

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF KENTUCKY-)
AMERICAN WATER COMPANY FOR AN)
ADJUSTMENT OF RATES, A CERTIFICATE) CASE NO. 2023-00191
OF PUBLIC CONVENIENCE AND NECESSITY)
FOR INSTALLATION OF ADVANCED)
METERING INFRASTRUCTURE, APPROVAL)
OF REGULATORY AND ACCOUNTING)
TREATMENTS, AND TARIFF REVISIONS)

**THE ATTORNEY GENERAL’S RESPONSE TO KENTUCKY-AMERICAN WATER
COMPANY’S FIRST REQUEST FOR INFORMATION**

The Intervenor, the Attorney General of the Commonwealth of Kentucky, through his Office of Rate Intervention (“Attorney General”), submits the following response to Kentucky-American Water Company’s (“Kentucky American” or “Company”) First Request for Information in the above-styled matter.

Respectfully submitted,

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Certificate of Service and Filing

Pursuant to the Commission's Orders and in accord with all other applicable law, Counsel certifies that the foregoing electronic filing was transmitted to the Commission on November 2, 2023, and there are currently no parties that the Commission has excused from participation by electronic means in this proceeding.

This 2nd day of November, 2023.

Angela M. Aoad

Assistant Attorney General

AFFIDAVIT

STATE OF GEORGIA)

COUNTY OF FULTON)

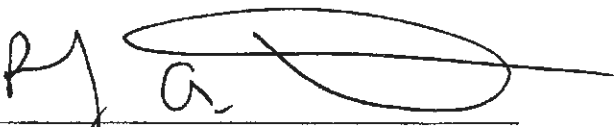
RICHARD A. BAUDINO, being duly sworn, deposes and states: that the attached is his sworn testimony and that the statements contained are true and correct to the best of his knowledge, information and belief.

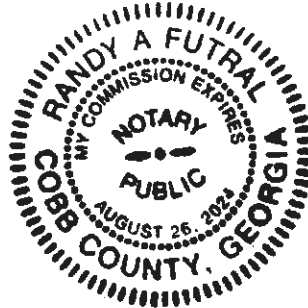


Richard A. Baudino

Sworn to and subscribed before me on this

2nd day of November, 2023.



Notary Public

Electronic Application of Kentucky-American Water Company for an Adjustment of Rates, a Certificate of Public Convenience and Necessity for Installation of Advanced Metering Infrastructure, Approval of Regulatory and Accounting Treatments, and Tariff Revisions
Case No. 2023-00191
The Attorney General's Response to
Kentucky-American Water Company's First Request for Information

WITNESS RESPONSIBLE:
RICHARD A. BAUDINO

QUESTION NO. 1
Page 1 of 1

In Excel spreadsheet or other format, with all formulas, columns and rows unprotected and fully accessible, please provide all workpapers and source documents not previously provided.

RESPONSE:

Please refer to the documents attached below. Additionally, excel spreadsheets are being filed contemporaneously with this discovery response.

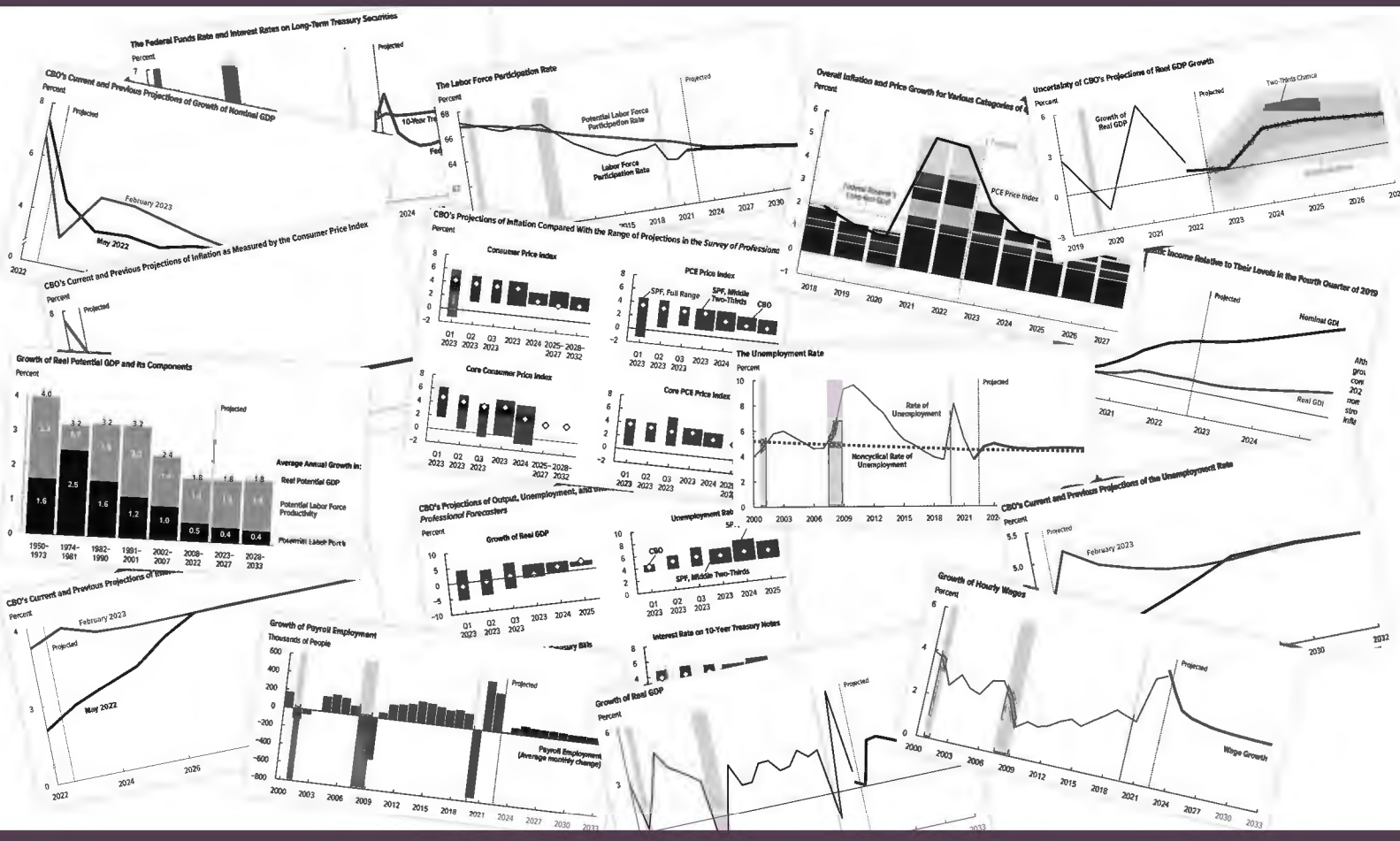
Please note that the materials in footnotes 5, 6, 7, 8, 9, 10, 12, 13, 14, 24, and 25 may be accessed using the links provided in the footnotes.

The Kroll materials cited in footnotes 20 and 39 and the risk premiums shown on page 2 of Exhibit RAB-5 are from Kroll's Cost of Capital Navigator, which is a subscription service. Upon request, the Attorney General can make these materials available for inspection at its Frankfort office at a mutually agreeable time and date.

The Value Line materials relied upon by Mr. Baudino are available through subscription. Upon request, the Attorney General can make these materials available for inspection at its Frankfort office at a mutually agreeable time and date.

Stock prices may be accessed using the web address shown in Exhibit RAB-2.

The Economic Outlook for 2023 to 2033 in 16 Charts



At a Glance

The Congressional Budget Office regularly publishes its baseline projections of what the federal budget and the economy would look like in the current year and the following 10 years if current laws governing federal taxes and spending generally remained unchanged. This report summarizes—with an emphasis on graphic presentation—the information about CBO’s economic forecast that was published in *The Budget and Economic Outlook: 2023 to 2033* (February 2023).

- Economic output (gross domestic product, or GDP) is projected to stop growing early this year in response to last year’s sharp rise in interest rates. Output is projected to start growing again during the second half of 2023 as falling inflation allows the Federal Reserve to reduce interest rates, causing rebounds in sectors of the economy that are sensitive to interest rates.
- Inflation was higher in 2021 and 2022 than in any other years of the previous four decades: 5.7 percent and 5.5 percent, respectively, as measured by the price index for personal consumption expenditures. The annual growth of that price index is projected to remain above the Federal Reserve’s long-term goal of 2 percent through 2024 and then fall near to that goal by 2026.
- Interest rates on Treasury securities are projected to rise further in early 2023 and then gradually fall beginning in late 2023.
- The unemployment rate is projected to increase from 3.6 percent at the end of last year to 5.1 percent at the end of 2023 before gradually declining to 4.5 percent by the end of 2027.

CBO’s projections for the federal budget depend in part on the agency’s projection of the growth of nominal GDP. (That growth reflects both inflation and the growth of real GDP—that is, GDP adjusted to remove the effects of inflation.) Since May 2022, when CBO published its previous baseline projections, the agency has lowered its projection of the growth of nominal GDP in 2023 from 4.5 percent to 3.1 percent. However, CBO is now projecting much faster growth of nominal GDP in the 2024–2026 period than it did last May; after 2026, growth rates for nominal GDP are roughly similar to those in the May projections. CBO has increased, on average, its projections of short- and long-term interest rates over the next five years, mostly because it has raised its near-term projections of inflation since May.

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Notes

The economic projections described in this report reflect economic developments and information available as of December 6, 2022. The historical data shown in the charts and discussed in the text reflect more recent fourth-quarter data available from the Bureau of Economic Analysis and other sources in early February 2023. Some of the charts portray the difference in underlying data by using thin lines for actual values before 2023 and thick lines for projected values and by showing a break between those lines.

In addition, some of the charts use shaded vertical bars to indicate periods of recession. (A recession extends from the peak of a business cycle to its trough.)

Unless this report indicates otherwise, all years referred to are calendar years.

Numbers in the text and charts may not add up to totals because of rounding.

The projections of output, prices, labor market measures, interest rates, and income used for the Congressional Budget Office's budget projections are available on CBO's website (www.cbo.gov/data/budget-economic-data#4).

The Economic Outlook for 2023 to 2033 in 16 Charts

This report summarizes the Congressional Budget Office's February 2023 economic projections, which the agency used in updating its projections of federal revenues and spending through 2033. CBO's economic projections reflect several factors: economic developments as of December 6, 2022; the assumption that current laws governing federal taxes and spending generally remain in place; and CBO's initial assessment of full-year discretionary funding for the federal government for fiscal year 2023. (That initial assessment, which was based on proposals under discussion in early December, is 4 percent lower than CBO's current estimate of total discretionary funding for fiscal year 2023.) The economic projections cover such key variables as economic output, inflation, interest rates, and conditions in the labor market.

The Economic Outlook for 2023 to 2027

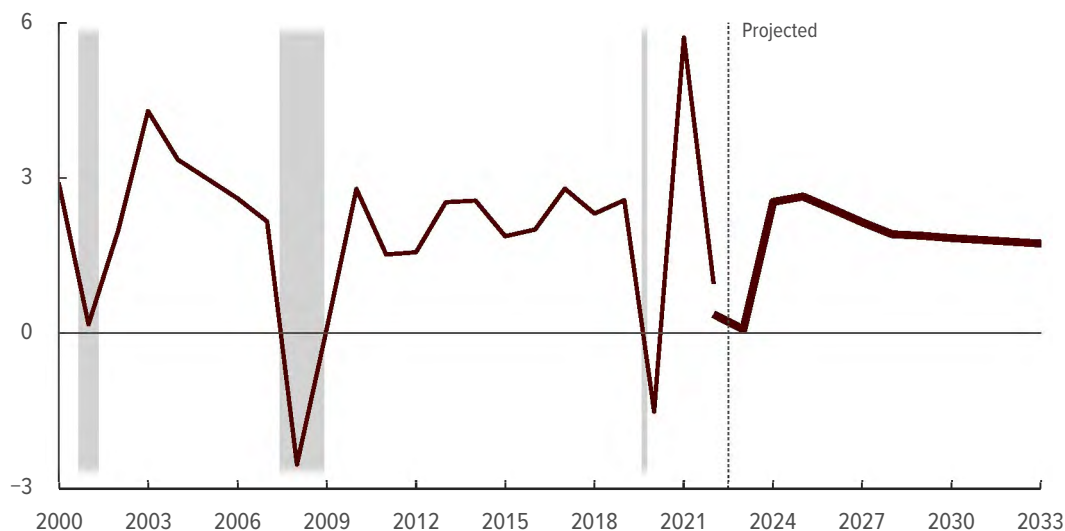
In 2022, the economy's output (gross domestic product, or GDP) grew modestly, inflation continued at a high rate, the Federal Reserve sharply increased interest rates, and the labor market was tight, with many more job vacancies than available workers. In 2023, economic activity is projected to stagnate, with rising unemployment and falling inflation. Interest rates are projected to remain high initially and then gradually decrease in the next few years as inflation continues to slow.

Output

In CBO's projections, the growth of GDP comes to a halt in early 2023, mainly because of the sharp rise in interest rates last year, and then resumes at a slow pace. For 2023 as a whole, real GDP (that is, GDP adjusted to remove the effects of inflation) is projected to grow by just 0.1 percent. The growth of real GDP is projected to speed up thereafter, averaging 2.4 percent a year from 2024 to 2027, in response to declines in interest rates.

Growth of Real GDP

Percent



The growth of real GDP is expected to be restrained in 2023 by declines in home building and inventory investment. Real GDP growth is projected to rebound after 2023 as the growth of investment and exports increases as a result of lower interest rates, faster economic growth abroad, and a weaker dollar.

Inflation

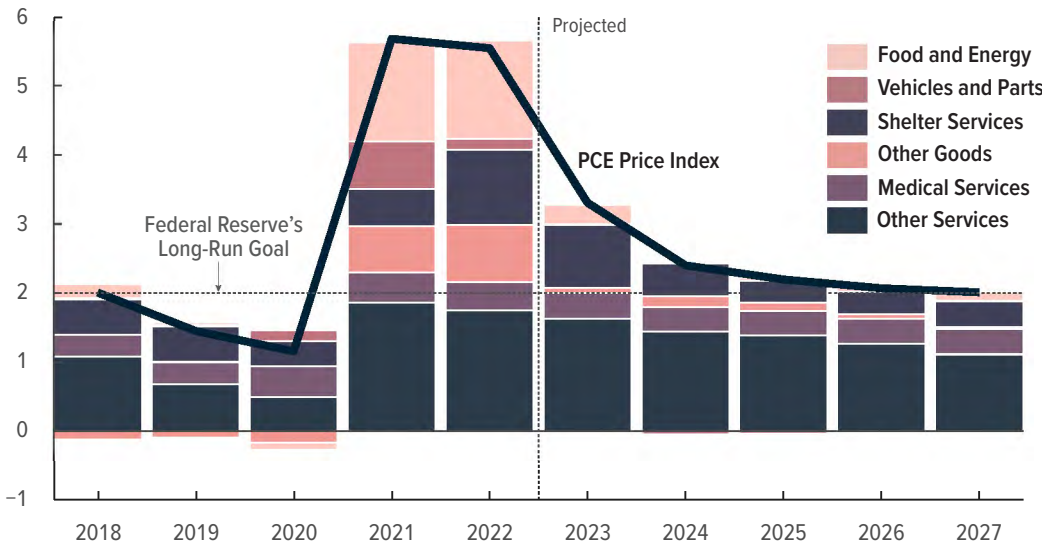
Inflation was slightly lower in 2022 than 2021, but higher than any other year since 1981, as the war between Russia and Ukraine contributed to higher prices for food and energy. Those upward price pressures added to the high inflation the United States was already experiencing because of buoyant demand, constraints on supply, and tight labor markets. The Federal Reserve’s preferred measure of inflation—the price index for personal consumption expenditures (PCE)—increased by 5.5 percent last year and by 5.7 percent in 2021.

Inflation is projected to slow gradually in 2023 as pressures ease from the factors that have caused demand to grow more rapidly than supply in recent years. CBO projects that inflation as measured by the PCE price index will be 3.3 percent in 2023 and 2.4 percent in 2024. PCE inflation is projected to continue declining thereafter, approaching the Federal Reserve’s long-run goal of 2 percent by 2026.

Of the categories that make up the PCE price index, food, energy, and shelter-related services are projected to experience the largest slowdowns in price growth in the next few years.

Overall Inflation and Price Growth for Various Categories of Goods and Services

Percent



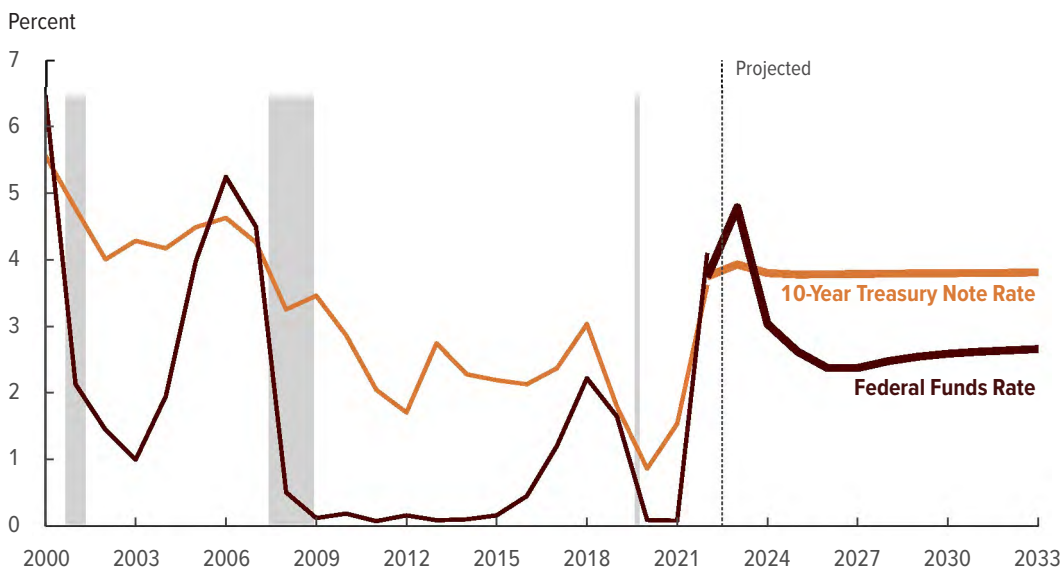
CBO projects that prices for goods will grow more slowly in 2023 and beyond than they did in 2021 and 2022, largely because problems with supply chains will continue to abate and domestic demand will decline. Among services, CBO projects that higher interest rates will slow the growth of prices for shelter services (a measure of the flow of housing services that housing units provide to their occupants) starting in the second half of 2023.

Interest Rates

In CBO’s projections, interest rates on short-term Treasury securities (such as 3-month Treasury bills) move largely in concert with changes in the Federal Reserve’s target range for the federal funds rate (the rate that financial institutions charge each other for overnight loans of their monetary reserves). CBO projects that the Federal Reserve will increase the target range for the federal funds rate in early 2023 and leave it unchanged for several months thereafter to reduce inflationary pressures. As a result, short-term interest rates are projected to continue to rise during the first half of 2023 and then gradually decline beginning in late 2023. After 2023, the Federal Reserve is projected to lower the target range for the federal funds rate as inflation falls toward the Federal Reserve’s long-run goal of 2 percent.

The interest rate on 10-year Treasury notes is projected to remain near 4 percent over the next five years. CBO’s projection of that long-term rate is driven by its projections of short-term interest rates and of the term premium (the additional return paid to bondholders for the extra risk associated with holding long-term bonds). Term premiums fell to historically low levels in the years just before the coronavirus pandemic for several reasons, including less worry on the part of investors about unexpectedly high inflation, less uncertainty about the future path of the Federal Reserve’s interest rate policies, and a strong pattern of returns on stocks and on bonds moving in opposite directions. CBO expects those factors to continue to dissipate, bringing term premiums back up close to their average level of the past 40 years.

The Federal Funds Rate and Interest Rates on Long-Term Treasury Securities



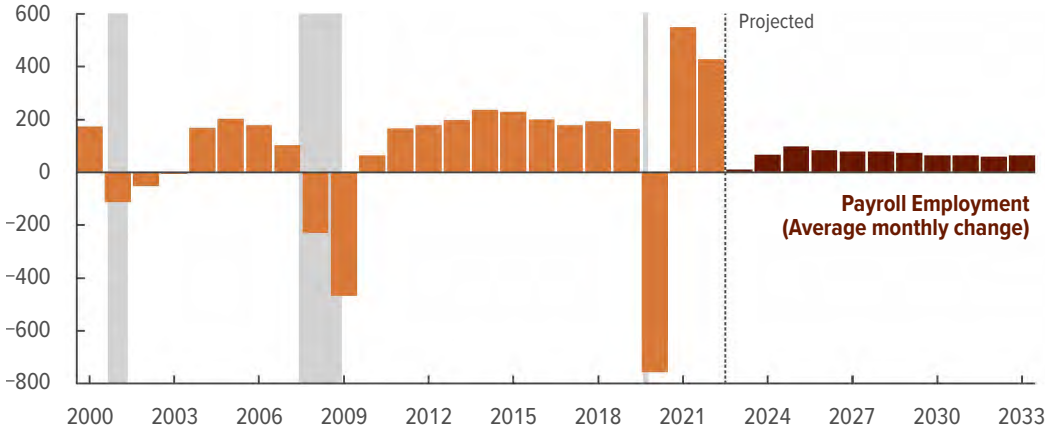
Interest rates on 10-year Treasury notes are expected to rise slightly in 2023, largely because of a projected increase in term premiums. After 2023, interest rates on those long-term Treasury securities are expected to fall slightly, mainly because short-term rates (such as the federal funds rate) are expected to decline.

Employment

The growth of nonfarm payroll employment is projected to slow in 2023 as the slowdown in real GDP growth dampens the demand for workers. CBO expects employment to increase more rapidly in 2024, as economic growth rebounds, but to remain moderate through 2027. In CBO’s projections, employment growth is positive from the end of 2023 through the end of 2027, with an average increase of 78,000 jobs per month.

Growth of Payroll Employment

Thousands of People



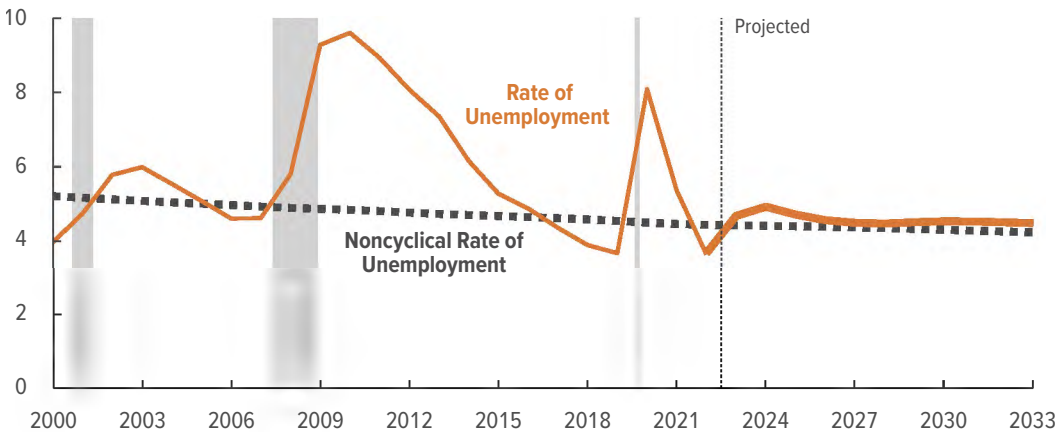
After dropping sharply in 2020 and rebounding strongly thereafter, nonfarm payroll employment (measured as the average monthly change over a given year) is projected to grow at a slower pace in the coming years.

Unemployment

Reflecting the expected slowdown in economic growth, the overall rate of unemployment is projected to rise from 3.6 percent in the fourth quarter of 2022 to 5.1 percent by the end of 2023, averaging 4.7 percent for 2023 as a whole. Thereafter, the unemployment rate is projected to decline gradually beginning in the second quarter of 2024, falling to 4.5 percent by the end of 2027.

The Unemployment Rate

Percent

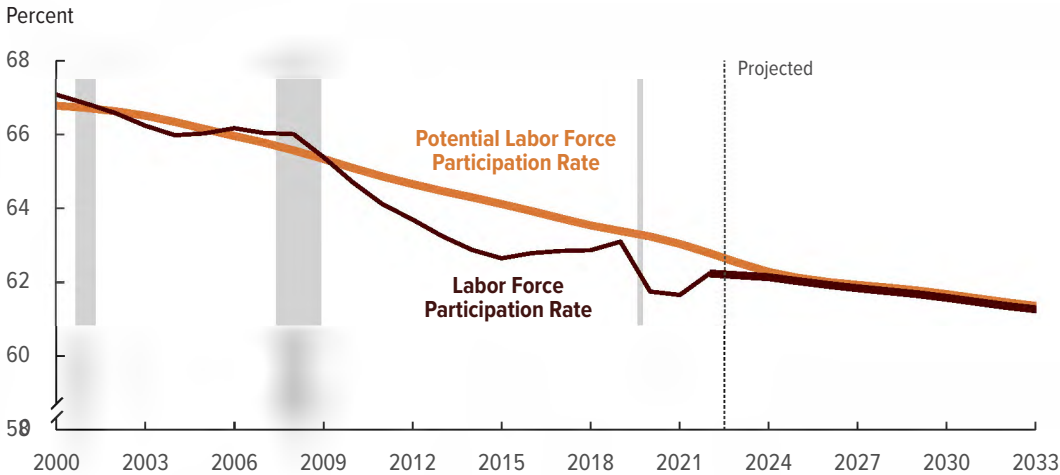


In the second half of 2023, the unemployment rate is projected to rise above the noncyclical rate of unemployment (the rate that results from all sources except changes in total demand), reflecting an increase in slack in the labor market.

Labor Force Participation

The rate of labor force participation is projected to remain roughly unchanged in 2023 at 62.2 percent. (That rate is the share of the civilian noninstitutionalized population age 16 or older that has jobs or that is available for work and is either seeking work or expecting to be recalled from a temporary layoff.) Thereafter, the labor force participation rate is projected to decline to 61.8 percent by 2027 as the effects of population aging (which dampens overall labor force participation) become more prominent relative to the short-term effects of economic growth.

The Labor Force Participation Rate

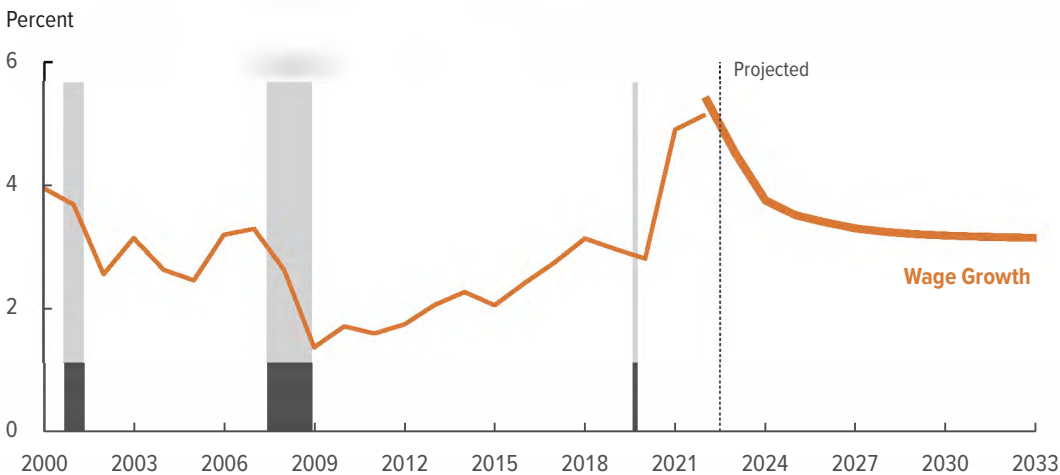


The projected decline in the labor force participation rate after 2023 is consistent with the decline in the potential rate—CBO’s estimate of the labor force participation rate that would occur if economic output and other key variables were at their maximum sustainable amounts.

Wages

CBO expects hourly wages to grow more slowly in the next few years than they did in 2022. The employment cost index for wages and salaries of workers in private industry—a measure of the hourly price of labor, excluding fringe benefits—grew by 5.1 percent in 2022. The growth of that index is projected to decline to 3.8 percent in 2024 and 3.3 percent in 2027.

Growth of Hourly Wages



Nominal wage growth (which includes the effects of inflation) is projected to decrease starting in 2023 because of slowing demand for labor and falling inflation.

The Economic Outlook for 2028 to 2033

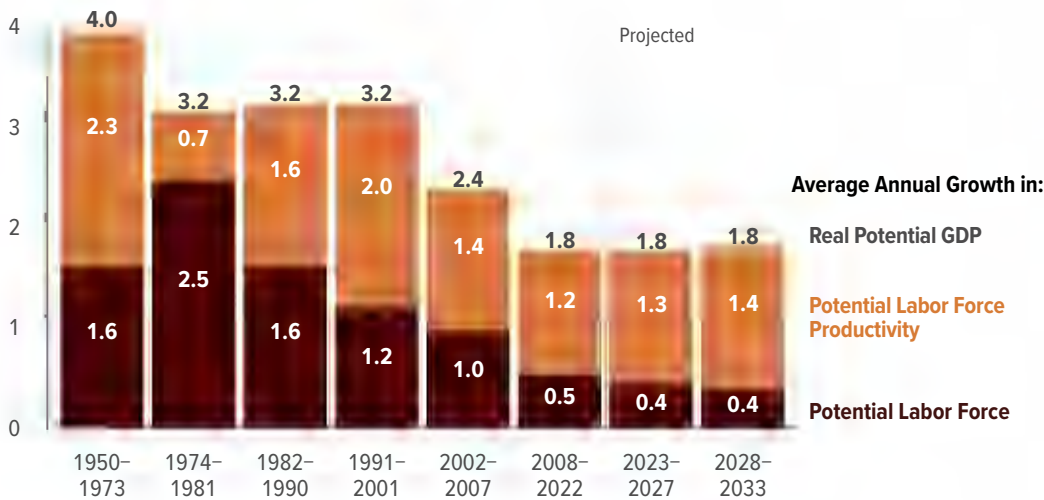
CBO’s economic projections for the next five years are strongly influenced by changes in the overall demand for goods and services. By contrast, the agency’s projections for the following five years are fundamentally determined by its assessment of the prospects for growth in several key inputs to potential GDP (the maximum sustainable output of the economy). Those inputs are the potential number of workers in the labor force, capital services (the flow of productive services from the stock of capital assets), and the potential productivity of the labor force and capital services.

Real potential GDP is projected to grow at an average rate of 1.8 percent a year over the 2028–2033 period. That rate is roughly equal to the average annual growth of real potential GDP since late 2007, the peak of the previous cycle of business activity. However, that overall growth rate masks differences for the two components of the growth of real potential GDP—growth of the potential labor force (CBO’s estimate of the size of the labor force that would occur if economic output and other key variables were at their maximum sustainable amounts) and growth of that labor force’s productivity. The potential labor force is projected to increase at a slower annual pace over the 2028–2033 period than it has since 2007, on average, whereas potential labor force productivity is projected to grow more rapidly than its average since 2007.

Real GDP is projected to increase at the same average rate from 2028 to 2033 as real potential GDP, 1.8 percent a year.

Growth of Real Potential GDP and Its Components

Percent



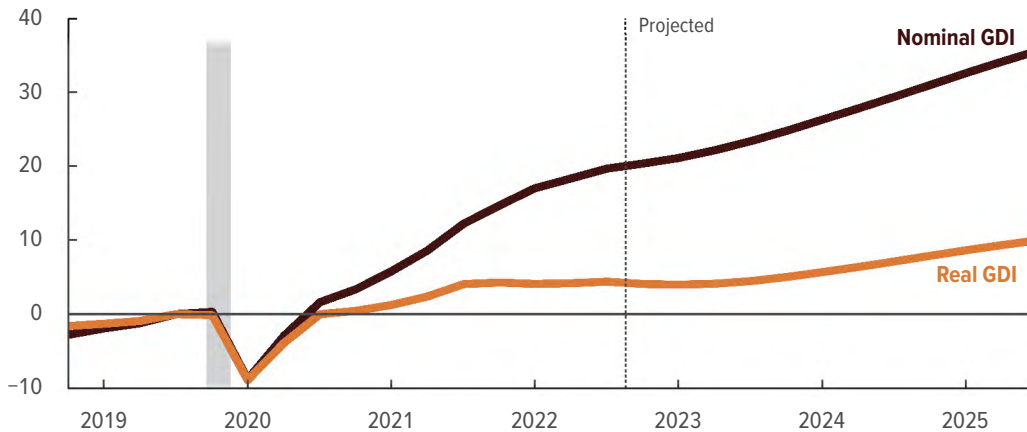
The economy’s potential output is projected to grow much more slowly, on average, over the 2028–2033 period than it did in the second half of the 20th century, mainly because of an ongoing, long-term slowdown in the growth of the labor force as well as slower growth of productivity.

Projections of Income for 2023 to 2033

Nominal gross domestic income (total income earned in the production of GDP) is projected to grow at a moderate rate through 2033: by 3.1 percent this year, an average of 4.8 percent in 2024 and 2025, and an average of 4.0 percent from 2026 to 2033. That growth would leave nominal GDI about 35 percent higher at the end of 2025, and 85 percent higher at the end of 2033, than it was just before the pandemic.

Change in Nominal and Real Gross Domestic Income Relative to Their Levels in the Fourth Quarter of 2019

Percent



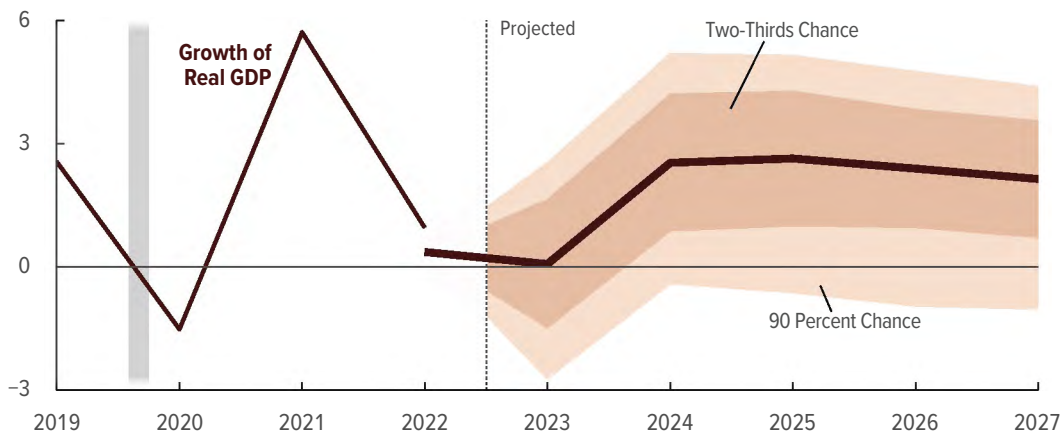
Although CBO expects the growth rate of real GDI to continue to stagnate in 2023, it anticipates that nominal GDI will grow at a stronger rate because of inflation.

Uncertainty About the Economic Outlook

CBO’s projections of economic output and labor market conditions are subject to a high degree of uncertainty. In the short term, the effect of higher interest rates on overall demand, the easing of supply-chain disruptions, and participation in the labor market could be larger or smaller than expected. In the longer term, the growth of potential output in the aftermath of the pandemic could be faster or slower than expected.

Uncertainty of CBO’s Projections of Real GDP Growth

Percent



CBO estimates that there is an approximately two-thirds chance that the annual rate of real GDP growth will be between -1.5 percent and 1.7 percent in 2023 and between 0.7 percent and 3.6 percent in 2027.

Comparison With CBO's May 2022 Economic Projections

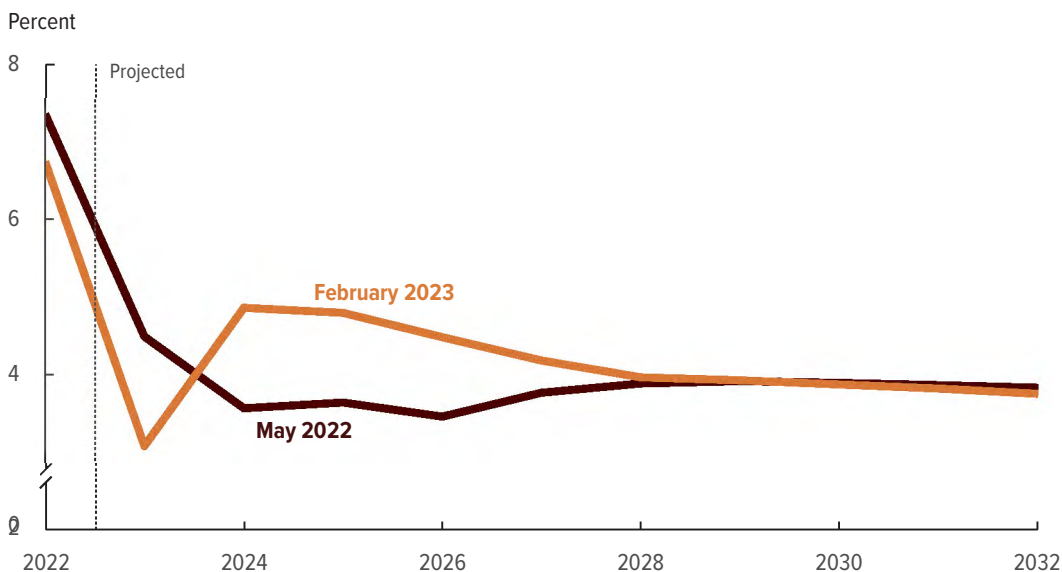
Since May 2022, when CBO published its previous economic forecast, the agency has significantly lowered its projection of real GDP growth in 2023 and raised its projection of inflation in 2023. In addition, CBO now expects interest rates to be higher from 2023 through 2026 than it forecast previously. After 2026, the differences between CBO's current and previous forecasts are smaller.

Output

CBO's current projection of real GDP growth in 2023, 0.1 percent, is much lower than its May forecast of 2.2 percent growth. That change reflects reductions in projected growth for many sectors of the economy, such as consumer spending, business fixed investment, residential investment, and exports. Conversely, real GDP is now projected to grow more rapidly during the 2024–2026 period than CBO forecast in May, as the economy rebounds from slow growth this year and as the Federal Reserve reduces interest rates from a higher 2023 level than was previously projected. Growth of real GDP is now projected to average 2.5 percent a year over the 2024–2026 period, compared with the 1.5 percent a year projected last spring.

CBO's projection of nominal GDP growth in 2023, 3.1 percent, is also lower than its previous forecast, 4.5 percent. That change reflects the large downward revision to the projection of real GDP growth this year, which is only partly offset by an upward revision to CBO's projection of inflation in 2023. The agency now projects stronger growth of nominal GDP from 2024 to 2029 than it projected in May, mainly reflecting the stronger projected growth of real GDP. Beyond 2029, CBO's current projection of nominal GDP growth is generally similar to its May projection.

CBO's Current and Previous Projections of Growth of Nominal GDP

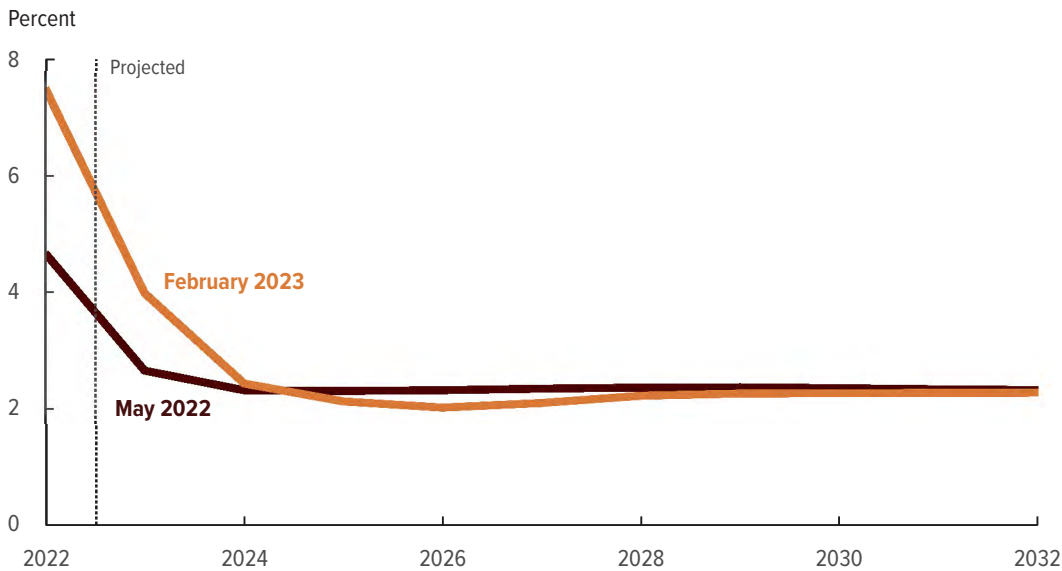


CBO is now projecting lower growth of nominal GDP in 2023 than it projected last May, because of a large reduction in its forecast for real GDP growth, partly offset by an increase in its forecast for inflation. Both nominal and real GDP are now projected to grow more rapidly from 2024 to 2029 than CBO projected in May, because of faster projected growth in investment and exports.

Inflation

CBO expects inflation to be substantially higher this year than it anticipated last spring. In addition to its projection of the PCE price index, CBO projects changes in other price indexes, including the consumer price index for all urban consumers (CPI-U). In May, CBO projected that inflation as measured by the CPI-U would amount to 2.7 percent in 2023. It has since raised that projection to 4.0 percent. CBO also projects a slightly larger increase in the CPI-U in 2024 than it projected previously: 2.4 percent versus 2.3 percent. Beyond 2024, CBO’s current projections of CPI-U inflation are slightly lower than its May projections.

CBO’s Current and Previous Projections of Inflation as Measured by the Consumer Price Index



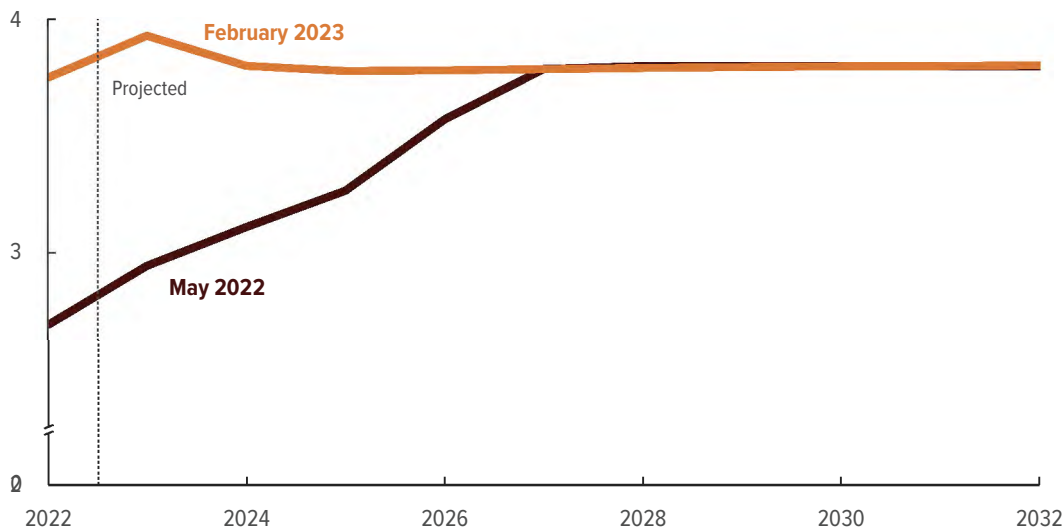
CBO is projecting higher inflation for 2023 and 2024 than it did last May for two main reasons: Recent historical data suggest that, in many sectors of the economy, price growth will probably continue to be higher than CBO anticipated, and disruptions in the supply of goods and services have lasted longer than CBO previously forecast.

Interest Rates

CBO expects short- and long-term interest rates to be higher, on average, over the next several years than it forecast in May and to be roughly the same as in its May forecast thereafter. In CBO’s projections for those later years, the effects of faster growth of productivity and higher income from capital as a share of total income, which are estimated to push up interest rates, are largely offset by higher saving rates in the United States and elsewhere and higher risk premiums, which are estimated to push down interest rates.

CBO’s Current and Previous Projections of Interest Rates on 10-Year Treasury Notes

Percent



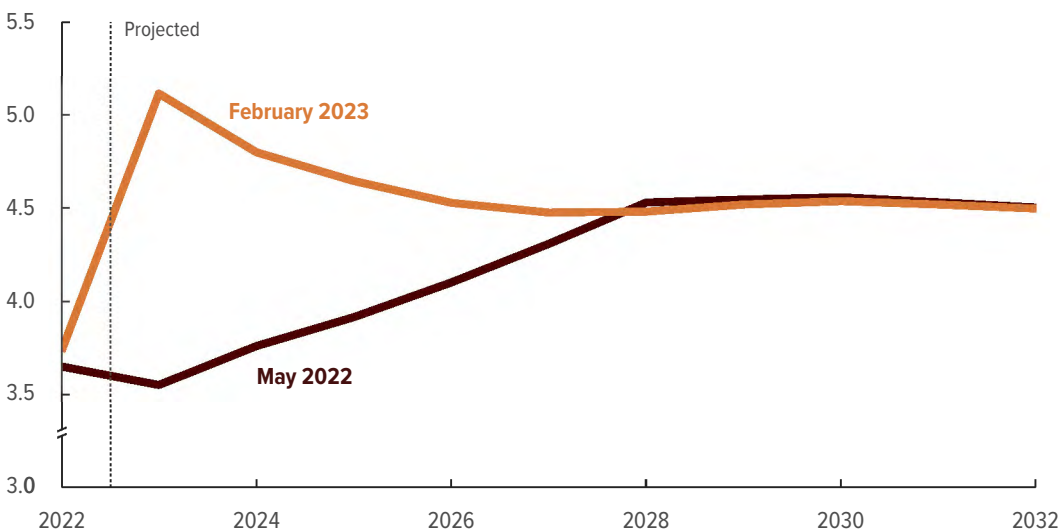
Long-term interest rates, such as those on 10-year Treasury notes, are now projected to be higher over the 2023–2027 period than CBO forecast in May. That change reflects an increase in the projection for short-term rates—which partly determine long-term rates—because of an increase in projected inflation, which implies that the Federal Reserve will raise the target range for the federal funds rate higher than previously projected.

Unemployment

CBO is currently projecting a higher average unemployment rate between 2022 and 2026 than it forecast in May: 4.5 percent versus 3.8 percent.

CBO’s Current and Previous Projections of the Unemployment Rate

Percent



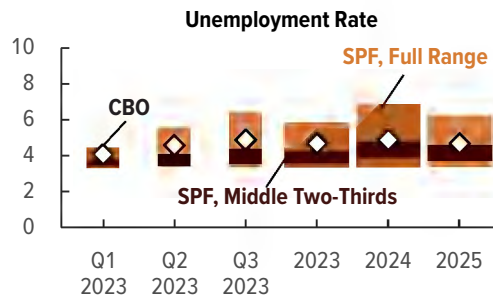
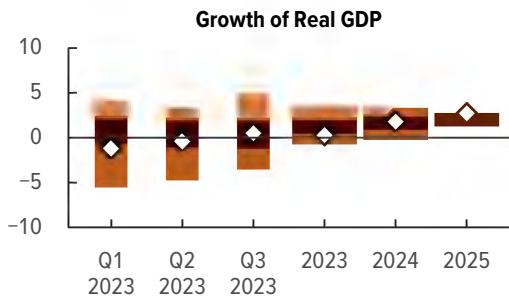
The upward revision to CBO’s projection of the unemployment rate in the next several years stems from a reduction in its projection of economic growth in 2023.

Comparison With Other Economic Projections

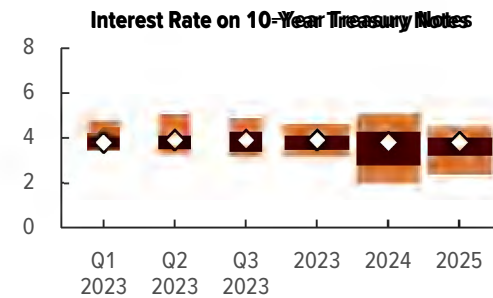
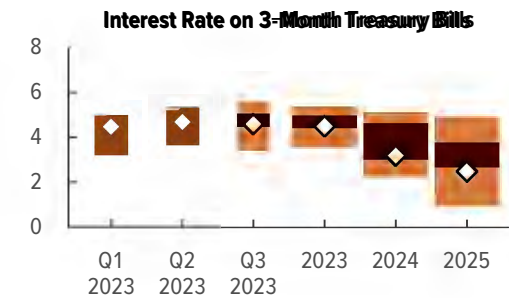
CBO compared its projections for the next few years with those of the Federal Reserve Bank of Philadelphia’s *Survey of Professional Forecasters* (SPF). For the most part, CBO’s projections of output, unemployment, interest rates, and inflation are roughly consistent with those of most forecasters in the SPF.

CBO’s Projections of Output, Unemployment, and Interest Rates Compared With the Range of Projections in the *Survey of Professional Forecasters*

Percent

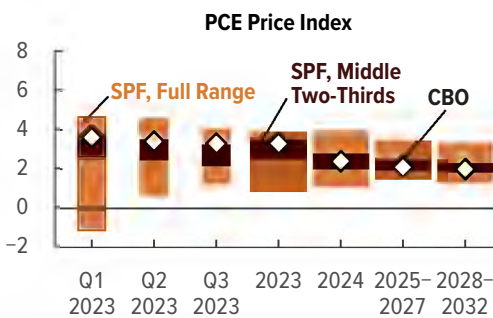
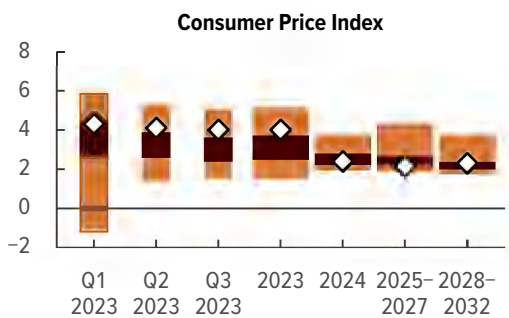


CBO’s projection of real GDP growth is slightly below the middle two-thirds of the range of the SPF forecast for 2023 as a whole, within that range for 2024, and slightly above that range for 2025. CBO’s projection of unemployment is above the middle two-thirds of the SPF range for the 2023–2025 period. CBO’s projections of short- and long-term interest rates are within the middle two-thirds of the SPF ranges except for 2025, when CBO forecasts lower short-term rates.

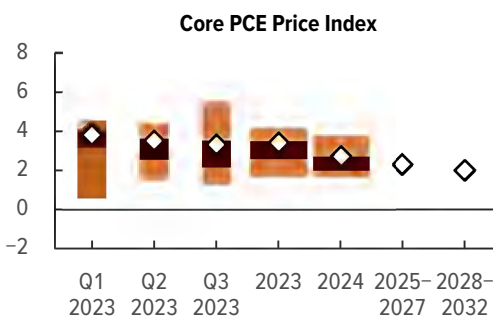
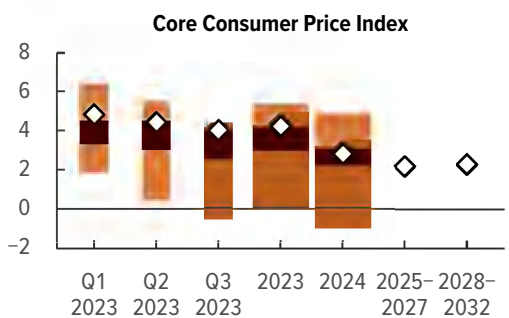


CBO’s Projections of Inflation Compared With the Range of Projections in the *Survey of Professional Forecasters*

Percent



CBO’s projections of inflation—as measured by the consumer price index for all urban consumers and the price index for personal consumption expenditures—are generally within the middle two-thirds of the ranges of SPF forecasts. However, CBO projects a larger rise in the consumer price index in 2023 and a smaller average over the 2025–2027 period than the middle two-thirds of the SPF does. CBO’s projections of the core inflation indexes, which exclude food and energy prices, are also close to the middle two-thirds of the SPF ranges.



Appendix: Data Sources and Notes for Exhibits

Growth of Real GDP

Data source: Congressional Budget Office. See www.cbo.gov/publication/58848#data.

Growth of real gross domestic product (GDP) is measured from the fourth quarter of one calendar year to the fourth quarter of the next. Values for 2000 to 2022 (the thin line) reflect data available from the Bureau of Economic Analysis in late January 2023. Those data contain values for the fourth quarter of 2022, which were not available when CBO developed its current projections for 2022 to 2033 (the thick line).

Overall Inflation and Price Growth for Various Categories of Goods and Services

Data sources: Congressional Budget Office; Bureau of Economic Analysis. See www.cbo.gov/publication/58848#data.

Inflation is measured from the fourth quarter of one calendar year to the fourth quarter of the next. Values in the bars represent the contributions, in percentage points, of each category of goods and services to the growth rate of the price index for personal consumption expenditures. The sum of the contributions of those categories equals the overall growth of that index. “Other goods” include core durable and nondurable goods (other than vehicles and parts), such as electronics, home furnishings, and apparel. “Other services” include core services (other than housing services and medical services), such as transportation and recreation services.

The Federal Funds Rate and Interest Rates on Long-Term Treasury Securities

Data sources: Congressional Budget Office; Federal Reserve. See www.cbo.gov/publication/58848#data.

Values for 2000 to 2022 (the thin lines) reflect data on interest rates for the full month of December 2022.

Those data were not available when CBO developed its current projections for 2022 to 2033 (the thick lines).

Growth of Payroll Employment

Data sources: Congressional Budget Office; Bureau of Labor Statistics. See www.cbo.gov/publication/58848#data.

Payroll employment is the number of employed workers, excluding proprietors, private household employees, unpaid volunteers, farm employees, and unincorporated self-employed workers. The average monthly change in payroll employment is calculated by dividing by 12 the change in nonfarm payrolls from the fourth quarter of one calendar year to the fourth quarter of the next. Values for 2000 to 2022 (the orange bars) reflect data available from the Bureau of Labor Statistics in late January 2023. Those data contain values for the fourth quarter of 2022, which were not available when CBO developed its current projections for 2022 to 2033 (the brown bars).

The Unemployment Rate

Data sources: Congressional Budget Office; Bureau of Labor Statistics. See www.cbo.gov/publication/58848#data.

The unemployment rate is the number of people not working who are available for work and are either seeking work or expecting to be recalled from a temporary layoff, expressed as a percentage of the labor force (the number of people age 16 or older in the civilian noninstitutionalized population who have jobs or who are available for work and are either seeking work or expecting to be recalled from a temporary layoff). The noncyclical rate of unemployment is the rate that results from all sources except fluctuations in aggregate demand, including normal turnover of jobs and mismatches between the skills of available workers and the skills necessary to fill vacant positions.

The data are annual averages. Values for 2000 to 2022 (the thin line) reflect data available from the Bureau of Labor Statistics in late January 2023. Those data contain values for the fourth quarter of 2022, which were not available when CBO developed its current projections for 2022 to 2033 (the thick line).

The Labor Force Participation Rate

Data sources: Congressional Budget Office; Bureau of Labor Statistics. See www.cbo.gov/publication/58848#data.

The data are annual averages. Values for 2000 to 2022 (the thin lines) reflect data available from the Bureau of Labor Statistics in late January 2023. Those data contain values for the fourth quarter of 2022, which were not available when CBO developed its current projections for 2022 to 2033 (the thick lines).

Growth of Hourly Wages

Data sources: Congressional Budget Office; Bureau of Labor Statistics. See www.cbo.gov/publication/58848#data.

Wages are measured using the employment cost index for wages and salaries of workers in private industry. The growth of wages is measured from the fourth quarter of one calendar year to the fourth quarter of the next. Values for 2000 to 2022 (the thin line) reflect data available from the Bureau of Labor Statistics in late January 2023. Those data contain values for the fourth quarter of 2022, which were not available when CBO developed its current projections for 2022 to 2033 (the thick line).

Growth of Real Potential GDP and Its Components

Data source: Congressional Budget Office. See www.cbo.gov/publication/58848#data.

Growth of real potential GDP is the sum of the growth of the potential labor force and growth of potential labor force productivity. The potential labor force is CBO's estimate of the size of the labor force that would occur if economic output and other key variables were at their maximum sustainable amounts. Potential labor force productivity is the ratio of real potential GDP to the potential labor force. The bars show average annual growth rates over the specified periods. Those rates are calculated using calendar year data.

Change in Nominal and Real Gross Domestic Income Relative to Their Levels in the Fourth Quarter of 2019

Data sources: Congressional Budget Office; Bureau of Economic Analysis. See www.cbo.gov/publication/58848#data.

The chart shows the percentage difference in nominal or real gross domestic income (GDI) from its level in the fourth quarter of 2019. GDI is the sum of all income earned in the production of GDP. Real GDI is nominal GDI that has been adjusted to remove the effects of inflation, as measured by the GDP price index.

Uncertainty of CBO's Projections of Real GDP Growth

Data sources: Congressional Budget Office; Bureau of Economic Analysis. See www.cbo.gov/publication/58848#data.

To quantify the uncertainty of its projections of real GDP growth over for next five years, CBO conducted 1,000 simulations to produce probability distributions for the future path of that variable. For discussion of the methods used to quantify uncertainty, see Congressional Budget Office, "Estimating the Uncertainty of the Economic Forecast Using CBO's Expanded Markov-Switching Model" (January 2023), www.cbo.gov/publication/58884, and "Estimating the Uncertainty of the Economic Forecast Using CBO's Bayesian Vector Autoregression Model" (January 2023), www.cbo.gov/publication/58883.

Growth of real GDP is measured from the fourth quarter of one calendar year to the fourth quarter of the next. Values for 2019 to 2022 (the thin line) reflect data available from the Bureau of Economic Analysis in late January 2023. Those data contain values for the fourth quarter of 2022, which were not available when CBO developed its current projections for the next five years (the thick line) and analyzed their uncertainty.

CBO's Current and Previous Projections of Growth of Nominal GDP

Data source: Congressional Budget Office. See www.cbo.gov/publication/58848#data.

Growth of nominal GDP is measured from the fourth quarter of one calendar year to the fourth quarter of the next.

CBO's Current and Previous Projections of Inflation as Measured by the Consumer Price Index

Data source: Congressional Budget Office. See www.cbo.gov/publication/58848#data.

Inflation is measured from the fourth quarter of one calendar year to the fourth quarter of the next.

CBO's Current and Previous Projections of Interest Rates on 10-Year Treasury Notes

Data source: Congressional Budget Office. See www.cbo.gov/publication/58848#data.

CBO's Current and Previous Projections of the Unemployment Rate

Data source: Congressional Budget Office. See www.cbo.gov/publication/58848#data.

The unemployment rate is the number of people not working who are available for work and are either seeking work or expecting to be recalled from a temporary layoff, expressed as a percentage of the labor force (the number of people age 16 or older in the civilian non-institutionalized population who have jobs or who are available for work and are either seeking work or expecting to be recalled from a temporary layoff). The data are annual averages.

CBO's Projections of Output, Unemployment, and Interest Rates Compared With the Range of Projections in the Survey of Professional Forecasters

Data sources: Congressional Budget Office; Federal Reserve Bank of Philadelphia, *Survey of Professional*

Forecasters: First Quarter 2023 (February 10, 2023), <https://tinyurl.com/y2xctkwk>. See www.cbo.gov/publication/58848#data.

The full range of forecasts from the *Survey of Professional Forecasters* is based on the highest and lowest of the roughly 40 forecasts. The middle two-thirds of that range omits the top one-sixth and the bottom one-sixth of the forecasts.

Quarterly growth of real GDP is measured from one quarter to the next and expressed as an annual rate; annual growth is measured from the average of one calendar year to the next.

CBO's Projections of Inflation Compared With the Range of Projections in the Survey of Professional Forecasters

Data sources: Congressional Budget Office; Federal Reserve Bank of Philadelphia, *Survey of Professional Forecasters: First Quarter 2023* (February 10, 2023), <https://tinyurl.com/y2xctkwk>. See www.cbo.gov/publication/58848#data.

The full range of forecasts from the *Survey of Professional Forecasters* (SPF) is based on the highest and lowest of the roughly 40 forecasts. The middle two-thirds of that range omits the top one-sixth and the bottom one-sixth of the forecasts. Multiyear averages are calculated using the 5-year and 10-year averages reported in the SPF. The survey did not provide forecasts of inflation in the core indexes beyond 2024.

Quarterly inflation is measured from one quarter to the next and expressed as an annual rate. Annual inflation is measured from the fourth quarter of one calendar year to the fourth quarter of the next.

About This Document

This report, which was prepared to enhance the Congressional Budget Office's transparency, is based on the information in Chapter 2 of *The Budget and Economic Outlook: 2023 to 2033* (February 2023). In keeping with CBO's mandate to provide objective, impartial analysis, the report makes no recommendations.

Robert Arnold, Aaron Betz, Daniel Fried, and Mark Lasky prepared this report with guidance from Richard DeKaser. John McClelland and Julie Topoleski offered comments. Many CBO analysts contributed to the projections described in *The Budget and Economic Outlook*.

Mark Doms, Jeffrey Kling, and Robert Sunshine reviewed this report. Christian Howlett edited it, and Jorge Salazar created the graphics and prepared the report for publication. The report is available at www.cbo.gov/publication/58880.

CBO seeks feedback to make its work as useful as possible. Please send comments to communications@cbo.gov.



Phillip L. Swagel
Director
February 2023

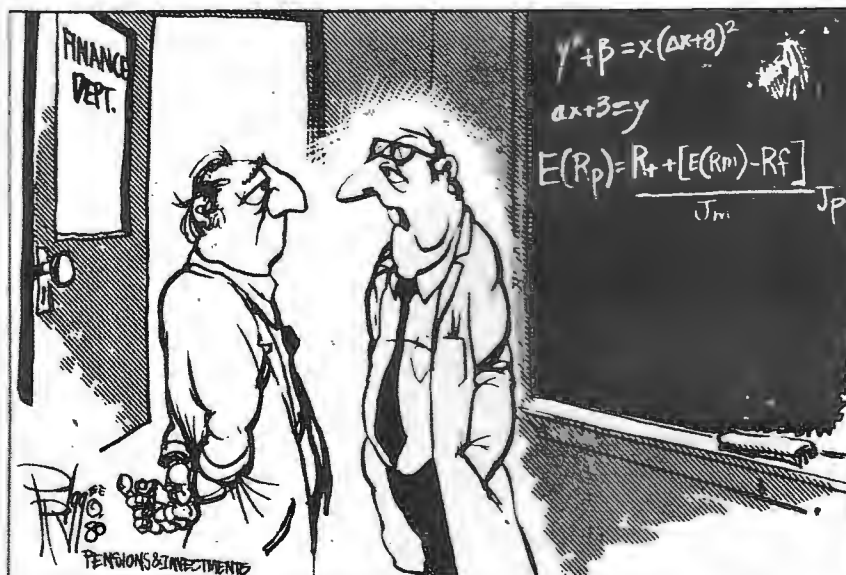
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scrap heap. The financial ascendancy of beta, now the Death of Beta," "Bye, of the times was a letter ter known only as "Deep ery big story breaking in Pricing Model is dead." 'turncoat quant" as fol- ne to investors what the e set of tools making up ng even modern portfolio



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EVIDENCE

' is wrong. The unearth- lead to an abandonment is and a return to tradi- nmunity is not ready to here are many reasons, I

table returns are prefer- returns. Clearly, if one for oil as from a riskless gambling for gambling's really did not worry at ar derivative-securities Thus, the beta measure ome aspects of what we etas from the past do a volatility in the future.

quantitatively inclined finan- w investment technology.

Second, as Professor Richard Roll of UCLA has argued, we must keep in mind that it is very difficult (indeed probably impossible) to measure beta with any degree of precision. The S&P 500 Index is not "the market." The total stock market contains many thousands of additional stocks in the United States and thousands more in foreign countries. Moreover, the total market includes bonds, real estate, commodities, and assets of all sorts, including one of the most important assets any of us has—the human capital built up by education, work, and life experiences. Depending on exactly how you measure the "market," you can obtain very different beta values. One's conclusions about the capital-asset pricing model and beta as a measure of risk depend very much on how you measure beta. Two economists from the University of Minnesota, Ravi Jagannathan and Zhenyu Wang, find that when the market index (against which we measure beta) is redefined to include human capital and when betas are allowed to vary with cyclical

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the expected future return on stocks (9.8%) is also 1.7% lower than the historic 11.5%.

One crucial assumption here is that there is a stable risk premium on equities, so that the future risk premium can be measured by the average past risk premium (7.8%). But this assumption may not hold. For example, investors might be less averse to holding stocks in the past. Perhaps the growth in mutual funds and ETFs has made it easier for investors to diversify away risks, or perhaps pension funds can diversify by investing overseas. If investors can eliminate more of their risk than in the past, they may be content with a lower risk premium.

What all this means is that estimating future returns is part science, but also part art. The science is that we can use past returns to guide us. Given a set of past returns, there is a scientific "correct" way to calculate the average past return. The "art" comes in two forms. The first is knowing how far back to go when gathering past data. We pointed out an advantage of longer histories—they're less skewed by outlier years. But a disadvantage is that they may be less relevant for today. Perhaps stock returns 100 years ago were from a different market where it was much harder to diversify, so investors required a higher risk premium to hold

stocks. The second art form is knowing how much to adjust historic data when forecasting the future. If you say you decided to estimate stock returns over the past 70 years. You believe the returns demanded by investors have come down from the first half of the last century, which included the Great Depression of the 1930s and two World Wars. So you focus on the period since 1950. But even those past 70 years aren't a perfect guide to the future. You may believe risk premiums will come down even more as diversification continues to become widespread, or you may fear the opposite, that stocks will become less safe going forward due to technological change risk.

There is no formula to tell us what will happen next, nor how much we should increase or decrease the historical average by analysis of future risks. Indeed, that's where the skill of the analyst lies. It is also why professional investors can disagree wildly on the future direction of the market, even though they all see the same data. In turn, this can explain why there's so much volatility in financial markets: One investor is willing to buy and another is willing to sell, yet both believe they've got a good deal because they have different predictions for the future.

The difficulty of estimating expected returns is particularly important for growth stocks, which pay no (or few) dividends today. Since the bulk of their dividends will arise far into the future, those dividends will be heavily discounted, and so their present value is particularly sensitive to the discount rate.⁸ This is one reason there is particular disagreement over the value of growth stocks, and why there can be bubbles and crashes in such stocks (such as the dot-com bubble of the late 1990s and its subsequent bursting).⁹ For the same reason, estimates of future returns have outsized effects on the NPV of projects with cash flows that occur far into the future, such as the earnings of an oil producer finally moving to clean energy. Indeed, a common criticism is that managers use too high discount rates, and so underinvest in long-term projects.

To sum up this discussion: Estimating the risk premium is just as much of an art as a science. History contains valuable clues, but the future may be different from the past. Many economists rely on the evidence of history and therefore work with a risk premium of 7%. The remainder generally use a somewhat lower figure. We have no official position on the issue, but we believe that a range of 5% to 8% is reasonable for the risk premium in the United States. We will use 7% in the examples in this and the next chapter.

⁸ Specifically, a dividend in year t will be discounted by $(1 + r)^t$, so small changes in the estimate of r will be compounded t times.

⁹ Figure 2.2 showed that the effect of different discount rates is greater the more years you go out.

¹⁰ Another second reason is disagreement over the growth rate g .

Cost of Capital

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Selecting a Sample Period of *ex post* Data

The average realized risk premium is sensitive to the period chosen for the average. While the selection of 1926 as a starting point corresponds to the initial publishing of the forerunner to the current S&P 500 (the S&P Composite Index of 90 stocks), the choice of that date was otherwise arbitrary. Regarding the historical time period over which realized risk premiums should be calculated, Morningstar offers two observations:¹³

1. Reasons to focus on recent history:
 - The recent past may be most relevant to an investor.
 - Return patterns may change over time.
 - The longer period includes "unusual events" which may not be representative of today's economy.
2. Reasons to focus on long-term history:
 - Long-term historical returns have shown surprising stability.
 - Short-term observations may lead to illogical forecasts.
 - Every period has dramatic historical events and we do not know what major events lie ahead.
 - Law of large numbers: More observations lead to a more accurate estimate.

In choosing the years one includes in the estimate, the analyst is looking for a period in which the realized returns best represent what might be expected in future periods. One might consider eliminating from the sample period a period influenced by abnormal circumstances. Or one might consider a sample period with risk characteristics more comparable to the risk characteristics confronting investors today.

Bias in Realized Risk Premium Data

Some observers have suggested that the period including the 1940s and the immediate post-World War II boom years may have exhibited unusually high average realized return premiums due to the Fed's intervention in interest rates.

The low real rates on bonds may have contributed to greater equity returns in the immediate postwar period. Since firms finance a large part of their capital investment with bonds, the *lower* real cost of obtaining such funds likely *increased* returns to shareholders. It may not be a coincidence that the greatest 30-year average equity return occurred in a period marked by very low real returns on bonds.¹⁴

We consider the years 1942 through 1951 particularly problematic as they reflected a period of government-imposed stability in U.S. government bond interest rates. During World War II, the U.S. Treasury (Treasury) decreed that interest rates had to be kept at artificially low levels in order to reduce government financing costs. This led to the Fed's April 1942 public commitment to maintain interest rates at prescribed levels on U.S. government debt, both long term and short term.

¹³2013 Ibbotson® S&P® Valuation Yearbook (Chicago: Morningstar, 2013): 57–61.

¹⁴Jeremy Siegel, *Stocks for the Long Run* (New York: McGraw-Hill, 1994): 20.

EXHIBIT 8.1 Realized Risk Premiums Excluding 1942–1951

Year	Realized Risk Premiums (arithmetic average)	Standard Deviation
1926–2012 all years	6.70%	20.26%
1926–2012 (excluding 1942–1951)	5.53%	20.76%

Source: Compiled from data in the *EnCorr*[®] database. Copyright © 2013 Morningstar, Inc. All rights reserved. Calculated (or derived) on CRSP[®] data; © 2013 Center for Research in Security Prices (CRSP[®]), University of Chicago Booth School of Business. Compiled by Duff & Phelps LLC.

With regard to short-term interest rates, the Fed agreed to make a market in 3-month T-bills at a yield of 3/8%. With regard to longer-term securities, the Fed agreed to support interest rate ceilings; for example, it agreed to support 25-year U.S. government bond prices at a level consistent with a 2.5% interest rate ceiling.¹⁵

After World War II, the Fed continued maintaining an interest rate ceiling due to the Treasury's pressure and, to a lesser extent, a fear of returning to the high unemployment levels of the Great Depression. The Treasury and the Fed ended the pegging of interest rates on T-bills in July 1947. But interest rate controls on long-term rates continued until postwar inflationary pressures caused the Treasury and the Fed to reach an accord announced March 4, 1951, freeing the Fed of its obligation of pegging interest rates.¹⁶ Including this period in calculating realized returns is analogous to valuing airline stocks today by looking at prices of airline stocks when domestic airline fares were regulated.

To better understand the impact of the interest rate controls on the ERP, we examined the arithmetic average of realized risk premiums (based on one-year returns) for the period 1926–2012 as reported in the *SBBi Yearbook*¹⁷ and the arithmetic average of realized risk premiums (based on one-year returns) for the period 1926–2012 *excluding 1942 through 1951*. Exhibit 8.1 displays these results.

Eliminating the years 1942 through 1951 from the sample reduced the realized risk premium from the published 6.70% to 5.53% for 1926–2012. One can interpret the realized risk premium data reported in the *SBBi Yearbook* as being biased high by as much as 117 basis points (1.17%). We will call this the “WWII Interest Rate Bias.” We use 1.17% as the adjustment below to indicate the extent of the possible bias created by this period in the indicated ERP estimates we display.

We are not questioning the accuracy of the realized risk premiums reported in the *SBBi Yearbook*. Rather, we believe that if one were using the realized return data as a basis for forecasting ERP, demonstrated bias should be removed where possible. Removing the data from 1942–1951 from the sample allows the analyst to make the data more representative of what might be expected in future years. We believe that

¹⁵Mark Toma, “Interest Rate Controls: The United States in the 1940s,” *The Journal of Economic History* 52(3) (September 1992): 633–634.

¹⁶Jerry W. Markham, *A Financial History of the United States*, vol. 1 (Armonk, NY: M.E. Sharpe, 2002): 299–300.

¹⁷Table 5.1, long-horizon based on the S&P 500, 2013 *Ibbotson*[®] *SBBi*[®] *Valuation Yearbook*: 54.

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13

Criticism of CAPM and Beta versus Other Risk Measures¹

Introduction
CAPM Assumptions and Beta as a Risk Measure
Problems with CAPM Assumptions
Testing Asset Pricing Models
Testing Risk Factors Priced by the Market
Risk Measures beyond Beta
Total Risk
Adjusted Beta for Company Size and Company-specific Risk
Downside Risk
Value at Risk
Scenario-based Approach
Duration
Yield Spreads
Fundamental Risk
Summary
Appendix 13A: Example of Computing Downside Beta Estimates

INTRODUCTION

Even though the capital asset pricing model (CAPM) is the most widely used method of estimating the cost of equity capital, the accuracy and predictive power of beta as the sole measure of risk have increasingly come under attack. As a result, alternative measures of risk have been proposed and tested. That is, despite its wide adoption, academics and practitioners alike have questioned the usefulness of CAPM in accurately estimating the cost of equity capital and the use of beta as a reliable measure of risk.

While the CAPM explains how investors should act and price risk, empirical research has shown that investors often act differently than predicted by CAPM. This chapter explores these criticisms, alternative measures of risk, and the other methods used to estimate the cost of equity capital.

¹The authors want to thank Niel Patel of Duff & Phelps LLC for preparing material for this chapter.

following the discrete projection period. Many analysts assume capital expenditures to equal depreciation when estimating the terminal value, which results in overestimation of expected net cash flow and overvaluation, where real growth in excess of inflation is expected.⁸

USING AN UNATTAINABLE GROWTH RATE IN CALCULATING THE TERMINAL VALUE

The growth rate assumed in calculating the terminal value is a compound growth rate *in perpetuity*, which is a very long time. At a growth rate of 20% compounded annually, the company's revenues would soon exceed the gross domestic product (GDP) of the United States and eventually that of the world. Long-term growth rates exceeding the real growth in GDP plus inflation are generally not sustainable. Most analysts use more conservative growth rates in calculating the terminal value. Generally, the long-term growth rate only applies to the existing enterprise or core business net cash flows, consistent with the net cash flow projections in the discounted cash flow method (see discussion in Chapter 34).

Using Market Multiples without Adjusting for Differences in Growth

Some practitioners use a market multiple, such as the industry average multiple of earnings before interest, income taxes, depreciation, and amortization (EBITDA) to estimate a terminal value.

As we discussed in Chapter 4, the authors believe that use of a market-derived multiple for calculation of the terminal value is not appropriate, as it mixes elements of the market and income approaches and does not represent a true income approach.

In addition to mixing valuation approaches, it is not clear that a current average industry multiple reflects a long-term estimate of growth consistent with the sustainable long-term growth rate in net cash flows of the existing enterprise or core business. If the growth rate embedded in the multiple is inconsistent, utilizing this method will either overvalue or undervalue the business.

As an example, current multiples in an industry reflect the consensus growth estimates of the market, which are built upon analysts' estimates of earnings. Analysts include both the earnings of the company expected from the existing business and the earnings expected from reinvestment of retained net cash flows and reinvestment of those retained net cash flows in investments that are unspecified. Typically, the net cash flow estimates used in the DCF method valuation are based on the core business

⁸For a good discussion of this common error, see Gilbert E. Matthews, "Cap X = Depreciation Is Unrealistic Assumption for Most Terminal Values," *Shannon Pratt's Business Valuation Update* (March 2002): 1-3. See also Gilbert E. Matthews, "Errors and Omissions in DCF Calculations: A Critique of Delaware's Dr. Pepper Appraisal," *Business Valuation Update* (October 2007): 1-5. In this article, the author states: "In a perpetuity model with a 3% growth rate and assuming a 10-year average life for fixed assets, capital expenditures would exceed depreciation by 15.5% using straight-line depreciation and 11.6% using double-declining method."

HANDBOOK OF THE EQUITY RISK PREMIUM

By

Rajnish Mehra



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income return for the S&P stocks. The authors also used CRSP government bond data to include U.S. Treasury bond and bill indexes. They also included a corporate bond index constructed from bond yields, as well as inflation rates. Besides displaying total returns across all yearly hold periods, the paper was unique in that it explicitly measured historical risk premiums, not only for equities, but also including the horizon (maturity) premium, the default premium, and real interest rate. All results were presented in real (inflation-adjusted) terms as well. In Ibbotson Associates Yearbooks, they later added the small stock premium, the value premium, as well as various other data. These historical premiums came to be used as the risk premium input into the CAPM model, as well as for other models.

Later in 1976, Ibbotson and Sinquefeld showed how historical data can be used to simulate probability distributions of future returns. They started with the then-current yield curve, with its implicit forward interest-rate structure. They added the various historical premiums using bootstrapping methods that retained the correlation structure among the asset classes. They used a historical equity risk premium that was measured during the previous half-century to be 6.3 percent geometrically relative to U.S. Treasury bills, but a lesser number relative to longer-term bonds that contained horizon risk premiums.

Interestingly, 1976 was also the year that Vanguard launched its market index trust, a passive, value-weighted portfolio of large-cap U.S. stocks designed to match the performance of the S&P500. The excellent excess performance of stocks from 1926 to 1976 reported in Ibbotson and Sinquefeld may have helped build demand for a passive portfolio that sought to capture these historical returns. Just as the empirical study by Edgar Lawrence Smith demonstrated to investors in the 1920s the superiority of stocks over bonds and motivated a move toward equities, indexation made a lot of sense to investors in the 1970s when they had five decades of historical performance upon which to base their expectations for the future.

An important historical note is that the decade of the 1970s was one of the worst periods in U.S. capital market history for stocks. The crash of 1973–1974, the experience of double-digit inflation, and the erosion of capital were fresh in the public imagination in 1976. Equity returns had not exceeded debt returns over nearly the entire preceding decade. Thus, the historical equity premium appeared to most as a wildly optimistic forecast of the future expected return of stocks over T-bills. In fact it was not—the equity risk premium since 1976 has nearly matched the estimate made at the time.

There are several ways in which one might estimate an expected risk premium useful for forecasting. One way is to extrapolate historical risk premiums, as did Ibbotson and Sinquefeld. Another is to use investor demand models based upon investor risk aversion, as did Mehra and Precott. A third way is to look at the type of returns that the corporate sector supplies. Diermeir, Ibbotson, and Siegel (1984) and later Ibbotson and Chen (2003) used this supply approach. They extrapolated the cash flows and earnings growth generated by companies themselves. These forecasts tend to give somewhat lower historical risk premiums, primarily because part of the total return of the stock market has come from price-to-earnings ratio expansion. This expansion

is not predicated to continue on indefinitely, and is removed from the expected risk premium.

4. HISTORY AS WRITTEN BY THE WINNERS?

A major conceptual problem with equating the *ex post* historical realization of the equity premium with its *ex ante* expectation is that history could simply have turned out better than people expected. Recall that in 1938, J. B. Williams calculated the market forecast of the equity risk premium as a mere 1 1/2 percent. He might have been shocked to see the realized premium over the following five decades exceed his forecast by a multiple of four. A more subtle problem is that historical records of successful markets tend to get preserved, but it is difficult to dig up the records of failed markets. To study these issues, Brown, Goetzmann, and Ross (1995) built a model of stock market performance that examined the *ex post* historical return conditional upon survival. Their analytical results showed that when a market is confronted with the continued possibility of failure (modeled statistically as an absorbing lower bound), the *ex post* realized growth can be substantially higher than the unconditional mean. The fact that the U.S. survived two world wars and periods of global political unrest that caused other major markets to fail would suggest that the mean return of the U.S. market is an overestimate of its true historical mean.

It is important to point out that this view of the equity risk premium is quite different than the critique of the equity premium puzzle posed by University of Iowa economist Thomas Rietz. Rietz (1988) theorized that a high *ex ante* equity premium could be justified by a fear of a huge crash. An equity premium of 6 percent would thus reflect the potential for an event that may not have been realized in America's financial history but that nevertheless was a possibility in people's minds. One limitation of the Rietz critique is that it conflicts with historical expectations of stock returns—most notably the J. B. Williams's forward-looking premium in 1938 of 1 1/2 percent. The survivorship story, on the other hand, is entirely consistent with low historical expectations of the future, although it would be unlikely to reduce the equity risk premium to such a low number.

In order to estimate the potential scale of the survival bias, and to look for empirical evidence that the U.S. market was an unusual performer in the global economy, Jorion and Goetzmann (1999) collected capital appreciation and inflation data for a large sample of the world's equity markets from 1921 forward. They found that the U.S. was the top performer out of 39 markets, in terms of real capital appreciation of stocks. Studying this effect subsequently with a smaller but richer sample, Dimson, Marsh, and Staunton (2002) collect total real returns for 12 countries over the entire century and find that the U.S. was in the top quartile of performers in real terms—inched out by Sweden and Australia over the first couple of decades of the century.¹³ The Jorion and Goetzmann

¹³Dimson, Marsh, and Staunton (2002).

*Equity Risk Premiums (ERP): Determinants,
Estimation, and Implications – The 2022 Edition*

Updated: March 23, 2022

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cannot even reject the hypothesis that the equity risk premium in each of these countries is zero, let alone attach a value to that premium.

If the standard errors on these estimates make them close to useless, consider how much more noise there is in estimates of historical risk premiums for some emerging market equity markets, which often have a reliable history of ten years or less, and very large standard deviations in annual stock returns. Historical risk premiums for emerging markets may provide for interesting anecdotes, but they clearly should not be used in risk and return models.

The Survivor Bias

Given how widely the historical risk premium approach is used, it is surprising that the flaws in the approach have not drawn more attention. Consider first the underlying assumption that investors' risk premiums have not changed over time and that the average risk investment (in the market portfolio) has remained stable over the period examined. We would be hard pressed to find anyone who would be willing to sustain this argument with fervor. The obvious fix for this problem, which is to use a more recent time period, runs directly into a second problem, which is the large noise associated with historical risk premium estimates. While these standard errors may be tolerable for very long time periods, they clearly are unacceptably high when shorter periods are used.

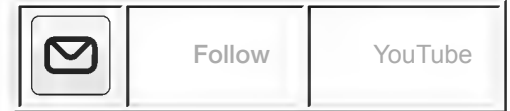
Even if there is a sufficiently long time period of history available, and investors' risk aversion has not changed in a systematic way over that period, there is a final problem. Markets such as the United States, which have long periods of equity market history, represent "survivor markets". In other words, assume that one had invested in the largest equity markets in the world in 1928, of which the United States was one.⁸⁰ In the period extending from 1928 to 2000, investments in many of the other equity markets would have earned much smaller premiums than the US equity market, and some of them would have resulted in investors earning little or even negative returns over the period. Thus, the

⁸⁰ Jorion, Philippe and William N. Goetzmann, 1999, *Global Stock Markets in the Twentieth Century*, Journal of Finance, 54(3), 953-980. They looked at 39 different equity markets and concluded that the US was the best performing market from 1921 to the end of the century. They estimated a geometric average premium of 3.84% across all of the equity markets that they looked at, rather than just the US and estimated that the survivor bias added 1.5% to the US equity risk premium (with arithmetic averages) and 0.9% with geometric averages.



Damodaran
ONLINE

About Teaching Writing Data Tools Blog YouTube Podcasts



My name is Aswath Damodaran, and I teach corporate finance and valuation at the Stern School of Business at New York University. I am a teacher first, who also happens to love untangling the puzzles of corporate finance and valuation, and writing about my experiences. As a result, I am at the intersection of three businesses, education, publishing and financial services, that are all big, inefficiently run and deserve to be disrupted. I may not have the power to change the status quo in any of these businesses, but I can stir the pot, and this website is my attempt to do so.

Broadly speaking, the website is broken down into four sections. The first, [teaching](#), includes all of my classes, starting with the MBA classes that I teach at Stern and including the shorter (2-day to 3-day) executive sessions I have on corporate finance and valuation. You will find not only the material for the classes (lecture notes, quizzes), but also webcasts of the classes that you can access on different platforms. I also have classes specifically tailored to an online audience on valuation, corporate finance and investment philosophies, as well as my quirky versions of accounting and statistics classes. The second, [writing](#), includes links to almost everything I have written and continue to write, starting with my books and extending to my practitioner papers (on equity risk premiums, cash flows and other things valuation-related). The third, [data](#), contains the annual updates that I provide on industry averages, for US and global companies, on both corporate finance and valuation metrics (including multiples). It is also where I provide my estimates of equity risk premiums and costs of capital. The fourth, [tools](#), incorporates the spreadsheets that I have developed over time to value and analyze companies and short in-practice webcasts on how to analyze companies. (If you have trouble with any of the links, try a different browser, since Google Chrome, in particular, seems to have developed an aversion to downloads on my site.)

I have been told that my website is ugly, and I apologize for its clunky look and feel. While some of you have offered to make it look better for me, and I thank you for your kindness, I need to be able to tweak, modify and adapt the website as I go along and to do that, I have to work with what I know about website design, which is not much. You can try the search engine below and if that does not work, try this [guide to the site](#).

Other Updates

Teaching:

1. *Stern Classes: The Spring 2023 Corporate Finance*

Equity Risk Premiums (Data, Updates and Papers)

Implied ERP on September 1, 2023= 4.40% (Trailing 12 month, with adjusted payout); 4.90% (Trailing 12 month cash yield); 5.79% (Average CF yield last 10 years); 4.67% (Net cash yield); 4.35% (Normalized Earnings & Payout)

Implied ERP in previous month = 4.38% (Trailing 12 month, with adjusted payout); 4.83% (Trailing 12 month cash yield); 5.70% (Average CF yield last 10 years); 4.62% (Net cash yield); 4.29% (Normalized Earnings & Payout)

Downloadable datasets (For more data, [go here](#))

1. [Historical Returns on Stocks, Bonds, Real Estate and Gold \(for historical risk premiums\)](#)
2. [Implied ERP by month for previous months \(September 2008- Current\)](#)
3. [Implied ERP \(annual\) from 1960 to Current](#)
4. My data on ERP & CRP by country ([January 2023](#) and [July 2023](#))

Downloadable spreadsheets (For more spreadsheets, [go here](#))

1. [Spreadsheet to compute current ERP for current month](#)
2. [Spreadsheet to value the S&P 500 \(January 1, 2023\)](#)
3. [Valuation Spreadsheet for non-financial service firms](#) with [video guidance](#)

Papers: Starting in 2008, I have written annual update papers on equity risk premiums, in two installments. The first one looks at equity risk premiums, in general, starting with their determinants and working through different approaches to measuring them. The second one is more focused on country risk. The latest updates for both can be found below:

1. [Equity Risk Premiums \(Annual Update Paper\)](#)
2. [Country Risk Premiums \(Annual Update Paper\)](#)

class, now fully archived, can be found [here](#) and the archived Spring 2023 Valuation class is linked [here](#).

2. *Online classes (Free and NYU Certificate):* The online versions of these classes can be found [here](#) and NYU is offering certificate versions [here](#). In the next academic year, I will be teaching all three classes again and you can find the links to them [here](#).
3. *Short Prep Courses:* If you need a short brush up on the basics of finance, I have added a class on the [foundations of finance](#) as well as a [minimalist accounting class](#) to my online list. In 2021, I added a [statistics class to the mix](#), again taught from the perspective of someone who uses statistics rather than a statistical expert.

Writing:

1. *Papers/Articles:* This paper on [valuing Tesla \(with Brad Cornell\)](#) won the readers' award (Bernstein-Levy) in The Journal of Portfolio Management. Brad and I have written a [paper on what we call the big market delusion](#), on how the allure of big markets coupled with overconfident entrepreneurs/investors can create over pricing across companies. In 2020, we [added a paper on ESG](#), a concept that has been oversold and overhyped by its proponents, as well as a paper on value investing's travails in the last decade. I also have a [paper on valuing users](#), subscribers and members. In 2020, I also wrote a series of fourteen posts on the COVID crisis, with the emphasis on markets, in real time, which I put [together as a paper](#) (way too long) on what I learned and unlearned. I also added a [paper on the disruption coming to the IPO process](#). For a complete list of papers, go here
2. *Books:* My book on [Narrative and Numbers](#), from Columbia University Press, is in bookstores and the third edition of [The Dark Side of Valuation](#) came out in 2018. My book on Corporate Life Cycles, where I look at where a firm stands in its life cycle affects corporate finance, investing and valuation judgments, is forthcoming from Penguin Random House.

Data: The latest overall data update was on January 5, 2023; my next one will be in January 2024. My country risk premiums also get updated midyear; [my July 2023 update is now available here](#). Check under data for

downloads and links, as well as archived data from prior years.

Tools: Check under tools for additions to spreadsheets and webcast. uValue is available at the iTunes store.

Corporate Bond Yield Averages

	AV. CORP.	CORPORATE BY RATINGS				CORPORATE BY GROUPS			PUBLIC UTILITY BONDS				INDUSTRIAL BONDS				RAILROAD BONDS						
		Aaa	Aa	A	Baa	P.U.	IND.	R.R.	Aaa	Aa	A	Baa	Aaa	Aa	A	Baa	Aaa	Aa	A	Baa			
2017																							
Jan.	4.22	3.92	3.98	4.16	4.66	4.24	4.20	----	Jan.	----	3.96	4.14	4.62	Jan.	3.92	4.00	4.17	4.70	Jan.	----	----	----	----
Feb.	4.23	3.95	4.01	4.18	4.64	4.25	4.21	----	Feb.	----	3.99	4.18	4.58	Feb.	3.95	4.02	4.19	4.70	Feb.	----	----	----	----
Mar.	4.28	4.01	4.06	4.23	4.68	4.30	4.27	----	Mar.	----	4.04	4.23	4.62	Mar.	4.01	4.07	4.23	4.74	Mar.	----	----	----	----
Apr.	4.16	3.87	3.93	4.12	4.57	4.19	4.13	----	Apr.	----	3.93	4.12	4.51	Apr.	3.87	3.92	4.11	4.62	Apr.	----	----	----	----
May	4.15	3.85	3.93	4.11	4.55	4.19	4.12	----	May	----	3.94	4.12	4.50	May	3.85	3.92	4.09	4.60	May	----	----	----	----
June	3.98	3.68	3.78	3.93	4.37	4.01	3.95	----	June	----	3.77	3.94	4.32	June	3.68	3.78	3.92	4.41	June	----	----	----	----
July	4.01	3.70	3.80	3.98	4.39	4.06	3.96	----	July	----	3.82	3.99	4.36	July	3.70	3.78	3.95	4.41	July	----	----	----	----
Aug.	3.92	3.63	3.72	3.88	4.31	3.92	3.92	----	Aug.	----	3.67	3.86	4.23	Aug.	3.63	3.76	3.90	4.38	Aug.	----	----	----	----
Sept.	3.92	3.63	3.73	3.88	4.30	3.93	3.91	----	Sept.	----	3.70	3.87	4.24	Sept.	3.63	3.75	3.89	4.37	Sept.	----	----	----	----
Oct.	3.94	3.60	3.75	3.91	4.32	3.97	3.90	----	Oct.	----	3.74	3.91	4.26	Oct.	3.60	3.74	3.90	4.37	Oct.	----	----	----	----
Nov.	3.88	3.57	3.67	3.84	4.27	3.88	3.87	----	Nov.	----	3.65	3.83	4.16	Nov.	3.57	3.68	3.85	4.37	Nov.	----	----	----	----
Dec.	3.83	3.51	3.61	3.79	4.22	3.85	3.80	----	Dec.	----	3.62	3.79	4.14	Dec.	3.51	3.60	3.79	4.31	Dec.	----	----	----	----
2018																							
Jan.	3.88	3.55	3.68	3.85	4.26	3.91	3.85	----	Jan.	----	3.69	3.86	4.18	Jan.	3.55	3.66	3.84	4.33	Jan.	----	----	----	----
Feb.	4.13	3.82	3.95	4.09	4.51	4.15	4.12	----	Feb.	----	3.94	4.09	4.42	Feb.	3.82	3.95	4.09	4.60	Feb.	----	----	----	----
Mar.	4.20	3.87	3.99	4.14	4.64	4.21	4.19	----	Mar.	----	3.97	4.13	4.52	Mar.	3.87	4.00	4.14	4.75	Mar.	----	----	----	----
Apr.	4.22	3.85	4.01	4.17	4.67	4.24	4.20	----	Apr.	----	3.99	4.17	4.58	Apr.	3.85	4.03	4.17	4.76	Apr.	----	----	----	----
May	4.36	4.00	4.12	4.30	4.83	4.36	4.34	----	May	----	4.10	4.28	4.71	May	4.00	4.13	4.31	4.94	May	----	----	----	----
June	4.35	3.96	4.11	4.29	4.83	4.37	4.35	----	June	----	4.11	4.27	4.71	June	3.96	4.11	4.29	4.95	June	----	----	----	----
July	4.31	3.87	4.07	4.26	4.79	4.35	4.26	----	July	----	4.10	4.27	4.67	July	3.87	4.03	4.23	4.91	July	----	----	----	----
Aug.	4.29	3.88	4.05	4.23	4.77	4.33	4.25	----	Aug.	----	4.08	4.26	4.64	Aug.	3.88	4.01	4.20	4.89	Aug.	----	----	----	----
Sept.	4.38	3.98	4.14	4.31	4.88	4.41	4.35	----	Sept.	----	4.18	4.32	4.74	Sept.	3.98	4.09	4.30	5.02	Sept.	----	----	----	----
Oct.	4.54	4.14	4.28	4.46	5.07	4.56	4.52	----	Oct.	----	4.31	4.45	4.91	Oct.	4.14	4.24	4.45	5.22	Oct.	----	----	----	----
Nov.	4.64	4.22	4.37	4.53	5.22	4.65	4.62	----	Nov.	----	4.40	4.52	5.03	Nov.	4.22	4.34	4.53	5.42	Nov.	----	----	----	----
Dec.	4.49	4.02	4.20	4.37	5.13	4.51	4.47	----	Dec.	----	4.24	4.37	4.92	Dec.	4.02	4.16	4.36	5.34	Dec.	----	----	----	----
2019																							
Jan.	4.45	3.93	4.13	4.34	5.12	4.48	4.41	----	Jan.	----	4.18	4.35	4.91	Jan.	3.93	4.07	4.32	5.32	Jan.	----	----	----	----
Feb.	4.31	3.79	3.99	4.23	4.95	4.35	4.27	----	Feb.	----	4.05	4.25	4.76	Feb.	3.79	3.93	4.21	5.13	Feb.	----	----	----	----
Mar.	4.24	3.77	3.92	4.17	4.84	4.26	4.21	----	Mar.	----	3.98	4.16	4.65	Mar.	3.77	3.87	4.17	5.02	Mar.	----	----	----	----
Apr.	4.15	3.69	3.85	4.08	4.70	4.18	4.11	----	Apr.	----	3.91	4.08	4.55	Apr.	3.69	3.79	4.08	4.85	Apr.	----	----	----	----
May	4.08	3.67	3.80	4.01	4.63	4.10	4.06	----	May	----	3.84	3.98	4.47	May	3.67	3.76	4.03	4.78	May	----	----	----	----
June	3.89	3.42	3.59	3.83	4.46	3.93	3.85	----	June	----	3.65	3.82	4.31	June	3.42	3.53	3.84	4.60	June	----	----	----	----
July	3.75	3.29	3.46	3.70	4.28	3.79	3.70	----	July	----	3.53	3.69	4.13	July	3.29	3.38	3.70	4.42	July	----	----	----	----
Aug.	3.36	2.98	3.08	3.32	3.87	3.36	3.36	----	Aug.	----	3.17	3.29	3.63	Aug.	2.98	2.99	3.34	4.11	Aug.	----	----	----	----
Sept.	3.42	3.03	3.14	3.37	3.91	3.44	3.38	----	Sept.	----	3.24	3.37	3.71	Sept.	3.03	3.02	3.35	4.11	Sept.	----	----	----	----
Oct.	3.41	3.01	3.13	3.37	3.93	3.45	3.37	----	Oct.	----	3.24	3.39	3.72	Oct.	3.01	3.01	3.35	4.12	Oct.	----	----	----	----
Nov.	3.44	3.06	3.16	3.40	3.94	3.48	3.40	----	Nov.	----	3.25	3.43	3.76	Nov.	3.06	3.06	3.37	4.12	Nov.	----	----	----	----
Dec.	3.40	3.01	3.11	3.36	3.88	3.45	3.34	----	Dec.	----	3.22	3.40	3.73	Dec.	3.01	3.00	3.32	4.03	Dec.	----	----	----	----
2020																							
Jan.	3.30	2.94	3.02	3.27	3.77	3.34	3.26	----	Jan.	----	3.12	3.29	3.60	Jan.	2.94	2.92	3.24	3.94	Jan.	----	----	----	----
Feb.	3.13	2.78	2.85	3.09	3.61	3.16	3.10	----	Feb.	----	2.96	3.11	3.42	Feb.	2.78	2.75	3.06	3.80	Feb.	----	----	----	----
Mar.	3.53	3.02	3.08	3.43	4.29	3.59	3.46	----	Mar.	----	3.30	3.50	3.96	Mar.	3.02	2.86	3.35	4.61	Mar.	----	----	----	----
Apr.	3.22	2.43	2.75	3.12	4.13	3.31	3.12	----	Apr.	----	2.93	3.19	3.82	Apr.	2.43	2.56	3.05	4.43	Apr.	----	----	----	----
May	3.16	2.49	2.72	3.12	3.95	3.22	3.10	----	May	----	2.89	3.14	3.63	May	2.49	2.55	3.09	4.27	May	----	----	----	----
June	3.02	2.44	2.64	3.02	3.64	3.10	2.93	----	June	----	2.80	3.07	3.44	June	2.44	2.48	2.97	3.84	June	----	----	----	----
July	2.70	2.14	2.32	2.69	3.31	2.77	2.62	----	July	----	2.46	2.74	3.09	July	2.14	2.16	2.63	3.53	July	----	----	----	----
Aug.	2.71	2.25	2.37	2.68	3.27	2.76	2.65	----	Aug.	----	2.49	2.73	3.06	Aug.	2.25	2.25	2.63	3.49	Aug.	----	----	----	----
Sept.	2.80	2.31	2.47	2.79	3.36	2.88	2.73	----	Sept.	----	2.62	2.84	3.17	Sept.	2.31	2.31	2.73	3.55	Sept.	----	----	----	----
Oct.	2.89	2.35	2.55	2.88	3.44	2.98	2.79	----	Oct.	----	2.72	2.95	3.27	Oct.	2.35	2.37	2.81	3.60	Oct.	----	----	----	----
Nov.	2.79	2.30	2.47	2.79	3.30	2.89	2.68	----	Nov.	----	2.63	2.85	3.17	Nov.	2.30	2.30	2.72	3.41	Nov.	----	----	----	----
Dec.	2.72	2.26	2.44	2.72	3.16	2.80	2.63	----	Dec.	----	2.57	2.77	3.05	Dec.	2.26	2.31	2.66	3.27	Dec.	----	----	----	----
2021																							
Jan.	2.85	2.45	2.61	2.84	3.24	2.94	2.75	----	Jan.	----	2.73	2.91	3.18	Jan.	2.45	2.49	2.77	3.30	Jan.	----	----	----	----
Feb.	3.05	2.70	2.83	3.03	3.42	3.13	2.97	----	Feb.	----	2.93	3.09	3.37	Feb.	2.70	2.73	2.97	3.46	Feb.	----	----	----	----
Mar.	3.38	3.04	3.17	3.37	3.74	3.48	3.29	----	Mar.	----	3.27	3.44	3.72	Mar.	3.04	3.06	3.29	3.76	Mar.	----	----	----	----
Apr.	3.25	2.90	3.03	3.24	3.60	3.33	3.16	----	Apr.	----	3.13	3.30	3.57	Apr.	2.90	2.92	3.17	3.64	Apr.	----	----	----	----
May	3.28	2.96	3.07	3.27	3.62	3.36	3.19	----	May	----	3.17	3.33	3.58	May	2.96	2.95	3.21	3.65	May	----	----	----	----
June	3.11	2.79	2.91	3.10	3.45	3.19	3.02	----	June	----	3.01	3.16	3.41	June	2.79								

American States Water Company (AWR)

NYSE - Nasdaq Real Time Price. Currency in USD

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Quote Lookup

86.96 +1.40 (+1.64%)

As of 02:51PM EDT. Market open.

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- Holders
- Sustainability

Currency in USD

Earnings Estimate	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
No. of Analysts	2	2	2	3
Avg. Estimate	0.84	0.56	3.2	2.98
Low Estimate	0.82	0.53	3.19	2.88
High Estimate	0.86	0.59	3.21	3.03
Year Ago EPS	0.69	0.5	2.11	3.2

Revenue Estimate	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
No. of Analysts	1	1	2	2
Avg. Estimate	152M	132M	571.5M	559M
Low Estimate	152M	132M	540M	551M
High Estimate	152M	132M	603M	567M
Year Ago Sales	143M	125.37M	491.53M	571.5M
Sales Growth (year/est)	6.30%	5.30%	16.30%	-2.20%

Earnings History	9/29/2022	12/30/2022	3/30/2023	6/29/2023
EPS Est.	0.71	0.82	0.52	0.78
EPS Actual	0.69	0.5	0.93	1.04
Difference	-0.02	-0.32	0.41	0.26
Surprise %	-2.80%	-39.00%	78.80%	33.30%

EPS Trend	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
Current Estimate	0.84	0.56	3.2	2.98
7 Days Ago	0.84	0.56	3.2	2.98
30 Days Ago	0.91	0.52	3.06	2.98
60 Days Ago	0.85	0.55	2.83	2.95
90 Days Ago	0.85	0.55	2.83	2.95

EPS Revisions	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
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People Also Watch

Symbol	Last Price	Change	% Change
CWT California Water Service Group	51.86	+0.97	+1.91%
SJW SJW Group	66.78	+1.26	+1.92%
MSEX Middlesex Water Company	79.30	+1.82	+2.35%
NWN Northwest Natural Holding Company	39.98	+0.38	+0.96%
YORW The York Water Company	41.61	+0.28	+0.69%

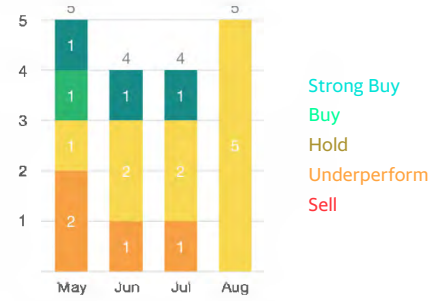
Similar to AWR

Symbol	Last Price	Change	% Change
CWT California Water Service Group	51.86	+0.97	+1.91%
AWK American Water Works Company, Inc.	140.67	+2.42	+1.75%
SJW SJW Group	66.78	+1.26	+1.92%
MSEX Middlesex Water Company	79.30	+1.82	+2.35%
YORW The York Water Company	41.61	+0.28	+0.69%

Recommendation Trends >

Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	N/A	N/A	1	1
Down Last 7 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	N/A	N/A	N/A	N/A

Growth Estimates	AWR	Industry	Sector(s)	S&P 500
Current Qtr.	21.70%	N/A	N/A	N/A
Next Qtr.	12.00%	N/A	N/A	N/A
Current Year	51.70%	N/A	N/A	N/A
Next Year	-6.90%	N/A	N/A	N/A
Next 5 Years (per annum)	4.40%	N/A	N/A	N/A
Past 5 Years (per annum)	12.04%	N/A	N/A	N/A



Recommendation Rating >



Analyst Price Targets (3) >

Average 93.67

Low 88.00 High 104.00
Current 86.96

Upgrades & Downgrades >

Upgrade	UBS: Sell to Neutral	6/28/2023
Downgrade	Wells Fargo: Equal-Weight to Underweight	6/28/2023
Upgrade	Wells Fargo: Underweight to Equal-Weight	5/12/2023
Downgrade	Seaport Global: Buy to Neutral	1/5/2023
Initiated	UBS: to Sell	11/30/2022
Maintains	Wells Fargo: to Underweight	11/9/2022

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Atmos Energy Corporation (ATO)

NYSE - Nasdaq Real Time Price. Currency in USD

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Quote Lookup

117.79 +1.39 (+1.19%)

As of 02:56PM EDT. Market open.

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Currency in USD

Earnings Estimate	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
No. of Analysts	6	2	9	9
Avg. Estimate	0.7	2.12	6.05	6.46
Low Estimate	0.64	2.09	6	6.4
High Estimate	0.8	2.16	6.09	6.52
Year Ago EPS	0.51	1.91	5.6	6.05

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Revenue Estimate	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
No. of Analysts	3	1	6	6
Avg. Estimate	978.05M	1.65B	4.76B	5.23B
Low Estimate	841M	1.65B	4.45B	4.75B
High Estimate	1.15B	1.65B	4.97B	5.59B
Year Ago Sales	722.63M	N/A	4.2B	4.76B
Sales Growth (year/est)	35.30%	N/A	13.30%	9.80%

People Also Watch

Symbol	Last Price	Change	% Change
AOS A. O. Smith Corporation	69.96	+1.16	+1.69%
ESS Essex Property Trust, Inc.	237.83	+0.26	+0.11%
LNT Alliant Energy Corporation	50.89	+0.61	+1.21%
CINF Cincinnati Financial Corporation	104.46	+0.44	+0.42%
AMCR Amcor plc	9.44	+0.04	+0.37%

Earnings History	9/29/2022	12/30/2022	3/30/2023	6/29/2023
EPS Est.	0.43	1.93	2.46	0.99
EPS Actual	0.51	1.91	2.48	0.94
Difference	0.08	-0.02	0.02	-0.05
Surprise %	18.60%	-1.00%	0.80%	-5.10%

Similar to ATO

Symbol	Last Price	Change	% Change
OGS ONE Gas, Inc.	75.11	+1.00	+1.35%
NWN Northwest Natural Holding Company	39.96	+0.36	+0.91%
NI NiSource Inc.	26.59	+0.26	+1.01%
UGI UGI Corporation	22.78	+0.11	+0.51%
UGIC UGI Corporation	57.31	-0.12	-0.20%

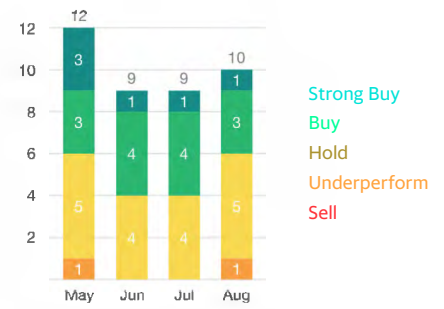
EPS Trend	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
Current Estimate	0.7	2.12	6.05	6.46
7 Days Ago	0.7	2.13	6.05	6.46
30 Days Ago	0.68	2.1	6.05	6.47
60 Days Ago	0.68	2	6.04	6.43
90 Days Ago	0.64	2	6.03	6.42

EPS Revisions	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
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Recommendation Trends >

Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	2	1	N/A	N/A
Down Last 7 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	N/A	1	N/A	1

Growth Estimates	ATO	Industry	Sector(s)	S&P 500
Current Qtr.	37.30%	N/A	N/A	N/A
Next Qtr.	11.00%	N/A	N/A	N/A
Current Year	8.00%	N/A	N/A	N/A
Next Year	6.80%	N/A	N/A	N/A
Next 5 Years (per annum)	7.50%	N/A	N/A	N/A
Past 5 Years (per annum)	7.79%	N/A	N/A	N/A



Recommendation Rating >



Analyst Price Targets (5) >



Upgrades & Downgrades >

- Maintains** Morgan Stanley: Overweight to Overweight 8/23/2023
- Initiated** Barclays: to Equal-Weight 8/23/2023
- Maintains** B of A Securities: Buy to Buy 8/16/2023
- Maintains** Morgan Stanley: Overweight to Overweight 7/21/2023
- Maintains** Morgan Stanley: Overweight to Overweight 6/23/2023
- Maintains** Morgan Stanley: Overweight to Overweight 5/22/2023

[More Upgrades & Downgrades](#)

California Water Service Group (CWT)

NYSE - Nasdaq Real Time Price. Currency in USD

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Visitors trend 2W ↓ 10W ↑ 9M ↑

Quote Lookup

51.86 +0.97 (+1.91%)

As of 02:58PM EDT. Market open.

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Currency in USD

Earnings Estimate	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
No. of Analysts	3	3	4	4
Avg. Estimate	0.66	1.08	1.64	2.15
Low Estimate	0.46	0.21	0.67	2
High Estimate	0.85	1.63	2.03	2.25
Year Ago EPS	1.03	0.35	1.77	1.64

Revenue Estimate	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
No. of Analysts	2	2	3	3
Avg. Estimate	241.65M	244.4M	835.4M	904.47M
Low Estimate	226M	204.8M	787.2M	880M
High Estimate	257.3M	284M	884M	925M
Year Ago Sales	266.31M	200.94M	846.43M	835.4M
Sales Growth (year/est)	-9.30%	21.60%	-1.30%	8.30%

Earnings History	9/29/2022	12/30/2022	3/30/2023	6/29/2023
EPS Est.	1.1	0.31	0	0.55
EPS Actual	1.03	0.35	-0.4	0.17
Difference	-0.07	0.04	-0.4	-0.38
Surprise %	-6.40%	12.90%	N/A	-69.10%

EPS Trend	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
Current Estimate	0.66	1.08	1.64	2.15
7 Days Ago	0.66	1.08	1.64	2.15
30 Days Ago	1	0.46	1.91	2.12
60 Days Ago	1.02	0.62	1.8	2.11
90 Days Ago	1.04	0.63	1.8	2.13

EPS Revisions	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
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People Also Watch

Symbol	Last Price	Change	% Change
AWR American States Water Company	86.96	+1.40	+1.64%
SJW SJW Group	66.78	+1.26	+1.92%
MSEX Middlesex Water Company	79.30	+1.82	+2.35%
YORW The York Water Company	41.61	+0.28	+0.69%
ARTNA Artesian Resources Corporation	46.09	+0.52	+1.14%

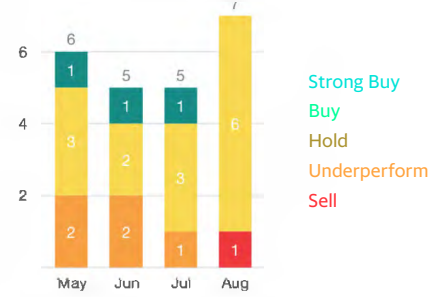
Similar to CWT

Symbol	Last Price	Change	% Change
SJW SJW Group	66.78	+1.26	+1.92%
MSEX Middlesex Water Company	79.30	+1.82	+2.35%
AWR American States Water Company	86.96	+1.40	+1.64%
ARTNA Artesian Resources Corporation	46.09	+0.52	+1.14%
YORW The York Water Company	41.61	+0.28	+0.69%

Recommendation Trends

Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	N/A	1	1	1
Down Last 7 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	N/A	N/A	N/A	N/A

Growth Estimates	CWT	Industry	Sector(s)	S&P 500
Current Qtr.	-35.90%	N/A	N/A	N/A
Next Qtr.	208.60%	N/A	N/A	N/A
Current Year	-7.30%	N/A	N/A	N/A
Next Year	31.10%	N/A	N/A	N/A
Next 5 Years (per annum)	10.80%	N/A	N/A	N/A
Past 5 Years (per annum)	-12.32%	N/A	N/A	N/A



Recommendation Rating >



Analyst Price Targets (4) >


Average 56.25

Low 48.00 High 66.00
Current 51.86

Upgrades & Downgrades >

Upgrade	Janney Montgomery Scott: Neutral to Buy	7/28/2023
Upgrade	Wells Fargo: Underweight to Equal-Weight	6/28/2023
Downgrade	UBS: Neutral to Sell	6/14/2023
Initiated	UBS: to Neutral	11/30/2022
Maintains	Wells Fargo: to Underweight	10/31/2022
Upgrade	Seaport Global: Sell to Neutral	1/25/2022

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Essential Utilities, Inc. (WTRG)

NYSE - Nasdaq Real Time Price. Currency in USD

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Quote Lookup

37.53 +0.86 (+2.33%)

As of 03:00PM EDT. Market open.

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Currency in USD

Earnings Estimate	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
No. of Analysts	5	5	8	7
Avg. Estimate	0.29	0.52	1.86	1.99
Low Estimate	0.26	0.49	1.85	1.95
High Estimate	0.34	0.55	1.88	2.03
Year Ago EPS	0.26	0.44	1.77	1.86

Revenue Estimate	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
No. of Analysts	3	3	3	4
Avg. Estimate	455.23M	729.93M	2.36B	2.49B
Low Estimate	450.8M	699M	2.35B	2.43B
High Estimate	462M	754.4M	2.37B	2.57B
Year Ago Sales	434.62M	705.38M	2.29B	2.36B
Sales Growth (year/est)	4.70%	3.50%	3.10%	5.70%

Earnings History	9/29/2022	12/30/2022	3/30/2023	6/29/2023
EPS Est.	0.22	0.45	0.71	0.34
EPS Actual	0.26	0.44	0.72	0.34
Difference	0.04	-0.01	0.01	0
Surprise %	18.20%	-2.20%	1.40%	0.00%

EPS Trend	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
Current Estimate	0.29	0.52	1.86	1.99
7 Days Ago	0.29	0.52	1.86	1.99
30 Days Ago	0.28	0.51	1.86	2.02
60 Days Ago	0.28	0.51	1.86	2.02
90 Days Ago	0.28	0.51	1.86	2.02

EPS Revisions	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
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People Also Watch

Symbol	Last Price	Change	% Change
YORW The York Water Company	41.61	+0.28	+0.69%
CWT California Water Service Group	51.87	+0.98	+1.93%
MSEX Middlesex Water Company	79.30	+1.82	+2.35%
AWR American States Water Company	87.02	+1.46	+1.71%
SJW SJW Group	66.73	+1.21	+1.85%

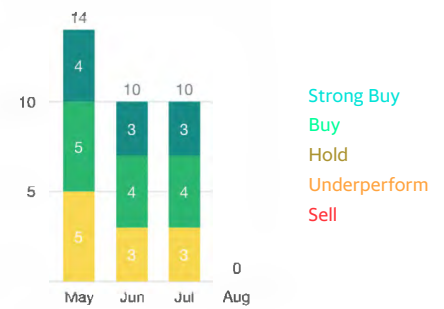
Similar to WTRG

Symbol	Last Price	Change	% Change
AWK American Water Works Company, Inc.	140.67	+2.42	+1.75%
CWCO Consolidated Water Co. Ltd.	26.63	+1.19	+4.68%
CWT California Water Service Group	51.87	+0.98	+1.93%
AWR American States Water Company	87.02	+1.46	+1.71%
MSEX Middlesex Water Company	79.30	+1.82	+2.35%

Recommendation Trends ▶

Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	1	3	1	N/A
Down Last 7 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	N/A	N/A	N/A	N/A

Growth Estimates	WTRG	Industry	Sector(s)	S&P 500
Current Qtr.	11.50%	N/A	N/A	N/A
Next Qtr.	18.20%	N/A	N/A	N/A
Current Year	5.10%	N/A	N/A	N/A
Next Year	7.00%	N/A	N/A	N/A
Next 5 Years (per annum)	5.40%	N/A	N/A	N/A
Past 5 Years (per annum)	4.15%	N/A	N/A	N/A



Recommendation Rating >



Analyst Price Targets (7) >


Average 52.14

Low 44.00 High 71.00
Current 37.53

Upgrades & Downgrades >

Downgrade	Northcoast Research: Buy to Neutral	5/18/2023
Maintains	Wells Fargo: to Overweight	5/10/2023
Reiterates	RBC Capital: to Outperform	3/16/2023
Maintains	Wells Fargo: to Overweight	2/28/2023
Upgrade	UBS: Neutral to Buy	2/6/2023
Maintains	UBS: to Neutral	11/29/2022

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Eversource Energy (ES)

NYSE - Nasdaq Real Time Price. Currency in USD

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Quote Lookup

65.49 +1.51 (+2.37%)

As of 02:59PM EDT. Market open.

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Currency in USD

Earnings Estimate	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
No. of Analysts	9	10	13	14
Avg. Estimate	1.02	0.84	4.37	4.64
Low Estimate	0.86	-0.25	4.34	4.56
High Estimate	1.09	1.08	4.43	4.72
Year Ago EPS	1.01	0.92	4.09	4.37

Revenue Estimate	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
No. of Analysts	3	3	7	7
Avg. Estimate	3.01B	2.68B	13B	13.4B
Low Estimate	2.67B	2.05B	12.57B	12.61B
High Estimate	3.2B	3.02B	13.8B	14.2B
Year Ago Sales	2.65B	3.03B	12.29B	13B
Sales Growth (year/est)	13.60%	-11.40%	5.80%	3.10%

Earnings History	9/29/2022	12/30/2022	3/30/2023	6/29/2023
EPS Est.	1.03	0.94	1.34	0.91
EPS Actual	1.01	0.92	1.41	1
Difference	-0.02	-0.02	0.07	0.09
Surprise %	-1.90%	-2.10%	5.20%	9.90%

EPS Trend	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
Current Estimate	1.02	0.84	4.37	4.64
7 Days Ago	1.01	0.96	4.37	4.65
30 Days Ago	1.05	1	4.36	4.65
60 Days Ago	1.09	1.02	4.37	4.66
90 Days Ago	1.09	1.03	4.37	4.66

EPS Revisions	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
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People Also Watch

Symbol	Last Price	Change	% Change
EVRG Eversource Energy, Inc.	57.01	+0.78	+1.39%
WEC WEC Energy Group, Inc.	85.37	+0.78	+0.92%
CMS CMS Energy Corporation	57.29	+0.55	+0.98%
LNT Alliant Energy Corporation	50.92	+0.64	+1.26%
PNW Pinnacle West Capital Corporation	79.36	+0.57	+0.72%

Similar to ES

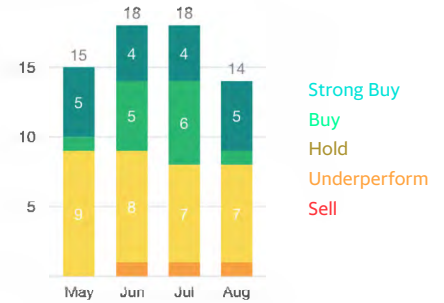
Symbol	Last Price	Change	% Change
WEC WEC Energy Group, Inc.	85.37	+0.78	+0.92%
EVRG	57.01	+0.78	+1.39%

Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	1	2	3	2
Down Last 7 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	N/A	N/A	N/A	N/A

Growth Estimates	ES	Industry	Sector(s)	S&P 500
Current Qtr.	1.00%	N/A	N/A	N/A
Next Qtr.	-8.70%	N/A	N/A	N/A
Current Year	6.80%	N/A	N/A	N/A
Next Year	6.20%	N/A	N/A	N/A
Next 5 Years (per annum)	6.70%	N/A	N/A	N/A
Past 5 Years (per annum)	5.92%	N/A	N/A	N/A

Eergy, Inc.	AEP	79.62	+0.79	+1.01%
American Electric Power Company, Inc.	ETR	95.07	+0.27	+0.28%
Entergy Corporation	XEL	57.63	+0.62	+1.09%
Xcel Energy Inc.				

Recommendation Trends >



Recommendation Rating >



Analyst Price Targets (14) >


Average 80.79

Low 67.00 High 100.00
Current 65.45

Upgrades & Downgrades >

Maintains	Morgan Stanley: Equal-Weight to Equal-Weight	8/23/2023
Initiated	Barclays: to Equal-Weight	8/23/2023
Maintains	BMO Capital: Market Perform to Market Perform	8/2/2023
Maintains	Mizuho: Neutral to Neutral	7/28/2023
Reiterates	Morgan Stanley: Equal-Weight to Equal-Weight	7/21/2023
Maintains	BMO Capital: Market Perform to Market Perform	6/28/2023

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Middlesex Water Company (MSEX)

NasdaqGS - NasdaqGS Real Time Price. Currency in USD

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Quote Lookup

79.30 +1.82 (+2.35%)

As of 02:52PM EDT. Market open.

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Currency in USD

Earnings Estimate	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
No. of Analysts	2	2	2	2
Avg. Estimate	0.85	0.51	2.25	2.66
Low Estimate	0.83	0.46	2.23	2.5
High Estimate	0.88	0.57	2.28	2.82
Year Ago EPS	0.8	0.4	2.39	2.25

Revenue Estimate	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
No. of Analysts	2	2	2	2
Avg. Estimate	51.05M	43.8M	175.8M	192.5M
Low Estimate	50M	41M	172M	182M
High Estimate	52.1M	46.6M	179.6M	203M
Year Ago Sales	47.73M	38.82M	162.43M	175.8M
Sales Growth (year/est)	7.00%	12.80%	8.20%	9.50%

Earnings History	9/29/2022	12/30/2022	3/30/2023	6/29/2023
EPS Est.	0.88	0.53	0.47	0.6
EPS Actual	0.8	0.4	0.33	0.55
Difference	-0.08	-0.13	-0.14	-0.05
Surprise %	-9.10%	-24.50%	-29.80%	-8.30%

EPS Trend	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
Current Estimate	0.85	0.51	2.25	2.66
7 Days Ago	0.85	0.51	2.25	2.66
30 Days Ago	0.89	0.51	2.33	2.66
60 Days Ago	0.89	0.51	2.33	2.66
90 Days Ago	0.89	0.51	2.33	2.66

EPS Revisions	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
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People Also Watch

Symbol	Last Price	Change	% Change
SJW SJW Group	66.78	+1.26	+1.92%
ARTNA Artesian Resources Corporation	46.09	+0.52	+1.14%
YORW The York Water Company	41.61	+0.28	+0.69%
CWT California Water Service Group	51.86	+0.97	+1.91%
AWR American States Water Company	87.02	+1.46	+1.71%

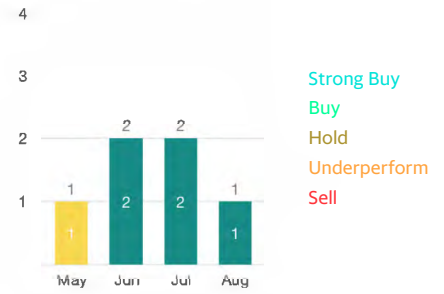
Similar to MSEX

Symbol	Last Price	Change	% Change
SJW SJW Group	66.78	+1.26	+1.92%
CWT California Water Service Group	51.86	+0.97	+1.91%
ARTNA Artesian Resources Corporation	46.09	+0.52	+1.14%
YORW The York Water Company	41.61	+0.28	+0.69%
AWR American States Water Company	87.02	+1.46	+1.71%

Recommendation Trends

Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	N/A	N/A	1	N/A
Down Last 7 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	N/A	N/A	N/A	N/A

Growth Estimates	MSEX	Industry	Sector(s)	S&P 500
Current Qtr.	6.20%	N/A	N/A	N/A
Next Qtr.	27.50%	N/A	N/A	N/A
Current Year	-5.90%	N/A	N/A	N/A
Next Year	18.20%	N/A	N/A	N/A
Next 5 Years (per annum)	2.70%	N/A	N/A	N/A
Past 5 Years (per annum)	-0.86%	N/A	N/A	N/A



Recommendation Rating >



Analyst Price Targets (2) >

Average 89.00



Upgrades & Downgrades >

Maintains	Baird: to Outperform	5/2/2023
Maintains	Baird: to Outperform	3/1/2023
Upgrade	Janney Montgomery Scott: Neutral to Buy	6/24/2022
Downgrade	Janney Montgomery Scott: Buy to Neutral	4/14/2021
Upgrade	Janney Capital: Neutral to Buy	3/2/2021
Initiated	Baird: to Outperform	12/4/2019

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NiSource Inc. (NI)

NYSE - Nasdaq Real Time Price. Currency in USD

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Quote Lookup

26.60 +0.27 (+1.03%)

As of 02:57PM EDT. Market open.

- Summary
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- Options
- Holders
- Sustainability

Currency in USD

Earnings Estimate	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
No. of Analysts	4	4	6	6
Avg. Estimate	0.14	0.56	1.58	1.68
Low Estimate	0.1	0.51	1.57	1.65
High Estimate	0.18	0.61	1.59	1.7
Year Ago EPS	0.1	0.5	1.47	1.58

Revenue Estimate	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
No. of Analysts	2	2	2	2
Avg. Estimate	1.02B	1.68B	6.04B	6.41B
Low Estimate	996.41M	1.6B	5.96B	6.34B
High Estimate	1.03B	1.75B	6.12B	6.47B
Year Ago Sales	1.03B	1.7B	5.85B	6.04B
Sales Growth (year/est)	-1.00%	-1.70%	3.20%	6.10%

Earnings History	9/29/2022	12/30/2022	3/30/2023	6/29/2023
EPS Est.	0.11	0.48	0.75	0.11
EPS Actual	0.1	0.5	0.77	0.11
Difference	-0.01	0.02	0.02	0
Surprise %	-9.10%	4.20%	2.70%	0.00%

EPS Trend	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
Current Estimate	0.14	0.56	1.58	1.68
7 Days Ago	0.12	0.57	1.58	1.68
30 Days Ago	0.13	0.55	1.57	1.68
60 Days Ago	0.13	0.53	1.57	1.68
90 Days Ago	0.15	0.49	1.57	1.69

EPS Revisions	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
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People Also Watch

Symbol	Last Price	Change	% Change
PNW Pinnacle West Capital Corporation	79.35	+0.56	+0.71%
CMS CMS Energy Corporation	57.27	+0.53	+0.93%
CNP CenterPoint Energy, Inc.	28.29	+0.44	+1.58%
PEG Public Service Enterprise Group Incorpora...	61.13	+0.41	+0.68%
LNT Alliant Energy Corporation	50.90	+0.62	+1.22%

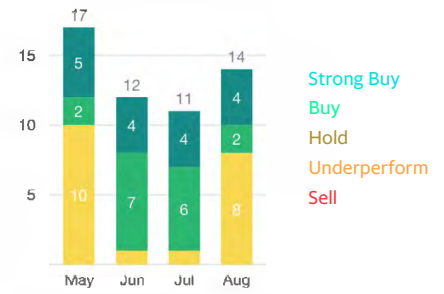
Similar to NI

Symbol	Last Price	Change	% Change
ATO Atmos Energy Corporation	117.80	+1.40	+1.20%
OGS ONE Gas, Inc.	75.11	+1.00	+1.35%
NWN Northwest Natural Holding Company	39.98	+0.38	+0.96%
NI-PB NiSource Inc.	24.81	+0.03	+0.14%
NIMC NiSource Inc.	100.01	+0.37	+0.37%

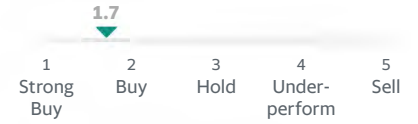
Recommendation Trends >

Up Last 7 Days	N/A	1	N/A	N/A
Up Last 30 Days	1	2	4	4
Down Last 7 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	1	1	N/A	N/A

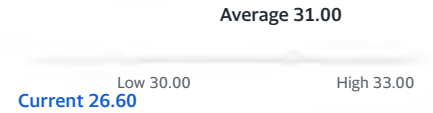
Growth Estimates	NI	Industry	Sector(s)	S&P 500
Current Qtr.	40.00%	N/A	N/A	N/A
Next Qtr.	12.00%	N/A	N/A	N/A
Current Year	7.50%	N/A	N/A	N/A
Next Year	6.30%	N/A	N/A	N/A
Next 5 Years (per annum)	6.70%	N/A	N/A	N/A
Past 5 Years (per annum)	2.08%	N/A	N/A	N/A



Recommendation Rating >



Analyst Price Targets (9) >



Upgrades & Downgrades >

Maintains	Guggenheim: Buy to Buy	7/7/2023
Maintains	BMO Capital: Outperform to Outperform	6/21/2023
Upgrade	UBS: Neutral to Buy	6/6/2023
Maintains	BMO Capital: to Outperform	2/23/2023
Upgrade	Credit Suisse: Neutral to Outperform	11/9/2022
Maintains	Wells Fargo: to Overweight	11/8/2022

[More Upgrades & Downgrades](#)

Northwest Natural Holding Company (NWN)

NYSE - Nasdaq Real Time Price. Currency in USD

Follow

Visitors trend 2W ↓ 10W ↑ 9M ↑

Quote Lookup

39.98 +0.38 (+0.96%)

As of 02:57PM EDT. Market open.

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Currency in USD

Earnings Estimate	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
No. of Analysts	4	4	6	6
Avg. Estimate	-0.67	1.29	2.67	2.78
Low Estimate	-0.74	1.2	2.65	2.65
High Estimate	-0.58	1.35	2.72	2.85
Year Ago EPS	-0.56	1.36	2.54	2.67

Revenue Estimate	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
No. of Analysts	2	2	3	3
Avg. Estimate	134.78M	359.75M	1.16B	1.19B
Low Estimate	130.9M	337.7M	1.1B	1.13B
High Estimate	138.66M	381.8M	1.22B	1.26B
Year Ago Sales	116.84M	375.25M	1.04B	1.16B
Sales Growth (year/est)	15.40%	-4.10%	12.10%	2.30%

Earnings History	9/29/2022	12/30/2022	3/30/2023	6/29/2023
EPS Est.	-0.72	1.33	1.9	-0.02
EPS Actual	-0.56	1.36	2.01	0.03
Difference	0.16	0.03	0.11	0.05
Surprise %	22.20%	2.30%	5.80%	250.00%

EPS Trend	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
Current Estimate	-0.67	1.29	2.67	2.78
7 Days Ago	-0.67	1.32	2.66	2.78
30 Days Ago	-0.68	1.25	2.67	2.79
60 Days Ago	-0.68	1.25	2.67	2.79
90 Days Ago	-0.65	1.26	2.66	2.78

EPS Revisions	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
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People Also Watch

Symbol	Last Price	Change	% Change
AWR	86.96	+1.40	+1.64%
American States Water Company			
NJR	42.59	+0.44	+1.04%
New Jersey Resources Corporation			
BKH	55.68	+0.37	+0.67%
Black Hills Corporation			
SJW	66.78	+1.26	+1.92%
SJW Group			
LANC	165.38	+3.74	+2.31%
Lancaster Colony Corporation			

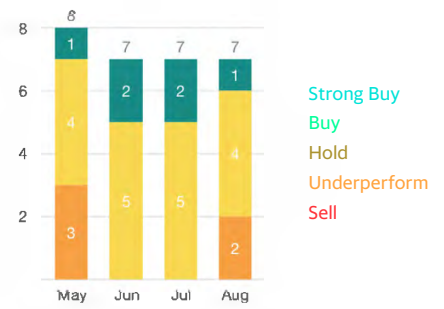
Similar to NWN

Symbol	Last Price	Change	% Change
NJR	42.59	+0.44	+1.04%
New Jersey Resources Corporation			
UGI	22.79	+0.12	+0.53%
UGI Corporation			
SWX	63.92	+0.06	+0.09%
Southwest Gas Holdings, Inc.			
SR	58.97	+0.40	+0.68%
Spire Inc.			
ATO	117.79	+1.39	+1.20%
Atmos Energy Corporation			

Recommendation Trends >

Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	1	1	1	1
Down Last 7 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	1	1	1	1

Growth Estimates	NWN	Industry	Sector(s)	S&P 500
Current Qtr.	-19.60%	N/A	N/A	N/A
Next Qtr.	-5.10%	N/A	N/A	N/A
Current Year	5.10%	N/A	N/A	N/A
Next Year	4.10%	N/A	N/A	N/A
Next 5 Years (per annum)	2.80%	N/A	N/A	N/A
Past 5 Years (per annum)	-16.65%	N/A	N/A	N/A



Recommendation Rating >



Analyst Price Targets (6) >


Average 51.33

Low 42.00 High 61.00
Current 39.98

Upgrades & Downgrades >

Maintains	Wells Fargo: Equal-Weight to Equal-Weight	8/4/2023
Maintains	Guggenheim: Neutral to Neutral	7/7/2023
Maintains	Stifel: Buy to Buy	5/17/2023
Downgrade	Maxim Group: Buy to Hold	5/5/2023
Maintains	Wells Fargo: to Equal-Weight	5/5/2023
Reiterates	RBC Capital: to Sector Perform	3/10/2023

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ONE Gas, Inc. (OGS)

NYSE - Nasdaq Real Time Price. Currency in USD

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Quote Lookup

75.11 +1.00 (+1.35%)

As of 02:56PM EDT. Market open.

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Currency in USD

Earnings Estimate	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
No. of Analysts	5	5	5	5
Avg. Estimate	0.44	1.3	4.14	4.31
Low Estimate	0.38	1.26	4.11	4.24
High Estimate	0.47	1.34	4.18	4.38
Year Ago EPS	0.44	1.23	4.08	4.14

Revenue Estimate	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
No. of Analysts	1	1	3	3
Avg. Estimate	391.77M	768.66M	2.66B	2.76B
Low Estimate	391.77M	768.66M	2.59B	2.7B
High Estimate	391.77M	768.66M	2.73B	2.83B
Year Ago Sales	280.05M	818.21M	2.58B	2.66B
Sales Growth (year/est)	39.90%	-6.10%	3.30%	3.80%

Earnings History	9/29/2022	12/30/2022	3/30/2023	6/29/2023
EPS Est.	0.42	1.21	1.86	0.58
EPS Actual	0.44	1.23	1.84	0.58
Difference	0.02	0.02	-0.02	0
Surprise %	4.80%	1.70%	-1.10%	0.00%

EPS Trend	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
Current Estimate	0.44	1.3	4.14	4.31
7 Days Ago	0.43	1.3	4.15	4.3
30 Days Ago	0.43	1.3	4.13	4.31
60 Days Ago	0.42	1.3	4.13	4.29
90 Days Ago	0.42	1.3	4.13	4.29

EPS Revisions	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
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People Also Watch

Symbol	Last Price	Change	% Change
NWE NorthWestern Corporation	51.24	+0.03	+0.06%
SR Spire Inc.	58.97	+0.40	+0.68%
NJR New Jersey Resources Corporation	42.59	+0.44	+1.04%
SWX Southwest Gas Holdings, Inc.	63.92	+0.06	+0.09%
OGE OGE Energy Corp.	34.38	+0.29	+0.87%

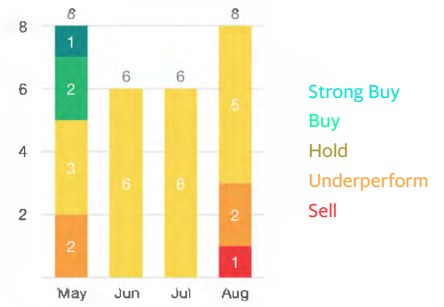
Similar to OGS

Symbol	Last Price	Change	% Change
NJR New Jersey Resources Corporation	42.59	+0.44	+1.04%
ATO Atmos Energy Corporation	117.79	+1.39	+1.19%
SR Spire Inc.	58.97	+0.40	+0.68%
SWX Southwest Gas Holdings, Inc.	63.92	+0.06	+0.09%
NI NiSource Inc.	26.60	+0.27	+1.03%

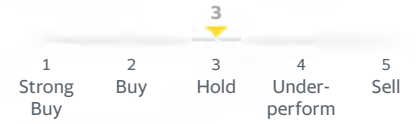
Recommendation Trends

Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	1	2	1	N/A
Down Last 7 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	1	N/A	N/A	1

Growth Estimates	OGS	Industry	Sector(s)	S&P 500
Current Qtr.	N/A	N/A	N/A	N/A
Next Qtr.	5.70%	N/A	N/A	N/A
Current Year	1.50%	N/A	N/A	N/A
Next Year	4.10%	N/A	N/A	N/A
Next 5 Years (per annum)	5.00%	N/A	N/A	N/A
Past 5 Years (per annum)	11.71%	N/A	N/A	N/A



Recommendation Rating >



Analyst Price Targets (6) >


Average 78.17

Low 70.00 **Current 75.11** High 83.00

Upgrades & Downgrades >

Maintains	Morgan Stanley: Equal-Weight to Equal-Weight	8/23/2023
Maintains	Stifel: Hold to Hold	8/15/2023
Reiterates	Morgan Stanley: Equal-Weight to Equal-Weight	7/21/2023
Maintains	Guggenheim: Neutral to Neutral	7/7/2023
Maintains	Morgan Stanley: Equal-Weight to Equal-Weight	6/23/2023
Maintains	Morgan Stanley: Equal-Weight to Equal-Weight	5/22/2023

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SJW Group (SJW)

NYSE - Nasdaq Real Time Price. Currency in USD

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Quote Lookup

66.73 +1.21 (+1.85%)

As of 03:00PM EDT. Market open.

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- Options
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Currency in USD

Earnings Estimate	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
No. of Analysts	2	2	4	5
Avg. Estimate	0.97	0.57	2.47	2.7
Low Estimate	0.94	0.51	2.45	2.61
High Estimate	1	0.64	2.49	2.8
Year Ago EPS	0.82	1.09	2.43	2.47

Revenue Estimate	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
No. of Analysts	1	1	2	2
Avg. Estimate	188M	163M	649.5M	676M
Low Estimate	188M	163M	648M	665M
High Estimate	188M	163M	651M	687M
Year Ago Sales	172M	171.37M	620.7M	649.5M
Sales Growth (year/est)	9.30%	-4.90%	4.60%	4.10%

Earnings History	9/29/2022	12/30/2022	3/30/2023	6/29/2023
EPS Est.	0.65	1.03	0.18	0.56
EPS Actual	0.82	1.09	0.37	0.58
Difference	0.17	0.06	0.19	0.02
Surprise %	26.20%	5.80%	105.60%	3.60%

EPS Trend	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
Current Estimate	0.97	0.57	2.47	2.7
7 Days Ago	0.97	0.57	2.47	2.7
30 Days Ago	0.93	0.6	2.47	2.69
60 Days Ago	0.92	0.65	2.47	2.68
90 Days Ago	0.95	0.57	2.46	2.68

EPS Revisions	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
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People Also Watch

Symbol	Last Price	Change	% Change
CWT California Water Service Group	51.87	+0.98	+1.93%
MSEX Middlesex Water Company	79.30	+1.82	+2.35%
AWR American States Water Company	87.02	+1.46	+1.71%
ARTNA Artesian Resources Corporation	46.09	+0.52	+1.14%
YORW The York Water Company	41.61	+0.28	+0.69%

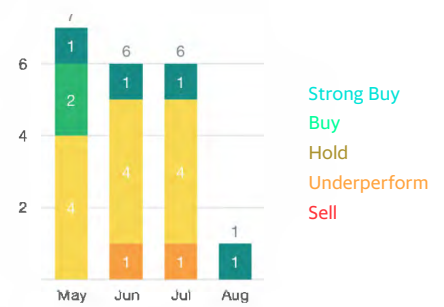
Similar to SJW

Symbol	Last Price	Change	% Change
MSEX Middlesex Water Company	79.30	+1.82	+2.35%
CWT California Water Service Group	51.87	+0.98	+1.93%
ARTNA Artesian Resources Corporation	46.09	+0.52	+1.14%
AWR American States Water Company	87.02	+1.46	+1.71%
YORW The York Water Company	41.61	+0.28	+0.69%

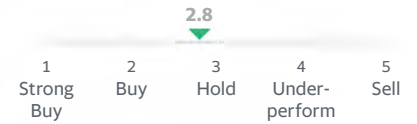
Recommendation Trends >

Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	N/A	N/A	1	1
Down Last 7 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	N/A	N/A	N/A	N/A

Growth Estimates	SJW	Industry	Sector(s)	S&P 500
Current Qtr.	18.30%	N/A	N/A	N/A
Next Qtr.	-47.70%	N/A	N/A	N/A
Current Year	1.60%	N/A	N/A	N/A
Next Year	9.30%	N/A	N/A	N/A
Next 5 Years (per annum)	6.10%	N/A	N/A	N/A
Past 5 Years (per annum)	5.85%	N/A	N/A	N/A



Recommendation Rating >



Analyst Price Targets (4) >


Average 82.00



Upgrades & Downgrades >

Downgrade	UBS: Buy to Neutral	6/6/2023
Downgrade	Wells Fargo: Equal-Weight to Underweight	5/12/2023
Downgrade	JP Morgan: Overweight to Neutral	2/7/2023
Downgrade	RBC Capital: Outperform to Sector Perform	1/17/2023
Downgrade	Seaport Global: Buy to Neutral	1/5/2023
Initiated	UBS: to Buy	11/30/2022

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Spire Inc. (SR)

NYSE - Nasdaq Real Time Price. Currency in USD

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Quote Lookup

58.97 +0.40 (+0.68%)

As of 02:57PM EDT. Market open.

Dividend SR announced a cash dividend of 0.72 with an ex-date of Sep. 8, 2023

- Summary
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Currency in USD

Earnings Estimate	Current Qtr.	Next Qtr.	Current Year	Next Year
No. of Analysts	0	0	0	0
Avg. Estimate	0	0	0	0
Low Estimate	0	0	0	0
High Estimate	0	0	0	0
Year Ago EPS	N/A	N/A	N/A	N/A

Revenue Estimate	Current Qtr.	Next Qtr.	Current Year	Next Year
No. of Analysts	0	0	0	0
Avg. Estimate	N/A	N/A	N/A	N/A
Low Estimate	N/A	N/A	N/A	N/A
High Estimate	N/A	N/A	N/A	N/A
Year Ago Sales	N/A	N/A	N/A	N/A
Sales Growth (year/est)	N/A	N/A	N/A	N/A

Earnings History	Invalid Date	Invalid Date	Invalid Date	Invalid Date
EPS Est.	N/A	N/A	N/A	N/A
EPS Actual	N/A	N/A	N/A	N/A
Difference	N/A	N/A	N/A	N/A

Surprise % N/A
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EPS Trend	Current Qtr.	Next Qtr.	Current Year	Next Year
Current Estimate	0	0	0	0
7 Days Ago	0	0	0	0
30 Days Ago	0	0	0	0
60 Days Ago	0	0	0	0
90 Days Ago	0	0	0	0

People Also Watch

Symbol	Last Price	Change	% Change
NWE NorthWestern Corporation	51.24	+0.03	+0.06%
SWX Southwest Gas Holdings, Inc.	63.92	+0.06	+0.09%
OGS ONE Gas, Inc.	75.11	+1.00	+1.35%
NJR New Jersey Resources Corporation	42.59	+0.44	+1.04%
ALE ALLETE, Inc.	56.21	+0.85	+1.54%

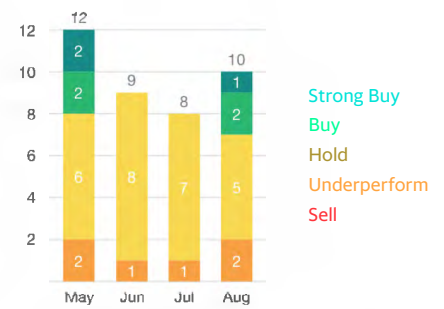
Similar to SR

Symbol	Last Price	Change	% Change
OGS ONE Gas, Inc.	75.11	+1.00	+1.35%
NJR New Jersey Resources Corporation	42.59	+0.44	+1.04%
UGI UGI Corporation	22.78	+0.11	+0.51%
NWN Northwest Natural Holding Company	39.98	+0.38	+0.96%
SWX Southwest Gas Holdings, Inc.	63.92	+0.06	+0.09%

Recommendation Trends

EPS Revisions	Current Qtr.	Next Qtr.	Current Year	Next Year
Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	N/A	N/A	N/A	N/A
Down Last 7 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	N/A	N/A	N/A	N/A

Growth Estimates	SR	Industry	Sector(s)	S&P 500
Current Qtr.	N/A	N/A	N/A	N/A
Next Qtr.	N/A	N/A	N/A	N/A
Current Year	N/A	N/A	N/A	N/A
Next Year	N/A	N/A	N/A	N/A
Next 5 Years (per annum)	N/A	N/A	N/A	N/A
Past 5 Years (per annum)	N/A	N/A	N/A	N/A



Upgrades & Downgrades >

Maintains	Morgan Stanley: Equal-Weight to Equal-Weight	8/23/2023
Maintains	Morgan Stanley: Equal-Weight to Equal-Weight	7/21/2023
Maintains	Guggenheim: Neutral to Neutral	7/7/2023
Maintains	Morgan Stanley: Equal-Weight to Equal-Weight	6/23/2023
Maintains	Morgan Stanley: Equal-Weight to Equal-Weight	5/22/2023
Maintains	Stifel: Hold to Hold	5/18/2023

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- Price, Consensus and EPS Surprise

Atmos Energy (ATO)
(Real Time Quote from BATS)

\$117.75 USD

+1.35 (1.16%)

Updated Aug 25, 2023 03:11 PM ET

Add to portfolio

Zacks Rank:
 2-Buy 1 2 3 4 5

Style Scores:
 Value | Growth | Momentum | VGM

Industry Rank:
 Bottom 37% (159 out of 251)

Industry: Utility - Gas Distribution

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Detailed Estimates

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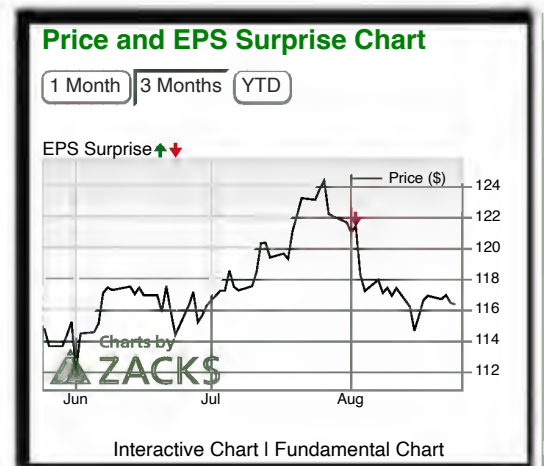
Estimates

Exp Earnings Date	11/8/23
Current Quarter	0.74
EPS Last Quarter	0.94
Last EPS Surprise	-3.09%
ABR	1.56

Earnings ESP	0.00%
Current Year	6.05
Next Year	6.46
EPS (TTM)	5.84
P/E (F1)	19.23

Growth Estimates	ATO	IND	S&P
Current Qtr (09/2023)	45.10	12.92	17.35
Next Qtr (12/2023)	6.28	-1.41	15.19

Research for ATO



- Fundamental Charts
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Current Year (09/2023)	8.04	-3.70	8.78
Next Year (09/2024)	6.78	6.10	16.69
Past 5 Years	8.80	6.80	9.00
Next 5 Years	7.30	6.00	NA
PE	19.23	12.70	20.43
PEG Ratio	2.65	2.12	NA

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Premium Research for ATO

Zacks Rank	Buy 2
Zacks Industry Rank	Bottom 37% (159 out of 251)
Zacks Sector Rank	Top 25% (4 out of 16)
Style Scores	<input type="checkbox"/> Value <input type="checkbox"/> Growth <input type="checkbox"/> Momentum <input type="checkbox"/> VGM
Earnings ESP	0.00%
Research Reports for ATO	Analyst Snapshot
 = Change in last 30 days	
View All Zacks Rank #1 Strong Buys	
More Premium Research » »	

Sales Estimates

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (9/2023)	Next Year (9/2024)
Zacks Consensus Estimate	933.73M	1.70B	4.97B	5.52B
# of Estimates	2	2	2	2
High Estimate	943.29M	1.72B	4.97B	5.59B
Low Estimate	924.17M	1.68B	4.97B	5.45B
Year ago Sales	722.63M	1.48B	4.20B	4.97B
Year over Year Growth Est.	29.21%	14.39%	18.24%	11.14%

Earnings Estimates

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (9/2023)	Next Year (9/2024)
Zacks Consensus Estimate	0.74	2.03	6.05	6.46
# of Estimates	2	2	5	5
Most Recent Consensus	NA	NA	6.06	6.46
High Estimate	0.80	2.09	6.06	6.52
Low Estimate	0.68	1.97	6.04	6.40
Year ago EPS	0.51	1.91	5.60	6.05
Year over Year Growth Est.	45.10%	6.28%	8.04%	6.71%

Agreement - Estimate Revisions

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (9/2023)	Next Year (9/2024)
Up Last 7 Days	0	0	0	0

Up Last 30 Days	0	0	1	0
Up Last 60 Days	1	1	3	2
Down Last 7 Days	0	1	0	1
Down Last 30 Days	0	1	0	1
Down Last 60 Days	0	0	0	0

Magnitude - Consensus Estimate Trend

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (9/2023)	Next Year (9/2024)
Current	0.74	2.03	6.05	6.46
7 Days Ago	0.74	2.04	6.05	6.46
30 Days Ago	0.74	2.04	6.04	6.45
60 Days Ago	0.72	1.99	6.03	6.43
90 Days Ago	0.64	1.99	6.03	6.42

Upside - Most Accurate Estimate Versus Zacks Consensus

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (9/2023)	Next Year (9/2024)
Most Accurate Estimate	0.74	2.09	6.04	6.49
Zacks Consensus Estimate	0.74	2.03	6.05	6.46
Earnings ESP	0.00%	2.96%	-0.23%	0.46%

Surprise - Reported Earnings History

	Quarter Ending (6/2023)	Quarter Ending (3/2023)	Quarter Ending (12/2022)	Quarter Ending (9/2022)	Average Surprise
Reported	0.94	2.48	1.91	0.51	NA
Estimate	0.97	2.47	1.93	0.45	NA
Difference	-0.03	0.01	-0.02	0.06	0.01
Surprise	-3.09%	0.40%	-1.04%	13.33%	2.40%

Annual Estimates By Analyst

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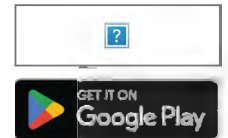
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American States Water (AWR)

(Real Time Quote from BATS)

\$86.83 USD

+1.27 (1.48%)

Updated Aug 25, 2023 03:16 PM ET

Add to portfolio

Zacks Rank: 1 2 3 4 5

Style Scores: Value | Growth | Momentum | VGM

Industry Rank: Top 10% (24 out of 251)

Industry: **Utility - Water Supply**

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Detailed Estimates

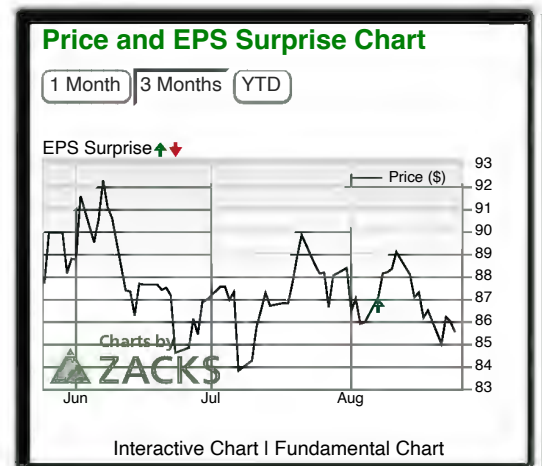
Estimates

Exp Earnings Date	11/6/23
Current Quarter	0.82
EPS Last Quarter	0.83
Last EPS Surprise	5.06%
ABR	3.00

Earnings ESP	0.00%
Current Year	2.96
Next Year	2.96
EPS (TTM)	2.56
P/E (F1)	28.91

Growth Estimates	AWR	IND	S&P
Current Qtr (09/2023)	18.84	1.82	17.35

Research for AWR



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Next Qtr (12/2023)	6.00	56.87	15.19
Current Year (12/2023)	29.82	9.60	8.78
Next Year (12/2024)	0.00	7.90	16.69
Past 5 Years	6.20	7.80	9.00
Next 5 Years	6.30	10.40	NA
PE	28.91	25.30	20.43
PEG Ratio	4.59	2.43	NA

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Premium Research for AWR

Zacks Rank ▲ Buy

Zacks Industry Rank Top 10% (24 out of 251)

Zacks Sector Rank Top 25% (4 out of 16)

Style Scores F Value | F Growth | D Momentum | F VGM

Earnings ESP 0.00%

Research Reports for AWR [Analyst](#) | [Snapshot](#)

▲ ▼ = Change in last 30 days

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Sales Estimates

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Zacks Consensus Estimate	152.00M	132.00M	574.50M	547.50M
# of Estimates	1	1	2	2
High Estimate	152.00M	132.00M	603.00M	551.00M
Low Estimate	152.00M	132.00M	546.00M	544.00M
Year ago Sales	134.98M	125.37M	491.53M	574.50M
Year over Year Growth Est.	12.61%	5.29%	16.88%	-4.70%

Earnings Estimates

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Zacks Consensus Estimate	0.82	0.53	2.96	2.96
# of Estimates	1	1	2	2
Most Recent Consensus	0.82	NA	3.21	3.03
High Estimate	0.82	0.53	3.21	3.03
Low Estimate	0.82	0.53	2.71	2.88
Year ago EPS	0.69	0.50	2.28	2.96
Year over Year Growth Est.	18.84%	6.00%	29.82%	-0.17%

Agreement - Estimate Revisions

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
--	-------------------------	-----------------------	---------------------------	------------------------

Up Last 7 Days	0	0	0	0
Up Last 30 Days	0	0	1	1
Up Last 60 Days	0	0	1	1
Down Last 7 Days	0	0	0	0
Down Last 30 Days	1	0	0	0
Down Last 60 Days	1	0	0	0

Magnitude - Consensus Estimate Trend

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Current	0.82	0.53	2.96	2.96
7 Days Ago	0.82	0.53	2.96	2.96
30 Days Ago	0.85	0.53	2.95	2.93
60 Days Ago	0.85	0.53	2.95	2.93
90 Days Ago	0.85	0.53	2.95	2.93

Upside - Most Accurate Estimate Versus Zacks Consensus

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Most Accurate Estimate	0.82	0.53	3.21	3.03
Zacks Consensus Estimate	0.82	0.53	2.96	2.96
Earnings ESP	0.00%	0.00%	8.45%	2.54%

Surprise - Reported Earnings History

	Quarter Ending (6/2023)	Quarter Ending (3/2023)	Quarter Ending (12/2022)	Quarter Ending (9/2022)	Average Surprise
Reported	0.83	0.54	0.50	0.69	NA
Estimate	0.79	0.54	0.84	0.70	NA
Difference	0.04	0.00	-0.34	-0.01	-0.08
Surprise	5.06%	0.00%	-40.48%	-1.43%	-9.21%

Quarterly Estimates By Analyst

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California Water Service Group (CWT)

(Real Time Quote from BATS)

\$51.81 USD

+0.92 (1.81%)

Updated Aug 25, 2023 03:16 PM ET

Zacks Rank: 3-Hold

Style Scores: Value | Growth | Momentum | VGM

Industry Rank: Top 10% (24 out of 251)

Industry: Utility - Water Supply

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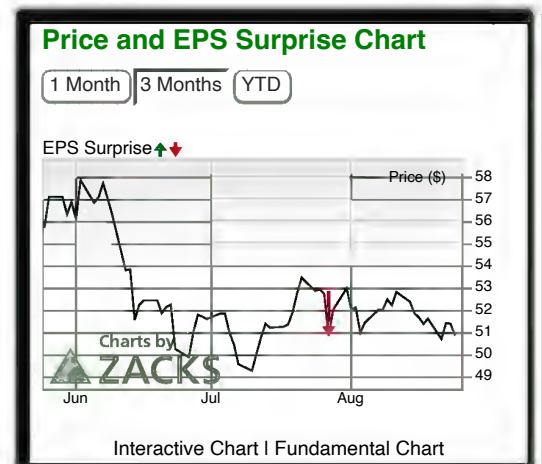
California Water Service Group (CWT) [Quote Overview](#) » [Estimates](#) » [California Water Service Group \(CWT\) Detailed Earnings Estimates](#)

Detailed Estimates

Estimates

Exp Earnings Date	10/26/23
Current Quarter	0.60
EPS Last Quarter	0.17
Last EPS Surprise	-81.32%
ABR	3.00

Research for CWT



Earnings ESP	0.00%
Current Year	1.90
Next Year	2.16
EPS (TTM)	1.15
P/E (F1)	26.78

Growth Estimates	CWT	IND	S&P
Current Qtr (09/2023)	-41.75	1.82	17.35

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Next Qtr (12/2023)	325.71	56.87	15.19
Current Year (12/2023)	7.34	9.60	8.78
Next Year (12/2024)	13.68	7.90	16.69
Past 5 Years	7.10	7.80	9.00
Next 5 Years	NA	10.40	NA
PE	26.78	25.30	20.43
PEG Ratio	NA	2.43	NA

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Premium Research for CWT

Zacks Rank	▼ Hold 3
Zacks Industry Rank	Top 10% (24 out of 251)
Zacks Sector Rank	Top 25% (4 out of 16)
Style Scores	<input type="checkbox"/> Value <input type="checkbox"/> Growth <input type="checkbox"/> Momentum <input type="checkbox"/> VGM
Earnings ESP	0.00%
Research Reports for CWT	Analyst Snapshot
▲▼ = Change in last 30 days	
View All Zacks Rank #1 Strong Buys	
More Premium Research » »	

Sales Estimates

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Zacks Consensus Estimate	235.23M	275.64M	835.94M	886.09M
# of Estimates	2	2	2	2
High Estimate	244.45M	284.00M	836.88M	892.17M
Low Estimate	226.00M	267.28M	835.00M	880.00M
Year ago Sales	266.31M	200.94M	846.43M	835.94M
Year over Year Growth Est.	-11.67%	37.18%	-1.24%	6.00%

Earnings Estimates

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Zacks Consensus Estimate	0.60	1.49	1.90	2.16
# of Estimates	2	2	3	3
Most Recent Consensus	0.74	1.34	1.99	2.25
High Estimate	0.74	1.63	1.99	2.25
Low Estimate	0.46	1.34	1.85	2.11
Year ago EPS	1.03	0.35	1.77	1.90
Year over Year Growth Est.	-41.75%	325.71%	7.34%	13.68%

Agreement - Estimate Revisions

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
--	-------------------------	-----------------------	---------------------------	------------------------

Up Last 7 Days	0	0	0	0
Up Last 30 Days	0	2	1	1
Up Last 60 Days	0	2	2	2
Down Last 7 Days	0	0	0	0
Down Last 30 Days	2	0	0	0
Down Last 60 Days	2	0	0	0

Magnitude - Consensus Estimate Trend

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Current	0.60	1.49	1.90	2.16
7 Days Ago	0.60	1.49	1.90	2.16
30 Days Ago	1.06	0.28	1.85	2.11
60 Days Ago	1.06	0.28	1.85	2.10
90 Days Ago	1.06	0.28	1.85	2.10

Upside - Most Accurate Estimate Versus Zacks Consensus

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Most Accurate Estimate	0.60	1.49	1.99	2.25
Zacks Consensus Estimate	0.60	1.49	1.90	2.16
Earnings ESP	0.00%	0.00%	4.74%	4.17%

Surprise - Reported Earnings History

	Quarter Ending (6/2023)	Quarter Ending (3/2023)	Quarter Ending (12/2022)	Quarter Ending (9/2022)	Average Surprise
Reported	0.17	-0.40	0.35	1.03	NA
Estimate	0.91	0.08	0.22	1.16	NA
Difference	-0.74	-0.48	0.13	-0.13	-0.31
Surprise	-81.32%	-600.00%	59.09%	-11.21%	-158.36%

Quarterly Estimates By Analyst

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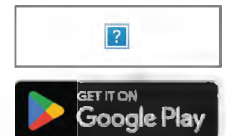
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Eversource Energy (ES)

(Real Time Quote from BATS)

\$65.44 USD

+1.47 (2.30%)

Updated Aug 25, 2023 03:14 PM ET

Zacks Rank:

3-Hold

Style Scores:

Value I Growth I Momentum I VGM

Industry Rank:

Top 43% (108 out of 251)

Industry: Utility - Electric Power

[Eversource Energy \(ES\) Quote Overview](#) » [Estimates](#) » [Eversource Energy \(ES\) Detailed Earnings Estimates](#)

Detailed Estimates

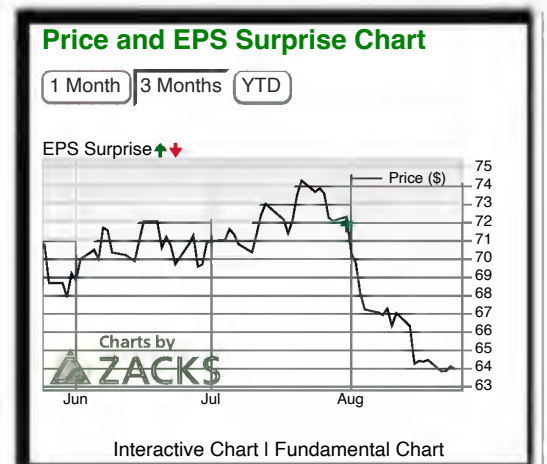
Estimates

Exp Earnings Date	11/1/23
Current Quarter	1.06
EPS Last Quarter	1.00
Last EPS Surprise	8.70%
ABR	2.36

Earnings ESP	2.20%
Current Year	4.36
Next Year	4.64
EPS (TTM)	4.34
P/E (F1)	14.66

Growth Estimates	ES	IND	S&P
Current Qtr (09/2023)	4.95	-1.70	17.35
Next Qtr (12/2023)	8.70	10.64	15.19

Research for ES



- Fundamental Charts
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Current Year (12/2023)	6.60	2.60	8.78
Next Year (12/2024)	6.42	6.90	16.69
Past 5 Years	5.60	3.50	9.00
Next 5 Years	5.70	6.40	NA
PE	14.66	26.90	20.43
PEG Ratio	2.58	4.20	NA

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Premium Research for ES

Zacks Rank	Hold 3
Zacks Industry Rank	Top 43% (108 out of 251)
Zacks Sector Rank	Top 25% (4 out of 16)
Style Scores	B Value D Growth B Momentum C VGM
Earnings ESP	2.20%
Research Reports for ES	Analyst Snapshot
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Sales Estimates

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Zacks Consensus Estimate	3.37B	3.20B	13.25B	13.75B
# of Estimates	3	3	3	3
High Estimate	3.62B	3.47B	13.93B	14.72B
Low Estimate	3.17B	2.99B	12.77B	13.09B
Year ago Sales	3.22B	3.03B	12.29B	13.25B
Year over Year Growth Est.	4.92%	5.63%	7.78%	3.80%

Earnings Estimates

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Zacks Consensus Estimate	1.06	1.00	4.36	4.64
# of Estimates	5	4	7	7
Most Recent Consensus	1.06	0.95	4.34	4.69
High Estimate	1.20	1.04	4.42	4.69
Low Estimate	0.99	0.95	4.33	4.56
Year ago EPS	1.01	0.92	4.09	4.36
Year over Year Growth Est.	4.95%	8.70%	6.60%	6.36%

Agreement - Estimate Revisions

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Up Last 7 Days	0	0	0	0

Up Last 30 Days	0	0	1	0
Up Last 60 Days	0	2	2	0
Down Last 7 Days	0	0	0	0
Down Last 30 Days	1	1	0	2
Down Last 60 Days	3	2	1	4

Magnitude - Consensus Estimate Trend

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Current	1.06	1.00	4.36	4.64
7 Days Ago	1.06	1.00	4.36	4.64
30 Days Ago	1.04	1.01	4.36	4.65
60 Days Ago	1.08	1.03	4.36	4.65
90 Days Ago	1.08	1.03	4.36	4.66

Upside - Most Accurate Estimate Versus Zacks Consensus

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Most Accurate Estimate	1.08	0.98	4.38	4.63
Zacks Consensus Estimate	1.06	1.00	4.36	4.64
Earnings ESP	2.20%	-2.00%	0.39%	-0.32%

Surprise - Reported Earnings History

	Quarter Ending (6/2023)	Quarter Ending (3/2023)	Quarter Ending (12/2022)	Quarter Ending (9/2022)	Average Surprise
Reported	1.00	1.41	0.92	1.01	NA
Estimate	0.92	1.36	0.94	1.03	NA
Difference	0.08	0.05	-0.02	-0.02	0.02
Surprise	8.70%	3.68%	-2.13%	-1.94%	2.08%

Quarterly Estimates By Analyst

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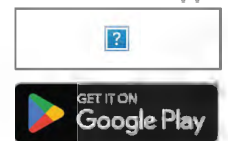
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Middlesex Water Company (MSEX)

(Real Time Quote from BATS)

\$79.45 USD

+1.97 (2.54%)

Updated Aug 25, 2023 03:16 PM ET

Add to portfolio

Zacks Rank:

2-Buy

Style Scores:

Value | Growth | Momentum | VGM

Industry Rank:


Top 10% (24 out of 251)

Industry: **Utility - Water Supply**

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Middlesex Water Company (MSEX) Quote Overview » Estimates » Middlesex Water Company (MSEX) Detailed Earnings Estimates

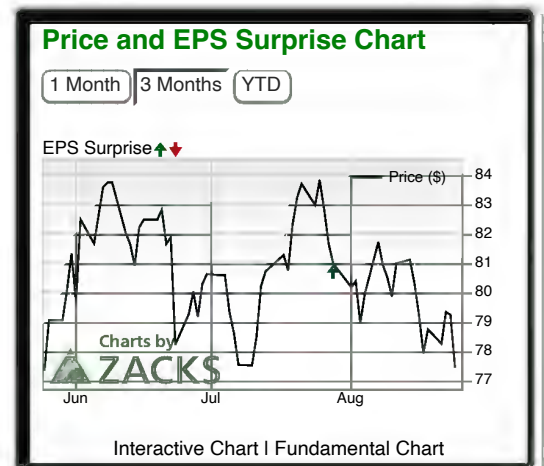
Detailed Estimates

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Estimates

Exp Earnings Date	10/27/23
Current Quarter	0.88
EPS Last Quarter	0.55
Last EPS Surprise	0.00%
ABR	1.00

Research for MSEX



Earnings ESP	0.00%
Current Year	2.23
Next Year	2.50
EPS (TTM)	2.08
P/E (F1)	34.74

Growth Estimates	MSEX	IND	S&P
Current Qtr (09/2023)	10.00	1.82	17.35

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Next Qtr (12/2023)	15.00	56.87	15.19
Current Year (12/2023)	-6.69	9.60	8.78
Next Year (12/2024)	12.11	7.90	16.69
Past 5 Years	8.70	7.80	9.00
Next 5 Years	NA	10.40	NA
PE	34.74	25.30	20.43
PEG Ratio	NA	2.43	NA

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Premium Research for MSEX

Zacks Rank ▲ Buy

Zacks Industry Rank Top 10% (24 out of 251)

Zacks Sector Rank Top 25% (4 out of 16)

Style Scores Value | Growth | Momentum | VGM

Earnings ESP 0.00%

Research Report for MSEX [Snapshot](#)

(▲ ▼ = Change in last 30 days)

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Sales Estimates

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Zacks Consensus Estimate	50.00M	41.00M	172.00M	182.00M
# of Estimates	1	1	1	1
High Estimate	50.00M	41.00M	172.00M	182.00M
Low Estimate	50.00M	41.00M	172.00M	182.00M
Year ago Sales	47.73M	38.82M	162.43M	172.00M
Year over Year Growth Est.	4.76%	5.62%	5.89%	5.81%

Earnings Estimates

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Zacks Consensus Estimate	0.88	0.46	2.23	2.50
# of Estimates	1	1	1	1
Most Recent Consensus	NA	NA	2.23	NA
High Estimate	0.88	0.46	2.23	2.50
Low Estimate	0.88	0.46	2.23	2.50
Year ago EPS	0.80	0.40	2.39	2.23
Year over Year Growth Est.	10.00%	15.00%	-6.69%	12.11%

Agreement - Estimate Revisions

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Up Last 7 Days	0	0	0	0

Up Last 30 Days	0	0	1	0
Up Last 60 Days	0	0	1	0
Down Last 7 Days	0	0	0	0
Down Last 30 Days	0	0	0	0
Down Last 60 Days	0	0	0	0

Magnitude - Consensus Estimate Trend

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Current	0.88	0.46	2.23	2.50
7 Days Ago	0.88	0.46	2.23	2.50
30 Days Ago	0.88	0.46	2.22	2.50
60 Days Ago	0.88	0.46	2.22	2.50
90 Days Ago	0.88	0.46	2.22	2.50

Upside - Most Accurate Estimate Versus Zacks Consensus

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Most Accurate Estimate	0.88	0.46	2.23	2.50
Zacks Consensus Estimate	0.88	0.46	2.23	2.50
Earnings ESP	0.00%	0.00%	0.00%	0.00%

Surprise - Reported Earnings History

	Quarter Ending (6/2023)	Quarter Ending (3/2023)	Quarter Ending (12/2022)	Quarter Ending (9/2022)	Average Surprise
Reported	0.55	0.33	0.40	0.80	NA
Estimate	0.55	0.41	0.49	0.88	NA
Difference	0.00	-0.08	-0.09	-0.08	-0.06
Surprise	0.00%	-19.51%	-18.37%	-9.09%	-11.74%

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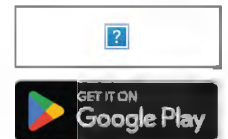
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NiSource (NI)

(Real Time Quote from BATS)

\$26.59 USD

+0.26 (0.99%)

Updated Aug 25, 2023 03:14 PM ET

Add to portfolio

Zacks Rank:

3-Hold

Style Scores:

Value | Growth | Momentum | VGM

Industry Rank:

Top 43% (108 out of 251)

Industry: Utility - Electric Power

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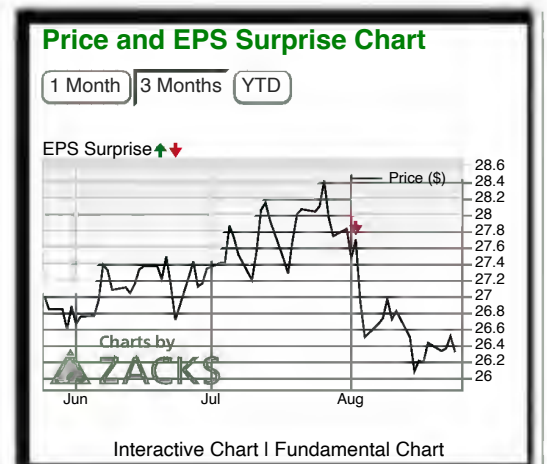
Estimates

Exp Earnings Date	11/6/23
Current Quarter	0.11
EPS Last Quarter	0.11
Last EPS Surprise	-15.38%
ABR	1.00

Earnings ESP	4.76%
Current Year	1.57
Next Year	1.69
EPS (TTM)	1.48
P/E (F1)	16.74

Growth Estimates	NI	IND	S&P
Current Qtr (09/2023)	10.00	-1.70	17.35
Next Qtr (12/2023)	16.00	10.64	15.19

Research for NI



- Fundamental Charts
- Comparative
- Interactive Charts
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Current Year (12/2023)	6.80	2.60	8.78
Next Year (12/2024)	7.64	6.90	16.69
Past 5 Years	4.20	3.50	9.00
Next 5 Years	7.00	6.40	NA
PE	16.74	26.90	20.43
PEG Ratio	2.39	4.20	NA

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Premium Research for NI

Zacks Rank ▼ Hold **3**

Zacks Industry Rank Top 43% (108 out of 251)

Zacks Sector Rank Top 25% (4 out of 16)

Style Scores [B] Value | [C] Growth | [F] Momentum | [C] VGM

Earnings ESP 4.76%

Research Reports for NI [Analyst](#) | [Snapshot](#)

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Sales Estimates

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Zacks Consensus Estimate	1.03B	1.60B	5.73B	5.99B
# of Estimates	2	2	2	2
High Estimate	1.03B	1.61B	5.77B	5.99B
Low Estimate	1.03B	1.60B	5.69B	5.98B
Year ago Sales	1.09B	1.70B	5.85B	5.73B
Year over Year Growth Est.	-5.23%	-5.97%	-2.00%	4.40%

Earnings Estimates

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Zacks Consensus Estimate	0.11	0.58	1.57	1.69
# of Estimates	2	2	4	4
Most Recent Consensus	0.11	0.58	1.57	1.70
High Estimate	0.11	0.58	1.58	1.72
Low Estimate	0.10	0.58	1.57	1.67
Year ago EPS	0.10	0.50	1.47	1.57
Year over Year Growth Est.	10.00%	16.00%	6.80%	7.64%

Agreement - Estimate Revisions

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Up Last 7 Days	0	0	0	0

Up Last 30 Days	0	1	0	0
Up Last 60 Days	1	1	0	1
Down Last 7 Days	1	0	1	1
Down Last 30 Days	1	0	1	1
Down Last 60 Days	1	0	2	1

Magnitude - Consensus Estimate Trend

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Current	0.11	0.58	1.57	1.69
7 Days Ago	0.11	0.58	1.58	1.70
30 Days Ago	0.11	0.58	1.59	1.71
60 Days Ago	0.11	0.57	1.60	1.71
90 Days Ago	0.08	0.57	1.57	1.68

Upside - Most Accurate Estimate Versus Zacks Consensus

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Most Accurate Estimate	0.11	0.58	1.57	1.70
Zacks Consensus Estimate	0.11	0.58	1.57	1.69
Earnings ESP	4.76%	0.00%	-0.16%	0.44%

Surprise - Reported Earnings History

	Quarter Ending (6/2023)	Quarter Ending (3/2023)	Quarter Ending (12/2022)	Quarter Ending (9/2022)	Average Surprise
Reported	0.11	0.77	0.50	0.10	NA
Estimate	0.13	0.77	0.49	0.11	NA
Difference	-0.02	0.00	0.01	-0.01	-0.01
Surprise	-15.38%	0.00%	2.04%	-9.09%	-5.61%

Quarterly Estimates By Analyst

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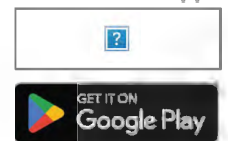
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Northwest Natural (NWN)

(Real Time Quote from BATS)

\$39.93 USD

+0.33 (0.83%)

Updated Aug 25, 2023 03:14 PM ET

Add to portfolio

Zacks Rank:

4-Sell

Style Scores:

Value | Growth | Momentum | VGM

Industry Rank:

Bottom 37% (159 out of 251)

Industry: Utility - Gas Distribution

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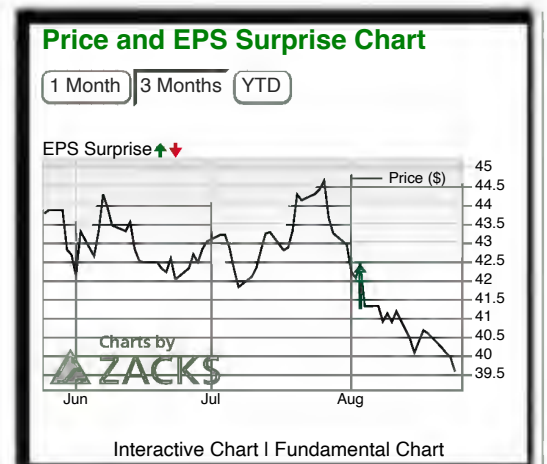
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Estimates

Exp Earnings Date	11/14/23
Current Quarter	-0.70
EPS Last Quarter	0.03
Last EPS Surprise	142.86%
ABR	2.67

Earnings ESP	0.00%
Current Year	2.69
Next Year	2.84
EPS (TTM)	2.84
P/E (F1)	14.72

Research for NWN



Growth Estimates	NWN	IND	S&P
Current Qtr (09/2023)	-25.00	12.92	17.35
Next Qtr (12/2023)	-1.47	-1.41	15.19

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Current Year (12/2023)	5.91	-3.70	8.78
Next Year (12/2024)	5.58	6.10	16.69
Past 5 Years	2.40	6.80	9.00
Next 5 Years	3.70	6.00	NA
PE	14.72	12.70	20.43
PEG Ratio	3.98	2.12	NA

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Zacks Rank ▼ Sell **4**

Zacks Industry Rank Bottom 37% (159 out of 251)

Zacks Sector Rank Top 25% (4 out of 16)

Style Scores B Value | B Growth | C Momentum | B VGM

Earnings ESP 0.00%

Research Report for NWN [Snapshot](#)

(▲▼) = Change in last 30 days

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Sales Estimates

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Zacks Consensus Estimate	138.66M	381.80M	1.22B	1.26B
# of Estimates	1	1	1	1
High Estimate	138.66M	381.80M	1.22B	1.26B
Low Estimate	138.66M	381.80M	1.22B	1.26B
Year ago Sales	116.84M	375.25M	1.04B	1.22B
Year over Year Growth Est.	18.68%	1.75%	17.68%	3.55%

Earnings Estimates

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Zacks Consensus Estimate	-0.70	1.34	2.69	2.84
# of Estimates	1	1	2	2
Most Recent Consensus	NA	NA	NA	NA
High Estimate	-0.70	1.34	2.70	2.85
Low Estimate	-0.70	1.34	2.68	2.83
Year ago EPS	-0.56	1.36	2.54	2.69
Year over Year Growth Est.	-25.00%	-1.47%	5.91%	5.58%

Agreement - Estimate Revisions

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Up Last 7 Days	0	0	0	0

Up Last 30 Days	0	0	0	0
Up Last 60 Days	0	0	0	0
Down Last 7 Days	1	1	1	1
Down Last 30 Days	1	1	1	1
Down Last 60 Days	1	1	1	1

Magnitude - Consensus Estimate Trend

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Current	-0.70	1.34	2.69	2.84
7 Days Ago	-0.67	1.43	2.70	2.86
30 Days Ago	-0.67	1.43	2.70	2.86
60 Days Ago	-0.67	1.43	2.70	2.86
90 Days Ago	-0.67	1.43	2.70	2.86

Upside - Most Accurate Estimate Versus Zacks Consensus

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Most Accurate Estimate	-0.70	1.34	2.68	2.85
Zacks Consensus Estimate	-0.70	1.34	2.69	2.84
Earnings ESP	0.00%	0.00%	-0.37%	0.35%

Surprise - Reported Earnings History

	Quarter Ending (6/2023)	Quarter Ending (3/2023)	Quarter Ending (12/2022)	Quarter Ending (9/2022)	Average Surprise
Reported	0.03	2.01	1.36	-0.56	NA
Estimate	-0.07	1.93	1.25	-0.75	NA
Difference	0.10	0.08	0.11	0.19	0.12
Surprise	142.86%	4.15%	8.80%	25.33%	45.29%

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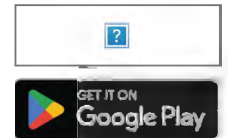
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ONE Gas (OGS)
(Real Time Quote from BATS)

\$75.12 USD
+1.01 (1.36%)
Updated Aug 25, 2023 03:14 PM ET

Add to portfolio

Zacks Rank: 3-Hold

Style Scores: Value | Growth | Momentum | VGM


Industry Rank: Bottom 37% (159 out of 251)

Industry: Utility - Gas Distribution

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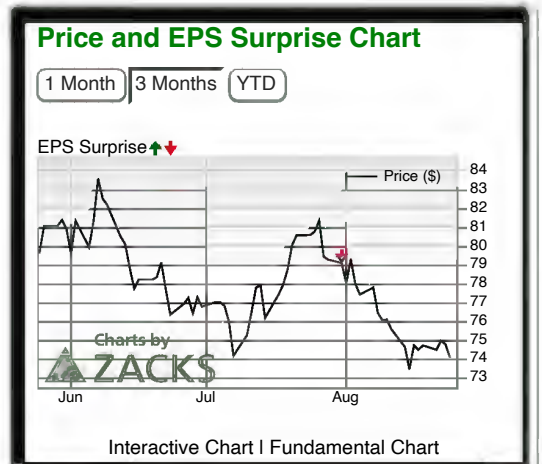
Estimates

Exp Earnings Date	10/30/23
Current Quarter	0.45
EPS Last Quarter	0.58
Last EPS Surprise	-1.69%
ABR	2.71

Earnings ESP	1.87%
Current Year	4.13
Next Year	4.29
EPS (TTM)	4.09
P/E (F1)	17.96

Growth Estimates	OGS	IND	S&P
Current Qtr (09/2023)	2.27	12.92	17.35
Next Qtr (12/2023)	3.25	-1.41	15.19

Research for OGS



- Fundamental Charts
- Comparative
- Interactive Charts
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- Price & EPS Surprise
- 12 Month EPS
- Broker Recommendations

Current Year (12/2023)	1.23	-3.70	8.78
Next Year (12/2024)	3.87	6.10	16.69
Past 5 Years	6.70	6.80	9.00
Next 5 Years	5.00	6.00	NA
PE	17.96	12.70	20.43
PEG Ratio	3.59	2.12	NA

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Premium Research for OGS

Zacks Rank	▼ Hold 3
Zacks Industry Rank	Bottom 37% (159 out of 251)
Zacks Sector Rank	Top 25% (4 out of 16)
Style Scores	B Value C Growth D Momentum C VGM
Earnings ESP	1.87%
Research Reports for OGS	Analyst Snapshot
<p>(▲▼) = Change in last 30 days</p> <p>View All Zacks Rank #1 Strong Buys</p>	
More Premium Research » »	

Sales Estimates

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Zacks Consensus Estimate	392.69M	803.08M	2.65B	2.73B
# of Estimates	3	3	3	3
High Estimate	394.82M	846.28M	2.73B	2.83B
Low Estimate	391.48M	768.66M	2.59B	2.66B
Year ago Sales	359.36M	818.21M	2.58B	2.65B
Year over Year Growth Est.	9.27%	-1.85%	2.62%	3.22%

Earnings Estimates

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Zacks Consensus Estimate	0.45	1.27	4.13	4.29
# of Estimates	3	3	5	5
Most Recent Consensus	0.44	NA	4.13	4.28
High Estimate	0.47	1.28	4.15	4.32
Low Estimate	0.43	1.26	4.11	4.28
Year ago EPS	0.44	1.23	4.08	4.13
Year over Year Growth Est.	2.27%	3.25%	1.23%	4.07%

Agreement - Estimate Revisions

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Up Last 7 Days	0	0	0	0

Up Last 30 Days	1	0	0	1
Up Last 60 Days	2	0	1	2
Down Last 7 Days	1	0	0	1
Down Last 30 Days	1	0	1	1
Down Last 60 Days	0	1	1	0

Magnitude - Consensus Estimate Trend

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Current	0.45	1.27	4.13	4.29
7 Days Ago	0.45	1.27	4.13	4.30
30 Days Ago	0.45	1.27	4.13	4.29
60 Days Ago	0.43	1.27	4.13	4.28
90 Days Ago	0.43	1.27	4.13	4.28

Upside - Most Accurate Estimate Versus Zacks Consensus

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Most Accurate Estimate	0.46	1.27	4.13	4.30
Zacks Consensus Estimate	0.45	1.27	4.13	4.29
Earnings ESP	1.87%	0.00%	0.10%	0.14%

Surprise - Reported Earnings History

	Quarter Ending (6/2023)	Quarter Ending (3/2023)	Quarter Ending (12/2022)	Quarter Ending (9/2022)	Average Surprise
Reported	0.58	1.84	1.23	0.44	NA
Estimate	0.59	1.85	1.20	0.41	NA
Difference	-0.01	-0.01	0.03	0.03	0.01
Surprise	-1.69%	-0.54%	2.50%	7.32%	1.90%

Quarterly Estimates By Analyst

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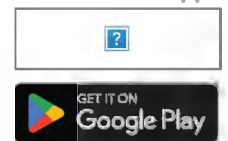
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SJW Group (SJW)

(Real Time Quote from BATS)

\$66.64 USD

+1.12 (1.71%)

Updated Aug 25, 2023 03:17 PM ET

Add to portfolio

Zacks Rank: 2-Buy 2 3 4 5

Style Scores: Value I Growth I Momentum I VGM

Industry Rank: Top 10% (24 out of 251)

Industry: Utility - Water Supply

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[SJW Group \(SJW\) Quote Overview](#) » [Estimates](#) » [SJW Group \(SJW\) Detailed Earnings Estimates](#)

Detailed Estimates

[Better trading starts here.](#)

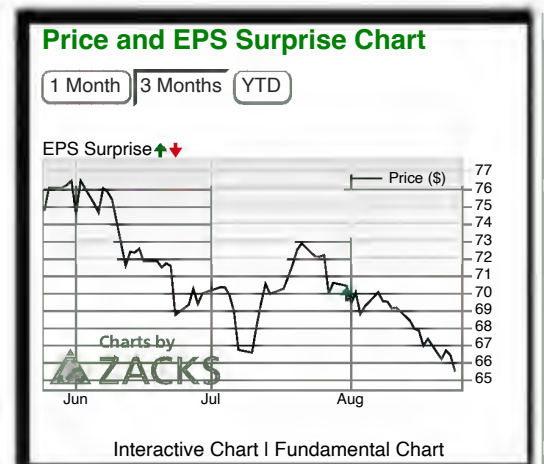
Estimates

Exp Earnings Date	10/26/23
Current Quarter	0.93
EPS Last Quarter	0.58
Last EPS Surprise	0.00%
ABR	3.00

Earnings ESP	0.00%
Current Year	2.47
Next Year	2.69
EPS (TTM)	2.87
P/E (F1)	26.49

Growth Estimates	SJW	IND	S&P
Current Qtr (09/2023)	12.05	1.82	17.35
Next Qtr (12/2023)	-44.04	56.87	15.19

Research for SJW



- Fundamental Charts
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- Broker Recommendations

Current Year (12/2023)	2.07	9.60	8.78
Next Year (12/2024)	8.91	7.90	16.69
Past 5 Years	0.20	7.80	9.00
Next 5 Years	NA	10.40	NA
PE	26.49	25.30	20.43
PEG Ratio	NA	2.43	NA

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Premium Research for SJW

Zacks Rank ▲ Buy **2**

Zacks Industry Rank Top 10% (24 out of 251)

Zacks Sector Rank Top 25% (4 out of 16)

Style Scores Value | Growth | Momentum | VGM

Earnings ESP 0.00%

Research Report for SJW [Snapshot](#)

(▲▼) = Change in last 30 days

[View All Zacks Rank #1 Strong Buys](#)

[More Premium Research » »](#)

Sales Estimates

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Zacks Consensus Estimate	187.47M	160.08M	645.47M	660.86M
# of Estimates	2	2	2	2
High Estimate	188.00M	163.00M	648.00M	665.00M
Low Estimate	186.93M	157.16M	642.93M	656.71M
Year ago Sales	175.98M	171.37M	620.70M	645.47M
Year over Year Growth Est.	6.53%	-6.59%	3.99%	2.38%

Earnings Estimates

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Zacks Consensus Estimate	0.93	0.61	2.47	2.69
# of Estimates	2	2	3	3
Most Recent Consensus	NA	NA	2.45	2.74
High Estimate	0.94	0.64	2.49	2.74
Low Estimate	0.91	0.57	2.45	2.61
Year ago EPS	0.83	1.09	2.42	2.47
Year over Year Growth Est.	12.05%	-44.04%	2.07%	8.91%

Agreement - Estimate Revisions

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Up Last 7 Days	0	0	0	0

Up Last 30 Days	0	0	1	1
Up Last 60 Days	0	0	0	1
Down Last 7 Days	0	0	0	0
Down Last 30 Days	0	0	0	0
Down Last 60 Days	0	0	0	0

Magnitude - Consensus Estimate Trend

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Current	0.93	0.61	2.47	2.69
7 Days Ago	0.93	0.61	2.47	2.69
30 Days Ago	0.93	0.61	2.47	2.68
60 Days Ago	0.93	0.61	2.47	2.69
90 Days Ago	0.93	0.61	2.46	2.68

Upside - Most Accurate Estimate Versus Zacks Consensus

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Most Accurate Estimate	0.93	0.61	2.45	2.74
Zacks Consensus Estimate	0.93	0.61	2.47	2.69
Earnings ESP	0.00%	0.00%	-0.94%	1.73%

Surprise - Reported Earnings History

	Quarter Ending (6/2023)	Quarter Ending (3/2023)	Quarter Ending (12/2022)	Quarter Ending (9/2022)	Average Surprise
Reported	0.58	0.37	1.09	0.83	NA
Estimate	0.58	0.24	1.03	0.67	NA
Difference	0.00	0.13	0.06	0.16	0.09
Surprise	0.00%	54.17%	5.83%	23.88%	20.97%

Quarterly Estimates By Analyst

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Annual Estimates By Analyst

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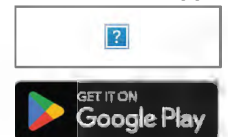
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Spire (SR)
 (Real Time Quote from BATS)

\$58.94 USD

+0.37 (0.63%)

Updated Aug 25, 2023 03:14 PM ET

Add to portfolio

Zacks Rank: 4-Sell

Style Scores: Value Growth Momentum VGM

Industry Rank: Bottom 37% (159 out of 251)

Industry: Utility - Gas Distribution

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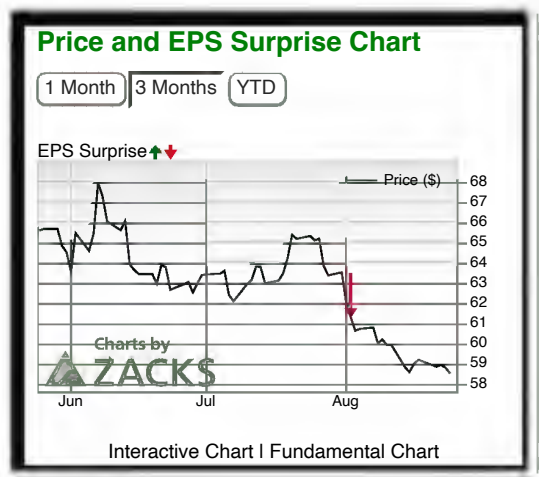
[Spire \(SR\) Quote Overview](#) » [Estimates](#) » [Spire \(SR\) Detailed Earnings Estimates](#)

Detailed Estimates

Estimates

Exp Earnings Date	11/15/23
Current Quarter	-0.77
EPS Last Quarter	-0.42
Last EPS Surprise	-2,000.00%
ABR	3.11

Research for SR



Earnings ESP	3.27%
Current Year	4.20
Next Year	4.30
EPS (TTM)	4.17
P/E (F1)	13.94

Growth Estimates	SR	IND	S&P
Current Qtr (09/2023)	-16.67	12.92	17.35
Next Qtr (12/2023)	-8.39	-1.41	15.19

- Fundamental Charts
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Current Year (09/2023)	8.81	-3.70	8.78
Next Year (09/2024)	2.38	6.10	16.69
Past 5 Years	1.60	6.80	9.00
Next 5 Years	4.20	6.00	NA
PE	13.94	12.70	20.43
PEG Ratio	3.31	2.12	NA

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Premium Research for SR

Zacks Rank ▼ Sell **4**

Zacks Industry Rank Bottom 37% (159 out of 251)

Zacks Sector Rank Top 25% (4 out of 16)

Style Scores B Value | D Growth | A Momentum | B VGM

Earnings ESP 3.27%

Research Reports for SR [Analyst](#) | [Snapshot](#)

(▲▼) = Change in last 30 days

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Sales Estimates

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (9/2023)	Next Year (9/2024)
Zacks Consensus Estimate	304.26M	729.03M	2.65B	2.55B
# of Estimates	4	4	4	4
High Estimate	390.60M	858.12M	2.74B	2.97B
Low Estimate	237.96M	548.54M	2.49B	1.96B
Year ago Sales	314.20M	814.00M	2.20B	2.65B
Year over Year Growth Est.	-3.16%	-10.44%	20.32%	-3.75%

Earnings Estimates

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (9/2023)	Next Year (9/2024)
Zacks Consensus Estimate	-0.77	1.42	4.20	4.30
# of Estimates	4	4	5	6
Most Recent Consensus	-0.68	NA	4.15	4.31
High Estimate	-0.68	1.51	4.31	4.35
Low Estimate	-0.85	1.35	4.14	4.14
Year ago EPS	-0.66	1.55	3.86	4.20
Year over Year Growth Est.	-16.67%	-8.39%	8.81%	2.46%

Agreement - Estimate Revisions

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (9/2023)	Next Year (9/2024)
Up Last 7 Days	2	0	0	1

Up Last 30 Days	3	0	0	0
Up Last 60 Days	3	0	0	0
Down Last 7 Days	0	0	2	2
Down Last 30 Days	0	0	4	4
Down Last 60 Days	1	0	4	4

Magnitude - Consensus Estimate Trend

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (9/2023)	Next Year (9/2024)
Current	-0.77	1.42	4.20	4.30
7 Days Ago	-0.85	1.39	4.23	4.32
30 Days Ago	-0.92	1.39	4.27	4.33
60 Days Ago	-0.88	1.39	4.27	4.33
90 Days Ago	-0.82	1.39	4.26	4.31

Upside - Most Accurate Estimate Versus Zacks Consensus

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (9/2023)	Next Year (9/2024)
Most Accurate Estimate	-0.74	1.51	4.17	4.33
Zacks Consensus Estimate	-0.77	1.42	4.20	4.30
Earnings ESP	3.27%	6.53%	-0.66%	0.68%

Surprise - Reported Earnings History

	Quarter Ending (6/2023)	Quarter Ending (3/2023)	Quarter Ending (12/2022)	Quarter Ending (9/2022)	Average Surprise
Reported	-0.42	3.70	1.55	-0.66	NA
Estimate	-0.02	3.49	1.15	-0.64	NA
Difference	-0.40	0.21	0.40	-0.02	0.05
Surprise	-2,000.00%	6.02%	34.78%	-3.13%	-490.58%

Quarterly Estimates By Analyst

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Annual Estimates By Analyst

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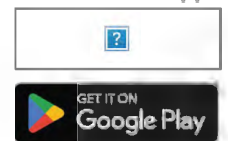
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Essential Utilities (WTRG)

(Real Time Quote from BATS)

\$37.46 USD

+0.79 (2.15%)

Updated Aug 25, 2023 03:17 PM ET

Add to portfolio

Zacks Rank:

3-Hold

Style Scores:

Value | Growth | Momentum | VGM

Industry Rank:

Top 10% (24 out of 251)

Industry: [Utility - Water Supply](#)

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[Essential Utilities \(WTRG\) Quote Overview](#) » [Estimates](#) » [Essential Utilities \(WTRG\) Detailed Earnings Estimates](#)

Detailed Estimates

Estimates

Exp Earnings Date 11/6/23

Current Quarter 0.29

EPS Last Quarter 0.34

Last EPS Surprise 0.00%

ABR 2.00

Earnings ESP 0.00%

Current Year 1.86

Next Year 2.00

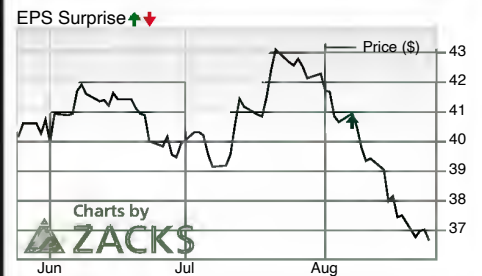
EPS (TTM) 1.76

P/E (F1) 19.69

Research for WTRG

Price and EPS Surprise Chart

1 Month | 3 Months | YTD



Interactive Chart | Fundamental Chart

Growth Estimates

	WTRG	IND	S&P
Current Qtr (09/2023)	11.54	1.82	17.35
Next Qtr (12/2023)	15.91	56.87	15.19

- Fundamental Charts
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Current Year (12/2023)	5.08	9.60	8.78
Next Year (12/2024)	7.53	7.90	16.69
Past 5 Years	5.30	7.80	9.00
Next 5 Years	5.60	10.40	NA
PE	19.69	25.30	20.43
PEG Ratio	3.52	2.43	NA

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Premium Research for WTRG

Zacks Rank ▼ Hold **3**

Zacks Industry Rank Top 10% (24 out of 251)

Zacks Sector Rank Top 25% (4 out of 16)

Style Scores Value | Growth | **Momentum** | VGM

Earnings ESP 0.00%

Research Reports for WTRG [Analyst](#) | [Snapshot](#)

▲ ▼ = Change in last 30 days

[View All Zacks Rank #1 Strong Buys](#)

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Sales Estimates

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Zacks Consensus Estimate	462.00M	698.94M	2.34B	2.44B
# of Estimates	2	2	2	2
High Estimate	462.00M	699.00M	2.36B	2.45B
Low Estimate	461.99M	698.88M	2.32B	2.43B
Year ago Sales	434.62M	705.38M	2.29B	2.34B
Year over Year Growth Est.	6.30%	-0.91%	2.27%	4.13%

Earnings Estimates

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Zacks Consensus Estimate	0.29	0.51	1.86	2.00
# of Estimates	2	2	5	5
Most Recent Consensus	0.29	NA	1.86	1.99
High Estimate	0.29	0.51	1.88	2.03
Low Estimate	0.29	0.50	1.85	1.98
Year ago EPS	0.26	0.44	1.77	1.86
Year over Year Growth Est.	11.54%	15.91%	5.08%	7.42%

Agreement - Estimate Revisions

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Up Last 7 Days	1	0	1	0
Up Last 30 Days	1	0	2	0

Up Last 60 Days	1	0	3	1
Down Last 7 Days	0	0	0	1
Down Last 30 Days	0	0	0	1
Down Last 60 Days	0	0	0	1

Magnitude - Consensus Estimate Trend

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Current	0.29	0.51	1.86	2.00
7 Days Ago	0.29	0.51	1.86	2.00
30 Days Ago	0.29	0.51	1.86	2.00
60 Days Ago	0.29	0.51	1.86	2.00
90 Days Ago	0.28	0.51	1.86	2.00

Upside - Most Accurate Estimate Versus Zacks Consensus

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Most Accurate Estimate	0.29	0.51	1.86	1.99
Zacks Consensus Estimate	0.29	0.51	1.86	2.00
Earnings ESP	0.00%	0.00%	-0.11%	-0.50%

Surprise - Reported Earnings History

	Quarter Ending (6/2023)	Quarter Ending (3/2023)	Quarter Ending (12/2022)	Quarter Ending (9/2022)	Average Surprise
Reported	0.34	0.72	0.44	0.26	NA
Estimate	0.34	0.74	0.45	0.23	NA
Difference	0.00	-0.02	-0.01	0.03	0.00
Surprise	0.00%	-2.70%	-2.22%	13.04%	2.03%

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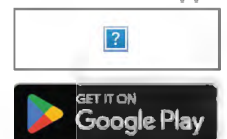
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Electronic Application of Kentucky-American Water Company for an Adjustment of Rates, a Certificate of Public Convenience and Necessity for Installation of Advanced Metering Infrastructure, Approval of Regulatory and Accounting Treatments, and Tariff Revisions
Case No. 2023-00191
The Attorney General's Response to
Kentucky-American Water Company's First Request for Information

WITNESS RESPONSIBLE:
RICHARD A. BAUDINO
COUNSEL AS TO OBJECTION

QUESTION NO. 2
Page 1 of 1

Please see Exhibit RAB-1 to Mr. Baudino's testimony which lists his expert testimony appearances. Please provide copies of or active links to each piece of testimony listed for calendar years 2020, 2021, 2022, and 2023 to date.

RESPONSE:

Objection. The question is overly broad and unduly burdensome, and seeks information which is in the public domain.

Kentucky American, through its counsel, has agreed to limit the request to testimony related to water cases for the aforementioned specified time period. Without waiving said objection, the pertinent active links are as follows:

1. Case No. 2022-00147: <https://psc.ky.gov/Case/ViewCaseFilings/2022-00147>
2. Case No. 21-0369-W-42T
<http://www.psc.state.wv.us/scripts/WebDocket/ViewDocument.cfm?CaseActivityID=572022&NotType=WebDocket>

Please also refer to copies of Mr. Baudino's testimonies attached below, which do not have available active links.

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

PENNSYLVANIA PUBLIC UTILITY COMMISSION :
V. : **Docket No. R-2020-3019369**
PENNSYLVANIA-AMERICAN WATER COMPANY :

**DIRECT TESTIMONY
AND EXHIBITS
OF
RICHARD A. BAUDINO**

ON BEHALF OF

AK STEEL

J. KENNEDY AND ASSOCIATES, INC.

SEPTEMBER 8, 2020

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

PENNSYLVANIA PUBLIC UTILITY COMMISSION :
V. : **Docket No. R-2020-3019369**
PENNSYLVANIA-AMERICAN WATER COMPANY :

DIRECT TESTIMONY OF RICHARD A. BAUDINO

1 **Q. Please state your name and business address.**

2 A. My name is Richard A. Baudino. My business address is J. Kennedy and Associates,
3 Inc. ("Kennedy and Associates"), 570 Colonial Park Drive, Suite 305, Roswell,
4 Georgia 30075.

5

6 **Q. What is your occupation and by whom are you employed?**

7 A. I am a consultant to Kennedy and Associates.

8

9 **Q. Please describe your education and professional experience.**

10 A. I received my Master of Arts degree with a major in Economics and a minor in
11 Statistics from New Mexico State University in 1982. I also received my Bachelor of
12 Arts Degree with majors in Economics and English from New Mexico State in 1979.
13 In October 1989, I joined the utility consulting firm of Kennedy and Associates as a
14 Senior Consultant where my duties and responsibilities covered substantially the same
15 areas as those during my tenure with the New Mexico Public Service Commission
16 Staff. I became Manager in July 1992 and was named Director of Consulting in
17 January 1995. Currently, I am a consultant with Kennedy and Associates. Exhibit
18 _____(RAB-1) summarizes my expert testimony experience.

1 **Q. On whose behalf are you testifying?**

2 A. I am testifying on behalf of AK Steel.

3

4 **Q. What is the purpose of your testimony?**

5 A. The purpose of my testimony is to address revenue allocation and rate design issues
6 for Pennsylvania-American Water Company ("PAWC" or "Company"). Specifically,
7 I will address PAWC witness Constance Heppenstall's recommended revenue
8 allocation and rate design for the Industrial class.

9

10 **Q. Please summarize Ms. Heppenstall's approach to the Company's proposed class**
11 **cost of service study ("CCOSS").**

12 A. Ms. Heppenstall described her approach to the Company's CCOSS beginning on page
13 6, line 24 of her Direct Testimony. Ms. Heppenstall utilized the base-extra capacity
14 method as described in the 2017 and prior editions of the Water Rates Manual
15 published by the American Water Work Association ("AWWA"). This approach to
16 cost allocation has been accepted by the Pennsylvania Public Utilities Commission
17 ("PPUC" or "Commission") in past PAWC cases. Ms. Heppenstall provided CCOSSs
18 for Water Operations Excluding Steelton and Water Steelton Operations. The results
19 of these two CCOSSs are included in her Exhibit Nos. 12-A and 12-B, respectively.

20

21 In this case, Ms. Heppenstall performed CCOSS for 2021 ("Rate Year 1") and 2022
22 ("Rate Year 2") for Water Operations Excluding Steelton and its Water Steelton
23 Operations.

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The extra capacity factors in the CCOSS were developed from the results of customer demand study that the Company submitted in its 2017 base rate case (R-2017-2595853). Ms. Heppenstall also described several adjustments to her CCOSSs beginning on page 13 of her Direct Testimony. These changes include:

- Exclusion of contract sales under Riders DIS (Demand Industrial Sales) and DRS (Demand Resale Sales) in developing the allocation factors for the Industrial class and sales for resale – Group A class.
- Exclusion of interruptible curtailment volumes from the extra capacity portion of allocation factors 2, 3, and 4.
- Reallocation of the unrecovered portion of public fire protection costs from the residential, commercial, industrial, and public classes. Ms. Heppenstall explained that this adjustment was performed in order to comply with Section 1328 of the Public Utility Code, which provides that public fire hydrant rates may only recover 25% of the cost of public fire protection service. The unrecovered balance is then recovered in the fixed charges of other customer classes.
- Inclusion of a portion of the wastewater revenue requirement and Water Steelton Operations to the water operations revenue requirement of its Water Operations Excluding Steelton.

In this proceeding AK Steel takes no position on the inclusion of wastewater revenue requirement or the Water Steelton Operations to the water operations revenue

1 requirement for its Water Operations Excluding Steelton.

2

3 **Q. What is your recommended class revenue allocation in this proceeding?**

4 A. I recommend that the Commission adopt Ms. Heppenstall's recommended revenue
5 allocation in this proceeding. Table 1 presents the Company's proposed revenue
6 increases for each of the largest customer classes in Column (1). Columns (2) and (3)
7 present each class' current return on rate base and its relative rate of return ("RROR")
8 before the proposed increases. The RROR indicates how close or how far each class
9 is from the system average rate of return. For example, a customer class that has a
10 RROR of 1.0 is earning a return equal to the system average return. A customer class
11 with a 0.95 RROR is earning a return that is 95% of the system average return, which
12 indicates that its return is less than the system average. A RROR greater than 1.0
13 indicates a class return that is greater than the system average. Columns (4) and (5)
14 present each class' return and RROR under proposed revenues.

TABLE 1
Class Rates of Return
At Current and Proposed Class Revenues

	(1) Proposed % Increase	(2) <u>Current Revenues</u> % Return	(3) <u>RROR</u>	(4) <u>Proposed Revenues</u> % Return	(5) <u>RROR</u>
Residential	13.3%	7.00	0.99	7.98	0.99
Commercial	13.0%	6.95	0.98	7.98	0.99
Industrial	9.4%	7.52	1.06	7.92	0.99
Public (Municipal)	4.5%	9.82	1.39	9.66	1.20
Private Fire	15.3%	6.36	0.90	8.05	1.00
Public Fire	7.0%	6.84	0.97	8.01	1.00
Total	12.7%	7.07	1.00	8.02	1.00

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12 **Q. Do you agree with the Company's proposed rate design for the Industrial class?**

13 A. No, not completely. In PAWC's 2017 rate case, Company witness Herbert proposed

14 a lower percentage increase to the tail block rate of the Industrial class. This was

1 appropriate given that Mr. Herbert excluded curtailable consumption from the
2 maximum hour allocations in the Company's CCOSS. Ms. Heppenstall also took this
3 approach in her 2021 CCOS. It is also appropriate to assign a lower percentage
4 increase to the tail block rate given the lower quality and reliability of service that
5 PAWC's curtailable customer has accepted as part of its water service. Finally,
6 PAWC's other customers benefit from the Company being able to curtail a high-
7 volume user during periods when system capacity may be constrained, thus increasing
8 system reliability and potentially avoiding higher costs of adding capacity.

9
10 **Q. What is your recommendation regarding rate design for the Industrial class in**
11 **this proceeding?**

12 A. I recommend increasing the Industrial tail block rate at 50% of the increase to the first
13 three rate blocks. This approach approximates the lower rate of increase applied to
14 the tail block rate by Mr. Herbert in Case No. R-2017-2595853. In that case, the tail
15 block rate was increased by 17.3%, compared to the increases for the second and third
16 blocks of 31.3% and 31.4%, respectively. The tail block increase was reduced by
17 about 45% in that case. My recommendation of a 50% reduction to the tail block
18 increase in this case is slightly higher than Mr. Herbert's recommendation, but is
19 reasonably close and accounts for the lower level of service associated with
20 interruptible volumes. Exhibit ___(RAB-2) provides supporting information from Mr.
21 Herbert's Schedule H, page 2 of 5, from Exhibit 12-A in Case No. R-2017-2595853
22 and the development of the rate block increases.

1 In this case, Ms. Heppenstall increased each of the four rate blocks by 8.04% - 8.06%.
2 A reduction of 50% to the third block increase of 8.04% results in a 4.02% increase
3 for the tail block. The lower percentage increase results in a reduction to the tail block
4 revenue increase of \$55,472 compared to Ms. Heppenstall's proposed increase. In
5 order to recover this very small revenue shortfall, I recommend that it be spread evenly
6 across the proposed increases to the customer charges. Total current Industrial
7 customer charge revenues are \$4,823,405. Adding \$55,472 to current customer charge
8 revenues represents an increase of only 1.15%. My proposed across the board increase
9 to customer charges will serve to mitigate the increases in the volumetric charges for
10 Industrial customers. This proposal would not impact the rates of customers outside
11 of the Industrial class and is revenue neutral to PAWC. Please refer to Exhibit
12 ___(RAB-2) for supporting calculations.

13
14 **Q. Mr. Baudino, do you support PAWC's requested total revenue increase in this**
15 **proceeding?**

16 A. No. AK Steel takes no position with respect to the Company's requested rate increase.
17 If the Commission reduces PAWC's rate increase request, then the percentage class
18 increases recommended by Ms. Heppenstall should be adjusted downward in
19 proportion to the Commission's reduction in total revenue requirement. For example,
20 if the Commission reduces PAWC's requested increase of 12.7% by 50%, the resulting
21 overall increase would be 6.35%. The reduction to the Industrial class increase of 50%
22 would result in a revised increase of 4.70%. This proportionate reduction should also

1 be applied to the increases to the Industrial rate blocks, preserving the lower increase
2 to the tail block in proportion to the first three blocks.

3
4 **Q. Do you have any recommendation regarding PAWC's proposal for Rate Year 1**
5 **and Rate Year 2 increases?**

6 A. AK Steel takes no position regarding PAWC's request for Rate Year 1 and Rate Year
7 2 increases. However, if the Commission adopts a Rate Year 2 increase, I recommend
8 that it apply any such increase using an equal across the board increase for all PAWC
9 customer classes. I make this recommendation based on PAWC's Rate Year 1 revenue
10 allocation, which brings customer classes reasonably close to a RROR of 1.0. The
11 Rate Year 2 CCOSS presented by Ms. Heppenstall is based on forecasts through the
12 twelve months ended December 31, 2022. Rather than try to forecast a Rate Year 2
13 revenue allocation, which may be speculative at best, it makes more sense to simply
14 apply an across the board increase for Rate Year 2, given that the resulting class
15 RRORs for Rate Year 1 are so close to 1.0.

16
17 **Q. Does this conclude your Direct Testimony?**

18 A. Yes.

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

PENNSYLVANIA PUBLIC UTILITY COMMISSION :
V. : **Docket No. R-2020-3019369**
PENNSYLVANIA-AMERICAN WATER COMPANY :

**EXHIBITS
OF
RICHARD A. BAUDINO**

**ON BEHALF OF
AK STEEL**

J. KENNEDY AND ASSOCIATES, INC.

SEPTEMBER 8, 2020

RESUME OF RICHARD A. BAUDINO

EDUCATION

New Mexico State University, M.A.

Major in Economics

Minor in Statistics

New Mexico State University, B.A.

Economics

English

Thirty-seven years of experience in utility ratemaking and the application of principles of economics to the regulation of electric, gas, and water utilities. Broad based experience in revenue requirement analysis, cost of capital, rate of return, cost and revenue allocation, and rate design.

REGULATORY TESTIMONY

Preparation and presentation of expert testimony in the areas of:

Cost of Capital for Electric, Gas and Water Companies

Electric, Gas, and Water Utility Cost Allocation and Rate Design

Revenue Requirements

Gas and Electric industry restructuring and competition

Fuel cost auditing

Ratemaking Treatment of Generating Plant Sale/Leasebacks

RESUME OF RICHARD A. BAUDINO

EXPERIENCE

1989 to

Present: Kennedy and Associates: **Director of Consulting, Consultant** - Responsible for consulting assignments in revenue requirements, rate design, cost of capital, economic analysis of generation alternatives, electric and gas industry restructuring/competition and water utility issues.

1982 to

1989: New Mexico Public Service Commission Staff: **Utility Economist** - Responsible for preparation of analysis and expert testimony in the areas of rate of return, cost allocation, rate design, finance, phase-in of electric generating plants, and sale/leaseback transactions.

CLIENTS SERVED

Regulatory Commissions

Louisiana Public Service Commission
Georgia Public Service Commission
New Mexico Public Service Commission

Other Clients and Client Groups

Ad Hoc Committee for a Competitive Electric Supply System	Northwest Arkansas Gas Consumers
Air Products and Chemicals, Inc.	Maryland Energy Group
Arkansas Electric Energy Consumers	Occidental Chemical
Arkansas Gas Consumers	PSI Industrial Group
AK Steel	Large Power Intervenors (Minnesota)
Armco Steel Company, L.P.	Tyson Foods
Aqua Large Users Group	West Virginia Energy Users Group
Assn. of Business Advocating Tariff Equity	The Commercial Group
Atmos Cities Steering Committee	Wisconsin Industrial Energy Group
Canadian Federation of Independent Businesses	South Florida Hospital and Health Care Assn.
CF&I Steel, L.P.	PP&L Industrial Customer Alliance
Cities of Midland, McAllen, and Colorado City	Philadelphia Area Industrial Energy Users Gp.
Cities Served by Texas-New Mexico Power Co.	Philadelphia Large Users Group
Cities Served by AEP Texas	West Penn Power Intervenors
City of New York	Duquesne Industrial Intervenors
Climax Molybdenum Company	Met-Ed Industrial Users Gp.
Connecticut Industrial Energy Consumers	Penelec Industrial Customer Alliance
Crescent City Power Users Group	Penn Power Users Group
Cripple Creek & Victor Gold Mining Co.	Columbia Industrial Intervenors
General Electric Company	U.S. Steel & Univ. of Pittsburg Medical Ctr.
Holcim (U.S.) Inc.	Multiple Intervenors
IBM Corporation	Maine Office of Public Advocate
Industrial Energy Consumers	Missouri Office of Public Counsel
Kentucky Industrial Utility Consumers	University of Massachusetts - Amherst
Kentucky Office of the Attorney General	WCF Hospital Utility Alliance
Lexington-Fayette Urban County Government	West Travis County Public Utility Agency
Large Electric Consumers Organization	Steering Committee of Cities Served by Oncor
Newport Steel	Utah Office of Consumer Services
North Carolina Attorney General's Office	Healthcare Council of the National Capital Area
	Vermont Department of Public Service
	Texas Industrial Energy Consumers

**Expert Testimony Appearances
of
Richard A. Baudino
As of September 2020**

Date	Case	Jurisdict.	Party	Utility	Subject
10/83	1803, 1817	NM	New Mexico Public Service Commission	Southwestern Electric Coop.	Rate design.
11/84	1833	NM	New Mexico Public Service Commission Palo Verde	El Paso Electric Co.	Service contract approval, rate design, performance standards for nuclear generating system
1983	1835	NM	New Mexico Public Service Commission	Public Service Co. of NM	Rate design.
1984	1848	NM	New Mexico Public Service Commission	Sangre de Cristo Water Co.	Rate design.
02/85	1906	NM	New Mexico Public Service Commission	Southwestern Public Service Co.	Rate of return.
09/85	1907	NM	New Mexico Public Service Commission	Jomada Water Co.	Rate of return.
11/85	1957	NM	New Mexico Public Service Commission	Southwestern Public Service Co.	Rate of return.
04/86	2009	NM	New Mexico Public Service Commission	El Paso Electric Co.	Phase-in plan, treatment of sale/leaseback expense.
06/86	2032	NM	New Mexico Public Service Commission	El Paso Electric Co.	Sale/leaseback approval.
09/86	2033	NM	New Mexico Public Service Commission	El Paso Electric Co.	Order to show cause, PVNGS audit.
02/87	2074	NM	New Mexico Public Service Commission	El Paso Electric Co.	Diversification.
05/87	2089	NM	New Mexico Public Service Commission	El Paso Electric Co.	Fuel factor adjustment.
08/87	2092	NM	New Mexico Public Service Commission	El Paso Electric Co.	Rate design.
10/87	2146	NM	New Mexico Public Service Commission	Public Service Co. of New Mexico	Financial effects of restructuring, reorganization.
07/88	2162	NM	New Mexico Public Service Commission	El Paso Electric Co.	Revenue requirements, rate design, rate of return.

**Expert Testimony Appearances
of
Richard A. Baudino
As of September 2020**

Date	Case	Jurisdct.	Party	Utility	Subject
01/89	2194	NM	New Mexico Public Service Commission	Plains Electric G&T Cooperative	Economic development.
1/89	2253	NM	New Mexico Public Service Commission	Plains Electric G&T Cooperative	Financing.
08/89	2259	NM	New Mexico Public Service Commission	Homestead Water Co.	Rate of return, rate design.
10/89	2262	NM	New Mexico Public Service Commission	Public Service Co. of New Mexico	Rate of return.
09/89	2269	NM	New Mexico Public Service Commission	Ruidoso Natural Gas Co.	Rate of return, expense from affiliated interest.
12/89	89-208-TF	AR	Arkansas Electric Energy Consumers	Arkansas Power & Light Co.	Rider M-33.
01/90	U-17282	LA	Louisiana Public Service Commission	Gulf States Utilities	Cost of equity.
09/90	90-158	KY	Kentucky Industrial Utility Consumers	Louisville Gas & Electric Co.	Cost of equity.
09/90	90-004-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Cost of equity, transportation rate.
12/90	U-17282 Phase IV	LA	Louisiana Public Service Commission	Gulf States Utilities	Cost of equity.
04/91	91-037-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Transportation rates.
12/91	91-410-EL-AIR	OH	Air Products & Chemicals, Inc., Armco Steel Co., General Electric Co., Industrial Energy Consumers	Cincinnati Gas & Electric Co.	Cost of equity.
05/92	910890-EI	FL	Occidental Chemical Corp.	Florida Power Corp.	Cost of equity, rate of return.
09/92	92-032-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Cost of equity, rate of return, cost-of-service.
09/92	39314	ID	Industrial Consumers for Fair Utility Rates	Indiana Michigan Power Co.	Cost of equity, rate of return.

**Expert Testimony Appearances
of
Richard A. Baudino
As of September 2020**

Date	Case	Jurisdict.	Party	Utility	Subject
09/92	92-009-U	AR	Tyson Foods	General Waterworks	Cost allocation, rate design.
01/93	92-346	KY	Newport Steel Co.	Union Light, Heat & Power Co.	Cost allocation.
01/93	39498	IN	PSI Industrial Group	PSI Energy	Refund allocation.
01/93	U-10105	MI	Association of Businesses Advocating Tariff Equality (ABATE)	Michigan Consolidated Gas Co.	Return on equity.
04/93	92-1464-EL-AIR	OH	Air Products and Chemicals, Inc., Armco Steel Co., Industrial Energy Consumers	Cincinnati Gas & Electric Co.	Return on equity.
09/93	93-189-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Transportation service terms and conditions.
09/93	93-081-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Cost-of-service, transportation rates, rate supplements; return on equity; revenue requirements.
12/93	U-17735	LA	Louisiana Public Service Commission Staff	Cajun Electric Power Cooperative	Historical reviews; evaluation of economic studies.
03/94	10320	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric Co.	Trimble County CWIP revenue refund.
4/94	E-015/GR-94-001	MN	Large Power Intervenors	Minnesota Power Co.	Evaluation of the cost of equity, capital structure, and rate of return.
5/94	R-00942993	PA	PG&W Industrial Intervenors	Pennsylvania Gas & Water Co.	Analysis of recovery of transition costs.
5/94	R-00943001	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania charge proposals.	Evaluation of cost allocation, rate design, rate plan, and carrying
7/94	R-00942986	PA	Armco, Inc., West Penn Power Industrial Intervenors	West Penn Power Co.	Return on equity and rate of return.
7/94	94-0035-E-42T	WV	West Virginia Energy Users' Group	Monongahela Power Co.	Return on equity and rate of return.

**Expert Testimony Appearances
of
Richard A. Baudino
As of September 2020**

Date	Case	Jurisdict.	Party	Utility	Subject
8/94	8652	MD	Westvaco Corp. Co.	Potomac Edison	Return on equity and rate of return.
9/94	930357-C	AR	West Central Arkansas Gas Consumers	Arkansas Oklahoma Gas Corp.	Evaluation of transportation service.
9/94	U-19904	LA	Louisiana Public Service Commission	Gulf States Utilities	Return on equity.
9/94	8629	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Transition costs.
11/94	94-175-U	AR	Arkansas Gas Consumers	Arkla, Inc.	Cost-of-service, rate design, rate of return.
3/95	RP94-343-000	FERC	Arkansas Gas Consumers	NorAm Gas Transmission	Rate of return.
4/95	R-00943271	PA	PP&L Industrial Customer Alliance	Pennsylvania Power & Light Co.	Return on equity.
6/95	U-10755	MI	Association of Businesses Advocating Tariff Equity	Consumers Power Co.	Revenue requirements.
7/95	8697	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Cost allocation and rate design.
8/95	95-254-TF U-2811	AR	Tyson Foods, Inc.	Southwest Arkansas Electric Cooperative	Refund allocation.
10/95	ER95-1042-000	FERC	Louisiana Public Service Commission	Systems Energy Resources, Inc.	Return on Equity.
11/95	I-940032	PA	Industrial Energy Consumers of Pennsylvania	State-wide - all utilities	Investigation into Electric Power Competition.
5/96	96-030-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Revenue requirements, rate of return and cost of service.
7/96	8725	MD	Maryland Industrial Group	Baltimore Gas & Electric Co., Potomac Electric Power Co. and Constellation Energy Corp.	Return on Equity.
7/96	U-21496	LA	Louisiana Public Service Commission	Central Louisiana Electric Co.	Return on equity, rate of return.
9/96	U-22092	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.

**Expert Testimony Appearances
of
Richard A. Baudino
As of September 2020**

Date	Case	Jurisdict.	Party	Utility	Subject
1/97	RP96-199-000	FERC	The Industrial Gas Users Conference	Mississippi River Transmission Corp.	Revenue requirements, rate of return and cost of service.
3/97	96-420-U	AR	West Central Arkansas Gas Corp.	Arkansas Oklahoma Gas Corp.	Revenue requirements, rate of return, cost of service and rate design.
7/97	U-11220	MI	Association of Business Advocating Tariff Equity	Michigan Gas Co. and Southeastern Michigan Gas Co.	Transportation Balancing Provisions.
7/97	R-00973944	PA	Pennsylvania American Water Large Users Group	Pennsylvania-American Water Co.	Rate of return, cost of service, revenue requirements.
3/98	8390-U	GA	Georgia Natural Gas Group and the Georgia Textile Manufacturers Assoc.	Atlanta Gas Light	Rate of return, restructuring issues, unbundling, rate design issues.
7/98	R-00984280	PA	PG Energy, Inc. Intervenors	PGE Industrial	Cost allocation.
8/98	U-17735	LA	Louisiana Public Service Commission	Cajun Electric Power Cooperative	Revenue requirements.
10/98	97-596	ME	Maine Office of the Public Advocate	Bangor Hydro-Electric Co.	Return on equity, rate of return.
10/98	U-23327	LA	Louisiana Public Service Commission	SWEPSCO, CSW and AEP	Analysis of proposed merger.
12/98	98-577	ME	Maine Office of the Public Advocate	Maine Public Service Co.	Return on equity, rate of return.
12/98	U-23358	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity, rate of return.
3/99	98-426	KY	Kentucky Industrial Utility Customers, Inc.	Louisville Gas and Electric Co	Return on equity.
3/99	99-082	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Utilities Co.	Return on equity.
4/99	R-984554	PA	T. W. Phillips Users Group	T. W. Phillips Gas and Oil Co.	Allocation of purchased gas costs.
6/99	R-0099462	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Balancing charges.
10/99	U-24182	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Cost of debt.

**Expert Testimony Appearances
of
Richard A. Baudino
As of September 2020**

Date	Case	Jurisdict.	Party	Utility	Subject
10/99	R-00994782	PA	Peoples Industrial Intervenor	Peoples Natural Gas Co.	Restructuring issues.
10/99	R-00994781	PA	Columbia Industrial Intervenor	Columbia Gas of Pennsylvania	Restructuring, balancing charges, rate flexing, alternate fuel.
01/00	R-00994786	PA	UGI Industrial Intervenor	UGI Utilities, Inc.	Universal service costs, balancing, penalty charges, capacity Assignment.
01/00	8829	MD	Maryland Industrial Gr.	Baltimore Gas & Electric Co.	Revenue requirements, cost allocation, rate design.
02/00	R-00994788	PA	Penn Fuel Transportation	PFG Gas, Inc., and	Tariff charges, balancing provisions.
05/00	U-17735	LA	Louisiana Public Service Comm.	Louisiana Electric Cooperative	Rate restructuring.
07/00	2000-080	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric Co.	Cost allocation.
07/00	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket E)	LA	Louisiana Public Service Commission	Southwestern Electric Power Co.	Stranded cost analysis.
09/00	R-00005654	PA	Philadelphia Industrial And Commercial Gas Users Group.	Philadelphia Gas Works	Interim relief analysis.
10/00	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket B)	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Restructuring, Business Separation Plan.
11/00	R-00005277 (Rebuttal)	PA	Penn Fuel Transportation Customers	PFG Gas, Inc. and North Penn Gas Co.	Cost allocation issues.
12/00	U-24993	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
03/01	U-22092	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Stranded cost analysis.
04/01	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket B) (Addressing Contested Issues)	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Restructuring issues.
04/01	R-00006042	PA	Philadelphia Industrial and Commercial Gas Users Group	Philadelphia Gas Works	Revenue requirements, cost allocation and tariff issues.

**Expert Testimony Appearances
of
Richard A. Baudino
As of September 2020**

Date	Case	Jurisdiction	Party	Utility	Subject
11/01	U-25687	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
03/02	14311-U	GA	Georgia Public Service Commission	Atlanta Gas Light	Capital structure.
08/02	2002-00145	KY	Kentucky Industrial Utility Customers	Columbia Gas of Kentucky	Revenue requirements.
09/02	M-00021612	PA	Philadelphia Industrial And Commercial Gas Users Group	Philadelphia Gas Works	Transportation rates, terms, and conditions.
01/03	2002-00169	KY	Kentucky Industrial Utility Customers	Kentucky Power	Return on equity.
02/03	02S-594E	CO	Cripple Creek & Victor Gold Mining Company	Aquila Networks – WPC	Return on equity.
04/03	U-26527	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
10/03	CV020495AB	GA	The Landings Assn., Inc.	Utilities Inc. of GA	Revenue requirement & overcharge refund
03/04	2003-00433	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric	Return on equity, Cost allocation & rate design
03/04	2003-00434	KY	Kentucky Industrial Utility Customers	Kentucky Utilities	Return on equity
4/04	04S-035E	CO	Cripple Creek & Victor Gold Mining Company, Goodrich Corp., Holcim (U.S.) Inc., and The Trane Co.	Aquila Networks – WPC	Return on equity.
9/04	U-23327, Subdocket B	LA	Louisiana Public Service Commission	Southwestern Electric Power Company	Fuel cost review
10/04	U-23327 Subdocket A	LA	Louisiana Public Service Commission	Southwestern Electric Power Company	Return on Equity
06/05	050045-EI	FL	South Florida Hospital and HealthCare Assoc.	Florida Power & Light Co.	Return on equity
08/05	9036	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Revenue requirement, cost allocation, rate design, Tariff issues.
01/06	2005-0034	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Power Co.	Return on equity.

**Expert Testimony Appearances
of
Richard A. Baudino
As of September 2020**

Date	Case	Jurisdict.	Party	Utility	Subject
03/06	05-1278-E-PC-PW-42T	WV	West Virginia Energy Users Group	Appalachian Power Company	Return on equity.
04/06	U-25116 Commission	LA	Louisiana Public Service	Entergy Louisiana, LLC	Transmission Issues
07/06	U-23327 Commission	LA	Louisiana Public Service	Southwestern Electric Power Company	Return on equity, Service quality
08/06	ER-2006-0314	MO	Missouri Office of the Public Counsel	Kansas City Power & Light Co.	Return on equity, Weighted cost of capital
08/06	06S-234EG	CO	CF&I Steel, L.P. & Climax Molybdenum	Public Service Company of Colorado	Return on equity, Weighted cost of capital
01/07	06-0960-E-42T Users Group	WV	West Virginia Energy	Monongahela Power & Potomac Edison	Return on Equity
01/07	43112	AK	AK Steel, Inc.	Vectren South, Inc.	Cost allocation, rate design
05/07	2006-661	ME	Maine Office of the Public Advocate	Bangor Hydro-Electric	Return on equity, weighted cost of capital.
09/07	07-07-01	CT	Connecticut Industrial Energy Consumers	Connecticut Light & Power	Return on equity, weighted cost of capital
10/07	05-UR-103	WI	Wisconsin Industrial Energy Group, Inc.	Wisconsin Electric Power Co.	Return on equity
11/07	29797	LA	Louisiana Public Service Commission	Cleco Power :LLC & Southwestern Electric Power	Lignite Pricing, support of settlement
01/08	07-551-EL-AIR	OH	Ohio Energy Group	Ohio Edison, Cleveland Electric, Toledo Edison	Return on equity
03/08	07-0585, 07-0585, 07-0587, 07-0588, 07-0589, 07-0590, (consol.)	IL	The Commercial Group	Ameren	Cost allocation, rate design
04/08	07-0566	IL	The Commercial Group	Commonwealth Edison	Cost allocation, rate design
06/08	R-2008-2011621	PA	Columbia Industrial Intervenors	Columbia Gas of PA	Cost and revenue allocation, Tariff issues
07/08	R-2008-2028394	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy	Cost and revenue allocation, Tariff issues

**Expert Testimony Appearances
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Richard A. Baudino
As of September 2020**

Date	Case	Jurisdict.	Party	Utility	Subject
07/08	R-2008-2039634	PA	PPL Gas Large Users Group	PPL Gas	Retainage, LUFG Pct.
08/08	6680-UR-116	WI	Wisconsin Industrial Energy Group	Wisconsin P&L	Cost of Equity
08/08	6690-UR-119	WI	Wisconsin Industrial Energy Group	Wisconsin PS	Cost of Equity
09/08	ER-2008-0318	MO	The Commercial Group	AmerenUE	Cost and revenue allocation
10/08	R-2008-2029325	PA	U.S. Steel & Univ. of Pittsburgh Med. Ctr.	Equitable Gas Co.	Cost and revenue allocation
10/08	08-G-0609	NY	Multiple Intervenors	Niagara Mohawk Power	Cost and Revenue allocation
12/08	27800-U	GA	Georgia Public Service Commission	Georgia Power Company	CWIP/AFUDC issues, Review financial projections
03/09	ER08-1056	FERC	Louisiana Public Service Commission	Entergy Services, Inc.	Capital Structure
04/09	E002/GR-08-1065	MN	The Commercial Group	Northern States Power	Cost and revenue allocation and rate design
05/09	08-0532	IL	The Commercial Group	Commonwealth Edison	Cost and revenue allocation
07/09	080677-EI	FL	South Florida Hospital and Health Care Association	Florida Power & Light	Cost of equity, capital structure, Cost of short-term debt
07/09	U-30975	LA	Louisiana Public Service Commission	Cleco LLC, Southwestern Public Service Co.	Lignite mine purchase
10/09	4220-UR-116	WI	Wisconsin Industrial Energy Group	Northern States Power	Class cost of service, rate design
10/09	M-2009-2123945	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities	Smart Meter Plan cost allocation
10/09	M-2009-2123944	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Company	Smart Meter Plan cost allocation
10/09	M-2009-2123951	PA	West Penn Power Industrial Intervenors	West Penn Power	Smart Meter Plan cost allocation
11/09	M-2009-2123948	PA	Duquesne Industrial Intervenors	Duquesne Light Company	Smart Meter Plan cost allocation
11/09	M-2009-2123950	PA	Met-Ed Industrial Users Group, Penelec Industrial Customer Alliance, Penn Power Users Group	Metropolitan Edison, Pennsylvania Electric Co., Pennsylvania Power Co.	Smart Meter Plan cost allocation

**Expert Testimony Appearances
of
Richard A. Baudino
As of September 2020**

Date	Case	Jurisdict.	Party	Utility	Subject
03/10	09-1352-E-42T	WV	West Virginia Energy Users Group	Monongahela Power	Return on equity, rate of return Potomac Edison
03/10	E015/GR-09-1151	MN	Large Power Intervenors	Minnesota Power	Return on equity, rate of return
04/10	2009-00459	KY	Kentucky Industrial Utility Consumers	Kentucky Power	Return on equity
04/10	2009-00548 2009-00549	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric, Kentucky Utilities	Return on equity.
05/10	10-0261-E-GI	WV	West Virginia Energy Users Group	Appalachian Power Co./ Wheeling Power Co.	EE/DR Cost Recovery, Allocation, & Rate Design
05/10	R-2009-2149262	PA	Columbia Industrial Intervenors	Columbia Gas of PA	Class cost of service & cost allocation
06/10	2010-00036	KY	Lexington-Fayette Urban County Government	Kentucky American Water Company	Return on equity, rate of return, revenue requirements
06/10	R-2010-2161694	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities	Rate design, cost allocation
07/10	R-2010-2161575	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Co.	Return on equity
07/10	R-2010-2161592	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Co.	Cost and revenue allocation
07/10	9230	MD	Maryland Energy Group	Baltimore Gas and Electric	Electric and gas cost and revenue allocation; return on equity
09/10	10-70	MA	University of Massachusetts-Amherst	Western Massachusetts Electric Co.	Cost allocation and rate design
10/10	R-2010-2179522	PA	Duquesne Industrial Intervenors	Duquesne Light Company	Cost and revenue allocation, rate design
11/10	P-2010-2158084	PA	West Penn Power Industrial Intervenors	West Penn Power Co.	Transmission rate design
11/10	10-0699-E-42T	WV	West Virginia Energy Users Group	Appalachian Power Co. & Wheeling Power Co.	Return on equity, rate of Return
11/10	10-0467	IL	The Commercial Group	Commonwealth Edison	Cost and revenue allocation and rate design
04/11	R-2010-2214415	PA	Central Pen Gas Large Users Group	UGI Central Penn Gas, Inc.	Tariff issues, revenue allocation
07/11	R-2011-2239263	PA	Philadelphia Area Energy Users Group	PECO Energy	Retainage rate

**Expert Testimony Appearances
of
Richard A. Baudino
As of September 2020**

Date	Case	Jurisdict.	Party	Utility	Subject
08/11	R-2011-2232243	PA	AK Steel	Pennsylvania-American Water Company	Rate Design
08/11	11AL-151G	CO	Climax Molybdenum	PS of Colorado	Cost allocation
09/11	11-G-0280	NY	Multiple Intervenors	Corning Natural Gas Co.	Cost and revenue allocation
10/11	4220-UR-117	WI	Wisconsin Industrial Energy Group	Northern States Power	Cost and revenue allocation, rate design
02/12	11AL-947E	CO	Climax Molybdenum, CF&I Steel	Public Service Company of Colorado	Return on equity, weighted cost of capital
07/12	120015-EI	FL	South Florida Hospitals and Health Care Association	Florida Power and Light Co,	Return on equity, weighted cost of capital
07/12	12-0613-E-PC	WV	West Virginia Energy Users Group	American Electric Power/APCo	Special rate proposal for Century Aluminum
07/12	R-2012-2290597	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities Corp.	Cost allocation
09/12	05-UR-106	WI	Wisconsin Industrial Energy Group	Wisconsin Electric Power Co.	Class cost of service, cost and revenue allocation, rate design
09/12	2012-00221 2012-00222	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric, Kentucky Utilities	Return on equity.
10/12	9299	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design Cost of equity, weighted cost of capital
10/12	4220-UR-118	WI	Wisconsin Industrial Energy Group	Northern States Power Company	Class cost of service, cost and revenue allocation, rate design
10/12	473-13-0199	TX	Steering Committee of Cities Served by Oncor	Cross Texas Transmission, LLC	Return on equity, capital structure
01/13	R-2012-2321748 et al.	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Cost and revenue allocation
02/13	12AL-1052E	CO	Cripple Creek & Victor Gold Mining, Holcim (US) Inc.	Black Hills/Colorado Electric Utility Company	Cost and revenue allocations
06/13	8009	VT	IBM Corporation	Vermont Gas Systems	Cost and revenue allocation, rate design
07/13	130040-EI	FL	WCF Hospital Utility Alliance	Tampa Electric Co.	Return on equity, rate of return
08/13	9326	MD	Maryland Energy Group	Baltimore Gas and Electric	Cost and revenue allocation, rate design, special rider

**Expert Testimony Appearances
of
Richard A. Baudino
As of September 2020**

Date	Case	Jurisdict.	Party	Utility	Subject
08/13	P-2012-2325034	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities, Corp.	Distribution System Improvement Charge
09/13	4220-UR-119	WI	Wisconsin Industrial Energy Group	Northern States Power Co.	Class cost of service, cost and revenue allocation, rate design
11/13	13-1325-E-PC	WV	West Virginia Energy Users Group	American Electric Power/APCo	Special rate proposal, Felman Production
06/14	R-2014-2406274	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Cost and revenue allocation, rate design
08/14	05-UR-107	WI	Wisconsin Industrial Energy Group	Wisconsin Electric Power Co.	Cost and revenue allocation, rate design
10/14	ER13-1508 et al.	FERC	Louisiana Public Service Comm.	Entergy Services, Inc.	Return on equity
11/14	14AL-0660E	CO	Climax Molybdenum Co. and CFI Steel, LP	Public Service Co. of Colorado	Return on equity, weighted cost of capital
11/14	R-2014-2428742	PA	AK Steel	West Penn Power Company	Cost and revenue allocation
12/14	42866	TX	West Travis Co. Public Utility Agency	Travis County Municipal Utility District No. 12	Response to complain of monopoly power
3/15	2014-00371 2014-00372	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric, Kentucky Utilities	Return on equity, cost of debt, weighted cost of capital
3/15	2014-00396	KY	Kentucky Industrial Utility Customers	Kentucky Power Co.	Return on equity, weighted cost of capital
6/15	15-0003-G-42T	WV	West Virginia Energy Users Gp.	Mountaineer Gas Co.	Cost and revenue allocation, Infrastructure Replacement Program
9/15	15-0676-W-42T	WV	West Virginia Energy Users Gp.	West Virginia-American Water Company	Appropriate test year, Historical vs. Future
9/15	15-1256-G-390P	WV	West Virginia Energy Users Gp.	Mountaineer Gas Co.	Rate design for Infrastructure Replacement and Expansion Program
10/15	4220-UR-121	WI	Wisconsin Industrial Energy Gp.	Northern States Power Co.	Class cost of service, cost and revenue allocation, rate design
12/15	15-1600-G-390P	WV	West Virginia Energy Users Gp.	Dominion Hope	Rate design and allocation for Pipeline Replacement & Expansion Prog.
12/15	45188	TX	Steering Committee of Cities Served by Oncor	Oncor Electric Delivery Co.	Ring-fence protections for cost of capital

**Expert Testimony Appearances
of
Richard A. Baudino
As of September 2020**

Date	Case	Jurisdict.	Party	Utility	Subject
2/16	9406	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design, proposed Rider 5
3/16	39971	GA	GA Public Service Comm. Staff	Southern Company / AGL Resources	Credit quality and service quality issues
04/16	2015-00343	KY	Kentucky Office of the Attorney General	Atmos Energy	Cost of equity, cost of short-term debt, capital structure
05/16	16-G-0058 16-G-0059	NY	City of New York	Brooklyn Union Gas Co., KeySpan Gas East Corp.	Cost and revenue allocation, rate design, service quality issues
06/16	16-0073-E-C	WV	Constellium Rolled Products Ravenswood, LLC	Appalachian Power Co.	Complaint; security deposit
07/16	9418	MD	Healthcare Council of the National Capital Area	Potomac Electric Power Co.	Cost of equity, cost of service, Cost and revenue allocation
07/16	160021-EI	FL	South Florida Hospital and Health Care Association	Florida Power and Light Co.	Return on equity, cost of debt, capital structure
07/16	16-057-01	UT	Utah Office of Consumer Svcs.	Dominion Resources, Questar Gas Co.	Credit quality and service quality issues
08/16	8710	VT	Vermont Dept. of Public Service	Vermont Gas Systems	Return on equity, cost of debt, cost of capital
08/16	R-2016-2537359	PA	AK Steel Corp.	West Penn Power Co.	Cost and revenue allocation
09/16	2016-00162	KY	Kentucky Office of the Attorney General	Columbia Gas of Ky.	Return on equity, cost of short-term debt
09/16	16-0550-W-P	WV	West Va. Energy Users Gp.	West Va. American Water Co.	Infrastructure Replacement Program Surcharge
01/17	46238	TX	Steering Committee of Cities Served by Oncor	Oncor Electric Delivery Co.	Ring fencing and other conditions for acquisition, service quality and reliability
02/17	45414	TX	Cities of Midland, McAllen, and Colorado City	Sharyland Utilities, LP and Sharyland Dist. and Transmission Services, LLC	Return on equity
02/17	2016-00370 2016-00371	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric, Kentucky Utilities	Return on equity, cost of debt, weighted cost of capital
03/17	10580	TX	Atmos Cities Steering Committee	Atmos Pipeline Texas	Return on equity, capital structure, weighted cost of capital
03/17	R-3867-2013	Quebec, Canada	Canadian Federation of Independent Businesses	Gaz Metro	Marginal Cost of Service Study

**Expert Testimony Appearances
of
Richard A. Baudino
As of September 2020**

Date	Case	Jurisdict.	Party	Utility	Subject
05/17	R-2017-2586783	PA	Philadelphia Industrial and Commercial Gas Users Gp.	Philadelphia Gas Works	Cost and revenue allocation, rate design, Interruptible tariffs
08/17	R-2017-2595853	PA	AK Steel	Pennsylvania American Water Co.	Cost and revenue allocation, rate design
8/17	17-3112-INV	VT	Vt. Dept. of Pubic Service	Green Mountain Power	Return on equity, cost of debt, weighted cost of capital
9/17	4220-UR-123	WI	Wisconsin Industrial Energy Group	Northern States Power	Cost and revenue allocation, rate design
10/17	2017-00179	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Power Co.	Return on equity, cost of short-term debt
12/17	2017-00321	KY	Office of the Attorney General	Duke Energy Kentucky, Inc.	Return on equity
1/18	2017-00349	KY	Office of the Attorney General	Atmos Energy	Return on equity, cost of debt, weighted cost of capital
5/18	Fiscal Years 2019-2021 Rates	PA	Philadelphia Large Users Group	Philadelphia Water Department	Cost and revenue allocation
8/18	18-0974-TF	VT	Vt. Dept. of Public Service	Green Mountain Power	Return on equity, cost of debt, weighted cost of capital
8/18	48401	TX	Cities Served by Texas-New Mexico Power Company	Texas-New Mexico Power Co.	Return on equity, capital structure
8/18	18-05-16	CT	Connecticut Industrial Energy Consumers	Connecticut Natural Gas Co.	Cost and revenue allocation
9/18	9484	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design
9/18	2017-370-E	SC	South Carolina Office of Regulatory Staff	South Carolina Electric & Gas, Dominion Resources, SCANA	Return on equity, service quality standards, credit quality conditions
10/18	18-1115-G-390P	WV	West Va. Energy Users Group	Mountaineer Gas Company	Customer protections for Infrastructure Replacement and Expansion Program
12/18	R-2018-3003558, R-2018-3003561	PA	Aqua Large Users Group	Aqua Pennsylvania, Inc.	Cost and revenue allocation
02/19	UD-18-07	CCNO	Crescent City Power Users' Gp.	Entergy New Orleans, LLC	Return on equity, Reliability Incentive Mechanism, other proposed riders
03/19	2018-00358	KY	Office of the Attorney General	Kentucky American Water Co.	Return on equity, Qualified Infrastructure Program rider
05/19	19-E-0065 19-G-0066	NY	City of New York	Consolidated Edison Co.	Cost and revenue allocation, rate design, tariff issues, fast-charging station incentives

**Expert Testimony Appearances
of
Richard A. Baudino
As of September 2020**

Date	Case	Jurisdict.	Party	Utility	Subject
05/2019	19-0513-TF	VT	Vt. Dept. of Public Service	Vermont Gas Systems	Return on equity, capital structure
06/2019	5-TG-100	WI	Wisconsin Industrial Energy Group	WEPCO, Wisconsin Gas, Wisconsin PS	Transportation and balancing issues
07/2019	49494	TX	Cities Served by AEP Texas	AEP Texas, Inc.	Return on equity, capital structure
08/2019	19-G-0309 19-G-0310	NY	City of New York	Brooklyn Union Gas Co., KeySpan Gas East Corp.	Cost and revenue allocation, rate design, tariff issues and modifications
08/2019	19-0316-G-42T	WV	West Virginia Energy Users Gp.	Mountaineer Gas Company	Cost and revenue allocation
8/2019	5-UR-109	WI	Wisconsin Industrial Energy Gp.	Wisconsin Electric Power Co., Wisconsin Gas, LLC	Cost Allocation, Class cost of service study
8/2019	6690-UR-126	WI	Wisconsin Industrial Energy Gp.	Wisconsin Public Service Corp.	Cost Allocation, Class cost of service study
9/2019	9610	MD	Maryland Energy Group	Baltimore Gas and Electric Co.	Cost and revenue allocation, rate design
12/2019	2019-00271	KY	Office of the Attorney General	Duke Energy Kentucky, Inc.	Return on equity
2/2020	49831	TX	Texas Industrial Energy Consumers	Southwestern Public Service Co.	Return on equity, capital structure, rate of return
2/2020	E-7. Sub 1214	NC	NC Attorney General's Office	Duke Energy Carolinas	Return on equity, capital structure, rate of return, economic conditions
2/2020	E-2. Sub 1219	NC	NC Attorney General's Office	Duke Energy Progress	Return on equity, capital structure, rate of return, economic conditions
5/2020	R-2019- 3015162	PA	Industrial Energy Consumers of Pennsylvania	UGI Utilities, Inc.	Return on equity, cost of debt, revenue allocation, rate design
6/2020	20-G-0101	NY	Multiple Intervenors	Corning Natural Gas Corp.	Cost and revenue allocation
9/2020	R-2020- 2019369	PA	AK Steel	Pennsylvania-American Water Company	Cost and revenue allocation, rate design

Calculations for AK Steel Industrial Rate Block Increases

Herbert Proposed Industrial rates, R-2017-2595853

	<u>Current Rates</u>	<u>Proposed Rates</u>	<u>Pct Increase</u>	<u>Fourth Block Reduction</u>
First Block	0.9898	1.2844	29.8%	
Second Block	0.7398	0.9717	31.3%	
Third Block	0.5866	0.7707	31.4%	
Fourth Block	0.3962	0.4648	17.3%	-44.8%

Source: Current and proposed rates from Schedule H, page 2, of Exhibit 12-A, Case No. R-2017-2595853

Witness Heppentall Proposed Industrial Rates

	<u>Current Rates</u>	<u>Proposed Rates</u>	<u>Pct Increase</u>	<u>AK Fourth Block Incr.</u>	<u>AK Fourth Block Rate</u>
First Block	1.1843	1.2796	8.05%		
Second Block	0.9010	0.9736	8.06%		
Third Block	0.7088	0.7658	8.04%		
Fourth Block	0.4328	0.4676	8.04%	4.02%	0.4502

Fourth Block Consumption		3,188,030			
Heppenstall Proposed Rate		0.4676			
Heppenstall Proposed Revenues		\$ 1,490,723			
AK Steel Proposed Rate		0.4502			
AK Steel Proposed Revenues		\$ 1,435,251			
Difference in 4th Block Revenues To Be Reallocated to Customer Charge		\$ 55,472			

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

PENNSYLVANIA PUBLIC UTILITY COMMISSION :
V. : **Docket No. R-2020-3019369**
PENNSYLVANIA-AMERICAN WATER COMPANY :

**SURREBUTTAL TESTIMONY
OF
RICHARD A. BAUDINO**

ON BEHALF OF

AK STEEL

J. KENNEDY AND ASSOCIATES, INC.

OCTOBER 20, 2020

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

PENNSYLVANIA PUBLIC UTILITY COMMISSION :
V. : **Docket No. R-2020-3019369**
PENNSYLVANIA-AMERICAN WATER COMPANY :

SURREBUTTAL TESTIMONY OF RICHARD A. BAUDINO

1 **Q. Please state your name and business address.**

2 A. My name is Richard A. Baudino. My business address is J. Kennedy and Associates,
3 Inc. ("Kennedy and Associates"), 570 Colonial Park Drive, Suite 305, Roswell,
4 Georgia 30075.

5

6 **Q. What is your occupation and by whom are you employed?**

7 A. I am a consultant to Kennedy and Associates.

8

9 **Q. Did you submit Direct Testimony in this proceeding?**

10 A. Yes, I submitted Direct Testimony on behalf of AK Steel.

11

12 **Q. What is the purpose of your Surrebuttal Testimony?**

13 A. The purpose of my Surrebuttal Testimony is to respond to the Rebuttal Testimony of
14 Ms. Constance Heppenstall, witness for Pennsylvania American Water Company
15 ("PAWC" or "Company").

1 **Q. Do you agree with Ms. Heppenstall's calculation of the 1.7%¹ increase to**
2 **Industrial customer charges that would be necessary to recover your proposed**
3 **reduction of \$55,472 to the Company's proposed increase to the fourth block of**
4 **the Industrial rate schedule?**

5 A. Yes, I agree with Ms. Heppenstall's calculation of an additional 1.7% increase to
6 Industrial customer charges to recover my proposed lower percentage increase to the
7 fourth block of the Industrial rate schedule. However, I still believe that this small
8 additional increase is reasonable based on the arguments I presented in my Direct
9 Testimony. In addition, it should be pointed out that in the likely event that the
10 Commission orders a lower revenue increase for PAWC, then this additional 1.7%
11 increase would be reduced as well. Finally, AK Steel would also pay the increased
12 customer charge along with the rest of the Industrial customers.

13
14 **Q. Are higher customer charges consistent with the collection of the Company's**
15 **fixed costs?**

16 A. Yes. A substantial amount of PAWC's fixed plant costs are being collected in the
17 volumetric charges, which are applied to volumes of water consumed. More recovery
18 of the Company's fixed costs in the customer charge would more closely match
19 recovery of these costs, which do not vary with volumes of water consumed.

20
21 **Q. On page 8, line 22 through 24 Ms. Heppenstall testified that since the Industrial**
22 **rate increases in this case are "much smaller" than in the 2017 rate case, a**

¹ Heppenstall Direct, page 9, lines 5 through 11.

1 **mitigation of the curtailment rate for AK Steel is not critical. Please address Ms.**
2 **Heppenstall's position on this point.**

3 A. I reviewed PAWC witness Paul Herbert's filed testimony in the 2017 rate case. Mr.
4 Herbert did not mention that the lower increase to the curtailment rate in that case was
5 for purposes of rate mitigation.

6
7 **Q. On page 9, lines 17 through 19, Ms. Heppenstall testified that AK Steel has not**
8 **been interrupted since it became a curtailment customer in May 2011. Please**
9 **address this portion of Ms. Heppenstall's Rebuttal Testimony.**

10 A. It is irrelevant whether or not AK Steel has been interrupted since May 2011. What is
11 relevant is that PAWC may interrupt AK Steel if system constraints justify a
12 curtailment of service. PAWC's Terms and Conditions for the Industrial Curtailment
13 Rate specifies the following with respect to curtailment:

14 **Curtailment.** The Company may request the customer to curtail its water usage to
15 assist the Company in addressing a system emergency, including insufficiency, for any
16 reason, of the Company's source of supply, treatment/purification, pumping,
17 transmission, storage or distribution capacity to serve customers' demands. However,
18 the maximum continuous period of each requested curtailment may not exceed six (6)
19 hours and the number of curtailments requested may not exceed three (3) in any one
20 calendar month nor exceed a total of six (6) curtailments in any year, measured in
21 twelve-month intervals commencing on the effective date of the Service Agreement.
22 The customer will be provided not less than one hour's notice before a requested
23 curtailment is expected to begin. Notice may be by telephone to the customer contact
24 identified in the Service Agreement.

25
26 **Amount of Curtailment.** When a curtailment is requested, the customer shall curtail
27 all usage of Company-supplied water for industrial purposes. Company-supplied
28 water may continue to be used for sanitary purposes, fire suppression and boiler feed-
29 water make-up, provided, however, that such permitted usage shall not exceed, in
30 aggregate, 15% of the customer's average daily usage during the preceding month,
31 prorated for the period of the requested curtailment.

1 The discounted Industrial tail block rate properly recognizes the reduced reliability of
2 service that AK Steel agreed to when it entered into the Industrial Curtailment Rate
3 with the Company. PAWC obviously saw the value to its system of being able to
4 curtail such a large customer. Otherwise it would not have agreed to the curtailment
5 tariff in the first place.

6

7 **Q. Does this conclude your Surrebuttal Testimony?**

8 **A. Yes.**

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission, *et al.* :
 :
 v. : R-2021-3027385, *et al.*
 :
 Aqua Pennsylvania, Inc. :

Pennsylvania Public Utility Commission, *et al.* :
 :
 v. : R-2021-3027386, *et al.*
 :
 Aqua Pennsylvania Wastewater, Inc. :

**DIRECT TESTIMONY
AND EXHIBITS
OF
RICHARD A. BAUDINO**

**ON BEHALF OF
AQUA LARGE USERS GROUP
J. KENNEDY AND ASSOCIATES, INC.**

NOVEMBER 2021

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission, et al. :
:
v. : R-2021-3027385, et al.
:
Aqua Pennsylvania, Inc. :

Pennsylvania Public Utility Commission, et al. :
:
v. : R-2021-3027386, et al.
:
Aqua Pennsylvania Wastewater, Inc. :

DIRECT TESTIMONY OF RICHARD A. BAUDINO

1 **Q. Please state your name and business address.**

2 A. My name is Richard A. Baudino. My business address is J. Kennedy and Associates, Inc.
3 ("Kennedy and Associates"), 570 Colonial Park Drive, Suite 305, Roswell, Georgia 30075.

4 **Q. What is your occupation and by whom are you employed?**

5 A. I am a consultant to Kennedy and Associates.

6 **Q. Please describe your education and professional experience.**

7 A. I received my Master of Arts degree with a major in Economics and a minor in Statistics
8 from New Mexico State University in 1982. I also received my Bachelor of Arts Degree
9 with majors in Economics and English from New Mexico State in 1979. I began my
10 professional career with the New Mexico Public Service Commission Staff in October
11 1982 and was employed there as a Utility Economist. During my employment with the
12 Staff, my responsibilities included the analysis of a broad range of issues in the ratemaking
13 field. Areas in which I testified included cost of service, rate of return, rate design, revenue

1 requirements, analysis of sale/leasebacks of generating plants, utility finance issues, and
2 generating plant phase-ins.

3 In October 1989, I joined the utility consulting firm of Kennedy and Associates as a Senior
4 Consultant where my duties and responsibilities covered substantially the same areas as
5 those during my tenure with the New Mexico Public Service Commission Staff. I became
6 Manager in July 1992 and was named Director of Consulting in January 1995. Currently,
7 I am a consultant with Kennedy and Associates.

8 Exhibit ___(RAB-1) summarizes my expert testimony experience.

9 **Q. On whose behalf are you testifying?**

10 A. I am testifying on behalf of the Aqua Large Users Group ("Aqua LUG").

11 **Q. What is the purpose of your testimony?**

12 A. The purpose of my Direct Testimony is to respond to the revenue allocation proposal
13 presented by Ms. Constance Heppenstall, witness for Aqua Pennsylvania, Inc. ("AP" or
14 "Company").

15 **Q. Did you present prefiled testimony in the Company's last rate case?**

16 A. Yes. I presented Rebuttal and Surrebuttal Testimony in AP's last rate case, Docket Nos.
17 R-2018-3003558 and R-2018-3003561.

18 **Q. Please summarize Ms. Heppenstall's approach to the Company's water system class
19 cost of service study ("CCOSS").**

20 A. Ms. Heppenstall followed the base-extra capacity method as set forth in the Water Rates
21 Manual published by the American Water Works Association. This general approach to
22 water utility cost allocation has been accepted by the Pennsylvania Public Utility
23 Commission ("PPUC" or "Commission") in past AP rate cases. Because of past PPUC

1 acceptance, I will use the CCOSS filed by Ms. Heppenstall as a general guide to revenue
2 allocation in this proceeding.

3 **Q. Based on your review of Ms. Heppenstall's CCOSS, did she follow the approach used**
4 **by the Company in its last rate case?**

5 A. Yes, Ms. Heppenstall's approach is consistent with the CCOSS in the Company's last water
6 rate case.

7 **Q. Please explain what class relative rates of return are and why they are important.**

8 A. The relative rate of return ("RROR") shows how close a customer class rate of return is to
9 the system average return. For example, if a customer class rate of return is 5.5% and the
10 system average rate of return is 6.5%, then that class RROR is 0.85 (5.5% divided by 6.5%).
11 Because the 0.85 RROR is below 1.0, the class is earning less than the system average rate
12 of return. A class RROR of 1.0 indicates that the class return is the same as the system
13 average rate of return. A class RROR greater than 1.0 indicates that the class RROR is
14 greater than the system average rate of return.

15 **Q. How do the customer class RRORs at current rates in this case compare with the**
16 **RRORs at current rates in the last AP water case?**

17 A. Table 1 presents a comparison of RRORs at current rates in AP's last rate case and in this
18 case. Also shown are the resulting RRORs from Ms. Heppenstall's proposed revenue
19 allocation. RRORs at current rates in this case, shown in Column (2), were taken from
20 AP's Exhibit No. 5-A, Part 1, Schedule B, page 1 of 1. The RRORs presented in
21 Column (1), entitled "2018 Case", were taken from Exhibit No. 5-A, Schedule B, page 1
22 of in Docket No. R-2018-3003558. Finally, Column (3) shows the Company's proposed

1 RRORs from Ms. Heppenstall's revenue allocation and were taken from Exhibit No. 5-A,
2 Schedule C, page 1 of 1.

	(1)	(2)	(3)
	2018	Current	AP
	<u>Case</u>	<u>Case</u>	<u>Proposed</u>
			<u>RROR</u>
Residential	0.95	0.96	0.96
Commercial	1.04	1.07	1.05
Industrial	0.84	0.93	1.00
Public	1.21	1.18	1.18
Other Water Utilities	5.12	15.77	14.74
Private Fire	1.76	1.25	1.27
Public Fire	0.98	0.97	1.00

3
4 The RRORs at current rates for Residential, Commercial, and Public Fire are roughly the
5 same in both dockets. The Industrial class RROR improved substantially, going from 0.84
6 to 0.93. The Public class RROR has declined slightly and Private Fire RROR declined
7 substantially.

8 With respect to the RRORs that result from Ms. Heppenstall's proposed revenue allocation,
9 too little movement is made for the Residential, Commercial, and Public classes. The
10 proposed RROR for the Residential class made no movement toward the system average
11 increase in Ms. Heppenstall's proposed revenue allocation. The Commercial class RROR
12 declined only slightly. The Industrial class, however, was moved to a RROR of 1.0 with
13 an 18.5% revenue increase.

1 **Q. Given the RRORs in this case, what is your recommendation for revenue allocation?**

2 A. I recommend that somewhat more movement be made toward cost of service for the
3 Residential, Commercial, and Public classes. My recommended revenue allocation
4 involves the following:

- 5 • Move the Residential class from a RROR of 0.96 to 0.98.
- 6 • Move the Commercial class from a RROR of 1.07 to 1.02.
- 7 • Move the Industrial class from a RROR of 0.93 to 0.99.
- 8 • Move the Public class from a RROR of 1.18 to 1.15.

9 Please refer to Exhibit ___(RAB-2) for the results of my revenue allocation
10 recommendation to the Commission. This exhibit was generated using AP's CCOSS that
11 was provided in response to I&E RS-2-D-W. Page 1 shows Aqua LUG's proposed revenue
12 allocation to customer classes in the last two columns. Changes to Ms. Heppenstall's
13 revenue allocation were relatively modest. The increases to the Commercial and Public
14 classes were reduced from 16.0% to 13.88%. The Residential class increase moved from
15 17.4% to 18.26%. Aqua LUG's proposed class RRORs are shown on page 2 of Exhibit
16 ___(RAB-2). I would note that the increase to the Residential class represents 1.07 times
17 the system average increase, which is very reasonable.

18 **Q. Are there certain considerations for changes in the design of rates from your**
19 **proposal?**

20 A. Yes. Commercial and Industrial customer charges and the rates for consumption blocks 1
21 through 4 are the same for both classes. Industrial class rates also have 5th and 6th blocks
22 that Commercial customers do not have. The Company should take care to keep customer
23 charges and consumption charges in blocks 1 through 4 of the Commercial and Industrial

1 classes the same in its rate design, while avoiding excessive increases for blocks 5 and 6 in
2 the Industrial class. If necessary, AP could move some of the Industrial revenue increase
3 to the Residential class to moderate the increases in these blocks.

4 **Q. How does the Company differentiate between Commercial and Industrial customers?**

5 A. According to AP's Rules and Regulations, 3. Classes Of General Metered Service,
6 Commercial and Industrial customers are described as follows:

7 Commercial Class: A building, store, restaurant or office which is primarily a site for the
8 buying or selling of goods or the provision of professional or consumer services. In
9 addition, apartments, condominium complexes, colleges, private and public schools, car
10 washes, laundromats, construction sites, hotels, motels, and tanks filled at the Company's
11 premise are included in this class.

12 Industrial Class: A building or factory which is primarily a site for the manufacture or
13 production of goods.

14 Although not specifically stated in the Rules and Regulations, hospitals would be
15 considered in the Commercial class as well, as they are not involved in the manufacture or
16 production of goods.

17 **Q. Just to be clear, you are not supporting the Company's proposed revenue
18 requirement, are you?**

19 A. No. I am not taking a position on the Company's revenue requirement. I am using the
20 Company's requested revenue increase as a means to illustrate my revenue allocation
21 proposal. Should the Commission reduce AP's requested revenue increase, as is likely, the
22 percentage increases I presented on page 1 of Exhibit ___(RAB-2) should be scaled back
23 by an equal percentage amount to match the percentage reduction in the Company's
24 requested increase.

25 **Q. Does this conclude your Direct Testimony?**

26 A. Yes.

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission, *et al.* :
 :
 v. : R-2021-3027385, *et al.*
 :
 Aqua Pennsylvania, Inc. :

Pennsylvania Public Utility Commission, *et al.* :
 :
 v. : R-2021-3027386, *et al.*
 :
 Aqua Pennsylvania Wastewater, Inc. :

**EXHIBITS
OF
RICHARD A. BAUDINO**

**ON BEHALF OF
AQUA LARGE USERS GROUP
J. KENNEDY AND ASSOCIATES, INC.**

NOVEMBER 2021

RESUME OF RICHARD A. BAUDINO

EDUCATION

New Mexico State University, M.A.

Major in Economics

Minor in Statistics

New Mexico State University, B.A.

Economics

English

Thirty-nine years of experience in utility ratemaking and the application of principles of economics to the regulation of electric, gas, and water utilities. Broad based experience in revenue requirement analysis, cost of capital, rate of return, cost and revenue allocation, and rate design.

REGULATORY TESTIMONY

Preparation and presentation of expert testimony in the areas of:

Cost of Capital for Electric, Gas and Water Companies

Electric, Gas, and Water Utility Cost Allocation and Rate Design

Revenue Requirements

Gas and Electric industry restructuring and competition

Fuel cost auditing

Ratemaking Treatment of Generating Plant Sale/Leasebacks

RESUME OF RICHARD A. BAUDINO

EXPERIENCE

1989 to

Present: Kennedy and Associates: Director of Consulting, Consultant - Responsible for consulting assignments in revenue requirements, rate design, cost of capital, economic analysis of generation alternatives, electric and gas industry restructuring/competition and water utility issues.

1982 to

1989: New Mexico Public Service Commission Staff: Utility Economist - Responsible for preparation of analysis and expert testimony in the areas of rate of return, cost allocation, rate design, finance, phase-in of electric generating plants, and sale/leaseback transactions.

CLIENTS SERVED

Regulatory Commissions

Louisiana Public Service Commission
Georgia Public Service Commission
New Mexico Public Service Commission

Other Clients and Client Groups

Ad Hoc Committee for a Competitive Electric Supply System	Northwest Arkansas Gas Consumers
Air Products and Chemicals, Inc.	Maryland Energy Group
Arkansas Electric Energy Consumers	Occidental Chemical
Arkansas Gas Consumers	PSI Industrial Group
AK Steel	Large Power Intervenors (Minnesota)
Armco Steel Company, L.P.	Tyson Foods
Aqua Large Users Group	West Virginia Energy Users Group
Assn. of Business Advocating Tariff Equity	The Commercial Group
Atmos Cities Steering Committee	Wisconsin Industrial Energy Group
Canadian Federation of Independent Businesses	South Florida Hospital and Health Care Assn.
CF&I Steel, L.P.	PP&L Industrial Customer Alliance
Cities of Midland, McAllen, and Colorado City	Philadelphia Area Industrial Energy Users Gp.
Cities Served by Texas-New Mexico Power Co.	Philadelphia Large Users Group
Cities Served by AEP Texas	West Penn Power Intervenors
City of New York	Duquesne Industrial Intervenors
Climax Molybdenum Company	Met-Ed Industrial Users Gp.
Connecticut Industrial Energy Consumers	Penelec Industrial Customer Alliance
Crescent City Power Users Group	Penn Power Users Group
Cripple Creek & Victor Gold Mining Co.	Columbia Industrial Intervenors
Dearborn Industrial Generation, LLC	U.S. Steel & Univ. of Pittsburgh Medical Ctr.
General Electric Company	Multiple Intervenors
Holcim (U.S.) Inc.	Maine Office of Public Advocate
IBM Corporation	Missouri Office of Public Counsel
Industrial Energy Consumers	University of Massachusetts - Amherst
Kentucky Industrial Utility Consumers	WCF Hospital Utility Alliance
Kentucky Office of the Attorney General	West Travis County Public Utility Agency
Lexington-Fayette Urban County Government	Steering Committee of Cities Served by Oncor
Large Electric Consumers Organization	Utah Office of Consumer Services
Newport Steel	Healthcare Council of the National Capital Area
North Carolina Attorney General's Office	Vermont Department of Public Service
	Texas Industrial Energy Consumers

**Expert Testimony Appearances
of
Richard A. Baudino
As of November 2021**

Date	Case	Jurisdict.	Party	Utility	Subject
10/83	1803, 1817	NM	New Mexico Public Service Commission	Southwestern Electric Coop.	Rate design.
11/84	1833	NM	New Mexico Public Service Commission Palo Verde	El Paso Electric Co.	Service contract approval, rate design, performance standards for nuclear generating system
1983	1835	NM	New Mexico Public Service Commission	Public Service Co. of NM	Rate design.
1984	1848	NM	New Mexico Public Service Commission	Sangre de Cristo Water Co.	Rate design.
02/85	1906	NM	New Mexico Public Service Commission	Southwestern Public Service Co.	Rate of return.
09/85	1907	NM	New Mexico Public Service Commission	Jomada Water Co.	Rate of return.
11/85	1957	NM	New Mexico Public Service Commission	Southwestern Public Service Co.	Rate of return.
04/86	2009	NM	New Mexico Public Service Commission	El Paso Electric Co.	Phase-in plan, treatment of sale/leaseback expense.
06/86	2032	NM	New Mexico Public Service Commission	El Paso Electric Co.	Sale/leaseback approval.
09/86	2033	NM	New Mexico Public Service Commission	El Paso Electric Co.	Order to show cause, PVNGS audit.
02/87	2074	NM	New Mexico Public Service Commission	El Paso Electric Co.	Diversification.
05/87	2089	NM	New Mexico Public Service Commission	El Paso Electric Co.	Fuel factor adjustment.
08/87	2092	NM	New Mexico Public Service Commission	El Paso Electric Co.	Rate design.
10/87	2146	NM	New Mexico Public Service Commission	Public Service Co. of New Mexico	Financial effects of restructuring, reorganization.
07/88	2162	NM	New Mexico Public Service Commission	El Paso Electric Co.	Revenue requirements, rate design, rate of return.

**Expert Testimony Appearances
of
Richard A. Baudino
As of November 2021**

Date	Case	Jurisdiction	Party	Utility	Subject
01/89	2194	NM	New Mexico Public Service Commission	Plains Electric G&T Cooperative	Economic development.
1/89	2253	NM	New Mexico Public Service Commission	Plains Electric G&T Cooperative	Financing.
08/89	2259	NM	New Mexico Public Service Commission	Homestead Water Co.	Rate of return, rate design.
10/89	2262	NM	New Mexico Public Service Commission	Public Service Co. of New Mexico	Rate of return.
09/89	2269	NM	New Mexico Public Service Commission	Ruidoso Natural Gas Co.	Rate of return, expense from affiliated interest.
12/89	89-208-TF	AR	Arkansas Electric Energy Consumers	Arkansas Power & Light Co.	Rider M-33.
01/90	U-17282	LA	Louisiana Public Service Commission	Gulf States Utilities	Cost of equity.
09/90	90-158	KY	Kentucky Industrial Utility Consumers	Louisville Gas & Electric Co.	Cost of equity.
09/90	90-004-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Cost of equity, transportation rate.
12/90	U-17282 Phase IV	LA	Louisiana Public Service Commission	Gulf States Utilities	Cost of equity.
04/91	91-037-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Transportation rates.
12/91	91-410-EL-AIR	OH	Air Products & Chemicals, Inc., Armco Steel Co., General Electric Co., Industrial Energy Consumers	Cincinnati Gas & Electric Co.	Cost of equity.
05/92	910890-EI	FL	Occidental Chemical Corp.	Florida Power Corp.	Cost of equity, rate of return.
09/92	92-032-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Cost of equity, rate of return, cost-of-service.
09/92	39314	ID	Industrial Consumers for Fair Utility Rates	Indiana Michigan Power Co.	Cost of equity, rate of return.

**Expert Testimony Appearances
of
Richard A. Baudino
As of November 2021**

Date	Case	Jurisdict.	Party	Utility	Subject
09/92	92-009-U	AR	Tyson Foods	General Waterworks	Cost allocation, rate design.
01/93	92-346	KY	Newport Steel Co.	Union Light, Heat & Power Co.	Cost allocation.
01/93	39498	IN	PSI Industrial Group	PSI Energy	Refund allocation.
01/93	U-10105	MI	Association of Businesses Advocating Tariff Equality (ABATE)	Michigan Consolidated Gas Co.	Return on equity.
04/93	92-1464-EL-AIR	OH	Air Products and Chemicals, Inc., Armco Steel Co., Industrial Energy Consumers	Cincinnati Gas & Electric Co.	Return on equity.
09/93	93-189-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Transportation service terms and conditions.
09/93	93-081-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Cost-of-service, transportation rates, rate supplements; return on equity; revenue requirements.
12/93	U-17735	LA	Louisiana Public Service Commission Staff	Cajun Electric Power Cooperative	Historical reviews; evaluation of economic studies.
03/94	10320	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric Co.	Trimble County CWIP revenue refund.
4/94	E-015/GR-94-001	MN	Large Power Intervenors	Minnesota Power Co.	Evaluation of the cost of equity, capital structure, and rate of return.
5/94	R-00942993	PA	PG&W Industrial Intervenors	Pennsylvania Gas & Water Co.	Analysis of recovery of transition costs.
5/94	R-00943001	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania charge proposals.	Evaluation of cost allocation, rate design, rate plan, and carrying
7/94	R-00942986	PA	Armco, Inc., West Penn Power Industrial Intervenors	West Penn Power Co.	Return on equity and rate of return.
7/94	94-0035-E-42T	WV	West Virginia Energy Users' Group	Monongahela Power Co.	Return on equity and rate of return.

**Expert Testimony Appearances
of
Richard A. Baudino
As of November 2021**

Date	Case	Jurisdict.	Party	Utility	Subject
8/94	8652	MD	Westvaco Corp. Co.	Potomac Edison	Return on equity and rate of return.
9/94	930357-C	AR	West Central Arkansas Gas Consumers	Arkansas Oklahoma Gas Corp.	Evaluation of transportation service.
9/94	U-19904	LA	Louisiana Public Service Commission	Gulf States Utilities	Return on equity.
9/94	8629	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Transition costs.
11/94	94-175-U	AR	Arkansas Gas Consumers	Arkla, Inc.	Cost-of-service, rate design, rate of return.
3/95	RP94-343- 000	FERC	Arkansas Gas Consumers	NorAm Gas Transmission	Rate of return.
4/95	R-00943271	PA	PP&L Industrial Customer Alliance	Pennsylvania Power & Light Co.	Return on equity.
6/95	U-10755	MI	Association of Businesses Advocating Tariff Equity	Consumers Power Co.	Revenue requirements.
7/95	8697	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Cost allocation and rate design.
8/95	95-254-TF U-2811	AR	Tyson Foods, Inc.	Southwest Arkansas Electric Cooperative	Refund allocation.
10/95	ER95-1042 -000	FERC	Louisiana Public Service Commission	Systems Energy Resources, Inc.	Return on Equity.
11/95	I-940032	PA	Industrial Energy Consumers of Pennsylvania	State-wide - all utilities	Investigation into Electric Power Competition.
5/96	96-030-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Revenue requirements, rate of return and cost of service.
7/96	8725	MD	Maryland Industrial Group	Baltimore Gas & Electric Co., Potomac Electric Power Co. and Constellation Energy Corp.	Return on Equity.
7/96	U-21496	LA	Louisiana Public Service Commission	Central Louisiana Electric Co.	Return on equity, rate of return.
9/96	U-22092	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.

**Expert Testimony Appearances
of
Richard A. Baudino
As of November 2021**

Date	Case	Jurisdict.	Party	Utility	Subject
1/97	RP96-199-000	FERC	The Industrial Gas Users Conference	Mississippi River Transmission Corp.	Revenue requirements, rate of return and cost of service.
3/97	96-420-U	AR	West Central Arkansas Gas Corp.	Arkansas Oklahoma Gas Corp.	Revenue requirements, rate of return, cost of service and rate design.
7/97	U-11220	MI	Association of Business Advocating Tariff Equity	Michigan Gas Co. and Southeastern Michigan Gas Co.	Transportation Balancing Provisions.
7/97	R-00973944	PA	Pennsylvania American Water Large Users Group	Pennsylvania-American Water Co.	Rate of return, cost of service, revenue requirements.
3/98	8390-U	GA	Georgia Natural Gas Group and the Georgia Textile Manufacturers Assoc.	Atlanta Gas Light	Rate of return, restructuring issues, unbundling, rate design issues.
7/98	R-00984280	PA	PG Energy, Inc. Intervenors	PGE Industrial	Cost allocation.
8/98	U-17735	LA	Louisiana Public Service Commission	Cajun Electric Power Cooperative	Revenue requirements.
10/98	97-596	ME	Maine Office of the Public Advocate	Bangor Hydro-Electric Co.	Return on equity, rate of return.
10/98	U-23327	LA	Louisiana Public Service Commission	SWEPSCO, CSW and AEP	Analysis of proposed merger.
12/98	98-577	ME	Maine Office of the Public Advocate	Maine Public Service Co.	Return on equity, rate of return.
12/98	U-23358	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity, rate of return.
3/99	98-426	KY	Kentucky Industrial Utility Customers, Inc.	Louisville Gas and Electric Co	Return on equity.
3/99	99-082	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Utilities Co.	Return on equity.
4/99	R-984554	PA	T. W. Phillips Users Group	T. W. Phillips Gas and Oil Co.	Allocation of purchased gas costs.
6/99	R-0099462	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Balancing charges.
10/99	U-24182	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Cost of debt.

**Expert Testimony Appearances
of
Richard A. Baudino
As of November 2021**

Date	Case	Jurisdict.	Party	Utility	Subject
10/99	R-00994782	PA	Peoples Industrial Intervenor	Peoples Natural Gas Co.	Restructuring issues.
10/99	R-00994781	PA	Columbia Industrial Intervenor	Columbia Gas of Pennsylvania	Restructuring, balancing charges, rate flexing, alternate fuel.
01/00	R-00994786	PA	UGI Industrial Intervenor	UGI Utilities, Inc.	Universal service costs, balancing, penalty charges, capacity Assignment.
01/00	8829	MD	Maryland Industrial Gr.	Baltimore Gas & Electric Co.	Revenue requirements, cost allocation, rate design.
02/00	R-00994788	PA	Penn Fuel Transportation	PFG Gas, Inc., and	Tariff charges, balancing provisions.
05/00	U-17735	LA	Louisiana Public Service Comm.	Louisiana Electric Cooperative	Rate restructuring.
07/00	2000-080	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric Co.	Cost allocation.
07/00	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket E)	LA	Louisiana Public Service Commission	Southwestern Electric Power Co.	Stranded cost analysis.
09/00	R-00005654	PA	Philadelphia Industrial And Commercial Gas Users Group.	Philadelphia Gas Works	Interim relief analysis.
10/00	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket B)	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Restructuring, Business Separation Plan.
11/00	R-00005277 (Rebuttal)	PA	Penn Fuel Transportation Customers	PFG Gas, Inc. and North Penn Gas Co.	Cost allocation issues.
12/00	U-24993	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
03/01	U-22092	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Stranded cost analysis.
04/01	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket B) (Addressing Contested Issues)	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Restructuring issues.
04/01	R-00006042	PA	Philadelphia Industrial and Commercial Gas Users Group	Philadelphia Gas Works	Revenue requirements, cost allocation and tariff issues.

**Expert Testimony Appearances
of
Richard A. Baudino
As of November 2021**

Date	Case	Jurisdict.	Party	Utility	Subject
11/01	U-25687	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
03/02	14311-U	GA	Georgia Public Service Commission	Atlanta Gas Light	Capital structure.
08/02	2002-00145	KY	Kentucky Industrial Utility Customers	Columbia Gas of Kentucky	Revenue requirements.
09/02	M-00021612	PA	Philadelphia Industrial And Commercial Gas Users Group	Philadelphia Gas Works	Transportation rates, terms, and conditions.
01/03	2002-00169	KY	Kentucky Industrial Utility Customers	Kentucky Power	Return on equity.
02/03	02S-594E	CO	Cripple Creek & Victor Gold Mining Company	Aquila Networks – WPC	Return on equity.
04/03	U-26527	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
10/03	CV020495AB	GA	The Landings Assn., Inc.	Utilities Inc. of GA	Revenue requirement & overcharge refund
03/04	2003-00433	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric	Return on equity, Cost allocation & rate design
03/04	2003-00434	KY	Kentucky Industrial Utility Customers	Kentucky Utilities	Return on equity
4/04	04S-035E	CO	Cripple Creek & Victor Gold Mining Company, Goodrich Corp., Holcim (U.S.) Inc., and The Trane Co.	Aquila Networks – WPC	Return on equity.
9/04	U-23327, Subdocket B	LA	Louisiana Public Service Commission	Southwestern Electric Power Company	Fuel cost review
10/04	U-23327 Subdocket A	LA	Louisiana Public Service Commission	Southwestern Electric Power Company	Return on Equity
06/05	050045-EI	FL	South Florida Hospital and Health Care Assoc.	Florida Power & Light Co.	Return on equity
08/05	9036	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Revenue requirement, cost allocation, rate design, Tariff issues.
01/06	2005-0034	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Power Co.	Return on equity.

**Expert Testimony Appearances
of
Richard A. Baudino
As of November 2021**

Date	Case	Jurisdict.	Party	Utility	Subject
03/06	05-1278-E-PC-PW-42T	WV	West Virginia Energy Users Group	Appalachian Power Company	Return on equity.
04/06	U-25116 Commission	LA	Louisiana Public Service	Entergy Louisiana, LLC	Transmission Issues
07/06	U-23327 Commission	LA	Louisiana Public Service	Southwestern Electric Power Company	Return on equity, Service quality
08/06	ER-2006-0314	MO	Missouri Office of the Public Counsel	Kansas City Power & Light Co.	Return on equity, Weighted cost of capital
08/06	06S-234EG	CO	CF&I Steel, L.P. & Climax Molybdenum	Public Service Company of Colorado	Return on equity, Weighted cost of capital
01/07	06-0960-E-42T Users Group	WV	West Virginia Energy	Monongahela Power & Potomac Edison	Return on Equity
01/07	43112	AK	AK Steel, Inc.	Vectren South, Inc.	Cost allocation, rate design
05/07	2006-661	ME	Maine Office of the Public Advocate	Bangor Hydro-Electric	Return on equity, weighted cost of capital.
09/07	07-07-01	CT	Connecticut Industrial Energy Consumers	Connecticut Light & Power	Return on equity, weighted cost of capital
10/07	05-UR-103	WI	Wisconsin Industrial Energy Group, Inc.	Wisconsin Electric Power Co.	Return on equity
11/07	29797	LA	Louisiana Public Service Commission	Cleco Power :LLC & Southwestern Electric Power	Lignite Pricing, support of settlement
01/08	07-551-EL-AIR	OH	Ohio Energy Group	Ohio Edison, Cleveland Electric, Toledo Edison	Return on equity
03/08	07-0585, 07-0585, 07-0587, 07-0588, 07-0589, 07-0590, (consol.)	IL	The Commercial Group	Ameren	Cost allocation, rate design
04/08	07-0566	IL	The Commercial Group	Commonwealth Edison	Cost allocation, rate design
06/08	R-2008-2011621	PA	Columbia Industrial Intervenors	Columbia Gas of PA	Cost and revenue allocation, Tariff issues
07/08	R-2008-2028394	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy	Cost and revenue allocation, Tariff issues

**Expert Testimony Appearances
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Richard A. Baudino
As of November 2021**

Date	Case	Jurisdict.	Party	Utility	Subject
07/08	R-2008-2039634	PA	PPL Gas Large Users Group	PPL Gas	Retainage, LUFG Pct.
08/08	6680-UR-116	WI	Wisconsin Industrial Energy Group	Wisconsin P&L	Cost of Equity
08/08	6690-UR-119	WI	Wisconsin Industrial Energy Group	Wisconsin PS	Cost of Equity
09/08	ER-2008-0318	MO	The Commercial Group	AmerenUE	Cost and revenue allocation
10/08	R-2008-2029325	PA	U.S. Steel & Univ. of Pittsburgh Med. Ctr.	Equitable Gas Co.	Cost and revenue allocation
10/08	08-G-0609	NY	Multiple Intervenors	Niagara Mohawk Power	Cost and Revenue allocation
12/08	27800-U	GA	Georgia Public Service Commission	Georgia Power Company	CWIP/AFUDC issues, Review financial projections
03/09	ER08-1056	FERC	Louisiana Public Service Commission	Entergy Services, Inc.	Capital Structure
04/09	E002/GR-08-1065	MN	The Commercial Group	Northern States Power	Cost and revenue allocation and rate design
05/09	08-0532	IL	The Commercial Group	Commonwealth Edison	Cost and revenue allocation
07/09	080677-EI	FL	South Florida Hospital and Health Care Association	Florida Power & Light	Cost of equity, capital structure, Cost of short-term debt
07/09	U-30975	LA	Louisiana Public Service Commission	Cleco LLC, Southwestern Public Service Co.	Lignite mine purchase
10/09	4220-UR-116	WI	Wisconsin Industrial Energy Group	Northern States Power	Class cost of service, rate design
10/09	M-2009-2123945	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities	Smart Meter Plan cost allocation
10/09	M-2009-2123944	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Company	Smart Meter Plan cost allocation
10/09	M-2009-2123951	PA	West Penn Power Industrial Intervenors	West Penn Power	Smart Meter Plan cost allocation
11/09	M-2009-2123948	PA	Duquesne Industrial Intervenors	Duquesne Light Company	Smart Meter Plan cost allocation
11/09	M-2009-2123950	PA	Met-Ed Industrial Users Group, Penelec Industrial Customer Alliance, Penn Power Users Group	Metropolitan Edison, Pennsylvania Electric Co., Pennsylvania Power Co.	Smart Meter Plan cost allocation

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Date	Case	Jurisdict.	Party	Utility	Subject
03/10	09-1352-E-42T	WV	West Virginia Energy Users Group	Monongahela Power	Return on equity, rate of return Potomac Edison
03/10	E015/GR-09-1151	MN	Large Power Intervenors	Minnesota Power	Return on equity, rate of return
04/10	2009-00459	KY	Kentucky Industrial Utility Consumers	Kentucky Power	Return on equity
04/10	2009-00548 2009-00549	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric, Kentucky Utilities	Return on equity.
05/10	10-0261-E-GI	WV	West Virginia Energy Users Group	Appalachian Power Co./ Wheeling Power Co.	EE/DR Cost Recovery, Allocation, & Rate Design
05/10	R-2009-2149262	PA	Columbia Industrial Intervenors	Columbia Gas of PA	Class cost of service & cost allocation
06/10	2010-00036	KY	Lexington-Fayette Urban County Government	Kentucky American Water Company	Return on equity, rate of return, revenue requirements
06/10	R-2010-2161694	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities	Rate design, cost allocation
07/10	R-2010-2161575	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Co.	Return on equity
07/10	R-2010-2161592	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Co.	Cost and revenue allocation
07/10	9230	MD	Maryland Energy Group	Baltimore Gas and Electric	Electric and gas cost and revenue allocation; return on equity
09/10	10-70	MA	University of Massachusetts-Amherst	Western Massachusetts Electric Co.	Cost allocation and rate design
10/10	R-2010-2179522	PA	Duquesne Industrial Intervenors	Duquesne Light Company	Cost and revenue allocation, rate design
11/10	P-2010-2158084	PA	West Penn Power Industrial Intervenors	West Penn Power Co.	Transmission rate design
11/10	10-0699-E-42T	WV	West Virginia Energy Users Group	Appalachian Power Co. & Wheeling Power Co.	Return on equity, rate of Return
11/10	10-0467	IL	The Commercial Group	Commonwealth Edison	Cost and revenue allocation and rate design
04/11	R-2010-2214415	PA	Central Pen Gas Large Users Group	UGI Central Penn Gas, Inc.	Tariff issues, revenue allocation
07/11	R-2011-2239263	PA	Philadelphia Area Energy Users Group	PECO Energy	Retainage rate

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Date	Case	Jurisdict.	Party	Utility	Subject
08/11	R-2011-2232243	PA	AK Steel	Pennsylvania-American Water Company	Rate Design
08/11	11AL-151G	CO	Climax Molybdenum	PS of Colorado	Cost allocation
09/11	11-G-0280	NY	Multiple Intervenors	Corning Natural Gas Co.	Cost and revenue allocation
10/11	4220-UR-117	WI	Wisconsin Industrial Energy Group	Northern States Power	Cost and revenue allocation, rate design
02/12	11AL-947E	CO	Climax Molybdenum, CF&I Steel	Public Service Company of Colorado	Return on equity, weighted cost of capital
07/12	120015-EI	FL	South Florida Hospitals and Health Care Association	Florida Power and Light Co,	Return on equity, weighted cost of capital
07/12	12-0613-E-PC	WV	West Virginia Energy Users Group	American Electric Power/APCo	Special rate proposal for Century Aluminum
07/12	R-2012-2290597	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities Corp.	Cost allocation
09/12	05-UR-106	WI	Wisconsin Industrial Energy Group	Wisconsin Electric Power Co.	Class cost of service, cost and revenue allocation, rate design
09/12	2012-00221 2012-00222	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric, Kentucky Utilities	Return on equity.
10/12	9299	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design Cost of equity, weighted cost of capital
10/12	4220-UR-118	WI	Wisconsin Industrial Energy Group	Northern States Power Company	Class cost of service, cost and revenue allocation, rate design
10/12	473-13-0199	TX	Steering Committee of Cities Served by Oncor	Cross Texas Transmission, LLC	Return on equity, capital structure
01/13	R-2012-2321748 et al.	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Cost and revenue allocation
02/13	12AL-1052E	CO	Cripple Creek & Victor Gold Mining, Holcim (US) Inc.	Black Hills/Colorado Electric Utility Company	Cost and revenue allocations
06/13	8009	VT	IBM Corporation	Vermont Gas Systems	Cost and revenue allocation, rate design
07/13	130040-EI	FL	WCF Hospital Utility Alliance	Tampa Electric Co.	Return on equity, rate of return
08/13	9326	MD	Maryland Energy Group	Baltimore Gas and Electric	Cost and revenue allocation, rate design, special rider

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Date	Case	Jurisdict.	Party	Utility	Subject
08/13	P-2012-2325034	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities, Corp.	Distribution System Improvement Charge
09/13	4220-UR-119	WI	Wisconsin Industrial Energy Group	Northern States Power Co.	Class cost of service, cost and revenue allocation, rate design
11/13	13-1325-E-PC	WV	West Virginia Energy Users Group	American Electric Power/APCo	Special rate proposal, Felman Production
06/14	R-2014-2406274	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Cost and revenue allocation, rate design
08/14	05-UR-107	WI	Wisconsin Industrial Energy Group	Wisconsin Electric Power Co.	Cost and revenue allocation, rate design
10/14	ER13-1508 et al.	FERC	Louisiana Public Service Comm.	Entergy Services, Inc.	Return on equity
11/14	14AL-0660E	CO	Climax Molybdenum Co. and CFI Steel, LP	Public Service Co. of Colorado	Return on equity, weighted cost of capital
11/14	R-2014-2428742	PA	AK Steel	West Penn Power Company	Cost and revenue allocation
12/14	42866	TX	West Travis Co. Public Utility Agency	Travis County Municipal Utility District No. 12	Response to complain of monopoly power
3/15	2014-00371 2014-00372	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric, Kentucky Utilities	Return on equity, cost of debt, weighted cost of capital
3/15	2014-00396	KY	Kentucky Industrial Utility Customers	Kentucky Power Co.	Return on equity, weighted cost of capital
6/15	15-0003-G-42T	WV	West Virginia Energy Users Gp.	Mountaineer Gas Co.	Cost and revenue allocation, Infrastructure Replacement Program
9/15	15-0676-W-42T	WV	West Virginia Energy Users Gp.	West Virginia-American Water Company	Appropriate test year, Historical vs. Future
9/15	15-1256-G-390P	WV	West Virginia Energy Users Gp.	Mountaineer Gas Co.	Rate design for Infrastructure Replacement and Expansion Program
10/15	4220-UR-121	WI	Wisconsin Industrial Energy Gp.	Northern States Power Co.	Class cost of service, cost and revenue allocation, rate design
12/15	15-1600-G-390P	WV	West Virginia Energy Users Gp.	Dominion Hope	Rate design and allocation for Pipeline Replacement & Expansion Prog.
12/15	45188	TX	Steering Committee of Cities Served by Oncor	Oncor Electric Delivery Co.	Ring-fence protections for cost of capital

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Date	Case	Jurisdict.	Party	Utility	Subject
2/16	9406	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design, proposed Rider 5
3/16	39971	GA	GA Public Service Comm. Staff	Southern Company / AGL Resources	Credit quality and service quality issues
04/16	2015-00343	KY	Kentucky Office of the Attorney General	Atmos Energy	Cost of equity, cost of short-term debt, capital structure
05/16	16-G-0058 16-G-0059	NY	City of New York	Brooklyn Union Gas Co., KeySpan Gas East Corp.	Cost and revenue allocation, rate design, service quality issues
06/16	16-0073-E-C	WV	Constellium Rolled Products Ravenswood, LLC	Appalachian Power Co.	Complaint; security deposit
07/16	9418	MD	Healthcare Council of the National Capital Area	Potomac Electric Power Co.	Cost of equity, cost of service, Cost and revenue allocation
07/16	160021-EI	FL	South Florida Hospital and Health Care Association	Florida Power and Light Co.	Return on equity, cost of debt, capital structure
07/16	16-057-01	UT	Utah Office of Consumer Svcs.	Dominion Resources, Questar Gas Co.	Credit quality and service quality issues
08/16	8710	VT	Vermont Dept. of Public Service	Vermont Gas Systems	Return on equity, cost of debt, cost of capital
08/16	R-2016-2537359	PA	AK Steel Corp.	West Penn Power Co.	Cost and revenue allocation
09/16	2016-00162	KY	Kentucky Office of the Attorney General	Columbia Gas of Ky.	Return on equity, cost of short-term debt
09/16	16-0550-W-P	WV	West Va. Energy Users Gp.	West Va. American Water Co.	Infrastructure Replacement Program Surcharge
01/17	46238	TX	Steering Committee of Cities Served by Oncor	Oncor Electric Delivery Co.	Ring fencing and other conditions for acquisition, service quality and reliability
02/17	45414	TX	Cities of Midland, McAllen, and Colorado City	Sharyland Utilities, LP and Sharyland Dist. and Transmission Services, LLC	Return on equity
02/17	2016-00370 2016-00371	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric, Kentucky Utilities	Return on equity, cost of debt, weighted cost of capital
03/17	10580	TX	Atmos Cities Steering Committee	Atmos Pipeline Texas	Return on equity, capital structure, weighted cost of capital
03/17	R-3867-2013	Quebec, Canada	Canadian Federation of Independent Businesses	Gaz Metro	Marginal Cost of Service Study

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Date	Case	Jurisdict.	Party	Utility	Subject
05/17	R-2017-2586783	PA	Philadelphia Industrial and Commercial Gas Users Gp.	Philadelphia Gas Works	Cost and revenue allocation, rate design, Interruptible tariffs
08/17	R-2017-2595853	PA	AK Steel	Pennsylvania American Water Co.	Cost and revenue allocation, rate design
8/17	17-3112-INV	VT	Vt. Dept. of Pubic Service	Green Mountain Power	Return on equity, cost of debt, weighted cost of capital
9/17	4220-UR-123	WI	Wisconsin Industrial Energy Group	Northern States Power	Cost and revenue allocation, rate design
10/17	2017-00179	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Power Co.	Return on equity, cost of short-term debt
12/17	2017-00321	KY	Office of the Attorney General	Duke Energy Kentucky, Inc.	Return on equity
1/18	2017-00349	KY	Office of the Attorney General	Atmos Energy	Return on equity, cost of debt, weighted cost of capital
5/18	Fiscal Years 2019-2021 Rates	PA	Philadelphia Large Users Group	Philadelphia Water Department	Cost and revenue allocation
8/18	18-0974-TF	VT	Vt. Dept. of Public Service	Green Mountain Power	Return on equity, cost of debt, weighted cost of capital
8/18	48401	TX	Cities Served by Texas-New Mexico Power Company	Texas-New Mexico Power Co.	Return on equity, capital structure
8/18	18-05-16	CT	Connecticut Industrial Energy Consumers	Connecticut Natural Gas Co.	Cost and revenue allocation
9/18	9484	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design
9/18	2017-370-E	SC	South Carolina Office of Regulatory Staff	South Carolina Electric & Gas, Dominion Resources, SCANA	Return on equity, service quality standards, credit quality conditions
10/18	18-1115-G-390P	WV	West Va. Energy Users Group	Mountaineer Gas Company	Customer protections for Infrastructure Replacement and Expansion Program
12/18	R-2018-3003558, R-2018-3003561	PA	Aqua Large Users Group	Aqua Pennsylvania, Inc.	Cost and revenue allocation
02/19	UD-18-07	CCNO	Crescent City Power Users' Gp.	Entergy New Orleans, LLC	Return on equity, Reliability Incentive Mechanism, other proposed riders
03/19	2018-00358	KY	Office of the Attorney General	Kentucky American Water Co.	Return on equity, Qualified Infrastructure Program rider
05/19	19-E-0065 19-G-0066	NY	City of New York	Consolidated Edison Co.	Cost and revenue allocation, rate design, tariff issues, fast-charging station incentives

**Expert Testimony Appearances
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Date	Case	Jurisdict.	Party	Utility	Subject
05/2019	19-0513-TF	VT	Vt. Dept. of Public Service	Vermont Gas Systems	Return on equity, capital structure
06/2019	5-TG-100	WI	Wisconsin Industrial Energy Group	WEPCO, Wisconsin Gas, Wisconsin PS	Transportation and balancing issues
07/2019	49494	TX	Cities Served by AEP Texas	AEP Texas, Inc.	Return on equity, capital structure
08/2019	19-G-0309 19-G-0310	NY	City of New York	Brooklyn Union Gas Co., KeySpan Gas East Corp.	Cost and revenue allocation, rate design, tariff issues and modifications
08/2019	19-0316-G-42T	WV	West Virginia Energy Users Gp.	Mountaineer Gas Company	Cost and revenue allocation
8/2019	5-UR-109	WI	Wisconsin Industrial Energy Gp.	Wisconsin Electric Power Co., Wisconsin Gas, LLC	Cost Allocation, Class cost of service study
8/2019	6690-UR-126	WI	Wisconsin Industrial Energy Gp.	Wisconsin Public Service Corp.	Cost Allocation, Class cost of service study
9/2019	9610	MD	Maryland Energy Group	Baltimore Gas and Electric Co.	Cost and revenue allocation, rate design
12/2019	2019-00271	KY	Office of the Attorney General	Duke Energy Kentucky, Inc.	Return on equity
2/2020	49831	TX	Texas Industrial Energy Consumers	Southwestern Public Service Co.	Return on equity, capital structure, rate of return
2/2020	E-7. Sub 1214	NC	NC Attorney General's Office	Duke Energy Carolinas	Return on equity, capital structure, rate of return, economic conditions
2/2020	E-2. Sub 1219	NC	NC Attorney General's Office	Duke Energy Progress	Return on equity, capital structure, rate of return, economic conditions
5/2020	R-2019- 3015162	PA	Industrial Energy Consumers of Pennsylvania	UGI Utilities, Inc.	Return on equity, cost of debt, revenue allocation, rate design
6/2020	20-G-0101	NY	Multiple Intervenors	Corning Natural Gas Corp.	Cost and revenue allocation
9/2020	R-2020- 2019369	PA	AK Steel	Pennsylvania-American Water Company	Cost and revenue allocation, rate design
9/2020	20-035-04	UT	The Kroger Co.	Rocky Mountain Power	Cost and revenue allocation, rate design
10/2020	2020-00174	KY	Ky. Office of the Attorney General, Ky. Industrial Utility Customers	Kentucky Power Co.	Return on equity
3/2021	2020-00349	KY	Ky. Office of the Attorney General, Ky. Industrial Utility Customers	Kentucky Utilities Co.	Return on equity
3/2021	2020-00350	KY	Ky. Office of the Attorney General, Ky. Industrial Utility Customers	Louisville Gas and Electric Co.	Return on equity

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Date	Case	Jurisdict.	Party	Utility	Subject
3/2021	20-0746-G-42T	WV	West Va. Energy Users Group	Dominion Energy West Va.	Cost and revenue allocation, cost of equity
4/2021	17-12-03RE11	CT	Connecticut Industrial Energy Consumers	PURA Investigation Into Distribution System Planning	Economic development rates
6/2021	U-20940	MI	Dearborn Industrial Generation, LLC	DTE Gas Company	Cost and revenue allocation, rate design
7/2021	21-0043-G-PC	WV	West Va. Energy Users Group	Mountaineer Gas Co., UGI Corporation	Hold harmless conditions for utility acquisition
07/2021	U-35441	LA	Louisiana Public Service Commission	Southwestern Electric Power Company	Return on equity, cost of capital, service quality
08/2021	51802	TX	Texas Industrial Energy Consumers	Southwestern Public Service Company	Return on equity
09/21	2021-00190	KY	Kentucky Office of the Attorney General	Duke Energy Kentucky, Inc.	Return on equity, cost of debt
09/21	2021-00183	KY	Kentucky Office of the Attorney General	Columbia Gas of Kentucky, Inc.	Return on equity, cost of debt, capital structure
09/21	21-0369-W-42T	WV	West Va. Energy Users Group	West Virginia-American Water Company	Revenue stabilization mechanism
09/21	2021-00185	KY	Kentucky Office of the Attorney General	Delta Natural Gas Company, Inc.	Return on equity, cost of debt, capital structure
09/21	2021-00214	KY	Kentucky Office of the Attorney General	Atmos Energy Corporation	Return on equity, common equity ratio
11/21	R-2021-3027385, R-2021-3027386	PA	Aqua Large Users Group	Aqua Pennsylvania, Inc.	Cost and revenue allocation, Rate design

AQUA PENNSYLVANIA, INC.

AQUA LUG PROPOSED REVENUE ALLOCATION
AT AQUA PENNSYLVANIA REQUESTED REVENUE INCREASE

Customer Classification (1)	Pro Forma Cost of Service, as of March 31, 2020				Pro Forma Revenues Under Present Rates		Pro Forma Revenues Under Proposed Rates		Aqua LUG Proposed Increase	
	Amount (2)	Act 11 (3)	Water COS Plus Act 11 (4)	Percent of Total (5)	Amount (6)	Percent of Total (7)	Amount (8)	Percent of Total (9)	Amount (10)	Percent Increase (11)
Residential	\$ 382,958,592	\$ 16,806,100	\$ 399,764,692	68.1%	\$ 333,854,297	66.7%	\$ 394,824,929	67.3%	\$ 60,970,631	18.26%
Commercial	130,800,375	3,939,400	134,739,774	23.0%	119,491,326	23.8%	\$ 136,081,853	23.2%	16,590,526	13.88%
Industrial	19,732,783	528	19,733,310 *	3.4%	16,630,075	3.3%	\$ 19,613,804	3.3%	2,983,729	17.94%
Public	8,810,536	93,398	8,903,933 *	1.5%	8,516,664	1.7%	\$ 9,699,143	1.7%	\$1,182,479	13.88%
Other Water Utilities	2,396		2,396 *	0.0%	12,812	0.0%	14,846	0.0%	2,035	15.88%
Private Fire Protection	16,069,330		16,069,330	2.7%	16,153,537	3.2%	18,976,135	3.2%	2,822,599	17.47%
Public Fire Protection	<u>7,767,095</u>		<u>7,767,095</u>	<u>1.3%</u>	<u>6,438,592</u>	<u>1.3%</u>	<u>7,767,626</u>	<u>1.3%</u>	<u>1,329,034</u>	<u>20.64%</u>
Total Tariff Sales of Water	566,141,107	20,839,425	586,980,531	100.0%	501,097,303	100.0%	586,978,336	100.0%	85,881,033	17.14%
Contract Sales - Industrial	3,157,961		3,157,961		3,128,996		3,157,961		28,965	0.93%
Contract Sales - Public	1,448,398		1,448,398		1,247,315		1,448,398		201,083	16.12%
Contract Sales - OWU	<u>2,960,342</u>		<u>2,960,342</u>		<u>2,886,684</u>		<u>2,960,342</u>		<u>73,657</u>	<u>2.55%</u>
Subtotal Contract Sales	7,566,700	-	7,566,700		7,262,995		7,566,700		303,706	4.18%
Total Sales of Water	<u>573,707,807</u>	<u>20,839,425</u>	<u>594,547,232</u>		<u>508,360,298</u>		<u>594,545,036</u>		<u>86,184,738</u>	<u>16.95%</u>
Other Revenues - Wheeling Fees	15,256		15,256		15,256		15,256			
Other Water Revenues	<u>1,303,137</u>		<u>1,303,137</u>		<u>1,303,137</u>		<u>1,303,137</u>		-	0.00%
Subtotal Other Revenue	1,318,393		1,318,393		1,318,393		1,318,393		-	
Total	<u>\$ 575,026,200</u>	<u>\$ 20,839,425</u>	<u>\$ 595,865,624</u>		<u>\$ 509,678,691</u>		<u>\$ 595,863,429</u>		<u>86,184,738</u>	<u>16.91%</u>

* Contract Sales Excluded.

AQUA PENNSYLVANIA, INC.

AQUA LUG PROPOSED REVENUE ALLOCATION
WITH CUSTOMER CLASS RATES OF RETURN AND RELATIVE RATES OF RETURN

ITEM (1)	COST OF SERVICE (2)	RESIDENTIAL (3)	COMMERCIAL (4)	INDUSTRIAL (5)	PUBLIC (6)	OTHER WATER UTILITIES (7)	FIRE PROTECTION	
							PRIVATE (8)	PUBLIC (9)
1. REVENUES FROM SALES	586,978,336	394,824,929	136,081,853	19,613,804	9,699,143	14,846	18,976,135	7,767,626
2. OTHER REVENUES	8,885,093	6,008,384	2,055,086	310,099	138,421	36	252,577	120,500
3. TOTAL OPERATING REVENUES	595,863,429	400,833,313	138,136,939	19,923,903	9,837,564	14,882	19,228,712	7,888,125
4. LESS: OPERATING EXPENSES (INCLUDES REALLOCATION OF FIRE & ACT 11)	272,527,954	208,427,199	58,788,820	8,109,157	3,818,520	1,462	5,799,871	-12,417,004
5. RETURN AND INCOME TAXES	323,335,475	192,406,113	79,348,119	11,814,747	6,019,044	13,420	13,428,841	20,305,129
6. LESS: TAXABLE EXCLUSIONS (FACTOR 18)	70,371,594	42,950,669	16,977,358	2,597,275	1,136,923	211	2,290,032	4,419,125
7. TAXABLE INCOME	252,963,881	149,455,444	62,370,761	9,217,472	4,882,120	13,209	11,138,808	15,886,004
8. LESS: INCOME TAXES (TAX. INC.)	31,622,324	18,683,017	7,796,798	1,152,251	610,301	1,651	1,392,432	1,985,866
9. NET RETURN (Line 5 - Line 8)	291,713,151	173,723,096	71,551,320	10,662,496	5,408,743	11,769	12,036,409	18,319,263
10. ORIGINAL COSTS MEASURE OF VALUE	3,818,296,020	2,330,468,439	921,173,482	140,924,470	61,687,972	10,361	124,253,386	239,777,907
11. RATE OF RETURN, PERCENT	7.64	7.45	7.77	7.57	8.77	113.59	9.69	7.64
12. RELATIVE RATE OF RETURN	1.00	0.98	1.02	0.99	1.15	14.87	1.27	1.00

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission, *et al.* :
 :
 v. : R-2021-3027385, *et al.*
 :
 Aqua Pennsylvania, Inc. :

Pennsylvania Public Utility Commission, *et al.* :
 :
 v. : R-2021-3027386, *et al.*
 :
 Aqua Pennsylvania Wastewater, Inc. :

**SURREBUTTAL TESTIMONY
OF
RICHARD A. BAUDINO**

**ON BEHALF OF
AQUA LARGE USERS GROUP
J. KENNEDY AND ASSOCIATES, INC.**

DECEMBER 2021

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission, *et al.* :
 :
 v. : R-2021-3027385, *et al.*
 :
 Aqua Pennsylvania, Inc. :

Pennsylvania Public Utility Commission, *et al.* :
 :
 v. : R-2021-3027386, *et al.*
 :
 Aqua Pennsylvania Wastewater, Inc. :

SURREBUTTAL TESTIMONY OF RICHARD A. BAUDINO

1 **Q. Please state your name and business address.**

2 A. My name is Richard A. Baudino. My business address is J. Kennedy and Associates, Inc.
3 ("Kennedy and Associates"), 570 Colonial Park Drive, Suite 305, Roswell, Georgia 30075.

4 **Q. What is your occupation and by whom are you employed?**

5 A. I am a consultant to Kennedy and Associates.

6 **Q. Did you submit Direct Testimony in this proceeding?**

7 A. Yes. I submitted Direct Testimony on behalf of the Aqua Large Users Group ("Aqua
8 LUG").

9 **Q. What is the purpose of your Surrebuttal Testimony?**

10 A. The purpose of my Surrebuttal Testimony is to respond to the Rebuttal Testimonies of
11 Mr. Brian Kalcic, witness for the Office of Small Business Advocate ("OSBA"), and
12 Ms. Constance Heppenstall, witness for Aqua Pennsylvania, Inc. ("Company").

1 **Q. Please summarize Mr. Kalcic's response to the revenue allocation proposal you**
2 **submitted in your Direct Testimony.**

3 A. Mr. Kalcic's response begins on page 11, line 10 of his Rebuttal Testimony. Mr. Kalcic
4 concluded that the Public, Other Water Utilities, and Private Fire Protection classes would
5 not move closer to their respective cost of service under my revenue allocation proposal.
6 He also testified that the revenue subsidy received by the Residential class would decline
7 by less than 22% under my revenue allocation proposal.

8 **Q. Please respond to Mr. Kalcic's evaluation of your revenue allocation proposal.**

9 A. At the Company's requested revenue increase and proposed Act 11 revenues, the
10 Residential class would receive a greater revenue increase under my revenue allocation
11 proposal (18.26%) than the Company's proposal (17.4%). Mr. Kalcic proposed an increase
12 for the Residential class of 19.6%. The subsidies being paid by the Public, Other Water
13 Utilities, and the Private Fire classes could indeed be reduced, but at the expense of an
14 additional increase to the Residential class. I continue to support my revenue allocation as
15 a reasonable alternative to the Company's revenue allocation proposal. However, Aqua
16 LUG does not oppose Mr. Kalcic's revenue allocation proposal as it also addresses the
17 customer class cost of service concerns raised in my Direct Testimony.

18 **Q. How did Company witness Heppenstall respond to your proposed revenue allocation?**

19 A. On page 25, line 10 of her Rebuttal Testimony, Ms. Heppenstall stated that she had "no
20 philosophical problem" with my revenue allocation proposal. However, on Schedule 1 of
21 Exhibit No. 5R-A Part II Ms. Heppenstall presented her revenue allocation, which is the
22 same as in her Direct Testimony. Thus, although Ms. Heppenstall had no "philosophical

1 problem" with my recommendation, she maintained her revenue allocation from her Direct
2 Testimony.

3 For the reasons I stated in my Direct Testimony, the Company's revenue allocation does
4 not move its customer classes sufficiently toward their allocated cost to serve and should
5 be rejected. I continue to recommend that the Commission adopt my proposed revenue
6 allocation or, in the alternative, adopt Mr. Kalcic's revenue allocation recommendation.

7 **Q. Does this conclude your Surrebuttal Testimony?**

8 **A. Yes.**

1 **Q. On whose behalf are you testifying?**

2 A. I am testifying on behalf of Cleveland-Cliffs Steel.

3 **Q. What is the purpose of your testimony?**

4 A. The purpose of my testimony is to address revenue allocation, rate design, and the
5 proposed Revenue Stabilization Mechanism ("RSM") for Pennsylvania-American
6 Water Company ("PAWC" or "Company"). I will address PAWC witness Constance
7 Heppenstall's recommended revenue allocation and Mr. Charles Rea's proposed RSM.

8 **Q. Please summarize Ms. Heppenstall's approach to the Company's proposed class
9 cost of service study ("CCOSS").**

10 A. Ms. Heppenstall described her approach to the Company's CCOSS beginning on page
11 6, line 10 of her Direct Testimony. Ms. Heppenstall utilized the base-extra capacity
12 method as described in the 2017 and prior editions of the Water Rates Manual
13 published by the American Water Work Association ("AWWA"). This approach to
14 cost allocation has consistently been accepted by the Pennsylvania Public Utilities
15 Commission ("PPUC" or "Commission") in past PAWC cases. Ms. Heppenstall
16 provided a CCOSS for Water Operations, which is included in her Exhibit No. 12-A.
17 In this case, Ms. Heppenstall performed CCOSS for the fully projected test year ending
18 December 31, 2023 and includes a portion of the Company's wastewater revenue
19 requirement.

20 The extra capacity factors in the CCOSS were developed from the results of
21 customer demand study that the Company submitted in its 2017 base rate case. Ms.
22 Heppenstall also described several adjustments to her CCOSSs beginning on page 11
23 of her Direct Testimony. These changes include:

- 1 • Exclusion of contract sales under Riders DIS (Demand Industrial Sales) and
2 DRS (Demand Resale Sales) in developing the allocation factors for the
3 Industrial class and sales for resale – Group A class.
- 4 • Exclusion of interruptible curtailment volumes from the extra capacity portion
5 of allocation factors 2, 3, and 4.
- 6 • Reallocation of the unrecovered portion of public fire protection costs from the
7 residential, commercial, industrial, and public classes. Ms. Heppenstall
8 explained that this adjustment was performed in order to comply with Section
9 1328 of the Public Utility Code, which provides that public fire hydrant rates
10 may only recover 25% of the cost of public fire protection service. The
11 unrecovered balance is then recovered in the fixed charges of other customer
12 classes.
- 13 • Allocation of a portion of the wastewater revenue requirement to the water
14 operations revenue requirement of its Water Operations.

15 In this proceeding Cleveland-Cliffs takes no position on the inclusion of
16 wastewater revenue requirement in PAWC's water operations revenue requirement.

17 **Q. Were there any errors in the Company's CCOSS?**

18 A. Yes. According to PAWC's response to the Office of Small Business Advocate
19 ("OSBA") interrogatory OSBA 03-03, the amounts of the Act 11 wastewater revenue
20 requirement that were allocated to the Industrial and Public Authority classes were
21 inadvertently switched. The amounts that should have been allocated to the Industrial
22 and Public Authority classes should be \$3,567,460 and \$1,967,040, respectively.

23

1 I made this correction to Exhibit No. 12-A, Schedule A and to the allocation of Act 11
2 revenues in PAWC's CCROSS. Exhibit ___(RAB-2), pages 1 and 2 show the results of
3 the correction.

4 **Q. What do the results of Ms. Heppenstall's proposed revenue allocation now show?**

5 A. The corrected results show that Ms. Heppenstall's proposed revenue allocation results
6 in nearly equal class rates of return for the major rate classes, which are Residential,
7 Commercial, Industrial, and Public Authority. Page 2 of Exhibit ___(RAB-2) shows
8 that these classes now generate relative rates of return of 1.0. The relative rate of
9 return ("RROR") indicates whether a customer class is above or below the system
10 average rate of return. A RROR above 1.0 indicates that a customer class above the
11 system average rate of return and is paying rates in excess of the costs to serve that
12 class. Similarly, a RROR less than 1.0 shows that a customer class is paying less than
13 the system average rate of return. Ms. Heppenstall's proposed revenue allocation
14 results in RRORs of 1.0 for the major rate classes. Thus, I recommend that the
15 Commission adopt her proposed revenue allocation.

16 **Q. Please describe PAWC's proposed RSM.**

17 A. Company witness Charles B. Rea described the proposed RSM beginning on page 76
18 of his Direct Testimony. According to Mr. Rea, the proposed RSM would align the
19 Company's future revenues with the level of revenues authorized by the Commission.
20 If PAWC's actual revenues in a given future year fall below the Commission's
21 authorized level in this case, the difference would be collected in the following year
22 through an additional charge to all customers. Alternatively, if actual revenues in a

1 future year are greater than the level authorized by the Commission, the customers
2 would receive a credit, or reduction, in the following year. In Mr. Rea's words:

3 The RSM ensures that the Company collects an annual revenue amount
4 consistent with the authorized revenue amount in this case and that
5 customers in total pay the revenue level found appropriate to produce
6 just and reasonable rates.
7

8 Direct Testimony of Charles B. Rea, p. 77, lines 14-16.

9 **Q. Should the Commission approve PAWC's proposed RSM?**

10 A. No. I recommend that the Commission reject the proposed RSM.

11 **Q. Why should the Commission reject the proposed RSM in this case?**

12 A. The Company's proposed RSM should be rejected for the following reasons.

13 First, the Commission has already approved the Company's Distribution
14 System Improvement Charge ("DSIC"), a mechanism designed to provide accelerated
15 cost recovery to PAWC for certain system improvements. According to Mr. Rea's
16 revenue adjustment in Schedule 2c, the Company will collect annualized DSIC
17 revenues in 2022 of \$24.3 million for water and wastewater operations at the current
18 DSIC rates. The DSIC has been and will continue to be an important ongoing source
19 of revenue collection outside of traditional rate case proceedings for PAWC.

20 Second, the Company also has the opportunity to include forecasted costs and
21 investments through the use of a forecasted test year. In this case, PAWC proposed
22 using a fully projected future test year through the end of 2023. This provides a
23 significant benefit to PAWC compared to using an historic test period, which is this
24 case would be a 12-month period ending December 31, 2021.

25 Both the DSIC and the use of a future test year serve to reduce regulatory lag
26 for the Company.

1 **Q. Are there other problems with PAWC's proposed RSM?**

2 A. Yes. The industrial class should not be included in the RSM. First, Mr. Rea only
3 provided analysis of conservation-related revenue losses from the Residential,
4 Commercial, and Public (Municipal) classes. There is no evidence in this case that the
5 Industrial class is affected by conservation measures, weather, or declining numbers
6 of customers. Second, the proposed RSM presents significant problems with interclass
7 allocations of lost revenues.

8 **Q. Based on your experience, would water conservation and loss of revenues be an**
9 **issue for Industrial customers in the way it is with the Company's Residential**
10 **customers?**

11 A. No. Industrial customers already have an incentive to be as cost efficient as possible
12 due to competition in the markets in which they operate. This being the case, industrial
13 customers likely have already made investments in efficient water use, as well as use
14 of electricity and natural gas. It is unlikely that there would be concerns with ongoing
15 declines in consumption as there are in the Residential class. Indeed, if there were, the
16 Company would likely have already analyzed this trend and presented it to the
17 Commission.

18 **Q. Did Mr. Rea present any analysis suggesting that weather influences industrial**
19 **water consumption?**

20 A. No.

1 **Q. Did Mr. Rea propose any revenue adjustments for the industrial class based on**
2 **weather or expected declines in consumption?**

3 A. No. Mr. Rea presented Usage Trend Adjustments on pages 69 and 70 of his Direct
4 Testimony. He explained on page 69 that the Usage Trend Adjustments "incorporate
5 weather normalization, COVID normalization, and adjustments for trends in declining
6 use" that he described and quantified earlier in his Direct Testimony. These
7 adjustments were applied to the Residential, Commercial, and Public (Municipal)
8 classes. The Industrial class was not included.

9 **Q. What factors might increase or decrease revenues from the industrial class?**

10 A. Revenues from the industrial class would be affected by general economic conditions,
11 economic conditions in the markets in which industrial customers operate, and
12 industrial customers moving into or out of PAWC's service territory. These factors
13 have nothing to do with weather, generally declining usage per customer, or declining
14 customer trends that Mr. Rea attempted to measure in his analyses of the Residential,
15 Commercial, and Public classes.

16 **Q. Please explain how the proposed RSM would cause problems with inter-class**
17 **revenue allocations.**

18 A. Mr. Rea stated on page 85, lines 6 through 9, that the RSM would "align actual revenue
19 collection with authorized revenues for all customers in the residential, commercial,
20 industrial, municipal, and sales for resale classes except for those customers taking
21 service under contract rates." For purposes of the RSM, any revenue shortfall would
22 be collected from all customers. What this means is that if due to continued
23 conservation the residential class's revenues declined from the Commission authorized

1 level in this case, that revenue shortfall would be collected from all customers, not just
2 from the Residential class. Commercial and industrial customers would have to pay a
3 portion of the residential class revenue shortfall, even though commercial and
4 industrial customers were not responsible for it. Likewise, if both commercial and
5 residential classes experienced revenue shortfalls due to declining usage, once again
6 the industrial customers would have to pay a portion of that revenue shortfall.

7 Clearly the RSM has built-in customer class allocation inequities. It is unfair
8 and unreasonable to expect Industrial customers to pay for usage declines in the
9 residential and commercial classes.

10 **Q. If the RSM were modified to confine the declines in revenue from each class to**
11 **the class in which the declines occur, would this work for the Industrial class?**

12 A. No. Industrial class revenues could rise or fall based on market conditions and on the
13 general economy. Further, if a single industrial customer left PAWC's system, the loss
14 in revenues from that customer would be confined to the rest of the industrial
15 customers and would have to be picked up by those customers. This could have a
16 devastating rate impact on those customers depending on the volumes that were lost
17 from the departing industrial customer. Industrial customers must not be placed in
18 such a risky and potentially damaging position by the operation of a RSM.

19 **Q. If the Commission decides to approve some form of a RSM in this proceeding,**
20 **what is your recommendation?**

21 A. I recommend that the Commission exclude the Industrial class of customers if it
22 decides to implement a RSM in this case. PAWC provided no support or analysis

1 showing that the factors the Company cited in support of its proposed RSM apply to
2 the Industrial class.

3 **Q. Mr. Baudino, do you support PAWC's requested total revenue increase in this**
4 **proceeding?**

5 A. No. Cleveland-Cliffs takes no position with respect to the Company's requested rate
6 increase. If the Commission reduces PAWC's rate increase request, then the
7 percentage class increases recommended by Ms. Heppenstall should be adjusted
8 downward in proportion to the Commission's reduction in total revenue requirement.
9 For example, if the Commission reduces PAWC's requested increase of 22% by 50%,
10 the resulting overall increase would be 11%. The reduction to the Industrial class
11 increase of 50% would result in a revised increase of 11%.

12 **Q. Does this conclude your Direct Testimony?**

13 A. Yes.

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

PENNSYLVANIA PUBLIC UTILITY COMMISSION :
V. : **Docket Nos.**
: **R-2022-3031672,**
: **R-2022-3031673**
PENNSYLVANIA-AMERICAN WATER COMPANY :

EXHIBITS
OF
RICHARD A. BAUDINO

ON BEHALF OF
CLEVELAND-CLIFFS STEEL
J. KENNEDY AND ASSOCIATES, INC.

JULY 29, 2022

RESUME OF RICHARD A. BAUDINO

EDUCATION

New Mexico State University, M.A.

Major in Economics

Minor in Statistics

New Mexico State University, B.A.

Economics

English

Thirty-nine years of experience in utility ratemaking and the application of principles of economics to the regulation of electric, gas, and water utilities. Broad based experience in revenue requirement analysis, cost of capital, rate of return, cost and revenue allocation, and rate design.

REGULATORY TESTIMONY

Preparation and presentation of expert testimony in the areas of:

Cost of Capital for Electric, Gas and Water Companies

Electric, Gas, and Water Utility Cost Allocation and Rate Design

Revenue Requirements

Gas and Electric industry restructuring and competition

Fuel cost auditing

Ratemaking Treatment of Generating Plant Sale/Leasebacks

RESUME OF RICHARD A. BAUDINO

EXPERIENCE

1989 to

Present: Kennedy and Associates: Director of Consulting, Consultant - Responsible for consulting assignments in revenue requirements, rate design, cost of capital, economic analysis of generation alternatives, electric and gas industry restructuring/competition and water utility issues.

1982 to

1989: New Mexico Public Service Commission Staff: Utility Economist - Responsible for preparation of analysis and expert testimony in the areas of rate of return, cost allocation, rate design, finance, phase-in of electric generating plants, and sale/leaseback transactions.

CLIENTS SERVED

Regulatory Commissions

Louisiana Public Service Commission
Georgia Public Service Commission
New Mexico Public Service Commission

Other Clients and Client Groups

Ad Hoc Committee for a Competitive Electric Supply System	Northwest Arkansas Gas Consumers
Air Products and Chemicals, Inc.	Maryland Energy Group
Arkansas Electric Energy Consumers	Occidental Chemical
Arkansas Gas Consumers	PSI Industrial Group
AK Steel	Large Power Intervenors (Minnesota)
Armco Steel Company, L.P.	Tyson Foods
Aqua Large Users Group	West Virginia Energy Users Group
Assn. of Business Advocating Tariff Equity	The Commercial Group
Atmos Cities Steering Committee	Wisconsin Industrial Energy Group
Canadian Federation of Independent Businesses	South Florida Hospital and Health Care Assn.
CF&I Steel, L.P.	PP&L Industrial Customer Alliance
Cities of Midland, McAllen, and Colorado City	Philadelphia Area Industrial Energy Users Gp.
Cities Served by Texas-New Mexico Power Co.	Philadelphia Large Users Group
Cities Served by AEP Texas	West Penn Power Intervenors
City of New York	Duquesne Industrial Intervenors
Climax Molybdenum Company	Met-Ed Industrial Users Gp.
Connecticut Industrial Energy Consumers	Penelec Industrial Customer Alliance
Crescent City Power Users Group	Penn Power Users Group
Cripple Creek & Victor Gold Mining Co.	Columbia Industrial Intervenors
Dearborn Industrial Generation, LLC	U.S. Steel & Univ. of Pittsburgh Medical Ctr.
General Electric Company	Multiple Intervenors
Holcim (U.S.) Inc.	Maine Office of Public Advocate
IBM Corporation	Missouri Office of Public Counsel
Industrial Energy Consumers	University of Massachusetts - Amherst
Kentucky Industrial Utility Consumers	WCF Hospital Utility Alliance
Kentucky Office of the Attorney General	West Travis County Public Utility Agency
Lexington-Fayette Urban County Government	Steering Committee of Cities Served by Oncor
Large Electric Consumers Organization	Utah Office of Consumer Services
Newport Steel	Healthcare Council of the National Capital Area
North Carolina Attorney General's Office	Vermont Department of Public Service
	South Carolina Office of Regulatory Staff
	Texas Industrial Energy Consumers

**Expert Testimony Appearances
of
Richard A. Baudino
As of July 2022**

Date	Case	Jurisdict.	Party	Utility	Subject
10/83	1803, 1817	NM	New Mexico Public Service Commission	Southwestern Electric Coop.	Rate design.
11/84	1833	NM	New Mexico Public Service Commission Palo Verde	El Paso Electric Co.	Service contract approval, rate design, performance standards for nuclear generating system
1983	1835	NM	New Mexico Public Service Commission	Public Service Co. of NM	Rate design.
1984	1848	NM	New Mexico Public Service Commission	Sangre de Cristo Water Co.	Rate design.
02/85	1906	NM	New Mexico Public Service Commission	Southwestern Public Service Co.	Rate of return.
09/85	1907	NM	New Mexico Public Service Commission	Jomada Water Co.	Rate of return.
11/85	1957	NM	New Mexico Public Service Commission	Southwestern Public Service Co.	Rate of return.
04/86	2009	NM	New Mexico Public Service Commission	El Paso Electric Co.	Phase-in plan, treatment of sale/leaseback expense.
06/86	2032	NM	New Mexico Public Service Commission	El Paso Electric Co.	Sale/leaseback approval.
09/86	2033	NM	New Mexico Public Service Commission	El Paso Electric Co.	Order to show cause, PVNGS audit.
02/87	2074	NM	New Mexico Public Service Commission	El Paso Electric Co.	Diversification.
05/87	2089	NM	New Mexico Public Service Commission	El Paso Electric Co.	Fuel factor adjustment.
08/87	2092	NM	New Mexico Public Service Commission	El Paso Electric Co.	Rate design.
10/87	2146	NM	New Mexico Public Service Commission	Public Service Co. of New Mexico	Financial effects of restructuring, reorganization.
07/88	2162	NM	New Mexico Public Service Commission	El Paso Electric Co.	Revenue requirements, rate design, rate of return.

**Expert Testimony Appearances
of
Richard A. Baudino
As of July 2022**

Date	Case	Jurisdct.	Party	Utility	Subject
01/89	2194	NM	New Mexico Public Service Commission	Plains Electric G&T Cooperative	Economic development.
1/89	2253	NM	New Mexico Public Service Commission	Plains Electric G&T Cooperative	Financing.
08/89	2259	NM	New Mexico Public Service Commission	Homestead Water Co.	Rate of return, rate design.
10/89	2262	NM	New Mexico Public Service Commission	Public Service Co. of New Mexico	Rate of return.
09/89	2269	NM	New Mexico Public Service Commission	Ruidoso Natural Gas Co.	Rate of return, expense from affiliated interest.
12/89	89-208-TF	AR	Arkansas Electric Energy Consumers	Arkansas Power & Light Co.	Rider M-33.
01/90	U-17282	LA	Louisiana Public Service Commission	Gulf States Utilities	Cost of equity.
09/90	90-158	KY	Kentucky Industrial Utility Consumers	Louisville Gas & Electric Co.	Cost of equity.
09/90	90-004-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Cost of equity, transportation rate.
12/90	U-17282 Phase IV	LA	Louisiana Public Service Commission	Gulf States Utilities	Cost of equity.
04/91	91-037-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Transportation rates.
12/91	91-410-EL-AIR	OH	Air Products & Chemicals, Inc., Armco Steel Co., General Electric Co., Industrial Energy Consumers	Cincinnati Gas & Electric Co.	Cost of equity.
05/92	910890-EI	FL	Occidental Chemical Corp.	Florida Power Corp.	Cost of equity, rate of return.
09/92	92-032-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Cost of equity, rate of return, cost-of-service.
09/92	39314	ID	Industrial Consumers for Fair Utility Rates	Indiana Michigan Power Co.	Cost of equity, rate of return.

**Expert Testimony Appearances
of
Richard A. Baudino
As of July 2022**

Date	Case	Jurisdict.	Party	Utility	Subject
09/92	92-009-U	AR	Tyson Foods	General Waterworks	Cost allocation, rate design.
01/93	92-346	KY	Newport Steel Co.	Union Light, Heat & Power Co.	Cost allocation.
01/93	39498	IN	PSI Industrial Group	PSI Energy	Refund allocation.
01/93	U-10105	MI	Association of Businesses Advocating Tariff Equality (ABATE)	Michigan Consolidated Gas Co.	Return on equity.
04/93	92-1464-EL-AIR	OH	Air Products and Chemicals, Inc., Armco Steel Co., Industrial Energy Consumers	Cincinnati Gas & Electric Co.	Return on equity.
09/93	93-189-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Transportation service terms and conditions.
09/93	93-081-U	AR	Arkansas Gas Consumers	Arkansas Louisiana Gas Co.	Cost-of-service, transportation rates, rate supplements; return on equity; revenue requirements.
12/93	U-17735	LA	Louisiana Public Service Commission Staff	Cajun Electric Power Cooperative	Historical reviews; evaluation of economic studies.
03/94	10320	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric Co.	Trimble County CWIP revenue refund.
4/94	E-015/GR-94-001	MN	Large Power Intervenors	Minnesota Power Co.	Evaluation of the cost of equity, capital structure, and rate of return.
5/94	R-00942993	PA	PG&W Industrial Intervenors	Pennsylvania Gas & Water Co.	Analysis of recovery of transition costs.
5/94	R-00943001	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania charge proposals.	Evaluation of cost allocation, rate design, rate plan, and carrying
7/94	R-00942986	PA	Armco, Inc., West Penn Power Industrial Intervenors	West Penn Power Co.	Return on equity and rate of return.
7/94	94-0035-E-42T	WV	West Virginia Energy Users' Group	Monongahela Power Co.	Return on equity and rate of return.

**Expert Testimony Appearances
of
Richard A. Baudino
As of July 2022**

Date	Case	Jurisdict.	Party	Utility	Subject
8/94	8652	MD	Westvaco Corp. Co.	Potomac Edison	Return on equity and rate of return.
9/94	930357-C	AR	West Central Arkansas Gas Consumers	Arkansas Oklahoma Gas Corp.	Evaluation of transportation service.
9/94	U-19904	LA	Louisiana Public Service Commission	Gulf States Utilities	Return on equity.
9/94	8629	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Transition costs.
11/94	94-175-U	AR	Arkansas Gas Consumers	Arkla, Inc.	Cost-of-service, rate design, rate of return.
3/95	RP94-343-000	FERC	Arkansas Gas Consumers	NorAm Gas Transmission	Rate of return.
4/95	R-00943271	PA	PP&L Industrial Customer Alliance	Pennsylvania Power & Light Co.	Return on equity.
6/95	U-10755	MI	Association of Businesses Advocating Tariff Equity	Consumers Power Co.	Revenue requirements.
7/95	8697	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Cost allocation and rate design.
8/95	95-254-TF U-2811	AR	Tyson Foods, Inc.	Southwest Arkansas Electric Cooperative	Refund allocation.
10/95	ER95-1042-000	FERC	Louisiana Public Service Commission	Systems Energy Resources, Inc.	Return on Equity.
11/95	I-940032	PA	Industrial Energy Consumers of Pennsylvania	State-wide - all utilities	Investigation into Electric Power Competition.
5/96	96-030-U	AR	Northwest Arkansas Gas Consumers	Arkansas Western Gas Co.	Revenue requirements, rate of return and cost of service.
7/96	8725	MD	Maryland Industrial Group	Baltimore Gas & Electric Co., Potomac Electric Power Co. and Constellation Energy Corp.	Return on Equity.
7/96	U-21496	LA	Louisiana Public Service Commission	Central Louisiana Electric Co.	Return on equity, rate of return.
9/96	U-22092	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.

**Expert Testimony Appearances
of
Richard A. Baudino
As of July 2022**

Date	Case	Jurisdict.	Party	Utility	Subject
1/97	RP96-199-000	FERC	The Industrial Gas Users Conference	Mississippi River Transmission Corp.	Revenue requirements, rate of return and cost of service.
3/97	96-420-U	AR	West Central Arkansas Gas Corp.	Arkansas Oklahoma Gas Corp.	Revenue requirements, rate of return, cost of service and rate design.
7/97	U-11220	MI	Association of Business Advocating Tariff Equity	Michigan Gas Co. and Southeastern Michigan Gas Co.	Transportation Balancing Provisions.
7/97	R-00973944	PA	Pennsylvania American Water Large Users Group	Pennsylvania-American Water Co.	Rate of return, cost of service, revenue requirements.
3/98	8390-U	GA	Georgia Natural Gas Group and the Georgia Textile Manufacturers Assoc.	Atlanta Gas Light	Rate of return, restructuring issues, unbundling, rate design issues.
7/98	R-00984280	PA	PG Energy, Inc. Intervenors	PGE Industrial	Cost allocation.
8/98	U-17735	LA	Louisiana Public Service Commission	Cajun Electric Power Cooperative	Revenue requirements.
10/98	97-596	ME	Maine Office of the Public Advocate	Bangor Hydro-Electric Co.	Return on equity, rate of return.
10/98	U-23327	LA	Louisiana Public Service Commission	SWEPSCO, CSW and AEP	Analysis of proposed merger.
12/98	98-577	ME	Maine Office of the Public Advocate	Maine Public Service Co.	Return on equity, rate of return.
12/98	U-23358	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity, rate of return.
3/99	98-426	KY	Kentucky Industrial Utility Customers, Inc.	Louisville Gas and Electric Co	Return on equity.
3/99	99-082	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Utilities Co.	Return on equity.
4/99	R-984554	PA	T. W. Phillips Users Group	T. W. Phillips Gas and Oil Co.	Allocation of purchased gas costs.
6/99	R-0099462	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Balancing charges.
10/99	U-24182	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Cost of debt.

**Expert Testimony Appearances
of
Richard A. Baudino
As of July 2022**

Date	Case	Jurisdict.	Party	Utility	Subject
10/99	R-00994782	PA	Peoples Industrial Intervenor	Peoples Natural Gas Co.	Restructuring issues.
10/99	R-00994781	PA	Columbia Industrial Intervenor	Columbia Gas of Pennsylvania	Restructuring, balancing charges, rate flexing, alternate fuel.
01/00	R-00994786	PA	UGI Industrial Intervenor	UGI Utilities, Inc.	Universal service costs, balancing, penalty charges, capacity Assignment.
01/00	8829	MD	Maryland Industrial Gr.	Baltimore Gas & Electric Co.	Revenue requirements, cost allocation, rate design.
02/00	R-00994788	PA	Penn Fuel Transportation	PFG Gas, Inc., and	Tariff charges, balancing provisions.
05/00	U-17735	LA	Louisiana Public Service Comm.	Louisiana Electric Cooperative	Rate restructuring.
07/00	2000-080	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric Co.	Cost allocation.
07/00	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket E)	LA	Louisiana Public Service Commission	Southwestern Electric Power Co.	Stranded cost analysis.
09/00	R-00005654	PA	Philadelphia Industrial And Commercial Gas Users Group.	Philadelphia Gas Works	Interim relief analysis.
10/00	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket B)	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Restructuring, Business Separation Plan.
11/00	R-00005277 (Rebuttal)	PA	Penn Fuel Transportation Customers	PFG Gas, Inc. and North Penn Gas Co.	Cost allocation issues.
12/00	U-24993	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
03/01	U-22092	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Stranded cost analysis.
04/01	U-21453 U-20925 (SC), U-22092 (SC) (Subdocket B) (Addressing Contested Issues)	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Restructuring issues.
04/01	R-00006042	PA	Philadelphia Industrial and Commercial Gas Users Group	Philadelphia Gas Works	Revenue requirements, cost allocation and tariff issues.

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Date	Case	Jurisdict.	Party	Utility	Subject
11/01	U-25687	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
03/02	14311-U	GA	Georgia Public Service Commission	Atlanta Gas Light	Capital structure.
08/02	2002-00145	KY	Kentucky Industrial Utility Customers	Columbia Gas of Kentucky	Revenue requirements.
09/02	M-00021612	PA	Philadelphia Industrial And Commercial Gas Users Group	Philadelphia Gas Works	Transportation rates, terms, and conditions.
01/03	2002-00169	KY	Kentucky Industrial Utility Customers	Kentucky Power	Return on equity.
02/03	02S-594E	CO	Cripple Creek & Victor Gold Mining Company	Aquila Networks – WPC	Return on equity.
04/03	U-26527	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Return on equity.
10/03	CV020495AB	GA	The Landings Assn., Inc.	Utilities Inc. of GA	Revenue requirement & overcharge refund
03/04	2003-00433	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric	Return on equity, Cost allocation & rate design
03/04	2003-00434	KY	Kentucky Industrial Utility Customers	Kentucky Utilities	Return on equity
4/04	04S-035E	CO	Cripple Creek & Victor Gold Mining Company, Goodrich Corp., Holcim (U.S.) Inc., and The Trane Co.	Aquila Networks – WPC	Return on equity.
9/04	U-23327, Subdocket B	LA	Louisiana Public Service Commission	Southwestern Electric Power Company	Fuel cost review
10/04	U-23327 Subdocket A	LA	Louisiana Public Service Commission	Southwestern Electric Power Company	Return on Equity
06/05	050045-EI	FL	South Florida Hospital and Health Care Assoc.	Florida Power & Light Co.	Return on equity
08/05	9036	MD	Maryland Industrial Group	Baltimore Gas & Electric Co.	Revenue requirement, cost allocation, rate design, Tariff issues.
01/06	2005-0034	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Power Co.	Return on equity.

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Date	Case	Jurisdict.	Party	Utility	Subject
03/06	05-1278-E-PC-PW-42T	WV	West Virginia Energy Users Group	Appalachian Power Company	Return on equity.
04/06	U-25116 Commission	LA	Louisiana Public Service	Entergy Louisiana, LLC	Transmission Issues
07/06	U-23327 Commission	LA	Louisiana Public Service	Southwestern Electric Power Company	Return on equity, Service quality
08/06	ER-2006-0314	MO	Missouri Office of the Public Counsel	Kansas City Power & Light Co.	Return on equity, Weighted cost of capital
08/06	06S-234EG	CO	CF&I Steel, L.P. & Climax Molybdenum	Public Service Company of Colorado	Return on equity, Weighted cost of capital
01/07	06-0960-E-42T Users Group	WV	West Virginia Energy	Monongahela Power & Potomac Edison	Return on Equity
01/07	43112	AK	AK Steel, Inc.	Vectren South, Inc.	Cost allocation, rate design
05/07	2006-661	ME	Maine Office of the Public Advocate	Bangor Hydro-Electric	Return on equity, weighted cost of capital.
09/07	07-07-01	CT	Connecticut Industrial Energy Consumers	Connecticut Light & Power	Return on equity, weighted cost of capital
10/07	05-UR-103	WI	Wisconsin Industrial Energy Group, Inc.	Wisconsin Electric Power Co.	Return on equity
11/07	29797	LA	Louisiana Public Service Commission	Cleco Power :LLC & Southwestern Electric Power	Lignite Pricing, support of settlement
01/08	07-551-EL-AIR	OH	Ohio Energy Group	Ohio Edison, Cleveland Electric, Toledo Edison	Return on equity
03/08	07-0585, 07-0585, 07-0587, 07-0588, 07-0589, 07-0590, (consol.)	IL	The Commercial Group	Ameren	Cost allocation, rate design
04/08	07-0566	IL	The Commercial Group	Commonwealth Edison	Cost allocation, rate design
06/08	R-2008-2011621	PA	Columbia Industrial Intervenors	Columbia Gas of PA	Cost and revenue allocation, Tariff issues
07/08	R-2008-2028394	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy	Cost and revenue allocation, Tariff issues

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07/08	R-2008-2039634	PA	PPL Gas Large Users Group	PPL Gas	Retainage, LUFG Pct.
08/08	6680-UR-116	WI	Wisconsin Industrial Energy Group	Wisconsin P&L	Cost of Equity
08/08	6690-UR-119	WI	Wisconsin Industrial Energy Group	Wisconsin PS	Cost of Equity
09/08	ER-2008-0318	MO	The Commercial Group	AmerenUE	Cost and revenue allocation
10/08	R-2008-2029325	PA	U.S. Steel & Univ. of Pittsburgh Med. Ctr.	Equitable Gas Co.	Cost and revenue allocation
10/08	08-G-0609	NY	Multiple Intervenors	Niagara Mohawk Power	Cost and Revenue allocation
12/08	27800-U	GA	Georgia Public Service Commission	Georgia Power Company	CWIP/AFUDC issues, Review financial projections
03/09	ER08-1056	FERC	Louisiana Public Service Commission	Entergy Services, Inc.	Capital Structure
04/09	E002/GR-08-1065	MN	The Commercial Group	Northern States Power	Cost and revenue allocation and rate design
05/09	08-0532	IL	The Commercial Group	Commonwealth Edison	Cost and revenue allocation
07/09	080677-EI	FL	South Florida Hospital and Health Care Association	Florida Power & Light	Cost of equity, capital structure, Cost of short-term debt
07/09	U-30975	LA	Louisiana Public Service Commission	Cleco LLC, Southwestern Public Service Co.	Lignite mine purchase
10/09	4220-UR-116	WI	Wisconsin Industrial Energy Group	Northern States Power	Class cost of service, rate design
10/09	M-2009-2123945	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities	Smart Meter Plan cost allocation
10/09	M-2009-2123944	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Company	Smart Meter Plan cost allocation
10/09	M-2009-2123951	PA	West Penn Power Industrial Intervenors	West Penn Power	Smart Meter Plan cost allocation
11/09	M-2009-2123948	PA	Duquesne Industrial Intervenors	Duquesne Light Company	Smart Meter Plan cost allocation
11/09	M-2009-2123950	PA	Met-Ed Industrial Users Group, Penelec Industrial Customer Alliance, Penn Power Users Group	Metropolitan Edison, Pennsylvania Electric Co., Pennsylvania Power Co.	Smart Meter Plan cost allocation

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Date	Case	Jurisdict.	Party	Utility	Subject
03/10	09-1352-E-42T	WV	West Virginia Energy Users Group	Monongahela Power	Return on equity, rate of return Potomac Edison
03/10	E015/GR-09-1151	MN	Large Power Intervenors	Minnesota Power	Return on equity, rate of return
04/10	2009-00459	KY	Kentucky Industrial Utility Consumers	Kentucky Power	Return on equity
04/10	2009-00548 2009-00549	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric, Kentucky Utilities	Return on equity.
05/10	10-0261-E-GI	WV	West Virginia Energy Users Group	Appalachian Power Co./ Wheeling Power Co.	EE/DR Cost Recovery, Allocation, & Rate Design
05/10	R-2009-2149262	PA	Columbia Industrial Intervenors	Columbia Gas of PA	Class cost of service & cost allocation
06/10	2010-00036	KY	Lexington-Fayette Urban County Government	Kentucky American Water Company	Return on equity, rate of return, revenue requirements
06/10	R-2010-2161694	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities	Rate design, cost allocation
07/10	R-2010-2161575	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Co.	Return on equity
07/10	R-2010-2161592	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Co.	Cost and revenue allocation
07/10	9230	MD	Maryland Energy Group	Baltimore Gas and Electric	Electric and gas cost and revenue allocation; return on equity
09/10	10-70	MA	University of Massachusetts-Amherst	Western Massachusetts Electric Co.	Cost allocation and rate design
10/10	R-2010-2179522	PA	Duquesne Industrial Intervenors	Duquesne Light Company	Cost and revenue allocation, rate design
11/10	P-2010-2158084	PA	West Penn Power Industrial Intervenors	West Penn Power Co.	Transmission rate design
11/10	10-0699-E-42T	WV	West Virginia Energy Users Group	Appalachian Power Co. & Wheeling Power Co.	Return on equity, rate of Return
11/10	10-0467	IL	The Commercial Group	Commonwealth Edison	Cost and revenue allocation and rate design
04/11	R-2010-2214415	PA	Central Pen Gas Large Users Group	UGI Central Penn Gas, Inc.	Tariff issues, revenue allocation
07/11	R-2011-2239263	PA	Philadelphia Area Energy Users Group	PECO Energy	Retainage rate

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Date	Case	Jurisdict.	Party	Utility	Subject
08/11	R-2011-2232243	PA	AK Steel	Pennsylvania-American Water Company	Rate Design
08/11	11AL-151G	CO	Climax Molybdenum	PS of Colorado	Cost allocation
09/11	11-G-0280	NY	Multiple Intervenors	Corning Natural Gas Co.	Cost and revenue allocation
10/11	4220-UR-117	WI	Wisconsin Industrial Energy Group	Northern States Power	Cost and revenue allocation, rate design
02/12	11AL-947E	CO	Climax Molybdenum, CF&I Steel	Public Service Company of Colorado	Return on equity, weighted cost of capital
07/12	120015-EI	FL	South Florida Hospitals and Health Care Association	Florida Power and Light Co.	Return on equity, weighted cost of capital
07/12	12-0613-E-PC	WV	West Virginia Energy Users Group	American Electric Power/APCo	Special rate proposal for Century Aluminum
07/12	R-2012-2290597	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities Corp.	Cost allocation
09/12	05-UR-106	WI	Wisconsin Industrial Energy Group	Wisconsin Electric Power Co.	Class cost of service, cost and revenue allocation, rate design
09/12	2012-00221 2012-00222	KY	Kentucky Industrial Utility Consumers	Louisville Gas and Electric, Kentucky Utilities	Return on equity.
10/12	9299	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design Cost of equity, weighted cost of capital
10/12	4220-UR-118	WI	Wisconsin Industrial Energy Group	Northern States Power Company	Class cost of service, cost and revenue allocation, rate design
10/12	473-13-0199	TX	Steering Committee of Cities Served by Oncor	Cross Texas Transmission, LLC	Return on equity, capital structure
01/13	R-2012-2321748 et al.	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Cost and revenue allocation
02/13	12AL-1052E	CO	Cripple Creek & Victor Gold Mining, Holcim (US) Inc.	Black Hills/Colorado Electric Utility Company	Cost and revenue allocations
06/13	8009	VT	IBM Corporation	Vermont Gas Systems	Cost and revenue allocation, rate design
07/13	130040-EI	FL	WCF Hospital Utility Alliance	Tampa Electric Co.	Return on equity, rate of return
08/13	9326	MD	Maryland Energy Group	Baltimore Gas and Electric	Cost and revenue allocation, rate design, special rider

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Date	Case	Jurisdict.	Party	Utility	Subject
08/13	P-2012-2325034	PA	PP&L Industrial Customer Alliance	PPL Electric Utilities, Corp.	Distribution System Improvement Charge
09/13	4220-UR-119	WI	Wisconsin Industrial Energy Group	Northern States Power Co.	Class cost of service, cost and revenue allocation, rate design
11/13	13-1325-E-PC	WV	West Virginia Energy Users Group	American Electric Power/APCo	Special rate proposal, Felman Production
06/14	R-2014-2406274	PA	Columbia Industrial Intervenors	Columbia Gas of Pennsylvania	Cost and revenue allocation, rate design
08/14	05-UR-107	WI	Wisconsin Industrial Energy Group	Wisconsin Electric Power Co.	Cost and revenue allocation, rate design
10/14	ER13-1508 et al.	FERC	Louisiana Public Service Comm.	Entergy Services, Inc.	Return on equity
11/14	14AL-0660E	CO	Climax Molybdenum Co. and CFI Steel, LP	Public Service Co. of Colorado	Return on equity, weighted cost of capital
11/14	R-2014-2428742	PA	AK Steel	West Penn Power Company	Cost and revenue allocation
12/14	42866	TX	West Travis Co. Public Utility Agency	Travis County Municipal Utility District No. 12	Response to complain of monopoly power
3/15	2014-00371 2014-00372	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric, Kentucky Utilities	Return on equity, cost of debt, weighted cost of capital
3/15	2014-00396	KY	Kentucky Industrial Utility Customers	Kentucky Power Co.	Return on equity, weighted cost of capital
6/15	15-0003-G-42T	WV	West Virginia Energy Users Gp.	Mountaineer Gas Co.	Cost and revenue allocation, Infrastructure Replacement Program
9/15	15-0676-W-42T	WV	West Virginia Energy Users Gp.	West Virginia-American Water Company	Appropriate test year, Historical vs. Future
9/15	15-1256-G-390P	WV	West Virginia Energy Users Gp.	Mountaineer Gas Co.	Rate design for Infrastructure Replacement and Expansion Program
10/15	4220-UR-121	WI	Wisconsin Industrial Energy Gp.	Northern States Power Co.	Class cost of service, cost and revenue allocation, rate design
12/15	15-1600-G-390P	WV	West Virginia Energy Users Gp.	Dominion Hope	Rate design and allocation for Pipeline Replacement & Expansion Prog.
12/15	45188	TX	Steering Committee of Cities Served by Oncor	Oncor Electric Delivery Co.	Ring-fence protections for cost of capital

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Date	Case	Jurisdict.	Party	Utility	Subject
2/16	9406	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design, proposed Rider 5
3/16	39971	GA	GA Public Service Comm. Staff	Southern Company / AGL Resources	Credit quality and service quality issues
04/16	2015-00343	KY	Kentucky Office of the Attorney General	Atmos Energy	Cost of equity, cost of short-term debt, capital structure
05/16	16-G-0058 16-G-0059	NY	City of New York	Brooklyn Union Gas Co., KeySpan Gas East Corp.	Cost and revenue allocation, rate design, service quality issues
06/16	16-0073-E-C	WV	Constellium Rolled Products Ravenswood, LLC	Appalachian Power Co.	Complaint; security deposit
07/16	9418	MD	Healthcare Council of the National Capital Area	Potomac Electric Power Co.	Cost of equity, cost of service, Cost and revenue allocation
07/16	160021-EI	FL	South Florida Hospital and Health Care Association	Florida Power and Light Co.	Return on equity, cost of debt, capital structure
07/16	16-057-01	UT	Utah Office of Consumer Svcs.	Dominion Resources, Questar Gas Co.	Credit quality and service quality issues
08/16	8710	VT	Vermont Dept. of Public Service	Vermont Gas Systems	Return on equity, cost of debt, cost of capital
08/16	R-2016-2537359	PA	AK Steel Corp.	West Penn Power Co.	Cost and revenue allocation
09/16	2016-00162	KY	Kentucky Office of the Attorney General	Columbia Gas of Ky.	Return on equity, cost of short-term debt
09/16	16-0550-W-P	WV	West Va. Energy Users Gp.	West Va. American Water Co.	Infrastructure Replacement Program Surcharge
01/17	46238	TX	Steering Committee of Cities Served by Oncor	Oncor Electric Delivery Co.	Ring fencing and other conditions for acquisition, service quality and reliability
02/17	45414	TX	Cities of Midland, McAllen, and Colorado City	Sharyland Utilities, LP and Sharyland Dist. and Transmission Services, LLC	Return on equity
02/17	2016-00370 2016-00371	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric, Kentucky Utilities	Return on equity, cost of debt, weighted cost of capital
03/17	10580	TX	Atmos Cities Steering Committee	Atmos Pipeline Texas	Return on equity, capital structure, weighted cost of capital
03/17	R-3867-2013	Quebec, Canada	Canadian Federation of Independent Businesses	Gaz Metro	Marginal Cost of Service Study

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Date	Case	Jurisdict.	Party	Utility	Subject
05/17	R-2017-2586783	PA	Philadelphia Industrial and Commercial Gas Users Gp.	Philadelphia Gas Works	Cost and revenue allocation, rate design, Interruptible tariffs
08/17	R-2017-2595853	PA	AK Steel	Pennsylvania American Water Co.	Cost and revenue allocation, rate design
8/17	17-3112-INV	VT	Vt. Dept. of Pubic Service	Green Mountain Power	Return on equity, cost of debt, weighted cost of capital
9/17	4220-UR-123	WI	Wisconsin Industrial Energy Group	Northern States Power	Cost and revenue allocation, rate design
10/17	2017-00179	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Power Co.	Return on equity, cost of short-term debt
12/17	2017-00321	KY	Office of the Attorney General	Duke Energy Kentucky, Inc.	Return on equity
1/18	2017-00349	KY	Office of the Attorney General	Atmos Energy	Return on equity, cost of debt, weighted cost of capital
5/18	Fiscal Years 2019-2021 Rates	PA	Philadelphia Large Users Group	Philadelphia Water Department	Cost and revenue allocation
8/18	18-0974-TF	VT	Vt. Dept. of Public Service	Green Mountain Power	Return on equity, cost of debt, weighted cost of capital
8/18	48401	TX	Cities Served by Texas-New Mexico Power Company	Texas-New Mexico Power Co.	Return on equity, capital structure
8/18	18-05-16	CT	Connecticut Industrial Energy Consumers	Connecticut Natural Gas Co.	Cost and revenue allocation
9/18	9484	MD	Maryland Energy Group	Baltimore Gas & Electric	Cost and revenue allocation, rate design
9/18	2017-370-E	SC	South Carolina Office of Regulatory Staff	South Carolina Electric & Gas, Dominion Resources, SCANA	Return on equity, service quality standards, credit quality conditions
10/18	18-1115-G-390P	WV	West Va. Energy Users Group	Mountaineer Gas Company	Customer protections for Infrastructure Replacement and Expansion Program
12/18	R-2018-3003558, R-2018-3003561	PA	Aqua Large Users Group	Aqua Pennsylvania, Inc.	Cost and revenue allocation
02/19	UD-18-07	CCNO	Crescent City Power Users' Gp.	Entergy New Orleans, LLC	Return on equity, Reliability Incentive Mechanism, other proposed riders
03/19	2018-00358	KY	Office of the Attorney General	Kentucky American Water Co.	Return on equity, Qualified Infrastructure Program rider
05/19	19-E-0065 19-G-0066	NY	City of New York	Consolidated Edison Co.	Cost and revenue allocation, rate design, tariff issues, fast-charging station incentives

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Date	Case	Jurisdict.	Party	Utility	Subject
05/2019	19-0513-TF	VT	Vt. Dept. of Public Service	Vermont Gas Systems	Return on equity, capital structure
06/2019	5-TG-100	WI	Wisconsin Industrial Energy Group	WEPCO, Wisconsin Gas, Wisconsin PS	Transportation and balancing issues
07/2019	49494	TX	Cities Served by AEP Texas	AEP Texas, Inc.	Return on equity, capital structure
08/2019	19-G-0309 19-G-0310	NY	City of New York	Brooklyn Union Gas Co., KeySpan Gas East Corp.	Cost and revenue allocation, rate design, tariff issues and modifications
08/2019	19-0316-G-42T	WV	West Virginia Energy Users Gp.	Mountaineer Gas Company	Cost and revenue allocation
8/2019	5-UR-109	WI	Wisconsin Industrial Energy Gp.	Wisconsin Electric Power Co., Wisconsin Gas, LLC	Cost Allocation, Class cost of service study
8/2019	6690-UR-126	WI	Wisconsin Industrial Energy Gp.	Wisconsin Public Service Corp.	Cost Allocation, Class cost of service study
9/2019	9610	MD	Maryland Energy Group	Baltimore Gas and Electric Co.	Cost and revenue allocation, rate design
12/2019	2019-00271	KY	Office of the Attorney General	Duke Energy Kentucky, Inc.	Return on equity
2/2020	49831	TX	Texas Industrial Energy Consumers	Southwestern Public Service Co.	Return on equity, capital structure, rate of return
2/2020	E-7. Sub 1214	NC	NC Attorney General's Office	Duke Energy Carolinas	Return on equity, capital structure, rate of return, economic conditions
2/2020	E-2. Sub 1219	NC	NC Attorney General's Office	Duke Energy Progress	Return on equity, capital structure, rate of return, economic conditions
5/2020	R-2019- 3015162	PA	Industrial Energy Consumers of Pennsylvania	UGI Utilities, Inc.	Return on equity, cost of debt, revenue allocation, rate design
6/2020	20-G-0101	NY	Multiple Intervenors	Corning Natural Gas Corp.	Cost and revenue allocation
9/2020	R-2020- 2019369	PA	AK Steel	Pennsylvania-American Water Company	Cost and revenue allocation, rate design
9/2020	20-035-04	UT	The Kroger Co.	Rocky Mountain Power	Cost and revenue allocation, rate design
10/2020	2020-00174	KY	Ky. Office of the Attorney General, Ky. Industrial Utility Customers	Kentucky Power Co.	Return on equity
3/2021	2020-00349	KY	Ky. Office of the Attorney General, Ky. Industrial Utility Customers	Kentucky Utilities Co.	Return on equity
3/2021	2020-00350	KY	Ky. Office of the Attorney General, Ky. Industrial Utility Customers	Louisville Gas and Electric Co.	Return on equity

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Date	Case	Jurisdct.	Party	Utility	Subject
3/2021	20-0746-G-42T	WV	West Va. Energy Users Group	Dominion Energy West Va.	Cost and revenue allocation, cost of equity
4/2021	17-12-03RE11	CT	Connecticut Industrial Energy Consumers	PURA Investigation Into Distribution System Planning	Economic development rates
6/2021	U-20940	MI	Dearborn Industrial Generation, LLC	DTE Gas Company	Cost and revenue allocation, rate design
7/2021	21-0043-G-PC	WV	West Va. Energy Users Group	Mountaineer Gas Co., UGI Corporation	Hold harmless conditions for utility acquisition
07/2021	U-35441	LA	Louisiana Public Service Commission	Southwestern Electric Power Company	Return on equity, cost of capital, service quality
08/2021	51802	TX	Texas Industrial Energy Consumers	Southwestern Public Service Company	Return on equity
09/21	2021-00190	KY	Kentucky Office of the Attorney General	Duke Energy Kentucky, Inc.	Return on equity, cost of debt
09/21	2021-00183	KY	Kentucky Office of the Attorney General	Columbia Gas of Kentucky, Inc.	Return on equity, cost of debt, capital structure
09/21	21-0369-W-42T	WV	West Va. Energy Users Group	West Virginia-American Water Company	Revenue stabilization mechanism
09/21	2021-00185	KY	Kentucky Office of the Attorney General	Delta Natural Gas Company, Inc.	Return on equity, cost of debt, capital structure
09/21	2021-00214	KY	Kentucky Office of the Attorney General	Atmos Energy Corporation	Return on equity, common equity ratio
11/21	R-2021-3027385, R-2021-3027386	PA	Aqua Large Users Group	Aqua Pennsylvania, Inc.	Cost and revenue allocation, Rate design
11/21	21-G-0394	NY	Multiple Intervenors	Corning Natural Gas Corp.	Cost and revenue allocation
06/22	21-G-0577	NY	Multiple Intervenors	Liberty Utilities (St. Lawrence Gas) Corp.	Cost of revenue allocation, rate design
07/22	2022-89-G	SC	South Carolina Office of Regulatory Staff	Piedmont Natural Gas Co.	Return on equity, capital structure cost of capital
07/22	R-2022-3031672, R-2022-3031673	PA	Cleveland-Cliffs Steel	Pennsylvania American Water Company	Cost and revenue allocation, rate design

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS

COMPARISON OF PRO FORMA COST OF SERVICE WITH REVENUES UNDER PRESENT AND PROPOSED RATES
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2023

CORRECTED ALLOCATION OF ACT 11 COST OF SERVICE

Customer Classification (1)	Pro Forma Cost of Service, as of December 31, 2023				Pro Forma Revenues Under Present Rates		Pro Forma Revenues Under Proposed Rates		Proposed Increase	
	Cost of Service (2)	Allocation of Other COS* (3)	Total Amount (4)	Percent of Total (5)	Amount (6)	Percent of Total (7)	Amount (8)	Percent of Total (9)	Amount (10)	Percent Increase (11)
Residential	\$ 510,855,495	\$ 48,509,221	\$ 559,364,716	65.7%	\$ 457,907,960	65.5%	\$ 559,366,395	65.6%	\$ 101,458,435	22.2%
Commercial	199,068,741	18,902,935	217,971,676	25.6%	175,141,809	25.1%	217,967,237	25.6%	42,825,428	24.5%
Industrial	33,678,149	3,567,458	37,245,607	4.4%	30,550,032	4.4%	37,250,055	4.4%	6,700,023	21.9%
Public (Municipal)	20,715,090	1,967,039	22,682,129	2.7%	21,180,396	3.0%	22,678,754	2.7%	1,498,358	7.1%
Other Water Utilities - Group A	279,034		279,034	0.0%	244,982	0.0%	271,466	0.0%	26,484	10.8%
Other Water Utilities - Group B	50,471		50,471	0.0%	54,566	0.0%	59,162	0.0%	4,596	8.4%
Private Fire Protection	5,267,167		5,267,167	0.6%	4,925,568	0.7%	5,268,028	0.6%	342,460	7.0%
Public Fire Protection	9,449,695	-	9,449,695	1.1%	8,842,466	1.3%	9,448,871	1.1%	606,405	6.9%
Total Sales of Water	779,363,842	72,946,653	852,310,495	100.1%	698,847,779	100.0%	852,309,968	100.0%	153,462,189	22.0%
Other Water Revenues	11,115,826		11,115,826		10,157,762		11,115,826		958,064	9.4%
Contract Sales - Industrial	3,891,115		3,891,115		3,891,115		3,891,115		-	0.0%
Contract Sales - Resale	2,733,803		2,733,803		2,733,803		2,733,803		-	0.0%
Total	\$ 797,104,586	\$ 72,946,653	\$ 870,051,239		\$ 715,630,458		\$ 870,050,711		\$ 154,420,253	21.6%

* Includes unrecovered Wastewater Cost of Service.

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS
DEVELOPMENT OF RATE OF RETURN BY CUSTOMER CLASSIFICATION
UNDER PROPOSED RATES

CORRECTED REALLOCATION OF ACT 11 COST OF SERVICE

ITEM (1)	COST OF SERVICE (2)	RESIDENTIAL (3)	COMMERCIAL (4)	INDUSTRIAL (5)	PUBLIC (6)	OTHER WATER UTILITIES		FIRE PROTECTION	
						GROUP A (7)	GROUP B (8)	PRIVATE (9)	PUBLIC (10)
1. REVENUES FROM SALES	\$ 852,309,968	\$ 559,366,395	\$ 217,967,237	\$ 37,250,055	\$ 22,678,754	\$ 271,466	\$ 59,162	\$ 5,268,028	\$ 9,448,871
2. OTHER REVENUES	17,740,744	13,073,808	3,234,584	485,526	351,688	20,474	860	179,357	394,448
3. TOTAL OPERATING REVENUES	870,050,711	572,440,203	221,201,821	37,735,581	23,030,442	291,940	60,022	5,447,385	9,843,319
4. LESS: OPERATING EXPENSES (INCLUDES REALLOCATION OF FIRE & WW ALLOC.)	477,444,904	336,285,812	119,050,092	20,142,369	12,551,228	142,465	12,071	2,266,413	(13,005,546)
5. RETURN AND INCOME TAXES	392,605,807	236,154,390	102,151,729	17,593,212	10,479,214	149,475	47,951	3,180,972	22,848,865
6. LESS: TAXABLE EXCLUSIONS (FACTOR 19)	76,404,122	45,957,079	19,880,353	3,422,905	2,039,990	30,562	7,640	618,873	4,446,720
7. TAXABLE INCOME	316,201,685	190,197,311	82,271,376	14,170,308	8,439,224	118,913	40,310	2,562,099	18,402,145
8. LESS: INCOME TAXES (TAX. INC.)	72,274,597	43,473,627	18,804,867	3,238,924	1,928,963	27,180	9,214	585,622	4,206,200
9. NET RETURN (Line 5 - Line 8)	320,331,210	192,680,764	83,346,862	14,354,288	8,550,250	122,295	38,737	2,595,350	18,642,665
10. ORIGINAL COSTS MEASURE OF VALUE	4,034,404,744	2,427,005,536	1,049,576,924	180,766,020	107,601,832	1,667,380	206,029	32,816,382	234,764,625
11. RATE OF RETURN, PERCENT	7.94	7.94	7.94	7.94	7.95	7.33	18.80	7.91	7.94
12. RELATIVE RATE OF RETURN	1.00	1.00	1.00	1.00	1.00	0.92	2.37	1.00	1.00

Q. On page 10 of his Rebuttal Testimony, Mr. Kalcic recommended that if the Pennsylvania Public Utility Commission (“Commission”) excludes the Industrial class from PAWC’s proposed Revenue Stabilization Mechanism (“RSM”), then the Commission should also adopt a reduced return on equity (“ROE”) only for those classes included in the RSM. Please address Mr. Kalcic’s recommendation.

A. If the Commission approves the Company’s RSM, then it should reject Mr. Kalcic’s recommended lower ROE for customer classes included in the RSM. As I stated in my Direct Testimony on page 6, there is no evidence whatsoever in this case that the Industrial class is affected by conservation measures, weather, or declining customer numbers and so should not be included in the RSM. If the RSM is approved and the Industrial class is excluded, then there is absolutely no basis to apply a higher ROE to the Industrial class. The risks from conservation measures, weather, and declining customer numbers are associated with the Residential, Commercial, and Public classes, not the Industrial class.

Q. On pages 52 and 53 of his Rebuttal Testimony, Mr. Rea stated that you admitted that there is revenue volatility in the Industrial class. Is Mr. Rea’s characterization of your Direct Testimony accurate?

A. No. In my Direct Testimony I did not “admit” that Industrial class revenues were “volatile”. I did generally describe certain factors that would cause Industrial class revenues to either increase or decrease on pages 7 and 8 of my Direct Testimony. However, there are no analyses that have been presented in this case showing that Industrial class revenues are “volatile” or that they are more or less volatile than revenues from the other customer classes.

Q. On pages 2 and 3 of her Rebuttal Testimony, Ms. LaConte responded to Mr. Cline’s recommended scale back of rates by recommending that the Commission

only scale back the volumetric charges for the Industrial class. Please respond to this recommendation.

A. I agree with Ms. LaConte's recommended scale back of volumetric charges only for the Industrial class. This approach recognizes the disparate increases in customer charges and volumetric charges proposed by the Company and brings these increases into closer balance.

Q. Does this conclude your Surrebuttal Testimony?

A. Yes.


**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

PENNSYLVANIA PUBLIC UTILITY COMMISSION :
V. : **Docket Nos.**
: **R-2022-3031672,**
: **R-2022-3031673**
PENNSYLVANIA-AMERICAN WATER COMPANY :

VERIFICATION

I, Richard A. Baudino, hereby state that the facts set forth in Cleveland-Cliffs Statement No. 1-SR and accompanying exhibits are true and correct to the best of my knowledge, information, and belief. I understand that this verification is made subject to the provisions and penalties of 18 Pa. C.S. §4904 (relating to unsworn falsification to authorities).

Dated: September 1, 2022


Richard A. Baudino

Electronic Application of Kentucky-American Water Company for an Adjustment of Rates, a Certificate of Public Convenience and Necessity for Installation of Advanced Metering Infrastructure, Approval of Regulatory and Accounting Treatments, and Tariff Revisions
Case No. 2023-00191
The Attorney General's Response to
Kentucky-American Water Company's First Request for Information

WITNESSES RESPONSIBLE:
GREG R. MEYER

QUESTION NO. 3
Page 1 of 1

Please see Exhibit RAB-1 to Mr. Baudino's testimony which lists his expert testimony appearances. Please provide a similar list for all of Mr. Meyer's expert testimony appearances in the same format as Exhibit RAB-1 which format includes: date, case, jurisdiction, party, utility, and subject.

RESPONSE:

All of Mr. Meyer's responses to Kentucky American's First Request for Information will be contained in a separate filing.

Electronic Application of Kentucky-American Water Company for an Adjustment of Rates, a Certificate of Public Convenience and Necessity for Installation of Advanced Metering Infrastructure, Approval of Regulatory and Accounting Treatments, and Tariff Revisions
Case No. 2023-00191
The Attorney General's Response to
Kentucky-American Water Company's First Request for Information

WITNESS RESPONSIBLE:
GREG R. MEYER

QUESTION NO. 4
Page 1 of 1

For the listing of expert testimony appearances provided in response to Item 3 above, please provide copies of or active links to each piece of testimony listed for calendar years 2020, 2021, 2022, and 2023 to date.

RESPONSE:

All of Mr. Meyer's responses to Kentucky American's First Request for Information will be contained in a separate filing.