THE EMISSIONS & GENERATION RESOURCE INTEGRATED DATABASE FOR 2007

(eGRID2007) TECHNICAL SUPPORT DOCUMENT

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Technical Support Document

Emissions & Generation Resource Integrated Database

eGRID

Data Year 2005

U. S. Environmental Protection Agency Office of Atmospheric Programs

Prepared by E.H. Pechan & Associates, Inc.

eGRID2007 Version 1.0

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NOTICES

This document has been reviewed by the Climate Protection Partnerships Division (CPPD), Office of Atmospheric Programs (OAP), U.S. Environmental Protection Agency (EPA), and approved for distribution.

This document is available to the public through CPPD's website at http://www.epa.gov/egrid .

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ABBREVIATIONS AND ACRONYMS

AR4	Fourth Intergovernmental Panel on Climate Change Assessment
BACT	Best Available Control Technology
BBtu	Billion Btu
Btu	British thermal unit
CAMD	Clean Air Markets Division
CEM	Continuous Emissions Monitoring
CHP	Combined heat and power (cogeneration)
CH_4	Methane
CO_2	Carbon dioxide
CPPD	Climate Protection Partnerships Division
DOE	U.S. Department of Energy
EEA	Energy and Environmental Analysis, an ICF International Company
eGRID	Emissions & Generation Resource Integrated Database
eGRID96	Emissions & Generation Resource Integrated Database for the year 1996 (1995 data)
eGRID97	Emissions & Generation Resource Integrated Database for the year 1997 (1995-1996 data)
eGRID2000	Emissions & Generation Resource Integrated Database for the year 2000 (1996-1998 data)
eGRID2002	Emissions & Generation Resource Integrated Database for the year 2002 (1996-2000 data)
eGRID2006	Emissions & Generation Resource Integrated Database for the year 2006 (2004 data)
eGRID2007	Emissions & Generation Resource Integrated Database for the year 2007 (2004 and 2005 data)
EGC	Electric generating company
EIA	Energy Information Administration
EPA	U.S. Environmental Protection Agency
ERG	Eastern Research Group
ETS	Emissions Tracking System
FERC	Federal Energy Regulatory Commission
FIPS	Federal Information Processing Standards
GATS	Generation Attribute Tracking System
GHG	Greenhouse gas
GIS	Geographic Information System
GWh	Gigawatt-hour
Hg	Mercury
ICE	Information Collection Effort (by EPA for 1999 mercury data)
ICF	International Company
IPCC	Intergovernmental Panel on Climate Change
IPM	Integrated Planning Model (developed by ICF Incorporated)
kWh	kilowatt-hour
LAER	Lowest Achievable Emission Rate
lb	Pound
MMBtu	Million Btu
MMcf	Million cubic feet
MSW	Municipal Solid Waste

ABBREVIATIONS AND ACRONYMS (continued)

MW	Megawatt
MWC	Municipal Waste Combustor
MWh	Megawatt-hour
NATCARB	Distributed National Carbon Sequestration Database and Geographic Information System
NERC	North American Electric Reliability Corporation
NESCAUM	Northeast States for Coordinated Air Use Management
NETL	National Energy Technology Laboratory
NGO	Nongovernmental Organizations
NIST	National Institute of Standards and Technology
NO_x	Nitrogen oxides
NREL	National Renewable Energy Laboratory
N_2O	Nitrous oxide
OAP	Office of Atmospheric Programs
OMEGA JV	Ohio Municipal Electric Generation Agency Joint Ventures
ORIS	Office of the Regulatory Information System
ORNL	Oak Ridge National Laboratory
OTC	Ozone Transport Commission
OTR	Ozone Transport Region
PCA	Power control area
Pechan	E.H. Pechan & Associates, Inc.
RACT	Reasonably Available Control Technology
RECS	Renewable Energy Credits
RGGI	Regional Greenhouse Gas Initiative
RPS	Renewable Portfolio Standards
SAR	Second Intergovernmental Panel on Climate Change Assessment
SAS	Statistical Analysis System
SO_2	Sulfur dioxide
TAR	Third Intergovernmental Panel on Climate Change Assessment

SECTION I. INTRODUCTION

The Emissions & Generation Resource Integrated Database (eGRID) is a comprehensive inventory of environmental attributes of electric power systems. The preeminent source of emissions data for the electric power sector, eGRID is 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. Data reported include generation in megawatt-hour (MWh); resource mix (for renewable and nonrenewable generation); emissions in tons for carbon dioxide (CO_2), nitrogen oxides (NO_x), and sulfur dioxide (SO_2); emissions in pounds for methane (CH_4), nitrous oxide (N_2O) and mercury (Hg); emission rates for CO_2, NO_x, and SO_2 (in both pounds per megawatt-hour [lb/MWh]) and pounds per million British thermal unit [lb/MMBtu]) and for CH_4, N_2O, and Hg (in pounds per gigawatt-hour [lb/GWh] and pounds per billion Btu [lb/BBtu]); heat input in MMBtu; and nameplate capacity in megawatts (MW). eGRID reports this information on an annual basis (as well as by ozone season for NO_x emissions and emission rates, generation, and heat input) at different levels of aggregation (boiler, generator, plant, companies, and grid regions of the country).

The 1996 eGRID (eGRID96) was first released in December 1998; the 1997 eGRID (eGRID97) with 1996 and 1997 data, was first released in December 1999; and the 2000 eGRID (eGRID2000), with 1996 and 1997 data as in eGRID97, and 1998 data, was released in March and September 2001. The 2002 eGRID (eGRID2002), with preliminary 2000 data, was first released as Version 1.0 in December 2002 and with 1996-2000 data as Version 2.0 in April 2003 and Version 2.01 in May 2003. eGRID2006 Version 1.0, with the year 2004 plant spreadsheet file, was first released in December 2006; Version 2.0, which includes one Excel workbook with an updated plant file, as well as the boiler and generator files for year 2004, was released in early April 2007; and Version 2.1, with the complete set of files – boiler, generator, plant, State, EGC location (operator)- and owner-based, parent company location (operator)- and owner-based, power control area, eGRID subregion, and NERC region – was released in late April 2007 and updated for typos in May 2007.

The newest and sixth edition of eGRID, eGRID2007 Version 1.0, was released in September 2008, published in October 2008, and includes three Excel workbooks with year 2005 data. The year 2004 data are the same as those included in eGRID2006. The three workbooks consist of 12 year 2005 data files -- boiler, generator, plant, State, EGC location (operator)- and owner-based, parent company location (operator)- and owner-based, power control area, eGRID subregion, and NERC region – as well as the State Import-Export files years 2004 and 2005 and a U.S. generation and consumption file for years 2004 and 2005. A web-based eGRID user friendly application is planned for release in 2009.

eGRID2007's date in the name represents the year that the industry data are adjusted to. eGRID2007's year 2005 data have been reconfigured to reflect the industry's current structure as was known by December 31, 2007, including plant ownership and operators, parent company affiliations, company mergers, and grid configurations.

Although eGRID is based on more than existing Federal data sources, its development required substantial attention to quality control. Accurate matching of entities from different databases required great care, even where identification codes were available. Inconsistencies between data sources, missing data, and ambiguous data necessitated adjustments to values of individual data elements, especially identification data. In general, however, questionable data have not been altered, except with regard to the relationship of plants to the power grid.

This document provides a description of the eGRID2007 data elements in the 12 Excel spreadsheet files for each level of aggregation as well as the three State Import-Export files. Section II provides a

summary of the database; Section III is the Methodology Section and presents the methodology for emissions estimations, including adjustments for biomass and combined heat and power (CHP), among other issues; Section IV includes discussion of eGRID specific ID and name changes and associations; and Section V describes the data elements in detail. There is a set of Reference citations in Section VI and two Appendices – Appendix A, which includes the file structure, and Appendix B, which includes the eGRID subregion and NERC region representational maps.

SECTION II. SUMMARY OF eGRID2007 DATA

A. eGRID FILES

eGRID2007 contains electric power data at different levels of aggregation. As the database name implies, the focus of the data files is on two areas: generation and emissions. Generation is expressed in both MWh and as a percentage (called "resource mix" – generation of a certain fuel or resource type divided by total generation). CO_2, NO_x, and SO_2 emissions are expressed in tons and CH_4, N_2O, and Hg emissions are expressed in pounds. Emission rates are expressed in lb/MWh, lb/MMBtu for CO_2, NO_x, and SO_2 and are expressed in lb/GWh and lb/BBtu for CH_4, N_2O, and Hg. The measurement units are United States units, not metric units.

Data users should take note that eGRID's emissions and emission rates are calculated at the generation source level, as they are derived for individual power plants. If eGRID's output emission rates (in lb per M[G]Wh) are applied at the retail source level (i.e., by assigning emissions to usage by retail customers), emissions should generally be revised upwards by an appropriate factor to reflect transmission and distribution line losses. eGRID data do not include imports – just plant generated net MWh, MMBtu, and emissions.

eGRID2007's year 2005 data have been reconfigured to reflect the industry's current structure as was known by December 31, 2007, including plant ownership and operators, parent company affiliations, company mergers, and grid configurations. eGRID2007 also includes the year 2004 data from eGRID2006, which were configured to reflect the industry's structure as was known by October 1, 2006. Only certain eGRID files can be linked from year 2005 to year 2004. The files that can be linked include the NERC region (by NERC acronym), eGRID subregion (by eGRID subregion acronym), State (by postal State abbreviation), and plant (by eGRID plant sequence number). The eGRID year 2005 plant data are linked to the year 2004 plant data with the inclusion of the year 2004 plant file's SEQPLT04 variable in the year 2005 plant file – when the plants match. (Although most plants will match on ORISPL, there are some exceptions, so it is completely accurate to match from year 2005 to 2004 using SEQPLT04).

The year 2005 data are displayed in three workbooks. Two of the workbooks include the aggregation files. The boiler, generator, and plant data are included in the first workbook, the plant workbook. The location (operator)-based spreadsheets for State, electric generating company, parent company, power control area, eGRID subregion, NERC region, and U.S. are included in the second workbook, the aggregation workbook. The owner-based spreadsheet for electric generating company and parent company are also included in the second workbook. State Import-Export data are contained in the third workbook, the ImportExport workbook. The spreadsheets can be downloaded from the EPA Climate Protection Partnerships Division's (CPPD) Clean Energy eGRID web site, http://www.epa.gov/egrid, along with Summary Tables and this document. The data were originally processed on the EPA IBM mainframe using SAS, the Statistical Analysis System software.

The 12 eGRID2007 aggregation files are:

- BLR (boiler), with 4,866 year 2005 records;
- GEN (generator), with 16,306 year 2005 records;
- PLNT (plant), with 4,998 year 2005 records with non-zero generation and/or heat input;
- ST (State), with 51 year 2005 records;
- EGCL and EGCO (electric generating company), with 1,667 year 2005 records for the location (operator)-based file and 1,898 year 2005 records for the owner-based file, respectively;

- PRCL and PRCO (parent company), with 97 year 2005 records in the location (operator)-based file and 101 year 2005 records in the owner-based file, respectively;
- PCAL (power control area), with 112 year 2005 records in the location (operator)-based file;
- SRL (eGRID subregion), with 26 eGRID subregion year 2005 records in the location (operator)-based file;
- NRL (NERC region), with 10 NERC region year 2005 records in the location (operator)-based file; and
- US, with 1 year 2005 U.S. totals record.

The number of variables in each of the 12 aggregation files varies, with 34 in BLR, 15 in GEN, 158 in PLNT, 109 in ST, 111 in EGCL and EGCO, 109 in PRCL and PRCO, 109 in PCAL, 110 in SRL, 109 in NRL, and 107 in US. The first variable in each file is a unique sequence number for that file. The boiler file is sorted by State postal code abbreviation, plant name, plant code, and boiler ID. The generator file is sorted by State postal code abbreviation, plant name, plant code, and generator ID. The plant file is sorted by State postal code abbreviation, plant name, and plant code. The State file is sorted by State postal code abbreviation. The two electric generating company files are sorted by electric generating company name, the two parent company files are sorted by parent company name, the power control area file is sorted by power control area name, the eGRID subregion file is sorted by eGRID subregion name, and the NERC region file is sorted by NERC region acronym.

In this edition of eGRID, Import-Export Files for years 2004 and 2005 and the Generation and Consumption file for the U.S have been included in a third workbook; similar files were in eGRID2002, but not in eGRID2006.

The file structure for all the year 2005 files is included in Appendix A. The file structure also includes a description of the variables and the original data sources. The file structure indicates which variables in year 2005 are new or different from those in year 2004.

B. eGRID SOURCES

eGRID is developed from a variety of data collected by the U.S. Environmental Protection Agency (EPA), Energy Information Administration (EIA), and Federal Energy Regulatory Commission (FERC). Federal data sources include:

- EPA, Emissions Tracking System/Continuous Emissions Monitoring (ETS/CEM) (EPA, 2007);
- EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2005;
- EPA, Electric Utility Steam Generating Units Hazardous Air Pollutant Emission Study: 1999 Mercury Information Collection Request (ICR) Database (EPA, 2001) updated to 2002 (RTI, 2005);
- EPA, Large Municipal Waste Combustor Emissions for 2000 (EPA, 2002);
- EIA, EIA-767: Steam-Electric Plant Operation and Design Report (EIA, 2006a);
- EIA, EIA-860: Annual Electric Generator Report (EIA, 2007a);
- EIA, EIA-906: Power Plant Report (EIA, 2006c);
- EIA, EIA-920: Combined Heat and Power Plant Report (EIA, 2006b);
- EIA, EIA-861: Annual Electric Power Industry Report (EIA, 2007b);
- EIA, EIA-423: Monthly Cost and Quality of Fuels for Electric Plants Report (unregulated [nonutility]) (EIA, 2006d);
- FERC, FERC-423: Monthly Report of Cost and Quality of Fuels for Electric Plants (regulated [utility]) (FERC, 2006); and

- EIA, Electric Power Monthly, Plants Sold and Transferred (EIA, 2006-2008).

An additional source of eGRID data, the North American Electric Reliability Corporation [formerly the North American Electric Reliability Council] (NERC), is quasi-governmental since it was certified by FERC in July 2006 as the "electric reliability organization" (NERC, 2008).

Data displayed in eGRID are derived from the above data sources; EPA does not collect data directly from electric generators for eGRID. Inconsistencies between data sources, missing data, and ambiguous data occasionally necessitate adjustments to values of individual data elements. When necessary, EPA substitutes data from secondary sources or default values. EPA also updates ownership, corporate affiliation, and grid configuration data. In general, however, data are displayed as reported; this may lead to plant file outliers to which users should be alert.

C. WHAT'S NEW IN eGRID2007

eGRID2007 includes several new data element delineated below:

- Because of increased interest in curbing greenhouse gases (GHG) associated with electricity production, beginning with the plant file, eGRID now includes emission tons and rates for two other GHGs, methane (CH_4) and nitrous oxide (N_2O).

- In the plant file, there is a new flag indicating whether the latitude and longitude values comprise the county centroid or not.

- In the plant file, there is a coal flag indicating whether the plant burns any amount of coal.

- In the plant file, there is another new flag indicating whether the plant combusts fuel. Two noteworthy plants that have both generators that combust fuel and that do not combust fuel are Crystal River and Turkey Point, both in Florida.

- Beginning with the plant file, there are four new resource mix variables: combustion and noncombustion generation in terms of MWh and percent.

- Beginning with the plant file, there are seven new combustion output emission rates for each aggregation file – for ozone season NO_x and annual NO_x, SO_2, CO_2, CH_4, N_2O, and Hg.

Three files that were included in eGRID2002, but not in eGRID2006, are included in eGRID2007: the State Import-Export files for 2004 and 2005, and the U.S. Generation and Consumption file. The file structure is included in Appendix A.

Methodological changes in eGRID2007 for year 2005 data include a revised methodology for splitting out the municipal solid waste data into biomass and fossil components; some updated IDs; updated latitude and longitudes and data sources; updated Hg data source; updated generation methodology for missing data; updated CO_2 emission factors; updated primary fuel determination; expansion of the plant coal/oil/gas primary fuel category variable to include other fossil fuel; and the addition of emissions for geothermal plants. Methodological changes are detailed in Section III, the Methodology Section. Year 2004 data included in eGRID2007 are unchanged from the data in eGRID2006. For more information about the year 2004 data, see the eGRID2006 Technical Support Document (Pechan, 2007).

There have been a few changes to the NERC regions, power control areas, and eGRID subregions. Representational maps of the NERC regions and eGRID subregions are included in Appendix B.

D. USERS OF eGRID

eGRID data support tools that are produced such as labeling/environmental disclosure, Renewable Portfolio Standards (RPS) and Renewable Energy Credits (RECS) attributes, and the Regional Greenhouse Gas Initiative (RGGI). The eGRID data are specifically used for other EPA tools and programs such as Power Profiler, Climate Leaders, Portfolio Manager, and Personal Greenhouse Gas Emissions Calculator.

eGRID is also used by other Federal Government agencies such as Oak Ridge National Laboratory (ORNL) for their Combined Heat and Power Calculator, the National Energy Technology Laboratory (NETL) for their sponsored Distributed National Carbon Sequestration Database and Geographic Information System (NATCARB), and the National Renewable Energy Laboratory (NREL) for their micropower distributed generation optimization model named HOMER. RECS Tracking Systems, such as ISO-New England's Generation Information System (GIS) and PJM's Generation Attribute Tracking System (GATS) utilize eGRID data; and States rely on eGRID data for electricity labeling (environmental disclosure programs), emissions inventories, and registries (such as The Climate Registry and the California Climate Action Registry), and for policy decisions/impacts such as output based standards; many States also publish state-specific eGRID data on the web.

eGRID is additionally used for nongovernmental organizations' (NGOs) tools and analysis such as the Northeast States for Coordinated Air Use Management (NESCAUM) analysis, Powerscorecard.org, the Ozone Transport Commission's (OTC) Emission Workbook, the Greenhouse Gas (GHG) Protocol Initiative, the Rocky Mountain Institute's Community Energy Finder, Leonardo Academy's "Cleaner and Greener Environmental Program," the National Resource Defense Council's Benchmarking Air Emissions, The Berkeley Institute of the Environment, Cool Climate Carbon Footprint Calculator, the Climate and Air Pollution Planning Assistant (CAPPA), Emission Solution's Carbon Footprint Calculator, and the Clean Air Climate Protection software developed by the International Council for Local Environmental Initiatives (ICLEI). The Center for Global Developments' Carbon Monitoring for Action Database (CARMA) at carma.org, which contains information about carbon emissions for power plant and companies in the U.S. as well as other countries, used eGRID year 2004 data as a base, according to the Center's David Wheeler (Wheeler, 2007).

eGRID has many academic uses and is often cited in relevant research and analysis papers and lessons prepared by various consulting groups as well as universities such as Stanford, North Carolina University, Texas A&M University, Penn State, Eastern Connecticut University, and Michigan Tech.

SECTION III. eGRID METHODOLOGY

This section describes eGRID development methodologies that are not transparent. Some methods used for eGRID2007 are modified or refined from previous editions of eGRID and are so noted in this section.

A. TREATMENT OF ELECTRICITY GENERATION AND EMISSIONS FROM BIOMASS

Biomass and solid waste burning plants are specifically addressed in eGRID as follows:

Biomass is a fuel derived from organic matter such as wood and paper products, agricultural waste, or methane (e.g., from landfills). eGRID assumes that these materials are subject to the natural carbon cycle and, therefore, do not contribute to global warming. eGRID assigns zero CO_2 emissions to generation from the combustion of all biomass because these organic materials would otherwise release CO_2 (or other greenhouse gases) to the atmosphere through decomposition.

Emissions from generation powered by renewable methane (landfill gas and digester gas) are also treated as a special case in eGRID with respect to NO_x and SO_2. Landfill gas and digester gas emissions must be flared in most cases if the gas is not consumed as useful energy. eGRID determines the amount of incremental NO_x emissions attributable to utilizing renewable methane to generate electricity and eGRID assumes that renewable methane such as landfill gas or digester gas would have been flared if not used to generate electricity. This generation is then assigned the appropriate NO_x emission factor, e.g., for a boiler or internal combustion engine or turbine. These emissions are then offset by the amount of emissions represented by a typical flare. SO_2 emissions are assumed to be the same as the flare's emissions and are, therefore, assigned a value of zero.

B. TREATMENT OF ELECTRICITY GENERATION AND EMISSIONS FROM SOLID WASTE

Solid waste typically consists of a mixture of renewable materials (biomass such as wood, paper, and food waste) and nonrenewable materials (fossil-based materials such as plastics and tires) and, therefore, requires special treatment in eGRID. In 2007, both EIA and EPA updated the methodology regarding the renewable-nonrenewable composition (biomass and fossil) of municipal solid waste (MSW). Beginning with eGRID's year 2005 data, EPA modified EIA's biomass-fossil splits for fuel consumption, heat input, and generation. EPA's municipal solid waste (MSW) splits' methodology utilizes decimal values and also provides different splits for the consumption data, based on the type of combustor. The MSW percentages for the MSW biomass component (called MSB) and the MSW fossil component (called MSF) are described in Table III-1 below (EIA, 2007c). The type of MSW is obtained from an EPA data file (EPA, 2002).

Table III-1. Municipal Solid Waste MSB and MSF Splits

MSW Type	Variable(s)	MSB Split (%)	MSF Split (%)
Mass Burn	Heat Input, Generation	52.7%	47.3%
Mass Burn	Fuel Consumption	65.4%	34.6%
Refuse Derived Fuel	Heat Input, Generation	52.7%	47.3%
Refuse Derived Fuel	Fuel Consumption	75.1%	24.9%
Unknown	Heat Input, Generation	52.7%	47.3%
Unknown	Fuel Consumption	67.7%	32.3%

As with all biomass generation, the renewable portion of solid waste is assumed to have zero CO_2 emissions, but other emissions are reported based on appropriate emission factors. Generation from supplemental fossil fuels co-fired with solid waste is identified if known and reflected in emission rates.

C. ESTIMATION OF EMISSIONS

Emissions (CO_2, NO_x, SO_2, Hg, CH_4, and N_2O) in eGRID are estimated using data from a variety of sources from EPA and EIA (see SOURCEM variable in the eGRID plant file). Carbon dioxide (CO_2) is a product of fossil fuel combustion and is the primary greenhouse gas (GHG) emitted by human activities that is contributing to global climate change; nitrogen oxides (NO_x) is a product of fossil fuel combustion and is a precursor to the formation of ozone, or smog, and also contributes to acid rain and other environmental and human health impacts; sulfur dioxide (SO_2) is an air pollutant emitted primarily by power plants burning fossil fuels, especially coal, which is a precursor to acid rain and is associated with other environmental and human health impacts; and mercury (Hg) is a toxic heavy metal that is a byproduct of the combustion of fossil fuels, especially coal. Methane (CH_4) and nitrous oxide (N_2O), two other GHG emitted by electric power generators, are included in eGRID beginning at the plant level. These latter two emissions data can be used to supplement the eGRID2007 year 2005 eGRID subregion CO_2 output emission rates as default factors as specified in a variety of climate protocols (including The Climate Registry, The California Climate Action Registry, and EPA's Climate Leaders) for indirect emissions estimation calculations for the three electric power GHGs.

Although many small units, as well as some nonutilities and cogenerators, are not subject to EPA's ETS/CEM data reporting, the vast majority of emissions reported in eGRID are from the ETS/CEM data. Sources that report to ETS/CEM are generally utility and nonutility steam units with at least 25 MW capacity, nonsteam units – gas turbines, internal combustion engines – that came on-line after 1990, and independent power producers/cogenerators that sell a specific amount of electricity.

Plant level emissions in eGRID are built by summing its component parts – which could simply be unit level boilers and/or turbines or a combination of boilers and prime movers representing an aggregation of like generating units. In general, eGRID plant level emissions reflect a combination of monitored and estimated data. Emissions and emission rates in eGRID represent emissions and rates at the point(s) of generation. They do account for losses within the generating plants (net generation). However, they do not take into account any power purchases, imports or exports of electricity into a specific State or any other grouping of plants; and they do not account for any transmission and distribution losses between the points of generation and the points of consumption.

eGRID emissions and heat input that are displayed in the boiler file are unadjusted, while both adjusted and unadjusted emissions and heat input are displayed in the plant file. Adjusted emissions and heat input as well as generation are used in calculating plant emission rates and for all aggregation emission values.

1. Unadjusted Emission Estimates for Year 2005

Emissions that are reported and estimated for eGRID are unadjusted, except for biomass CO_2 values, and are displayed only at the plant level. The plant file emission rates and any subsequent aggregation files only include adjusted emissions, emission rates, and heat input. Depending on the source of data and the emissions type, component emissions are adjusted for biomass and then summed to the plant level before making the CHP adjustment specific to eGRID. Both the source(s) of emissions data and the adjustments flags are provided in the plant file.

2. Annual Emission Estimates for CO_2, SO_2, and NO_x

Mass emissions in eGRID are estimated using data from a variety of sources. eGRID's primary source for CO_2, SO_2, and NO_x, data is ETS/CEM unit level annual data. CO_2 is a greenhouse gas, while SO_2 and NO_x are not. SO_2 and NO_x are acid rain pollutants and have been regulated under the Clean Air Act Amendments for many years. If ETS/CEM data are not reported, the emissions are generally estimated using fuel consumption – on a boiler-fuel level if the data are in the EIA-767, and/or on a prime mover-fuel level if the data are only in the EIA-906/920 file. For estimating CO_2, the Intergovernmental Panel on Climate Change (IPCC) greenhouse gas (GHG) methodology using fuel consumption, a fuel-specific carbon coefficient, and the fuel-related fraction of carbon oxidized is implemented. Note that beginning with year 2005 data, the IPCC's mandated change to a uniform oxidation fraction of 1 is used for all fuels. For SO_2, EPA-approved uncontrolled emissions factors, sulfur content, and control efficiencies, if available, are also used in the calculation of these emissions.

The following describes how NO_x emissions are estimated for cases in which ETS/CEM data are not reported or cannot be used. For data originating from the EIA-767, the controlled annual emission rate and heat input are used. For data originating from the EIA-906/920, for steam prime movers, fuel use and EPA-approved emissions factors are used; and for nonsteam prime movers, beginning with year 2004 eGRID data, a better method is used to calculate NO_x emissions for combined cycles, turbines, and internal combustion engines. NO_x emission factors were developed based on the prime mover technology, size, and location. The location is important due to the differing stringency of air pollution controls in some areas with severe air quality problems. For larger nonsteam generators, the factors were based on data from the EPA Reasonably Available Control Technology/Best Available Control Technology/Lowest Achievable Emission Rate RACT/BACT/LAER) Clearinghouse (EPA, undated2). The methodology also reviewed current RACT requirements for large generating facilities in regions with stringent limits in areas such as the Ozone Transport Region (OTR), California, and Texas. For smaller nonsteam generators (including small combustion turbines, microturbines and reciprocating engines), the methodology draws from several sources including the EPA CHP Partnership *Catalogue of CHP* (EPA, undated1) and the U.S. Department of Energy (DOE) *Gas-Fired Distributed Energy Resource Technology Characterizations* (DOE, 2003).

Beginning with year 2005 data, geothermal emissions, albeit minimal, are estimated for CO_2, SO_2, and NO_x. While CO_2 is a gas in the geothermal reservoir, SO_2 and NO_x result from hydrogen sulfide combustion. The three pollutants' emission factors, obtained from a 2007 Geothermal Energy Association environmental guide (GEA, 2007), are applied to net generation, and differ depending on the type of geothermal plant (GEA, 2008). For a binary or flash/binary geothermal plant, there are no CO_2, SO_2, or NO_x emission factors; for a flash geothermal plant, there are no NO_x emission factors and small CO_2 and SO_2 emission factors; and for a dry steam geothermal plant, there are small CO_2, SO_2, and NO_x emission factors.

3. Annual Emission Estimates for CH_4 and N_2O

In addition to CO_2, electric power plants also emit some CH_4, and N_2O GHG emissions. Thus, in eGRID2007, for year 2005 data, these emissions and emission output rates are estimated and displayed, beginning at the plant level. CH_4 and N_2O emissions are reported in pounds and are estimated by multiplying the fuel specific heat input in MMBtu by appropriate emissions factors from the latest (fourth) 2006 IPCC (AR4) (IPCC, 2007) that have been converted to lb/MMBtu units (IPCC, 2007).

Nitrous oxide (N_2O) is an oxide of nitrogen that is not part of the NO_x subset of oxides of nitrogen. N_2O is a greenhouse gas, the emissions of which are contributing toward global climate change; NO_x is not a GHG. N_2O should not be confused with NO_X.

a. Global Warming Potential

Global Warming Potential (GWP) is a value assigned to a GHG so that the emissions of different gases can be assessed on an equivalent basis to the emissions of the reference gas, CO_2, which has a GWP of 1. Traditionally, the 100-year GWPs are used when calculating an overall CO_2 equivalent, which is the sum of the products of each GHG emission value and its GWP. Note: be sure when calculating the CO_2 equivalent that each of the GHG emission values has the same measurement units (either all in tons or all in pounds) since in eGRID, CO_2 are expressed in tons while both CH_4 and N_2O are expressed in pounds. Additionally, in order to compare emissions across previous data years', the GWP for the second (1996) IPCC assessment (SAR), is used, although there have been subsequent third (2001) (TAR) and fourth (2006) (AR4) assessments. A comparison of the three GWP for the three electric power GHG gases is presented in Table III-2 (EPA, 2008).

Table III-2. Comparison of 100-Year GWPs

Gas	SAR	TAR	AR4
CO_2	1	1	1
CH_4	21	23	25
N_2O	310	296	298

4. Annual Emission Estimates for Mercury (Hg)

The most important mercury (Hg) electric power sources – coal and municipal solid waste boilers – are represented in eGRID using two EPA-developed data files: one with 2000 Hg emissions for large municipal waste combustors (MWC) (EPA, 2002) and one with 2002 Hg emissions for coal-fired boilers (RTI, 2005); previous versions of eGRID use year 2000 MWC and 1999 Hg mercury values (EPA, 2001). Mercury emissions, reported in pounds, for identified coal plants are estimated in eGRID by multiplying the 2002 emissions by the ratio of the plant's 2005 to 2002 coal tons. In a similar fashion, mercury emissions for identified large municipal solid waste plants are estimated by multiplying the 2000 emissions by the ratio of the plant's 2005 to 2000 solid waste tons.

Care should be taken when using Hg emissions data from eGRID. Because data used to determine emission rates originated from a different year from the plant operational data year there are potential discrepancies that would cause the estimates of Hg emissions presented in eGRID to be less representative of actual Hg emissions.

5. Ozone Season Emission Estimates for NO_x

The ozone season is the five-month period from May through September when excessive levels of ozone, or smog, are most likely to form in the atmosphere due to a chemical reaction of nitrogen oxides with other pollutants in the presence of sunlight. EPA provides ozone season ETS/CEM NO_x emissions for many units that do not report annual emissions. For purposes of eGRID, the ETS/CEM ozone season data are included only if the annual ETS/CEM NO_x emissions are also available (with two exceptions – see discussion of Hay Road units 1 and 2 under subsection 9.b. in this Methodology Section). Otherwise, for those units that report to the EIA-767, as well as sampled plants with prime movers that report to the EIA-906/920 file and are not covered by either ETS/CEM or EIA-767 data, monthly fuel quantity is provided

so that five-month (May through September) ozone season NO_x emissions can be estimated in the same estimates are calculated as the annual estimates multiplied by 5/12.

6. Adjusted Emission Estimates

Emissions reported in eGRID represent emissions from fuel utilized only for electricity generation. Thus, for certain plants, there are two possible cases for which eGRID adjusts the emission estimates: if components of the plant burn biomass, including renewable methane (such as landfill, methane, and digester [other biomass] gas), and if the plant is a CHP facility. A biomass facility's emissions reported in eGRID may be different from that reported in other EPA sources such as EPA/CAMD's ETS/CEM.

There are seven plant-prime movers (all steam) whose net generation is reported as zero even though positive fuel use is reported to EPA and/or the EIA-767. For six of these plants, Elizabethtown Power (ORISPL=10380), Lumberton Power (ORISPL=10382), Tillamook Lumber (ORISPL=50232), Walter B. Hall Resource Recovery Facility (ORISPL=50660), Shenango Neville Island Coke Works (ORISPL=54532), and Geneva Energy LLC (ORISPL=55174), the adjusted emissions and heat input for the entire plant were set to zero (the unadjusted values are published for reference purposes). For the seventh plant, 74th Street (ORISPL=2504), only the steam portions are adjusted to zero; the gas turbine adjusted emissions and heat input remain positive. The assignment of zero adjusted values was based on research regarding the operation of these plants, as well as experience and judgment.

7. Adjustments for Biomass

eGRID makes adjustments for biomass emissions, for renewable methane biomass emissions, and for solid waste emissions. Solid waste typically consists of a mixture of renewable materials – biomass such as wood, paper, and food waste – and "other fossil" nonrenewable materials – fossil-based materials such as plastics and tires. A flag in the plant file indicates whether there is any biomass adjustment and the type of adjustment. The possible adjustments for CO_2, NO_x, and SO_2 emissions (and heat input) are explained below. There are no Hg emissions associated with the combustion of biomass in eGRID, so there are no biomass adjustments for Hg.

a. CO_2

Biomass is a fuel derived from organic matter, including, but not limited to, wood and paper products, agricultural waste, or methane (e.g., from landfills). eGRID assumes that these materials are subject to the natural carbon cycle and, therefore, do not contribute to global warming. Thus, all biomass CO_2 emissions (including those from renewable methane) are assigned a value of zero because these organic materials would otherwise release CO_2 (or other greenhouse gases) through decomposition. For estimated biomass plant emissions components, the unadjusted emission values and the adjusted-for-biomass emissions values are the same because there are no carbon coefficients for these fuels. For those units burning biomass and reporting non-zero emissions to the Clean Air Markets Division (CAMD), their CO_2 emissions are reported as zero in eGRID.

b. NO_x, SO_2, CH_4, and N_2O

In most cases, emissions from renewable methane from sources such as landfill gas and digester gas must be flared if the gas is not utilized to generate electricity. Therefore, eGRID assumes that renewable methane would not have been flared if used to generate electricity. The amount of incremental NO_x and SO_2 emissions attributable to utilizing renewable methane to generate electricity is what is considered for

eGRID's emissions. Thus, emissions from these fuels are adjusted by decreasing the uncontrolled emission factors (used to estimate the emissions) by the emissions factor represented by a typical flare.

For NO_x, the EPA-approved flare emission factor is assumed to be 40 lb per million cubic feet (MMcf) of methane, 20 lb per MMcf of methane for landfill gas, and 26 lb per MMcf of methane for digester gas, and is subtracted from the respective original EPA-approved uncontrolled emission factors before being applied. For SO_2, CH_4, and N_2O, the emission factors are assumed to be the same as the flares', so there are no incremental SO_2, CH_4, and N_2O emissions attributable to utilizing renewable methane to generate electricity, and values of zero are assigned.

In eGRID, there are no fuel adjustments for NO_x, SO_2, CH_4, and N_2O emissions for biomass other than renewable methane.

8. Adjustments for CHP

CHP is a type of generating facility that produces electricity and another form of useful thermal energy (such as heat or steam) used for industrial, commercial, heating, or cooling purposes. CHP, also known as cogeneration, converts energy more efficiently than facilities that separately produce heat and electricity. The plants labeled as CHP in eGRID are an EPA designation based on a CHP file developed for DOE. A flag in the plant file indicates if a plant is considered a CHP for purposes of eGRID. Since emissions reported in eGRID represent electricity generation only, emissions associated with useful thermal output – the amount of heat produced in a CHP facility that is used for purposes other than making electricity – are excluded (and a plant's emissions data reported in eGRID may be different from that reported in other EPA sources).

eGRID's methodology is designed to share CHP's efficiency gains between electricity and useful thermal output. For CHP facilities in the year 2005 data, eGRID allocates emissions between electricity and thermal output using a plant level electric allocation factor that discounts the value of useful thermal output by 25%. (Whereas in eGRID2006 and eGRID2007 there is a 75/25 split, in eGRID2002 there was a 50/50 split.) If a plant is a CHP and has an electric allocation factor, it is applied to the emissions (and heat input) for the entire plant after any biomass adjustment has been made. Specifically, the adjusted value is the product of the electric allocation factor and the original value.

The methodology for estimating an electric allocation factor is as follows:

There are two sources of thermal output from EIA, one indirect and the other direct. The useful thermal output value can be calculated from EIA-906/920 data as 0.8 multiplied by (total heat input minus electricity heat input) MMBtu; or as reported to the EIA-767. With these data, the electric allocation factor is calculated as the ratio of the electricity heat output to the sum of the electricity and steam heat outputs, where electricity heat output in MMBtu is the net generation MWh multiplied by 3.413 (a slight change in eGRID2007 (previously the conversion factor was 3.412) and steam heat output MMBtu is 0.75 multiplied by useful thermal output. If a plant reports (directly or indirectly) useful thermal output to both EIA-906/920 and EIA-767, the EIA-906/920 data are used.

If the useful thermal output is unknown, the electric allocation factor (ELCALLOC) is estimated given specific conditions. But, if there are non-zero values for both annual net generation and annual total heat input, an 8,500 Btu per kilowatt-hour (kWh) median plant nominal heat rate is assumed. Since actual heat rate equals (electric allocation factor multiplied by 1000 multiplied by heat input MMBtu) divided by (net generation MWh), then the electric allocation factor for CHP plants without a given useful thermal output is initially calculated as:

ELCALLOC = (8.5 * plant net generation MWh) / (unadjusted plant heat input MMBtu).

If, however, the plant's CHP prime mover has been designated steam and the heat rate is less than 22,747 Btu/kWh, then the electric allocation factor for the CHP plant is initially calculated as:

ELCALLOC = ((12.68 * plant net generation) / (unadjusted plant heat input)) - 0.17444.

For calculated electric allocation factors that fall below a specified minimum, additional adjustments are made as summarized in Table III-3 below.

Table III-3. Floors for Power to Heat Ratio and ELCALLOC

Type of CHP Prime Mover	Minimum ELCALLOC	Minimum Power to Heat Ratio
Coal or MWC Boilers	0.11765	0.10
All Other Boilers	0.06250	0.05
Gas Turbines	0.30556	0.33
Combined Cycles	0.47183	0.67
Internal Combustion Engines	0.40000	0.50

The CHP electric allocation "floors" were derived from an analysis of the theoretical power-to-heat ratio of different CHP technologies and the actual operating characteristics of existing CHP systems. The power-to-heat ratio is largely a function of the CHP prime mover, its efficiency, and the amount and temperature of heat available from the system. In addition, the reported operating characteristics of a large number of CHP facilities as reported in the DOE ORNL CHP database (EEA, 2007) were reviewed. The combination of theoretical and reported characteristics was used to establish the minimum values for the electric allocation factors.

9. Emission Rate Estimates

Both output and input emission rates are calculated for eGRID, beginning with the plant level of aggregation. In addition to emission values, annual and ozone season net generation and heat input values (adjusted heat input values if it is a CHP) are required for emission rate calculations.

a. Generation

Net generation, in MWh, is the amount of electricity produced by the generator and transmitted to the electric grid; it does not include any generation consumed by the plant. If the generation consumed by the plant is greater than the gross generation, negative net generation will occur and be displayed in eGRID; this can further result in negative emission rates.

Plant-fuel-prime mover net generation for all prime mover types can be obtained from the EIA-906/920. Steam generator unit level net generation can be obtained from the EIA-767, if reported. Nuclear generator unit level net generation can be obtained from the EIA-906.

For sampled plants with EIA-906/920 net generation or only EIA-767 generator net generation, generation is reported monthly and annually, so that ozone season generation is calculated by summing up the generation for the five months of May through September. If none of these sources provide monthly data, ozone season generation is calculated as 5/12 of the annual generation. If a plant reports generation to both EIA-906/920 and EIA-767, the EIA-906/920 data are used. In eGRID2007, for year 2005 data, an attempt has been made to provide generation for those plant-prime movers (or entire plants) that did not

report data to the EIA-906/920, yet did report emissions to the ETS/CEM and/or fuel use to the EIA-767 (from which emissions were calculated).

The following methodology was employed for obtaining year 2005 net generation data:

Plant level net generation

To determine plant level net generation, use EIA-906/920 plant-prime mover annual and ozone season MWh net generation, if available. If plant-prime mover net generation is also needed because there is CAMD non-zero reported emissions or EIA-767 non-zero estimated emissions without associated EIA-906/920 net generation, then use EIA-767 annual generation for all steam prime movers aggregated to the plant level, if available. If no EIA-767 data are available for this purpose, then use CAMD annual gross load multiplied by a prime mover-level factor found in Velocity Suite's data (Ventyx, 2007) for the specific unit(s) to estimate annual net generation MWh, aggregated to the plant level by prime mover. Otherwise, if net generation for that prime mover is zero, then the associated adjusted emissions is assigned a value of zero. Ozone season net generation for those plants/generators that report monthly to the EIA-906/920 or to the EIA-767, is calculated by summing the May through September net generation; for plants/units that report annually to the EIA-906/920 or to CAMD ETS/CEM, the ozone season net generation is calculated as 5/12 of annual net generation. Fuel type generation is taken care of in the EIA-906/920; for the selected EIA-767 and CAMD net generation, the fuel code of the primary fuel is used (see subsection F about resource mix).

Generator level net generation

To determine generator level net generation, use the EIA-767 generators' non-zero annual and ozone season net generation MWh for steam turbine (ST) and combine cycle steam turbine (CA) units, if available. Otherwise, use EIA-906/920 annual and ozone season net generation MWh for plants with one prime mover at a non-nuclear plant operating in year 2005. Additionally, for nuclear generators, use EIA-906 annual and ozone season net generation.

b. Heat Input

Heat input, in MMBtu, is the amount of heat energy consumed by a generating unit that combusts fuel. Annual boiler level heat input (MMBtu) for eGRID is initially obtained from ETS/CEM reported data. If these data are unavailable, heat input is calculated by multiplying the fuel consumption by the heat content from the EIA-767; otherwise, heat input is obtained directly from the EIA-906/920. The component parts (unit and prime mover levels) are then summed to the plant level.

EPA provides ozone season ETS/CEM heat input for some units that do not report annual heat input or emissions. For purposes of eGRID, units with ETS/CEM ozone season data are included only if annual ETS/CEM heat input is non-zero. (For eGRID2007 year 2005 data, Hay Road 1 and 2 are exceptions to this rule.) Otherwise, for sampled plants with EIA-906/920 heat input or only EIA-767 boiler calculated heat input, heat input or fuel use/heat content is reported monthly and annually. If available, the ozone season generation is calculated by summing up the data for the five months of May through September. If none of these sources provide monthly data, then ozone season heat input is calculated as 5/12 of the annual heat input. If a plant reports heat input or data to calculate heat input for the same prime mover to EIA-906/920 and/or EIA-767 and/or CAMD ETS/CEM, the CAMD ETS/CEM data are used first, the EIA-767 data are used second, and the EIA-906/920 data are used last. If the sources are different for different components of the plant, then the heat input data are summed for the plant.

c. Rates

The units for output emission rates are lb/MWh for SO_2, NO_x, and CO_2, and lb/GWh for Hg, CH_4, and N_2O. These rates are calculated as the emissions divided by the net generation and multiplied by a unit conversion factor. For input emission rates, the units are lb/MMBtu for SO_2, NO_x, and CO_2, and lb/BBtu for Hg; CH_4, and N_2O; these rates are calculated as the emissions divided by the heat input and multiplied by a unit conversion factor.

i. Fuel-based Emission Rates

Beginning at the State level, coal, oil, gas, and fossil fuel output and input emission rates are calculated based on plants' fossil fuel category, which in turn is based on the plants' primary fuel (see subsection E). If a plant's primary fuel is in the coal, oil, or gas category, then all of its adjusted emissions and heat input, and generation are included in the respective aggregation level for that fuel category. For example, all plants whose primary fuel is in the coal category and who are located in Alabama will have their emissions, heat input, and generation summed and then the appropriate calculations will be applied to determine the fuel-based output and input emission rates for Alabama.

New for year 2005 data in eGRID2007, the fossil fuel category will include not only coal, oil, and gas, but also other fossil fuels. See Table III-4 for a list of primary fuels and fuel categories.

ii. Non-baseload Emission Rates

Beginning at the State level, there are seven annual non-baseload emission rates which are the annual output emission rates for plants that combust fuel and have capacity factors less than 0.8, weighted by generation and a percent of generation determined by capacity factor. These data values are derived from plant level data and supplement, rather than replace, the fossil fuel output emission rates, which are sometimes used as a rough estimate to determine how much emissions could be avoided if energy efficiency and/or renewable energy displaces fossil fuel generation. These non-baseload output emission rates would somewhat improve this rough estimate by factoring out baseload generation, which is generally unaffected by measures that affect marginal generation.

The plant level capacity factor is used as a surrogate for determining how much non-baseload generation and emissions occur at each facility. Although there are reasons that can influence a particular plant's capacity factor besides dispatch or load order (e.g., repairs, etc.), capacity factor is being used as a surrogate for dispatch-order for this calculation. The non-baseload information is published in eGRID just at the aggregate level (State, PCA, etc.), and not for individual plants.

The following describes the procedure used to generate these non-baseload emission rates. The emission rates are determined starting with plant level data. First, all generation from resources that do not combust fuel is removed from each plant. Plants with 100% hydro, nuclear, wind, solar, and/or geothermal generation are removed from the non-baseload calculation. For any plants that have partial generation from the combustion of fuel, the emissions from the plant are retained and the generation from resources that do not combust fuel is subtracted out for this calculation, and the plant's output emission rate is recalculated. Next, a capacity factor relationship is used to determine the percent of the plant's generation and emissions to be considered non-baseload generation. All generation at plants with low capacity factors (greater than 0.0 and less than 0.2) would be considered non-baseload. No generation at plants with high capacity factors (0.8 and greater) would be considered non-baseload generation. No generation at plants with negative generation from combustion sources would be considered non-baseload generation. A linear relationship would determine the percent generation that is non-baseload at plants

with capacity factors between these 0.2 and 0.8. The non-baseload generation of each plant is multiplied by the plant's output emission rate, to determine the non-baseload emissions. Finally, the total non-baseload generation and the total non-baseload emissions are summed up at each level of aggregation (State, EGCs, parent companies, PCA, eGRID subregion, NERC region, and U.S. Total) and are used to calculate the non-baseload output emission rates.

eGRID non-baseload values can be useful when attempting to estimate the emissions benefits of reductions in electricity use. For example, if one is interested in estimating the carbon dioxide emission reductions associated with the installation of energy efficient equipment or products (e.g. and ENERGYSTAR heating, ventilating, and air conditioning (HVAC) system); or the installation of building envelop technologies (e.g. sealing air leaks and insulation improvements), then one could use the eGRID subregion non-baseload CO_2 output emission rate and the expected or actual energy savings resulting from the installation to estimate the CO_2 emission reductions. Non-baseload values may be less appropriate when attempting to determine the emissions benefits of some intermittent resources, such as wind power. Non-baseload values should not be used for assigning an emission value for electricity use in carbon-footprinting exercises or GHG emissions inventory efforts.

iii. Combustion Emission Rates

New for year 2005 data in eGRID2007 and beginning at the plant level, are combustion output emission rates for all pollutants. Whereas the generation used in the denominator for calculating the traditional output emission rate is the total net generation, the denominator used for calculating the combustion output emission rate is the net generation associated with emissions, namely, the combustion generation only. Thus, generation from nuclear, hydro, geothermal, solar, and wind will not be included in the calculation of this rate.

D. TREATMENT OF PLANT OWNERSHIP

The owner(s) and operator of a plant are tracked for eGRID using daily and bi-weekly trade press releases as well as EIA's Electric Power Monthly's "Plants Sold and Transferred" table. This information, through December 2007, overrides and updates any ownership and/or operator information provided in the 2006 EIA-860. Since ownership is reported in eGRID only on the plant level, but in the EIA-860 on the generator level, the generators' owner companies and percentages must be aggregated to the plant level, which is accomplished for each plant by MW-weighting each generator's ownership and then summing to the plant level.

Unfortunately, there are some plants for which this methodology will result in misleading percentages. For example, if one company owns only one of several generators and that one generator is connected to a "clean" boiler that has emissions whose ratio to the entire plant's emissions is much less than its MW's ratio to the entire plant's MW, that one company will, because of its MW-to-plant MW ratio, have a higher plant ownership percentage attributed to it than its actual emissions plant percentage; thus, that company will be associated with greater emissions and generation than it actually has.

This situation is not typical since most plants do not have "jointly owned" generators or different owners for all the plant's generators. It affects only some plants and companies and some percentage of emissions and generation associations in this situation. One example that does not benefit from this methodology is Ohio's Cardinal plant (ORISPL = 2828) which has three generators and three boilers, associated on a one-to-one basis. Each generator has about the same nameplate capacity. One generator is owned by Ohio Power, and two by Buckeye Power Inc. The Cardinal plant ownership is approximately 33% Ohio Power and 67% Buckeye, so 67% of the plant emissions would be attributable to Buckeye

Power using eGRID methodology. However, the SO_2 emissions for the two boilers associated with Buckeye's two generators combined are only about 60% of the Cardinal plant's SO_2 emissions total. Note that these misleading emission proportions for SO_2 are not duplicated for Cardinal's NO_x or CO_2 emissions.

E. DETERMINATION OF PLANT PRIMARY FUEL

The primary fuel of a plant that consumes any amount of combustible fuel is determined solely by the fuel that has the maximum heat input for year 2005 data. This is different from eGRID2006's year 2004 data in two respects. For year 2004 data, if any type of coal was consumed, then coal was the plant's primary fuel; and the ETS/CEM primary fuel designation was used in eGRID for ETS/CEM units. For year 2005 data, there is now a coal flag, which indicates whether any coal is burned at the plant; this is helpful if the primary fuel is not a coal type.

For plants that do not consume any combustible fuel, the primary "fuel" is determined by the resource associated with the prime mover (nuclear, solar, wind, geothermal, or hydro/pumped storage) with the maximum generation associated with that prime mover.

The possible original fuel codes and fuel categories for the plant primary fuel data variable (PLPRMFL in the eGRID plant file) are as shown in Table III-4 below.

Table III-4. Plant Primary Fuel

Fuel Code	Description	Fuel Category	Fuel Group
AB	Agricultural byproducts	Biomass	Solid fuel
BLQ	Black liquor	Biomass	Solid fuel
DG	Digester gas	Biomass	Gaseous fuel
LFG	Landfill gas	Biomass	Gaseous fuel
ME	Methane	Biomass	Gaseous fuel
MSB	MSW biomass component	Biomass	Solid fuel
OBL	Other biomass liquid	Biomass	Liquid fuel
OBS	Other biomass solids	Biomass	Solid fuel
PP	Paper pellets	Biomass	Solid fuel
SLW	Sludge waste	Biomass	Solid fuel
WDL	Wood, wood waste liquids	Biomass	Liquid fuel
WDS	Wood, wood waste solids	Biomass	Solid fuel
BIT	Bituminous coal	Coal	Solid fuel
LIG	Lignite coal	Coal	Solid fuel
SUB	Subbituminous coal	Coal	Solid fuel
SC	Syncoal	Coal	Solid fuel
WC	Waste coal	Coal	Solid fuel
NG	Natural gas	Gas	Gaseous fuel
PG	Propane gas/LPG	Gas	Gaseous fuel
DFO	Distillate/diesel oil	Oil	Liquid fuel
JF	Jet fuel	Oil	Liquid fuel
KER	Kerosene	Oil	Liquid fuel
OOL	Other oil	Oil	Liquid fuel
PC	Petroleum coke	Oil	Solid fuel
RG	Refinery gas	Oil	Gaseous fuel
RFO	Residual oil	Oil	Liquid fuel
WO	Waste oil	Oil	Liquid fuel
BFG	Blast furnace gas	Other fossil	Gaseous fuel

Table III-4 (continued).

Fuel Code	Description	Fuel Category	Fuel Group
COG	Coke oven gas	Other fossil	Gaseous fuel
HY	Hydrogen	Other fossil	Gaseous fuel
LB	Liquid byproducts	Other fossil	Liquid fuel
MH	Methanol	Other fossil	Liquid fuel
MSF	MSW other fossil part	Other fossil	Solid fuel
OG	Other gas	Other fossil	Gaseous fuel
PRG	Process gas	Other fossil	Gaseous fuel
TDF	Tire-derived fuel	Other fossil	Solid fuel

Note that since solid waste plants are broken down into biomass and fossil components, a solid waste plant will have "MSB" as the primary fuel.

F. ESTIMATION OF RESOURCE MIX

Resource mix is a collection of nonrenewable and renewable resources that are used to generate electricity. Nonrenewable resources include fossil fuels (e.g., coal, oil, natural gas, and other fossil) and nuclear energy source; renewable energy resources include biomass, solar, wind, geothermal, and hydro. A percentage is assigned to each resource or group of resources. Resource mix is displayed in eGRID and expressed in both MWh and generation percent.

For cases in which there is only one fuel and its generation is negative, that fuel's generation percent is assigned 100%. For cases in which there are fuels with both negative and positive net generation, the generation percents only include the positive generation in both the denominator and numerator. For cases in which there are only two fuels and both net generations are negative, both fuels' generation percents are assigned 0%.

For the three grouped aggregate categories – total net generation from nonrenewable, total net generation from all renewables, and total net generation from renewables minus hydro, the sum of the total net generation from renewables and from all nonrenewables equals the total net generation. In cases for which there is both positive and negative fuel generation in the nonrenewables category (it is unlikely to happen in the renewables category), the category percentages may be misleading since only the positive generation components are considered in calculating the generation percents for total renewables and nonrenewables. Similarly, for the two grouped aggregated categories of combustion net generation and noncombustion net generation, their sum equals the total net generation. For cases in which there is more than one negative nonrenewables (or combustion) net generation value and there is no renewables (or noncombustion) net generation, the total nonrenewables (or combustion) resource mix is assigned 100 %.

eGRID plant resource mix and net generation are derived from the EIA-906/920, which provides the information on a plant-prime mover-fuel level. However, there are some cases for which only the EIA-767 or the CAMD ETS/CEM generation are available for use in eGRID. In these cases, the plant's primary fuel (based on the maximum heat input value) is assigned 100% of the generation for the resource mix. As a result, there may be a few eGRID plants that did not report generation to the EIA-906/920 that burned some coal (but coal is not the primary fuel), that have its COALFLAG = 1, yet there is no coal generation displayed; or vice versa.

G. DETERMINATION OF PLANT AGGREGATION LINKS

The plant's State, operator, and owner(s), as well as the utility service area EGC (for nonutility plants), are already associated with each plant, based on EIA data that have been updated to correct known errors and to reflect 2007 industry configuration.

1. Power Control Area

A Power Control Area (PCA) (or Balancing Authority, as NERC terms it) is a portion of an integrated power grid for which a single dispatcher has operational control of all electric generators. PCAs range in size from small municipal utilities such as Columbia Water & Light (MO), to large power pools such as PJM Interconnection. In Alaska, isolated electric utility systems which are not part of an integrated power grid have been grouped into a nominal PCA called "Alaska Misc." In Hawaii, isolated electric utility systems which are not part of an integrated power grid, have been grouped into a nominal PCA called "Hawaii Misc."

For utility plants, a location (operator)-based PCA includes all generating plants operated by electric generating companies whose system is dispatched by that power control area, including portions of generating plants owned by generating companies outside the control area. For nonutility plants, PCAs are generally assigned according to the utility service area in which the nonutility plant is physically located. See Section IV for further information about PCAs.

The PCA associated with a plant is determined by the utility/regulated EGC (not parent company) associated with the plant. At present, there is not one Federal file that can be used to link 2006 utility EGCs with their PCAs. There is an association between utility EGC and PCA reported in the 2006 EIA-861 data (EIA, 2007b), but the relationship and entities involved reflect year 2006 industry configurations, and is, thus, only partially useful for eGRID2007, whose plants' owners and operator have been updated to reflect 2007 industry configuration. Additionally, the eGRID PCAs have been updated and reported by the North American Electric Reliability Corporation (NERC), too, to reflect a 2007 configuration (NERC, 2008).

For eGRID purposes, with a few exceptions (for a list of the exceptions, see Section IV), if the plant's operator EGC is a utility, then it is used as the link to the PCA; otherwise, the plant's utility service area, a utility EGC, is used determine the nonutility plant's PCA. (A utility service area is determined by the geographic region within which an electric utility has a franchise to sell electricity subject to regulation by State and/or Federal ratemaking authorities.)

Although the utility service area data provide by EIA has been updated by EPA, in some cases, it is a best guess.

2. NERC Region

NERC region refers to a region designated by the North American Electric Reliability Corporation (NERC). Each NERC region listed in eGRID represents one of ten regional portions of the North American electricity transmission grid: eight in the contiguous United States, plus Alaska and Hawaii (which are not part of the formal NERC regions, but are considered so in eGRID). The ten NERC region names and their acronyms for eGRID are as follows:

- Alaska Systems Coordinating Council (ASCC),
- Florida Reliability Coordinating Council (FRCC),

- Hawaiian Islands Coordinating Council (HICC),
- Midwest Reliability Organization (MRO),
- Northeast Power Coordinating Council (NPCC),
- Reliability First Corporation (RFC),
- SERC Reliability Corporation (SERC),
- Southwest Power Pool (SPP),
- Texas Regional Entity (TRE) (previously ERCOT), and
- Western Electricity Coordinating Council (WECC).

Although some NERC regions include portions of Canada and/or Mexico that are integrated with U.S. grids, eGRID data are limited to generation within the United States. See Section IV for further information about NERC regions.

The PCA link to the NERC region has been determined by NERC. The plant's associated PCA determines the plant's associated NERC region, except for the PJM Interconnection PCA, which has plants in two NERC regions. The relationship between PCAs and NERC regions as of December 31, 2007 is displayed below in Table III-5.

Table III-5. PCA-NERC Region Relationship

PCA Name	NERC Name
Alabama Electric Cooperative, Inc.	SERC Reliability Corporation
Alaska Misc	Alaska Systems Coordinating Council
Alliant Energy - CA – ALTE	Midwest Reliability Organization
Alliant Energy - CA – ALTW	Midwest Reliability Organization
Ameren – Illinois (reconfigured)	SERC Reliability Corporation
Ameren – Missouri (reconfigured)	SERC Reliability Corporation
Anchorage, Municipality of	Alaska Systems Coordinating Council
Aquila Networks – MPS	Southwest Power Pool
Aquila Networks – WPK	Southwest Power Pool
Arizona Public Service Company	Western Electricity Coordinating Council
Associated Electric Cooperative, Inc.	SERC Reliability Corporation
Avista Corp.	Western Electricity Coordinating Council
Big Rivers Electric Corp.	SERC Reliability Corporation
Board of Public Utilities	Southwest Power Pool
Bonneville Power Administration	Western Electricity Coordinating Council
California Independent System Operator	Western Electricity Coordinating Council
Central and Southwest	Southwest Power Pool
Chugach Electric Association Inc.	Alaska Systems Coordinating Council
Cinergy Corporation	Reliability First Corporation
City of Homestead	Florida Reliability Coordinating Council
City of Independence Missouri	Southwest Power Pool
City of Lafayette	Southwest Power Pool
City of Tallahassee	Florida Reliability Coordinating Council
City Water Light & Power (moved from RFC to SERC)	SERC Reliability Corporation
Cleco Corporation, Inc.	Southwest Power Pool
Columbia Water & Light	SERC Reliability Corporation
Dairyland Power Cooperative	Midwest Reliability Organization
Duke Power Company	SERC Reliability Corporation
East Kentucky Power Cooperative, Inc.	SERC Reliability Corporation
El Paso Electric Company	Western Electricity Coordinating Council

Table III-5 (continued).

PCA Name	NERC Name
Empire District Electric Co., The	Southwest Power Pool
Entergy Services, Inc.	SERC Reliability Corporation
EON (formerly LG&E Energy Transmission Services)	SERC Reliability Corporation
ERCOT ISO	Texas Regional Entity (formerly named ERCOT)
First Energy Corp.	Reliability First Corporation
Florida Municipal Power Pool	Florida Reliability Coordinating Council
Florida Power & Light	Florida Reliability Coordinating Council
Florida Power Corporation	Florida Reliability Coordinating Council
Gainesville Regional Utilities	Florida Reliability Coordinating Council
Golden Valley Elec Assn Inc	Alaska Systems Coordinating Council
Grand River Dam Authority	Southwest Power Pool
Great River Energy	Midwest Reliability Organization
Hawaii Electric Light Co., Inc	Hawaiian Islands Coordinating Council
Hawaii Misc	Hawaiian Islands Coordinating Council
Hawaiian Electric Co Inc	Hawaiian Islands Coordinating Council
Hoosier Energy	Reliability First Corporation
Idaho Power Company	Western Electricity Coordinating Council
Imperial Irrigation District	Western Electricity Coordinating Council
Indianapolis Power & Light Company	Reliability First Corporation
ISO New England Inc.	Northeast Power Coordinating Council
JEA	Florida Reliability Coordinating Council
Kansas City Power & Light, Co	Southwest Power Pool
Lincoln Electric System	Midwest Reliability Organization
Los Angeles Department of Water and Power	Western Electricity Coordinating Council
Louisiana Energy & Power Authority	Southwest Power Pool
Louisiana Generating, LLC	SERC Reliability Corporation
Madison Gas and Electric Company	Midwest Reliability Organization
Maritime Area	Northeast Power Coordinating Council
Michigan Electric Coordinated Systems	Reliability First Corporation
MidAmerican Energy Company	Midwest Reliability Organization
Minnesota Power, Inc.	Midwest Reliability Organization
Muscatine Power and Water	Midwest Reliability Organization
Nebraska Public Power District	Midwest Reliability Organization
Nevada Power Company	Western Electricity Coordinating Council
New York Independent System Operator	Northeast Power Coordinating Council
Northern Indiana Public Service Company	Reliability First Corporation
Northern States Power Company	Midwest Reliability Organization
Ohio Valley Electric Corporation	Reliability First Corporation
Oklahoma Gas and Electric	Southwest Power Pool
Omaha Public Power District	Midwest Reliability Organization
Otter Tail Power Company	Midwest Reliability Organization
PacifiCorp-East	Western Electricity Coordinating Council
PacifiCorp-West	Western Electricity Coordinating Council
PJM Interconnection	Reliability First Corporation
PJM Interconnection	SERC Reliability Corporation
Portland General Electric Company	Western Electricity Coordinating Council
Progress Energy Carolinas – EAST	SERC Reliability Corporation
Public Service Company of Colorado	Western Electricity Coordinating Council
Public Service Company of New Mexico	Western Electricity Coordinating Council

Table III-5 (continued).

PCA Name	NERC Name
PUD No. 1 of Chelan County	Western Electricity Coordinating Council
PUD No. 1 of Douglas County	Western Electricity Coordinating Council
PUD No. 2 of Grant County	Western Electricity Coordinating Council
Puget Sound Energy	Western Electricity Coordinating Council
Salt River Project	Western Electricity Coordinating Council
Seattle Department of Lighting	Western Electricity Coordinating Council
Seminole Electric Cooperative	Florida Reliability Coordinating Council
Sierra Pacific Power Company	Western Electricity Coordinating Council
South Carolina Electric & Gas Company	SERC Reliability Corporation
South Carolina Public Service Authority (Santee Co)	SERC Reliability Corporation
South Mississippi Electric Power Association	SERC Reliability Corporation
Southeastern Power Administration – Hartwell	SERC Reliability Corporation
Southern Company Services, Inc.	SERC Reliability Corporation
Southern Illinois Power Cooperative	SERC Reliability Corporation
Southern Indiana Gas & Electric Co.	Reliability First Corporation
Southern Minnesota Municipal Power Agency	Midwest Reliability Organization
Southwestern Power Administration	Southwest Power Pool
Southwestern Public Service Company	Southwest Power Pool
Sunflower Electric Power Corporation	Southwest Power Pool
Tacoma Power	Western Electricity Coordinating Council
Tampa Electric Company	Florida Reliability Coordinating Council
Tennessee Valley Authority	SERC Reliability Corporation
Tucson Electric Power Company	Western Electricity Coordinating Council
Turlock Irrigation District (new in eGRID2007)	Western Electricity Coordinating Council
Upper Peninsula Power Co.	Midwest Reliability Organization
Utilities Commission, City of New Smyrna Beach	Florida Reliability Coordinating Council
WAPA - Colorado-Missouri	Western Electricity Coordinating Council
WAPA - Lower Colorado	Western Electricity Coordinating Council
WAPA - Upper Great Plains East	Midwest Reliability Organization
WAPA - Upper Great Plains West	Western Electricity Coordinating Council
Western Farmers Electric Cooperative	Southwest Power Pool
Western Resources dba Westar Energy	Southwest Power Pool
Wisconsin Energy Corporation	Reliability First Corporation
Wisconsin Public Service Corporation	Midwest Reliability Organization

A representation of the NERC region map used for eGRID2007 is included in Appendix B.

3. eGRID Subregion

eGRID subregions are identified and defined by EPA – using the 2007 NERC regions and PCAs as a guide – along with the older eGRID subregions. An eGRID subregion is often, but not always, equivalent to an Integrated Planning Model (IPM) subregion. The 26 eGRID subregions are subsets of the NERC regions as configured on December 31, 2007. The plant's associated PCA determines the plant's associated eGRID subregion, which is defined as a subset of the NERC region and is composed of entire PCAs, with the exception of PJM Interconnection and New York Independent System Operator PCAs (each is associated with three eGRID subregions). See Section IV for further information about eGRID subregions. The 26 eGRID subregion names and their acronyms are as follows:

- ASCC Miscellaneous (AKMS)
- ASCC Alaska Grid (AKGD)
- ERCOT All (ERCT)
- FRCC All (FRCC)
- HICC Miscellaneous (HIMS)
- HICC Oahu (HIOA)
- MRO East (MROE)
- MRO West (MROW)
- NPCC Long Island (NYLI)
- NPCC NYC/Westchester (NYCW)
- NPCC New England (NEWE)
- NPCC Upstate NY (NYUP)
- RFC East (RFCE)
- RFC Michigan (RFCM)
- RFC West (RFCW)
- SERC Midwest (SRMW)
- SERC Mississippi Valley (SRMV)
- SERC South (SRSO)
- SERC Tennessee Valley (SRTV)
- SERC Virginia/Carolina (SRVC)
- SPP North (SPNO)
- SPP South (SPSO)
- WECC California (CAMX)
- WECC Northwest (NWPP)
- WECC Rockies (RMPA)
- WECC Southwest (AZNM)

The relationship among PCAs, eGRID subregions, and NERC regions, as of December 31, 2007, is depicted in Table III-6 below.

Table III-6. PCA-eGRID Subregion – NERC Region Relationship

PCA Name	eGRID Subregion Name	NERC Region
Alabama Electric Cooperative, Inc.	SERC South	SERC
Alaska Misc	ASCC Miscellaneous	ASCC
Alliant Energy - CA – ALTE	MRO East	MRO
Alliant Energy - CA – ALTW	MRO West	MRO
Ameren - Illinois (formerly the IL part of Ameren Transmission Central Illinois Light Co., and Illinois Power PCAs)	SERC Midwest	SERC
Ameren - Missouri (formerly the MO part of Ameren Transmission)	SERC Midwest	SERC
Anchorage, Municipality of	ASCC Alaska Grid	ASCC
Aquila Networks – MPS	SPP North	SPP
Aquila Networks – WPK	SPP North	SPP
Arizona Public Service Company	WECC Southwest	WECC
Associated Electric Cooperative, Inc.	SERC Midwest	SERC
Avista Corp.	WECC Northwest	WECC
Big Rivers Electric Corp.	SERC Tennessee Valley	SERC
Board of Public Utilities	SPP North	SPP
Bonneville Power Administration	WECC Northwest	WECC
California Independent System Operator	WECC California	WECC

Table III-6 (continued).

PCA Name	eGRID Subregion Name	NERC Region
Central and Southwest	SPP South	SPP
Chugach Electric Assn Inc	ASCC Alaska Grid	ASCC
Cinergy Corporation	RFC West	RFC
City of Homestead	FRCC All	FRCC
City of Independence Missouri	SPP North	SPP
City of Lafayette	SPP South	SPP
City of Tallahassee	FRCC All	FRCC
City Water Light & Power (moved from RFC to SERC)	SERC Mississippi Valley	SERC
Cleco Corporation, Inc.	SPP South	SPP
Columbia Water & Light	SERC Midwest	SERC
Dairyland Power Cooperative	MRO West	MRO
Duke Power Company	SERC Virginia/Carolina	SERC
East Kentucky Power Cooperative, Inc.	SERC Tennessee Valley	SERC
El Paso Electric Company	WECC Southwest	WECC
Empire District Electric Co., The	SPP North	SPP
Entergy Services, Inc.	SERC Mississippi Valley	SERC
EON - US (formerly LG&E Energy Transmission Services)	SERC Tennessee Valley	SERC
ERCOT ISO	ERCOT All	TRE (new name)
First Energy Corp.	RFC West	RFC
Florida Municipal Power Pool	FRCC All	FRCC
Florida Power & Light	FRCC All	FRCC
Florida Power Corporation	FRCC All	FRCC
Gainesville Regional Utilities	FRCC All	FRCC
Golden Valley Elec Assn Inc	ASCC Alaska Grid	ASCC
Grand River Dam Authority	SPP South	SPP
Great River Energy	MRO West	MRO
Hawaii Electric Light Co., Inc	HICC Miscellaneous	HICC
Hawaii Misc	HICC Miscellaneous	HICC
Hawaiian Electric Co Inc	HICC Oahu	HICC
Hoosier Energy	RFC West	RFC
Idaho Power Company	WECC Northwest	WECC
Imperial Irrigation District	WECC Southwest	WECC
Indianapolis Power & Light Company	RFC West	RFC
ISO New England Inc.	NPCC New England	NPCC
JEA	FRCC All	FRCC
Kansas City Power & Light, Co	SPP North	SPP
Lincoln Electric System	MRO West	MRO
Los Angeles Department of Water and Power	WECC California	WECC
Louisiana Energy & Power Authority	SPP South	SPP
Louisiana Generating, LLC	SERC Mississippi Valley	SERC
Madison Gas and Electric Company	MRO East	MRO
Maritime Area	NPCC New England	NPCC
Michigan Electric Coordinated Systems	RFC Michigan	RFC
MidAmerican Energy Company	MRO West	MRO
Minnesota Power, Inc.	MRO West	MRO
Muscatine Power and Water	MRO West	MRO
Nebraska Public Power District	MRO West	MRO
Nevada Power Company	WECC Southwest	WECC
New York Independent System Operator	NPCC NYC/Westchester	NPCC
New York Independent System Operator	NPCC Long Island	NPCC
New York Independent System Operator	NPCC Upstate NY	NPCC
Northern Indiana Public Service Company	RFC West	RFC
Northern States Power Company	MRO West	MRO
Ohio Valley Electric Corporation	RFC West	RFC
Oklahoma Gas and Electric	SPP South	SPP

Table III-6 (continued).

PCA Name	eGRID Subregion Name	NERC Region
Omaha Public Power District	MRO West	MRO
Otter Tail Power Company	MRO West	MRO
PacifiCorp-East	WECC Northwest	WECC
PacifiCorp-West	WECC Northwest	WECC
PJM Interconnection	RFC East	RFC
PJM Interconnection	RFC West	RFC
PJM Interconnection	SERC Virginia/Carolina	SERC
Portland General Electric Company	WECC Northwest	WECC
Progress Energy Carolinas – EAST	SERC Virginia/Carolina	SERC
Public Service Company of Colorado	WECC Rockies	WECC
Public Service Company of New Mexico	WECC Southwest	WECC
PUD No. 1 of Chelan County	WECC Northwest	WECC
PUD No. 1 of Douglas County	WECC Northwest	WECC
PUD No. 2 of Grant County	WECC Northwest	WECC
Puget Sound Energy	WECC Northwest	WECC
Salt River Project	WECC Southwest	WECC
Seattle Department of Lighting	WECC Northwest	WECC
Seminole Electric Cooperative	FRCC All	FRCC
Sierra Pacific Power Company	WECC Northwest	WECC
South Carolina Electric & Gas Company	SERC Virginia/Carolina	SERC
South Carolina Public Service Authority (Santee Cooper)	SERC Virginia/Carolina	SERC
South Mississippi Electric Power Association	SERC South	SERC
Southeastern Power Administration – Hartwell	SERC Virginia/Carolina	SERC
Southern Company Services, Inc.	SERC South	SERC
Southern Illinois Power Cooperative	SERC Midwest	SERC
Southern Indiana Gas & Electric Co.	RFC West	RFC
Southern Minnesota Municipal Power Agency	MRO West	MRO
Southwestern Power Administration	SPP South	SPP
Southwestern Public Service Company	SPP South	SPP
Sunflower Electric Power Corporation	SPP North	SPP
Tacoma Power	WECC Northwest	WECC
Tampa Electric Company	FRCC All	FRCC
Tennessee Valley Authority	SERC Tennessee Valley	SERC
Tucson Electric Power Company	WECC Southwest	WECC
Turlock Irrigation District (new, separated from California Independent System Operator)	WECC California	WECC
Upper Peninsula Power Co.	MRO East	MRO
Utilities Commission, City of New Smyrna Beach	FRCC All	FRCC
WAPA - Colorado-Missouri	WECC Rockies	WECC
WAPA - Lower Colorado	WECC Southwest	WECC
WAPA - Upper Great Plains East	MRO West	MRO
WAPA - Upper Great Plains West	WECC Northwest	WECC
Western Farmers Electric Cooperative	SPP South	SPP
Western Resources dba Westar Energy	SPP North	SPP
Wisconsin Energy Corporation	RFC West	RFC
Wisconsin Public Service Corporation	MRO East	MRO

A representation of the eGRID subregion map used in eGRID2007 is included in Appendix B.

H. TREATMENT OF AGGREGATION LEVELS

All aggregation levels are based on the plant file. The State file data are developed by summing up the plant data (adjusted heat input, adjusted emissions, adjusted fuel-based emissions, net generation, fuel-based net generation, nameplate capacity, and the plant data values needed to calculate non-baseload

emission rates), based on the State in which the plant is located. The EGC (and parent company) location (operator)-based files are developed by summing up the plant data, based on the operator EGC (parent company, if it exists, of the operator EGC) of the plant. The PCA, eGRID subregion, and NERC region aggregations are done similarly, based on the plant data.

The EGC (and parent company) owner-based files are developed a bit differently from the location (operator)-based files, but using the same principles. If the owner EGC does not own 100% of the plant, it is not attributed with 100% of the plant's data. In particular, each of the owner EGCs (and parent company, if it exists, of the owner EGC) are attributed its ownership percent of each data element that is aggregated.

The totals from the plant, State, two EGC, PCA, eGRID subregion, NERC region, and U.S. files' adjusted heat input, adjusted emissions, adjusted fuel-based emissions, net generation, fuel-based net generation, and nameplate capacity data should be the same, after accounting for rounding. Some variables' totals in the EGC owner-based file may appear to differ from those in the other files because of ownership percent and rounding.

The totals from the two parent company files will be different from each other and different from the other eight files' since a plant is not necessarily associated with a location (operator)- and/or owner-based parent company.

SECTION IV. SPECIFIC eGRID ID AND NAME CHANGES AND ASSOCIATIONS

eGRID2007 generally uses ID codes (for plants, companies, etc.) assigned by EIA. However, identifiers (IDs) and certain corresponding names have been changed in eGRID2007 in order to minimize confusion. If needed, entities that do not have an EIA designated ID are assigned values in eGRID. The specifics are delineated below.

A. PLANT LEVEL

One plant, Laramie River Station (ORISPL = 6204) in Wyoming, has three boilers and generators that supply power to two different power grids. Consequently, the first boiler (1) has become a separate plant in eGRID2007 with a dummy ORISPL = 6204.1 because it is operated within a PCA that is in the Eastern grid; while the second and third boilers have become a separate plant with a dummy ORISPL = 6204.2 because they are operated within a PCA that is in the Western grid. This plant representation occurs in all editions of eGRID.

B. EGC, COMPANY LEVEL

EGCs, for purposes of eGRID files, are operators and owners of power plants for the given year. Each EGC has a unique code assigned by EIA, or by EPA for eGRID as described below.

Many eGRID EGCs, or companies, do not have a known ID code assigned by EIA, perhaps because they recently purchased or began to operate a plant. Thus, companies with unknown EIA EGC IDs are assigned a dummy negative three-digit EGC ID code beginning with -101.

Nonutility, or unregulated, companies that represent the same EGC are called nufronts in eGRID. They are grouped together under a nufront name and are given a dummy negative four-digit EGC ID code beginning with -1001. This practice began with the first edition of eGRID because there were so many individual companies that represented the same EGC but had a slightly different name or spelling of a name, and aggregation to the EGC level would have been meaningless if these separate EGCs were not related. Some nufronts are also parent company subsidiaries.

Additionally, some Ohio utility plants have more owners than they are able to report on the EIA-860, so eGRID has adopted their Ohio Municipal Electric Generation Agency (OMEGA) Joint Ventures categories that group these individual owners into OMEGA JV1, OMEGA JV2, OMEGA JV5, and OMEGA JV6 and uses these OMEGAJV names as single owners. These relationships have been updated for eGRID 2007 (AMP-Ohio, 2008).

Several other companies were broken up and given dummy IDs because the company operates in more than one power control area. These include:

- Basin Electric Power Coop (ID = 1307), which was broken up into two divisions: Basin Electric Power Coop-East (ID = 1307.1) and Basin Electric Power Coop-West (ID = 1307.2);
- Pacificorp (ID = 14354), which was broken up into two divisions: Pacificorp-Rocky Mtn (ID = 14354.1) and Pacificorp-Pacific (ID = 14354.2);
- Texas-New Mexico Power Co (ID = 40051), which was broken up into Texas-New Mexico Power Co-NM (ID = 40051.1) and Texas-New Mexico Power Co-TX (ID = 40051.2); and

- Aquila Inc (ID = 770), which was broken up into Aquila Networks Co-Colorado (ID = 770.1) and Aquila Networks-Missouri (ID = 770.3).

C. PARENT COMPANY LEVEL

Parent company refers to a company (such as a holding company) that owns one or more operating subsidiaries or divisions that generate electricity; it is not a legal definition. Data for parent companies are found in separate parent company spreadsheets, rather than in the company (EGC) spreadsheets. If eGRID breaks up an EGC (such as Pacificorp or Basin Electric) that operates in more than one PCA, the entire EGC is then also reunited and reported as a parent company. Federal entities (such as USBIA, USBR, and USCE) that consist of several EGCs are also treated as parent companies by eGRID. More detailed information about parent companies follows.

No parent company in eGRID has an assigned EIA ID, so eGRID assigns IDs of the form -7xxx.

The following EGCs, or companies (including some government agencies), which are divided at the company level, have been grouped as a single parent company at the parent company level and for eGRID purposes, are considered subsidiaries of parent companies:

- Aquila Inc (ID = -7062), which now includes one former Utilicorp United EGC division, Aquila Networks-Colorado (ID = 770.1), as well as the former Missouri Public Service Co, Aquila Networks-Missouri (ID = 770.3);
- Basin Electric Power Coop (ID = -7304), which includes two Basin Electric Power Coop EGC divisions (ID = 1307.1 and ID = 1307.2);
- Pacificorp (ID = 14354), which includes two Pacificorp EGC divisions (ID = 14354.1 and ID = 14354.2) absorbed by MidAmerican Energy Holdings Co parent company (ID = -7034);
- U.S. Army Corp of Engineers, USCE, (ID = -7059), which includes 14 EGCs that are divisions of the Corps of Engineers;
- U.S. Bureau of Indian Affairs, USBIA, (ID = -7060), which includes three EGCs that are divisions of the Bureau of Indian Affairs;
- U.S. Bureau of Reclamation (ID = -7061), which includes five EGCs that are divisions of the Bureau of Reclamation; and
- Northwestern Corp (ID = -7110), which includes Northwestern Energy (SD), EGC ID=13809 and Northwestern Energy (MT), EGC ID = 13902. These EGC IDs were both assigned to the same company name, but because of the different company headquarters, eGRID kept the EGCs separate.

D. POWER CONTROL AREA (PCA) and NERC REGION LEVELS

More detailed information about power control areas (PCA) and NERC regions follow.

There have only been a few changes to both NERC regions and PCAs from eGRID2006 to eGRID2007, as specified in Table III-5 and Table III-6.

Two PCAs have dummy (negative) codes since there are none available from EIA: -1 for Alaska Misc, and -2 for Hawaii Misc.

In eGRID, a PCA associated with a plant is determined first by its utility operator. If the plant is operated by a nonutility, then the associated utility service area (a utility company with a specified area close to the plant's location) determines the PCA. There are some plants in eGRID that display both a utility operator

and a different utility service area. For some cases in eGRID, the utility service area is used to determine the PCA because the operator's location seems to be too far away. The eleven plants for which the utility service area rather than the utility operator were used to determine the PCA are ORISPL = 127 (Oklaunion, TX), ORISPL = 887 (Joppa Steam, IL), ORISPL = 1391 (Louisiana 1, LA), ORISPL = 1392 (Louisiana 2, LA), ORISPL = 1574 (Conowingo, MD), ORISPL = 6018 (East Bend, KY), ORISPL = 7128 (William F Matson Generating Station , PA), ORISPL = 7158 (Woodsdale, OH), ORISPL = 55202 (Pinckneyville, IL), ORISPL = 55417 (Raccoon Creek Energy Center, IL), and ORISPL = 55496 (Goose Creek Energy Center, IL).

See a representation of the eGRID2007 NERC region map in Appendix B.

E. eGRID SUBREGION LEVEL

eGRID subregions are developed as subsets of NERC regions. In eGRID2002 and earlier, these grid regions were similar to EPA's IPM subregions (except for the New York and California areas). Many of these older subregions no longer exist since their NERC regions no longer exist. At this juncture, NERC has only defined subregions in the WECC NERC region. Thus, for the WECC NERC region and for those other NERC regions that did not change configuration, the newer eGRID subregions will remain. Definitions of the other newer eGRID subregions were made by EPA/CPPD after consultation with NERC staff.

See a representation of the eGRID2007 subregion map in Appendix B.

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SECTION V. DESCRIPTION OF DATA ELEMENTS

For year 2005 data, eGRID2007 has 12 aggregation files named BLR (boiler), GEN (generator), PLNT (plant), ST (State), EGCL (location (operator)-based EGC), EGCO (owner-based EGC), PRCL (location (operator)-based parent company), PRCO (owner-based parent company), PCAL (PCA), SRL (eGRID subregion), NRL (NERC region), and US (Unites States total). Appendix A provides file structures for the eGRID2007 2005 data year, which include variable descriptions and data sources. Definitions for like variables are not repeated after described in the plant file. For example, in the plant file, the net generation in MWh is defined at the plant level for the data element PLNGENAN. For each subsequent file, the net generation, nnNGENAN (where nn is ST, EG, PR, PC, SR, or NR) is not described in Appendix A; it is simply the sum of PLNGENAN attributed to the aggregation entity.

Descriptions of the 13th – 15th eGRID2007 files, the 2004 and 2005 Import-Export files and the U.S. Generation and Consumption file, are also included in this section.

A. THE BLR (BOILER) FILE

There are 34 variables in the first file, BLR, which contains unit level data. Note that summing the boiler unadjusted emissions to the plant level may not result in the same values as the plant unadjusted emissions since additional emissions from prime movers not covered by the ETS/CEM or EIA-767 data files may be included in the plant emissions values.

1. **eGRID2007 2005 File Boiler Sequence Number (SEQBLR05) –**
   The boiler records in this year 2005 data file are sorted by State postal code abbreviation, plant name, plant code, and boiler ID, and are assigned a unique sequential number beginning with 1. This sequence number is unlikely to be the same as the sequence number in the year 2004 eGRID file for the same entity.

2. **State Abbreviation (PSTATABB) –**
   This field contains the two character postal code abbreviation of the State in which the plant is located.
   Source: EIA-860

3. **Plant Name (PNAME) –**
   This field is the name associated with each plant.
   Source: EIA-860 + updates

4. **DOE/EIA ORIS Plant or Facility Code (ORISPL) –**
   This plant code corresponds to PNAME and was originally developed for power plants by the Office of the Regulatory Information System (ORIS), which was a part of the Federal Power Commission. It is now assigned by EIA and is used as a unique plant identification code for many EPA electric power databases, too. One plant code, that for Laramie River, has been altered. See Section IV for details.
   Source: EIA-860

5. **Boiler ID (BLRID) –**
   This field identifies the unit ID for the unit that produces the emissions. The unit may be a steam boiler, combustion turbine, or engine.
   Sources: ETS/CEM, EIA-767

6. Acid Rain Program Flag (ARPFLAG) –
This field indicates if the unit reports ETS/CEM data annually under Title IV of the Clean Air Act Amendments of 1990 as part of the Acid Rain Program (1=Yes).
Source: ETS/CEM

7. NO_x Budget Program Flag (NBPFLAG) –
This field indicates if the unit reports ETS/CEM data as part of the NO_x Budget Program (1=Yes).
Source: ETS/CEM

8. Boiler Bottom and Firing Types (BOTFIRTY) –
This field displays the boiler bottom type followed by the firing type.
Possible values are:

For bottom type:

	=	Blank
DRY	=	Dry bottom
WET	=	Wet bottom

For firing type:

	=	Blank
ARCH	=	Arch firing
CELL	=	Cell
CYCL	=	Cyclone firing
DUCT	=	Duct burner
FLUIDI	=	Fluidized bed firing
OTHBLR	=	Other boiler
OTHTRB	=	Other turbine
STOKER	=	Stoker
TANG	=	Tangential firing
TURBO	=	Turbo
VERT	=	Vertical firing
WALL	=	Wall

Source: ETS/CEM, EIA-767

9. Number of Associated Generators (NUMGEN) –
This field provides the number of generators associated with each EIA-767 boiler in the file.
Source: EIA-767 calculated

10. Primary Boiler Fuel (FUELB1) –
This field specifies the primary fuel determined from EIA-767 reported data or the primary fuel reported to EPA's ETS/CEM.
Possible values are:

AB	=	Agricultural byproducts
BFG	=	Blast furnace gas
BIT	=	Bituminous coal
BLQ	=	Black liquor
COG	=	Coke oven gas

DFO	=	Distillate, light fuel oil, FO2, diesel oil
DG	=	Digester gas (other biomass gases)
HY	=	Hydrogen
LFG	=	Landfill gas
LIG	=	Lignite coal
MSB	=	Municipal solid waste biomass component
NG	=	Natural gas
OG	=	Other gas
OOL	=	Other oil
PC	=	Petroleum coke
PRG	=	Process gas
RFO	=	Petroleum, heavy fuel oil, residual oil
RG	=	Refinery gas
SC	=	Synthetic coal (syncoal)
SLW	=	Sludge waste
SUB	=	Subbituminous coal
TDF	=	Tire-derived fuel
WC	=	Waste coal
WDL	=	Wood, wood waste liquids
WDS	=	Wood, wood waste solids
WO	=	Waste oil

Sources: EIA-767 based, ETS/CEM

11. Hours Connected to Load (LOADHRS) –
This field indicates the reported number of hours per year that the EIA-767 boiler operated.
Source: EIA-767

12 Boiler Unadjusted Annual ETS/CEM Heat Input (HTIEAN) –
This field, in MMBtu, is the unit's unadjusted annual total heat input assigned by EPA/CAMD, based on the values reported to EPA's ETS/CEM. When not available, it is zero.
Source: ETS/CEM

13. Boiler Unadjusted Ozone Season ETS/CEM Heat Input (HTIEOZ) –
This field, in MMBtu, is the unit's unadjusted ozone season (May through September) heat input, based on the values reported to EPA's ETS/CEM. When not available, it is zero.
Source: ETS/CEM

14 Boiler Unadjusted Annual Total EIA-Based Calculated Heat Input (HTIFAN) –
This field, in MMBtu, provides the boiler's unadjusted annual total heat input, calculated using EIA-767 data, when available. When not available, it is zero.

15. Boiler Unadjusted Ozone Season EIA-Based Calculated Heat Input (HTIFOZ) –
This field, in MMBtu, provides the boiler's unadjusted ozone season (May through September) heat input, calculated using EIA 767 based data, when available. If EIA-767 based ozone season data are not available, but EIA-767 based annual data are, then the value in this field is calculated as 5/12 of the annual value. Otherwise, the value is zero.

16. **Boiler Unadjusted Annual ETS/CEM NO_x Emissions (NOXEAN) –**
This field, in tons, is the unit's unadjusted NO_x emissions assigned by EPA/CAMD based on the values reported to EPA's ETS/CEM. When not available, it is zero.
Source: ETS/CEM

17. **Boiler Unadjusted Ozone Season ETS/CEM NO_x Emissions (NOXEOZ) –**
This field, in tons, is the unit's unadjusted ozone season (May through September) NO_x emissions based on values reported to EPA's ETS/CEM. When not available, it is zero.
Source: ETS/CEM

18. **Boiler Unadjusted Annual EIA-Based Calculated NO_x Emissions (NOXFAN) –**
This field, in tons, is the boiler's unadjusted annual NO_x emissions, calculated using EIA-767 reported data, when available, and the EPA-approved emission factors. When not available, it is zero.

19. **Boiler Unadjusted Ozone Season EIA-Based Calculated NO_x Emissions (NOXFOZ) –**
This field, in tons, is the boiler's unadjusted ozone season (May through September) NO_x emissions calculated from EIA-reported data and EPA-approved emission factors. If EIA-767- based ozone season data are not available, but EIA-767 based annual data are, then the value in this field is calculated as 5/12 of the annual value. Otherwise, the value is zero.

20. **Boiler Unadjusted Annual ETS/CEM SO_2 Emissions (SO2EAN) –**
This field, in tons, is the unit's unadjusted annual SO_2 emissions assigned by EPA/CAMD based on the values reported to EPA's ETS/CEM. When not available, it is zero. Delaware's Hay Road 1 and 2 (CCs) do not report annual SO_2 emissions since they are not in the ARP, so the emissions were estimated using fuel quantity (back calculated from reported ETS/CEM heat input and average hear content) and the appropriate EPA-approved emission factor.
Source: ETS/CEM

21. **Boiler Unadjusted Annual EIA-Based Calculated SO_2 Emissions (SO2FAN) –**
This field, in tons, is the boiler's unadjusted annual SO_2 emissions calculated using EIA-767 reported data, when available, and the EPA-approved emission factors. When not available, it is zero.

22. **Boiler Unadjusted Annual ETS/CEM CO_2 Emissions (CO2EAN) –**
This field, in tons, is the unit's unadjusted annual CO_2 emissions assigned by EPA/CAMD based on the values reported to EPA's ETS/CEM. Delaware's Hay Road 1 and 2 (CCs) do not report annual CO_2 emissions since they are not in the ARP, so the emissions were estimated using reported ETS/CEM heat input and the appropriate IPCC GHG carbon coefficient. When not available, it is zero. If the fuel for this boiler is biomass, the CO_2 emissions are assigned a zero value (see the Methodology Section for the rationale for biomass adjustments for CO_2).
Source: ETS/CEM

23. **Boiler Unadjusted Annual EIA-Based Calculated CO_2 Emissions (CO2FAN) –**
This field, in tons, is the boiler's unadjusted annual CO_2 emissions calculated using EIA-767 reported data, when available, and IPCC GHG carbon coefficients. When not

available, it is zero. If the fuel for this boiler is biomass, the CO_2 emissions are assigned a zero value (see the Methodology Section).

24. Source of "Best" Data from ETS/CEM or EIA-767 (SRCBEST) –
This field describes the one source of the "best" variables (HTIBAN, NOXBAN, SO2BAN, CO2BAN, HTIBOZ, NOXBOZ) – either ETS/CEM or EIA-767.

25. Boiler Unadjusted Annual Best Heat Input (HTIBAN) –
This field, in MMBtu, contains the "best" unadjusted annual heat input value by taking HTIEAN as its value, if it exists; otherwise, HTIFAN's value is used.

26. Boiler Unadjusted Ozone Season Best Heat Input (HTIBOZ) –
This field, in MMBtu, contains the "best" unadjusted ozone season (May through September) heat input value by taking HTIEOZ as its value, if it exists; otherwise, HTIFOZ's value is used.

27. Boiler Unadjusted Annual Best NO_x Emissions (NOXBAN) –
This field, in tons, contains the "best" unadjusted annual NO_x value by taking NOXEAN as its value, if it exists; otherwise NOXFAN's value is used.

28. Boiler Unadjusted Ozone Season Best NO_x Emissions (NOXBOZ) –
This field, in tons, contains the "best" unadjusted ozone season (May through September) NO_x value by taking NOXEOZ as its value, if it exists; otherwise NOXFOZ's value is used.

29. Boiler Unadjusted Annual Best SO_2 Emissions (SO2BAN) –
This field, in tons, contains the "best" unadjusted annual SO_2 value by taking SO2EAN as its value, if it exists; otherwise SO2FAN's value is used.

30. Boiler Unadjusted Annual Best CO_2 Emissions (CO2BAN) –
This field, in tons, contains the "best" unadjusted annual CO_2 value by taking CO2EAN as its value, if it exists; otherwise CO2FAN's value is used.

31. SO_2 (Scrubber) First Control Device (SO2CTLDV) –
This field contains the first reported SO_2 control device. Values may be combined and separated by commas.
Possible values are:

BR = Jet bubbling reactor
CD = Circulating dry scrubber
DA = Dual alkali
DL FGD = Dry lime flue gas desulfurization unit
FBL = Fluidized bed
MA = Mechanically aided type
MO = Magnesium oxide
OT = Other
PA = Packed type
SB = Sodium based
SD = Spray dryer type
SP = Spray type
TR = Tray type

VE = Venturi type
WL FGD = Wet lime flue gas desulfurization unit
WLS = Wet limestone

Sources: ETS/CEM, EIA-767

32. NO_x First Control Device (NOXCTLDV) –

This field contains the first reported NO_x control device. Values may be combined and separated by commas.
Possible values are:

AA = Advanced overfire air
BF = Biased firing
CF = Fluidized bed combustor
CM = Combustion modification/fuel reburning
DLNB = Dry low NO_x premixed technology
FR = Flue gas recirculation
FU = Fuel reburning
H2O = Water injection
LA = Low excess air
LNB or LN = Low NO_x burner
LNBO = Low NO_x burner with overfire air
LNC1 = Low NO_x burner technology with close-coupled overfire air
LNC2 = Low NO_x burner technology with separated OFA
LNC3 = Low NO_x burner technology with close-coupled and separated overfire air
LNCB = Low NO_x burner technology for cell burners
NH3 = Ammonia injection
OT = Other
OFA or OV = Overfire air
SC = Slagging
SCR or SR = Selective catalytic reduction
SNCR or SN = Selective noncatalytic reduction
STM = Steam injection

Sources: ETS/CEM, EIA-767

33. Hg Activated Carbon Injected System Flag (HGCTLDV) –

This field contains an activated carbon injection mercury control flag (1=Yes).
Source: EIA-767

34. Boiler Year On-Line (BLRYRONL) –

The field provides the four digit boiler year on-line.
Source: ETS/CEM, EIA-767

B. THE GEN (GENERATOR) FILE

There are 15 variables in the second file, GEN, which contains generator level data. Note that summing the generator generation to the plant level may not result in the same values as the plant generation. This file includes generation from generators in the EIA-767, from nuclear units in the EIA-906/920, and from those plant-prime movers in the EIA-906/920 that have only one generator in the EIA-860. The source of generation in the plant file is primarily the EIA-906/920.

1. eGRID2007 2005 File Generator Sequence Number (SEQGEN05) –
The generator records in this year 2005 data file are sorted by State postal code abbreviation, plant name, plant code, and generator ID, and are assigned a unique sequential number beginning with 1. This sequence number is unlikely to be the same as the sequence number in the year 2004 eGRID file for the same entity.

2. State Abbreviation (PSTATABB) –
This field contains the two character postal code abbreviation of the State in which the plant is located.
Source: EIA-860

3. Plant Name (PNAME) –
This field is the name associated with each plant.
Source: EIA-860 + updates

4. DOE/EIA ORIS Plant or Facility Code (ORISPL) –
This plant code corresponds to PNAME and was originally developed for power plants by the Office of the Regulatory Information System (ORIS), which was a part of the Federal Power Commission. It is now assigned by EIA and is used as a unique plant identification code for many EPA electric power databases, too. One plant code, that for Laramie River, has been altered. See Section IV for details.
Source: EIA-860

5. Generator ID (GENID) –
This field identifies the electrical generation unit (generator). In the majority of cases, there is a 1-to-1 correspondence with the boiler ID if it is a steam generator.
Sources: EIA-860, EIA-767

6. Number of Associated Boilers (NUMBLR) –
This field provides the number of EIA-767 boilers associated with each generator in the file.
Source: EIA-767 calculated

7. Generator Status (GENSTAT) –
This field indicates the reported generator status at the end of the given year.
Possible values are:

BU	=	Cold storage, back-up
OP	=	Operating
OS	=	In commercial operation, but out of service
RE	=	Retired
SB	=	Cold stand-by (long-term storage)

TS = Testing
V = More than 50% constructed

Source: EIA-860

8. Prime Mover Type (PRMVR) –

This field indicates the reported generator's electric generator type. Possible values are:

BT = Binary cycle turbine
CA = Combined cycle steam turbine
CC = Combined cycle - total unit
CE = Compressed air energy storage
CS = Combined cycle - single shaft
CT = Combined cycle combustion turbine
GT = Combustion (gas) turbine
HY = Hydraulic turbine
IC = Internal combustion (diesel)
OT = Other turbine
PS = Hydraulic turbine - reversible (pumped storage)
PV = Photovoltaic
ST = Steam turbine (boiler, nuclear, geothermal)
WT = Wind turbine

Source: EIA-860

9. Primary Generator Fuel (FUELG1) –

This field indicates the potential primary fuel reported for the generator. Possible values are:

AB = Agricultural byproducts
BFG = Blast furnace gas
BIT = Bituminous coal
BLQ = Black liquor
DFO = Distillate, light fuel oil, FO2, diesel oil
DG = Digester gas (other biomass gases)
GEO = Geothermal
JF = Jet fuel
KER = Kerosene
LFG = Landfill gas
LIG = Lignite coal
MSB = Municipal solid waste biomass component
NG = Natural gas
NUC = Nuclear materiel
OBL = Other biomass liquid
OBS = Other biomass solid
OG = Other gas
OTH = Other unknown
PC = Petroleum coke
PUR = Purchased steam
RFO = Petroleum, heavy fuel oil, residual oil
SC = Synthetic coal (syncoal)
SUB = Subbituminous coal

SUN = Solar
TDF = Tire-derived fuel
WAT = Water
WC = Waste coal
WDL = Wood, wood waste liquids
WDS = Wood, wood waste solids
WH = Waste heat
WND = Wind
WO = Waste oil

Source: EIA-860

10. Generator Nameplate Capacity (NAMEPCAP) –
This field indicates the nameplate capacity, in MW, of the generator.
Source: EIA-860

11. Generator Capacity Factor (CFACT) –
This field is calculated at the generator level:
CFACT = (GENNTAN) / (NAMEPCAP * 8760).
The value should be between 0 and 1 exclusive. However, there are outliers.

12. Generator Annual Net Generation (GENNTAN) –
This field is the reported net generation in MWh. Note that summing the net generation of the generators in a plant may not provide a value that is the same as the plant generation value, PLNGENAN, since the data sources are often different.
Sources: EIA-767, EIA-906/920

13. Generator Ozone Season Net Generation (GENNTOZ) –
This field is the generator five month ozone season (May through September) net generation in MWh. For plants that reported monthly data, it is based on monthly generator generation data. Otherwise, it is calculated as 5/12 of the annual value.
Sources: EIA-767, EIA-906/920

14. Generation Data Source (GENERSRC) –
This field describes the data source of the generator net generation data. The three values are as follows:

767 = EIA-767,
906NK = EIA-906/920 nuclear unit
906NONK = EIA-906/920 only generator at that plant's prime mover

15. Generator Year On-Line (GENYRONL) –
This field provides the four digit generator year on-line.
Source: EIA-860

C. THE PLNT (PLANT) FILE

There are 158 variables in PLNT. Some data may be outliers and should be viewed with caution.

1. **eGRID2007 2005 File Plant Sequence Number (SEQPLT05) –**
The plant records in this year 2005 data file are sorted by State postal code abbreviation, plant name, and boiler ID, and are assigned a unique sequential number beginning with 1. This sequence number is unlikely to be the same as the sequence number in the year 2004 eGRID file for the same entity.

2. **State Abbreviation (PSTATABB) –**
This field contains the two character postal code abbreviation of the State in which the plant is located.
Source: EIA-860

3. **Plant Name (PNAME) –**
This field is the name associated with each plant.
Source: EIA-860 + updates

4. **DOE/EIA ORIS Plant or Facility Code (ORISPL) –**
This plant code corresponds to PNAME and was originally developed for power plants by the Office of the Regulatory Information System (ORIS), which was a part of the Federal Power Commission. It is now assigned by EIA and is used as a unique plant identification code for many EPA electric power databases, too. One plant code, that for Laramie River, has been altered. See Section IV for details.
Source: EIA-860

5. **Plant EPA Facility Registry System FRS Identification Code (FRSID) –**
This field is the EPA Facility Registry System (FRS) code associated with the ORISPL. This field is based on matches from EPA's FRS database as of October 2007.
Source: EPA FRS

6. **Plant Operator Name (OPRNAME) –**
The name associated with each operating company (EGC) is contained in this field.
Source: EIA-860 + updates

7. **Plant Operator ID (OPRCODE) –**
This field corresponds to OPRNAME and contains the operating company ID. Each operating company has a unique company code assigned by EIA, with some exceptions. Some operator names do not have associated codes assigned by EIA and are EPA-assigned negative IDs beginning with -101; and some nonutility EGCs are grouped together, called nufronts, and are EPA-assigned negative IDs beginning with -1001. See Section IV for details.
Source: EIA-860 + updates

8. **Utility Service Area Name (UTLSRVNM) –**
This field contains the name of the utility service area (a utility company or EGC) in which the nonutility plant is located. See Section IV for further details.
Source: EIA-860 + updates

9. **Utility Service Area ID (UTLSRVID) –**
This field corresponds to UTLSRVNM and contains the unique ID code associated with each utility service area.
Source: EIA-860 + updates

10. **Parent Company ID Associated with the Operator (OPPRNUM) –**
This field contains the ID of the parent company, if it exists, associated with the plant's operating company (EGC). It is zero otherwise. EIA did not assign IDs for most parent companies; thus, EPA assigned unique negative integer IDs beginning with -7001 as parent company IDs.
Source: EIA + updates

11. **Parent Company Name Associated with the Operator (OPPRNAME) –**
This field corresponds to OPPRNUM and contains the name of the parent company, if it exists, associated with the plant's operating company. It is blank otherwise. See the Methodology Section and Section IV for further information about parent companies.
Source: EIA + updates

12. **Power Control Area Name (PCANAME) –**
This field contains the name of the power control area for the plant. See the Methodology Section and Section IV for further information about PCAs.
Sources: NERC, EIA-861 + EPA updates

13. **Power Control Area ID (PCAID) –**
This field corresponds to PCANAME and contains the ID of the power control area for the plant. See the Methodology Section and Section IV for further information about eGRID subregions.
Sources: NERC, EIA-861 + EPA updates

14. **NERC Region Acronym (NERC) –**
This field contains the acronym for the NERC region in which the plant is located and is also the NERC region associated with the plant's PCA. See the Methodology Section and Section IV for further information about NERC regions. A representation of the eGRID2007 NERC region map is included in Appendix B.
Source: NERC

15. **eGRID Subregion Acronym (SUBRGN) –**
This field contains the acronym for the eGRID subregion in which the plant is located. See the Methodology Section and Section IV for further information about eGRID subregions. A representation of the eGRID2007 eGRID subregion map is included in Appendix B.
Source: EPA

16. **eGRID Subregion Name (SRNAME) –**
This field corresponds to SUBRGN and contains the name of the eGRID subregion in which the plant is located. See the Methodology Section and Section IV for further information about eGRID subregions.
Source: EPA

17. Plant FIPS State Code (FIPSST) –
This field contains the two digit Federal Information Processing Standards (FIPS) State character code of the State in which the plant is located.
Source: NIST-derived

18. Plant FIPS County Code (FIPSCNTY) –
This field contains the three digit FIPS county character code of the county in which the plant is located.
Source: NIST-derived

19. Plant County Name (CNTYNAME) –
This field corresponds to FIPSST and contains the name of the county in which the plant is located.
Source: EIA-860, ETS/CEM

20. Plant Latitude (LAT) –
This field contains the latitude, in degrees to four decimal places, associated with the plant. When not available, the plant's county centroid's y-coordinate is used.
Source: EPA/CAMD + updates

21. Plant Longitude (LON) –
This field contains the longitude, in degrees to four decimal places, associated with the plant. When not provided, the plant's county centroid's x-coordinate is used.
Source: EPA/CAMD + updates

22. Country centroid flag (CCFLAG) –
This field indicates if the latitude and longitude fields (# 20 and # 21) are based on the county centroid (1= county centroid used).
This is a new field in eGRID2007.

23. Number of Boilers (NUMBLR) –
This field contains the number of boilers within a plant. Note that the meaning and sources of these data are different from the data element of the same name in the generator file.
Source: ETS/CEM, EIA-767 calculated

24. Number of Generators (NUMGEN) –
This field contains the number of generators within a plant. Note that the meaning and source of these data are different from the data element of the same name in the boiler file.
Source: EIA-860 calculated

25. Plant combustion status (COMBUST) –
This field contains the plant combustion status: Possible values are: 1= Combusts, 0 = No combustion, 0.5 = Partial combustion.
This is a new field in eGRID2007.

26. Plant Emissions Source(s) (SOURCEM) –
This field describes the source(s) of emissions data for the plant. There maybe multiple sources that are displayed in the order listed below and separated by commas and blanks (to indicate that there are some unused sources).

Possible values are:

CEM	=	NO_x, SO_2, and CO_2 emissions reported to EPA's Emissions Tracking System/Continuous Emissions Monitoring System (ETS/CEM); CH_4 and N_2O emission estimated by applying EPA-approved emission factors to ETS/CEM data
767	=	NO_x, SO_2, CO_2, CH_4, and N_2O emissions estimated by applying EPA-approved emission factors to EIA-767 data
906	=	NO_x, SO_2, CO_2, CH_4, and N_2O emissions estimated by applying EPA-approved emission factors to EIA-906/920 data
ICR	=	Mercury emissions estimated using EPA's Year 2002 Coal Mercury data, which is based on EPA's 1999 ICR
MWC	=	Mercury emissions estimated using EPA's Year 2000 Large MWC Boiler Database for mercury

27. Plant Primary Fuel (PLPRMFL) –

This field contains the plant's primary fuel based on maximum heat input if the plant combusts any fuel or assignment if the plant does not combust any fuel. Possible values are:

AB	=	Agricultural byproducts
BFG	=	Blast furnace gas
BIT	=	Bituminous coal
BLQ	=	Black liquor
COG	=	Coke oven gas
DFO	=	Distillate, light fuel oil, FO2, diesel oil
DG	=	Digester gas (other biomass gases)
GEO	=	Geothermal steam
HY	=	Hydrogen
JF	=	Jet fuel
KER	=	Kerosene
LFG	=	Landfill gas
LIG	=	Lignite coal
MSB	=	Municipal solid waste biomass component
NG	=	Natural gas
NUC	=	Nuclear materiel
OBS	=	Other biomass solid
OG	=	Other gas
OOL	=	Other oil
OTH	=	Other (unknown)
PC	=	Petroleum coke
PG	=	Propane gas/LPG
PRG	=	Process gas
PUR	=	Purchased fuel (unknown)
RFO	=	Petroleum, heavy fuel oil, residual oil
RG	=	Refinery gas
SC	=	Synthetic coal (syncoal)
SLW	=	Sludge waste
SUB	=	Subbituminous coal
SUN	=	Sun
TDF	=	Tire-derived fuel

WAT	=	Water
WC	=	Waste coal
WDL	=	Wood, wood waste liquids
WDS	=	Wood, waste solids
WND	=	Wind
WO	=	Waste oil

28. Plant Primary Coal/Oil/Gas/Other Fossil Fuel Category (PLFUELCT) –
The value of this field is "COAL" if PLPRMFL is derived from coal, "OIL" if it is derived from oil, "GAS" if it is derived from gas, or "OFSL" if it is other fossil. Fossil fuel refers to any naturally occurring organic fuel, such as petroleum, coal, and natural gas. The fossil fuel category is defined differently in eGRID2007, including other fossil in addition to coal, oil, and gas, for the first time for year 2005 data. See the Methodology Section for a complete list of fuel codes and categories.

29. Flag indicating if the plant used any amount of coal (COALFLAG) –
This field contains a flag to indicate if the plant used any amount of coal (1= Yes). This is a new field in eGRID2007.

30. Plant Capacity Factor (CAPFAC) –
This field contains the plant capacity factor, expressed with four decimal places. It is calculated as follows:
CAPFAC = PLNGENAN / (NAMEPCAP * 8760)
Although the value should be between 0 and 1 inclusive, there are outliers.

31. Plant Nameplate Capacity (NAMEPCAP) –
This field contains the nameplate capacity of the plant, in MW.
Source: EIA-860 summed

32. Renewable Methane/Biomass Plant Adjustment Flag (RMBMFLAG) –
This field contains the renewable methane (landfill gas, digester gas)/biomass adjustment flag. A biomass facility's emissions reported in eGRID may be different from that reported in other EPA sources such as EPA/CAMD's ETS/CEM. Possible values are: 0 = No biomass, 1= Renewable methane included, or 100 = Other biomass included. For details, see the Methodology Section.

33. Combined Heat and Power (CHP) Plant Adjustment Flag (CHPFLAG) –
This field contains a flag to indicate if the plant is a CHP facility (1=Yes). A CHP facility's emissions and heat input reported in eGRID may be different from that reported in other EPA sources such as EPA/CAMD's ETS/CEM. For details, see the Methodology Section.
Source: eGRID CHP list

34. CHP Plant Useful Thermal Output (USETHRMO) –
This field, in MMBtu, contains the useful thermal output estimated or reported for a CHP facility.
Source: EIA 906/920 calculated, EIA-767

35. CHP Plant Power to Heat Ratio (PWRTOHT) –
This field contains the power to heat ratio in a CHP facility, which is the ratio of heat value of electricity generated (3413 * kWh output) to the facility's useful thermal output. There are outliers.

36. CHP Plant Electric Allocation Factor (ELCALLOC) –
This field contains the decimal fraction of the emissions that is attributed to electricity. It is derived as the ratio of the electric heat output to the sum of the electric and steam heat outputs, where the steam output is 75% of the useful thermal output. The electric allocation factor is used to allocate emissions from a CHP facility to both electricity generation and useful thermal output. See CHP in the Methodology Section for further information. For non-CHP plants, eGRID uses an electric allocation factor of 1.0.

37. Plant Pumped Storage Flag (PSFLAG) –
This field indicates if the plant has at least one pumped storage generator (1= Yes).
Source: EIA-860

38. Plant Annual Heat Input (PLHTIAN) –
This field is the total annual heat input, in MMBtu, for the plant. For CHP plants, the value is adjusted by the electric allocation factor. See the Methodology Section for details.

39. Plant Ozone Season Heat Input (PLHTIOZ) –
This field is the five month ozone season (May through September) heat input, in MWh, for the plant. For CHP plants, the value is adjusted by the electric allocation factor. See the Methodology Section for details.

40. Plant Annual Net Generation (PLNGENAN) –
This field is the total reported annual net generation, in MWh, for the plant.
Sources: EIA-906/920, EIA-767

41. Plant Ozone Season Net Generation (PLNGENOZ) –
This field, in MWh, is the five month ozone season (May through September) net generation for the plant.
Sources: EIA-906/920, EIA-767

42. Plant Annual NO_x Emissions (PLNOXAN) –
This field, in tons, is the total annual NO_x emissions for the plant. Renewable methane biomass components of this field are adjusted. For CHP plants, the value is adjusted by the electric allocation factor. See the Methodology Section for details.

This adjusted emissions field is estimated by first making the renewable methane adjustment (if it exists) and then applying the electric allocation factor (if the plant is a CHP). See the Methodology Section for details.

43. Plant Ozone Season NO_x Emissions (PLNOXOZ) –
This field, in tons, is the five month ozone season (May through September) NO_x emissions for the plant. Renewable methane biomass components of this field are adjusted. For CHP plants, the value is adjusted by the electric allocation factor. See the Methodology Section for details.

This adjusted emissions field is estimated by first making the renewable methane adjustment (if it exists) and then applying the electric allocation factor (if the plant is a CHP). See the Methodology Section for details.

44. Plant Annual SO_2 Emissions (PLSO2AN) –
This field, in tons, is the total annual SO_2 emissions for the plant. Renewable methane biomass components of this field are adjusted. For CHP plants, the value is adjusted by the electric allocation factor. See the Methodology Section for details.

This adjusted emissions field is estimated by first making the renewable methane adjustment (if it exists) and then applying the electric allocation factor (if the plant is a CHP). See the Methodology Section for details.

45. Plant Annual CO_2 Emissions (PLCO2AN) –
This field, in tons, is the total annual CO_2 emissions for the plant. For biomass (including renewable methane) components of the plant emissions, the unadjusted and adjusted-for-biomass emission values are the same since there are no carbon coefficients for these fuels. For CHP plants, the value is adjusted by the electric allocation factor.

This adjusted emissions field is estimated by first making the biomass adjustment (if it exists) and then applying the electric allocation factor (if the plant is a CHP). See the Methodology Section for details.

46. Plant annual CH_4 Emissions (PLCH4AN) –
This field, in lbs, is the total annual CH_4 emissions for the plant. For CHP plants, the value is adjusted by the electric allocation factor. See the Methodology Section for details.
This is a new field in eGRID2007.

47. Plant annual N_2O emissions (PLN2OAN) –
This field, in lbs, is the total annual N_2O emissions for the plant. For CHP plants, the value is adjusted by the electric allocation factor. See the Methodology Section for details.
This is a new field in eGRID2007.

48. Plant Annual Hg Emissions (PLHGAN) –
This field, in lbs, is the total annual Hg emissions for the plant. For CHP plants, the value is adjusted by the electric allocation factor. See the Methodology Section for details.

49. Plant Annual NO_x Output Emission Rate (PLNOXRTA) –
This field, in lb/MWh, is calculated as follows:
PLNOXRTA = 2000 * PLNOXAN / PLNGENAN.

50. Plant Ozone Season NO_x Output Emission Rate (PLNOXRTO) –
This field, in lb/MWh, is calculated as follows:
PLNOXRTO = 2000 * PLNOXOZ / PLNGENOZ.

51. Plant Annual SO_2 Output Emission Rate (PLSO2RTA) –
This field, in lb/MWh, is calculated as follows:
PLSO2RTA = 2000 * PLSO2AN / PLNGENAN.

52. Plant Annual CO_2 Output Emission Rate (PLCO2RTA) –
This field, in lb/MWh, is calculated as follows:
PLCO2RTA = 2000 * PLCO2AN / PLNGENAN.

53. Plant Annual CH_4 Output Emission Rate (PLCH4RTA) –
This field, in lb/GWh, is calculated as follows:
P LCH4RTA = PLCH4AN / (PLNGENAN / 1000).
This is a new field in eGRID2007.

54. Plant Annual N_2O Output Emission Rate (PLN2ORTA) –
This field, in lb/GWh, is calculated as follows:
P LN2ORTA = PLN2OAN / (PLNGENAN / 1000).
This is a new field in eGRID2007.

55. Plant Annual Hg Output Emission Rate (PLHGRTA) –
This field, in lb/GWh, is calculated as follows:
PLHGRTA = PLHGAN / (PLNGENAN / 1000).

56. Plant Annual NO_x Input Emission Rate (PLNOXRA) –
This field, in lb/MMBtu, is calculated as follows:
PLNOXRA = 2000 * PLNOXAN / PLHTIAN.

57. Plant Ozone Season NO_x Input Emission Rate (PLNOXRO) –
This field, in lb/MMBtu, is calculated as follows:
PLNOXRO = 2000 * PLNOXOZ / PLHTIOZ.

58. Plant Annual SO_2 Input Emission Rate (PLSO2RA) –
This field, in lb/MMBtu, is calculated as follows:
PLSO2RA = 2000 * PLSO2AN / PLHTIAN.

59. Plant Annual CO_2 Input Emission Rate (PLCO2RA) –
This field, in lb/MMBtu, is calculated as follows:
PLCO2RA = 2000 * PLCO2AN / PLHTIAN.

60. Plant Annual Hg Input Emission Rate (PLHGRA) –
This field, in lb/BBtu, is calculated as follows:
PLHGRA = PLHGAN / (PLHTIAN / 1000).

61. Plant Annual NO_x Combustion Output Emission Rate (PLNOXCRT) –
This field, in lb/MMBtu, is calculated as follows:
PLNOXCRT = 2000 * PLNOXAN / PLGENACY.
This is a new field in eGRID2007.

62. Plant Ozone Season NO_x Combustion Output Emission Rate (PLNOXCRO) –
This field, in lb/MMBtu, is calculated as follows:
PLNOXCRO = 2000 * PLNOXOZ / (PLGENACY * PLNGENOZ / PLNGENAN).
This is a new field in eGRID2007.

63. Plant Annual SO_2 Combustion Output Emission Rate (PLSO2CRT) –
This field, in lb/MMBtu, is calculated as follows:

PLSO2CRT = 2000 * PLSO2AN / PLGENACY.
This is a new field in eGRID2007.

64. Plant Annual CO_2 Combustion Output Emission Rate (PLCO2CRT) –
This field, in lb/MMBtu, is calculated as follows:
PLCO2CRT = 2000 * PLCO2AN / PLGENACY.
This is a new field in eGRID2007.

65. Plant Annual CH_4 Combustion Output Emission Rate (PLCH4CRT) –
This field, in lb/BBtu, is calculated as follows:
PLCH4CRT = PLCH4AN / (PLGENACY / 1000).
This is a new field in eGRID2007.

66. Plant Annual N_2O Combustion Output Emission Rate (PLN2OCRT) –
This field, in lb/BBtu, is calculated as follows:
PLN2OCRT = PLN2OAN / (PLGENACY / 1000).
This is a new field in eGRID2007.

67. Plant Annual Hg Combustion Output Emission Rate (PLHGCRT) –
This field, in lb/BBtu, is calculated as follows:
PLHGCRT = PLHGAN / (PLGENACY / 1000).
This is a new field in eGRID2007.

68. Plant Unadjusted Annual NO_x Emissions (UNNOX) –
This field, in tons, is the total plant level unadjusted annual NO_x emissions. See the Methodology Section for details.

69. Plant Unadjusted Ozone Season NO_x Emissions (UNNOXOZ) –
This field, in tons, is the unadjusted five month ozone season (May through September) NO_x emissions for the plant. See the Methodology Section for details.

70. Plant Unadjusted Annual SO_2 Emissions (UNSO2) –
This field, in tons, is the total plant level unadjusted annual SO_2 emissions. See the Methodology Section for details.

71. Plant Unadjusted Annual CO_2 Emissions (UNCO2) –
This field, in tons, is the total plant level unadjusted annual CO_2 emissions. For biomass components of the plant emissions, the adjusted and unadjusted emission values are the same since there are no carbon coefficients for these fuels. See the Methodology Section for details.

72. Plant Unadjusted Annual CH_4 Emissions (UNCH4) –
This field, in lbs, is the total plant level unadjusted annual CH_4 emissions. See the Methodology Section for details.
This is a new field in eGRID2007.

73. Plant Unadjusted Annual N_2O Emissions (UNN2O) –
This field, in lbs, is the total plant level unadjusted annual N_2O emissions. See the Methodology Section for details.
This is a new field in eGRID2007.

74. Plant Unadjusted Annual Hg Emissions (UNHG) –
This field, in lbs, is the total plant level unadjusted annual Hg emissions. Mercury emissions are reported for year 2002 for coal plants and for year 2000 for large municipal waste combustors, and for eGRID, are estimated for year 2005. See the Methodology Section for details.

75. Plant Unadjusted Annual Heat Input (UNHTI) –
This field, in MMBtu, is the total plant level unadjusted annual heat input. See the Methodology Section for details.
Sources: ETS/CEM, EIA-906/920, EIA-767 calculated

76. Plant Unadjusted Ozone Season Heat Input (UNHTIOZ) –
This field, in MMBtu, is the five month ozone season (May through September) heat input for the plant. See the Methodology Section for details.
Sources: ETS/CEM, EIA-906/920, EIA-767 calculated

77. Plant Nominal Heat Rate (PLHTRT) –
This field, in Btu/kWh, contains the plant nominal heat rate. It is calculated as follows: PLHTRT = 1000 * PLHTIAN / PLNGENAN.
For CHP plants, the value is, in effect, adjusted by the electric allocation factor, since the heat input has been adjusted.

78. Plant Annual Coal Net Generation (PLGENACL) –
This field, in MWh, contains the plant annual net generation for coal. Fuel codes that are included in coal are BIT, SUB, LIG, WC, and SC.

79. Plant Annual Oil Net Generation (PLGENAOL) –
This field, in MWh, contains the plant annual net generation for oil. Fuel codes included in oil are DFO, JF, KER, RFO, WO, OOL, PC, and RG.

80. Plant Annual Gas Net Generation (PLGENAGS) –
This field, in MWh, contains the plant annual net generation for natural gas. Fuel codes included in gas are NG and PG.

81. Plant Annual Nuclear Net Generation (PLGENANC) –
This field, in MWh, contains the plant annual net generation for nuclear if the fuel code is NUC. Note that one plant, North Anna, has both nuclear and hydro prime movers, but the greater generation is associated with nuclear.

82. Plant Annual Hydro Net Generation (PLGENAHY) –
This field, in MWh, contains the plant annual net generation for hydro if the fuel code is WAT.

83. Plant Annual Biomass Net Generation (PLGENABM) –
This field, in MWh, contains the plant annual net generation for biomass. Biomass is a fuel derived from organic matter such as wood and paper products, agricultural waste, or methane (e.g., from landfills). The renewable portion of solid waste, fuel code MSB, is included as biomass, as are WDS, WDL, PP, BLQ, AB, SLW, ME, DG, LFG, OBS, and OBL. See the Methodology Section for more information.

84. Plant Annual Wind Net Generation (PLGENAWI) –
This field, in MWh, contains the plant annual net generation for wind if the fuel code is WND.

85. Plant Annual Solar Net Generation (PLGENASO) –
This field, in MWh, contains the plant annual net generation for solar if the fuel code is SUN.

86. Plant Annual Geothermal Net Generation (PLGENAGT) –
This field, in MWh, contains the plant annual net generation for geothermal if the fuel code is GEO.

87 Plant Annual Other Fossil Net Generation (PLGENAOF) –
This field, in MWh, contains the plant annual net generation for other fossil fuel that cannot be categorized as coal, oil, or natural gas. Other fossil fuel codes include LB, MH, HY, OG, PRG, BFG, COG, TDF, and MSF.

88. Plant Annual Other Unknown/ Purchased Fuel Net Generation (PLGENAOP) –
This field, in MWh, contains the plant annual net generation for other unknown/purchased if the fuel code is OTH or PUR.

89. Plant Annual Total Nonrenewables Net Generation (PLGENATN) –
This field, in MWh, contains the annual total nonrenewables net generation for the plant. Nonrenewables are exhaustible energy resources such as coal, oil, natural gas, other fossil, nuclear power, and other unknown/purchased fuel. This field is the sum of PLGENACL, PLGENAOL, PLGENAGS, PLGENAOF, PLGENANC, and PLGENAOP.

90. Plant Annual Total Renewables Net Generation (PLGENATR) –
This field, in MWh, contains the annual total renewables net generation for the plant. Renewables are inexhaustible energy resources such as biomass, wind, solar, geothermal, and hydro. This field is the sum of PLGENABM, PLGENAWI, PLGENASO, PLGENAGT, and PLGENAHY.

91. Plant Annual Total Nonhydro Renewables Net Generation (PLGENATH) –
This field, in MWh, contains the annual total nonhydro renewables net generation for the plant. This field is the sum of PLGENABM, PLGENAWI, PLGENASO, and PLGENAGT.

92. Plant Annual Total Combustion Net Generation (PLGENACY) –
This field, in MWh, contains the annual total combustion net generation for the plant. This field is the sum of PLGENACL, PLGENAOL, PLGENAGS, PLGENAOF, PLGENAOP, and PLGENABM.
This is a new field in eGRID2007.

93. Plant Annual Total Noncombustion Net Generation (PLGENACN) –
This field, in MWh, contains the annual total noncombustion net generation for the plant. This field is the sum of PLGENANC, PLGENAHY, PLGENAWI, PLGENASO, and PLGENAGT.
This is a new field in eGRID2007.

94. Plant Coal Generation Percent (PLCLPR) –
This field, the coal resource mix expressed as a percent of plant annual net generation, is calculated as follows:
PLCLPR = 100 * PLGENACL / PLNGENAN.

95. Plant Oil Generation Percent (PLOLPR) –
This field, the oil resource mix expressed as a percent of plant annual net generation, is calculated as follows:
PLOLPR = 100 * PLGENAOL / PLNGENAN.

96. Plant Gas Generation Percent (PLGSPR) –
This field, the gas resource mix expressed as a percent of plant annual net generation, is calculated as follows:
PLGSPR = 100 * PLGENAGS / PLNGENAN.

97. Plant Nuclear Generation Percent (PLNCPR) –
This field, the nuclear resource mix expressed as a percent of plant annual net generation, is calculated as follows:
PLNCPR = 100 * PLGENANC / PLNGENAN.

98. Plant Hydro Generation Percent (PLHYPR) –
This field, the hydro resource mix expressed as a percent of plant annual net generation, is calculated as follows:
PLHYPR = 100 * PLGENAHY / PLNGENAN.

99. Plant Biomass Generation Percent (PLBMPR) –
This field, the biomass resource mix expressed as a percent of plant annual net generation, is calculated as follows:
PLBMPR = 100 * PLGENABM / PLNGENAN.

100. Plant Wind Generation Percent (PLWIPR) –
This field, the wind resource mix expressed as a percent of plant annual net generation, is calculated as follows:
PLWIPR = 100 * PLGENAWI / PLNGENAN.

101. Plant Solar Generation Percent (PLSOPR) –
This field, the solar resource mix expressed as a percent of plant annual net generation, is calculated as follows:
PLSOPR = 100 * PLGENASO / PLNGENAN.

102. Plant Geothermal Generation Percent (PLGTPR) –
This field, the geothermal resource mix expressed as a percent of plant annual net generation, is calculated as follows:
PLGTPR = 100 * PLGENAGT / PLNGENAN.

103. Plant Other Fossil Generation Percent (PLOFPR) –
This field, the other fossil resource mix expressed as a percent of plant annual net generation, is calculated as follows:
PLOFPR = 100 * PLGENAOF / PLNGENAN.

104. Plant Other Unknown/Purchased Fuel Generation Percent (PLOPPR) –
This field, the other unknown/purchased fuel resource mix expressed as a percent of plant annual net generation, is calculated as follows:
PLOPPR = 100 * PLGENAOP / PLNGENAN.

105. Plant Total Nonrenewables Generation Percent (PLTNPR) –
This field, the total nonrenewables resource mix expressed as a percent of plant annual net generation, is calculated as follows:
PLTNPR = 100 * PLGENATN / PLNGENAN.

106. Plant Total Renewables Generation Percent (PLTRPR) –
This field, the total renewables resource mix expressed as a percent of plant annual net generation, is calculated as follows:
PLTRPR = 100 * PLGENATR / PLNGENAN.

107. Plant Total Nonhydro Renewables Generation Percent (PLTHPR) –
This field, the total nonhydro renewables resource mix expressed as a percent of plant annual net generation, is calculated as follows:
PLTHPR = 100 * PLGENATH / PLNGENAN.

108. Plant Total Combustion Generation Percent (PLCYPR) –
This field, the total combustion resource mix expressed as a percent of plant annual net generation, is calculated as follows:
PLCYPR = 100 * PLGENACY / PLNGENAN.
This is a new field in eGRID2007.

109. Plant Total Noncombustion Generation Percent (PLCNPR) –
This field, the total noncombustion resource mix expressed as a percent of plant annual net generation, is calculated as follows:
PLCYPR = 100 * PLGENACN / PLNGENAN.
This is a new field in eGRID2007.

110. Plant Owner Name (First) (OWNRNM01) –
This field contains the name of the first plant owner, a company or EGC.
Sources: EIA-860 + updates

111. Plant Owner Code (First) (OWNRUC01) –
This field contains the unique company code associated with OWNRNM01 and assigned by EIA, with some exceptions. Some owner names do not have associated codes assigned by EIA and are EPA-assigned negative IDs beginning with -101; and some nonutility EGCs are grouped together, called nufronts, and are EPA-assigned negative IDs beginning with -1001. See Section IV for details.
Sources: EIA-860 + updates

112. Plant Owner Percent (First) (OWNRPR01) –
This field contains the percent of the plant that is owned by OWNRNM01. It is calculated based on reported generator ownership data. If no information on ownership is provided, then it is assumed that the operator has 100% ownership. See the Methodology Section for details.
Source: EIA-860 + updates

113. Plant Owner Name (Second) (OWNRNM02) –
This field contains the name of the second plant owner.
Source: EIA-860 + updates

114. Plant Owner Code (Second) (OWNRUC02) –
This field contains the unique EIA-assigned number associated with OWNRNM02.
Source: EIA-860 + updates

115. Plant Owner Percent (Second) (OWNRPR02) –
This field contains the percent of the plant that is owned by OWNRNM02. It is calculated based on reported generator ownership data.
Source: EIA-860 + updates

116. – 157. Plant Owner Name, Plant Owner Code, and Plant Owner Percent (Third - Sixteenth) –
The description of these fields contains the information for the third through sixteenth plant owners. See the descriptions in fields #110 through #112 above.
Source: EIA-860 + updates

158. eGRID2006 2004 File Plant Sequence Number (SEQPLT04) –
This field contains the sequence number of the plant in the year 2004 data, if one exists. This sequence number is unlikely to be the same as the sequence number in the year 2005 eGRID file for the same plant.

D. THE ST (STATE) FILE

There are 109 variables in the fourth file, ST, which contains State level data. All size, heat input, generation, and emission values are derived by aggregating from the plant level based on the State in which the plant is located. Variables that are either identical to those in the plant file or different from those in the plant file by the first two letters of their names (e.g., STHTIAN instead of PLHTIAN) are not re-described. Aggregated variable names generally begin with "ST."

1. **eGRID2007 2005 File State Sequence Number (SEQST05) –**
   The State records in this year 2005 data file are sorted by State postal code abbreviation and are assigned a unique sequential number beginning with 1. This sequence number is unlikely to be the same as the sequence number in the year 2004 eGRID file for the same entity.

2. **State Abbreviation (PSTATABB)**

3. **FIPS State Code (FIPSST)**

4. **State Generator Capacity (NAMEPCAP)**

5. **State Annual Heat Input (STHTIAN)**

6. **State Ozone Season Heat Input (STHTIOZ)**

7. **State Annual Net Generation (STNGENAN)**

8. **State Ozone Season Net Generation (STNGENOZ)**

9. **State Annual NO_x Emissions (STNOXAN)**

10. **State Ozone Season NO_x Emissions (STNOXOZ)**

11. **State Annual SO_2 Emissions (STSO2AN)**

12. **State Annual CO_2 Emissions (STCO2AN)**

13. **State Annual CH_4 Emissions (STCH4AN) –**
    This is a new field in eGRID2007.

14. **State Annual N_2O Emissions (STN2OAN) –**
    This is a new field in eGRID2007.

15. **State Annual Hg Emissions (STHGAN)**

16. **State Annual NO_x Output Emission Rate (STNOXRTA) –**
    This field, in lb/MWh, is calculated as follows:
    STNOXRTA = 2000 * STNOXAN / STNGENAN.

17. **State Ozone Season NO_x Output Emission Rate (STNOXRTO) –**
This field, in lb/MWh, is calculated as follows:
STNOXRTO = 2000 * STNOXOZ / STNGENOZ.

18. **State Annual SO_2 Output Emission Rate (STSO2RTA) –**
This field, in lb/MWh, is calculated as follows:
STSO2RTA = 2000 * STSO2AN / STNGENAN.

19. **State Annual CO_2 Output Emission Rate (STCO2RTA) –**
This field, in lb/MWh, is calculated as follows:
STCO2RTA = 2000 * STCO2AN / STNGENAN.

20. **State Annual CH_4 Output Emission Rate (STCH4RTA) –**
This field, in lb/GWh, is calculated as follows:
STHCH4RTA = STCH4AN / (STNGENAN / 1000).
This is a new field in eGRID2007.

21. **State Annual N_2O Output Emission Rate (STN2ORTA) –**
This field, in lb/GWh, is calculated as follows:
STN2ORTA = STN2OAN / (STNGENAN / 1000).
This is a new field in eGRID2007

22. **State Annual Hg Output Emission Rate (STHGRTA) –**
This field, in lb/GWh, is calculated as follows:
STHGRTA = STHGAN / (STNGENAN / 1000).

23. **State Annual NO_x Input Emission Rate (STNOXRA) –**
This field, in lb/MMBtu, is calculated as follows:
STNOXRA = 2000 * STNOXAN / STHTIAN.

24. **State Ozone Season NO_x Input Emission Rate (STNOXRO) –**
This field, in lb/MMBtu, is calculated as follows:
STNOXRO = 2000 * STNOXOZ / STHTIOZ.

25. **State Annual SO_2 Input Emission Rate (STSO2RA) –**
This field, in lb/MMBtu, is calculated as follows:
STSO2RA = 2000 * STSO2AN / STHTIAN.

26. **State Annual CO_2 Input Emission Rate (STCO2RA) –**
This field, in lb/MMBtu, is calculated as follows:
STCO2RA = 2000 * STCO2AN / STHTIAN.

27. **State Annual Hg Input Emission Rate (STHGRA) –**
This field, in lb/BBtu, is calculated as follows:
STHGRA = STHGAN / (STHTIAN / 1000).

28. **State Annual NO_x Combustion Output Emission Rate (STNOXCRT) –**
This field, in lb/MMBtu, is calculated as follows:
STNOXCRT = 2000 * STNOXAN / STGENACY.
This is a new field in eGRID2007.

29. State Ozone Season NO_x Combustion Output Emission Rate (STNOXCRO) –
This field, in lb/MMBtu, is calculated as follows:
STNOXCRO = 2000 * STNOXOZ / (STGENACY * STNGENOZ / STNGENAN).
This is a new field in eGRID2007.

30. State Annual SO_2 Combustion Output Emission Rate (STSO2CRT) –
This field, in lb/MMBtu, is calculated as follows:
STSO2CRT = 2000 * STSO2AN / STGENACY.
This is a new field in eGRID2007.

31. State Annual CO_2 Combustion Output Emission Rate (STCO2CRT) –
This field, in lb/MMBtu, is calculated as follows:
STCO2CRT = 2000 * STCO2AN / STGENACY.
This is a new field in eGRID2007.

32. State Annual CH_4 Combustion Output Emission Rate (STCH4CRT) –
This field, in lb/BBtu, is calculated as follows:
STCH4CRT = STCH4AN / (STGENACY / 1000).
This is a new field in eGRID2007.

33. State Annual N_2O Combustion Output Emission Rate (STN2OCRT) –
This field, in lb/BBtu, is calculated as follows:
STN2OCRT = STN2OAN / (STGENACY / 1000).
This is a new field in eGRID2007.

34. State Annual Hg Combustion Output Emission Rate (STHGCRT) –
This field, in lb/BBtu, is calculated as follows:
STHGCRT = STHGAN / (STGENACY / 1000).
This is a new field in eGRID2007.

35. State Coal Annual NO_x Output Emission Rate (STCNOXRT) –
This field, in lb/MWh, is calculated as the sum of the annual NO_x emissions from all plants in the State that have coal as its primary fuel (PLPRMFL) divided by the sum of the net generation from the same set of plants, and multiplied by a unit conversion factor. It is calculated in the same manner as is any output emission rate.

36. State Oil Annual NO_x Output Emission Rate (STONOXRT) –
This field, in lb/MWh, is calculated as the sum of the annual NO_x emissions from all plants in the State that have oil as its primary fuel (PLPRMFL) divided by the sum of the net generation from the same set of plants, and multiplied by a unit conversion factor. It is calculated in the same manner as is any output emission rate.

37. State Gas Annual NO_x Output Emission Rate (STGNOXRT) –
This field, in lb/MWh, is calculated as the sum of the annual NO_x emissions from all plants in the State that have natural gas as its primary fuel (PLPRMFL) divided by the sum of the net generation from the same set of plants, and multiplied by a unit conversion factor. It is calculated in the same manner as is any output emission rate.

38. State Fossil Fuel Annual NO_x Output Emission Rate (STFSNXRT) –
This field, in lb/MWh, is calculated as the sum of the annual NO_x emissions from all plants in the State that have coal, oil, or gas fossil fuel as its primary fuel (PLPRMFL)

divided by the sum of the net generation from the same set of plants, and multiplied by a unit conversion factor. It is calculated in the same manner as is any output emission rate.

39. - 42. State Coal, Oil, Gas, Fossil Fuel Ozone Season NO_x Output Emission Rates – The descriptions of these fields, in lb/MWh, contain the same information for ozone season NO_x as fields #35 through #38, respectively, do for annual NO_x.

43. - 46. State Coal, Oil, Gas, Fossil Fuel Annual SO_2 Output Emission Rates – The descriptions of these fields, in lb/MWh, contain the same information for annual SO_2 as fields #35 through #38, respectively, do for annual NO_x.

47. - 50. State Coal, Oil, Gas, Fossil Fuel Annual CO_2 Output Emission Rates – The descriptions of these fields, in lb/MWh, contain the same information for annual CO_2 as fields #35 through #38, respectively, do for annual NO_x.

51. - 52. State Coal, Fossil Fuel Annual Hg Output Emission Rates – The descriptions of these fields, in lb/GWh, contain the same information for annual Hg as fields #35 and #37, respectively, do for annual NO_x.

53. - 70. State Coal, Oil, Gas, Fossil Fuel Annual NO_x, Ozone Season NO_x, Annual SO_2, Annual CO_2, Annual Hg Input Emission Rates –
The description of these fields, primary fuel-specific input emission rates, contains the same information that fields #24 through #41 do for primary fuel-specific output emission rates – except that the calculations include heat input, rather than net generation. Note that for Hg input emission rates, the units are lb/BBtu, not lb/MMBtu. These values are calculated in the same manner as are any input emission rates.

71. State Annual Non-baseload NO_x Output Emission Rates (STNBNOX) –
This field, in lb/MWh, is the sum of the annual non-baseload NO_x emissions divided by the sum of annual non-baseload net generation in the State and then multiplied by a unit conversion factor. This field is intended to provide a more refined estimate of avoided emissions than the fossil-fuel average output emission rate. The non-baseload emissions and generation include only emissions and generation from combustion sources and exclude emissions and generation from plants that have high capacity factors. The remaining emissions and generation are weighted by a factor which is a function of capacity factor. For more information, see the Methodology Section.

72. State Ozone Season Non-baseload NO_x Output Emission Rate (STNBNXO) –
The description of this field (as well as fields #73 through #77), in lb/MWh, contain the same information as field #71 does, but for the appropriate pollutant.

73. State Annual Non-baseload SO_2 Output Emission Rate (STNBSO2)

74. State Annual Non-baseload CO_2 Output Emission Rate (STNBCO2)

75. State Annual Non-baseload CH_4 Output Emission Rate (STNBCH4) –
This is a new field in eGRID2007.

76. State Annual Non-baseload N_2O Output Emission Rate (STNBN2O) –
This is a new field in eGRID2007.

77. **State Annual Non-baseload Hg Output Emission Rate (STNBHG) –**

78. **State Annual Coal Net Generation (STGENACL)**

79. **State Annual Oil Net Generation (STGENAOL)**

80. **State Annual Gas Net Generation (STGENAGS)**

81. **State Annual Nuclear Net Generation (STGENANC)**

82. **State Annual Hydro Net Generation (STGENAHY)**

83. **State Annual Biomass Net Generation (STGENABM)**

84. **State Annual Wind Net Generation (STGENAWI)**

85. **State Annual Solar Net Generation (STGENASO)**

86. **State Annual Geothermal Net Generation (STGENAGT)**

87. **State Annual Other Fossil Net Generation (STGENAOF)**

88. **State Annual Other Unknown/Purchased Net Generation (STGENAOP)**

89. **State Annual Total Nonrenewables Net Generation (STGENATN)**

90. **State Annual Total Renewables Net Generation (STGENATR)**

91. **State Annual Total Nonhydro Renewables Net Generation (STGENATH)**

92. **State Annual Total Combustion Net Generation (STGENACY) –**
This is a new field in eGRID2007.

93. **State Annual Total Noncombustion Net Generation (STGENACN) –**
This is a new field in eGRID2007.

94. **State Coal Generation Percent (STCLPR)**

95. **State Oil Generation Percent (STOLPR)**

96. **State Gas Generation Percent (STGSPR)**

97. **State Nuclear Generation Percent (STNCPR)**

98. **State Hydro Generation Percent (STHYPR)**

99. **State Biomass Generation Percent (STBMPR)**

100. **State Wind Generation Percent (STWIPR)**

101. **State Solar Generation Percent (STSOPR)**

102. State Geothermal Generation Percent (STGTPR)

103. State Other Fossil Generation Percent (STOFPR)

104. State Other Unknown/Purchased Generation Percent (STOPPR)

105. State Total Nonrenewables Generation Percent (STTNPR)

106. State Total Renewables Generation Percent (STTRPR)

107. State Total Nonhydro Renewables Generation Percent (STTHPR)

108. State Total Combustion Generation Percent (STCYPR) –
This is a new field in eGRID2007.

109. State Total Noncombustion Generation Percent (STCNPR) –
This is a new field in eGRID2007.

E. THE EGCL AND EGCO (EGC) FILES

There are 111 variables in the fifth, EGCL, which contains location (operator)-based EGC data, and sixth EGCO, which contains owner-based EGC data, files. All generation and emission values are derived by aggregating from the plant level based on the EGC's plant operator, or ownership and ownership percentage. Even if an EGC is owned by a parent (holding) company, all data are reported in these files for individual EGCs. There are no variables that have not been described in previous file variable descriptions. Aggregated variable names generally begin with "EG."

F. THE PRCL AND PRCO (PARENT COMPANY) FILES

There are 109 variables in the seventh and eighth files, which contain company data organized by parent company for individual generating companies that are subsidiaries or divisions of a larger parent (holding) company. For PRCL/PRCO, all generation and emissions are derived by aggregating from the location (operator)/owner-based EGC level based on the EGC subsidiaries in the parent company. The totals for data in these files will not be the same as for the plant, State, and EGC files since these files are a subset of the others and do not include all aggregated emissions and generation. The PRCL/PRCO files will also not have the same number of records or data totals since there are different numbers of parent companies with EGCs that own/operate eGRID plants. There are no variables that have not been described in previous file variable descriptions. Aggregated variable names generally begin with "PR."

G. THE PCAL (PCA) FILE

There are 109 variables in the ninth file, PCAL, which contains location (operator)-based power control area (PCA) data. All generation and emission values are derived by aggregating from the plant level based on the associated PCA. There are no variables that have not been described in previous file variable descriptions. Aggregated variable names generally begin with "PC."

H. THE SRL (eGRID SUBREGION) FILE

There are 110 variables in the tenth file, SRL, which contains location (operator)-based eGRID subregions. All generation and emission values are derived by aggregating from the plant level based on the associated eGRID subregion. There are no variables that have not been described in previous file variable descriptions. Aggregated variable names generally begin with "SR."

I. THE NRL (NERC REGION) FILE

There are 109 variables in the eleventh file, NRL, which contains location (operator)-based NERC region data. All generation and emission values are derived by aggregating from the plant level based on the associated NERC region. There only variable in this file that has not been described in a previous file variable description is NERCNAME, the NERC region name associated with the NERC region acronym (see subsection G.2.of the Methodology Section). Aggregated variable names generally begin with "NR."

J. THE US (U.S.) FILE

There are 107 variables in the twelfth file, US, which contains data for the entire United States. All generation and emission values are derived by aggregating from the plant level. There are no variables that have not been described in previous file variable descriptions. Aggregated variable names generally begin with "US."

K. THE STIE04 (2004 STATE IMPORT-EXPORT) FILE

There are 13 variables in STIE04, which contains State import-export data for year 2004.

1. **eGRID2006 2004 State File Sequence Number (SEQST04) –**
   This field contains the State sequence number and is the same as the one in eGRID2006's ST; it can be used to link data for the same State.

2. **State Abbreviation (PSTATABB) –**
   This field contains the abbreviation of the State.

3. **Grid Region (GRIDRGN) –**
   This field contains the grid region in which the State is included. There are five distinct grid regions comprising one or more whole States:

   E = Eastern grid (36 Eastern States plus DC)
   W = Western grid (11 Western States)
   AK = Alaska
   HI = Hawaii
   TX = Texas

4. **2004 State Total Net Generation (STNGEN04) –**
   This field contains the 2004 total net generation, in GWh, for the given State, as reported by EIA.
   Source: EIA's *Electric Power Annual*, data table (generation_state.xls)

5. **2004 State Sales to Ultimate Customers (STSLCN04) –**
   This field contains the 2004 sales to ultimate consumers, in GWh, for the given State, as reported by EIA.
   Source: EIA Electric Sales, Revenue, and Average Price data table (sales_state.xls)

6. **2004 State Energy Consumed by Respondent Without Charge (STCNEL04) –**
   This field contains the 2004 energy consumed by the respondent without charge, in GWh, for the given State, as reported to EIA.
   Source: EIA-861

7. **2004 State Energy Furnished Without Charge (STCNFR04) –**
   This field contains the 2004 energy furnished without charge, in GWh, for the given State, as reported to EIA.
   Source: EIA-861

8. **2004 State Total Consumption (STCON04) –**
   This field contains the 2004 total consumption, in GWh, for the given State. It is the sum of STSLCN04, STCNEL04, and STCNFR04.

9. **2004 Grid Gross Loss Factor (GRDLSF04) –**
   This field contains the 2004 grid gross loss factor, as a decimal with five places to the right of the decimal for the grid region which the given State is associated. The grid loss factor represents the percent difference, expressed as a decimal, between total generation

(including net foreign imports) and total consumption. The grid gross loss factor is calculated separately for each grid region.

10. **2004 State Adjusted Total Net Generation (STADJG04) –**
This field contains the 2004 adjusted total net generation, in GWh, for the given State. The algorithm is as follows: STADJG04 = ((1 – GRDLSF04) * STNGEN04).

11. **2004 State Estimated Net Imports (STESTI04) –**
This field contains the 2004 estimated net imports, in GWh, for the given State. Positive values denote net imports; negative values denote net exports. The algorithm is as follows: STESTI04 = STCON04 – STADJG04.

12. **2004 State Estimated Net Imports as a Percent of Total Consumption (STPRI04) –**
This field contains the 2004 estimated net imports as a percent of the total consumption, for the given State. The algorithm is as follows:
STPRI94 = 100 *(STESTI04 / STCON04).
Only positive values are displayed; Negative values are not meaningful.

13. **2004 State Estimated Net Exports as a Percent of Total Net Generation (STPRE04) –**
This field contains the 2004 estimate net imports as a percent of total net generation, for the given State. The algorithm is as follows:
STPRE04 = 100 * (-STESTI04 / STNGEN04).
Only positive values are displayed; Negative values are not meaningful.

L. THE STIE05 (2005 STATE IMPORT-EXPORT) FILE

There are 13 variables in STIE05, which contains State import-export data for year 2005. There are no variables in this file that have not been previously described in the previous file, STIE04.

M. THE USGC (U.S. GENERATION AND CONSUMPTION) FILE

There are 6 variables in USGC, which contains generation and consumption as well as net foreign import data for the United States for years 2004 and 2005.

1. **2004 U.S. Total Net Generation (USTNGN04) –**
This field contains the U.S. total net generation for 2004, in GWh.

2. **2004 U.S. Total Consumption, (USTCON04) –**
This field contains the U.S. total consumption for 2004, in GWh.

3. **2004 Net Foreign Imports (USTNFI04) –**
This field contains the total net foreign (Canadian and Mexican) imports for 2004, in GWh. These data are reported at the State level, are displayed in an internal EIA database, and are summed to the U.S. level.

4. **2005 U.S. Total Net Generation (USTNGN05) –**
This field contains the U.S. total net generation for 2005, in GWh.

5. 2005 U.S. Total Consumption (USTCON05) –
This field contains the U.S. total consumption for 2005, in GWh.

6. 2005 Net Foreign Imports (USTNFI05) –
This field contains the total net foreign (Canadian and Mexican) imports for 2005, in GWh. These data are reported at the State level, are displayed in an internal EIA database, and are summed to the U.S. level.

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APPENDIX A. eGRID2007 FILE STRUCTURE – VARIABLE DESCRIPTIONS FOR 2005 DATA YEAR

The year 2005 data for eGRID2007 are initially in database format and are then transformed into Excel spreadsheets. The structure of the 12 aggregation, two State Import-Export, and one U.S. Generation and Consumption database files – including descriptions of the variables and original sources of data – are delineated below in the file structure. NOTE: *Italics indicates new field*; **bold indicates change.**

Table A-1
eGRID2007 Version 1.0 File Structure
2005 BLR Boiler File*

Field	Name	Description	Source(s)
1	SEQBLR05	eGRID2007 2005 file boiler sequence number	
2	PSTATABB	State abbreviation	EIA-860
3	PNAME	Plant name	EIA-860 + updates
4	ORISPL	DOE/EIA ORIS plant or facility code	EIA-860
5	BLRID	Boiler ID	ETS/CEM, EIA-767
6	ARPFLAG	Acid Rain Program flag: 1 = Yes	ETS/CEM
7	NBPFLAG	NO_x Budget Program flag: 1 = Yes	ETS/CEM
8	BOTFIRTY	Boiler bottom and firing types	ETS/CEM, EIA-767
9	NUMGEN	Number of associated generators	EIA-767 **calculated**
10	FUELB1	Primary boiler fuel	EIA-767 based, ETS/CEM
11	LOADHRS	Hours connected to load	EIA-767
12	HTIEAN	Boiler unadjusted annual ETS/CEM heat input (MMBtu)	ETS/CEM
13	HTIEOZ	Boiler unadjusted ozone season ETS/CEM heat input (MMBtu)	ETS/CEM
14	HTIFAN	Boiler unadjusted annual total EIA-based calculated heat input (MMBtu)	
15	HTIFOZ	Boiler unadjusted ozone season EIA-based calculated heat input (MMBtu)	
16	NOXEAN	Boiler unadjusted annual ETS/CEM NO_x emissions (tons)	ETS/CEM
17	NOXEOZ	Boiler unadjusted ozone season ETS/CEM NO_x emissions (tons)	ETS/CEM
18	NOXFAN	Boiler unadjusted annual EIA-based calculated NO_x emissions (tons)	
19	NOXFOZ	Boiler unadjusted ozone season EIA-based calculated NO_x emissions (tons)	
20	SO2EAN	Boiler unadjusted annual ETS/CEM SO_2 emissions (tons)	ETS/CEM
21	SO2FAN	Boiler unadjusted annual EIA-based calculated SO_2 emissions (tons)	
22	CO2EAN	Boiler unadjusted annual ETS/CEM CO_2 emissions (tons)	ETS/CEM
23	CO2FAN	Boiler unadjusted annual EIA-based calculated CO_2 emissions (tons)	
24	SRCBEST	Source of “best” data from ETS/CEM or EIA-767	
25	HTIBAN	Boiler unadjusted annual best heat input (MMBtu)	
26	HTIBOZ	Boiler unadjusted ozone season best heat input (MMBtu)	
27	NOXBAN	Boiler unadjusted annual best NO_x emissions (tons)	
28	NOXBOZ	Boiler unadjusted ozone season best NO_x emissions (tons)	
29	SO2BAN	Boiler unadjusted annual best SO_2 emissions (tons)	
30	CO2BAN	Boiler unadjusted annual best CO_2 emissions (tons)	
31	SO2CTLDV	SO_2 (scrubber) first control device	ETS/CEM, EIA-767
32	NOXCTLDV	NO_x first control device	ETS/CEM, EIA-767
33	HGCTLDV	Hg Activated carbon injection system flag: 1 = Yes	EIA-767
34	BLRYRONL	Boiler year on-line	ETS/CEM, EIA-767

*Note that summing the boiler unadjusted emissions to the plant level may not result in the same values as the plant unadjusted emissions since additional emissions from prime movers not covered by the EPA ETS/CEM or EIA-767 data files may be included in the plant emissions values.

Table A-1
eGRID2007 Version 1.0 File Structure
2005 GEN Generator File**

Field	Name	Description	Source(s)
1	SEQGEN05	eGRID2007 2005 file generator sequence number	
2	PSTATABB	State abbreviation	EIA-860
3	PNAME	Plant name	EIA-860 + updates
4	ORISPL	DOE/EIA ORIS plant or facility code	EIA-860
5	GENID	Generator ID	EIA-860, EIA-767
6	NUMBLR	Number of associated boilers	EIA-767 **calculated**
7	GENSTAT	Generator status	EIA-860
8	PRMVR	Prime mover type	EIA-860
9	FUELG1	Primary generator fuel	EIA-860
10	NAMEPCAP	Generator nameplate capacity (MW)	EIA-860
11	CFACT	Generator capacity factor	
12	GENNTAN	Generator annual net generation (MWh)	EIA-767, EIA-906/920
13	GENNTOZ	Generator ozone season net generation (MWh)	EIA-767, EIA-906/920
14	GENERSRC	Generation data source	
15	GENYRONL	Generator year on-line	EIA-860

**Note that summing the generator generation to the plant level may not result in the same values as the plant generation. This file includes generation from generators in the EIA-767, from nuclear units in the EIA-906/920, and from those plant-prime movers in the EIA-906/920 that have only one generator in the EIA-860. For a few generators, EPA's ETS/CEM data are the generation source; see the Methodology Section of the TSD for details. The source of generation in the plant file is primarily the EIA-906/920.

Table A-1
eGRID2007 Version 1.0 File Structure
2005 PLNT Plant File

Field	Name	Description	Source(s)
1	SEQPLT05	eGRID2007 2005 file plant sequence number	
2	PSTATABB	State abbreviation	EIA-860
3	PNAME	Plant name	EIA-860 + updates
4	ORISPL	DOE/EIA ORIS plant or facility code	EIA-860
5	FRSID	Plant EPA Facility Registry System (FRS) identification code	EPA FRS
6	OPRNAME	Plant operator name	EIA-860 + updates
7	OPRCODE	Plant operator ID	EIA-860 + updates
8	UTLSRVNM	Utility service area name	EIA-860, EIA + updates
9	UTLSRVID	Utility service area ID	EIA-860, EIA + updates
10	OPPRNUM	Parent company ID associated with the operator	EIA + updates
11	OPPRNAME	Parent company name associated with the operator	EIA + updates
12	PCANAME	Power control area name	NERC, EIA-861 + **EPA** updates
13	PCAID	Power control area ID	NERC, EIA-861 + **EPA** updates
14	NERC	NERC region acronym	NERC
15	SUBRGN	eGRID subregion acronym	EPA
16	SRNAME	eGRID subregion name	EPA
17	FIPSST	Plant FIPS State code	NIST-derived
18	FIPSCNTY	Plant FIPS county code	NIST-derived
19	CNTYNAME	Plant county name	EIA-860, **ETS/CEM**
20	LAT	Plant latitude	EPA/CAMD + updates
21	LON	Plant longitude	EPA/CAMD + updates
22	*CCFLAG*	*County centroid flag: 1 = County centroid used*	
23	NUMBLR	Number of boilers	**ETS/CEM, EIA-767 calculated**
24	NUMGEN	Number of generators	**EIA-860 calculated**
25	*COMBUST*	*Plant combustion status: 1 = Combusts, 0 = No combustion, 0.5 = Partial combustion*	
26	SOURCEM	Plant emissions source(s): **CEM, 767, 906, ICR, MWC**	
27	PLPRMFL	Plant primary fuel	
28	PLFUELCT	Plant primary coal/oil/gas/**other fossil** fuel category	
29	*COALFLAG*	*Flag indicating if the plant used any amount of coal: 1 = Yes*	
30	CAPFAC	Plant capacity factor	
31	NAMEPCAP	Plant nameplate capacity (MW)	EIA-860 summed
32	RMBMFLAG	Renewable methane/biomass plant adjustment flag: 0 = No biomass; 1 = Renewable methane included; 100 = Other biomass included	
33	CHPFLAG	Combined heat and power (CHP) plant adjustment flag: 1 = Yes	eGRID CHP List
34	USETHRMO	CHP plant useful thermal output (MMBtu)	EIA-906/920 calculated, EIA-767
35	PWRTOHT	CHP plant power to heat ratio	
36	ELCALLOC	CHP plant electric allocation factor	
37	PSFLAG	Plant pumped storage flag: 1 = Yes	EIA-860
38	PLHTIAN	Plant annual heat input (MMBtu)	
39	PLHTIOZ	Plant ozone season heat input (MMBtu)	
40	PLNGENAN	Plant annual net generation (MWh)	EIA-906/920, EIA-767
41	PLNGENOZ	Plant ozone season net generation (MWh)	EIA-906/920, EIA-767
42	PLNOXAN	Plant annual NO_x emissions (tons)	
43	PLNOXOZ	Plant ozone season NO_x emissions (tons)	
44	PLSO2AN	Plant annual SO_2 emissions (tons)	
45	PLCO2AN	Plant annual CO_2 emissions (tons)	
46	*PLCH4AN*	*Plant annual CH_4 emissions (lbs)*	
47	*PLN2OAN*	*Plant annual N_2O emissions (lbs)*	
48	PLHGAN	Plant annual Hg emissions (lbs)	
49	PLNOXRTA	Plant annual NO_x output emission rate (lb/MWh)	
50	PLNOXRTO	Plant ozone season NO_x output emission rate (lb/MWh)	

Table A-1
eGRID2007 Version 1.0 File Structure
2005 PLNT Plant File (continued).

Field	Name	Description	Source(s)
51	PLSO2RTA	Plant annual SO_2 output emission rate (lb/MWh)	
52	PLCO2RTA	Plant annual CO_2 output emission rate (lb/MWh)	
53	*PLCH4RTA*	*Plant annual CH_4 output emission rate (lb/GWh)*	
54	*PLN2ORTA*	*Plant annual N_2O output emission rate (lb/GWh)*	
55	PLHGRTA	Plant annual Hg output emission rate (lb/GWh)	
56	PLNOXRA	Plant annual NOx input emission rate (lb/MMBtu)	
57	PLNOXRO	Plant ozone season NO_x input emission rate (lb/MMBtu)	
58	PLSO2RA	Plant annual SO_2 input emission rate (lb/MMBtu)	
59	PLCO2RA	Plant annual CO_2 input emission rate (lb/MMBtu)	
60	PLHGRA	Plant annual Hg input emission rate (lb/BBtu)	
61	*PLNOXCRT*	*Plant annual NO_x combustion output emission rate (lb/MWh)*	
62	*PLNOXCRO*	*Plant ozone season NO_x combustion output emission rate (lb/MWh)*	
63	*PLSO2CRT*	*Plant annual SO_2 combustion output emission rate (lb/MWh)*	
64	*PLCO2CRT*	*Plant annual CO_2 combustion output emission rate (lb/MWh)*	
65	*PLCH4CRT*	*Plant annual CH_4 combustion output emission rate (lb/GWh)*	
66	*PLN2OCRT*	*Plant annual N_2O combustion output emission rate (lb/GWh)*	
67	*PLHGCRT*	*Plant annual Hg combustion output emission rate (lb/GWh)*	
68	UNNOX	Plant unadjusted annual NO_x emissions (tons)	
69	UNNOXOZ	Plant unadjusted ozone season NO_x emissions (tons)	
70	UNSO2	Plant unadjusted annual SO_2 emissions (tons)	
71	UNCO2	Plant unadjusted annual CO_2 emissions (tons)	
72	*UNCH4*	*Plant unadjusted annual CH_4 emissions (lbs)*	
73	*UNN2O*	*Plant unadjusted annual N_2O emissions (lbs)*	
74	UNHG	Plant unadjusted annual Hg emissions (lbs)	
75	UNHTI	Plant unadjusted annual heat input (MMBtu)	
76	UNHTIOZ	Plant unadjusted ozone season heat input (MMBtu)	ETS/CEM, EIA-906/920 & EIA-767 calculated
77	PLHTRT	Plant nominal heat rate (Btu/kWh)	
78	PLGENACL	Plant annual coal net generation (MWh)	
79	PLGENAOL	Plant annual oil net generation (MWh)	
80	PLGENAGS	Plant annual gas net generation (MWh)	
81	PLGENANC	Plant annual nuclear net generation (MWh)	
82	PLGENAHY	Plant annual hydro net generation (MWh)	
83	PLGENABM	Plant annual biomass net generation (MWh)	
84	PLGENAWI	Plant annual wind net generation (MWh)	
85	PLGENASO	Plant annual solar net generation (MWh)	
86	PLGENAGT	Plant annual geothermal net generation (MWh)	
87	PLGENAOF	Plant annual other fossil net generation (MWh)	
88	PLGENAOP	Plant annual other unknown/purchased fuel net generation (MWh)	
89	PLGENATN	Plant annual total nonrenewables net generation (MWh)	
90	PLGENATR	Plant annual total renewables net generation (MWh)	
91	PLGENATH	Plant annual total nonhydro renewables net generation (MWh)	
92	*PLGENACY*	*Plant annual total combustion net generation (MWh)*	
93	*PLGENACN*	*Plant annual total noncombustion net generation (MWh)*	
94	PLCLPR	Plant coal generation percent (resource mix)	
95	PLOLPR	Plant oil generation percent (resource mix)	
96	PLGSPR	Plant gas generation percent (resource mix)	
97	PLNCPR	Plant nuclear generation percent (resource mix)	
98	PLHYPR	Plant hydro generation percent (resource mix)	
99	PLBMPR	Plant biomass generation percent (resource mix)	
100	PLWIPR	Plant wind generation percent (resource mix)	
101	PLSOPR	Plant solar generation percent (resource mix)	
102	PLGTPR	Plant geothermal generation percent (resource mix)	
103	PLOFPR	Plant other fossil generation percent (resource mix)	
104	PLOPPR	Plant other unknown/purchased fuel generation percent (resource mix)	
105	PLTNPR	Plant total nonrenewables generation percent (resource mix)	
106	PLTRPR	Plant total renewables generation percent (resource mix)	
107	PLTHPR	Plant total nonhydro renewables generation percent (resource mix)	

Table A-1
eGRID2007 Version 1.0 File Structure
2005 PLNT Plant File (continued).

Field	Name	Description	Source(s)
108	*PLCYPR*	*Plant total combustion generation percent (resource mix)*	
109	*PLCNPR*	*Plant total noncombustion generation percent (resource mix)*	
110	OWNRNM01	Plant owner name (first)	EIA-860 + updates
111	OWNRUC01	Plant owner code (first)	EIA-860 + updates
112	OWNRPR01	Plant owner percent (first)	EIA-860 + updates
113	OWNRNM02	Plant owner name (second)	EIA-860 + updates
114	OWNRUC02	Plant owner code (second)	EIA-860 + updates
115	OWNRPR02	Plant owner percent (second)	EIA-860 + updates
116	OWNRNM03	Plant owner name (third)	EIA-860 + updates
117	OWNRUC03	Plant owner code (third)	EIA-860 + updates
118	OWNRPR03	Plant owner percent (third)	EIA-860 + updates
119	OWNRNM04	Plant owner name (fourth)	EIA-860 + updates
120	OWNRUC04	Plant owner code (fourth)	EIA-860 + updates
121	OWNRPR04	Plant owner percent (fourth)	EIA-860 + updates
122	OWNRNM05	Plant owner name (fifth)	EIA-860 + updates
123	OWNRUC05	Plant owner code (fifth)	EIA-860 + updates
124	OWNRPR05	Plant owner percent (fifth)	EIA-860 + updates
125	OWNRNM06	Plant owner name (sixth)	EIA-860 + updates
126	OWNRUC06	Plant owner code (sixth)	EIA-860 + updates
127	OWNRPR06	Plant owner percent (sixth)	EIA-860 + updates
128	OWNRNM07	Plant owner name (seventh)	EIA-860 + updates
129	OWNRUC07	Plant owner code (seventh)	EIA-860 + updates
130	OWNRPR07	Plant owner percent (seventh)	EIA-860 + updates
131	OWNRNM08	Plant owner name (eighth)	EIA-860 + updates
132	OWNRUC08	Plant owner code (eighth)	EIA-860 + updates
133	OWNRPR08	Plant owner percent (eighth)	EIA-860 + updates
134	OWNRNM09	Plant owner name (ninth)	EIA-860 + updates
135	OWNRUC09	Plant owner code (ninth)	EIA-860 + updates
136	OWNRPR09	Plant owner percent (ninth)	EIA-860 + updates
137	OWNRNM10	Plant owner name (tenth)	EIA-860 + updates
138	OWNRUC10	Plant owner code (tenth)	EIA-860 + updates
139	OWNRPR10	Plant owner percent (tenth)	EIA-860 + updates
140	OWNRNM11	Plant owner name (eleventh)	EIA-860 + updates
141	OWNRUC11	Plant owner code (eleventh)	EIA-860 + updates
142	OWNRPR11	Plant owner percent (eleventh)	EIA-860 + updates
143	OWNRNM12	Plant owner name (twelfth)	EIA-860 + updates
144	OWNRUC12	Plant owner code (twelfth)	EIA-860 + updates
145	OWNRPR12	Plant owner percent (twelfth)	EIA-860 + updates
146	OWNRNM13	Plant owner name (thirteenth)	EIA-860 + updates
147	OWNRUC13	Plant owner code (thirteenth)	EIA-860 + updates
148	OWNRPR13	Plant owner percent (thirteenth)	EIA-860 + updates
149	OWNRNM14	Plant owner name (fourteenth)	EIA-860 + updates
150	OWNRUC14	Plant owner code (fourteenth)	EIA-860 + updates
151	OWNRPR14	Plant owner percent (fourteenth)	EIA-860 + updates
152	*OWNRNM15*	*Plant owner name (fifteenth)*	*EIA-860 + updates*
153	*OWNRUC15*	*Plant owner code (fifteenth)*	*EIA-860 + updates*
154	*OWNRPR15*	*Plant owner percent (fifteenth)*	*EIA-860 + updates*
155	*OWNRNM16*	*Plant owner name (sixteenth)*	*EIA-860 + updates*
156	*OWNRUC16*	*Plant owner code (sixteenth)*	*EIA-860 + updates*
157	*OWNRPR16*	*Plant owner percent (sixteenth)*	*EIA-860 + updates*
158	*SEQPLT04*	*eGRID2006 2004 file plant sequence number*	

Table A-1
eGRID2007 Version 1.0 File Structure
2005 ST State File

Field	Name	Description
1	SEQST05	eGRID2007 2005 file State sequence number
2	PSTATABB	State abbreviation
3	FIPSST	FIPS State code
4	NAMEPCAP	State nameplate capacity (MW)
5	STHTIAN	State annual heat input (MMBtu)
6	STHTIOZ	State ozone season heat input (MMBtu)
7	STNGENAN	State annual net generation (MWh)
8	STNGENOZ	State ozone season net generation (MWh)
9	STNOXAN	State annual NO_x emissions (tons)
10	STNOXOZ	State ozone season NO_x emissions (tons)
11	STSO2AN	State annual SO_2 emissions (tons)
12	STCO2AN	State annual CO_2 emissions (tons)
13	*STCH4AN*	*State annual CH_4 emissions (lbs)*
14	*STN2OAN*	*State annual N_2O emissions (lbs)*
15	STHGAN	State annual Hg emissions (lbs)
16	STNOXRTA	State annual NO_x output emission rate (lb/MWh)
17	STNOXRTO	State ozone season NO_x output emission rate (lb/MWh)
18	STSO2RTA	State annual SO_2 output emission rate (lb/MWh)
19	STCO2RTA	State annual CO_2 output emission rate (lb/MWh)
20	*STCH4RTA*	*State annual CH_4 output emission rate (lb/GWh)*
21	*STN2ORTA*	*State annual N_2O output emission rate (lb/GWh)*
22	STHGRTA	State annual Hg output emission rate (lb/GWh)
23	STNOXRA	State annual NO_x input emission rate (lb/MMBtu)
24	STNOXRO	State ozone season NO_x input emission rate (lb/MMBtu)
25	STSO2RA	State annual SO_2 input emission rate (lb/MMBtu)
26	STCO2RA	State annual CO_2 input emission rate (lb/MMBtu)
27	STHGRA	State annual Hg input emission rate (lb/BBtu)
28	*STNOXCRT*	*State annual NO_x combustion output emission rate (lb/MWh)*
29	*STNOXCRO*	*State ozone season NO_x combustion output emission rate (lb/MWh)*
30	*STSO2CRT*	*State annual SO_2 combustion output emission rate (lb/MWh)*
31	*STCO2CRT*	*State annual CO_2 combustion output emission rate (lb/MWh)*
32	*STCH4CRT*	*State annual CH_4 combustion output emission rate (lb/GWh)*
33	*STN2OCRT*	*State annual N_2O combustion output emission rate (lb/GWh)*
34	*STHGCRT*	*State annual Hg combustion output emission rate (lb/GWh)*
35	STCNOXRT	State coal annual NO_x output emission rate (lb/MWh)
36	STONOXRT	State oil annual NO_x output emission rate (lb/MWh)
37	STGNOXRT	State gas annual NO_x output emission rate (lb/MWh)
38	STFSNXRT	State fossil fuel annual NO_x output emission rate (lb/MWh)
39	STCNXORT	State coal ozone season NO_x output emission rate (lb/MWh)
40	STONXORT	State oil ozone season NO_x output emission rate (lb/MWh)
41	STGNXORT	State gas ozone season NO_x output emission rate (lb/MWh)
42	STFSNORT	State fossil fuel ozone season NO_x output emission rate (lb/MWh)
43	STCSO2RT	State coal annual SO_2 output emission rate (lb/MWh)
44	STOSO2RT	State oil annual SO_2 output emission rate (lb/MWh)
45	STGSO2RT	State gas annual SO_2 output emission rate (lb/MWh)
46	STFSS2RT	State fossil fuel annual SO_2 output emission rate (lb/MWh)
47	STCCO2RT	State coal annual CO_2 output emission rate (lb/MWh)
48	STOCO2RT	State oil annual CO_2 output emission rate (lb/MWh)
49	STGCO2RT	State gas annual CO_2 output emission rate (lb/MWh)
50	STFSC2RT	State fossil fuel annual CO_2 output emission rate (lb/MWh)
51	STCHGRT	State coal annual Hg output emission rate (lb/GWh)
52	STFSHGRT	State fossil fuel annual Hg output emission rate (lb/GWh)
53	STCNOXR	State coal annual NO_x input emission rate (lb/MMBtu)
54	STONOXR	State oil annual NO_x input emission rate (lb/MMBtu)
55	STGNOXR	State gas annual NO_x input emission rate (lb/MMBtu)
56	STFSNXR	State fossil fuel annual NO_x input emission rate (lb/MMBtu)
57	STCNXOR	State coal ozone season NO_x input emission rate (lb/MMBtu)
58	STONXOR	State oil ozone season NO_x input emission rate (lb/MMBtu)
59	STGNXOR	State gas ozone season NO_x input emission rate (lb/MMBtu)

Table A-1
eGRID2007 Version 1.0 File Structure
2005 ST State File (continued).

Field	Name	Description
60	STFSNOR	State fossil fuel ozone season NO_x input emission rate (lb/MMBtu)
61	STCSO2R	State coal annual SO_2 input emission rate (lb/MMBtu)
62	STOSO2R	State oil annual SO_2 input emission rate (lb/MMBtu)
63	STGSO2R	State gas annual SO_2 input emission rate (lb/MMBtu)
64	STFSS2R	State fossil fuel annual SO_2 input emission rate (lb/MMBtu)
65	STCCO2R	State coal annual CO_2 input emission rate (lb/MMBtu)
66	STOCO2R	State oil annual CO_2 input emission rate (lb/MMBtu)
67	STGCO2R	State gas annual CO_2 input emission rate (lb/MMBtu)
68	STFSC2R	State fossil fuel annual CO_2 input emission rate (lb/MMBtu)
69	STCHGR	State coal annual Hg input emission rate (lb/BBtu)
70	STFSHGR	State fossil fuel annual Hg input emission rate (lb/BBtu)
71	STNBNOX	State annual non-baseload NO_x output emission rate (lb/MWh)
72	STNBNXO	State ozone season non-baseload NO_x output emission rate (lb/MWh)
73	STNBSO2	State annual non-baseload SO_2 output emission rate (lb/MWh)
74	STNBCO2	State annual non-baseload CO_2 output emission rate (lb/MWh)
75	*STNBCH4*	*State annual non-baseload CH_4 output emission rate (lb/GWh)*
76	*STNBN2O*	*State annual non-baseload N_2O output emission rate (lb/GWh)*
77	STNBHG	State annual non-baseload Hg output emission rate (lb/GWh)
78	STGENACL	State annual coal net generation (MWh)
79	STGENAOL	State annual oil net generation (MWh)
80	STGENAGS	State annual gas net generation (MWh)
81	STGENANC	State annual nuclear net generation (MWh)
82	STGENAHY	State annual hydro net generation (MWh)
83	STGENABM	State annual biomass net generation (MWh)
84	STGENAWI	State annual wind net generation (MWh)
85	STGENASO	State annual solar net generation (MWh)
86	STGENAGT	State annual geothermal net generation (MWh)
87	STGENAOF	State annual other fossil net generation (MWh)
88	STGENAOP	State annual other unknown/purchased fuel net generation (MWh)
89	STGENATN	State annual total nonrenewables net generation (MWh)
90	STGENATR	State annual total renewables net generation (MWh)
91	STGENATH	State annual total nonhydro renewables net generation (MWh)
92	*STGENACY*	*State annual total combustion net generation (MWh)*
93	*STGENACN*	*State annual total noncombustion net generation (MWh)*
94	STCLPR	State coal generation percent (resource mix)
95	STOLPR	State oil generation percent (resource mix)
96	STGSPR	State gas generation percent (resource mix)
97	STNCPR	State nuclear generation percent (resource mix)
98	STHYPR	State hydro generation percent (resource mix)
99	STBMPR	State biomass generation percent (resource mix)
100	STWIPR	State wind generation percent (resource mix)
101	STSOPR	State solar generation percent (resource mix)
102	STGTPR	State geothermal generation percent (resource mix)
103	STOFPR	State other fossil generation percent (resource mix)
104	STOPPR	State other unknown/purchased fuel generation percent (resource mix)
105	STTNPR	State total nonrenewables generation percent (resource mix)
106	STTRPR	State total renewables generation percent (resource mix)
107	STTHPR	State total nonhydro renewables generation percent (resource mix)
108	*STCYPR*	*State total combustion generation percent (resource mix)*
109	*STCNPR*	*State total noncombustion generation percent (resource mix)*

Table A-1
eGRID2007 Version 1.0 File Structure
2005 EGCL and EGCO Files
Electric Generating Company Location (Operator)-based and Owner-based Files

Field	Name	Description
1	SEQEGL05, SEQEGO05	eGRID2007 2005 file EGC location (operator)-based, owner-based sequence number
2	EGCNAME	EGC name
3	EGCCODE	EGC ID
4	PRNUM	Parent company ID associated with the EGC
5	PRNAME	Parent company name associated with the EGC
6	NAMEPCAP	EGC nameplate capacity (MW)
7	EGHTIAN	EGC annual heat input (MMBtu)
8	EGHTIOZ	EGC ozone season heat input (MMBtu)
9	EGNGENAN	EGC annual net generation (MWh)
10	EGNGENOZ	EGC ozone season net generation (MWh)
11	EGNOXAN	EGC annual NO_x emissions (tons)
12	EGNOXOZ	EGC ozone season NO_x emissions (tons)
13	EGSO2AN	EGC annual SO_2 emissions (tons)
14	EGCO2AN	EGC annual CO_2 emissions (tons)
15	*EGCH4AN*	*EGC annual CH_4 emissions (lbs)*
16	*EGN2OAN*	*EGC annual N_2O emissions (lbs)*
17	EGHGAN	EGC annual Hg emissions (lbs)
18	EGNOXRTA	EGC annual NO_x output emission rate (lb/MWh)
19	EGNOXRTO	EGC ozone season NO_x output emission rate (lb/MWh)
20	EGSO2RTA	EGC annual SO_2 output emission rate (lb/MWh)
21	EGCO2RTA	EGC annual CO_2 output emission rate (lb/MWh)
22	*EGCH4RTA*	*EGC annual CH_4 output emission rate (lb/GWh)*
23	*EGN2ORTA*	*EGC annual N_2O output emission rate (lb/GWh)*
24	EGHGRTA	EGC annual Hg output emission rate (lb/GWh)
25	EGNOXRA	EGC annual NO_x input emission rate (lb/MMBtu)
26	EGNOXRO	EGC ozone season NO_x input emission rate (lb/MMBtu)
27	EGSO2RA	EGC annual SO_2 input emission rate (lb/MMBtu)
28	EGCO2RA	EGC annual CO_2 input emission rate (lb/MMBtu)
29	EGHGRA	EGC annual Hg input emission rate (lb/BBtu)
30	*EGNOXCRT*	*EGC annual NO_x combustion output emission rate (lb/MWh)*
31	*EGNOXCRO*	*EGC ozone season NO_x combustion output emission rate (lb/MWh)*
32	*EGSO2CRT*	*EGC annual SO_2 combustion output emission rate (lb/MWh)*
33	*EGCO2CRT*	*EGC annual CO_2 combustion output emission rate (lb/MWh)*
34	*EGCH4CRT*	*EGC annual CH_4 combustion output emission rate (lb/GWh)*
35	*EGN2OCRT*	*EGC annual N_2O combustion output emission rate (lb/GWh)*
36	*EGHGCRT*	*EGC annual Hg combustion output emission rate (lb/GWh)*
37	EGCNOXRT	EGC coal annual NO_x output emission rate (lb/MWh)
38	EGONOXRT	EGC oil annual NO_x output emission rate (lb/MWh)
39	EGGNOXRT	EGC gas annual NO_x output emission rate (lb/MWh)
40	EGFSNXRT	EGC fossil fuel annual NO_x output emission rate (lb/MWh)
41	EGCNXORT	EGC coal ozone season NO_x output emission rate (lb/MWh)
42	EGONXORT	EGC oil ozone season NO_x output emission rate (lb/MWh)
43	EGGNXORT	EGC gas ozone season NO_x output emission rate (lb/MWh)
44	EGFSNORT	EGC fossil fuel ozone season NO_x output emission rate (lb/MWh)
45	EGCSO2RT	EGC coal annual SO_2 output emission rate (lb/MWh)
46	EGOSO2RT	EGC oil annual SO_2 output emission rate (lb/MWh)
47	EGGSO2RT	EGC gas annual SO_2 output emission rate (lb/MWh)
48	EGFSS2RT	EGC fossil fuel annual SO_2 output emission rate (lb/MWh)
49	EGCCO2RT	EGC coal annual CO_2 output emission rate (lb/MWh)
50	EGOCO2RT	EGC oil annual CO_2 output emission rate (lb/MWh)
51	EGGCO2RT	EGC gas annual CO_2 output emission rate (lb/MWh)
52	EGFSC2RT	EGC fossil fuel annual CO_2 output emission rate (lb/MWh)
53	EGCHGRT	EGC coal annual Hg output emission rate (lb/GWh)
54	EGFSHGRT	EGC fossil fuel annual Hg output emission rate (lb/GWh)
55	EGCNOXR	EGC coal annual NO_x input emission rate (lb/MMBtu)
56	EGONOXR	EGC oil annual NO_x input emission rate (lb/MMBtu)
57	EGGNOXR	EGC gas annual NO_x input emission rate (lb/MMBtu)

Table A-1
eGRID2007 Version 1.0 File Structure
2005 EGCL and EGCO Files (continued).
Electric Generating Company Location (Operator)-based and Owner-based Files

Field	Name	Description
58	EGFSNXR	EGC fossil fuel annual NO_x input emission rate (lb/MMBtu)
59	EGCNXOR	EGC coal ozone season NO_x input emission rate (lb/MMBtu)
60	EGONXOR	EGC oil ozone season NO_x input emission rate (lb/MMBtu)
61	EGGNXOR	EGC gas ozone season NO_x input emission rate (lb/MMBtu)
62	EGFSNOR	EGC fossil fuel ozone season NO_x input emission rate (lb/MMBtu)
63	EGCSO2R	EGC coal annual SO_2 input emission rate (lb/MMBtu)
64	EGOSO2R	EGC oil annual SO_2 input emission rate (lb/MMBtu)
65	EGGSO2R	EGC gas annual SO_2 input emission rate (lb/MMBtu)
66	EGFSS2R	EGC fossil fuel annual SO_2 input emission rate (lb/MMBtu)
67	EGCCO2R	EGC coal annual CO_2 input emission rate (lb/MMBtu)
68	EGOCO2R	EGC oil annual CO_2 input emission rate (lb/MMBtu)
69	EGGCO2R	EGC gas annual CO_2 input emission rate (lb/MMBtu)
70	EGFSC2R	EGC fossil fuel annual CO_2 input emission rate (lb/MMBtu)
71	EGCHGR	EGC coal annual Hg input emission rate (lb/BBtu)
72	EGFSHGR	EGC fossil fuel annual Hg input emission rate (lb/BBtu)
73	EGNBNOX	EGC annual non-baseload NO_x output emission rate (lb/MWh)
74	EGNBNXO	EGC ozone season non-baseload NO_x output emission rate (lb/MWh)
75	EGNBSO2	EGC annual non-baseload SO_2 output emission rate (lb/MWh)
76	EGNBCO2	EGC annual non-baseload CO_2 output emission rate (lb/MWh)
77	*EGNBCH4*	*EGC annual non-baseload CH_4 output emission rate (lb/GWh)*
78	*EGNBN2O*	*EGC annual non-baseload N_2O output emission rate (lb/GWh)*
79	EGNBHG	EGC annual non-baseload Hg output emission rate (lb/GWh)
80	EGGENACL	EGC annual coal net generation (MWh)
81	EGGENAOL	EGC annual oil net generation (MWh)
82	EGGENAGS	EGC annual gas net generation (MWh)
83	EGGENANC	EGC annual nuclear net generation (MWh)
84	EGGENAHY	EGC annual hydro net generation (MWh)
85	EGGENABM	EGC annual biomass net generation (MWh)
86	EGGENAWI	EGC annual wind net generation (MWh)
87	EGGENASO	EGC annual solar net generation (MWh)
88	EGGENAGT	EGC annual geothermal net generation (MWh)
89	EGGENAOF	EGC annual other fossil net generation (MWh)
90	EGGENAOP	EGC annual other unknown/purchased fuel net generation (MWh)
91	EGGENATN	EGC annual total nonrenewables net generation (MWh)
92	EGGENATR	EGC annual total renewables net generation (MWh)
93	EGGENATH	EGC annual total nonhydro renewables net generation (MWh)
94	*EGGENACY*	*EGC annual total combustion net generation (MWh)*
95	*EGGENACN*	*EGC annual total noncombustion net generation (MWh)*
96	EGCLPR	EGC coal generation percent (resource mix)
97	EGOLPR	EGC oil generation percent (resource mix)
98	EGGSPR	EGC gas generation percent (resource mix)
99	EGNCPR	EGC nuclear generation percent (resource mix)
100	EGHYPR	EGC hydro generation percent (resource mix)
101	EGBMPR	EGC biomass generation percent (resource mix)
102	EGWIPR	EGC wind generation percent (resource mix)
103	EGSOPR	EGC solar generation percent (resource mix)
104	EGGTPR	EGC geothermal generation percent (resource mix)
105	EGOFPR	EGC other fossil generation percent (resource mix)
106	EGOPPR	EGC other unknown/purchased fuel generation percent (resource mix)
107	EGTNPR	EGC total nonrenewables generation percent (resource mix)
108	EGTRPR	EGC total renewables generation percent (resource mix)
109	EGTHPR	EGC total nonhydro renewables generation percent (resource mix)
110	*EGCYPR*	*EGC total combustion generation percent (resource mix)*
111	*EGCNPR*	*EGC total noncombustion generation percent (resource mix)*

Table A-1
eGRID2007 Version 1.0 File Structure
2005 PRCL and PRCO Files
Parent Company Location (Operator)-based and Owner-based Files

Field	Name	Description
1	SEQPRL05, SEQPRO05	eGRID2007 2005 file Parent company location (operator)-based, owner-based sequence number
2	PRNUM	Parent company ID
3	PRNAME	Parent company name associated with the parent company ID
4	NAMEPCAP	Parent company nameplate capacity (MW)
5	PRHTIAN	Parent company annual heat input (MMBtu)
6	PRHTIOZ	Parent company ozone season heat input (MMBtu)
7	PRNGENAN	Parent company annual net generation (MWh)
8	PRNGENOZ	Parent company ozone season net generation (MWh)
9	PRNOXAN	Parent company annual NO_x emissions (tons)
10	PRNOXOZ	Parent company ozone season NO_x emissions (tons)
11	PRSO2AN	Parent company annual SO_2 emissions (tons)
12	PRCO2AN	Parent company annual CO_2 emissions (tons)
13	*PRCH4AN*	*Parent company annual CH_4 emissions (lbs)*
14	*PRN2OAN*	*Parent company annual N_2O emissions (lbs)*
15	PRHGAN	Parent company annual Hg emissions (lbs)
16	PRNOXRTA	Parent company annual NO_x output emission rate (lb/MWh)
17	PRNOXRTO	Parent company ozone season NO_x output emission rate (lb/MWh)
18	PRSO2RTA	Parent company annual SO_2 output emission rate (lb/MWh)
19	PRCO2RTA	Parent company annual CO_2 output emission rate (lb/MWh)
20	*PRCH4RTA*	*Parent company annual CH_4 output emission rate (lb/GWh)*
21	*PRN2ORTA*	*Parent company annual N_2O output emission rate (lb/GWh)*
22	PRHGRTA	Parent company annual Hg output emission rate (lb/GWh)
23	PRNOXRA	Parent company annual NO_x input emission rate (lb/MMBtu)
24	PRNOXRO	Parent company ozone season NO_x input emission rate (lb/MMBtu)
25	PRSO2RA	Parent company annual SO_2 input emission rate (lb/MMBtu)
26	PRCO2RA	Parent company annual CO_2 input emission rate (lb/MMBtu)
27	PRHGRA	Parent company annual Hg input emission rate (lb/BBtu)
28	*PRNOXCRT*	*Parent company annual NO_x combustion output emission rate (lb/MWh)*
29	*PRNOXCRO*	*Parent company ozone season NO_x combustion output emission rate (lb/MWh)*
30	*PRSO2CRT*	*Parent company annual SO_2 combustion output emission rate (lb/MWh)*
31	*PRCO2CRT*	*Parent company annual CO_2 combustion output emission rate (lb/MWh)*
32	*PRCH4CRT*	*Parent company annual CH_4 combustion output emission rate (lb/GWh)*
33	*PRN2OCRT*	*Parent company annual N_2O combustion output emission rate (lb/GWh)*
34	*PRHGCRT*	*Parent company annual Hg combustion output emission rate (lb/GWh)*
35	PRCNOXRT	Parent company coal annual NO_x output emission rate (lb/MWh)
36	PRONOXRT	Parent company oil annual NO_x output emission rate (lb/MWh)
37	PRGNOXRT	Parent company gas annual NO_x output emission rate (lb/MWh)
38	PRFSNXRT	Parent company fossil fuel annual NO_x output emission rate (lb/MWh)
39	PRCNXORT	Parent company coal ozone season NO_x output emission rate (lb/MWh)
40	PRONXORT	Parent company oil ozone season NO_x output emission rate (lb/MWh)
41	PRGNXORT	Parent company gas ozone season NO_x output emission rate (lb/MWh)
42	PRFSNORT	Parent company fossil fuel ozone season NO_x output emission rate (lb/MWh)
43	PRCSO2RT	Parent company coal annual SO_2 output emission rate (lb/MWh)
44	PROSO2RT	Parent company oil annual SO_2 output emission rate (lb/MWh)
45	PRGSO2RT	Parent company gas annual SO_2 output emission rate (lb/MWh)
46	PRFSS2RT	Parent company fossil fuel annual SO_2 output emission rate (lb/MWh)
47	PRCCO2RT	Parent company coal annual CO_2 output emission rate (lb/MWh)
48	PROCO2RT	Parent company oil annual CO_2 output emission rate (lb/MWh)
49	PRGCO2RT	Parent company gas annual CO_2 output emission rate (lb/MWh)
50	PRFSC2RT	Parent company fossil fuel annual CO_2 output emission rate (lb/MWh)
51	PRCHGRT	Parent company coal annual Hg output emission rate (lb/GWh)
52	PRFSHGRT	Parent company fossil fuel annual Hg output emission rate (lb/GWh)
53	PRCNOXR	Parent company coal annual NO_x input emission rate (lb/MMBtu)
54	PRONOXR	Parent company oil annual NO_x input emission rate (lb/MMBtu)
55	PRGNOXR	Parent company gas annual NO_x input emission rate (lb/MMBtu)
56	PRFSNXR	Parent company fossil fuel annual NO_x input emission rate (lb/MMBtu)
57	PRCNXOR	Parent company coal ozone season NO_x input emission rate (lb/MMBtu)

Table A-1
eGRID2007 Version 1.0 File Structure
2005 PRCL and PRCO Files (continued).
Parent Company Location (Operator)-based and Owner-based Files

Field	Name	Description
58	PRONXOR	Parent company oil ozone season NO_x input emission rate (lb/MMBtu)
59	PRGNXOR	Parent company gas ozone season NO_x input emission rate (lb/MMBtu)
60	PRFSNOR	Parent company fossil fuel ozone season NO_x input emission rate (lb/MMBtu)
61	PRCSO2R	Parent company coal annual SO_2 input emission rate (lb/MMBtu)
62	PROSO2R	Parent company oil annual SO_2 input emission rate (lb/MMBtu)
63	PRGSO2R	Parent company gas annual SO_2 input emission rate (lb/MMBtu)
64	PRFSS2R	Parent company fossil fuel annual SO_2 input emission rate (lb/MMBtu)
65	PRCCO2R	Parent company coal annual CO_2 input emission rate (lb/MMBtu)
66	PROCO2R	Parent company oil annual CO_2 input emission rate (lb/MMBtu)
67	PRGCO2R	Parent company gas annual CO_2 input emission rate (lb/MMBtu)
68	PRFSC2R	Parent company fossil fuel annual CO_2 input emission rate (lb/MMBtu)
69	PRCHGR	Parent company coal annual Hg input emission rate (lb/BBtu)
70	PRFSHGR	Parent company fossil fuel annual Hg input emission rate (lb/BBtu)
71	PRNBNOX	Parent company annual non-baseload NO_x output emission rate (lb/MWh)
72	PRNBNXO	Parent company ozone season non-baseload NO_x output emission rate (lb/MWh)
73	PRNBSO2	Parent company annual non-baseload SO_2 output emission rate (lb/MWh)
74	PRNBCO2	Parent company annual non-baseload CO_2 output emission rate (lb/MWh)
75	*PRNBCH4*	*Parent company annual non-baseload CH_4 output emission rate (lb/GWh)*
76	*PRNBN2O*	*Parent company annual non-baseload N_2O output emission rate (lb/GWh)*
77	PRNBHG	Parent company annual non-baseload Hg output emission rate (lb/GWh)
78	PRGENACL	Parent company annual coal net generation (MWh)
79	PRGENAOL	Parent company annual oil net generation (MWh)
80	PRGENAGS	Parent company annual gas net generation (MWh)
81	PRGENANC	Parent company annual nuclear net generation (MWh)
82	PRGENAHY	Parent company annual hydro net generation (MWh)
83	PRGENABM	Parent company annual biomass net generation (MWh)
84	PRGENAWI	Parent company annual wind net generation (MWh)
85	PRGENASO	Parent company annual solar net generation (MWh)
86	PRGENAGT	Parent company annual geothermal net generation (MWh)
87	PRGENAOF	Parent company annual other fossil net generation (MWh)
88	PRGENAOP	Parent company annual other unknown/purchased fuel net generation (MWh)
89	PRGENATN	Parent company annual total nonrenewables net generation (MWh)
90	PRGENATR	Parent company annual total renewables net generation (MWh)
91	PRGENATH	Parent company annual total nonhydro renewables net generation (MWh)
92	*PRGENACY*	*Parent company annual total combustion net generation (MWh)*
93	*PRGENACN*	*Parent company annual total noncombustion net generation (MWh)*
94	PRCLPR	Parent company coal generation percent (resource mix)
95	PROLPR	Parent company oil generation percent (resource mix)
96	PRGSPR	Parent company gas generation percent (resource mix)
97	PRNCPR	Parent company nuclear generation percent (resource mix)
98	PRHYPR	Parent company hydro generation percent (resource mix)
99	PRBMPR	Parent company biomass generation percent (resource mix)
100	PRWIPR	Parent company wind generation percent (resource mix)
101	PRSOPR	Parent company solar generation percent (resource mix)
102	PRGTPR	Parent company geothermal generation percent (resource mix)
103	PROFPR	Parent company other fossil generation percent (resource mix)
104	PROPPR	Parent company other unknown/purchased fuel generation percent (resource mix)
105	PRTNPR	Parent company total nonrenewables generation percent (resource mix)
106	PRTRPR	Parent company total renewables generation percent (resource mix)
107	PRTHPR	Parent company total nonhydro renewables generation percent (resource mix)
108	*PRCYPR*	*Parent company total combustion generation percent (resource mix)*
109	*PRCNPR*	*Parent company total noncombustion generation percent (resource mix)*

Table A-1
eGRID2007 Version 1.0 File Structure
2005 PCAL File
Power Control Area (PCA) Location (Operator)-based File

Field	Name	Description
1	SEQPCL05	eGRID2007 2005 file PCA location (operator)-based sequence number
2	PCAID	PCA ID
3	PCANAME	PCA name associated with the PCA ID
4	NAMEPCAP	PCA nameplate capacity (MW)
5	PCHTIAN	PCA annual heat input (MMBtu)
6	PCHTIOZ	PCA ozone season heat input (MMBtu)
7	PCNGENAN	PCA annual net generation (MWh)
8	PCNGENOZ	PCA ozone season net generation (MWh)
9	PCNOXAN	PCA annual NO_x emissions (tons)
10	PCNOXOZ	PCA ozone season NO_x emissions (tons)
11	PCSO2AN	PCA annual SO_2 emissions (tons)
12	PCCO2AN	PCA annual CO_2 emissions (tons)
13	*PCCH4AN*	*PCA annual CH_4 emissions (lbs)*
14	*PCN2OAN*	*PCA annual N_2O emissions (lbs)*
15	PCHGAN	PCA annual Hg emissions (lbs)
16	PCNOXRTA	PCA annual NO_x output emission rate (lb/MWh)
17	PCNOXRTO	PCA ozone season NO_x output emission rate (lb/MWh)
18	PCSO2RTA	PCA annual SO_2 output emission rate (lb/MWh)
19	PCCO2RTA	PCA annual CO_2 output emission rate (lb/MWh)
20	*PCCH4RTA*	*PCA annual CH_4 output emission rate (lb/GWh)*
21	*PCN2ORTA*	*PCA annual N_2O output emission rate (lb/GWh)*
22	PCHGRTA	PCA annual Hg output emission rate (lb/GWh)
23	PCNOXRA	PCA annual NO_x input emission rate (lb/MMBtu)
24	PCNOXRO	PCA ozone season NO_x input emission rate (lb/MMBtu)
25	PCSO2RA	PCA annual SO_2 input emission rate (lb/MMBtu)
26	PCCO2RA	PCA annual CO_2 input emission rate (lb/MMBtu)
27	PCHGRA	PCA annual Hg input emission rate (lb/BBtu)
28	*PCNOXCRT*	*PCA annual NO_x combustion output emission rate (lb/MWh)*
29	*PCNOXCRO*	*PCA ozone season NO_x combustion output emission rate (lb/MWh)*
30	*PCSO2CRT*	*PCA annual SO_2 combustion output emission rate (lb/MWh)*
31	*PCCO2CRT*	*PCA annual CO_2 combustion output emission rate (lb/MWh)*
32	*PCCH4CRT*	*PCA annual CH_4 combustion output emission rate (lb/GWh)*
33	*PCN2OCRT*	*PCA annual N_2O combustion output emission rate (lb/GWh)*
34	*PCHGCRT*	*PCA annual Hg combustion output emission rate (lb/GWh)*
35	PCCNOXRT	PCA coal annual NO_x output emission rate (lb/MWh)
36	PCONOXRT	PCA oil annual NO_x output emission rate (lb/MWh)
37	PCGNOXRT	PCA gas annual NO_x output emission rate (lb/MWh)
38	PCFSNXRT	PCA fossil fuel annual NO_x output emission rate (lb/MWh)
39	PCCNXORT	PCA coal ozone season NO_x output emission rate (lb/MWh)
40	PCONXORT	PCA oil ozone season NO_x output emission rate (lb/MWh)
41	PCGNXORT	PCA gas ozone season NO_x output emission rate (lb/MWh)
42	PCFSNORT	PCA fossil fuel ozone season NO_x output emission rate (lb/MWh)
43	PCCSO2RT	PCA coal annual SO_2 output emission rate (lb/MWh)
44	PCOSO2RT	PCA oil annual SO_2 output emission rate (lb/MWh)
45	PCGSO2RT	PCA gas annual SO_2 output emission rate (lb/MWh)
46	PCFSS2RT	PCA fossil fuel annual SO_2 output emission rate (lb/MWh)
47	PCCCO2RT	PCA coal annual CO_2 output emission rate (lb/MWh)
48	PCOCO2RT	PCA oil annual CO_2 output emission rate (lb/MWh)
49	PCGCO2RT	PCA gas annual CO_2 output emission rate (lb/MWh)
50	PCFSC2RT	PCA fossil fuel annual CO_2 output emission rate (lb/MWh)
51	PCCHGRT	PCA coal annual Hg output emission rate (lb/GWh)
52	PCFSHGRT	PCA fossil fuel annual Hg output emission rate (lb/GWh)
53	PCCNOXR	PCA coal annual NO_x input emission rate (lb/MMBtu)
54	PCONOXR	PCA oil annual NO_x input emission rate (lb/MMBtu)
55	PCGNOXR	PCA gas annual NO_x input emission rate (lb/MMBtu)
56	PCFSNXR	PCA fossil fuel annual NO_x input emission rate (lb/MMBtu)
57	PCCNXOR	PCA coal ozone season NO_x input emission rate (lb/MMBtu)
58	PCONXOR	PCA oil ozone season NO_x input emission rate (lb/MMBtu)

Table A-1
eGRID2007 Version 1.0 File Structure
2005 PCAL File (continued).
Power Control Area (PCA) Location (Operator)-based File

Field	Name	Description
59	PCGNXOR	PCA gas ozone season NO_x input emission rate (lb/MMBtu)
60	PCFSNOR	PCA fossil fuel ozone season NO_x input emission rate (lb/MMBtu)
61	PCCSO2R	PCA coal annual SO_2 input emission rate (lb/MMBtu)
62	PCOSO2R	PCA oil annual SO_2 input emission rate (lb/MMBtu)
63	PCGSO2R	PCA gas annual SO_2 input emission rate (lb/MMBtu)
64	PCFSS2R	PCA fossil fuel annual SO_2 input emission rate (lb/MMBtu)
65	PCCCO2R	PCA coal annual CO_2 input emission rate (lb/MMBtu)
66	PCOCO2R	PCA oil annual CO_2 input emission rate (lb/MMBtu)
67	PCGCO2R	PCA gas annual CO_2 input emission rate (lb/MMBtu)
68	PCFSC2R	PCA fossil fuel annual CO_2 input emission rate (lb/MMBtu)
69	PCCHGR	PCA coal annual Hg input emission rate (lb/BBtu)
70	PCFSHGR	PCA fossil fuel annual Hg input emission rate (lb/BBtu)
71	PCNBNOX	PCA annual non-baseload NO_x output emission rate (lb/MWh)
72	PCNBNXO	PCA ozone season non-baseload NO_x output emission rate (lb/MWh)
73	PCNBSO2	PCA annual non-baseload SO_2 output emission rate (lb/MWh)
74	PCNBCO2	PCA annual non-baseload CO_2 output emission rate (lb/MWh)
75	*PCNBCH4*	*PCA annual non-baseload CH_4 output emission rate (lb/GWh)*
76	*PCNBN2O*	*PCA annual non-baseload N_2O output emission rate (lb/GWh)*
77	PCNBHG	PCA annual non-baseload Hg output emission rate (lb/GWh)
78	PCGENACL	PCA annual coal net generation (MWh)
79	PCGENAOL	PCA annual oil net generation (MWh)
80	PCGENAGS	PCA annual gas net generation (MWh)
81	PCGENANC	PCA annual nuclear net generation (MWh)
82	PCGENAHY	PCA annual hydro net generation (MWh)
83	PCGENABM	PCA annual biomass net generation (MWh)
84	PCGENAWI	PCA annual wind net generation (MWh)
85	PCGENASO	PCA annual solar net generation (MWh)
86	PCGENAGT	PCA annual geothermal net generation (MWh)
87	PCGENAOF	PCA annual other fossil net generation (MWh)
88	PCGENAOP	PCA annual other unknown/purchased fuel net generation (MWh)
89	PCGENATN	PCA annual total nonrenewables net generation (MWh)
90	PCGENATR	PCA annual total renewables net generation (MWh)
91	PCGENATH	PCA annual total nonhydro renewables net generation (MWh)
92	*PCGENACY*	*PCA annual total combustion net generation (MWh)*
93	*PCGENACN*	*PCA annual total noncombustion net generation (MWh)*
94	PCCLPR	PCA coal generation percent (resource mix)
95	PCOLPR	PCA oil generation percent (resource mix)
96	PCGSPR	PCA gas generation percent (resource mix)
97	PCNCPR	PCA nuclear generation percent (resource mix)
98	PCHYPR	PCA hydro generation percent (resource mix)
99	PCBMPR	PCA biomass generation percent (resource mix)
100	PCWIPR	PCA wind generation percent (resource mix)
101	PCSOPR	PCA solar generation percent (resource mix)
102	PCGTPR	PCA geothermal generation percent (resource mix)
103	PCOFPR	PCA other fossil generation percent (resource mix)
104	PCOPPR	PCA other unknown/purchased fuel generation percent (resource mix)
105	PCTNPR	PCA total nonrenewables generation percent (resource mix)
106	PCTRPR	PCA total renewables generation percent (resource mix)
107	PCTHPR	PCA total nonhydro renewables generation percent (resource mix)
108	*PCCYPR*	*PCA total combustion generation percent (resource mix)*
109	*PCCNPR*	*PCA total noncombustion generation percent (resource mix)*

Table A-1
eGRID2007 Version 1.0 File Structure
2005 SRL File
eGRID Subregion Location (Operator)-based File

Field	Name	Description
1	SEQSRL05	eGRID2007 2005 file eGRID subregion location (operator)-based sequence number
2	SUBRGN	eGRID subregion acronym
3	SRNAME	eGRID subregion name associated with eGRID subregion acronym
4	NERC	NERC acronym associated with the eGRID subregion
5	NAMEPCAP	eGRID subregion nameplate capacity (MW)
6	SRHTIAN	eGRID subregion annual heat input (MMBtu)
7	SRHTIOZ	eGRID subregion ozone season heat input (MMBtu)
8	SRNGENAN	eGRID subregion annual net generation (MWh)
9	SRNGENOZ	eGRID subregion ozone season net generation (MWh)
10	SRNOXAN	eGRID subregion annual NO_x emissions (tons)
11	SRNOXOZ	eGRID subregion ozone season NO_x emissions (tons)
12	SRSO2AN	eGRID subregion annual SO_2 emissions (tons)
13	SRCO2AN	eGRID subregion annual CO_2 emissions (tons)
14	*SRCH4AN*	*eGRID subregion annual CH_4 emissions (lbs)*
15	*SRN2OAN*	*eGRID subregion annual N_2O emissions (lbs)*
16	SRHGAN	eGRID subregion annual Hg emissions (lbs)
17	SRNOXRTA	eGRID subregion annual NO_x output emission rate (lb/MWh)
18	SRNOXRTO	eGRID subregion ozone season NO_x output emission rate (lb/MWh)
19	SRSO2RTA	eGRID subregion annual SO_2 output emission rate (lb/MWh)
20	SRCO2RTA	eGRID subregion annual CO_2 output emission rate (lb/MWh)
21	*SRCH4RTA*	*eGRID subregion annual CH_4 output emission rate (lb/GWh)*
22	*SRN2ORTA*	*eGRID subregion annual N_2O output emission rate (lb/GWh)*
23	SRHGRTA	eGRID subregion annual Hg output emission rate (lb/GWh)
24	SRNOXRA	eGRID subregion annual NO_x input emission rate (lb/MMBtu)
25	SRNOXRO	eGRID subregion ozone season NO_x input emission rate (lb/MMBtu)
26	SRSO2RA	eGRID subregion annual SO_2 input emission rate (lb/MMBtu)
27	SRCO2RA	eGRID subregion annual CO_2 input emission rate (lb/MMBtu)
28	SRHGRA	eGRID subregion annual Hg input emission rate (lb/BBtu)
29	*SRNOXCRT*	*eGRID subregion annual NO_x combustion output emission rate (lb/MWh)*
30	*SRNOXCRO*	*eGRID subregion ozone season NO_x combustion output emission rate (lb/MWh)*
31	*SRSO2CRT*	*eGRID subregion annual SO_2 combustion output emission rate (lb/MWh)*
32	*SRCO2CRT*	*eGRID subregion annual CO_2 combustion output emission rate (lb/MWh)*
33	*SRCH4CRT*	*eGRID subregion annual CH_4 combustion output emission rate (lb/GWh)*
34	*SRN2OCRT*	*eGRID subregion annual N_2O combustion output emission rate (lb/GWh)*
35	*SRHGCRT*	*eGRID subregion annual Hg combustion output emission rate (lb/GWh)*
36	SRCNOXRT	eGRID subregion coal annual NO_x output emission rate (lb/MWh)
37	SRONOXRT	eGRID subregion oil annual NO_x output emission rate (lb/MWh)
38	SRGNOXRT	eGRID subregion gas annual NO_x output emission rate (lb/MWh)
39	SRFSNXRT	eGRID subregion fossil fuel annual NO_x output emission rate (lb/MWh)
40	SRCNXORT	eGRID subregion coal ozone season NO_x output emission rate (lb/MWh)
41	SRONXORT	eGRID subregion oil ozone season NO_x output emission rate (lb/MWh)
42	SRGNXORT	eGRID subregion gas ozone season NO_x output emission rate (lb/MWh)
43	SRFSNORT	eGRID subregion fossil fuel ozone season NO_x output emission rate (lb/MWh)
44	SRCSO2RT	eGRID subregion coal annual SO_2 output emission rate (lb/MWh)
45	SROSO2RT	eGRID subregion oil annual SO_2 output emission rate (lb/MWh)
46	SRGSO2RT	eGRID subregion gas annual SO_2 output emission rate (lb/MWh)
47	SRFSS2RT	eGRID subregion fossil fuel annual SO_2 output emission rate (lb/MWh)
48	SRCCO2RT	eGRID subregion coal annual CO_2 output emission rate (lb/MWh)
49	SROCO2RT	eGRID subregion oil annual CO_2 output emission rate (lb/MWh)
50	SRGCO2RT	eGRID subregion gas annual CO_2 output emission rate (lb/MWh)
51	SRFSC2RT	eGRID subregion fossil fuel annual CO_2 output emission rate (lb/MWh)
52	SRCHGRT	eGRID subregion coal annual Hg output emission rate (lb/GWh)
53	SRFSHGRT	eGRID subregion fossil fuel annual Hg output emission rate (lb/GWh)
54	SRCNOXR	eGRID subregion coal annual NO_x input emission rate (lb/MMBtu)
55	SRONOXR	eGRID subregion oil annual NO_x input emission rate (lb/MMBtu)
56	SRGNOXR	eGRID subregion gas annual NO_x input emission rate (lb/MMBtu)
57	SRFSNXR	eGRID subregion fossil fuel annual NO_x input emission rate (lb/MMBtu)
58	SRCNXOR	eGRID subregion coal ozone season NO_x input emission rate (lb/MMBtu)

Table A-1
eGRID2007 Version 1.0 File Structure
2005 SRL File (continued).
eGRID Subregion Location (Operator)-based File

Field	Name	Description
59	SRONXOR	eGRID subregion oil ozone season NO_x input emission rate (lb/MMBtu)
60	SRGNXOR	eGRID subregion gas ozone season NO_x input emission rate (lb/MMBtu)
61	SRFSNOR	eGRID subregion fossil fuel ozone season NO_x input emission rate (lb/MMBtu)
62	SRCSO2R	eGRID subregion coal annual SO_2 input emission rate (lb/MMBtu)
63	SROSO2R	eGRID subregion oil annual SO_2 input emission rate (lb/MMBtu)
64	SRGSO2R	eGRID subregion gas annual SO_2 input emission rate (lb/MMBtu)
65	SRFSS2R	eGRID subregion fossil fuel annual SO_2 input emission rate (lb/MMBtu)
66	SRCCO2R	eGRID subregion coal annual CO_2 input emission rate (lb/MMBtu)
67	SROCO2R	eGRID subregion oil annual CO_2 input emission rate (lb/MMBtu)
68	SRGCO2R	eGRID subregion gas annual CO_2 input emission rate (lb/MMBtu)
69	SRFSC2R	eGRID subregion fossil fuel annual CO_2 input emission rate (lb/MMBtu)
70	SRCHGR	eGRID subregion coal annual Hg input emission rate (lb/BBtu)
71	SRFSHGR	eGRID subregion fossil fuel annual Hg input emission rate (lb/BBtu)
72	SRNBNOX	eGRID subregion annual non-baseload NO_x output emission rate (lb/MWh)
73	SRNBNXO	eGRID subregion ozone season non-baseload NO_x output emission rate (lb/MWh)
74	SRNBSO2	eGRID subregion annual non-baseload SO_2 output emission rate (lb/MWh)
75	SRNBCO2	eGRID subregion annual non-baseload CO_2 output emission rate (lb/MWh)
76	*SRNBCH4*	*eGRID subregion annual non-baseload CH_4 output emission rate (lb/GWh)*
77	*SRNBN2O*	*eGRID subregion annual non-baseload N_2O output emission rate (lb/GWh)*
78	SRNBHG	eGRID subregion annual non-baseload Hg output emission rate (lb/GWh)
79	SRGENACL	eGRID subregion annual coal net generation (MWh)
80	SRGENAOL	eGRID subregion annual oil net generation (MWh)
81	SRGENAGS	eGRID subregion annual gas net generation (MWh)
82	SRGENANC	eGRID subregion annual nuclear net generation (MWh)
83	SRGENAHY	eGRID subregion annual hydro net generation (MWh)
84	SRGENABM	eGRID subregion annual biomass net generation (MWh)
85	SRGENAWI	eGRID subregion annual wind net generation (MWh)
86	SRGENASO	eGRID subregion annual solar net generation (MWh)
87	SRGENAGT	eGRID subregion annual geothermal net generation (MWh)
88	SRGENAOF	eGRID subregion annual other fossil net generation (MWh)
89	SRGENAOP	eGRID subregion annual other unknown/purchased fuel net generation (MWh)
90	SRGENATN	eGRID subregion annual total nonrenewables net generation (MWh)
91	SRGENATR	eGRID subregion annual total renewables net generation (MWh)
92	SRGENATH	eGRID subregion annual total nonhydro renewables net generation (MWh)
93	*SRGENACY*	*eGRID subregion annual total combustion net generation (MWh)*
94	*SRGENACN*	*eGRID subregion annual total noncombustion net generation (MWh)*
95	SRCLPR	eGRID subregion coal generation percent (resource mix)
96	SROLPR	eGRID subregion oil generation percent (resource mix)
97	SRGSPR	eGRID subregion gas generation percent (resource mix)
98	SRNCPR	eGRID subregion nuclear generation percent (resource mix)
99	SRHYPR	eGRID subregion hydro generation percent (resource mix)
100	SRBMPR	eGRID subregion biomass generation percent (resource mix)
101	SRWIPR	eGRID subregion wind generation percent (resource mix)
102	SRSOPR	eGRID subregion solar generation percent (resource mix)
103	SRGTPR	eGRID subregion geothermal generation percent (resource mix)
104	SROFPR	eGRID subregion other fossil generation percent (resource mix)
105	SROPPR	eGRID subregion other unknown/purchased fuel generation percent (resource mix)
106	SRTNPR	eGRID subregion total nonrenewables generation percent (resource mix)
107	SRTRPR	eGRID subregion total renewables generation percent (resource mix)
108	SRTHPR	eGRID subregion total nonhydro renewables generation percent (resource mix)
109	*SRCYPR*	*eGRID subregion total combustion generation percent (resource mix)*
110	*SRCNPR*	*eGRID subregion total noncombustion generation percent (resource mix)*

Table A-1
eGRID2007 Version 1.0 File Structure
2005 NRL File
NERC Region Location (Operator)-based File

Field	Name	Description
1	SEQNRL05	eGRID2007 2005 file NERC region location (operator)-based sequence number
2	NERC	NERC region acronym
3	NERCNAME	NERC name associated with the NERC region acronym
4	NAMEPCAP	NERC region nameplate capacity (MW)
5	NRHTIAN	NERC region annual heat input (MMBtu)
6	NRHTIOZ	NERC region ozone season heat input (MMBtu)
7	NRNGENAN	NERC region annual net generation (MWh)
8	NRNGENOZ	NERC region ozone season net generation (MWh)
9	NRNOXAN	NERC region annual NO_x emissions (tons)
10	NRNOXOZ	NERC region ozone season NO_x emissions (tons)
11	NRSO2AN	NERC region annual SO_2 emissions (tons)
12	NRCO2AN	NERC region annual CO_2 emissions (tons)
13	*NRCH4AN*	*NERC region annual CH_4 emissions (lbs)*
14	*NRN2OAN*	*NERC region annual N_2O emissions (lbs)*
15	NRHGAN	NERC region annual Hg emissions (lbs)
16	NRNOXRTA	NERC region annual NO_x output emission rate (lb/MWh)
17	NRNOXRTO	NERC region ozone season NO_x output emission rate (lb/MWh)
18	NRSO2RTA	NERC region annual SO_2 output emission rate (lb/MWh)
19	NRCO2RTA	NERC region annual CO_2 output emission rate (lb/MWh)
20	*NRCH4RTA*	*NERC region annual CH_4 output emission rate (lb/GWh)*
21	*NRN2ORTA*	*NERC region annual N_2O output emission rate (lb/GWh)*
22	NRHGRTA	NERC region annual Hg output emission rate (lb/GWh)
23	NRNOXRA	NERC region annual NO_x input emission rate (lb/MMBtu)
24	NRNOXRO	NERC region ozone season NO_x input emission rate (lb/MMBtu)
25	NRSO2RA	NERC region annual SO_2 input emission rate (lb/MMBtu)
26	NRCO2RA	NERC region annual CO_2 input emission rate (lb/MMBtu)
27	NRHGRA	NERC region annual Hg input emission rate (lb/BBtu)
28	*NRNOXCRT*	*NERC region annual NO_x combustion output emission rate (lb/MWh)*
29	*NRNOXCRO*	*NERC region ozone season NO_x combustion output emission rate (lb/MWh)*
30	*NRSO2CRT*	*NERC region annual SO_2 combustion output emission rate (lb/MWh)*
31	*NRCO2CRT*	*NERC region annual CO_2 combustion output emission rate (lb/MWh)*
32	*NRCH4CRT*	*NERC region annual CH_4 combustion output emission rate (lb/GWh)*
33	*NRN2OCRT*	*NERC region annual N_2O combustion output emission rate (lb/GWh)*
34	*NRHGCRT*	*NERC region annual Hg combustion output emission rate (lb/GWh)*
35	NRCNOXRT	NERC region coal annual NO_x output emission rate (lb/MWh)
36	NRONOXRT	NERC region oil annual NO_x output emission rate (lb/MWh)
37	NRGNOXRT	NERC region gas annual NO_x output emission rate (lb/MWh)
38	NRFSNXRT	NERC region fossil fuel annual NO_x output emission rate (lb/MWh)
39	NRCNXORT	NERC region coal ozone season NO_x output emission rate (lb/MWh)
40	NRONXORT	NERC region oil ozone season NO_x output emission rate (lb/MWh)
41	NRGNXORT	NERC region gas ozone season NO_x output emission rate (lb/MWh)
42	NRFSNORT	NERC region fossil fuel ozone season NO_x output emission rate (lb/MWh)
43	NRCSO2RT	NERC region coal annual SO_2 output emission rate (lb/MWh)
44	NROSO2RT	NERC region oil annual SO_2 output emission rate (lb/MWh)
45	NRGSO2RT	NERC region gas annual SO_2 output emission rate (lb/MWh)
46	NRFSS2RT	NERC region fossil fuel annual SO_2 output emission rate (lb/MWh)
47	NRCCO2RT	NERC region coal annual CO_2 output emission rate (lb/MWh)
48	NROCO2RT	NERC region oil annual CO_2 output emission rate (lb/MWh)
49	NRGCO2RT	NERC region gas annual CO_2 output emission rate (lb/MWh)
50	NRFSC2RT	NERC region fossil fuel annual CO_2 output emission rate (lb/MWh)
51	NRCHGRT	NERC region coal annual Hg output emission rate (lb/GWh)
52	NRFSHGRT	NERC region fossil fuel annual Hg output emission rate (lb/GWh)
53	NRCNOXR	NERC region coal annual NO_x input emission rate (lb/MMBtu)
54	NRONOXR	NERC region oil annual NO_x input emission rate (lb/MMBtu)
55	NRGNOXR	NERC region gas annual NO_x input emission rate (lb/MMBtu)
56	NRFSNXR	NERC region fossil fuel annual NO_x input emission rate (lb/MMBtu)
57	NRCNXOR	NERC region coal ozone season NO_x input emission rate (lb/MMBtu)
58	NRONXOR	NERC region oil ozone season NO_x input emission rate (lb/MMBtu)

Table A-1
eGRID2007 Version 1.0 File Structure
2005 NRL File (continued).
NERC Region Location (Operator)-based File

Field	Name	Description
59	NRGNXOR	NERC region gas ozone season NO_x input emission rate (lb/MMBtu)
60	NRFSNOR	NERC region fossil fuel ozone season NO_x input emission rate (lb/MMBtu)
61	NRCSO2R	NERC region coal annual SO_2 input emission rate (lb/MMBtu)
62	NROSO2R	NERC region oil annual SO_2 input emission rate (lb/MMBtu)
63	NRGSO2R	NERC region gas annual SO_2 input emission rate (lb/MMBtu)
64	NRFSS2R	NERC region fossil fuel annual SO_2 input emission rate (lb/MMBtu)
65	NRCCO2R	NERC region coal annual CO_2 input emission rate (lb/MMBtu)
66	NROCO2R	NERC region oil annual CO_2 input emission rate (lb/MMBtu)
67	NRGCO2R	NERC region gas annual CO_2 input emission rate (lb/MMBtu)
68	NRFSC2R	NERC region fossil fuel annual CO_2 input emission rate (lb/MMBtu)
69	NRCHGR	NERC region coal annual Hg input emission rate (lb/BBtu)
70	NRFSHGR	NERC region fossil fuel annual Hg input emission rate (lb/BBtu)
71	NRNBNOX	NERC region annual non-baseload NO_x output emission rate (lb/MWh)
72	NRNBNXO	NERC region ozone season non-baseload NO_x output emission rate (lb/MWh)
73	NRNBSO2	NERC region annual non-baseload SO_2 output emission rate (lb/MWh)
74	NRNBCO2	NERC region annual non-baseload CO_2 output emission rate (lb/MWh)
75	*NRNBCH4*	*NERC region annual non-baseload CH_4 output emission rate (lb/GWh)*
76	*NRNBN2O*	*NERC region annual non-baseload N_2O output emission rate (lb/GWh)*
77	NRNBHG	NERC region annual non-baseload Hg output emission rate (lb/GWh)
78	NRGENACL	NERC region annual coal net generation (MWh)
79	NRGENAOL	NERC region annual oil net generation (MWh)
80	NRGENAGS	NERC region annual gas net generation (MWh)
81	NRGENANC	NERC region annual nuclear net generation (MWh)
82	NRGENAHY	NERC region annual hydro net generation (MWh)
83	NRGENABM	NERC region annual biomass net generation (MWh)
84	NRGENAWI	NERC region annual wind net generation (MWh)
85	NRGENASO	NERC region annual solar net generation (MWh)
86	NRGENAGT	NERC region annual geothermal net generation (MWh)
87	NRGENAOF	NERC region annual other fossil net generation (MWh)
88	NRGENAOP	NERC region annual other unknown/purchased fuel net generation (MWh)
89	NRGENATN	NERC region annual total nonrenewables net generation (MWh)
90	NRGENATR	NERC region annual total renewables net generation (MWh)
91	NRGENATH	NERC region annual total nonhydro renewables net generation (MWh)
92	*NRGENACY*	*NERC region annual total combustion net generation (MWh)*
93	*NRGENACN*	*NERC region annual total noncombustion net generation (MWh)*
94	NRCLPR	NERC region coal generation percent (resource mix)
95	NROLPR	NERC region oil generation percent (resource mix)
96	NRGSPR	NERC region gas generation percent (resource mix)
97	NRNCPR	NERC region nuclear generation percent (resource mix)
98	NRHYPR	NERC region hydro generation percent (resource mix)
99	NRBMPR	NERC region biomass generation percent (resource mix)
100	NRWIPR	NERC region wind generation percent (resource mix)
101	NRSOPR	NERC region solar generation percent (resource mix)
102	NRGTPR	NERC region geothermal generation percent (resource mix)
103	NROFPR	NERC region other fossil generation percent (resource mix)
104	NROPPR	NERC region other unknown/purchased fuel generation percent (resource mix)
105	NRTNPR	NERC region total nonrenewables generation percent (resource mix)
106	NRTRPR	NERC region total renewables generation percent (resource mix)
107	NRTHPR	NERC region total nonhydro renewables generation percent (resource mix)
108	*NRCYPR*	*NERC region total combustion generation percent (resource mix)*
109	*NRCNPR*	*NERC region total noncombustion generation percent (resource mix)*

Table A-1
eGRID2007 Version 1.0 File Structure
2005 US File
United States File

Field	Name	Description	Source(s)
1	SEQUS05	eGRID2007 2005 file US sequence number	
2	NAMEPCAP	US nameplate capacity (MW)	
3	USHTIAN	US annual heat input (MMBtu)	
4	USHTIOZ	US ozone season heat input (MMBtu)	EIA's *Electric Power Annual*, data table (generation_state.xls)
5	USNGENAN	US annual net generation (MWh)	EIA Electric Sales, Revenue, and Average Price data table (sales_state.xls)
6	USNGENOZ	US ozone season net generation (MWh)	EIA-861
7	USNOXAN	US annual NO_x emissions (tons)	EIA-861
8	USNOXOZ	US ozone season NO_x emissions (tons)	
9	USSO2AN	US annual SO_2 emissions (tons)	
10	USCO2AN	US annual CO_2 emissions (tons)	
11	*USCH4AN*	*US annual CH_4 emissions (lbs)*	
12	*USN2OAN*	*US annual N_2O emissions (lbs)*	
13	USHGAN	US annual Hg emissions (lbs)	
14	USNOXRTA	US annual NO_x output emission rate (lb/MWh)	
15	USNOXRTO	US ozone season NO_x output emission rate (lb/MWh)	
16	USSO2RTA	US annual SO_2 output emission rate (lb/MWh)	
17	USCO2RTA	US annual CO_2 output emission rate (lb/MWh)	
18	*USCH4RTA*	*US annual CH_4 output emission rate (lb/GWh)*	
19	*USN2ORTA*	*US annual N_2O output emission rate (lb/GWh)*	
20	USHGRTA	US annual Hg output emission rate (lb/GWh)	
21	USNOXRA	US annual NO_x input emission rate (lb/MMBtu)	
22	USNOXRO	US ozone season NO_x input emission rate (lb/MMBtu)	
23	USSO2RA	US annual SO_2 input emission rate (lb/MMBtu)	
24	USCO2RA	US annual CO_2 input emission rate (lb/MMBtu)	
25	USHGRA	US annual Hg input emission rate (lb/BBtu)	
26	*USNOXCRT*	*US annual NO_x combustion output emission rate (lb/MWh)*	
27	*USNOXCRO*	*US ozone season NO_x combustion output emission rate (lb/MWh)*	
28	*USSO2CRT*	*US annual SO_2 combustion output emission rate (lb/MWh)*	
29	*USCO2CRT*	*US annual CO_2 combustion output emission rate (lb/MWh)*	
30	*USCH4CRT*	*US annual CH_4 combustion output emission rate (lb/GWh)*	
31	*USN2OCRT*	*US annual N_2O combustion output emission rate (lb/GWh)*	
32	*USHGCRT*	*US annual Hg combustion output emission rate (lb/GWh)*	
33	USCNOXRT	US coal annual NO_x output emission rate (lb/MWh)	
34	USONOXRT	US oil annual NO_x output emission rate (lb/MWh)	
35	USGNOXRT	US gas annual NO_x output emission rate (lb/MWh)	
36	USFSNXRT	US fossil fuel annual NO_x output emission rate (lb/MWh)	
37	USCNXORT	US coal ozone season NO_x output emission rate (lb/MWh)	
38	USONXORT	US oil ozone season NO_x output emission rate (lb/MWh)	
39	USGNXORT	US gas ozone season NO_x output emission rate (lb/MWh)	
40	USFSNORT	US fossil fuel ozone season NO_x output emission rate (lb/MWh)	
41	USCSO2RT	US coal annual SO_2 output emission rate (lb/MWh)	
42	USOSO2RT	US oil annual SO_2 output emission rate (lb/MWh)	
43	USGSO2RT	US gas annual SO_2 output emission rate (lb/MWh)	
44	USFSS2RT	US fossil fuel annual SO_2 output emission rate (lb/MWh)	
45	USCCO2RT	US coal annual CO_2 output emission rate (lb/MWh)	
46	USOCO2RT	US oil annual CO_2 output emission rate (lb/MWh)	
47	USGCO2RT	US gas annual CO_2 output emission rate (lb/MWh)	
48	USFSC2RT	US fossil fuel annual CO_2 output emission rate (lb/MWh)	
49	USCHGRT	US coal annual Hg output emission rate (lb/GWh)	
50	USFSHGRT	US fossil fuel annual Hg output emission rate (lb/GWh)	
51	USCNOXR	US coal annual NO_x input emission rate (lb/MMBtu)	
52	USONOXR	US oil annual NO_x input emission rate (lb/MMBtu)	
53	USGNOXR	US gas annual NO_x input emission rate (lb/MMBtu)	
54	USFSNXR	US fossil fuel annual NO_x input emission rate (lb/MMBtu)	
55	USCNXOR	US coal ozone season NO_x input emission rate (lb/MMBtu)	

Table A-1
eGRID2007 Version 1.0 File Structure
2005 US File (continued).
United States File

Field	Name	Description	Source(s)
56	USONXOR	US oil ozone season NO_x input emission rate (lb/MMBtu)	
57	USGNXOR	US gas ozone season NO_x input emission rate (lb/MMBtu)	
58	USFSNOR	US fossil fuel ozone season NO_x input emission rate (lb/MMBtu)	
59	USCSO2R	US coal annual SO_2 input emission rate (lb/MMBtu)	
60	USOSO2R	US oil annual SO_2 input emission rate (lb/MMBtu)	
61	USGSO2R	US gas annual SO_2 input emission rate (lb/MMBtu)	
62	USFSS2R	US fossil fuel annual SO_2 input emission rate (lb/MMBtu)	
63	USCCO2R	US coal annual CO_2 input emission rate (lb/MMBtu)	
64	USOCO2R	US oil annual CO_2 input emission rate (lb/MMBtu)	
65	USGCO2R	US gas annual CO_2 input emission rate (lb/MMBtu)	
66	USFSC2R	US fossil fuel annual CO_2 input emission rate (lb/MMBtu)	
67	USCHGR	US coal annual Hg input emission rate (lb/BBtu)	
68	USFSHGR	US fossil fuel annual Hg input emission rate (lb/BBtu)	
69	USNBNOX	US annual non-baseload NO_x output emission rate (lb/MWh)	
70	USNBNXO	US ozone season non-baseload NO_x output emission rate (lb/MWh)	
71	USNBSO2	US annual non-baseload SO_2 output emission rate (lb/MWh)	
72	USNBCO2	US annual non-baseload CO_2 output emission rate (lb/MWh)	
73	*USNBCH4*	*US annual non-baseload CH_4 output emission rate (lb/GWh)*	
74	*USNBN2O*	*US annual non-baseload N_2O output emission rate (lb/GWh)*	
75	USNBHG	US annual non-baseload Hg output emission rate (lb/GWh)	
76	USGENACL	US annual coal net generation (MWh)	
77	USGENAOL	US annual oil net generation (MWh)	
78	USGENAGS	US annual gas net generation (MWh)	
79	USGENANC	US annual nuclear net generation (MWh)	
80	USGENAHY	US annual hydro net generation (MWh)	
81	USGENABM	US annual biomass net generation (MWh)	
82	USGENAWI	US annual wind net generation (MWh)	
83	USGENASO	US annual solar net generation (MWh)	
84	USGENAGT	US annual geothermal net generation (MWh)	
85	USGENAOF	US annual other fossil net generation (MWh)	
86	USGENAOP	US annual other unknown/purchased fuel net generation (MWh)	
87	USGENATN	US annual total nonrenewables net generation (MWh)	
88	USGENATR	US annual total renewables net generation (MWh)	
89	USGENATH	US annual total nonhydro renewables net generation (MWh)	
90	*USGENACY*	*US annual total combustion net generation (MWh)*	
91	*USGENACN*	*US annual total noncombustion net generation (MWh)*	
92	USCLPR	US coal generation percent (resource mix)	
93	USOLPR	US oil generation percent (resource mix)	
94	USGSPR	US gas generation percent (resource mix)	
95	USNCPR	US nuclear generation percent (resource mix)	
96	USHYPR	US hydro generation percent (resource mix)	
97	USBMPR	US biomass generation percent (resource mix)	
98	USWIPR	US wind generation percent (resource mix)	
99	USSOPR	US solar generation percent (resource mix)	
100	USGTPR	US geothermal generation percent (resource mix)	
101	USOFPR	US other fossil generation percent (resource mix)	
102	USOPPR	US other unknown/purchased fuel generation percent (resource mix)	
103	USTNPR	US total nonrenewables generation percent (resource mix)	
104	USTRPR	US total renewables generation percent (resource mix)	
105	USTHPR	US total nonhydro renewables generation percent (resource mix)	
106	*USCYPR*	*US total combustion generation percent (resource mix)*	
107	*USCNPR*	*US total noncombustion generation percent (resource mix)*	

Table A-1
eGRID2007 Version 1.0 File Structure
STIE04 File
2004 State Import-Export File

Field	Name	Description	Source(s)
1	SEQST04	eGRID2006 2004 file State sequence number	
2	PSTATABB	State abbreviation	
3	GRIDRGN	Grid region (E = Eastern grid, W = Western grid, AK = Alaska, HI = Hawaii, TX=Texas)	
4	STNGEN04	2004 State total net generation (GWh)	EIA Electric Power Annual, data table (generation_state.xls)
5	STSLCN04	2004 State sales to ultimate customers (GWh)	EIA Electric Sales, Revenue, and Average Price data table (sales_state.xls)
6	STCNEL04	2004 State energy consumed by respondent without charge (GWh)	EIA-861
7	STCNFR04	2004 State energy furnished without charge (GWh)	EIA-861
8	STCON04	2004 State total consumption (= STSLCN04 + STCNEL04 + STCNFR04) (GWh)	
9	GRDLSF04	2004 grid gross loss factor	
10	STADJG04	2004 State adjusted total net generation (= (1 - GRDLSF04) * STNGEN04) (GWh)	
11	STESTI04	2004 State estimated net imports (= STCON04 - STADJG04) (GWh)	
12	STPRI04	2004 State estimated net imports as a percent of total consumption (= 100 * STESTI04/STCON04)	
13	STPRE04	2004 State estimated net exports as a percent of total net generation (= 100 *(- STESTI04/STNGEN04))	

Table A-1
eGRID2007 Version 1.0 File Structure
STIE05 File
2005 State Import-Export File

Field	Name	Description	Source(s)
1	SEQST05	eGRID2007 2005 file State sequence number	
2	PSTATABB	State abbreviation	
3	GRIDRGN	Grid region (E = Eastern grid, W = Western grid, AK = Alaska, HI = Hawaii, TX=Texas)	
4	STNGEN05	2005 State total net generation (GWh)	EIA Electric Power Annual, data table (generation_state.xls)
5	STSLCN05	2005 State sales to ultimate customers (GWh)	EIA Electric Sales, Revenue, and Average Price data table (sales_state.xls)
6	STCNEL05	2005 State energy consumed by respondent without charge (GWh)	EIA-861
7	STCNFR05	2005 State energy furnished without charge (GWh)	EIA-861
8	STCON05	2005 State total consumption (= STSLCN05 + STCNEL05 + STCNFR05) (GWh)	
9	GRDLSF05	2005 grid gross loss factor	
10	STADJG05	2005 State adjusted total net generation (= (1 - GRDLSF05) * STNGEN05) (GWh)	
11	STESTI05	2005 State estimated net imports (= STCON05 - STADJG05) (GWh)	
12	STPRI05	2005 State estimated net imports as a percent of total consumption (= 100 * STESTI05/STCON05)	
13	STPRE05	2005 State estimated net exports as a percent of total net generation (= 100 *(- STESTI05/STNGEN05))	

Table A-1
eGRID2007 Version 1.0 File Structure
USGC File
2004-2005 U.S. Generation and Consumption File

Field	Name	Description
1	USTNGN04	2004 U.S. total net generation (GWh)
2	USTCON04	2004 U.S. total consumption (GWh)
3	USTNFI04	2004 net foreign imports (GWh), based on internal EIA data
4	USTNGN05	2005 U.S. total net generation (GWh)
5	USTCON05	2005 U.S. total consumption (GWh)
6	USTNFI05	2005 net foreign imports (GWh), based on internal EIA data

APPENDIX B. eGRID2007 eGRID SUBREGION AND NERC REGION REPRESENTATIONAL MAPS

Figure B-1. eGRID2007 eGRID Subregion Representational Map

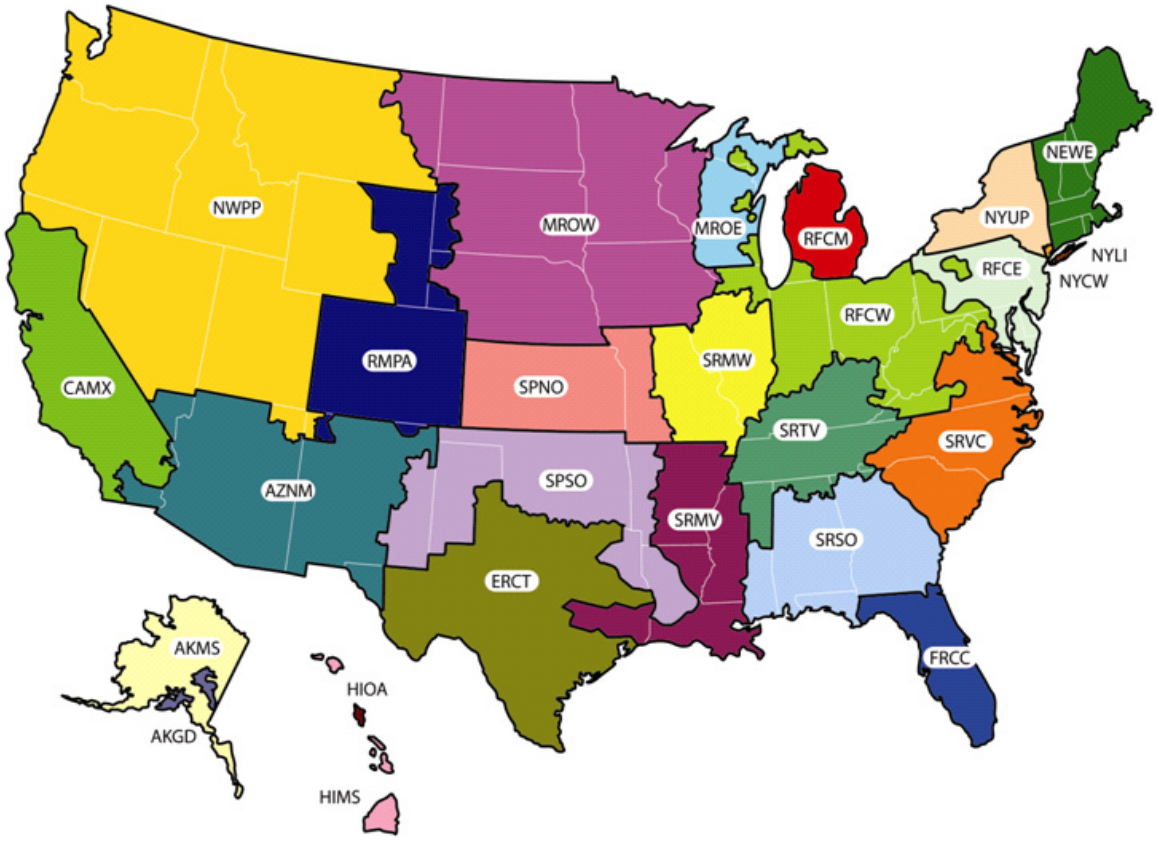

Figure B-2. eGRID2007 NERC Region Representational Map