

eGRID2023 revision audit

EPA revisions released January 17 and June 12, 2025. Independent reconstruction from frozen published source values.

Scope

The audit retains all 12,612 plants in each release, including Puerto Rico, and the supplied state, balancing-authority, subregion and NERC memberships. National totals follow the entire supplied EPA plant universe. Unit and generator records retain their complete keys and original observations.

Methods

For each region and metric, sum source masses and generation separately before dividing. Convert short tons to pounds with 2,000; CH4 and N2O are already in pounds. Use annual generation for annual pollutants and May-September generation for ozone-season NOx. Missing source cells remain missing; a sum over an empty numeric set is zero, with observed-cell counts retained. Negative generation and signed ratios are retained. A zero denominator produces a null audit rate.

The release-1 generator field PSTATEABB maps to PSTATABB and unit CAMDFLAG maps to CAPDFLAG in the database. Preserve the literal region code NA; it is not an empty field. The unit key includes prime mover. Flags describe observations or unresolved discrepancies, not proven errors.

National measure	Revision 1	Revision 2
Net generation, MWh	4,167,601,391.182	4,190,970,937.357
Adjusted CO2, short tons	1,607,700,437.900	1,607,676,335.942

National CO2 rate revision 1: 771.523131412 lb/MWh
National CO2 rate revision 2: 767.209489148 lb/MWh
National CO2 rate change: -4.313642264 lb/MWh

Revision impacts

518 plant annual-generation cells changed between the releases. The source change ledger records every changed retained plant field, including missingness transitions. EPA's revision notice identifies generation and identifier-crosswalk corrections; the cell ledger does not infer a cause for every individual difference.

Regional rate change is decomposed symmetrically into a mass contribution and a generation contribution. This averages the two calculation orders and is an arithmetic attribution, not a causal conclusion. Comparisons with unavailable rates retain an unavailable status.

Largest-change subregion: NYCW

Largest subregion CO2 rate change: -110.186897085 lb/MWh

Subregion	Old rate	New rate	Change	Mass part	Generation part
NYCW	974.6559	864.4690	-110.1869	0.0000	-110.1869
AZNM	740.8098	703.7031	-37.1067	0.1421	-37.2488
FRCC	801.8914	782.2623	-19.6291	-0.2935	-19.3355
SPSO	891.1030	872.0418	-19.0612	0.0000	-19.0612
RFCM	962.0841	970.6166	8.5325	0.0000	8.5325
CAMX	436.6546	428.4640	-8.1905	0.0000	-8.1905
MROE	1,402.0054	1,397.3133	-4.6921	0.0000	-4.6921
ERCT	738.0385	733.8621	-4.1763	0.0000	-4.1763
SRVC	590.2286	593.4186	3.1900	0.0000	3.1900
SRTV	895.6930	898.0792	2.3862	0.0000	2.3862

All rates and contributions in the table are lb/MWh. Displayed values are rounded only for reading; machine-readable artifacts retain calculation precision.

Reconciliation exceptions

Check	Revision 1	Revision 2
Retained negative annual generation	3	273
Unit pairs requiring prime mover in key	23	23
Annual generator/plant difference >0.01 MWh	526	13
Ozone generator/plant difference >0.01 MWh	0	0
Fuel/total generation difference >0.01 MWh	170	166
CO2 adjustment difference >0.002 tons	0	0
CO2e adjustment difference >0.002 tons	0	0
Blank balancing-authority membership	0	0

Negative-generation plants revision 1: 3

Negative-generation plants revision 2: 273

Generator annual reconciliation flags revision 1: 526

Generator annual reconciliation flags revision 2: 13

Multiplicity counts are distinct (plant, unit) pairs, not duplicate-row excess. Published fuel-specific and total generation may use different reporting paths. Neither a reconciliation flag nor a negative value authorizes deleting or silently correcting a record.

Plant ID	Plant generation	Generator sum	Difference
64164	787,094.000	0.000	787,094.000
65028	398,069.000	-2,877.000	400,946.000
64672	249,796.000	-2,227.000	252,023.000
60610	218,827.000	0.000	218,827.000
63172	149,260.000	-9,668.000	158,928.000

Limitations

The numerical reference is recomputed from published, rounded source cells. It is not a reconstruction of unavailable internal EPA precision. Independent validation compares aggregate masses, generation and rates against the official workbook, recording propagation bounds and every difference. Zero-denominator audit rates remain null even if EPA displays a placeholder zero.

Official comparison outcomes: missingness difference = 6; within assumed rounding bound = 6,672.

Reference CSV/database values and source hashes were checked programmatically. This does not constitute independent human professional sign-off, establish a benchmark difficulty tier, or imply EPA endorsement. Execution evidence records the actual tested environment; Linux execution and an independent agent trial are not asserted by this report.

Sources

U.S. Environmental Protection Agency. Emissions & Generation Resource Integrated Database (eGRID), 2023. Revisions 1 and 2; Technical Guide, January 2025. Core data are public-domain EPA data. This report is an independently prepared audit adaptation.

<https://www.epa.gov/egrid/detailed-data>

<https://www.epa.gov/egrid/known-issues-data-notes-and-revisions>

<https://www.epa.gov/egrid/frequent-questions-about-egrid>