

# 16th Annual International Emission Inventory Conference: Training Workshop: Quantifying Greenhouse Gas Emissions: eGRID

presented by Art Diem, USEPA  
diem.art@epa.gov 202-343-9340  
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**Clean EnergyEnvironment**  
STATE PARTNERSHIP



# What is eGRID?



- A comprehensive source of data on the environmental characteristics of U.S. power generation at various level of aggregation

<http://www.epa.gov/cleanenergy/egrid>



- Database of emissions ( $\text{CO}_2$ ,  $\text{NO}_x$ ,  $\text{SO}_2$ , Hg), fuel use, and generation from virtually all U.S. power plants
- 1996-2000 & 2004 data
- Carbon dioxide ( $\text{CO}_2$ ) emissions:
  - Based on EPA's Acid Rain Program's Emission Tracking System  $\text{CO}_2$  emissions data (usually based on continuous emissions monitors); otherwise, EPA's GHG Inventory methodology is used on EIA-906 fuel use data.
  - Adjusted to account for Combined Heat and Power (CHP) & Biomass

# Levels of Data



## ■ Basic Data

- Boiler level
  - Unadjusted emissions and boiler characteristics
- Generator level
  - Net generation and generator characteristics
- Plant level
  - Emissions, generation, plant characteristics
  - Starting point for aggregated data

## ■ Aggregation Levels

- State
- Electric Generating Company (EGC)
  - Location (operator)-based
  - Owner-based
- Parent Company
  - Location (operator)-based
  - Owner-based
- Power Control Area (PCA)
- eGRID Subregions
- NERC Regions
- U.S.

# eGRID2006 Format (2004 Data)



- Two Excel workbooks
  - Boiler, generator, and plant data
  - State, EGC, parent company, PCA, eGRID subregion and NERC region
- Two Adobe PDF files
  - Technical Support Document
    - Methodologies, Data Sources, Data Element Descriptions
  - Summary Data Tables

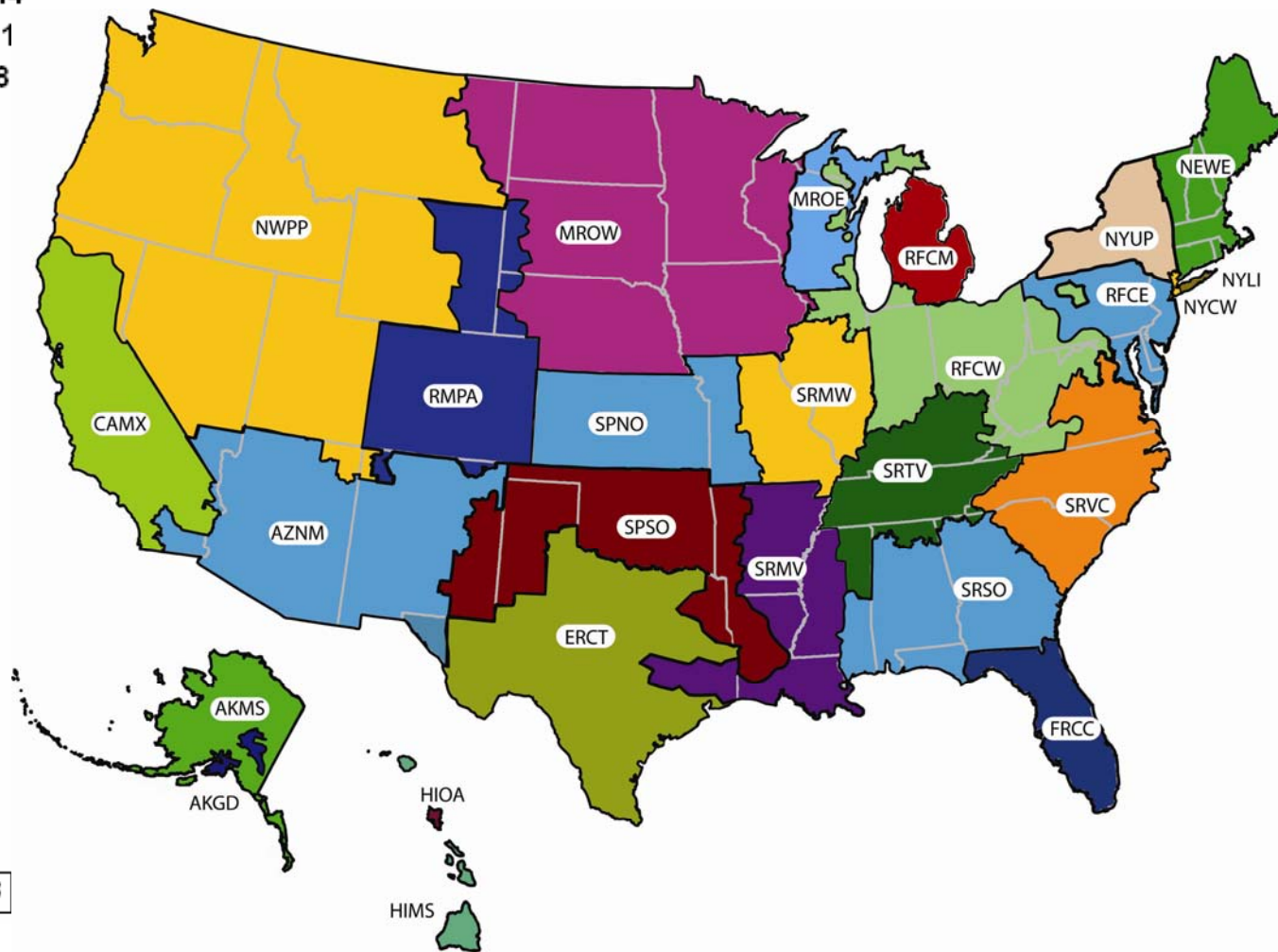
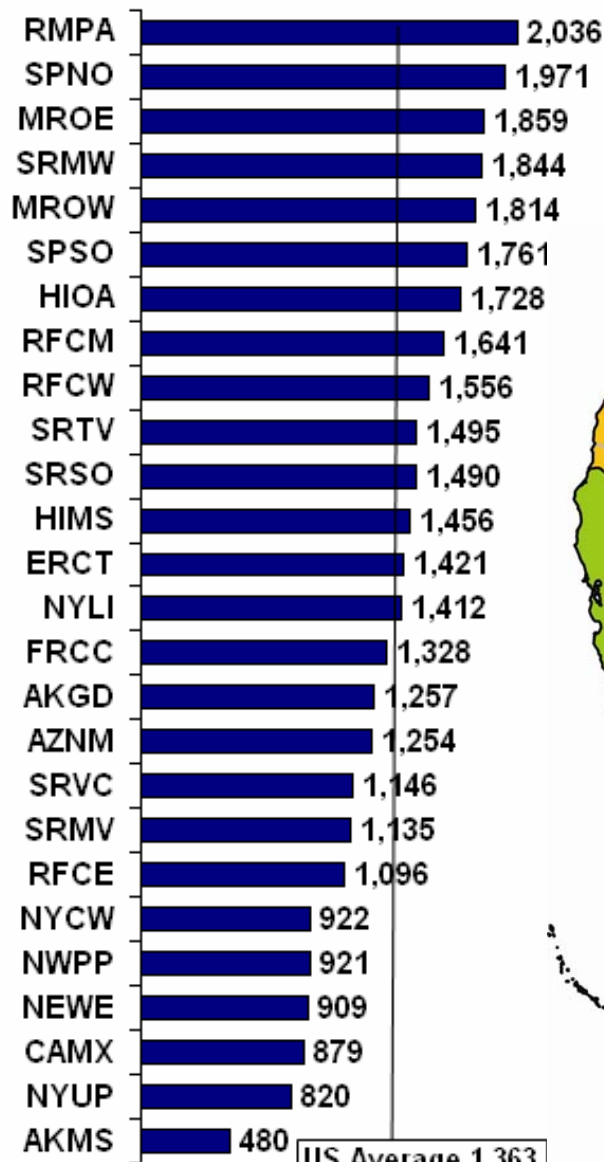
# eGRID2002 Format (1996-2000 Data)



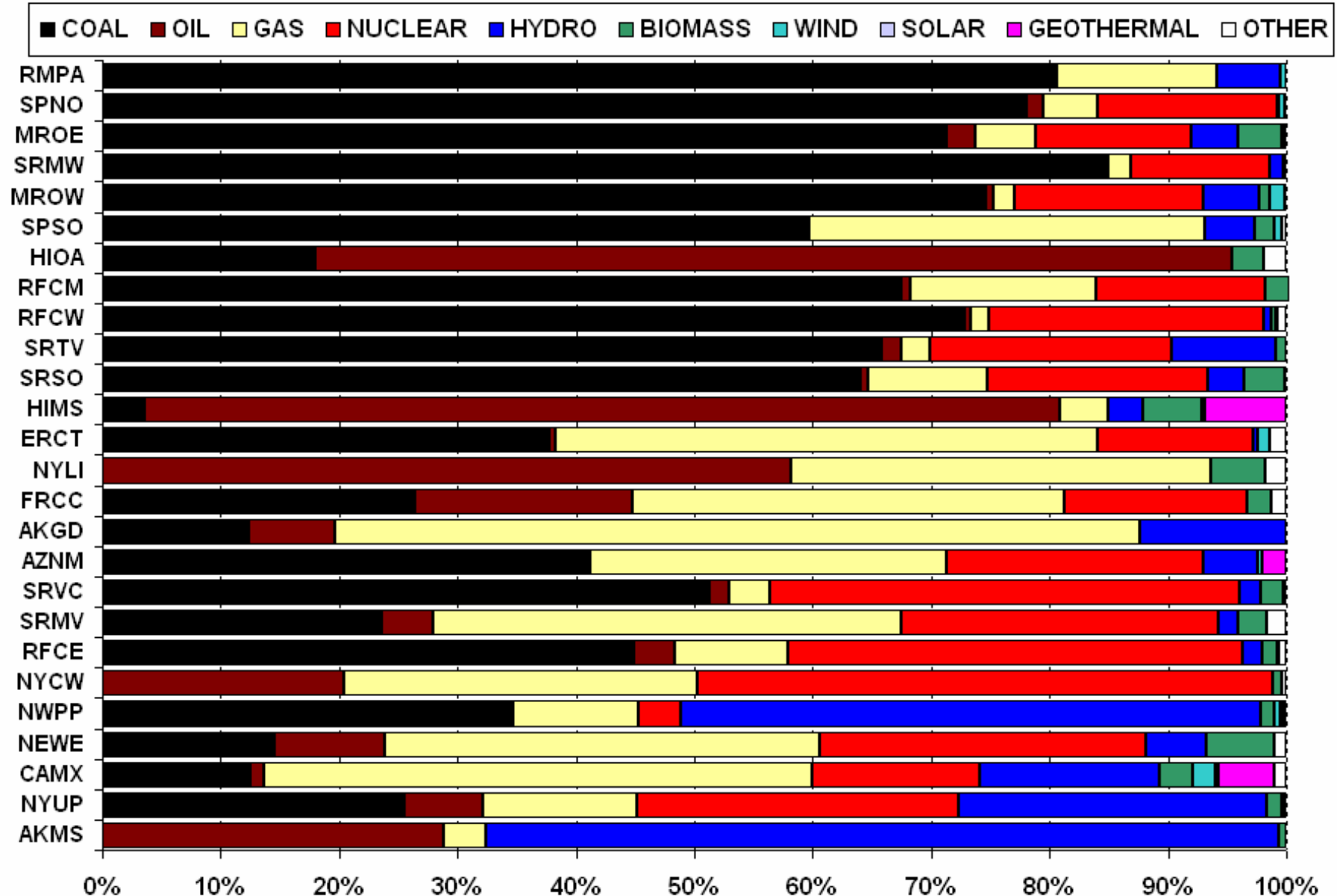
- Data Browser installation program
- 16 Excel workbooks
  - 1996-2000 location, owner, plant files
  - Power flow file
- Two Adobe PDF files
  - Technical Support Document
  - Users Manual

*(See the eGRID “archive” page)*

# eGRID Subregion Annual CO<sub>2</sub> Output Emission Rates (lb/MWh) (2004)



# Resource Mix: the primary driver of CO<sub>2</sub> Emission Rates



# Other Tools that use eGRID

# Power Profiler



- Web-based tool
- User input: zip code, and utility area
- Power Profiler displays eGRID subregion average emissions rates and resource mix and compares to national average
- This function is being imbedded in ENERGY STAR's Portfolio Manager and EPA's Personal Greenhouse Gas Calculator for CO<sub>2</sub> emissions
  - Adjustment of CO<sub>2</sub> rates accounting for T&D losses

# EPA Informational Resources using eGRID

- eGRID provides regional annual average carbon emission rates for EPA tools and guidance:
  - Power Profiler
    - <http://www.epa.gov/cleanenergy/powerprofiler.htm>
  - Personal Greenhouse Gas (GHG) Emissions Calculator
    - [http://www.epa.gov/climatechange/emissions/ind\\_calculator.html](http://www.epa.gov/climatechange/emissions/ind_calculator.html)
  - Climate Leaders
    - Indirect Emissions from Purchases/Sales of Electricity and Steam
    - <http://www.epa.gov/climateleaders/docs/indirectelectricityguidance.pdf>

# Other uses of eGRID

- California Climate Action Registry
  - <http://www.climateregistry.org/>
- NREL's HOMER
  - <http://www.nrel.gov/homer/>
- NETL's NATCARB
  - <http://www.natcarb.org/index.html>
- Leonardo Academy's Cleaner and Greener
  - <http://www.cleanerandgreener.org/>
- many others