Section 7. Total Energy

Total Energy Consumed

The preceding sections of this documentation describe how State end-use consumption estimates are made by individual energy source. This section describes how all energy sources are added in Btu to create end-use sector and total energy consumption estimates.

Energy consumption estimates for the residential sector include solar energy consumed in the commercial sector that cannot be identified separately.   The code "RC" in the data identifier indicates residential sector and "HC" indicates residential and commercial sectors combined in the following calculation used for each State and the United States:

$$TERCB = CLRCB + NGRCB + PARCB + WDRCB + GERCB + SOHCB + ESRCB + LORCB$$

The commercial sector calculations for each State and the U.S. total are:

$$TECCB = CLCCB + NGCCB + PACCB + WDCCB + GECCB + ESCCB + LOCCB$$

For the industrial sector, the State calculations are slightly different from the U.S. calculation ("ZZ" in the variable name represents the two-letter State code that differs for each State). The industrial sector includes net imports of coal coke (CCNIBUS) in the U.S. total but not in the individual State estimates because no reliable means of allocating the U.S. amount to the States has been developed.

$$TEICBZZ = CLICBZZ + NGICBZZ + PAICBZZ + HYATBZZ + WWICBZZ + GOICBZZ + ESICBZZ + LOICBZZ$$

$$TEICBUS = CLICBUS + CCNIBUS + NGICBUS + PAICBUS + HYATBUS + WWICBUS + GOICBUS + ESICBUS + LOICBUS$$

For the transportation sector, the calculations are:

$$TEACB = CLACB + NGACB + PAACB + ESACB + LOACB$$

Total energy consumed is calculated as the sum of all energy sources. It includes net imports of electricity generated from nonrenewable energy sources. The US and State calculations differ slightly. The States' calculations include net interstate flow of electricity and associated electricity system losses, and the U.S. calculation includes net imports of coal coke:

$$TETCBZZ = CLTCBZZ + NGTCBZZ + PATCBZZ + NUETBZZ + HYTCBZZ + WWTCBZZ + GOTCBZZ + EXNIBZZ + ELISBZZ$$

$$TETCBUS = CLTCBUS + CCNIBUS + NGTCBUS + PATCBUS + NUETBUS + HYTCBUS + WWTCBUS + GOTCBUS + EXNIBUS$$

As a cross-check that is not used in the report tables, total energy consumed is also calculated in SEDS as the sum of the consumption by the four end-use sectors for each State and US total:

$$TESSB = TERCB + TECCB + TEICB + TEACB$$

Total Net Energy Consumed

A set of totals is calculated to estimate consumption in the four major end use sectors excluding each sector's share of all electrical system energy losses that are incurred in the generation, transmission, and distribution of electricity. This series is total net energy consumed and is represented by "TN."

Total net energy consumed by the residential, commercial, industrial, and transportation sectors are calculated:

$$TNRCB = TERCB - LORCB \qquad TNICB = TEICB - LOICB$$
$$TNCCB = TECCB - LOCCB \qquad TNACB = TEACB - LOACB$$

Total Energy Consumed per Capita

The energy consumed per person residing in each State and in the United States is estimated by dividing the total energy series ("TE") by the resident population as published by the U.S. Department of Commerce, Bureau of the Census. The U.S. total population published by the Bureau of the Census is based on unrounded numbers that are not available by State so that the sum of the States' population does not equal the U.S. total. Therefore, the U.S. total population is input to SEDS instead of being calculated as the sum of the States' values. The Bureau of the Census series are estimated, in thousands of people, as of July 1 of each year, except in 1960, 1970, 1980, and 1990, when the April 1 census data were used. The variable names for the series are:

TPOPPZZ = The resident population of each State; and
TPOPPUS = The resident population of the United States.

Estimated energy consumption per capita for each State and the United States, in million Btu, is represented by "TETP" and is calculated:

$$TETPB = TETCB / TPOPP$$

The residential, commercial, industrial, and transportation sectors' energy consumption per capita are estimated:

$$TERPB = TERCB / TPOPP$$
$$TECPB = TECCB / TPOPP$$
$$TEIPB = TEICB / TPOPP$$
$$TEAPB = TEACB / TPOPP$$

Data Sources

TPOPPUS   Resident population of the United States. April 1 census for 1960, 1970, 1980, and 1990, and July 1 estimates for all other years.

> 1960 through 1989: U.S. Department of Commerce, Bureau of the Census, *Current Population Reports*, "Population Estimates and Projections," Series P-25. Specific publication and table numbers:
> — 1960 through 1969: Number 990, Table 4.
> — 1970 through 1979: Number 957, Table 4.
> — 1980 through 1989: Number 1058, Table 3.
> 1990: U.S. Department of Commerce, Bureau of the Census, Internet Release "Table 4. Resident Population of the 50 States, the District of Columbia, and Puerto Rico:...(2000 Census)." http://www.census.gov/population/www/cen2000/respop.html.
> 1991 forward: U.S. Department of Commerce, Bureau of the Census, Internet Release ST-99-3. http://eire.census.gov/popest/data/states.php, select "Annual Time Series."

TPOPPZZ   Resident population by State. April 1 census for 1960, 1970, 1980, and 1990, and July 1 estimates for all other years.

> 1960 through 1989: U.S. Department of Commerce, Bureau of the Census, *Current Population Reports*, "Population Estimates and Projections," Series P-25. Specific publication and table numbers:
> — 1960 through 1969: Number 460, Table 1.
> — 1970 through 1979: Number 957, Table 4.
> — 1980 through 1989: Number 1058, Table 3.
> 1990: U.S. Department of Commerce, Bureau of the Census, Internet Release "Table 4. Resident Population of the 50 States, the District of Columbia, and Puerto Rico:...(2000 Census)." http://www.census.gov/population/www/cen2000/respop.html.

1991 forward: U.S. Department of Commerce, Bureau of the Census, Internet Release ST-99-3. http://eire.census.gov/popest/data/states.php, select "Annual Time Series."