

Energy

S 1-218. General note.

Energy to meet the expanding power needs of our economy has been secured from various animate and inanimate sources. Among those of historical significance, whose use is generally within the control of mankind, are human and animal power; waterpower; windpower; wood and other vegetable matter used as fuel; coal; oil; and natural gas; and, since 1957, atomic energy. Currently, efforts are being made to develop and control solar energy, internal heat of the earth, and, through chemical processing, certain additional natural resources such as shale and sea water. For those interested in developing a comprehensive understanding of power problems the following books are suggested: Eugene Ayers and Charles A. Scarlott, *Energy Sources—The Wealth of the World*, McGraw-Hill Publishing Company, Inc., New York, 1952; P. C. Putnam, *Energy in the Future*, D. Van Nostrand Company, Inc., New York, 1953; Fred Cottrell, *Energy and Society*, McGraw-Hill Publishing Company, Inc., New York, 1955; J. F. Dewhurst and Associates, *America's Needs and Resources, A New Survey*, The Twentieth Century Fund, New York, 1955; Ali Bulet Cambel, editor, *Energy R&D and National Progress*, Government Printing Office, 1964; Hans H. Landsberg and Sam H. Schurr, *Energy in the United States, Sources, Uses, and Policy Issues*, Random House, New York, 1968; Warren E. Morrison and Charles L. Readling, *Energy Model for the United States, Energy Balances for the Years 1947-1965, and Projections and Forecasts*, U.S. Bureau of Mines Information Circular 8384, 1968; N. B. Guyol, *The World Electric Power Industry*, University of California Press, Berkeley and Los Angeles, 1969; M. King Hubbert, "Energy Resources," in *Resources and Man*, W. H. Freeman and Co., San Francisco, 1969; U.S. Congress, Joint Committee on Atomic Energy, *Environmental Effects of Producing Electric Power*, selected materials and hearings issued in 4 vols., 1969 and 1970; U.S. Senate, Committee on the Judiciary, hearings of the Subcommittee on Anti-Trust & Monopoly, *Competitive Aspects of the Energy Industry*, parts 1 and 2, 1970; U.S. Bureau of the Census, *1967 Census of Manufactures—Fuels and Electric Energy Consumed*, Report MC 67(S)4, Government Printing Office, 1971; Joel Darmstadter with Perry D. Teitelbaum and J. G. Polach, for Resources for the Future, Inc., *Energy in the World Economy: A Statistical Review of Trends in Output, Trade, and Consumption Since 1925*, Johns Hopkins University Press, Baltimore, 1971; National Petroleum Council, *U.S. Energy Outlook—An Initial Appraisal (1971-1985)*, Washington, D.C., 1971; Resources for the Future, Inc., in cooperation with M.I.T. Environmental Laboratory, *Energy Research Needs*, a report to the National Science Foundation, document No. PB 207-516, National Technical Information Service, Springfield, Va., 1971; U.S. Federal Power Commission, *The 1970 National Power Survey*, issued in 4 parts, 1971 and 1972; Walter G. Dupree, Jr., and James A. West, *United States Energy Through the Year 2000*, U.S. Dept. of the Interior, 1972; Edison Electric Institute, *Statistical Yearbook of the Electric Utility Industry*, New York, annual; U.S. Federal Power Commission, *World Power Data*, annual; U.S. Bureau of Mines, *Minerals Yearbook*, vols. I-II combined, *Metals, Minerals, and Fuels*, annual; United Nations Statistical Office, *World Energy Supplies*, Statistical Papers, Series J, New York, annual; U.S. Senate Committee on Interior and Insular Affairs, *A National Fuels and Energy Policy Study*, Pursuant to Senate Resolution 45, 1972-1974; Federal Power Commission, *Natural Gas Survey*, forthcoming.

Preparation of historical tables showing energy from various sources and total energy input on a per capita or other basis is complicated. The amounts shown will differ greatly depending on the

basis and point of measurement used. End-use data, for example, will show far larger increases in total per capita over the last 100 years than will data presenting physical measures such as tons, gallons, cubic feet, or B.t.u.'s because of increased efficiency in conversion and utilization.

Data on energy available from mineral fuels, waterpower for electric energy, and fuel wood are shown in series M 76-92. For total waterpower, net imports from waterpower sources in Canada and the energy equivalent of waterpower not converted to electric energy (direct drive from water wheels) must also be considered. Statistics available for power sources not included here are presented in some of the sources cited above. Data on the development and use of energy for power and related purposes are compiled or summarized and published by: Federal agencies such as the Bureau of Mines, Bureau of the Census, Rural Electrification Administration, Bureau of Labor Statistics, Federal Power Commission, Federal Reserve Board, Interstate Commerce Commission; the various trade associations such as the Edison Electric Institute, American Gas Association, Bituminous Coal Institute, American Petroleum Institute; and various technical journals, particularly in their statistical issues.

S 1-14. Total horsepower of all prime movers, 1849-1970.

Source: 1849-1952, J. F. Dewhurst and Associates, *America's Needs and Resources, A New Survey*, © 1955 by The Twentieth Century Fund, New York, p. 1117; 1955, estimates prepared by John A. Waring for *Transactions of Canadian Sectional Meeting, World Power Conference, 1958*; 1960-1970, unpublished estimates from John A. Waring.

Data for 1849-1952 for series S 4 (work animals), S 10 (sailing vessels), and S 12 (windmills), as shown on p. 1117 of *America's Needs and Resources*, are based on data presented in appendix 25-3 of that volume. All other data for 1849-1919 are from C. R. Daugherty, A. H. Horton, and R. W. Davenport, *Power Capacity and Production in the United States*, Water Supply Paper No. 579, U.S. Geological Survey, 1928. The original data from Daugherty *et al.* were for 1849 and subsequent 10-year intervals through 1919. Estimates for 1850 and subsequent 10-year intervals through 1940 are based on straight-line interpolation of original data.

All data for 1929, 1939, 1950, and 1952 shown in Dewhurst were prepared by John A. Waring. According to Waring, estimates for 1952 as shown in Dewhurst are too low for mines and farms, and too high for railroad locomotives.

A technical and statistical bibliography of early data pertaining to the development of horsepower equipment in the United States appears on pp. 43 and 44 of Daugherty *et al.* This source also contains a section on the sources and accuracy of the data. The following appraisal of the data appears on p. 21: "In general the accuracy of the statistics presented . . . increases with each successive decade. The data for the early years are almost wholly estimated, but it is believed that the estimates are supported by bases accurate enough to lend a degree of authenticity to them."

In addition to the classifications shown in series S 1-14, the installed mechanical horsepower in a number of special industries was also calculated for 1960 by Waring, as follows (in thousands): Municipal waterworks pumping engines, 2,188; gas utility stations, 1,775; natural gas pipeline pumping stations, 6,110; underground gas storage pool compressor engines, 470; petroleum pipeline pumping stations, 4,560; standby communications generator sets, 632; isolated non-industrial generator sets, 5,204; construction and contractors' building

equipment, 89,182; inboard powered motor boats and yachts, 29,870; outboard powered motor boats, 60,500; portable chain saws, 2,020; and power lawn mowers, 36,800. These total 239,311 thousand horsepower, which, when added to the 1960 total of 11,007,889 thousand shown in series S 1, result in an aggregate of 11,247,200 thousand horsepower.

S 15-24. Consumption of raw materials in constant 1967 dollars, by broad use classes, 1900-1969.

Source: U.S. Bureau of the Census and U.S. Bureau of Mines, *Raw Materials in the United States Economy: 1900-1969* (Working Paper No. 35), table A5.

The raw-materials series presented in the source are regrouped in these series in terms of the major purposes for which the materials are used. This classification represents materials used in the entire U.S. economy, including the raw-materials industries.

Minerals usually used for energy purposes are increasingly being absorbed for nonfuel uses. Some such uses are for synthetic rubber, carbon black, and other chemical raw materials; for lubricants, asphalt, road oil, waxes; and as carbon in iron and electrodes. The approximate significance of such uses is indicated by the following figures:

Period	Mineral fuels used for nonfuel purposes as a percent of total mineral fuels use
1960-1969.....	6.7
1950-1959.....	5.0
1940-1949.....	4.2
1930-1939.....	3.3
1920-1929.....	2.6
1910-1919.....	1.4
1900-1909.....	1.2

The figures in series S 15-24 exclude such uses from the figures presented for "energy materials" and include them in "physical-structure materials."

It should be noted that the relative importance of the foods, energy materials, and physical-structure materials segments of the consumption pattern is somewhat influenced by the consumption of raw materials within the raw-materials industries. The value of purchased feed for farm animals and seed are excluded here. However, the mineral fuels consumed in producing raw materials are included, as well as the indirect consumption of raw materials represented by the capital-goods requirements of the raw-materials industries. Available staff facilities did not permit extensive analysis of the magnitude of consumption of raw materials within the raw-materials industries. It appears, however, that 4 to 7 percent of all energy has been used in mineral-fuel production.

See also series K 392-406, L 56-71, and M 38-53 for raw material consumption by agricultural materials, forest products, and minerals, respectively.

S 25-31. Consumption of fuel resources, by major consumer group, 1947-1970.

Source: U.S. Bureau of Mines, *Minerals Yearbook* and *Mineral Industry Surveys*, annual issues.

Most of the uses in the residential and commercial classification have the common characteristic of contributing personal comfort: Lighting, heating, and cooling in homes, schools, theaters, offices, and stores; and the operation of dozens of other appliances from kitchen stoves to office equipment. The line between the two is particularly thin in the case of large apartment houses, which, for the purpose of most energy statistics, are classified as commercial. Industry comprises manufacturing and mining. The transportation category takes in both private vehicles operated by their owners and public transportation—long distance as well as short haul, passenger as well as freight, and water and air as well as land.

Miscellaneous is a "catch-all" category embracing such diverse uses and users as street lighting, the defense establishment, construc-

tion activities, transportation activities other than those identifiable in published statistics, and agriculture, which includes all uses of energy in farming, etc.

S 32-175. General note.

Some data on the production and use of electric energy are available since the beginning of commercial production in 1882. Data for 1882-1920, however, are difficult to evaluate because of changing bases of measurement and variations in coverage of the various censuses or other surveys made during the period. The Bureau of the Census published the results of censuses of the electric light and power industries made at 5-year intervals for 1902-1937, and the reports of the census of manufactures and of mineral industries contain important data on industrial use and production of electric energy. The Geological Survey, the *Electrical World* (McGraw-Hill Publishing Company, Inc., New York), and the National Electric Light Association also published considerable data applicable to the industry during this early period.

The chief gaps in the data for these years are in the production of electric energy by industrial establishments for their own use, and in the measurement of the sales by electric railroads and railways for public distribution. Early data on capacity must be converted from horsepower (hp.) to kilowatts (kw.) to be comparable; and capacity data in kilovolt-amperes (kv.-a.) were often tabulated as kw. without adjustment for the power factor. Data on generation were also often reported without allowance for the kilowatt-hours (kw.-hr.) used in production and, in many instances, where the prime mover was used both for direct drive and for electric generation, the kw.-hr. equivalent of power used directly was reported as generation. End uses were reported by appliances, as number of lamps, arc lights, or motors, rather than as kw.-hr. These variations in units of measurements, in classification, and in coverage often resulted in differences in estimated totals of as much as 20 to 25 percent. In presenting historical data on electric energy since 1902, efforts have been made to resolve such differences and place the data on a comparable basis.

Referring to various historical sources, one will note that data published in later years will frequently show material revisions to reflect changes in classification and coverage. In the utility series prior to 1945, for example, when a large generating plant was purchased from an industrial concern, the utility series would be adjusted to include the capacity and generation of this plant in prior years. Where such revisions have been made, the revised data are shown.

Since 1920, comprehensive statistics on capacity and generation of electric utilities for public use have been compiled and published by the Geological Survey for 1920-1936, and by the Federal Power Commission since 1936. Data on capacity and generation by non-utility establishments since 1939 have been compiled and published by the FPC. The Commission also published financial, operating, sales, and rate statistics for the electric utility industry. Data on customers, revenues, sales, and related matters since 1926 are published by the Edison Electric Institute and the McGraw-Hill Publishing Co., Inc., *Electrical World*.

During the years there has been a marked growth in the application of power from various fuels through electric energy produced not only in generating plants but by generators in mobile equipment of many types. Among these are power plants in ships, railroad locomotives, trailers, barges, trucks, tractors, buses, and in machines used in mining and heavy construction which produce electric energy for driving and operating the mobile unit and for other services related thereto, or to supplement generating plants for temporary periods. Also of interest are the electric generators for auxiliary purposes operated directly or indirectly by the prime movers in automobiles, airplanes, and other mobile engines or by independent power units in refrigerator cars and trailers and many other installations to furnish electric energy directly or to maintain the electric charge in batteries for use as required. The importance of these small generators is indicated by the fact that the 108 million motor vehicles registered

in the United States in 1970 alone have a total generator capacity in excess of that of all the federally owned electric utilities. Except where large units in the general classification of mobile plants are connected to utility systems for power for extended periods, neither capacity nor generation are included in the data indicating production and use of electric energy in the United States. In some cases, however, industries will report the horsepower of such equipment as driving generators, but, in general, do not indicate power output in kw.-hr.

S 32-35. Net production of electric energy, by electric utility and industrial generating plants, by type of plant, 1902-1970.

Source: Summation of series S 36-43.

S 36-39. Net production of electric energy, by electric utility generating plants, by type of plant, 1902-1970.

Source: 1902-1917, U.S. Bureau of the Census, *Census of Electrical Industries: Central Electric Light and Power Stations*; 1920-1970, U.S. Federal Power Commission, *Production of Energy and Capacity of Plants*, monthly and annual reports.

Census data for 1902-1917 were adjusted in some instances for classification and coverage by the late L. D. Jennings of the Federal Power Commission. The figures for electric energy produced by waterpower for 1912 and 1917, for example, differ from those published in *Central Electric Light and Power Stations: 1917*, table 26, because they have been adjusted to exclude electricity produced by steam and internal combustion engines at plants which also produced energy by waterpower, and energy produced in plants subsequently included in series S 40-43.

For 1920-1970, data are based on monthly reports by electric utilities to the FPC. Coverage is substantially 100 percent. Included are plants of the privately owned electric utilities, the cooperatively owned systems, and the publicly owned electric utilities. The latter group is composed of the following classes: Municipal electric utilities, Federal projects, public utility power districts, and State power projects.

S 40-43. Net production of electric energy, by industrial generating plants, by type of plant, 1902-1970.

Source: U.S. Federal Power Commission, 1902-1941, unpublished data; 1942-1970, *Production of Energy and Capacity of Plants*, monthly and annual reports.

Data include the generation of electric energy by manufacturing and extracting industries and by electric railroads and railways, but exclude electric energy generated by the following sources: Nonutility generating plants of less than 100 kw. capacity; plants operated by hotels, apartment houses, office buildings, or other commercial, transport, or service establishments; and plants in military installations. The total generating plant generation excluded is estimated at about 1½ percent of the annual total shown for both utility and industrial plants. This percentage has declined in recent years with the development of mobile type generators.

S 44-52. Net production of electric energy, by class of ownership, 1902-1970.

Source: Series S 44-51, see source for series S 36-39; series S 52, see source for series S 40-43.

The Federal Power Commission reports cited above show data for "noncentral stations" within the publicly owned group for 1920-1951. This category included plants supplying electric power primarily for such functions as public street lighting, water pumping, and sewage disposal. Such plants were included in municipal or other named classifications effective 1952. A similar adjustment using records available was made for 1920-1951.

Data for cooperatively owned utilities (series S 47) are shown in the source combined with power districts and State projects. The

separate data for series S 47 were obtained from the detailed records of the FPC. These amounts are slightly below those reported by the Rural Electrification Administration, *Annual Statistical Report—Rural Electrification Borrowers*, because a few plants financed by the REA are included in other classifications or are not, for various reasons, included in the FPC totals.

S 53-57. Number of electric utility generating plants, and production per kilowatt of installed generating capacity, 1902-1970.

Source: See source for series S 36-39.

Figures for series S 57 are based on beginning- and end-of-year average installed generating capacity, except for 1902-1920 when capacity as of the end of the year was used.

In counting the number of generating plants, each prime mover type in combination plants was included separately. Generating capacity represents the manufacturer's maximum nameplate rating of generators.

S 58-73. Privately owned electric utility generating plants, by type of plant and plant size, 1920-1970.

Source: U.S. Federal Power Commission, *Statistics of Privately Owned Electric Utilities in the U.S.*, annual issues.

See text for series S 36-39.

S 74-85. General note.

Gas turbine (plant type) generating capacity is included with steam. Separate data for gas turbines are available from the Federal Power Commission beginning with 1969. Amounts for 1969 and 1970 are as follows (in thousands of kilowatts):

	<i>Electric utilities</i>	<i>Industrial establishments</i>
1970	15,460	441
1969	10,094	424

S 74-77. Installed generating capacity in electric utility and industrial generating plants, by type of plant, 1902-1970.

Source: Summation of series S 78-85.

See also text for series S 36-39 and S 40-43.

S 78-81. Installed generating capacity in electric utility generating plants, by type of plant, 1902-1970.

Source: See source for series S 36-39.

See also text for series S 36-39.

S 82-85. Installed generating capacity in industrial generating plants, by type of plant, 1902-1970.

Source: See source for series S 40-43.

See also text for series S 40-43.

S 86-94. Installed generating capacity, by class of ownership, 1902-1970.

Source: Series S 86-93, see source for series S 36-39; series S 94, see source for series S 40-43.

See also text for series S 44-52.

S 95-106. Consumption of fuels by electric utilities, 1920-1970.

Source: U.S. Federal Power Commission, *Fuel Consumption of Electric Power Plants*, monthly and annual reports, and unpublished data.

For series S 105-106, data for years prior to 1940 are from the records of the Federal Power Commission or may be computed from the data shown for fuel used and electric energy generated. For 1920-1938, the distribution of energy generated for plants using two or more kinds of fuel was estimated.

The data are based on individual generating plant reports submitted monthly by all electric utilities to the FPC. Both the pri-

vately owned and publicly owned operations are included. The coal figures include anthracite, bituminous, and lignite coal—processed separately for the detailed report—and small amounts of coke; those for oil include crude oil, fuel oil, distillate pitch, sludge, and small quantities of other liquid fuels. The consumption of gas includes both natural gas and byproduct manufactured gas. In general, the minor fuels are reported in units equivalent to those for the major class of fuel with which they are combined. The quantities of each fuel include the consumption of generating plants operating on a standby or other intermittent basis.

Data on fuels used in industrial electric generating plants are not solicited as many establishments do not keep such records separate from fuels used for other purposes.

Kilowatt-hour production represents the summation of net station output after deduction for energy used in the operation of auxiliary equipment and facilities within the generating plants. Where two or more kinds of fuel are used at a particular plant during the same month, allocation of the kilowatt-hour production to each fuel is reported. Where such allocations are not made by the reporting utility, they are estimated on the basis of the latest available annual average B.t.u. content of each fuel used at that plant and the average B.t.u. per kw.-hr. generated reported for each kind of fuel.

S 107. Overall heat rate, 1925-1970.

Source: Edison Electric Institute, *Statistical Year Book of the Electric Utility Industry*, annual issues.

These data are estimates computed by the Edison Electric Institute by the application of an appropriate calorific factor for each fuel in series S 104-106.

S 108. Annual use of electric energy per residential customer, 1912-1970.

Source: 1912, U.S. Bureau of the Census, *Census of Electrical Industries, 1912*; 1917-1925, National Electric Light Association, *Statistical Supplement to the Electric Light and Power Industry in the United States*, Publication 1106, New York, 1931, p. 27; 1926-1970, Edison Electric Institute, *Edison Electric Institute Statistical Bulletin*, New York, 1952 and 1970 issues.

Averages are based on data for customers and on use reported by the electric utilities. Data for appliances used and related matters are published annually in the statistical issue of *Electrical Merchandising* (McGraw-Hill Publishing Company, Inc., New York).

S 109-111. Percentage of dwelling units with electric service, 1907-1956.

Source: For census years, U.S. Bureau of the Census, census of housing (decennial) and census of agriculture (quinquennial); for intercensal years, various annual issues of the following: National Electric Light Association, *Statistical Supplement to the Electric Light and Power Industry in the United States*, New York; McGraw-Hill Publishing Company, Inc., *Electrical World*, New York (copyright); and Edison Electric Institute, *Edison Electric Institute Statistical Bulletin*, New York.

Some adjustments for comparability and coverage have been made in the source data by the late L. D. Jennings of the Federal Power Commission.

In the annual *Statistical Bulletin* of the Edison Electric Institute and in the statistical reports of their predecessor organization, the National Electric Light Association (cited above), data on the electrification of farms (series S 110) are presented. The information shown in these publications includes Bureau of the Census data and data compiled by the Rural Electrification Administration as well as material collected by the Institute or the Association. In the annual statistical numbers of the *Electrical World* (cited above), data are presented showing the percent of the population living in wired homes (series S 109). These percentages are generally based on the relation between the number of residential electric customers and population

in census years. Percentages presented by the different sources indicated may vary from one to the other for intercensal years, depending on the statistical procedures used to determine the number of farms and dwelling units and related concepts applied. Among the items causing variations in the percentages of farms electrified, for example, are the inclusion or exclusion of farms without permanent dwelling units, farms with their own electric power plants, farms without service where distribution lines are within $\frac{1}{4}$ mile of the dwelling unit, or interpolation for the number of farms in intervening years between the various censuses of agriculture. The percentages shown are those considered reasonable and comparable to those for census years.

S 112-115, and S 117. Average price of electricity by class of service, 1907-1970.

Source: 1907-1924, based on a study by W. G. Vincent, Pacific Gas and Electric Company, *Edison Electric Institute Bulletin*, June 1936, p. 224 (adjusted by the late L. D. Jennings for comparability with the Federal Power Commission series); Federal Power Commission, 1925-1934, annual report, *Typical Electric Bills: Cities of 50,000 Population and More* (except that average prices have been adjusted from as of October 1, as originally published, to as of January 1 for comparability with the series subsequent to 1934); 1935-1970, *Typical Electric Bills, 1964*, p. VI and 1970, p. IX.

Prior to 1935 for series S 113-115 and for all years for S 112, the average bills for specified consumption are based on typical bills for residential and industrial service in cities with 50,000 or more inhabitants. These cities include about one-third of the total U.S. population. Beginning 1935 for series S 113-115, typical bills are based on residential service in communities with 2,500 or more population. These communities include about two-thirds of the U.S. population. Commercial and industrial service is still based on service in cities of 50,000 or more inhabitants. Since populations in adjacent areas are frequently served under the rate schedules effective in these cities, the bills reported indicate rate levels applicable to more than 70 percent of the total population.

Specifications for the computation of typical net monthly bills are prepared by the Federal Power Commission. Special rates for refrigeration, cooking, or water heating, where generally applicable, are used in computing the bill. Fuel adjustments, commodity adjustments, and tax adjustments where the tax is imposed upon the utility and not upon the customer, and other similar adjustments, have been included in the computations where applicable. Sales taxes computed separately and added to the bill computed under the rate schedules are not included in the bills reported.

Average bills are determined by multiplying the bill as of January 1 for each city by its population and dividing the sum of these products by the sum of the populations. Where two or more utilities serve a community with different bills, the population for each bill is determined by the proportion of customers served by class of service. For service where bills are presented under more than one rate schedule, the lowest bill generally applicable is used.

S 116, S 118, and S 119. Average price of electricity for all users, by class of user, 1902-1970.

Source: 1902-1925, U.S. Bureau of the Census, *Census of Electrical Industries, 1917* and 1922 reports; 1926-1970, Edison Electric Institute, *Edison Electric Institute Statistical Bulletin*, New York, 1952 and 1970 issues.

These averages indicate the average revenue from electric service and will vary with average use and rate levels.

S 120. Electric energy, total use, 1902-1970.

Source: Prior to 1955, summation of series S 121-132; thereafter, summation of series S 121-131.

Total amount is equal to (a) utility sales of electric energy by class of service, plus (b) industrial generation minus sales to utilities, plus

(c) use by utilities except in connection with the operation of generating plants, plus (d) energy furnished others without charge, plus (e) reported losses and unaccounted for, plus (f) estimated production for nonutility generating plants not included in industrial generation, series S 40, minus sales to utilities as shown by utility reports on purchased energy. This total by years was compared with total net generation of utility and industrial plants, series S 32, plus net imports, series S 132, plus estimates of energy produced by generating plants not included in series S 32. Differences of significance were analyzed, sources checked, explanations of the differences considered and adjustments made as necessary to account for all production or use. For 1939-1970, an appreciable portion of the energy estimated for plants not included in series S 32 and related series are variously reported to the Federal Power Commission or available from related material. For prior years, the amount estimated is based on relationships in benchmark years for which census or comparable type data on capacity, production, or use were available.

Beginning 1955, series is more refined, reflecting ultimate use rather than being based on rate classifications. Included is self-generation at Atomic Energy Commission installations; excluded is self-generation at shopping centers, apartment buildings, and offices.

Imports are classified according to ultimate use; "net imports" as a category is not included.

S 121-122. Electric energy, residential and commercial use, 1912-1970.

Source: 1912-1925, based on McGraw-Hill Publishing Company, Inc., *Electrical World*, annual statistical numbers, New York (copyright), and U.S. Bureau of the Census, *Census of Electrical Industries, 1902-1927*, reports at 5-year intervals; 1926-1944, Edison Electric Institute, *Electric Light and Power Industry in the United States*, New York; 1945-1970, U.S. Federal Power Commission, *Sales of Electric Energy by Class of Service*, monthly reports.

For 1912-1945, some combinations and adjustments were necessary for comparability with data for later years. These adjustments were made by the late L. D. Jennings of the Federal Power Commission.

Series S 121 includes residential use on farms and in rural areas but does not include (a) residential service charged in the rent of dwelling units, (b) service where energy is submetered by large apartment houses or operators of housing projects, (c) residential service secured in connection with commercial or other enterprises purchasing energy usually under commercial service classifications, or (d) irrigation sometimes included in the sales classification "Rural (district rural rates)." The FPC data include some residential service rendered by industrial and certain classes of publicly owned plants excluded from the Edison Electric Institute series.

Series S 122 includes purchases under commercial rate schedules for residential services by operators of apartment houses or housing projects where electric service is included in the rent of the facilities, and submetered service to small industrial establishments. Generally excluded are sales to very large commercial enterprises included in series S 130.

S 123. Electric energy, total industrial use, 1912-1970.

Source: Prior to 1963, summation of series S 124 and S 129; thereafter, see source for series S 121-122.

S 124. Use of electric energy for manufacturing industries, 1912-1962.

Source: 1912-1938, based on data in units of horsepower or kilowatt-hours presented in U.S. Bureau of the Census reports of the census of manufactures; 1939-1962, based on reports of the census of manufactures and U.S. Federal Power Commission report, *Industrial Electric Power, 1939-1946*, and unpublished data.

Estimates or reported data were checked with information on industrial or large light and power sales of electric energy plus data available or developed for industrial generation with allowances for

data applicable to series S 129, and, to a limited extent, series S 130. Adjustments that appeared reasonable in view of all information available, including that for later years, were made by the late L. D. Jennings of the Federal Power Commission for changes or variations in classification and coverage.

S 125. Use of electric energy for manufacture of nuclear fuels and related products, 1943-1970.

Source: 1943, U.S. Atomic Energy Commission, unpublished data; 1944-1970, U.S. Federal Power Commission, unpublished data.

Data for 1955-1970 were reported by suppliers of major installations of the Atomic Energy Commission and by the Commission itself.

S 126. Use of electric energy for paper and chemical industries, 1912-1954.

Source: See source for series S 124.

The figures combine data for two major industry groups—paper and chemicals; they exclude major nuclear energy projects where included in the chemical industry group.

S 127. Use of electric energy for primary metals, 1912-1962.

Source: See source for series S 124.

Figures include ferrous and nonferrous metals.

S 128. Use of electric energy for other manufacturing industries, 1912-1962.

Source: See source for series S 124.

S 129. Use of electric energy for extracting industries, 1912-1962.

Source: U.S. Bureau of the Census, 1912-1939, based on *Census of Mineral Industries*, reports for 1919, 1929, and 1939; U.S. Federal Power Commission, 1940-1946, *Industrial Electric Power, 1939-1946*; 1947-1962, unpublished data.

Data for 1947-1962 are based on generation reported by industrial plants in this classification. Data from trade associations and from technical publications on total output and on electric energy per unit computed for intercensal years for representative establishments were used to check data estimated for these years by other methods.

S 130. Use of electric energy for miscellaneous light and power, 1912-1970.

Source: See source for series S 121-122.

Figures include uses variously classified as other, industrial or large light and power (but not included in manufacturing or mineral industries), street and highway lighting, other sales to public authorities where service is not rendered under commercial or industrial rate schedules or purchased for resale by publicly owned systems, railroads and railways, interdepartmental or company use or furnished without charge by electric power systems, rural or other sales for irrigation, and generation in generating plants and used by enterprises of various kinds not included in the use classifications shown separately. The figures include energy for certain classes of residential and commercial uses, series S 121-122, as noted for those series, and may also include some manufacturing and extracting plants for which data were not included in these series, S 124-129, for reasons indicated in text for series S 120.

S 131. Electric energy losses and use unaccounted for, 1912-1970.

Source: 1912-1936, Edison Electric Institute, *Edison Electric Institute Statistical Bulletin*, New York, monthly and annual issues, and *Electric Light and Power Industry in the United States*, annual; McGraw-Hill Publishing Company, Inc., *Electrical World*, annual, New York (copyright); and U.S. Bureau of the Census, *Census of Electrical Industries, 1912-1932*, reports at 5-year intervals. 1937-1970, U.S. Federal Power Commission, unpublished data.

Relation to total energy used varies from year to year with changes in the proportion of energy metered on the low or on the high side of transformers at the point of delivery or at the generating plant, as well as for changes in technological efficiency in the transmission and distribution of electric energy and its relation to the quantities handled.

S 132. Electric energy, net imports, 1912-1970.

Source: U.S. Federal Power Commission, unpublished data.

Data for 1940-1970 are based on annual surveys for staff use. For prior years, data are based on FPC S-15, *Movement of Electric Energy Across State Lines and International Boundaries, 1940*, and on historical records and files to include exports and imports for industrial as well as utility purposes. Monthly and annual *Electric Power Statistics* published by the Dominion Bureau of Statistics, Ottawa, Canada, were also considered. Coverage in reports for the earlier years varied as did the treatment of energy delivered or received on long-term exchange agreements.

Beginning 1955, data classified in ultimate use; "net imports" as a category is not included in total.

S 133-146. Electric utilities—selected balance sheet and income account items of privately owned companies, 1937-1970.

Source: U.S. Federal Power Commission, *Statistics of Privately Owned Electric Utilities in the United States, 1971*, tables 10 and 13.

S 147-159. Rural Electrification Administration—electric program, summary of operations, 1935-1970.

Source: U.S. Rural Electrification Administration, *Annual Statistical Report—Rural Electrification Borrowers*, various issues.

The Rural Electrification Administration was established in May 1935, to initiate, formulate, administer, and supervise a program of approved projects with respect to the generation, transmission, and distribution of electric energy in rural areas. Later, the Rural Electrification Administration (REA) was authorized to make loans for a maximum of 35 years with interest at 2 percent per annum for the construction or improvement of rural electric systems.

The following definitions are used by REA:

Borrowers. Organizations, mainly cooperatives, to which loans for extending central station electric service in rural areas are made.

Systems. Rural electric distribution, generation, and transmission systems in operation by REA borrowers.

Miles energized. Pole miles of electric distribution and transmission lines in service.

Consumers served. The number of individual customers receiving service by borrowers as of the end of the calendar year.

Energy generated. The kilowatt-hours of energy produced during the calendar year by electric generating plants owned by the borrowers of REA loan funds.

Energy purchased. The kilowatt-hours of energy purchased during the calendar year by REA borrowers from all suppliers.

Revenue. Gross revenue received by REA borrowers mainly from the sale of electric energy.

S 160-175. Developed and undeveloped water power, by geographic division, 1920-1970.

Source: U.S. Federal Power Commission, *Electric Power Statistics*, annual summaries and related monthly reports.

The data for developed water power are based on monthly reports submitted to the Federal Power Commission by the electric utilities. FPC practice is to record generating unit capacity as that given by the manufacturer on the nameplate which is placed on each generator. Included are plants of the privately owned electric utilities, municipal utilities, Federal projects, public utility power districts and State

power projects. For 1946-1970, the data also include hydroelectric plants of industrial establishments based on their monthly reports to the FPC.

The data for undeveloped water power resources are based on river basin studies of the years shown. The discovery of new sites, changing criteria, and re-evaluation of needs, as well as the development of sites and a host of other reasons may cause the listed amounts of undeveloped water resources to increase or decrease from year to year. Therefore, the yearly changes in the figures for undeveloped resources cannot be directly related to the amounts of developed water power resources.

S 176-189. Natural gas—consumption and value, 1922-1970.

Source: U.S. Bureau of Mines, *Minerals Yearbook*, annual volumes.

Data on natural-gas consumption and value are collected by annual surveys of oil and gas producers, natural gas processing plants, gas pipeline companies, and gas utility companies with separate reports obtained for each State in which they operate.

Volumes are reported at the pressure base selected by the reporting company; however, prior to 1967, if the reported pressure base deviated more than 5 percent from 14.65 pounds per square in absolute (p.s.i.a.) at 60° F, it was corrected to this base. Beginning 1967, gas volumes are reported or converted to a pressure base of 14.73 (p.s.i.a.).

S 190-204. Gas utility industry—customers, sales, and revenues, by type of service, 1932-1970.

Source: American Gas Association, Arlington, Va., 1932-1959, *Historical Statistics of the Gas Industry*, 1965, pp. 163, 213, and 263; 1960-1970, *Gas Facts, 1971*, pp. 58, 78, and 98. (Copyright.)

American Gas Association (A.G.A.) statistics are based on data provided by individual gas companies to A.G.A.'s department of statistics on the Uniform Statistical Report, a detailed questionnaire distributed annually to the industry. This questionnaire, periodically reviewed by the financial community to insure the inclusion of all items important to security analysis and insurance companies, is also utilized by many gas companies in reporting their operations to the financial community.

Data relating to customers, sales, and revenues are based upon responses submitted to A.G.A. on this questionnaire by gas companies representing 96 percent of the industry. For the small remaining portion of the industry, data have been obtained from reports filed with regulatory commissions, supplemented by investigation of financial publications and other secondary sources.

Revised monthly sales and quarterly customers, sales, and revenues, as well as interim income statements, are based on information previously published in the *Monthly Bulletin of Utility Gas Sales*, and the *Quarterly Report of Gas Industry Operations*.

The three rate classifications are:

1. Residential service.
 - a. Without space heating.

Service to customers supplied for residential purposes (cooking, water heating, kitchen heating, where another fuel is principal heat for premises, etc.) by individual meter in a single family dwelling or building, or in an individual flat or apartment, or to not over four households served by a single meter (one customer) in a multiple family dwelling, or portion thereof. Service for residential purposes supplied to five or more households served as a *single customer* (one meter) under one rate classification contract is considered as commercial and is counted as only one customer.

Residential premises also used regularly for professional or business purposes (such as a doctor's office in a home, or where a small store is integral with the living space) are considered as residential where the residential

Series S 1-14. Total Horsepower of All Prime Movers: 1849 to 1970

[In thousands]

Year	Total	Automotive ¹	Nonautomotive											
			Total	Work animals	Inanimate									
					Total	Factories ²	Mines	Railroads ³	Merchant ships, powered	Sailing vessels	Farms ⁴	Windmills	Electric generating plants	Aircraft ⁵
1970	20,408,000	19,325,000	1,083,000	1,500	1,081,500	54,000	45,000	54,000	22,000	1	6,288,500	(e)	435,000	183,000
1969	19,115,000	18,075,000	1,040,250	1,250	1,039,000	53,000	44,000	53,000	19,000	1	6,302,000	(e)	404,000	165,000
1968	17,912,144	16,937,725	974,419	1,460	972,959	52,000	43,400	57,607	20,413	1	290,600	24	371,756	137,153
1967	17,050,693	16,152,371	898,322	1,620	896,702	51,000	42,500	49,067	21,493	1	273,606	24	342,918	116,093
1966	15,959,175	15,101,836	857,339	1,800	855,539	49,700	41,200	47,098	22,622	1	274,227	27	323,800	96,864
1965	15,096,332	14,306,300	790,032	2,000	788,032	48,400	40,800	43,838	24,015	2	269,822	30	307,025	54,600
1964	14,272,244	13,512,653	759,591	2,250	757,341	47,000	39,327	46,548	23,715	2	258,451	33	287,111	55,154
1963	13,413,072	12,713,712	699,360	2,500	696,860	45,770	37,000	46,390	23,890	2	217,928	37	273,085	52,758
1962	12,586,417	11,930,000	656,417	2,600	653,817	44,600	36,300	46,694	22,867	2	204,740	39	249,059	49,516
1961	11,611,311	10,972,210	639,101	2,700	636,401	43,250	35,400	47,453	23,046	2	205,463	41	235,746	48,000
1960*	11,007,889	10,366,880	641,009	2,790	638,219	42,000	34,700	46,856	23,890	2	237,020	44	217,173	36,534
1955	7,158,229	6,632,121	526,108	4,141	521,967	35,579	30,768	60,304	24,155	8	720,742	59	137,576	825,779
1952	5,736,886	5,361,386	375,500	5,930	369,520	35,045	9,523	101,690	23,207	9	78,590	62	108,453	22,941
1950	4,754,038	4,403,617	350,421	7,040	343,381	32,921	8,500	110,969	23,423	11	57,538	59	87,965	82,000
1940	2,773,316	2,511,312	262,004	12,510	249,494	21,768	7,332	92,361	9,408	26	57,472	130	53,542	87,455
1939		2,400,000				21,239	7,149	90,500	10,000		40,750		52,115	6,000
1930	1,663,944	1,426,568	237,376	17,660	219,716	19,519	5,620	109,743	9,115	100	28,610	200	43,427	3,382
1929		1,424,980				19,328	5,450	111,881	9,017		27,261		40,014	3,091
1920	458,450	280,900	172,550	22,430	150,120	19,422	5,146	80,182	6,508	169	21,443	200	17,050	
1919		230,432				19,432	5,112	76,660	6,229		20,796		15,250	
1910	138,810	24,636	114,124	21,460	92,664	16,697	4,473	61,303	3,098	220	10,460	180	6,228	
1909		7,714				16,393	4,401	48,491	2,750		9,311		5,225	
1900	63,952	100	63,852	18,730	45,122	10,309	2,919	24,501	1,663	251	4,009	120	1,350	
1899		32				9,633	2,754	21,835	1,542		3,420		1,200	
1890	44,086		44,086	15,970	28,116	6,303	1,445	16,980	1,124	280	1,452	80	447	
1889						5,939	1,300	16,440	1,078		1,233		120	
1880	26,314		26,314	11,580	14,734	3,664	715	8,592	741	314	668	40		
1879						3,411	650	7,720	703		606			
1870	16,931		16,931	8,660	8,271	2,453	380	4,462	632	314		30		
1869						2,346	350	4,100	624					
1860	13,763		13,763	8,630	5,133	1,675	170	2,156	515	597		20		
1859						1,600	150	1,940	503					
1850	8,495		8,495	5,960	2,535	1,150	60	586	325	400		14		
1849						1,100	50	435	305					

* Denotes first year for which figures include Alaska and Hawaii.
¹ Includes passenger cars, trucks, buses, and motorcycles.
² Excludes electric motors.
³ Beginning 1965, not strictly comparable with earlier years.
⁴ Excludes horses and other work animals, which are included in series S 4.

⁵ Includes private planes and commercial airliners.
⁶ Windmills included in series S 11.
⁷ Beginning 1955, not strictly comparable with earlier years.
⁸ Includes Alaska and Hawaii.

Series S 15-24. Consumption of Raw Materials in Constant 1967 Dollars, by Broad Use Classes: 1900 to 1969

[In millions of dollars]

Year	Raw materials, total	Food	Energy materials				Physical-structure materials			
			Total	Coal	Oil and gas	Fuel wood	Total	Agricultural and fishery nonfoods and wildlife products	Forest products	Minerals
1969	68,590	32,275	19,170	2,467	16,527	176	17,145	4,031	3,401	9,713
1968	67,095	31,735	18,202	2,430	15,590	182	17,158	4,193	3,400	9,555
1967	64,417	30,844	17,123	2,341	14,594	188	16,450	4,093	3,217	9,140
1966	63,547	29,938	16,513	2,370	13,935	208	17,096	4,357	3,386	9,353
1965	61,463	29,322	15,737	2,253	13,257	227	16,404	4,221	3,362	8,821
1964	59,880	29,183	15,158	2,154	12,757	247	15,539	4,068	3,254	8,217
1963	57,890	28,534	14,704	2,046	12,392	266	14,652	3,952	3,082	7,618
1962	56,514	27,702	14,212	1,923	12,003	286	14,600	4,132	2,949	7,519
1961	54,487	27,279	13,648	1,862	11,477	309	13,560	3,842	2,805	6,913
1960	53,644	26,636	13,532	1,925	11,280	327	13,476	3,814	2,831	6,831
1959	53,737	26,411	13,295	1,904	11,034	357	14,031	3,933	3,004	7,044
1958	51,192	25,579	12,820	1,857	10,605	358	12,793	3,644	2,724	6,425
1957	51,523	25,710	12,724	2,094	10,259	371	13,089	3,750	2,727	6,612
1956	52,232	25,891	12,701	2,161	10,136	404	13,640	4,017	3,064	6,559
1955	50,594	25,076	12,269	2,130	9,721	418	13,249	3,925	2,952	6,972
1954	47,630	24,182	11,319	1,955	8,940	424	12,129	3,673	2,804	5,852
1953	48,067	23,922	11,400	2,182	8,779	439	12,745	3,948	2,822	5,976
1952	46,718	23,340	11,101	2,242	8,397	462	12,277	3,952	2,807	5,513
1951	46,334	22,881	11,059	2,506	8,065	488	12,394	4,134	2,820	5,990
1950	45,532	22,672	10,334	2,479	7,409	496	12,476	4,367	2,811	5,298
1949	41,903	22,045	9,482	2,355	6,564	563	10,376	3,635	2,378	4,363
1948	43,181	21,885	9,950	2,904	6,494	552	11,346	4,150	2,705	4,491
1947	42,996	22,583	9,627	2,993	6,083	551	10,786	4,078	2,636	4,172
1946	41,976	22,586	8,740	2,717	5,477	546	10,650	4,389	2,428	3,833

Series S 15-24. Consumption of Raw Materials in Constant 1967 Dollars, by Broad Use Classes: 1900 to 1969—Con.

[In millions of dollars]

Year	Raw materials, total	Food	Energy materials				Physical-structure materials			
			Total	Coal	Oil and gas	Fuel wood	Total	Agricultural and fishery nonfoods and wildlife products	Forest products	Minerals
			15	16	17	18	19	20	21	22
1945	41,931	22,710	9,085	3,046	5,463	576	10,136	4,063	2,086	3,987
1944	42,271	22,784	8,998	3,252	5,165	581	10,489	4,143	2,289	4,057
1943	40,448	21,140	8,507	3,249	4,693	565	10,801	4,207	2,322	4,272
1942	39,351	20,261	7,954	2,974	4,394	586	11,136	4,197	2,528	4,411
1941	38,615	19,557	7,864	2,679	4,482	703	11,194	4,356	2,498	4,340
1940	34,901	18,985	7,261	2,453	4,074	734	8,655	3,580	2,140	2,935
1939	33,063	18,514	6,729	2,184	3,774	771	7,820	3,353	1,932	2,485
1938	30,998	17,541	6,198	1,978	3,438	782	6,359	2,838	1,755	1,755
1937	32,171	17,439	6,751	2,407	3,589	755	7,981	3,359	2,012	2,610
1936	31,675	17,543	6,542	2,412	3,350	780	7,590	3,372	1,876	2,342
1935	28,810	16,766	5,941	2,109	3,029	803	6,103	2,909	1,576	1,618
1934	28,753	17,606	5,726	2,069	2,815	842	5,421	2,781	1,342	1,298
1933	27,753	17,008	5,428	1,912	2,651	865	5,322	2,788	1,262	1,277
1932	26,258	16,644	5,225	1,850	2,526	849	4,389	2,358	1,060	971
1931	28,529	16,927	5,732	2,208	2,749	775	5,870	2,675	1,408	1,787
1930	29,890	16,830	6,071	2,670	2,690	711	6,989	2,744	1,923	2,317
1929	31,979	16,834	6,508	3,005	2,857	646	8,637	3,197	2,411	3,029
1928	30,545	16,430	6,157	2,927	2,583	647	7,958	2,952	2,279	2,727
1927	30,304	16,307	5,980	2,943	2,392	645	8,017	3,034	2,342	2,641
1926	30,518	16,390	6,092	3,128	2,333	631	8,036	2,843	2,459	2,734
1925	29,652	16,007	5,732	2,853	2,219	660	7,913	2,811	2,487	2,615
1924	28,840	15,953	5,656	2,924	2,051	681	7,231	2,495	2,412	2,324
1923	29,190	15,954	5,804	3,125	1,993	686	7,432	2,394	2,538	2,500
1922	26,312	15,217	4,822	2,463	1,631	728	6,273	2,042	2,253	1,978
1921	22,832	13,475	4,723	2,497	1,436	790	4,634	1,400	1,914	1,320
1920	26,706	14,406	5,285	3,071	1,435	779	7,015	2,628	2,274	2,113
1919	25,376	14,130	4,834	2,909	1,144	781	6,412	2,287	2,207	1,938
1918	25,984	13,913	5,019	3,230	982	807	7,052	2,779	2,110	2,163
1917	25,868	13,809	5,036	3,228	1,025	783	7,023	2,554	2,306	2,153
1916	24,427	12,879	4,642	3,006	851	785	6,906	2,112	2,485	2,309
1915	23,605	13,388	4,232	2,699	753	780	5,985	1,834	2,312	1,839
1914	24,643	13,819	4,047	2,593	662	792	6,777	2,767	2,438	1,572
1913	24,028	13,298	4,276	2,843	659	774	6,454	2,038	2,548	1,873
1912	24,027	13,757	4,085	2,685	624	776	6,185	1,769	2,608	1,808
1911	23,897	13,229	3,890	2,529	547	814	6,278	2,090	2,503	1,685
1910	23,075	12,952	3,867	2,558	507	802	6,256	1,850	2,601	1,805
1909	22,395	12,899	3,357	2,170	398	789	6,139	1,798	2,604	1,737
1908	21,498	12,593	3,350	2,163	384	803	5,555	1,737	2,462	1,356
1907	21,676	12,166	3,619	2,467	358	794	5,891	1,634	2,652	1,605
1906	21,797	12,426	3,258	2,125	331	802	6,113	1,892	2,573	1,648
1905	20,748	12,005	3,223	2,052	350	821	5,520	1,629	2,415	1,476
1904	20,351	12,140	2,972	1,850	281	841	5,239	1,677	2,353	1,209
1903	19,385	11,476	3,013	1,894	261	858	4,896	1,311	2,274	1,311
1902	18,679	11,056	2,628	1,532	221	875	4,995	1,407	2,210	1,378
1901	17,594	10,504	2,608	1,564	151	893	4,482	1,198	2,107	1,177
1900	17,358	10,448	2,447	1,418	120	909	4,463	1,317	2,030	1,116

Series S 25-31. Consumption of Fuel Resources, by Major Consumer Group: 1947 to 1970

[In trillions of British thermal units]

Year	Total	Household and commercial	Industrial	Transportation ¹	Electrical generation, utilities ²	Miscellaneous	Utility electricity purchased ³	Year	Total	Household and commercial	Industrial	Transportation ¹	Electrical generation, utilities ²	Miscellaneous	Utility electricity purchased ³														
																25	26	27	28	29	30	31	25	26	27	28	29	30	31
																1970	67,444	13,988	20,339	16,472	16,430	215	5,226	1958	41,696	9,467	13,507	10,275	7,317
1969	64,979	13,606	20,107	15,784	15,254	228	4,924	1957	41,706	8,685	14,503	10,229	7,330	959	2,167														
1968	61,763	13,109	19,363	15,156	13,892	243	4,529	1956	41,700	8,963	14,588	10,132	7,082	935	2,065														
1967	58,265	13,014	18,230	14,015	12,728	278	4,142	1955	39,703	8,595	13,991	9,826	6,595	696	1,881														
1966	56,412	12,388	18,028	13,845	12,054	597	3,905	1954	36,263	7,968	12,515	9,113	5,940	727	1,617														
1965	53,343	11,830	17,176	12,714	11,075	548	3,600	1953	37,586	7,757	13,752	9,205	5,891	981	1,518														
1964	51,240	11,143	16,698	12,261	10,375	763	3,356	1952	36,458	7,979	13,098	9,168	5,518	695	1,370														
1963	49,308	11,016	15,908	11,962	9,683	789	3,128	1951	36,775	7,857	13,698	9,206	5,281	733	1,294														
1962	47,422	10,948	15,249	11,415	9,093	717	2,910	1950	33,992	7,593	12,325	8,616	4,981	477	1,129														
1961	45,319	10,873	14,631	10,986	8,537	792	2,710	1949	31,438	6,884	11,369	8,075	4,616	544	998														
1960	44,569	10,174	14,642	10,818	8,263	672	2,586	1948	33,880	7,089	12,322	8,731	4,724	1,014	969														
1959	43,140	9,711	14,040	10,387	7,873	1,129	2,435	1947	33,035	6,775	12,795	8,791	4,264	410	879														

¹ Includes bunkers and military transportation.

² Represents fossil fuels burned in steam-electric plants with hydropower and nuclear

power converted to national average heat rates for fossil-fueled steam-electric plants as reported by Federal Power Commission. ³ Electricity generated and imported.

Series S 32-43. Net Production of Electric Energy, by Electric Utility and Industrial Generating Plants, by Type of Plant: 1902 to 1970

[In millions of kilowatt-hours]

Year	Total utility and industrial				Electric utilities				Industrial establishments			
	Total	Hydro	Steam	Internal combustion	Total	Hydro	Steam	Internal combustion	Total	Hydro	Steam	Internal combustion
	32	33	34	35	36	37	38	39	40	41	42	43
1970	1,639,771	250,699	1,375,252	13,820	1,531,609	247,456	1,278,091	6,062	108,162	3,243	97,161	7,758
1969	1,552,757	253,468	1,285,448	13,841	1,442,182	250,192	1,186,410	5,580	110,575	3,276	99,038	8,261
1968	1,436,029	225,874	1,196,587	13,568	1,329,443	222,491	1,101,767	5,185	106,586	3,383	94,820	8,383
1967	1,317,301	224,948	1,079,508	12,844	1,214,365	221,518	987,991	4,856	102,935	3,430	91,517	7,988
1966	1,249,444	197,938	1,038,645	12,861	1,144,350	194,756	944,430	5,164	105,094	3,182	94,215	7,697
1965	1,157,583	196,984	947,890	12,709	1,055,252	193,851	856,312	5,089	102,331	3,133	91,578	7,620
1964	1,083,741	180,301	890,887	12,553	983,990	177,073	801,907	5,010	99,751	3,228	88,980	7,543
1963	1,011,417	168,990	830,285	12,142	916,793	165,755	745,992	5,046	94,624	3,235	84,293	7,096
1962	946,526	172,086	763,313	11,127	854,796	168,579	681,340	4,878	91,730	3,507	81,973	6,249
1961	881,495	155,630	716,161	9,705	794,273	152,158	637,436	4,680	87,223	3,472	78,725	5,026
1960	844,188	149,515	683,941	10,733	755,374	145,796	605,031	4,547	88,814	3,719	78,910	6,186
1959*	797,567	141,500	645,164	10,903	711,822	138,028	569,355	4,438	85,745	3,471	75,808	6,465
1958	724,752	148,614	571,037	10,101	645,098	140,262	500,764	4,072	79,654	3,352	70,273	6,029
1957	716,356	133,358	571,405	11,593	631,507	130,232	497,212	4,062	84,849	3,125	74,193	7,531
1956	684,304	125,237	548,306	11,261	600,668	122,029	474,552	4,087	84,136	3,208	73,754	7,174
1955	629,010	116,236	502,388	10,386	547,038	112,975	430,119	3,944	81,972	3,261	72,269	6,442
1954	544,645	111,640	423,151	9,854	471,686	107,069	360,834	3,783	72,959	4,571	62,317	6,071
1953	514,169	109,617	394,726	9,826	442,664	105,233	333,541	3,890	71,505	4,384	61,185	5,936
1952	463,055	109,708	344,695	8,652	399,224	105,102	290,385	3,737	63,831	4,606	54,310	4,915
1951	433,358	104,376	321,705	7,277	370,673	99,750	267,252	3,671	62,685	4,626	54,453	3,606
1950	388,674	100,884	281,000	6,790	329,141	95,938	229,543	3,660	59,533	4,946	51,457	3,130
1949	345,066	94,773	244,429	5,864	291,099	89,748	197,878	3,473	55,967	5,025	46,551	2,391
1948	336,808	86,992	243,730	6,086	282,698	82,470	196,928	3,300	54,110	4,522	46,802	2,786
1947	307,400	83,066	218,985	5,349	255,739	78,426	174,500	2,813	51,661	4,640	44,485	2,536
1946	269,609	83,150	181,825	4,634	223,178	78,406	142,412	2,360	46,431	4,744	39,413	2,274
1945	271,255	84,747	181,708	4,800	222,486	79,970	140,435	2,081	48,769	4,777	41,273	2,719
1944	279,525	78,905	195,664	4,956	223,189	73,069	152,328	1,916	43,336	4,960	43,336	3,040
1943	267,540	79,077	183,952	4,511	217,759	73,632	142,381	1,746	49,781	5,445	41,571	2,765
1942	233,146	69,133	159,725	4,288	185,979	63,871	120,479	1,629	47,167	5,262	39,246	2,659
1941	208,306	55,357	149,157	3,792	164,788	50,863	112,319	1,606	43,518	4,494	36,838	2,186
1940	179,907	51,659	124,941	3,307	141,837	47,321	93,002	1,514	38,070	4,338	31,939	1,793
1939	161,308	47,691	110,635	2,982	127,642	43,564	82,783	1,295	33,666	4,127	27,852	1,687
1938	141,955	48,394	93,561		113,812	44,279	68,423	1,110	23,143	4,115		24,028
1937	146,476	48,272	98,204		118,913	44,013	73,891	1,009	27,563	4,259		23,304
1936	136,006	42,750	93,256		109,316	39,058	69,359	899	26,690	3,692		22,998
1935	118,935	42,253	76,682		95,287	38,372	56,144	771	23,648	3,881		19,767
1934	110,404	35,922	74,482		87,258	32,684	53,939	635	23,146	3,238		19,908
1933	102,655	36,730	65,925		81,740	33,457	47,709	574	20,915	3,273		17,642
1932	99,359	35,998	63,361		79,393	32,878	45,922	593	19,966	3,120		16,846
1931	109,373	32,106	77,267		87,350	29,028	57,685	637	22,023	3,078		18,945
1930	114,637	34,874	79,763		91,112	31,190	59,293	629	23,525	3,684		19,841
1929	116,747	37,038	79,709		92,180	32,648	58,965	567	24,567	4,390		20,177
1928	108,069	37,297	70,772		82,794	32,874	49,370	550	25,275	4,423		20,852
1927	101,390	32,924	68,466		75,418	28,474	46,615	329	25,972	4,450		21,522
1926	94,222	30,355	63,867		69,353	25,603	43,422	328	24,869	4,752		20,117
1925	84,666	26,112	58,554		61,451	21,798	39,367	286	23,215	4,314		18,901
1924	75,892	24,138	51,754		54,662	19,489	34,955	218	21,230	4,649		16,581
1923	71,399	23,421	47,978		51,229	18,940	32,093	196	20,170	4,481		15,689
1922	61,204	21,262	39,942		43,632	16,875	26,579	178	17,572	4,387		13,185
1921	53,125	18,732	34,393		37,180	14,703	22,311	166	15,945	4,029		11,916
1920	56,559	20,311	36,248		39,405	15,760	23,489	156	17,154	4,551		12,603
1917	43,429	13,948	29,481		25,438	10,100	15,338		17,991	3,848		14,143
1912	24,752	7,387	17,365		11,569	4,500	7,069		13,183	2,887		10,296
1907	14,121	4,003	10,118		5,862				8,259			
1902	5,969	2,166	3,803		2,507				3,462			

* Denotes first year for which figures include Alaska and Hawaii.

Series S 44-52. Net Production of Electric Energy, by Class of Ownership: 1902 to 1970

[In millions of kilowatt-hours]

Year	Total utility and industrial	Electric utilities							Industrial establishments
		Total	Privately owned	Cooperatively owned ¹	Publicly owned				
					Total	Municipal	Federal	Other ¹	
44	45	46	47	48	49	50	51	52	
1970	1,639,771	1,531,609	1,183,190	23,459	324,960	71,394	185,753	67,813	108,162
1969	1,552,757	1,442,182	1,102,162	17,513	322,507	69,614	183,245	69,648	110,575
1968	1,436,029	1,329,443	1,019,312	14,141	295,990	63,804	170,834	61,352	106,586
1967	1,317,301	1,214,365	928,439	12,389	273,538	57,739	162,399	53,350	102,935
1966	1,249,444	1,144,350	880,837	11,175	252,338	52,627	153,067	46,644	105,094
1965	1,157,583	1,055,252	809,474	8,571	237,207	49,940	145,231	42,036	102,331
1964	1,083,741	983,990	756,183	7,934	219,873	50,263	129,936	39,674	99,751
1963	1,011,417	916,793	701,253	6,949	208,591	46,293	124,340	37,958	94,624
1962	946,526	854,796	653,076	6,180	195,540	41,840	115,926	37,773	91,730
1961	881,495	794,273	606,737	5,294	182,242	38,872	112,375	30,995	87,223
1960	844,188	755,374	580,286	5,006	170,082	37,029	112,509	20,545	88,314
1959*	797,567	711,822	545,741	4,441	161,639	34,721	109,217	17,702	85,745
1958	724,752	645,098	490,402	3,422	151,274	28,329	110,437	12,508	79,654
1957	716,356	631,507	480,943	3,029	147,535	27,850	109,176	10,509	84,349
1956	684,804	600,668	469,015	3,413	138,240	28,005	100,711	9,524	84,136
1955	629,010	547,038	420,869	3,034	123,135	25,852	89,064	8,219	81,972
1954	544,645	471,686	370,970	2,476	98,240	23,505	67,804	6,931	72,959
1953	514,169	442,664	354,271	1,897	86,496	21,625	58,064	6,807	71,505
1952	463,055	399,224	322,126	1,526	75,572	17,490	52,492	5,590	63,831
1951	433,358	370,673	301,845	1,264	67,564	17,617	44,120	5,827	62,685
1950	388,674	329,141	266,860	1,010	61,271	15,244	40,388	5,639	59,533
1949	345,066	291,099	233,112	847	57,140	13,410	38,102	5,628	53,967
1948	336,808	282,698	228,231	673	53,794	13,122	35,373	5,299	54,110
1947	307,400	255,739	208,105	406	47,228	12,415	29,877	4,936	51,661
1946	269,609	223,178	181,020	300	41,858	10,801	26,960	4,097	46,431
1945	271,255	222,486	180,926	242	41,318	9,624	28,000	3,694	48,769
1944	279,525	228,189	185,850	200	42,139	9,637	28,367	3,635	51,336
1943	267,540	217,759	180,247	187	37,325	9,223	24,485	3,617	49,781
1942	233,146	185,979	158,052	123	27,804	7,610	16,893	3,301	47,167
1941	208,306	164,788	144,290	78	20,420	7,023	10,793	2,604	43,518
1940	179,907	141,837	125,411	37	16,389	6,188	8,584	1,617	38,070
1939	161,308	127,642	115,078		12,564	5,688	5,476	1,400	33,666
1938	141,955	113,812	104,090		9,722	5,237	3,029	1,456	28,143
1937	146,476	118,913	110,464		8,449	5,270	1,843	1,336	27,563
1936	136,006	109,316	102,293		7,023	4,705	1,072	1,246	26,690
1935	118,935	95,287	89,330		5,957	4,228	555	1,174	23,648
1934	110,404	87,258	82,079		5,179	3,834	357	988	23,146
1933	102,655	81,740	76,668		5,072	3,533	458	1,031	20,315
1932	99,359	79,393	74,488		4,905	3,517	445	943	19,966
1931	109,373	87,350	82,597		4,753	3,435	497	821	22,023
1930	114,637	91,112	86,109		5,003	3,604	465	934	23,525
1929	116,747	92,180	87,514		4,666	3,497	300	869	24,567
1928	108,069	82,794	78,207		4,587	3,245	356	986	25,275
1927	101,390	75,418	70,920		4,498	3,051	668	779	25,972
1926	94,222	69,353	65,480		3,873	2,332	518	523	24,869
1925	84,666	61,451	58,685		2,766	2,302	103	361	23,215
1924	75,892	54,662	52,315		2,347	1,940	58	349	21,230
1923	71,399	51,229	49,044		2,185	1,852	63	270	20,170
1922	61,204	43,632	41,660		1,972	1,637	55	280	17,572
1921	53,125	37,180	35,456		1,724	1,422	52	250	15,945
1920	56,559	39,405	37,716		1,689	1,373	59	257	17,154
1917	43,429	25,438	24,399		1,039	1,039			17,991
1912	24,752	11,569	11,032		537	537			13,183
1907	14,121	5,862	5,573		289	289			8,259
1902	5,969	2,507	2,311		196	196			3,462

* Denotes first year for which figures include Alaska and Hawaii.

¹ Prior to 1940, "cooperatively owned" included in "other publicly owned."

Series S 53-57. Number of Electric Utility Generating Plants, and Production Per Kilowatt of Installed Generating Capacity: 1902 to 1970

Year	Number of plants				Production per kilowatt of capacity (kw-hr.)	Year	Number of plants				Production per kilowatt of capacity (kw-hr.)
	Total	Hydro	Steam	Internal combustion			Total	Hydro	Steam	Internal combustion	
	53	54	55	56			53	54	55	56	
1970	3,519	1,183	1,330	1,006	4,490	1940	3,918	1,474	1,153	1,291	3,601
1969	3,472	1,188	1,272	1,012	4,602	1939	3,938	1,487	1,195	1,256	3,346
1968	3,429	1,207	1,206	1,016	4,568	1938	3,903	1,479	1,252	1,172	3,110
1967	3,378	1,211	1,149	1,018	4,510	1937	3,918	1,473	1,283	1,162	3,364
1966	3,290	1,217	1,085	988	4,617	1936	3,896	1,471	1,337	1,088	3,145
1965	3,290	1,231	1,068	991	4,469	1935	4,023	1,476	1,424	1,123	2,777
1964	3,377	1,274	1,072	1,031	4,427	1934	3,999	1,471	1,454	1,074	2,540
1963	3,402	1,284	1,074	1,044	4,354	1933	4,012	1,482	1,514	1,016	2,874
1962	3,435	1,301	1,068	1,066	4,588	1932	4,027	1,460	1,553	1,014	2,337
1961	3,476	1,333	1,062	1,081	4,540	1931	4,037	1,461	1,577	999	2,646
1960	3,497	1,343	1,072	1,082	4,635	1930	4,043	1,446	1,626	971	2,926
1959*	3,518	1,366	1,061	1,091	(NA)	1929	3,833	1,389	1,693	756	3,197
1958	3,481	1,359	1,051	1,071	4,748	1928	3,830	1,370	1,717	743	3,127
1957	3,517	1,360	1,043	1,114	5,056	1927	3,707	1,299	1,869	539	3,111
1956	3,534	1,365	1,037	1,132	5,108	1926	3,742	1,287	1,964	491	3,094
1955	3,587	1,381	1,045	1,161	5,037	1925	3,738	1,250	2,004	484	3,133
1954	3,627	1,387	1,045	1,195	4,862	1924	3,783	1,221	2,169	393	3,276
1953	3,686	1,406	1,041	1,239	5,098	1923	3,768	1,191	2,224	353	3,434
1952	3,698	1,412	1,030	1,256	5,051	1922	3,722	1,142	2,276	304	3,125
1951	3,806	1,428	1,048	1,330	5,124	1921	3,726	1,120	2,324	282	2,839
1950	3,867	1,458	1,051	1,358	4,984	1920	3,831	1,125	2,422	284	3,101
1949	3,888	1,465	1,054	1,369	4,862	1917	4,364				2,828
1948	3,879	1,467	1,045	1,367	5,191	1912	3,520				2,240
1947	3,865	1,479	1,045	1,341	4,984	1907	3,200				2,164
1946	3,854	1,488	1,046	1,320	4,441	1902	2,250				2,068
1945	3,886	1,505	1,057	1,324	4,487						
1944	3,933	1,510	1,082	1,341	4,699						
1943	3,959	1,507	1,101	1,351	4,687						
1942	3,899	1,489	1,100	1,310	4,257						
1941	3,882	1,473	1,116	1,293	4,008						

* Denotes first year for which figures include Alaska and Hawaii.

NA Not available.

Series S 58-73. Privately Owned Electric Utility Generating Plants, by Type of Plant and Plant Size: 1920 to 1970

[Plant size interval in kilowatts]

Year	Total plants	Steam plants						Nuclear plants	Hydro plants					Internal combustion		
		Total	Under 100,000	100,001-200,000	200,001-500,000	500,001-1,000,000	Over 1,000,000		Total	Under 5,000	5,001-25,000	25,001-100,000	Over 100,000	Total ¹	Under 5,000	Over 5,000
		58	59	60	61	62	63		64	65	66	67	68	69	70	71
NUMBER OF PLANTS																
1970	1,923	661	219	109	178	108	47	13	702	336	203	117	46	547	223	89
1969	1,893	656	224	116	176	97	43	10	719	354	202	117	46	508	229	80
1968	1,843	657	231	114	185	91	36	8	734	369	202	118	45	444	229	68
1967	1,794	657	239	114	192	86	26	8	739	373	204	117	45	390	231	58
1966	1,726	651	243	117	196	76	19	8	749	386	207	115	41	318	226	41
1965	1,724	653	255	115	194	72	17	7	754	393	205	116	40	310	234	36
1964	1,755	664	280	117	184	69	14	7	786	432	204	113	37	298	237	61
1963	1,798	674	299	117	186	60	12	7	812	462	204	111	35	305	251	54
1962	1,818	686	317	121	181	57	10	7	821	476	206	107	32	304	262	42
1961	1,858	696	339	122	176	50	9	5	839	498	205	105	31	318	232	36
1960	1,896	707	362	121	177	42	5	4	866	523	209	105	29	319	291	28
1959*	1,905	694	371	116	168	35	4	3	888	543	211	107	27	320	295	25
1958	1,911	689	388	118	152	27	4	3	897	553	212	106	26	322	299	23
1957	1,929	690	421	125	119	23	2	3	900	569	211	101	19	336	314	22
1956	1,934	684	427	122	117	17	1		903	578	210	97	18	347	325	22
1955	1,965	691	451	116	108	16			924	602	207	96	19	350	328	22
1954	2,003	703	483	112	97	11			934	618	204	94	18	366	342	24
1953	2,032	695	499	108	80	8			959	646	202	93	18	384	363	21
1952	2,038	684	513	94	70	7			964	660	195	93	16	390	371	19
1951	2,088	688	526	94	62	6			978	679	190	89	15	427	410	17
1950	2,116	684	543		141				990	702	186	87	15	442	428	14
1949	2,133	685	559		126				993	710	187	83	13	455	443	12
1948	2,123	670	564		106				991	709	187	83	12	462	452	10
1947	2,060	653	553		100				984	707	183	83	11	423	419	4
1946	2,045	650	556		94				986	709	184	82	11	409	405	4
1945	2,039	655	561		94				988	715	181	82	10	396	392	4

See footnotes at end of table.

Series S 58-73. Privately Owned Electric Utility Generating Plants, by Type of Plant and Plant Size: 1920 to 1970—Con.

[Plant size interval in kilowatts]

Year	Total plants	Steam plants						Nuclear plants	Hydro plants					Internal combustion		
		Total	Under 100,000	100,001-200,000	200,001-500,000	500,001-1,000,000	Over 1,000,000		Total	Under 5,000	5,001-25,000	25,001-100,000	Over 100,000	Total ¹	Under 5,000	Over 5,000
		58	59	60	61	62	63		64	65	66	67	68	69	70	71
CAPACITY (1,000 kilowatts)																
1970	259,662	220,536	8,375	15,676	58,619	75,314	62,552	5,622	18,638	654	2,415	5,802	9,767	14,866	437	1,987
1969	241,230	209,950	8,637	16,943	58,561	67,524	58,285	3,110	18,252	685	2,356	5,867	9,344	9,918	452	1,721
1968	223,121	196,787	8,837	16,639	61,477	61,836	47,998	1,940	18,166	708	2,376	5,867	9,220	6,228	441	1,507
1967	203,833	180,726	8,854	16,634	63,620	58,200	33,418	1,415	17,876	690	2,392	5,847	8,947	3,821	447	576
1966	186,325	167,105	8,977	17,217	64,876	51,271	24,764	931	16,149	695	2,439	5,672	7,843	2,140	413	347
1965	177,478	159,141	9,273	16,900	63,509	48,412	21,047	856	15,840	701	2,418	5,749	6,972	1,641	424	308
1964	167,426	150,379	10,059	17,260	60,556	45,742	16,762	836	15,043	747	2,410	5,573	6,813	1,168	432	736
1963	158,576	142,309	10,601	17,332	60,556	39,432	14,388	836	14,400	767	2,426	5,492	5,715	1,031	429	602
1962	150,992	135,959	10,634	17,826	57,955	37,481	12,063	803	13,369	767	2,443	5,293	4,866	861	427	434
1961	142,158	127,719	11,011	18,025	56,405	31,730	10,548	473	13,165	792	2,434	5,232	4,707	801	439	362
1960	133,839	119,820	11,588	17,702	57,695	27,158	5,677	321	13,010	812	2,498	5,259	4,441	688	447	241
1959*	123,991	110,375	11,909	17,154	54,520	22,175	4,617	112	12,854	826	2,512	5,373	4,143	650	436	214
1958	112,687	99,554	12,026	17,187	46,701	17,023	4,617	112	12,398	831	2,494	5,272	3,801	623	425	198
1957	97,439	85,581	12,825	18,738	37,094	14,534	2,390	112	11,127	858	2,518	5,037	2,714	619	435	184
1956	90,826	79,462	12,625	18,199	36,299	11,259	1,080	-----	10,738	854	2,497	4,811	2,576	626	442	184
1955	87,009	75,301	13,596	17,312	33,296	11,097	-----	-----	11,084	877	2,459	4,837	2,911	624	446	178
1954	79,408	67,957	14,183	16,647	30,052	7,075	-----	-----	10,806	891	2,417	4,694	2,804	645	449	196
1953	71,345	60,013	14,159	15,810	24,930	5,114	-----	-----	10,692	923	2,383	4,639	2,747	640	468	172
1952	64,354	53,488	14,017	13,774	21,200	4,497	-----	-----	10,251	923	2,275	4,658	2,395	615	464	151
1951	60,237	49,797	13,160	13,945	18,785	3,907	-----	-----	9,841	935	2,243	4,423	2,240	599	477	122
1950	54,833	44,633	13,355	-----	31,278	-----	-----	-----	9,626	950	2,202	4,248	2,226	574	469	105
1949	50,376	40,643	12,952	-----	27,691	-----	-----	-----	9,181	945	2,179	4,075	1,982	552	459	93
1948	44,983	35,474	12,367	-----	23,107	-----	-----	-----	9,002	950	2,174	4,018	1,860	507	433	74
1947	41,863	32,594	11,392	-----	21,202	-----	-----	-----	8,885	905	2,136	4,070	1,774	384	352	32
1946	40,123	30,954	11,028	-----	19,926	-----	-----	-----	8,863	912	2,148	4,029	1,774	306	276	30
1945	39,978	30,972	10,948	-----	20,024	-----	-----	-----	8,717	923	2,129	4,033	1,632	289	259	30

Year	Capacity (1,000 kilowatts)				Year	Capacity (1,000 kilowatts)			
	Total plants	Steam plants	Hydro plants	Internal combustion		Total plants	Steam plants	Hydro plants	Internal combustion
	58	59	66	71		58	59	66	71
1944	39,733	30,626	8,747	360	1930	30,285	22,322	7,697	267
1943	39,128	30,114	8,647	367	1929	27,953	20,722	7,023	208
1942	37,442	28,454	8,613	375	1928	25,990	18,848	6,943	200
1941	36,041	27,170	8,492	379	1927	23,418	17,241	6,048	129
1940	34,399	25,551	8,469	379	1926	21,819	16,000	5,700	120
1939	33,908	24,999	8,537	372	1925	20,045	14,618	5,316	111
1938	33,246	24,302	8,584	360	1924	16,740	11,945	4,711	84
1937	31,958	23,088	8,520	351	1923	14,787	10,449	4,264	75
1936	31,787	23,000	8,494	293	1922	13,419	9,441	3,908	69
1935	31,820	23,091	8,437	292	1921	12,797	9,028	3,703	66
1934	31,547	22,888	8,365	294	1920	12,022	8,443	3,511	68
1933	32,163	23,499	8,368	296					
1932	32,033	23,414	8,314	306					
1931	31,498	23,041	8,172	286					

* Denotes first year for which figures include Alaska and Hawaii.

¹ Beginning 1965, includes gas turbine plants.

Series S 74-85. Installed Generating Capacity in Electric Utility and Industrial Generating Plants, by Type of Plant: 1902 to 1970

[In thousands of kilowatts. As of December 31]

Year	Total utility and industrial				Electric utilities				Industrial establishments			
	Total	Hydro	Steam	Internal combustion	Total	Hydro	Steam	Internal combustion	Total	Hydro	Steam	Internal combustion
	74	75	76	77	78	79	80	81	82	83	84	85
1970	360,327	55,751	298,803	5,773	341,090	55,056	281,684	4,350	19,237	696	17,119	1,422
1969	332,606	53,447	273,534	5,625	313,349	52,753	256,891	4,205	19,257	694	17,143	1,420
1968	310,181	51,874	252,975	5,331	291,058	51,168	235,912	3,978	19,123	706	17,068	1,353
1967	288,185	48,832	234,195	5,158	269,252	48,112	217,322	3,818	18,933	720	16,879	1,340
1966	266,816	45,691	216,809	4,816	247,843	44,977	199,357	3,509	18,973	714	16,952	1,307
1965	254,519	44,490	205,423	4,606	236,126	43,732	188,979	3,365	18,393	708	16,444	1,241
1964	240,471	42,899	193,026	4,546	222,285	42,188	176,777	3,320	18,186	711	16,249	1,226
1963	228,757	40,928	183,348	4,480	210,549	40,214	167,090	3,245	18,208	714	16,259	1,235
1962	209,576	38,162	167,015	4,398	191,747	37,418	151,197	3,132	17,829	744	15,819	1,267
1961	199,216	35,801	158,588	4,326	181,312	35,557	142,746	3,009	17,904	745	15,841	1,318
1960	186,534	33,180	149,161	4,193	168,569	32,423	133,282	2,865	17,965	757	15,880	1,323
1959*	175,000	31,884	139,073	4,043	157,347	31,132	123,490	2,725	17,653	752	15,583	1,318
1958	160,651	30,089	126,625	3,936	142,597	29,359	110,633	2,604	18,054	730	15,992	1,332
1957	146,221	27,761	114,660	3,800	129,123	27,036	99,542	2,545	17,098	725	15,119	1,254
1956	137,342	26,386	107,251	3,705	120,697	25,654	92,591	2,452	16,645	732	14,860	1,253
1955	130,895	25,742	101,698	3,455	114,472	25,005	87,112	2,355	16,423	737	14,586	1,100
1954	118,878	24,238	91,250	3,390	102,592	23,211	77,102	2,279	16,286	1,027	14,148	1,111
1953	107,354	23,054	80,960	3,340	91,502	22,045	67,235	2,222	15,852	1,009	13,725	1,118
1952	97,312	21,416	72,620	3,276	82,227	20,419	59,679	2,129	15,085	997	12,941	1,147
1951	90,127	19,870	67,372	2,885	75,775	18,868	54,865	2,042	14,352	1,002	12,507	843
1950	82,850	18,674	61,495	2,681	68,919	17,675	49,338	1,911	13,931	999	12,162	770
1949	76,370	17,662	56,472	2,436	63,100	16,654	44,640	1,806	13,470	1,008	11,832	690
1948	69,615	16,635	50,751	2,229	56,560	15,652	39,304	1,604	13,055	983	11,447	625
1947	65,151	15,956	47,242	1,953	52,322	14,971	36,034	1,317	12,829	985	11,208	636
1946	63,066	15,823	45,442	1,796	50,817	14,848	34,318	1,156	12,749	980	11,129	640
1945	62,868	15,892	45,248	1,728	50,111	14,912	34,112	1,087	12,757	980	11,136	641
1944	62,066	15,696	44,637	1,733	49,189	14,686	33,541	1,062	12,877	1,110	11,096	671
1943	60,539	14,991	43,840	1,708	47,951	13,884	33,015	1,052	12,588	1,107	10,825	656
1942	57,287	13,947	41,593	1,697	45,053	12,842	31,169	1,042	12,184	1,105	10,424	655
1941	53,995	12,912	39,474	1,609	42,405	11,817	29,599	989	11,590	1,095	9,875	620
1940	50,962	12,304	37,138	1,520	39,927	11,224	27,775	928	11,035	1,080	9,363	592
1939	49,438	12,075	35,932	1,431	38,863	11,004	27,009	850	10,575	1,071	8,923	581
1938	46,873	11,682	35,191		37,492	10,657	26,066	769	9,381	1,025	8,356	
1937	44,370	11,186	33,184		35,620	10,176	24,763	681	8,750	1,010	7,740	
1936	43,532	11,037	32,545		35,082	10,037	24,441	604	8,500	1,000	7,500	
1935	42,828	10,399	32,429		34,436	9,399	24,471	566	8,392	1,000	7,392	
1934	42,545	10,345	32,200		34,119	9,345	24,253	521	8,426	1,000	7,426	
1933	43,037	10,330	32,707		34,587	9,334	24,759	494	8,450	996	7,454	
1932	42,849	10,253	32,591		34,387	9,258	24,646	483	8,462	1,000	7,462	
1931	42,287	10,190	32,097		33,698	9,090	24,162	446	8,589	1,100	7,489	
1930	41,153	9,650	31,503		32,384	8,585	23,385	414	8,769	1,065	7,704	
1929	38,708	8,925	29,783		29,839	7,813	21,704	322	8,869	1,112	7,757	
1928	36,782	8,800	27,982		27,805	7,702	19,790	313	8,977	1,098	7,879	
1927	34,574	7,927	26,647		25,079	6,802	18,078	199	9,495	1,125	8,370	
1926	32,936	7,650	25,286		23,386	6,405	16,792	189	9,550	1,245	8,305	
1925	30,037	7,150	22,937		21,472	5,922	15,368	182	8,615	1,228	7,387	
1924	25,923	6,224	19,699		17,681	5,024	12,535	122	8,242	1,200	7,042	
1923	23,235	5,632	17,553		15,643	4,507	11,026	110	7,592	1,175	6,417	
1922	21,317	5,229	16,088		14,192	4,129	9,965	98	7,125	1,100	6,025	
1921	20,605	5,002	15,603		13,519	3,902	9,527	90	7,086	1,100	5,986	
1920	19,439	4,804	14,635		12,714	3,704	8,920	90	6,725	1,100	5,625	
1917	15,494	3,836	11,608		8,994	2,786	6,122	80	6,500	1,100	5,400	
1912	10,980	2,794	8,186		5,165	1,694	3,395	76	5,315	1,100	4,715	
1907	6,809	1,906	4,903		2,709	906	1,765	38	4,100	1,000	3,100	
1902	2,987	1,140	1,847		1,212	290	914	8	1,775	850	925	

* Denotes first year for which figures include Alaska and Hawaii.

GENERATING CAPACITY

S 86-94

Series S 86-94. Installed Generating Capacity, by Class of Ownership: 1902 to 1970

[In thousands of kilowatts. As of December 31]

Year	Total utility and industrial	Electric utilities							Industrial establishments
		Total	Privately owned	Cooperatively owned ¹	Publicly owned				
					Total	Municipal	Federal	Other ¹	
86	87	88	89	90	91	92	93	94	
1970	860,327	341,090	262,675	5,161	73,253	20,941	38,718	13,594	19,237
1969	332,606	313,349	240,078	4,319	68,953	20,035	36,130	12,788	19,257
1968	310,181	291,058	220,766	3,434	66,858	19,429	34,956	12,473	19,123
1967	238,185	269,252	203,580	3,019	62,652	18,049	33,640	10,954	18,933
1966	266,816	247,843	185,670	2,758	59,415	16,548	32,608	10,258	18,973
1965	254,519	236,126	177,570	2,309	56,248	15,407	31,690	9,151	18,393
1964	240,471	222,285	167,704	2,017	52,564	15,199	28,342	9,022	18,186
1963	228,757	210,549	158,448	1,873	50,228	14,222	27,315	8,691	18,208
1962	209,576	191,747	145,111	1,591	45,046	12,991	24,345	7,710	17,829
1961	199,216	181,312	137,270	1,491	42,562	12,250	23,287	7,015	17,904
1960	186,534	168,569	128,912	1,423	38,233	11,539	22,380	4,314	17,965
1959*	175,000	157,347	119,403	1,168	36,775	10,953	21,906	3,917	17,653
1958	160,651	142,597	108,202	977	33,418	9,817	20,436	3,165	18,054
1957	146,221	129,123	97,376	924	30,823	8,640	19,649	2,534	17,098
1956	137,342	120,697	91,146	792	28,759	8,325	18,336	2,096	16,645
1955	130,895	114,472	86,887	776	26,809	7,795	16,962	2,052	16,423
1954	118,878	102,592	79,127	750	22,715	7,225	15,567	1,923	16,286
1953	107,354	91,502	71,201	619	19,682	6,570	11,358	1,754	15,852
1952	97,312	82,227	64,349	522	17,356	6,019	9,678	1,659	15,085
1951	90,127	75,775	60,192	482	15,101	5,293	8,099	1,709	14,352
1950	82,850	68,919	55,176	375	13,368	4,970	6,921	1,477	13,931
1949	76,570	63,100	50,484	233	12,333	4,727	6,210	1,396	13,470
1948	69,615	56,560	45,381	230	10,949	4,105	5,525	1,319	13,055
1947	65,151	52,322	41,986	168	10,138	3,825	5,027	1,316	12,829
1946	63,066	50,317	40,335	105	9,877	3,708	4,919	1,250	12,749
1945	62,868	50,111	40,307	87	9,717	3,586	5,081	1,050	12,757
1944	62,066	49,189	39,733	70	9,386	3,447	4,886	1,053	12,877
1943	60,539	47,951	39,128	66	8,757	3,419	4,322	1,016	12,588
1942	57,237	45,053	37,442	45	7,566	3,331	3,216	1,019	12,184
1941	53,995	42,405	36,041	30	6,334	3,158	2,371	805	11,590
1940	50,962	39,927	34,399	13	5,515	2,977	1,944	594	11,035
1939	49,438	38,863	33,908	-----	4,955	2,807	1,650	498	10,575
1938	46,873	37,492	33,246	-----	4,246	2,631	1,156	459	9,381
1937	44,370	35,620	31,958	-----	3,662	2,476	833	353	8,750
1936	43,582	35,082	31,787	-----	3,295	2,164	304	327	8,500
1935	42,828	34,436	31,820	-----	2,616	2,002	300	314	8,392
1934	42,545	34,119	31,547	-----	2,572	1,963	288	321	8,426
1933	43,037	34,587	32,163	-----	2,424	1,879	232	313	8,450
1932	42,349	34,387	32,033	-----	2,354	1,823	232	294	8,462
1931	42,287	33,698	31,498	-----	2,200	1,696	231	273	8,589
1930	41,153	32,384	30,285	-----	2,099	1,601	226	272	8,769
1929	38,708	29,839	27,952	-----	1,887	1,424	214	249	8,869
1928	36,782	27,805	25,991	-----	1,814	1,347	213	254	8,977
1927	34,574	25,079	23,418	-----	1,661	1,210	209	242	9,495
1926	32,936	23,386	21,819	-----	1,567	1,204	205	158	9,550
1925	30,087	21,472	20,045	-----	1,427	1,125	198	104	8,615
1924	25,923	17,681	16,740	-----	941	824	14	103	8,242
1923	23,235	15,643	14,737	-----	856	752	14	90	7,592
1922	21,317	14,192	13,419	-----	773	685	10	78	7,125
1921	20,605	13,519	12,797	-----	722	634	10	78	7,086
1920	19,439	12,714	12,023	-----	691	601	10	80	6,725
1917	15,494	8,994	8,412	-----	582	582	-----	-----	6,500
1912	10,980	5,165	4,769	-----	396	396	-----	-----	5,815
1907	6,809	2,709	2,500	-----	209	209	-----	-----	4,100
1902	2,987	1,212	1,099	-----	113	113	-----	-----	1,775

* Denotes first year for which figures include Alaska and Hawaii.

¹ Prior to 1940, "cooperatively owned" included in "other publicly owned."

Series S 95-107. Consumption of Fuels by Electric Utilities: 1920 to 1970

Year	Net generation, by fuel					Fuel consumed							Overall heat rate
	Total ¹	Coal	Fuel oil	Gas	Nuclear	Total coal equivalent	Coal	Oil	Gas	Per kilowatt-hour			
										Coal	Oil	Gas	
	95	96	97	98	99	100	101	102	103	104	105	106	
Mil. kw.-hr.	Mil. kw.-hr.	Mil. kw.-hr.	Mil. kw.-hr.	Mil. kw.-hr.	1,000 short tons	1,000 short tons	1,000 42-gal. bbl.	Mil. cu. ft.	Lb.	Gal.	Cu. ft.	B.t.u. per kw.-hr.	
1970	1,284,153	706,102	182,488	372,884	21,797	583,456	320,818	835,504	3,931,996	0.91	0.077	10.5	10,508
1969	1,191,989	706,001	137,847	333,279	13,923	524,476	310,641	251,027	3,487,642	.88	.076	10.5	10,457
1968	1,106,952	684,905	104,276	304,433	12,523	481,275	297,779	188,642	3,147,909	.87	.076	10.3	10,371
1967	992,847	630,483	89,271	264,806	7,655	431,769	274,185	161,278	2,746,352	.87	.076	10.4	10,396
1966	949,594	613,475	78,926	251,151	5,520	412,478	266,477	140,949	2,609,949	.87	.075	10.4	10,399
1965	861,401	570,926	64,801	221,559	3,657	369,931	244,788	115,203	2,321,101	.86	.075	10.5	10,384
1964	806,917	526,230	56,954	220,038	3,343	345,666	225,425	101,141	2,322,896	.86	.075	10.6	10,407
1963*	751,038	493,927	52,001	201,602	3,212	321,341	211,332	93,314	2,144,473	.86	.075	10.6	10,438
1962	684,031	450,249	46,983	184,301	2,270	293,578	193,238	85,768	1,965,974	.86	.076	10.7	10,493
1961	640,189	421,871	47,120	169,286	1,692	276,369	182,121	85,736	1,829,949	.86	.077	10.8	10,532
1960	607,660	403,067	46,105	157,970	518	266,064	176,684	85,340	1,724,762	.88	.078	10.9	10,701
1959	572,071	378,424	46,840	146,619	188	254,525	163,423	88,263	1,628,509	.89	.079	11.1	10,879
1958	504,662	344,366	40,372	119,759	165	223,136	155,724	77,668	1,372,853	.90	.081	11.5	11,090
1957	501,108	346,386	40,500	114,212	10	232,576	160,769	79,693	1,336,141	.93	.083	11.7	11,365
1956	478,487	338,503	35,947	104,037		223,733	158,279	72,711	1,239,311	.94	.085	11.9	11,456
1955	433,786	301,363	37,198	95,285		206,929	143,759	75,274	1,153,280	.95	.085	12.1	11,699
1954	364,354	239,146	31,520	93,688		130,367	118,385	66,745	1,165,498	.99	.089	12.4	12,180
1953	337,042	218,846	38,404	79,791		178,491	115,897	82,238	1,034,272	1.06	.090	13.0	12,589
1952	293,640	195,437	29,750	68,453		160,872	107,071	67,218	910,117	1.10	.095	13.3	13,361
1951	270,531	185,204	28,712	56,616		154,493	105,768	63,945	763,898	1.14	.094	13.5	13,641
1950	232,813					138,421	91,871	75,420	628,919	1.19	.094	14.1	14,030
1949	200,965					124,574	83,963	66,301	550,121	1.24	.098	14.9	15,033
1948	199,796					130,122	99,586	42,645	478,097	1.30	.107	15.9	15,738
1947	176,983					115,672	89,531	45,309	373,054	1.31	.112	16.2	15,600
1946	144,555					93,471	72,197	36,316	306,942	1.29	.108	16.3	15,700
1945	142,331					92,642	74,725	20,228	326,212	1.30	.109	16.5	15,800
1944	153,868					99,251	80,084	20,862	358,784	1.29	.109	16.6	15,850
1943	143,785					93,275	77,301	17,986	301,937	1.30	.111	17.0	16,000
1942	121,585					79,075	66,257	15,236	235,208	1.30	.115	16.7	16,100
1941	113,272					75,700	62,668	20,077	201,763	1.34	.112	16.9	16,550
1940	93,963					62,942	51,474	16,325	180,096	1.34	.112	16.5	16,400
1939	83,628					57,958	44,539	17,139	188,378	1.38	.100	16.4	16,700
1938	69,255					48,560	38,394	12,942	165,504	1.40	.113	17.1	17,450
1937	74,502					53,560	42,929	13,829	169,127	1.44	.119	17.1	17,850
1936	69,823					50,144	40,085	14,079	154,084	1.44	.118	17.1	17,800
1935	56,688					40,797	32,715	11,257	124,118	1.44	.118	17.0	17,850
1934	54,418					39,367	34,414	10,258	127,071	1.45	.120	17.2	17,950
1933	48,170					35,274	28,543	9,606	101,985	1.46	.122	17.3	18,150
1932	46,422					34,483	28,056	7,533	107,103	1.49	.122	17.6	18,450
1931	58,014					43,954	36,115	7,922	138,458	1.52	.128	18.0	18,800
1930	59,533					47,544	40,278	8,805	119,553	1.60	.132	19.0	19,800
1929	59,154					49,039	41,827	9,783	112,353	1.66	.137	19.7	20,550
1928	49,622					43,020	38,042	6,818	77,155	1.73	.143	20.9	21,550
1927	46,660					42,492	38,199	6,552	62,485	1.82	.153	21.5	22,600
1926	43,472					41,342	36,842	8,999	52,647	1.90	.157	22.9	23,600
1925	39,443					40,014	35,615	9,794	45,472	2.03	.165	23.9	25,175
1924	34,963					38,855	32,790	16,060	47,301	2.22	.182	26.3	
1923	32,088					38,404	33,636	13,925	29,340	2.39	.195	29.3	
1922	26,561					33,402	29,193	12,443	24,996	2.52	.209	31.2	
1921	22,343					30,436	26,604	11,505	21,701	2.72	.220	31.0	
1920	23,495					35,791	31,640	12,690	22,136	3.05	.254	36.9	

* Denotes first year for which figures include Alaska and Hawaii.

¹ Excludes generation by wood and waste fuels. Beginning 1961, includes limited output by use of wood, waste, and geothermal power, as follows, in million kw.-hr: 220 in

1961, 228 in 1962, 296 in 1963, 352 in 1964, 453 in 1965, 522 in 1966, 632 in 1967, 811 in 1968, 935 in 1969, and 882 in 1970.

ELECTRIC ENERGY

S 108-119

Series S 108-119. Growth of Residential Service, and Average Prices for Electric Energy: 1902 to 1970

Year	Residential service								Large light and power, average price		Average prices, all services ¹ (cents per kw.-hr.)	
	Annual use per customer ¹ (kw.-hr.)	Percentage of dwelling units with electric service			Average price (cents per kw.-hr.) monthly use of—				All consumption ¹ (cents per kw.-hr.)	Monthly use, 200,000 kw.-hr. ³		All customers ¹ (cents per kw.-hr.)
		All dwellings	Farm	Urban and rural nonfarm	25 kw.-hr.	100 kw.-hr. ²	250 kw.-hr. ³	500 kw.-hr. ²				
1970	7,066					4.09	3.00	2.10	2.10	1.75	0.95	1.59
1969	6,571					4.05	2.96	2.06	2.09	1.72	.91	1.54
1968	6,057					4.03	2.95	2.07	2.12	1.71	.90	1.55
1967	5,577					4.03	2.95	2.07	2.17	1.71	.90	1.56
1966	5,265					4.00	2.94	2.07	2.20	1.70	.89	1.56
1965	4,933					4.02	2.95	2.08	2.25	1.71	.90	1.59
1964	4,703					4.03	2.97	2.12	2.31	1.71	.91	1.62
1963	4,442					4.06	2.99	2.13	2.37	1.72	.93	1.65
1962	4,259					4.06	2.99	2.13	2.41	1.68	.96	1.68
1961	4,019					4.05	2.98	2.13	2.45	1.67	.97	1.69
1960	*3,854					4.04	2.98	2.12	*2.47	1.65	*.97	*1.69
1959	3,618					3.98	2.94	2.10	2.51	1.64	.96	1.69
1958	3,389					3.93	2.92	2.09	2.54	1.64	.97	1.71
1957	3,198					*3.89	*2.89	*2.08	2.56	*1.62	.94	1.67
1956	2,989	98.8	95.9	99.2	*5.28	3.88	2.88	2.07	2.61	1.60	.92	1.64
1955	2,773	98.4	94.4	98.8	5.20	3.86	2.87	2.06	2.65	1.58	.94	1.67
1954	2,573	97.9	93.0		5.16	3.82	2.84	2.05	2.70	1.58	.99	1.77
1953	2,369	97.2	91.4		5.12	3.81	2.83	2.04	2.74	1.58	1.00	1.77
1952	2,186	96.1	86.9		4.96	3.76	2.79	2.02	2.77	1.52	1.01	1.79
1951	2,021	95.2	82.2		4.96	3.74	2.78	2.00	2.81	1.51	1.00	1.78
1950	1,845	94.0	77.7	96.6	4.96	3.76	2.79	2.02	2.88	1.51	1.02	1.81
1949	1,684	93.0	72.9		5.00	3.78	2.80	2.04	2.95	1.55	1.05	1.86
1948	1,563	89.6	66.8		4.96	3.74	2.77	2.02	3.01	1.50	1.01	1.79
1947	1,438	86.2	60.2		4.92	3.75	2.77	2.01	3.09	1.45	.97	1.77
1946	1,329	85.5	53.3		5.12	3.85	2.82	2.03	3.22	1.44	.98	1.81
1945	1,229	85.0	48.0	93.0	5.28	3.89	2.84	2.04	3.41	1.43	.93	1.73
1944	1,151	84.0	42.2		5.32	3.92	2.86	2.05	3.51	1.44	.91	1.65
1943	1,070	81.3	40.0		5.32	3.94	2.88	2.05	3.60	1.43	.90	1.66
1942	1,022	81.2	37.8		5.36	3.96	2.90	2.07	3.67	1.41	.94	1.79
1941	986	80.0	35.0		5.36	3.98	2.92	2.08	3.73	1.41	1.00	1.90
1940	952	78.7	32.6	90.8	5.44	4.06	2.95	2.11	3.84	1.41	1.06	2.06
1939	897	77.3	27.4		5.60	4.12	2.98	2.17	4.00	1.43	1.12	2.16
1938	853	74.9	23.9		5.72	4.20	3.09	2.21	4.14	1.43	1.20	2.30
1937	805	73.1	18.3		5.80	4.25	3.13	2.30	4.30	1.48	1.14	2.17
1936	735	70.3	14.5		6.12	4.39	3.28	2.47	4.67	(NA)	1.19	2.27
1935	677	68.0	12.6	83.9	6.40	4.67	3.56	2.77	5.01	1.54	1.30	2.46
1934	629	67.1	12.1		6.52	4.49	3.60		5.33		1.35	2.58
1933	600	66.7	11.8		6.68	4.55	3.65		5.52		1.38	2.66
1932	601	67.0	11.2		6.76	4.61	3.69		5.60		1.53	2.85
1931	583	67.4	10.7		6.80	4.86	4.00		5.78		1.47	2.75
1930	547	68.2	10.4	84.8	6.92	5.00	4.12		6.03		1.41	2.66
1929	502	67.9	9.2		7.04	5.21	4.33		6.33		1.38	2.57
1928	463	65.0	7.3		7.24	5.44	4.62		6.63		1.40	2.66
1927	446	63.1	5.9		7.54	5.70	4.87		6.82		1.46	2.71
1926	430	57.9	4.8		7.52	5.85	5.09		7.00		1.49	2.71
1925	396	53.2	3.9	69.4	7.68	6.03	5.14		7.30		(NA)	(NA)
1924	378	48.6	3.5		7.8	6.3	5.4		7.20		(NA)	(NA)
1923	368	44.2	3.0		7.9	6.4	5.6		7.20		(NA)	(NA)
1922	359	40.0	2.5		8.0	6.7	5.9		7.38		1.8	2.33
1921	347	37.8	2.0		8.2	6.7	5.9		7.39		(NA)	(NA)
1920	339	34.7	1.6	47.4	8.4	6.9	6.0		7.45		(NA)	(NA)
1917	268	24.3			7.9	6.6	5.9		7.52		1.2	2.1
1912	264	15.9			9.5	8.6	8.0		9.10			(NA)
1907		8.0			10.9	10.3	9.5		10.5			2.7
1902									16.2			

* Denotes first year for which figures include Alaska and Hawaii.
 NA Not available.
¹ Beginning 1950, figures revised to allocate rural service to other appropriate classes of service; not comparable with previous years.
² Composite series using population weights and uniform bills for cities having population of 2,500 or more, beginning 1935; prior years, 50,000 or more.
³ Peak demand of 1,000 kilowatts.

Series S 120-132. Use of Electric Energy: 1902 to 1970

[In millions of kilowatt-hours]

Year	Total ¹	Residential	Commercial	Industrial						Miscellaneous light and power	Losses and use unaccounted for	Net imports ²			
				Total industrial	Manufacturing								Extracting		
					Total	Nuclear energy	Paper and chemicals	Primary metals	Other						
														120	121
1970	1,641,731	458,015	295,057	685,693		19,672						78,743	129,223	1,960	
1969	1,553,829	418,599	272,248	672,345		21,020						73,508	122,129	1,072	
1968	1,435,398	370,038	248,670	628,657		24,901						71,486	116,552	-651	
1967	1,317,001	381,118	225,710	588,360		29,828						65,670	105,943	-299	
1966	1,250,536	308,162	208,819	571,618		34,107						61,092	100,850	1,092	
1965	1,157,442	282,255	190,916	534,297		38,707						57,969	92,005	-141	
1964	1,085,696	263,441	171,436	508,991		46,464						55,257	86,571	1,955	
1963	1,011,515	243,486	156,924	477,325		51,167						50,786	82,994	98	
1962	947,018	226,430	145,276	449,270	388,222	51,501	(3)	93,721	*243,000	61,048		47,920	78,122	536	
1961	883,749	208,172	129,961	424,285	366,858	65,326	(3)	86,753	*224,779	57,377		47,432	73,949	2,254	
1960*	848,723	196,296	121,437	415,699	361,965	56,873	(3)	87,704	*217,388	53,734		44,421	70,870	4,535	
1959	798,858	181,889	112,955	394,770	350,592	56,998	(3)	84,216	*209,271	44,178		40,931	68,313	3,607	
1958	728,070	159,930	101,969	358,099	319,258	56,950	(3)	78,096	*189,212	38,841		44,208	63,864	3,318	
1957	719,957	147,969	94,994	374,476	325,445	58,938	(3)	77,766	*188,741	47,031		42,909	61,609	3,601	
1956	689,352	135,620	87,499	364,779	323,334	60,655	(3)	78,702	*183,977	41,445		41,327	60,127	4,548	
1955	633,078	121,526	80,031	334,088	299,261	50,105	(3)	75,960	*173,196	34,827		39,623	57,810	4,068	
1954	593,727	116,228	72,141	263,527	247,666	26,559		66,781	96,180	15,861		45,687	53,804	2,340	
1953	522,419	104,146	66,533	254,260	238,480	14,727		68,897	97,131	15,780		44,818	50,654	2,008	
1952	472,071	93,545	63,935	224,487	209,507	8,473		57,025	95,492	14,980		39,949	47,886	2,269	
1951	442,046	83,093	58,643	214,522	200,322	5,533		49,494	54,497	90,798		38,798	44,803	2,187	
1950	396,346	72,200	52,091	194,335	181,335	3,794		45,123	50,111	82,307		34,166	41,268	1,786	
1949	351,831	63,969	44,330	169,274	156,524	3,614		38,227	44,344	70,339		34,720	38,050	1,538	
1948	343,410	57,421	41,698	172,658	159,358	3,477		38,970	45,206	71,705		33,096	36,992	1,545	
1947	313,926	49,417	37,152	177,197	144,247	3,233		34,996	40,645	65,373		34,788	33,457	1,915	
1946	276,044	42,919	32,060	137,308	125,598	3,548		32,104	34,895	55,051		32,584	28,782	2,391	
1945	275,023	37,749	28,091	146,261	134,955	3,099		36,780	37,371	57,705		33,364	27,001	2,562	
1944	283,718	34,636	29,837	156,365	145,015	1,164		40,285	43,158	60,408		31,965	28,400	2,515	
1943	270,215	31,271	28,192	155,671	143,995	31		39,670	44,973	59,321		26,017	26,567	2,497	
1942	235,477	29,187	27,233	133,899	122,762			33,463	36,257	53,042		11,137	19,958	2,418	
1941	210,389	26,574	24,628	113,931	104,037			27,830	29,630	46,577		9,894	22,574	2,331	
1940	181,706	24,068	22,373	92,390	83,276			22,776	22,782	37,718		9,114	23,173	2,114	
1939	162,921	21,433	20,722	78,603	70,518			19,040	17,632	33,846		8,085	24,378	1,894	
1938	143,375	19,371	19,137	65,850	58,452			15,829	14,504	28,119		7,398	22,982	1,808	
1937	147,941	17,691	18,075	73,300	64,757			17,536	16,068	31,153		8,543	22,124	1,827	
1936	137,366	15,659	15,612	70,500	62,949			17,046	15,620	30,283		7,551	20,266	1,556	
1935	120,124	13,978	13,588	63,265	56,706			15,356	14,070	27,280		6,559	15,902	1,337	
1934	111,508	12,658	12,278	56,695	50,593			13,700	12,554	24,339		6,102	17,561	1,234	
1933	103,682	11,747	11,589	52,358	46,561			12,609	11,553	22,399		5,797	16,599	967	
1932	100,353	11,875	12,106	48,614	43,504			11,781	10,795	20,928		5,110	16,952	644	
1931	110,467	11,738	13,544	56,512	50,410			13,651	12,508	24,251		6,102	16,240	1,209	
1930	115,783	11,018	13,944	61,023	53,930			14,604	13,382	25,944		7,093	16,453	1,592	
1929	117,914	9,773	13,106	63,279	55,122			14,983	13,543	26,596		8,157	18,396	1,423	
1928	109,150	8,619	11,692	59,750	52,699			14,271	13,076	25,352		7,051	16,753	1,578	
1927	102,404	7,676	10,766	57,333	51,012			13,814	12,658	24,540		6,371	15,118	1,619	
1926	95,164	6,827	9,485	52,750	46,350			12,551	11,501	22,298		6,400	15,524	1,493	
1925	85,513	6,020	9,345	45,500	39,725			10,757	9,857	19,111		5,775	15,294	1,273	
1924	76,651	5,080	8,634	40,300	34,967			9,468	8,677	16,822		5,333	14,132	1,290	
1923	72,113	4,580	8,027	33,250	32,585			8,824	8,085	15,676		5,665	13,137	1,331	
1922	61,816	3,916	7,180	32,200	27,364			7,410	6,790	13,164		4,836	11,752	965	
1921	53,656	3,532	6,125	28,000	23,993			6,497	5,953	11,543		4,007	10,026	1,009	
1920	57,125	3,190	6,150	31,500	26,913			7,288	6,678	12,947		4,587	10,065	940	
1917	43,863	1,731	5,213	23,750	20,750			5,619	5,149	9,982		3,000	8,532	1,216	
1912	25,000	910	4,076	11,250	9,250			2,505	2,295	4,450		2,000	6,671	531	
1907	14,262														
1902	6,029														

* Denotes first year for which figures include Alaska and Hawaii.

¹ Beginning 1955, represents a more refined series reflecting ultimate use rather than being based on rate classifications. Includes self-generation at Atomic Energy Com-

mission installations; excludes self-generation at shopping centers, apartment buildings, and offices.

² Beginning 1955, classified in ultimate use; "net imports" not included in total.

* Paper and chemicals included in other.

ELECTRIC UTILITIES

S 133-159

Series S 133-146. Electric Utilities—Selected Balance Sheet and Income Account Items of Privately Owned Companies: 1937 to 1970

[In millions of dollars]

Year	Total assets, liabilities	Assets and debits			Liabilities and credits				Income accounts					
		Net utility plant	Current assets	Other	Capital stock	Long-term debt	Retained earnings	Other liabilities and credits	Operating revenues	Net operating revenues	Gross income			Net income
											Total	Operating	Other	
133	134	135	136	137	138	139	140	141	142	143	144	145	146	
1970	87,417	79,928	5,321	2,168	20,782	41,938	9,363	15,335	23,128	4,885	5,658	4,885	773	3,408
1969	78,317	71,449	4,810	2,057	18,584	37,072	8,608	14,053	21,085	4,490	4,628	4,493	136	3,196
1968	71,099	64,901	4,439	1,760	17,746	33,519	7,742	12,092	19,405	4,106	4,233	4,109	124	2,996
1967	65,197	59,421	4,156	1,619	17,080	30,358	6,997	10,761	17,935	3,896	4,005	3,899	106	2,908
1966	60,359	54,791	4,020	1,549	16,212	27,728	6,407	10,012	16,959	3,639	3,743	3,642	101	2,749
1965	56,395	51,267	3,639	1,489	15,668	25,502	5,712	9,512	15,820	3,405	3,506	3,409	97	2,581
1964	53,753	48,644	3,634	1,475	15,621	24,589	5,142	8,401	14,991	3,154	3,277	3,156	121	2,393
1963	51,389	46,566	3,411	1,412	15,074	23,632	4,640	8,043	14,180	3,020	3,108	3,023	85	2,178
1962	49,191	44,486	3,320	1,386	14,325	22,912	4,481	7,474	13,468	2,833	2,908	2,835	73	2,053
1961	47,009	42,549	3,152	1,309	13,801	22,028	4,011	7,168	12,604	2,560	2,630	2,563	67	1,875
1960	44,742	40,456	3,066	1,220	13,322	21,035	3,736	6,649	11,920	2,395	2,476	2,398	79	1,783
1959	42,106	37,889	2,943	1,273	12,636	19,818	3,356	6,296	11,129	2,220	2,286	2,222	64	1,656
1958	39,278	35,293	2,773	1,212	12,074	18,558	3,042	5,604	10,195	2,014	2,074	2,016	58	1,519
1957	36,401	32,436	2,799	1,166	11,434	17,037	2,718	5,212	9,670	1,849	1,916	1,852	64	1,413
1956	33,242	29,500	2,618	1,124	10,934	15,211	2,414	4,683	9,054	1,745	1,808	1,748	61	1,332
1955	30,992	27,318	2,567	1,107	10,404	14,316	2,191	4,081	8,360	1,617	1,683	1,620	63	1,244
1954	28,975	25,359	2,437	1,179	9,924	13,313	2,051	3,687	7,588	1,456	1,526	1,459	67	1,134
1953	26,615	23,165	2,377	1,073	9,314	12,030	1,868	3,403	7,136	1,318	1,369	1,321	49	1,030
1952	24,502	20,636	2,443	1,423	8,764	10,797	1,645	3,298	6,549	1,192	1,266	1,195	70	947
1951	22,365	18,654	2,307	1,404	8,146	9,983	1,444	2,792	6,508	1,056	1,122	1,060	62	814
1950	20,523	17,075	2,058	1,389	7,621	9,179	1,346	2,377	5,523	1,028	1,101	1,033	68	822
1949	18,906	15,581	1,899	1,427	7,016	8,532	1,197	2,161	5,069	951	1,022	956	66	757
1948	17,266	13,929	1,985	1,352	6,404	7,893	1,036	2,132	4,830	825	896	830	66	657
1947	15,573	12,487	1,763	1,323	6,071	6,581	888	2,033	4,291	811	883	815	67	643
1946	14,649	11,647	1,704	1,298	5,804	6,129	833	1,882	3,815	824	891	829	62	638
1945	14,452	11,446	1,672	1,333	5,950	6,117	766	1,619	3,682	828	887	833	54	534
1944	15,181	11,951	1,655	1,576	6,271	6,371	866	1,673	3,615	781	842	786	56	507
1943	15,525	12,286	1,583	1,655	6,353	6,587	845	1,739	3,464	752	817	759	58	502
1942	15,612	12,542	1,365	1,705	6,487	6,754	863	1,508	3,216	737	802	744	59	490
1941	15,600	12,640	1,217	1,742	6,504	6,822	868	1,406	3,029	762	836	770	67	527
1940	15,477	12,494	1,123	1,860	6,471	6,395	860	1,251	2,797	797	873	805	68	548
1939	15,318	12,352	1,042	1,924	6,387	6,971	811	1,148	2,647	786	864	794	70	535
1938	15,469	12,419	1,084	1,966	6,376	7,060	788	1,245	2,549	746	821	754	67	487
1937	15,272	12,356	959	1,957	6,432	6,850	802	1,188	2,532	761	840	769	71	509

Series S 147-159. Rural Electrification Administration—Electric Program, Summary of Operations: 1935 to 1970

Year	Net loans approved ¹		Systems in operation ²			Borrowers' operations during year ³				Average monthly consumption per consumer		Total utility plant	Employees
	Borrowers	Amount	Systems	Miles energized	Consumers served	Energy generated	Energy purchased	Energy sold	Revenue	All consumers	Residential consumers ⁴		
	147	148	149	150	151	152	153	154	155	156	157	158	159
		<i>Mil. dol.</i>		<i>1,000</i>	<i>1,000</i>	<i>Mil. kw.-hr.</i>	<i>Mil. kw.-hr.</i>	<i>Mil. kw.-hr.</i>	<i>Mil. dol.</i>	<i>Kw.-hr.</i>	<i>Kw.-hr.</i>	<i>Mil. dol.</i>	
1970	1,096	7,496	1,050	1,676	6,442	23,814	60,478	76,009	1,309	948	637	7,175	37,013
1969	1,098	7,151	1,049	1,650	6,197	13,073	56,031	66,421	1,168	876	643	6,593	35,771
1968	1,101	6,822	1,052	1,627	5,986	14,509	50,917	58,304	1,060	812	593	6,167	34,563
1967	1,101	6,403	1,052	1,606	5,806	13,710	45,400	52,880	977	751	543	5,776	33,457
1966	1,101	6,145	1,051	1,587	5,653	11,547	42,825	48,439	912	708	515	5,353	32,597
1965	1,103	5,793	1,052	1,567	5,541	8,334	39,104	42,668	847	654	479	4,979	31,702
1964	1,105	5,477	1,051	1,547	5,386	8,039	36,907	39,837	802	616	456	4,696	30,799
1963	1,101	5,073	1,046	1,527	5,238	7,002	33,005	35,357	746	565	425	4,406	29,316
1962	1,096	4,786	1,042	1,504	5,095	6,043	30,134	31,880	697	526	401	4,104	29,046
1961	1,091	4,509	1,038	1,483	4,956	5,118	27,754	28,967	651	487	375	3,897	28,084
1960	1,087	4,256	1,038	1,465	4,826	4,922	26,057	27,269	615	466	357	3,697	-----
1959	1,085	4,011	1,032	1,446	4,722	4,464	24,033	25,071	575	432	334	3,436	-----
1958	1,081	3,847	1,030	1,424	4,596	3,482	21,500	21,902	525	393	311	3,244	-----
1957	1,079	3,634	1,030	1,405	4,466	3,291	19,266	19,677	490	364	283	3,059	-----
1956	1,077	3,343	1,026	1,383	4,362	3,612	17,266	18,197	460	345	263	2,879	-----
1955	1,077	3,125	1,026	1,362	4,251	3,255	14,996	15,739	420	312	242	2,706	-----
1954	1,075	2,946	1,024	1,333	4,174	2,721	13,450	13,829	383	285	223	2,542	-----
1953	1,078	2,778	1,022	1,297	4,025	2,103	11,786	11,804	343	254	201	2,351	-----
1952	1,081	2,669	1,020	1,245	3,858	1,640	10,351	10,128	306	230	182	2,143	-----
1951	1,076	2,484	1,016	1,179	3,666	1,413	8,828	8,567	270	206	166	-----	-----

See footnotes at end of table.

Series S 147-159. Rural Electrification Administration—Electric Program, Summary of Operations: 1935 to 1970—Con.

Year	Net loans approved ¹		Systems in operation ²			Borrowers' operations during year ³				Average monthly consumption per consumer	
	Borrowers	Amount	Systems	Miles energized	Consumers served	Energy generated	Energy purchased	Energy sold	Revenue	All consumers	Residential consumers ⁴
	147	148	149	150	151	152	153	154	155	156	157
		<i>Mil. dol.</i>		<i>1,000</i>	<i>1,000</i>	<i>Mil. kw.-hr.</i>	<i>Mil. kw.-hr.</i>	<i>Mil. kw.-hr.</i>	<i>Mil. dol.</i>	<i>Kw.-hr.</i>	<i>Kw.-hr.</i>
1950	1,076	2,312	1,007	1,089	3,413	1,077	7,270	6,884	229	180	147
1949	1,066	1,999	995	943	3,040	903	5,879	5,564	188	166	134
1948	1,044	1,575	952	759	2,518	718	4,514	4,252	145	153	121
1947	1,029	1,191	911	603	2,046	443	3,379	3,056	111		
1946	1,009	958	869	507	1,684	320	2,497	2,244	87		
1945	961	667	848	450	1,409	258	2,159	1,951	71		
1944	904	518	826	410	1,217	213	1,974	1,795	63		
1943	873	474	811	390	1,088	199	1,721	1,572	54		
1942	868	460	803	378	1,012	131	1,305	1,151	47		
1941	869	434	773	343	902	83	854	724	35		
1940	791	351	685	268	674	34	402	311	17		
1939	688	268	548	181	436						
1938		181	350	67	176						
1937		82	126	17	44						
1936		44	29	3	8						
1935		7	2	-	-						

- Represents zero.

¹ Excludes loans rescinded. Cumulative as of Dec. 31. Prior to 1948, includes amounts not yet under loan contract.² As of Dec. 31. Includes data at time of repayment of loan for borrowers whose

loans have been repaid in full.

³ Excludes energy sales and revenues of power sold by one REA borrower to another, except for 1940-1942, for which such sales and revenues are included.⁴ Includes rural-nonfarm and farm consumers.

Series S 160-175. Developed and Undeveloped Water Power, by Geographic Division: 1920 to 1970

[In thousands of kilowatts. As of December 31. For composition of divisions, see text for series A 172-194]

Year	Developed water power ¹								Undeveloped water power							
	United States	New England	Middle Atlantic	North Central	South Atlantic	South Central	Mountain	Pacific	United States	New England	Middle Atlantic	North Central	South Atlantic	South Central	Mountain	Pacific
	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
1970	51,952	1,473	4,264	3,664	5,265	7,170	6,202	23,914	127,990	3,330	4,455	5,966	9,556	7,089	26,655	70,939
1969	50,243	1,495	4,231	3,718	5,271	6,951	6,097	22,481	128,900	3,300	4,545	5,892	9,708	7,054	26,923	71,478
1968	48,741	1,487	4,243	3,665	5,255	6,874	6,095	21,122	129,709	3,302	4,545	5,892	9,716	7,063	26,923	72,268
1967	45,826	1,491	4,247	3,703	5,349	6,530	6,083	18,425	130,444	3,304	4,514	5,619	9,468	7,008	26,891	73,640
1966	44,288	1,487	4,246	3,625	5,184	6,298	6,022	17,428	130,640	3,312	4,332	5,312	9,812	7,031	26,822	74,019
1965	42,948	1,488	4,237	3,460	4,700	6,088	5,551	17,424	124,087	3,240	4,986	5,497	9,977	7,343	26,530	66,514
1964	41,827	1,491	4,237	3,302	4,635	5,851	5,218	17,093	117,793	3,125	4,950	5,691	10,017	7,549	27,253	59,208
1963	40,230	1,497	4,218	3,197	4,600	5,419	4,845	16,454	115,734	3,128	5,179	5,866	9,903	8,023	26,652	56,983
1962	37,835	1,508	4,239	2,942	4,099	5,164	4,773	15,110	116,100	3,100	5,200	6,800	11,000	8,200	26,900	54,900
1961	36,193	1,518	3,852	2,618	3,795	4,897	4,821	14,694	112,700	2,800	5,700	9,000	8,900	8,100	24,100	54,100
1960	33,180	1,520	2,472	2,522	3,773	4,695	4,621	13,578	114,200	2,900	7,600	9,400	8,400	8,500	23,600	53,800
1959	* 31,794	1,513	2,475	2,369	3,788	4,697	4,511	* 12,439	* 114,287	2,858	7,465	9,591	8,388	8,499	23,243	* 54,243
1958	30,089	1,521	2,113	2,276	3,732	4,697	4,157	11,592	93,783	2,708	7,869	9,323	8,393	7,854	23,141	34,495
1957	27,761	1,523	1,600	2,277	3,732	4,674	3,785	10,165	90,242	2,728	8,382	8,967	7,645	7,480	21,245	33,795
1956	26,386	1,388	1,479	2,243	3,611	4,524	3,701	9,440	90,102	2,728	8,012	9,000	7,586	7,721	21,333	33,722
1955	25,742	1,385	1,789	1,905	3,536	4,524	3,706	8,898	86,895	2,586	8,023	9,335	7,943	7,213	20,668	31,127
1954	24,238	1,335	1,750	1,783	3,423	4,418	3,629	7,901	82,804	2,990	6,395	9,211	8,058	7,035	20,105	29,010
1953	23,055	1,282	1,704	1,620	3,212	4,374	3,438	7,425	85,562	3,122	6,449	9,412	8,281	7,464	21,618	29,216
1952	21,416	1,262	1,707	1,564	2,884	4,054	3,181	6,814	87,992	3,233	6,415	9,480	8,677	7,784	21,895	30,508
1951	19,871	1,254	1,677	1,559	2,785	3,547	2,627	6,421	86,174	3,239	6,598	8,117	8,255	8,168	22,089	29,708
1950	18,675	1,239	1,678	1,530	2,767	3,195	2,286	5,980	87,604	3,250	6,572	8,119	8,151	8,304	23,440	29,768
1949	17,662	1,202	1,687	1,469	2,687	2,993	2,202	5,423	88,070	3,249	6,503	8,192	8,184	8,374	23,426	30,142
1948	16,685	1,192	1,668	1,437	2,662	2,731	2,056	4,888	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1947	15,956	1,165	1,662	1,435	2,662	2,618	2,026	4,387	77,130	3,348	5,175	7,309	7,462	7,446	17,755	28,635
1946	15,828	1,167	1,669	1,434	2,663	2,618	2,008	4,269								
1945	14,912	895	1,591	1,300	2,222	2,592	2,002	4,309								
1944	14,586	894	1,593	1,303	2,086	2,393	2,003	4,314								
1943	13,884	893	1,587	1,314	2,085	2,151	1,924	3,929								
1942	12,842	891	1,596	1,294	2,084	1,936	1,784	3,256								
1941	11,817	855	1,589	1,280	1,912	1,588	1,692	2,902								

See footnotes at end of table.

Series S 160-175. Developed and Undeveloped Water Power, by Geographic Division: 1920 to 1970—Con.

[In thousands of kilowatts]

Year	Developed water power ¹								Year	Developed water power ¹							
	United States	New England	Middle Atlantic	North Central	South Atlantic	South Central	Mountain	Pacific		United States	New England	Middle Atlantic	North Central	South Atlantic	South Central	Mountain	Pacific
	160	161	162	163	164	165	166	167		160	161	162	163	164	165	166	167
1940	11,224	858	1,588	1,219	1,882	1,397	1,612	2,668	1980	8,585	753	1,290	881	1,603	882	784	2,391
1939	11,004	833	1,563	1,204	1,808	1,279	1,581	2,741	1929	7,831	554	1,218	879	1,351	841	680	2,308
1938	10,657	824	1,561	1,204	1,728	1,223	1,381	2,736	1928	7,702	557	1,205	862	1,346	840	679	2,213
1937	10,176	832	1,550	1,147	1,710	1,114	1,160	2,662	1927	6,802	496	1,151	842	963	700	673	1,977
1936	10,037	832	1,538	1,111	1,709	1,079	1,152	2,622	1926	6,405	474	1,115	835	945	618	592	1,826
1935	9,399	804	1,517	1,071	1,678	924	792	2,613	1925	5,922	415	1,027	813	878	482	570	1,738
1934	9,345	767	1,489	1,071	1,680	924	782	2,631	1924	5,024	381	905	741	760	280	544	1,413
1933	9,334	768	1,489	1,065	1,680	916	791	2,624	1923	4,507	350	766	705	659	248	520	1,259
1932	9,258	768	1,457	1,058	1,694	954	788	2,599	1922	4,128	337	757	664	534	195	509	1,132
1931	9,091	762	1,338	1,056	1,635	945	788	2,566	1921	3,902	314	741	632	536	187	494	998
									1920	3,704	291	662	629	589	174	487	872

* Denotes first year for which figures include Alaska and Hawaii.
NA Not available.

¹ Nameplate capacity of existing installations only. Includes capacity at electric utility and industrial plants, but excludes pumped storage capacity. Prior to 1946, includes capacity at electric utility plants only.

Series S 176-189. Natural Gas—Consumption and Value: 1922 to 1970

Year	Total consumption ¹ (bil. cu. ft.)				Value of gas consumed								Consumers (1,000)	
	Total	Residential	Commercial	Industrial	Total (mil. dol.)	Residential (mil. dol.)	Commercial (mil. dol.)	Industrial (mil. dol.)	Average per 1,000 cu. ft. ¹ (cents)				Residential	Commercial
									Total	Residential	Commercial	Industrial		
	176	177	178	179	180	181	182	183	184	185	186	187	188	189
1970	22,046	4,837	2,057	15,152	11,825	5,272	1,682	4,871	53.6	109.0	81.8	32.1	38,604	3,253
1969	20,923	4,728	1,955	14,240	10,769	4,954	1,526	4,289	51.5	104.7	78.1	30.1	38,096	3,222
1968	19,460	4,450	1,801	13,209	9,800	4,635	1,398	3,767	50.3	104.1	77.6	28.5	37,259	3,121
1967	18,173	4,313	1,717	12,143	9,442	4,501	1,338	3,603	51.9	104.3	77.9	29.7	36,434	3,077
1966	17,192	4,138	1,623	11,431	8,996	4,318	1,238	3,440	52.3	104.3	76.3	30.1	36,084	3,120
1965	16,033	3,903	1,443	10,687	8,368	4,091	1,115	3,162	52.2	104.8	77.3	29.6	35,302	2,991
1964	15,536	3,787	1,375	10,374	8,020	3,990	1,059	2,971	51.9	105.9	77.5	28.8	34,575	2,884
1963	14,640	3,589	1,268	9,783	7,497	3,750	996	2,751	51.2	104.5	78.6	28.1	33,451	2,788
1962	13,890	3,479	1,207	9,204	7,145	3,629	940	2,576	51.4	104.3	77.9	28.0	32,655	2,712
1961	13,082	3,249	1,077	8,756	6,667	3,475	838	2,354	51.0	107.0	77.8	26.9	32,052	2,641
1960*	12,509	3,103	1,020	8,386	6,270	3,209	791	2,270	50.1	103.4	77.5	27.1	31,148	2,584
1959	11,820	2,913	975	7,932	5,642	2,946	703	1,993	47.7	101.1	72.1	25.1	30,692	2,608
1958	10,761	2,714	872	7,175	4,968	2,665	606	1,697	46.2	98.2	69.5	23.6	29,282	2,405
1957	10,280	2,500	776	7,004	4,435	2,325	534	1,576	43.1	93.0	68.9	22.5	28,792	2,344
1956	9,707	2,328	717	6,662	4,025	2,126	465	1,434	41.5	91.3	64.9	21.5	27,887	2,255
1955	9,070	2,124	629	6,317	3,626	1,885	395	1,346	40.0	88.7	62.7	19.6	26,084	2,140
1954	8,403	1,894	585	5,924	3,205	1,692	328	1,195	38.1	89.3	64.7	19.2	25,227	2,076
1953	7,979	1,686	531	5,762	2,829	1,458	373	1,048	35.5	86.5	61.0	18.2	24,186	2,042
1952	7,613	1,622	516	5,475	2,527	1,347	294	886	33.2	83.1	57.0	16.2	22,569	1,855
1951	7,103	1,475	464	5,164	2,119	1,121	246	752	29.8	76.0	52.9	14.6	21,444	1,614
1950	6,026	1,198	388	4,440	1,604	826	184	594	26.6	69.0	47.6	13.4	16,906	1,347
1949	5,195	993	348	3,854	1,321	666	158	497	25.4	67.1	45.5	12.9	14,690	1,231
1948	4,945	896	323	3,726	1,194	585	142	467	24.1	65.3	44.0	12.5	13,508	1,145
1947	4,427	802	285	3,340	1,028	526	126	376	23.2	65.6	44.1	11.3	12,204	1,039
1946	4,013	661	242	3,110	883	447	103	333	22.0	67.6	42.4	10.7	11,472	965
1945	3,900	607	230	3,063	834	415	98	321	21.4	68.3	42.4	10.5	10,959	889
1944	3,696	562	221	2,913	794	388	92	314	21.5	69.1	41.7	10.8	10,669	845
1943	3,403	529	205	2,669	759	371	88	300	22.3	70.0	42.3	11.3	10,354	811
1942	3,045	499	184	2,362	691	353	80	258	22.7	70.7	43.7	10.9	10,135	779
1941	2,805	442	145	2,218	620	318	68	234	22.1	72.0	47.2	10.5	9,730	767
1940	2,655	444	135	2,076	577	316	64	197	21.7	71.1	47.8	9.5	9,245	741
1939	2,474	391	118	1,965	534	288	58	188	21.6	73.5	49.4	9.6	8,888	715
1938	2,294	368	114	1,812	501	273	56	172	21.8	74.2	49.2	9.4	8,570	695
1937	2,403	372	117	1,914	528	274	57	197	22.0	73.6	48.7	10.3	8,348	680
1936	2,161	343	112	1,706	476	252	54	170	22.0	73.3	48.1	10.0	8,017	657
1935	1,910	313	100	1,497	428	234	49	145	22.4	74.6	49.3	9.7	7,391	613
1934	1,765	288	91	1,386	394	215	45	134	22.3	74.6	49.6	9.7	6,984	582
1933	1,553	283	86	1,184	368	210	43	115	23.7	74.0	49.8	9.8	6,691	541
1932	1,554	298	87	1,169	384	223	44	117	24.7	74.8	50.4	10.0	6,506	531
1931	1,684	294	86	1,304	392	208	41	143	23.3	70.7	47.8	10.9	6,443	518
1930	1,942	296	81	1,565	416	201	39	176	21.4	67.8	47.8	11.3	5,035	413
1929	1,917	360		1,557	413		223	190	21.5		62.0	12.2	5,098	
1928	1,568	321		1,247	364		199	165	23.2		62.0	13.2	4,344	
1927	1,445	296		1,149	318		180	138	22.0		60.8	12.0	3,984	
1926	1,313	289		1,024	300		169	131	22.9		58.4	12.8	3,731	
1925	1,188	272		916	265		152	113	22.3		56.0	12.3	3,508	
1924	1,141	285		856	254		154	100	22.2		54.0	11.6	3,443	
1923	1,007	277		730	240		142	98	23.8		51.4	13.4	3,234	
1922	763	254		509	222		127	95	29.1		49.9	18.6	3,015	

¹ Beginning 1967, data volumes are converted to a pressure base of 14.73 p.s.i.a.; prior years are converted to a pressure base of 14.65 p.s.i.a.

* Beginning 1960, includes Alaska.

Series S 190-204. Gas Utility Industry—Customers, Sales, and Revenues, by Type of Service: 1932 to 1970

Year	Customers ¹ (1,000)					Sales ² (mil. therms ³)					Revenues ² (mil. dol.)				
	Total	Residential	Commercial	Industrial	Other	Total	Residential	Commercial	Industrial	Other	Total	Residential	Commercial	Industrial	Other
	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204
1970	41,482	38,097	3,181	199	55	160,435	49,237	20,066	84,392	6,740	10,283	5,207	1,620	3,181	274
1969	40,854	37,538	3,074	193	49	153,916	48,204	18,781	81,355	5,573	9,480	4,883	1,459	2,919	219
1968	39,930	36,691	3,004	188	47	144,724	45,527	17,049	75,951	6,197	8,781	4,567	1,315	2,675	223
1967	39,077	35,915	2,934	181	47	134,883	43,653	15,776	70,143	5,811	8,261	4,383	1,224	2,461	193
1966	38,228	35,142	2,868	174	45	125,591	41,754	14,628	66,533	5,676	7,870	4,195	1,135	2,335	205
1965	37,388	34,341	2,790	166	41	119,803	39,990	13,448	61,465	4,900	7,407	4,030	1,054	2,148	176
1964	36,463	33,551	2,712	159	41	115,912	38,697	12,735	59,120	5,360	7,133	3,895	998	2,049	191
1963	35,551	32,711	2,640	162	39	107,663	36,630	11,366	54,381	5,236	6,727	3,728	910	1,906	183
1962	34,683	31,893	2,598	156	37	102,343	35,369	10,929	51,001	5,049	6,445	3,603	874	1,796	171
1961	33,831	31,118	2,529	147	37	95,890	33,210	9,881	47,856	4,943	5,993	3,377	789	1,658	169
1960*	33,054	30,418	2,458	141	37	92,877	31,881	9,198	47,094	4,704	5,617	3,177	723	1,563	153
1959	32,066	29,530	2,364	136	36	87,917	29,739	8,275	45,631	4,273	5,065	2,870	638	1,431	131
1958	31,242	28,786	2,287	134	35	80,285	28,125	7,549	40,764	3,748	4,568	2,658	571	1,229	111
1957	30,476	28,101	2,211	132	32	77,034	25,935	6,989	40,476	3,535	4,134	2,379	506	1,150	99
1956	29,536	27,241	2,141	125	29	72,541	24,643	6,558	38,637	2,654	3,850	2,237	471	1,066	77
1955	28,479	26,283	2,048	121	27	66,586	22,387	6,029	35,351	2,819	3,450	2,007	424	938	81
1954	27,528	25,398	1,990	112	28	61,026	20,031	5,405	33,096	2,494	3,049	1,783	373	821	68
1953	26,705	24,647	1,926	107	25	56,073	18,033	4,980	30,373	2,637	2,716	1,574	339	739	63
1952	25,850	23,852	1,869	104	25	52,392	17,348	4,929	27,990	2,125	2,466	1,457	321	639	48
1951	24,953	23,042	1,787	101	23	48,222	16,205	4,559	25,522	1,936	2,228	1,385	294	557	42
1950	24,001	22,146	1,739	100	16	42,090	13,839	4,104	22,887	1,261	1,948	1,177	266	480	26
1949	23,035	21,264	1,657	97	17	35,790	11,327	3,724	18,979	1,260	1,689	1,031	238	396	24
1948	22,245	20,562	1,571	94	18	33,885	11,153	3,535	17,981	1,216	1,579	958	221	377	23
1947	21,416	19,835	1,474	91	16	29,882	10,037	3,107	15,792	897	1,396	862	191	326	18
1946	20,636	19,157	1,377	87	15	26,379	8,432	2,630	14,602	665	1,213	754	161	284	13
1945	19,977	18,607	1,278	80	12	25,868	7,749	2,497	14,523	1,098	1,153	705	149	281	18
1944	19,585	18,320	1,177	82	6	25,120	7,313	2,208	14,655	964	1,108	667	133	293	15
1943	19,064	17,838	1,141	77	8	23,415	7,001	2,083	13,582	748	1,064	643	128	277	11
1942	18,734	17,511	1,137	78	8	20,849	6,679	1,990	11,723	457	994	623	127	238	7
1941	18,126	16,904	1,137	78	7	19,009	5,862	1,650	11,206	292	914	575	114	220	5
1940	17,600	16,381	1,138	73	8	17,235	5,823	1,598	9,544	271	872	573	112	182	5
1939	17,128	15,926	1,121	73	8	15,927	5,239	1,469	8,768	401	814	538	105	165	6
1938	16,876	15,697	1,094	75	10	14,682	4,956	1,380	7,941	405	777	523	101	145	9
1937	16,605	15,466	1,056	74	9	15,773	4,987	1,382	9,041	364	802	528	100	167	7
1936	16,170	15,026	1,058	77	9	14,693	4,734	1,369	8,280	260	770	516	97	151	5
1935	15,819	14,725	1,014	72	8	12,924	4,445	1,211	7,221	47	727	509	91	130	2
1934	15,512	14,440	990	74	8	12,063	4,202	1,102	6,699	62	703	494	87	119	3
1933	15,195	14,141	973	68	8	10,531	4,237	1,150	5,114	29	680	495	88	95	2
1932	15,532	14,452	999	73	8	10,441	4,672	1,193	4,534	42	723	537	93	91	3

* Denotes first year for which figures include Alaska and Hawaii.

¹ Yearly averages.² Excludes sales for resale.³ A therm is equivalent to 100,000 British thermal units. A B.t.u. is the quantity of heat required to raise the temperature of 1 pound of water 1° F. at or near its point of maximum density.⁴ Includes Hawaii.

Series S 205-218. Gas Utility and Pipeline Industry—Balance Sheet and Income Account: 1937 to 1970

[In millions of dollars]

Year	Assets and other debits			Liabilities and other credits					Operating revenues	Net operating revenues	Utility operating income	Gross income	Net income	
	Total assets, liabilities	Utility plant and adjustments	Current and accrued assets	Other ¹	Capital stock and surplus	Long-term debt	Reserve for depreciation, retirements, etc.	Current and accrued liabilities						Other ²
	205	206	207	208	209	210	211	212						213
1970	45,625	38,541	3,674	3,410	8,735	15,681	10,696	4,832	5,681	16,380	2,074	2,086	2,384	1,427
1969	42,952	36,593	3,328	3,031	8,101	14,423	10,010	4,902	5,388	14,896	1,958	1,966	2,264	1,459
1968	40,245	34,400	3,120	2,725	8,115	13,610	9,310	4,325	4,885	13,770	1,702	1,710	2,000	1,312
1967	37,620	32,030	2,965	2,625	7,835	12,770	8,535	3,890	4,540	12,850	1,654	1,662	1,925	1,300
1966	35,175	30,175	2,765	2,235	7,475	12,055	7,855	3,620	4,170	12,219	1,536	1,543	1,740	1,179
1965	32,845	28,205	2,545	2,095	7,290	11,515	7,205	3,035	3,800	11,525	1,462	1,469	1,626	1,107
1964	31,000	26,410	2,605	1,985	7,085	11,070	6,615	2,850	3,380	11,074	1,373	1,380	1,559	1,063
1963	29,535	25,055	2,610	1,870	6,885	10,605	6,045	2,940	3,060	10,435	1,299	1,305	1,409	890
1962	28,500	23,940	2,650	1,910	6,745	10,450	5,615	2,890	2,800	10,019	1,274	1,280	1,416	907
1961	26,555	22,385	2,340	1,830	6,455	10,080	5,025	2,460	2,535	9,282	1,158	1,164	1,254	818
1960	24,570	20,835	2,185	1,550	5,930	9,130	4,570	2,420	2,520	8,696	1,109	1,112	1,222	830
1959	22,845	19,200	2,150	1,495	5,650	8,740	4,065	2,195	2,195	7,690	994	997	1,075	732
1958	20,730	17,465	1,905	1,360	5,185	8,005	3,690	1,960	1,890	6,856	890	892	976	668
1957	19,150	16,155	1,790	1,205	4,820	7,465	3,280	1,885	1,700	6,194	814	816	895	627
1956	16,885	14,490	1,605	790	4,370	6,390	3,055	1,630	1,440	5,661	764	766	821	600
1955	15,435	13,305	1,465	665	4,105	5,900	2,775	1,390	1,265	5,063	665	667	715	509
1954	14,230	12,195	1,375	660	3,780	5,615	2,525	1,160	1,150	4,454	582	584	630	435
1953	13,240	11,315	1,225	700	3,445	5,260	2,270	1,120	1,145	4,074	534	537	566	389
1952	11,770	10,095	1,145	530	3,145	4,540	2,045	1,030	1,010	3,462	455	457	489	352
1951	10,515	9,005	1,060	450	2,770	3,945	1,885	995	920	2,999	421	423	451	336
1950	9,010	7,620	970	420	2,540	3,145	1,740	735	850	2,553	371	372	405	317
1949	7,890	6,730	780	380	2,290	2,615	1,655	550	780	2,129	302	302	330	251
1948	7,165	5,945	805	415	2,090	2,370	1,475	535	695	1,954	263	263	290	222
1947	6,620	5,600	690	330	2,015	1,970	1,505	450	680	1,700	238	238	271	213
1946	5,940	5,065	615	260	1,915	1,580	1,495	365	535	1,465	233	232	255	195
1945	5,610	4,770	590	250	1,825	1,495	1,400	350	540	1,363	211	211	226	152
1944	5,550	4,735	570	245	1,750	1,515	1,335	360	590	1,308	219	215	217	145
1943	5,435	4,635	510	290	1,715	1,520	1,250	320	630	1,284	203	199	203	133
1942	5,155	4,445	440	270	1,680	1,525	1,070	310	570	1,188	194	190	195	124
1941	4,970	4,295	405	270	1,690	1,460	960	275	585	1,108	202	198	205	132
1940	4,980	4,330	360	290	1,740	1,575	870	245	550	1,054	215	214	223	145
1939	4,865	4,240	325	300	1,720	1,530	830	235	500	1,000	200	199	211	129
1938	4,815	4,195	330	290	1,665	1,650	740	235	525	964	191	185	195	105
1937	4,815	4,200	300	315	1,665	1,695	750	235	470	995	205	201	213	121

¹ Includes investment and fund accounts, capital stock discount and expense, and reacquired securities.

² Includes deferred credits, reserve for deferred income taxes, other reserves, contributions in aid of construction, and retained income.

³ Liability breakdown will not add to total because of error in reporting units.