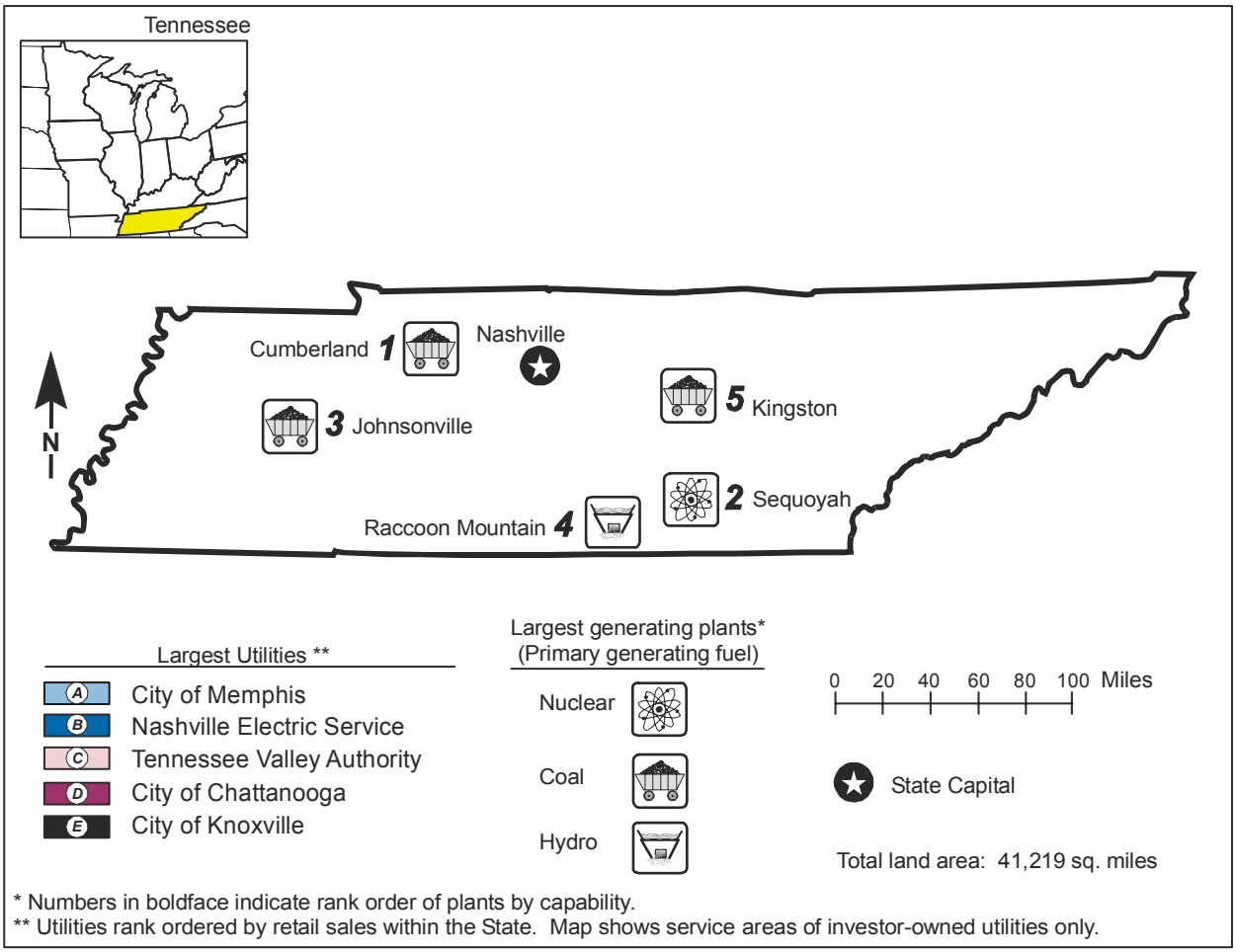
# Tennessee




* Numbers in boldface indicate rank order of plants by capability.
** Utilities rank ordered by retail sales within the State. Map shows service areas of investor-owned utilities only.

## Table 1. 1999 Summary Statistics

| Item | Value | U.S. Rank |
|---|---|---|
| NERC Region(s) | | ECAR/SERC |
| Primary Energy Source | | Coal |
| Net Summer Capability (megawatts) | 18,374 | 16 |
| Utility | 17,253 | 14 |
| Nonutility | 1,121 | 23 |
| Net Generation (megawatthours) | 93,418,718 | 15 |
| Utility | 89,682,569 | 13 |
| Nonutility | 3,736,149 | 28 |
| Emissions (thousand short tons) | | |
| Sulfur Dioxide | 390 | 13 |
| Nitrogen Oxide | 174 | 16 |
| Carbon Dioxide | 58,229 | 16 |
| Sulfur Dioxide/sq. mile | 9 | 12 |
| Nitrogen Oxide/sq. mile | 4 | 16 |
| Carbon Dioxide/sq. mile | 1,413 | 19 |
| Electricity Consumption (MWh) (excludes line losses) | 96,649,420 | 14 |
| Utility Retail Electricity Sales (megawatthours) | 93,180,379 | 13 |
| Nonutility Retail Sales and Direct Use (megawatthours) | 3,469,041 | 14 |
| Utility Average Retail Price (cents/kWh) | 5.63 | 36 |

## Table 2. Ten Largest Plants by Generating Capability, 1999

| Plant | Primary Energy Source(s) | Net Operating Company | Net Summer Capability (MW) |
|---|---|---|---|
| 1. Cumberland | Petroleum, Coal | Tennessee Valley Authority | 2,462 |
| 2. Sequoyah | Nuclear | Tennessee Valley Authority | 2,239 |
| 3. Johnsonville | Petroleum, Coal | Tennessee Valley Authority | 1,990 |
| 4. Raccoon Mountain | Hydro | Tennessee Valley Authority | 1,532 |
| 5. Kingston | Petroleum, Coal | Tennessee Valley Authority | 1,434 |
| 6. Gallatin | Petroleum, Coal | Tennessee Valley Authority | 1,248 |
| 7. Allen | Petroleum, Gas, Coal | Tennessee Valley Authority | 1,204 |
| 8. Watts Bar Nuclear | Nuclear | Tennessee Valley Authority | 1,118 |
| 9. Bull Run | Petroleum, Coal | Tennessee Valley Authority | 868 |
| 10. John Sevier | Petroleum, Coal | Tennessee Valley Authority | 704 |

## Table 3. Five Largest Utilities by Retail Sales within the State, 1999
(Megawatthours)

| Utility | Total | Residential | Commercial | Industrial | Other |
|---|---|---|---|---|---|
| A. City of Memphis | 13,821,132 | 5,225,900 | 4,495,011 | 3,979,688 | 120,533 |
| B. Nashville Electric Service | 11,629,436 | 4,225,141 | 4,247,196 | 3,035,554 | 121,545 |
| C. Tennessee Valley Authority | 8,830,601 | 0 | 0 | 8,821,277 | 9,324 |
| D. City of Chattanooga | 5,639,777 | 1,905,415 | 1,791,777 | 1,885,486 | 57,099 |
| E. City of Knoxville | 5,130,436 | 2,215,465 | 1,615,920 | 1,241,407 | 57,644 |
| Total | 45,051,382 | 13,571,921 | 12,149,904 | 18,963,412 | 366,145 |
| Percentage of Utility Sales | 48.0 | 38.0 | 48.0 | 60.0 | 35.0 |

**Table 4. Electric Power Industry Generating Capability by Primary Energy Source, 1990, 1994, and 1999**
(Megawatts)

| Plant Type | 1990 | 1994 | 1999 | Average Annual Rate of Growth (Percent) | Percentage Share 1990 | Percentage Share 1994 | Percentage Share 1999 |
|---|---|---|---|---|---|---|---|
| Total Utility | 16,996 | 16,482 | 17,253 | 0.2 | 97.5 | 96.3 | 93.9 |
| Coal | 9,289 | 8,615 | 8,618 | -0.8 | 53.3 | 50.3 | 46.9 |
| Petroleum | 1,152 | 1,982 | 784 | -4.2 | 6.6 | 11.6 | 4.3 |
| Gas | 516 | 0 | 732 | 4.0 | 3.0 | 0.0 | 4.0 |
| Nuclear | 2,296 | 2,217 | 3,357 | 4.3 | 13.2 | 13.0 | 18.3 |
| Hydroelectric | 3,743 | 3,668 | 3,762 | 0.1 | 21.5 | 21.4 | 20.5 |
| Total Nonutility | 430 | 632 | 1,121 | 11.2 | 2.5 | 3.7 | 6.1 |
| Coal | 259 | 277 | 356 | 3.6 | 1.5 | 1.6 | 1.9 |
| Gas | W | W | 537 | W | W | W | 2.9 |
| Hydroelectric | W | W | 167 | W | W | W | 0.9 |
| Other | 144 | 158 | 61 | -9.1 | 0.8 | 0.9 | 0.3 |
| Total Industry | 17,426 | 17,115 | 18,374 | 0.6 | 100.0 | 100.0 | 100.0 |
| Coal | 9,548 | 8,892 | 8,974 | -0.7 | 54.8 | 52.0 | 48.8 |
| Petroleum | W | W | 784 | W | W | W | 4.3 |
| Gas | 544 | 28 | 1,269 | 9.9 | 3.1 | 0.2 | 6.9 |
| Nuclear | 2,296 | 2,217 | 3,357 | 4.3 | 13.2 | 13.0 | 18.3 |
| Hydroelectric | W | W | 3,929 | W | W | W | 21.4 |
| Other | 144 | 158 | 61 | -9.1 | 0.8 | 0.9 | 0.3 |

**Figure 1. Industry Generating Capability by Primary Energy Source, 1999**

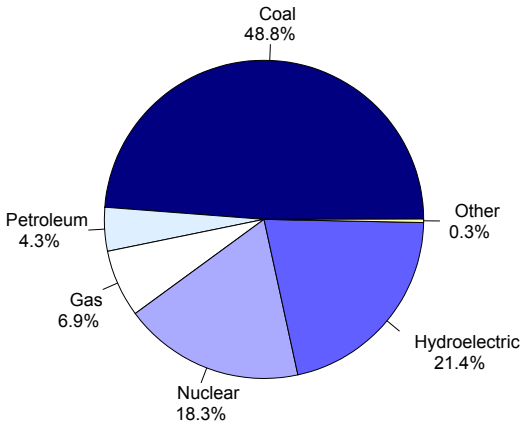



**Figure 2. Industry Generation by Energy Source, 1999**

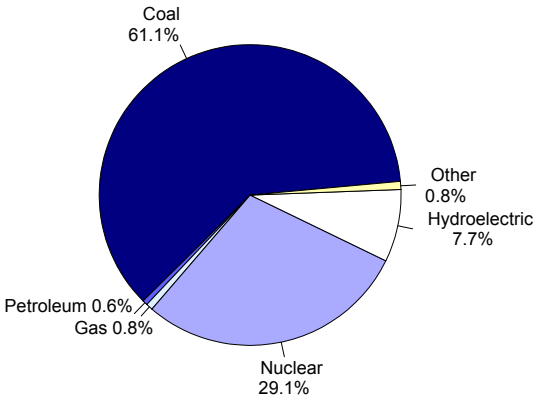


**Table 5. Electric Power Industry Generation of Electricity by Energy Source, 1990, 1994, and 1999**
(Megawatthours)

| Fuel | 1990 | 1994 | 1999 | Average Annual Rate of Change (Percent) | Percentage Share 1990 | Percentage Share 1994 | Percentage Share 1999 |
|---|---|---|---|---|---|---|---|
| Total Utility | W | W | 89,682,569 | W | W | W | 96.0 |
| Coal | W | W | 55,220,519 | W | W | W | 59.1 |
| Petroleum | W | W | 502,286 | W | W | W | 0.5 |
| Gas | W | W | 233,802 | W | W | W | 0.3 |
| Nuclear | W | W | 27,227,225 | W | W | W | 29.1 |
| Hydroelectric | W | W | 6,498,737 | W | W | W | 7.0 |
| Total Nonutility | W | W | 3,736,149 | W | W | W | 4.0 |
| Coal | W | W | 1,815,170 | W | W | W | 1.9 |
| Petroleum | W | W | 19,080 | W | W | W | 0.0 |
| Gas | W | W | 476,818 | W | W | W | 0.5 |
| Hydroelectric | W | W | 651,544 | W | W | W | 0.7 |
| Other | 472,661 | 719,150 | 773,536 | 5.6 | 0.6 | 0.9 | 0.8 |
| Total Industry | 76,219,792 | 78,356,638 | 93,418,718 | 2.3 | 100.0 | 100.0 | 100.0 |
| Coal | 51,829,435 | 53,679,896 | 57,035,689 | 1.1 | 68.0 | 68.5 | 61.1 |
| Petroleum | W | W | 521,366 | W | W | W | 0.6 |
| Gas | 240,770 | 278,230 | 710,620 | 12.8 | 0.3 | 0.4 | 0.8 |
| Nuclear | 14,002,591 | 11,932,352 | 27,227,225 | 7.7 | 18.4 | 15.2 | 29.1 |
| Hydroelectric | W | W | 7,150,281 | W | W | W | 7.7 |
| Other | W | W | 773,536 | W | W | W | 0.8 |

**Table 6. Utility Delivered Fuel Costs and Quality for Coal, Petroleum, and Gas, 1990, 1994, and 1999**

| Fuel | 1990 | 1994 | 1999 | Average Annual Rate of Change (Percent) |
|---|---|---|---|---|
| Coal (cents per million Btu) (1999 dollars) | 162.7 | 137.1 | 113.1 | -3.9 |
| Average heat value (Btu per pound) | 11966 | 12186 | 11635 | -0.3 |
| Average sulfur content (percent) | 2.0 | 2.0 | 1.6 | -2.6 |
| Petroleum (cents per million Btu) (1999 dollars) | 679.7 | 453.0 | 393.3 | -5.9 |
| Average heat value (Btu per gallon) | 138826 | 138244 | 139900 | 0.1 |

**Table 7. Electric Power Industry Emissions Estimates by Fuel, 1990, 1994, 1999**
(Thousand Short Tons)

| Emission Type | 1990 | 1994 | 1999 | Average Annual Rate of Change (Percent) |
|---|---|---|---|---|
| Sulfur Dioxide | | | | |
| Coal | 776 | 788 | 390 | -7.3 |
| Petroleum | * | * | * | -4.0 |
| Other | 0 | 0 | 0 | 0.0 |
| Total | 776 | 788 | 390 | -7.3 |
| Nitrogen Oxide | | | | |
| Coal | 193 | 197 | 171 | -1.3 |
| Petroleum | * | * | * | 17.7 |
| Gas | * | * | 1 | 38.5 |
| Other | 0 | 1 | 1 | 0.0 |
| Total | 193 | 198 | 174 | -1.2 |
| Carbon Dioxide | | | | |
| Coal | 50,241 | 54,097 | 57,156 | 1.4 |
| Petroleum | 102 | 250 | 469 | 18.4 |
| Gas | 33 | 128 | 575 | 37.2 |
| Other | 0 | 57 | 29 | 0.0 |
| Total | 50,377 | 54,533 | 58,229 | 1.6 |

**Figure 3. Industry Generation of Electricity by Energy Source, 1990-1999**

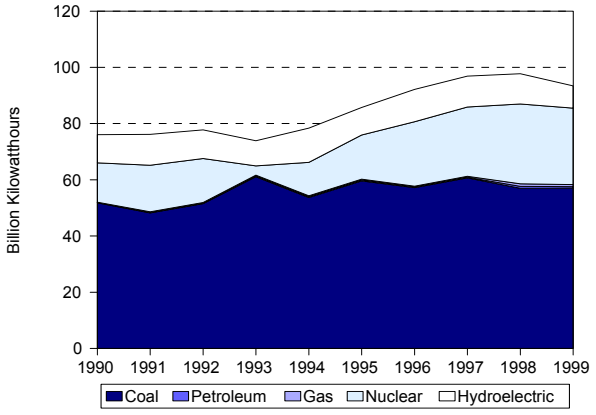



**Figure 4. Utility Delivered Fuel Costs for Coal, Petroleum, and Gas, 1990-1999 (1999 Dollars)**

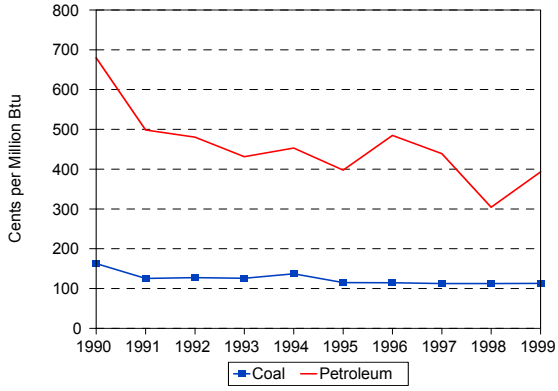


**Figure 5. Estimated Sulfur Dioxide Emissions, 1990-1999**

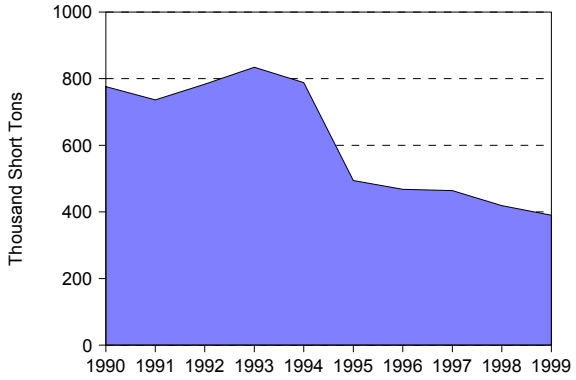



**Figure 6. Estimated Nitrogen Oxide Emissions, 1990-1999**

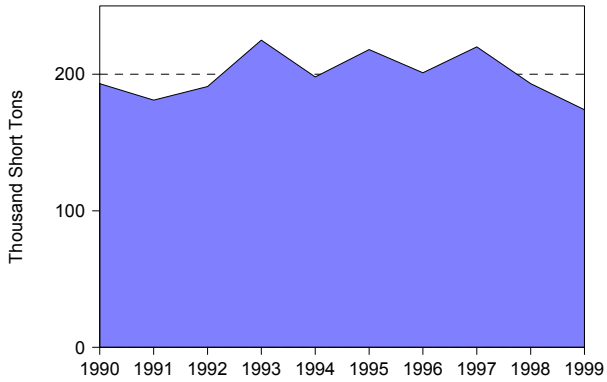



**Figure 7. Estimated Carbon Dioxide Emissions, 1990-1999**

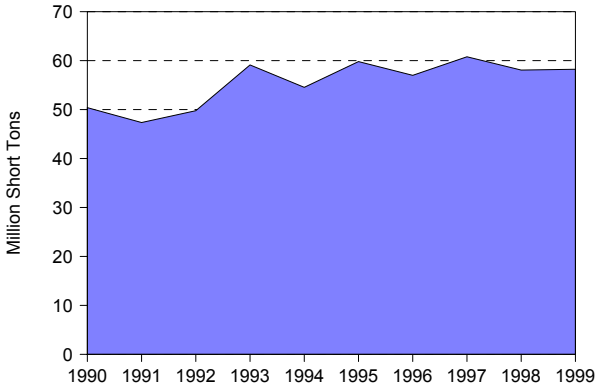



**Figure 8. Nuclear Power Capacity Factor Comparison, 1990-1999**

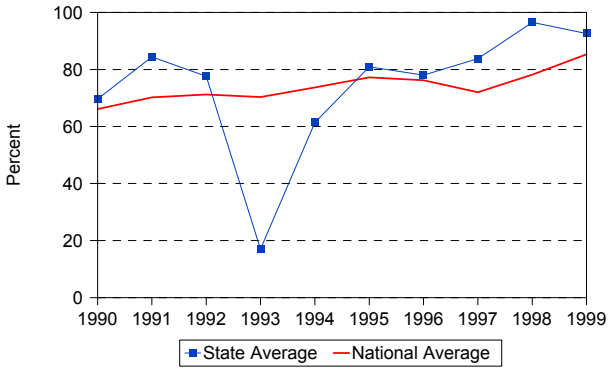


**Table 8. Utility Retail Sales, Revenue, and Average Revenue per Kilowatthour by Sector, 1990, 1994, and 1999**

| | 1990 | 1994 | 1999 | Average Annual Rate of Change (Percent) | Percentage Share 1990 | Percentage Share 1994 | Percentage Share 1999 |
|---|---|---|---|---|---|---|---|
| Utility Retail Sales | | | | | | | |
| (thousand megawatthours) | | | | | | | |
| Residential | 28,757 | 32,797 | 35,425 | 2.3 | 37.3 | 39.7 | 38.0 |
| Commercial | 12,128 | 5,154 | 25,228 | 8.5 | 15.7 | 6.2 | 27.1 |
| Industrial | 35,313 | 43,614 | 31,493 | -1.3 | 45.8 | 52.8 | 33.8 |
| Other | 947 | 968 | 1,035 | 1.0 | 1.2 | 1.2 | 1.1 |
| Total | 77,145 | 82,533 | 93,180 | 2.1 | 100.0 | 100.0 | 100.0 |
| Retail Sales Revenue | | | | | | | |
| (million 1999 dollars) | | | | | | | |
| Residential | 1,982 | 2,104 | 2,247 | 1.4 | 39.9 | 44.7 | 42.9 |
| Commercial | 895 | 373 | 1,586 | 6.6 | 18.0 | 7.9 | 30.3 |
| Industrial | 2,006 | 2,150 | 1,319 | -4.5 | 40.4 | 45.7 | 25.2 |
| Other | 79 | 82 | 90 | 1.5 | 1.6 | 1.7 | 1.7 |
| Total | 4,961 | 4,708 | 5,242 | 0.6 | 100.0 | 100.0 | 100.0 |
| Average Revenue per Kilowatthour | | | | | | | |
| (cents/kWh) (1999 dollars) | | | | | | | |
| Residential | 6.89 | 6.41 | 6.34 | NA | NA | NA | NA |
| Commercial | 7.38 | 7.23 | 6.29 | NA | NA | NA | NA |
| Industrial | 5.68 | 4.93 | 4.19 | NA | NA | NA | NA |
| Other | 8.31 | 8.44 | 8.71 | NA | NA | NA | NA |
| Total | 6.43 | 5.70 | 5.63 | NA | NA | NA | NA |

**Table 9. Utility Retail Sales, Revenue, and Number of Customers by Type of Utility, 1999**

| Item | Investor-Owned | Public | Federal | Cooperative | Total |
|---|---|---|---|---|---|
| Number of Utilities | 3 | 63 | 1 | 25 | 92 |
| Number of Retail Customers | 44,255 | 1,927,729 | 40 | 775,877 | 2,747,901 |
| Retail Sales (thousand megawatthours) | 1,804 | 65,268 | 8,831 | 17,278 | 93,180 |
| Percentage of Retail Sales | 1.9 | 70.0 | 9.5 | 18.5 | 100.0 |
| Revenue from Retail Sales (million dollars) | 79 | 3,809 | 267 | 1,087 | 5242 |
| Percentage of Revenue | 1.5 | 72.7 | 5.1 | 20.7 | 100.0 |
| Average Revenue per Kilowatthour (cents/kWh) | 4.40 | 5.84 | 3.02 | 6.29 | 5.63 |