EPA's nextGen eGRID Breakfast

A New Frontier in Power Sector Emissions Data

REM
September 18, 2024
8:00 - 8:45 AM

Clean Air & Power Division
Office of Atmospheric Protection, EPA

Goals

- Summarize eGRID
- Share plans for future improvements
- Get feedback and input on future improvements

Ask questions and give comments

Live polls via mobile app

Q&A via mobile app

Why Now?

- **The Inflation Reduction Act (IRA)** makes historic investments in climate action that are expected to reduce U.S. emissions ~40% by 2030 while supporting disadvantaged communities and the clean energy industrial base.
  - **Low-Emissions Electricity Program (LEEP)** - $87 million to reduce emissions from domestic energy generation and use.
  - **IRA** funding creates a time-bound opportunity for eGRID to expand in response to evolving customer needs

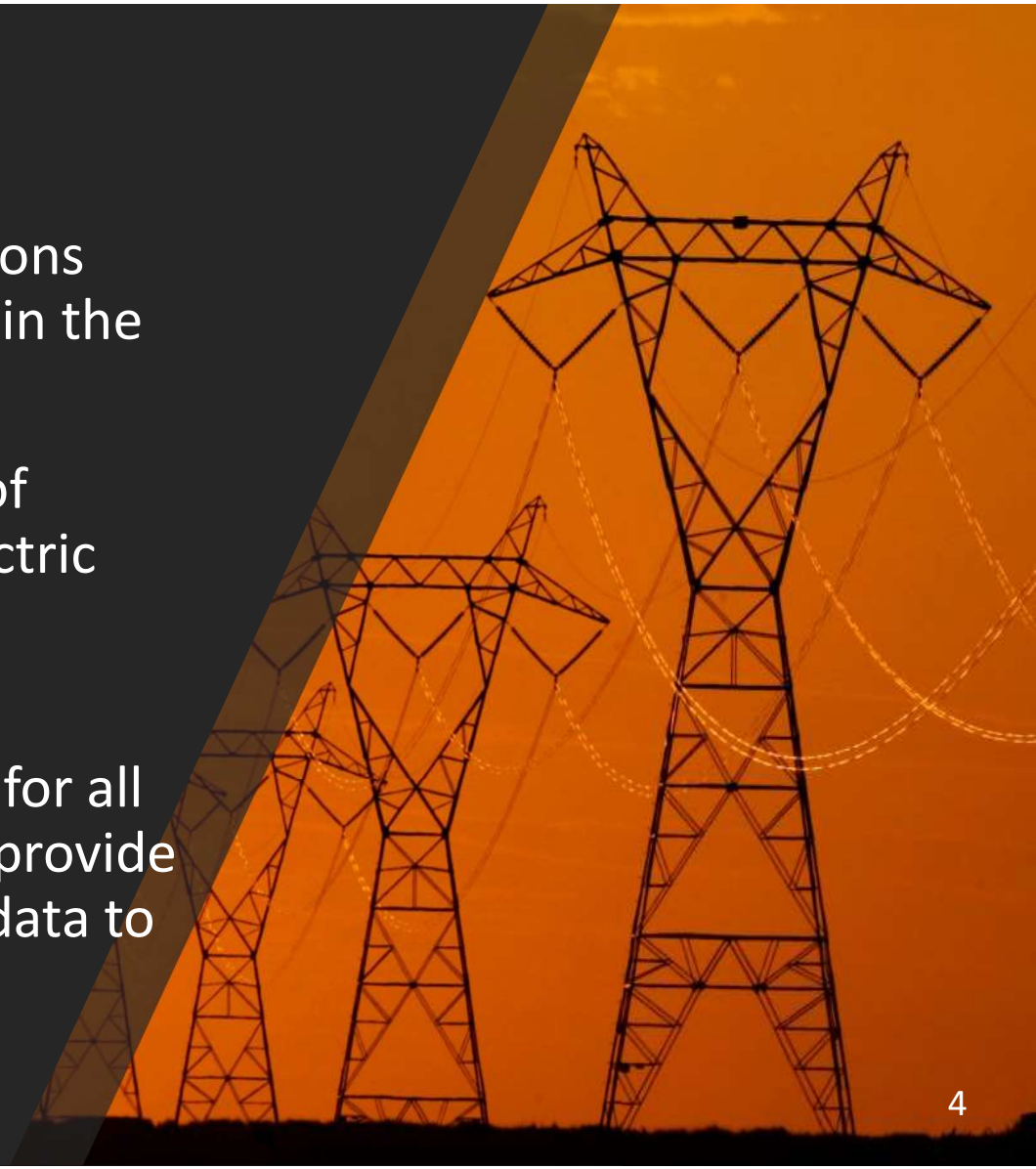
Start the live polls

Join at
slido.com
#3163 569

EPA

What is eGRID?

- A globally recognized source of emissions data for the electric power generated in the United States
- Contains a comprehensive inventory of emissions-related data for the U.S electric power industry (e.g., emissions, net generation, heat input, etc.)
- Based on available plant-specific data for all U.S. electricity generating plants that provide power to the electric grid and report data to the U.S. government



History

- First released in 1998 (with 1996 data)
- Current eGRID2022 is the 17th edition
- Released on January 30, 2023
- Released annually since 2018 data

Production Timeline

- About a year
- eGRID2023 will be released in January 2025
- EIA data is finalized in September
  - EIA 2023 data will be released in Sept 2024
  - Approximately 4 months for production and QA

Coverage

- Virtually every grid-connected U.S. power plant
- All electric generating units (EGUs) that report to the U.S. Energy Information Administration (EIA)
  - All EGUs that are grid-connected and located at a facility with a combined nameplate capacity of at least 1 MW.

- 11,000 Plants | 25,000 units | 25,000 generators

Data Sources

EIA – Plant Attributes, Operating, and Generation reported data through forms 860 and 923

EPA – Emissions Data reported through the Clean Air and Power Division's (CAPD) Power Sector Emissions Data

- Hourly CO_2, NO_X, SO_2, and Hg emissions for larger fossil fuel-fired plants (>25 MW)

Available Data

Emissions, generation, and facility attributes for virtually all U.S. EGUs

Facility Attributes
- Nameplate capacity
- Equipment types
- Capacity factors
- Emission controls

Emissions
- NO_X
- SO_2
- CO_2
- N_2O
- CH_4
- CO_2e
- Hg
- $PM_{2.5}$

Generation
- Total net generation (MWh)
- By fuel type
- Renewable/non-renewable
- Combustion/non-combustion

Emission Rates
- Output (lb/MWh)
- Input (lb/MMBtu)
- Non-baseload
- Fuel-specific

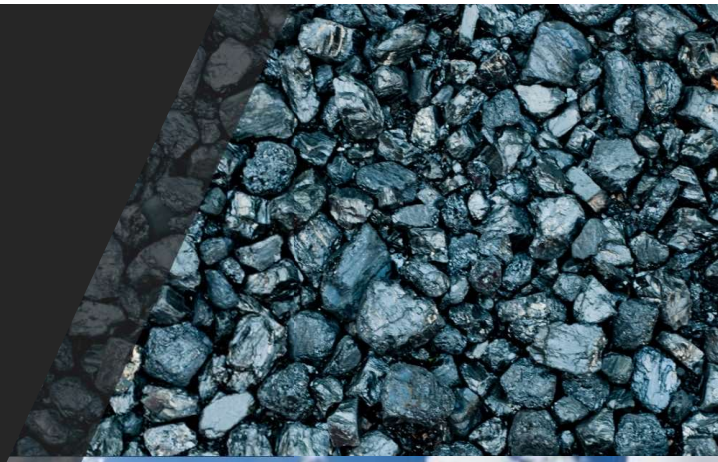
Fuel
- Primary fuel at the unit, generator, and plant levels
- Flag indicating coal use

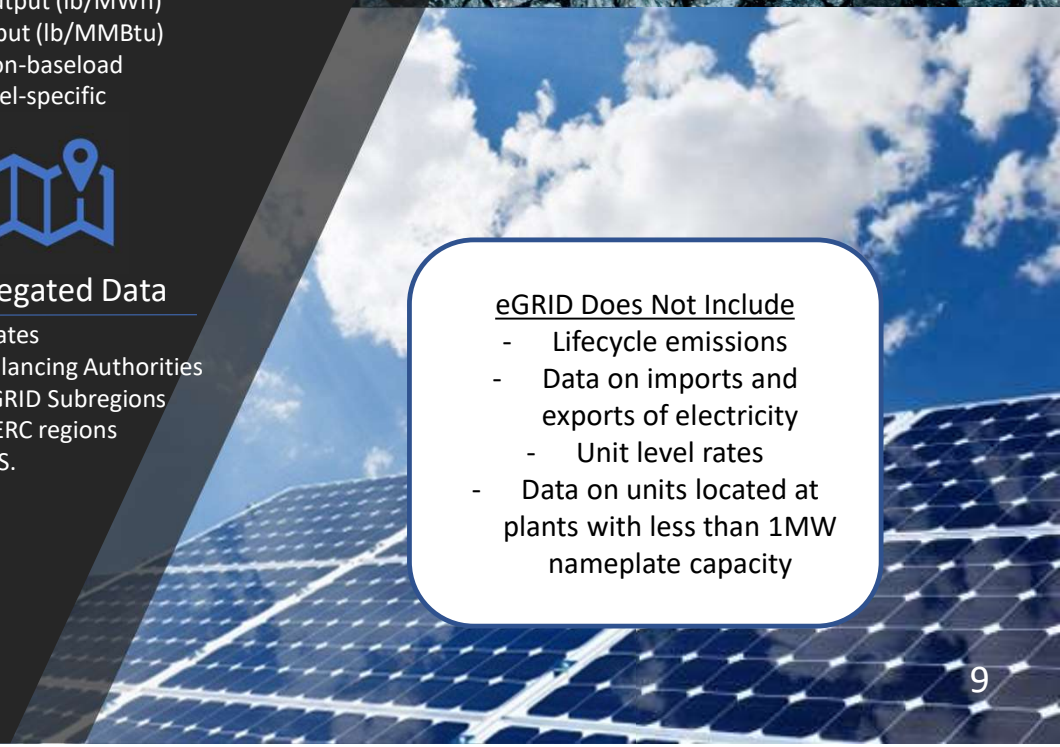
Resource Mix
- Percentage of generation by fuel type (%)

Grid Gross Loss
- Amount of electricity lost during transmission and distribution (%)

Aggregated Data
- States
- Balancing Authorities
- eGRID Subregions
- NERC regions
- U.S.

NEW **Recently added EJScreen demographic data**





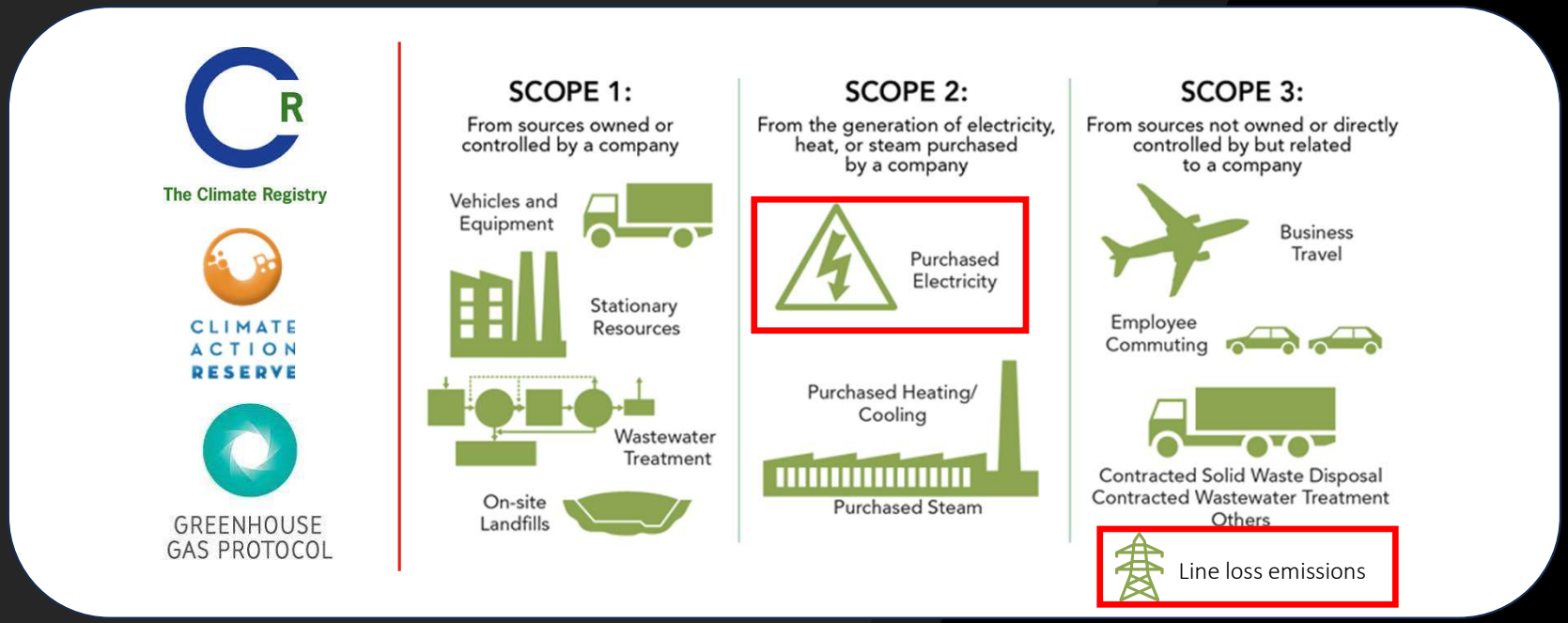
<u>eGRID Does Not Include</u>
- Lifecycle emissions
- Data on imports and exports of electricity
- Unit level rates
- Data on units located at plants with less than 1MW nameplate capacity

EPA

Uses of eGRID

eGRID is a trusted source of data on the environmental characteristics of the U.S. power sector

To determine the indirect GHG emissions from electricity purchases and avoided GHG emissions from projects and programs that reduce the demand for grid supplied electricity. The California Air Resources Board, Climate Registry, Climate Action Reserve, and Greenhouse Gas Protocol cite eGRID for use in estimating scope-2 GHG emissions from electricity purchases in the United States. Most carbon footprint calculators that are applicable to the United States use eGRID data.



More Users

Local and State Governments

Convenient source of data for states implementing policies such as emissions disclosure, output-based emissions standards, and renewable portfolio standards

Federal Agencies

Agencies like ORNL, NETL, NREL use eGRID to inform models and methodologies

NGOs

Present plant information, track changes, and compare emissions across power plants and companies

Academics

Calculate embedded emissions and emissions from electricity with over 300 citations since 2023

EPA

- GHG equivalences calculator
- Simplified GHG Emissions Calculator
- ENERGYSTAR's Portfolio Manager
- Green Power Equivalency Calculator
- Carbon Footprint Calculator
- AVoided Emissions and geneRation Tool (AVERT)
- Energy Savings and Impacts Scenario Tool (ESIST)
- Shore power calculator (OTAQ)
- fueleconomy.gov (OTAQ and DOE)

Renewable energy certificates (RECS) tracking systems, such as ISO-New England's Generation Information System (GIS) and PJM Interconnection's Generation Attribute Tracking System (GATS), also use eGRID data.

Current eGRID Suite Of Products

Download Detailed Data

Download the full eGRID datasets

Power Profiler

Find your electricity emissions

Explore the Data

Explore the data with visuals

Frequent Questions

Read through common Q&As

Neighboring Communities

Explore the new resource

https://www.epa.gov/egrid

NextGen eGRID

Inflation Reduction Act (IRA) funding creates a time-bound opportunity for eGRID to expand in response to evolving customer needs

Better Data

- New emission rates
- More options for emission rate time periods (e.g., monthly emission rates)

Data Access

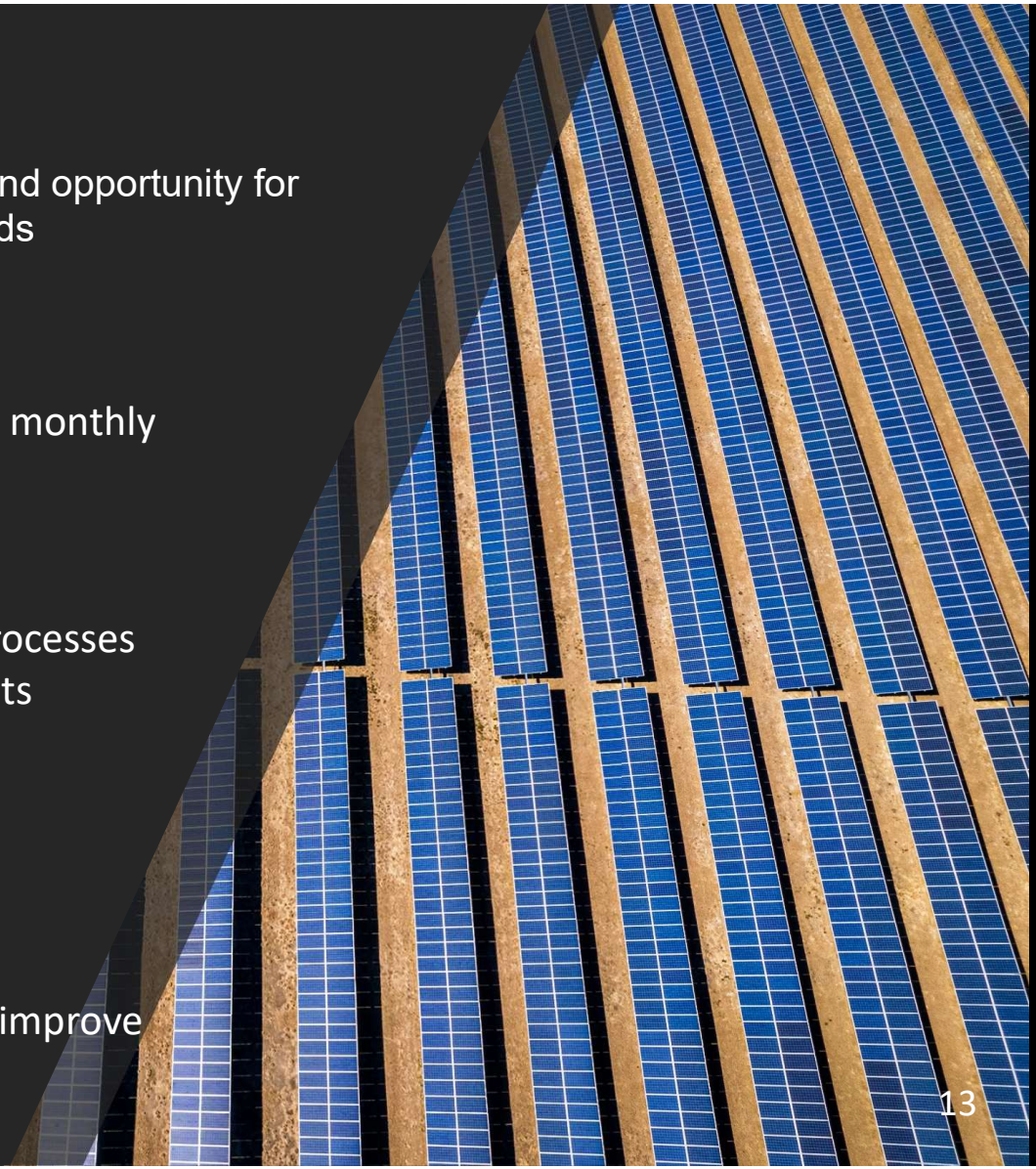
- Streamlining and improving production and QA processes
- Consolidating some of the different eGRID products

Interpretation

- New data visualizations and user interface

Coordination

- Working with federal agencies, labs, and RTOs to improve and harmonize data



nextGen eGRID Input

Focus Areas

1. Better data
2. Data access
3. Data interpretation
4. Coordination
5. Future-proofing

Join at
slido.com
#3163 569

Contact

Travis Johnson
U.S. EPA
johnson.travis@epa.gov

Anna Seifert
U.S. EPA
seifert.anna@epa.gov

User Satisfaction Survey
https://www.surveygizmo.com/s3/4398756/eGRID-User-Satisfaction-Survey