE generation must be at least 80%.
- 4) NV: [Bill 358](#)
  - a. Generation from qualifying renewables must equal 50% of retail sales by 2030
  - b. Generation from qualifying zero-carbon resources must equal 100% of retail sales by 2050.

**NOTE: Nevada bill was passed by ballot initiative. Under NV law, the same ballot must past twice in successive years, so the outcome is uncertain till 2020.**

- 5) WA: [SB 5116](#)
  - a. Coal phase out by 2025
  - b. 100% of retail sales from qualifying non-emitting generation by 2030.
  - c. Through 2044, utilities can comply up to 20% by:
    - i. Paying an alternate compliance payment
    - ii. Buying unbundled RECs
    - iii. Energy transformation projects
    - iv. MSW online before 1992