Section 1. Documentation Guide

This section describes the data identification codes in the State Energy Data System (SEDS). Sections 2 through 7, one for each energy source and total energy, provide: descriptions of all the data series that are entered into SEDS; the formulas applied in SEDS for creating additional data series; and notes on special circumstances for any series.

Appendix A is an alphabetical listing of the variable names and formulas used in consumption estimation; Appendix B lists the conversion factors used to convert physical units into British thermal units and cites the sources for those factors; Appendix C provides the state-level resident population data used in per capita calculations; Appendix D presents the real gross domestic product by state used to calculate total energy per real dollar of economic output; Appendix E provides metric and other physical conversion factors for measures used in energy analyses; and Appendix F summarizes changes made since the last complete release of SEDS estimates.

There are about 1,000 variables in SEDS. All of the variables are identified by five-character mnemonic series names, or MSN. In the following example, MGACP is the identifying code for data on motor gasoline consumption in the transportation sector in physical units:

\[
\begin{array}{|c|c|}
\hline
\text{Type of energy} & \text{Type of data} \\
\hline
\text{MGACP} & \\
\hline
\end{array}
\]

The energy sources and products in SEDS, which are represented by the first two letters of the variable name, are:

- AB = aviation gasoline blending components
- AI = aluminum ingot
- AR = asphalt and road oil
- AS = asphalt
- AV = aviation gasoline
- BM = biomass
- BQ = normal butane
- BY = butylene
- CC = coal coke
- CG = corrugated and solid fiber boxes
- CL = coal
- CO = crude oil, including lease condensate
- CT = catalytic cracking
- DF = distillate fuel oil
- DK = distillate fuel oil, including kerosene-type jet fuel
- EL = electricity
- EM = fuel ethanol, excluding denaturant
- EN = fuel ethanol, including denaturant
- EQ = ethane
- ES = electricity sales
- EY = ethylene
- FF = fossil fuels
- FN = petrochemical feedstocks, naphtha less than 401°F
- FO = petrochemical feedstocks, other oils equal to or greater than 401°F
- FS = petrochemical feedstocks, still gas
- GE = geothermal energy
- HL = hydrocarbon gas liquids
- HV = conventional hydroelectric power
- HY = hydroelectric power
- IQ = isobutane
- IY = isobutylene
- JF = jet fuel
- JK = jet fuel, kerosene-type
- JN = jet fuel, naphtha-type
- KS = kerosene
- LO = electrical system energy losses
- LU = lubricants
- MB = motor gasoline blending components

The energy activity or energy-consuming sector codes are:

- AB = aviation gasoline blending components
- AI = aluminum ingot
- AR = asphalt and road oil
- AS = asphalt
- AV = aviation gasoline
- BM = biomass
- BQ = normal butane
- BY = butylene
- CC = coal coke
- CG = corrugated and solid fiber boxes
- CL = coal
- CO = crude oil, including lease condensate
- CT = catalytic cracking
- DF = distillate fuel oil
- DK = distillate fuel oil, including kerosene-type jet fuel
- EL = electricity
- EM = fuel ethanol, excluding denaturant
- EN = fuel ethanol, including denaturant
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- FO = petrochemical feedstocks, other oils equal to or greater than 401°F
- FS = petrochemical feedstocks, still gas
- GE = geothermal energy
- HL = hydrocarbon gas liquids
- HV = conventional hydroelectric power
- HY = hydroelectric power
- IQ = isobutane
- IY = isobutylene
- JF = jet fuel
- JK = jet fuel, kerosene-type
- JN = jet fuel, naphtha-type
- KS = kerosene
- LO = electrical system energy losses
- LU = lubricants
- MB = motor gasoline blending components
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**MG** = motor gasoline  
**MM** = motor gasoline excluding fuel ethanol  
**MS** = miscellaneous petroleum products  
**NA** = natural gas (including isopentane) (before 1984)  
**NG** = natural gas, including supplemental gaseous fuels  
**NN** = natural gas, excluding supplemental gaseous fuels  
**NU** = nuclear electric power  
**OC** = organic chemicals  
**OP** = other petroleum products  
**P1** = asphalt and road oil, aviation gasoline, kerosene, lubricants, petroleum coke, and other petroleum products  
**PA** = all petroleum products  
**PC** = petroleum coke  
**PI** = paints and allied products  
**PL** = plant condensate  
**PM** = all petroleum products excluding ethanol blended into motor gasoline  
**PP** = natural gasoline (previously pentanes plus)  
**PQ** = propane  
**PY** = propylene  
**RD** = road oil  
**RE** = renewable energy  
**RF** = residual fuel oil  
**SF** = supplemental gaseous fuels  
**SG** = still gas  
**SN** = special naphtha  
**SO** = photovoltaic and solar thermal energy  
**TE** = total energy  
**TN** = total net energy (net of electrical system energy losses)  
**UO** = unfinished oils  
**US** = unfractionated streams  
**WD** = wood  
**WS** = waste  
**WW** = wood and waste  
**WX** = waxes  
**WY** = wind  

The energy-consuming sectors, identified by characters three and four of each variable name, are  

**AC** = transportation sector consumption  
**CC** = commercial sector consumption  
**EG** = electric power sector generation (also consumption)  
**EI** = electric power sector consumption  
**IC** = industrial sector consumption  
**RC** = residential sector consumption  
**TC** = total consumption of all energy-consuming sectors  
**TX** = total end-use consumption  

Per capita consumption is represented by “TP” in the third and fourth positions of the variable name.

Many other characters occur in the third and fourth positions of the variable names for the sales, deliveries, and distribution data series used in the intermediate calculations in SEDS to derive the end-use consumption estimates. Examples of these codes are  

- **BK** = sales for use in vessel bunkering  
- **CA** = capacity  
- **KC** = consumption at coke plants  
- **LP** = lease and plant fuel  
- **IN** = deliveries to the industrial sector  
- **OD** = distribution to other industrial users  
- **VA** = value of shipments or value-added in manufacture  

Combining the first two components (the first four letters) produces variable names, such as  

- **RFBK** = residual fuel oil sold for vessel bunkering  
- **RFAC** = residual fuel oil consumed by the transportation sector  
- **NGIN** = natural gas (including supplemental gaseous fuels) delivered to the industrial sector  
- **NGIC** = natural gas (including supplemental gaseous fuels) consumed by the industrial sector  

The fifth character of the variable names in SEDS identifies the type of data by using one of the following letters:  

- **B** = data in British thermal units (Btu)  
- **K** = factor for converting data from physical units to Btu  
- **M** = data in alternative physical units  
- **P** = data in standardized physical units
In general, data entered into SEDS are in physical units, represented by a “P” in the fifth character; for example, coal data are in thousand short tons, petroleum data are in thousand barrels, and natural gas data are in million cubic feet. In a few cases, data are obtained from the source documents in different units, such as thousand gallons instead of thousand barrels, and are represented by an “M” until converted in SEDS to the unit that is consistent with other variables. Conversion factors, represented by a “K” in the fifth character, are applied to the physical unit data to convert the data to British thermal units, a common unit for all forms of energy. The derived data series in billion British thermal units are represented by “B” in the fifth character. In a few cases, consumption estimates are derived by calculating shares of aggregated consumption data. The fractions used to calculate the consumption shares are identified by an “S” in the fifth character. The consumption estimates for some petroleum products are based on the value added in the manufacturing process by related industries in each state. The data series for those industrial activities are in million dollars, and the variable names contain “V” in the fifth character.

Table TN1.1. Geographic area codes used in the State Energy Data System

<table>
<thead>
<tr>
<th>Code</th>
<th>State</th>
<th>Code</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>AK</td>
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<td>NC</td>
<td>North Carolina</td>
</tr>
<tr>
<td>AL</td>
<td>Alabama</td>
<td>ND</td>
<td>North Dakota</td>
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<td>NJ</td>
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<td>NV</td>
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<tr>
<td>MS</td>
<td>Mississippi</td>
<td>48</td>
<td>The contiguous 48 states and the District of Columbia</td>
</tr>
<tr>
<td>MT</td>
<td>Montana</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There are a few variables that do not follow the convention:

- TPOPP = resident population
- GDPRX = real gross domestic product
- TETGR = total energy consumption per real dollar of GDP

Associated with, and sometimes attached to, each variable name is the geographic identification. Geographic areas used in SEDS are the 50 states and the District of Columbia (represented by the U.S. Postal Service state abbreviations) and the United States as a whole. Some estimates of electricity sales and losses are derived by using only the contiguous 48 states and the District of Columbia, and the variables used in those calculations are identified by “48.” The geographic area codes used in SEDS are shown in Table TN1.1.

Throughout this report, the term “state” includes the District of Columbia. Throughout this documentation, “ZZ” is used as a geographic identifier to represent the different state abbreviations that would be interchanged in that position of the variable name.