

COVID-19 and Utility Financial Impact

INSIGHTS FROM Q2 2020

PRESENTED BY

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THE **Brattle** GROUP



Purpose

- This report seeks to highlight the experience of electric utilities in terms of load reduction in the second quarter of 2020 (“Q2 2020”) and accompanying earnings results. As and if COVID-19 continues to have adverse effects on the economy, the interaction between load reduction and utility financials in Q2 2020 may provide insight into future burdens to be borne by utilities and/or their customers.
- At first glance, Q2 2020 suggests that utility financial burdens from COVID may be manageable. The pandemic had devastating effects on the economy, resulting in the worst quarterly drop in GDP since 1947. This was accompanied by a reduction in retail electricity sales of approximately 4% nationwide. Somewhat surprisingly, however, the observable financial impact on utilities through Q2 2020 was relatively muted. In fact, earnings for the sector went *up* in Q2 2020 relative to Q2 2019.
- A closer look suggests that **maintaining earnings (and ultimately cash flow) may not be sustainable if adverse COVID effects continue**. One clue is that, industry-wide, *revenues* have historically been highly correlated to changes in quarterly load. Indeed, electric revenues followed electricity sales in a downward direction in Q2 2020 relative to Q2 2019. While it may be possible to manage the earnings impact for one quarter--even with declining revenues--it is also intuitive that this cannot be maintained indefinitely.
- More concerning, **the experience of Q2 2020 suggests that the revenue reduction itself was muted, due to revenue recovery mechanisms and other “buffers” specific to pandemic conditions**. Thus financial results to date may still understate the eventual impact on electric utilities of persistent low load levels, unpaid bills, and customer defaults.

Agenda

Overview

Insights from Q2 2020

- a) Economic Contraction
- b) Utility Financial Results

The Leveraged Effects of Lost Revenues

Continued Pressure on Utility Revenues

The Potential for Future Rate Shock

Appendix A: Historical Impact of Changes in Retail Electricity Sales, 2006–2019

Overview

- The broad-based economic distress resulting from COVID-19 is now a familiar story
- Brattle has been periodically reporting on the unique changes in electricity usage driven by social distancing regimes
- As noted herein, this has consisted of significant net reductions in load, but widely varying effects by customer class:
 - Commercial and industrial load has fallen sharply
 - Residential load has increased
- The financial effects on utilities started to emerge as second quarter 2020 (“Q2 2020”) earnings results were announced in July and August:

As it turned out, utility financials were highly insulated in Q2 2020:

- Utility *earnings* were up partly due to cost management in the face of load reductions
- Some utility *revenues* were buffered by fixed tariffs, decoupling and other mechanisms



However, Q2 results may not be sustainable if depressed economic conditions persist:

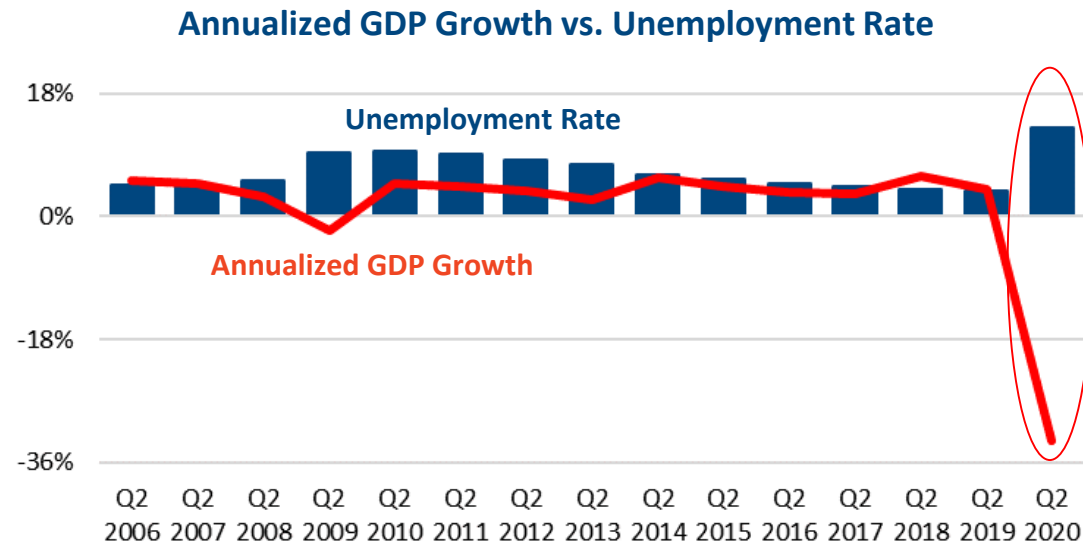
- Notwithstanding buffers, Q2 revenues were still sensitive to historically large load drops
- Revenue buffers can be expected to erode (pending new mechanisms)
- With declining revenues, cost management may be a finite resource

Insights From Q2 2020

a) Economic Contraction – GDP and Employment

The Q2 2020 annualized GDP decline of 32.9% was by far the largest drop in GDP since 1947, when the Bureau of Economic Affairs began compiling quarterly data

- The GDP decline coincided with an increase in unemployment, rising to 13% on average for Q2
- Analysis by the St. Louis Fed suggests that 13% unemployment was a muted response to GDP*



Sources: Bureau of Economic Analysis and Bureau of Labor Statistics

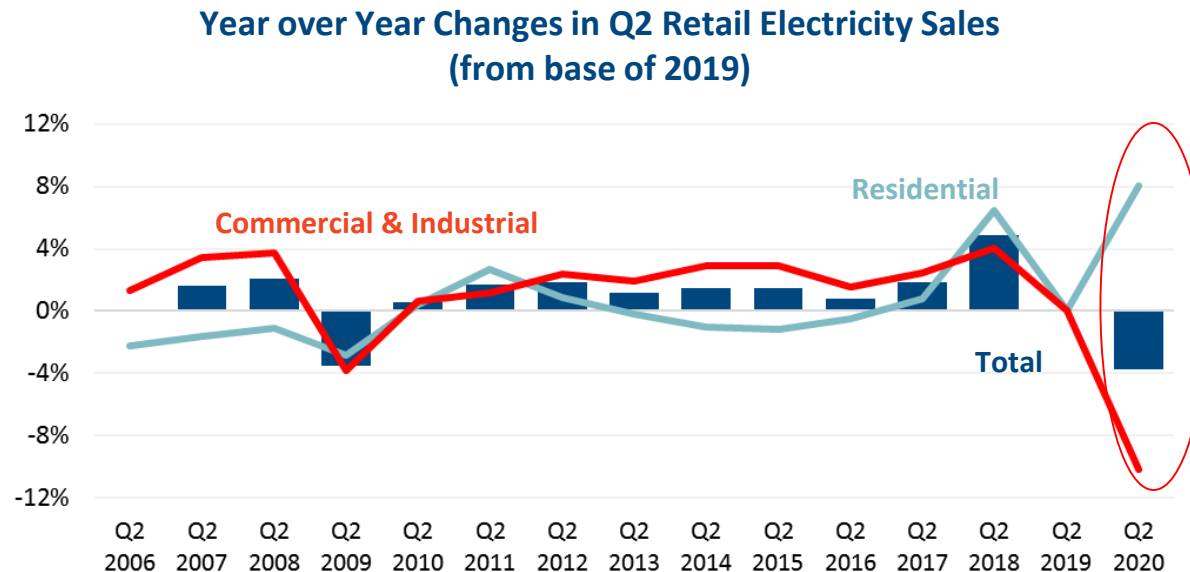
*"How Bad Can It Be? The Relationship between GDP Growth and the Unemployment Rate", Federal Reserve Bank of St. Louis, April 11, 2020.

Insights From Q2 2020

a) Economic Contraction – Electric Load Reduction

The load reduction of Q2 2020 is also unlike any other change in recent times

- It is marked by large divergences in electricity demand by customer class
 - Nationally, commercial and industrial load went down by approximately 10%
 - However, residential load went up by 8%, due to stay-at-home regimes
- These patterns are key to understanding past and potential future *financial effects* of COVID



Source: Energy Information Administration

Insights From Q2 2020

a) Economic Contraction – Load Reduction Drivers

Sectoral load changes reflected diverse factors:

Commercial and Industrial Sector (- 10%)

- Consumer-focused industries have been disproportionately hurt by COVID.
- 70% of the Q2 2020 GDP loss was attributable to services and non-durable goods.*
- The number of commercial bankruptcies in Q2 2020 up 40% from Q2 2019**, including:

- | | |
|-----------------|-------------------|
| • Neiman Marcus | • Modell Sports |
| • J.C. Penny | • GNC |
| • J Crew | • Gold's Gym |
| | • 24 Hour fitness |

- Further damage was blunted by low-cost borrowing, but with debt overhang going forward***

➡ ***All else equal, revenues can be expected to vary with load (subject to fixed tariffs).***

* Based on data reported by the Bureau of Economic Analysis

** Based on data reported by the American Bankruptcy Institute

*** "The Eye of the Bankruptcy Storm", *The New York Times*, July 17, 2020

Residential Sector (+ 8%)

- Despite high unemployment, personal bankruptcies did not increase in Q2 2020.*
- Thus nonpayment and associated bad debt likely did not fully reflect unemployment:

"The economic relief laws passed in response to COVID-19, particularly the CARES Act (P.L. 116-136), may reduce cases of utility bill nonpayment..."**

- This was likely temporary, given limitations on public relief and high consumer debt.
- Additionally, residential load would have gone up even with high levels of nonpayment.
- This is because of moratoriums on service disconnection that were widely prevalent in Q2.

➡ ***All else equal, revenues could vary inversely with load (because of disconnection moratoriums).***

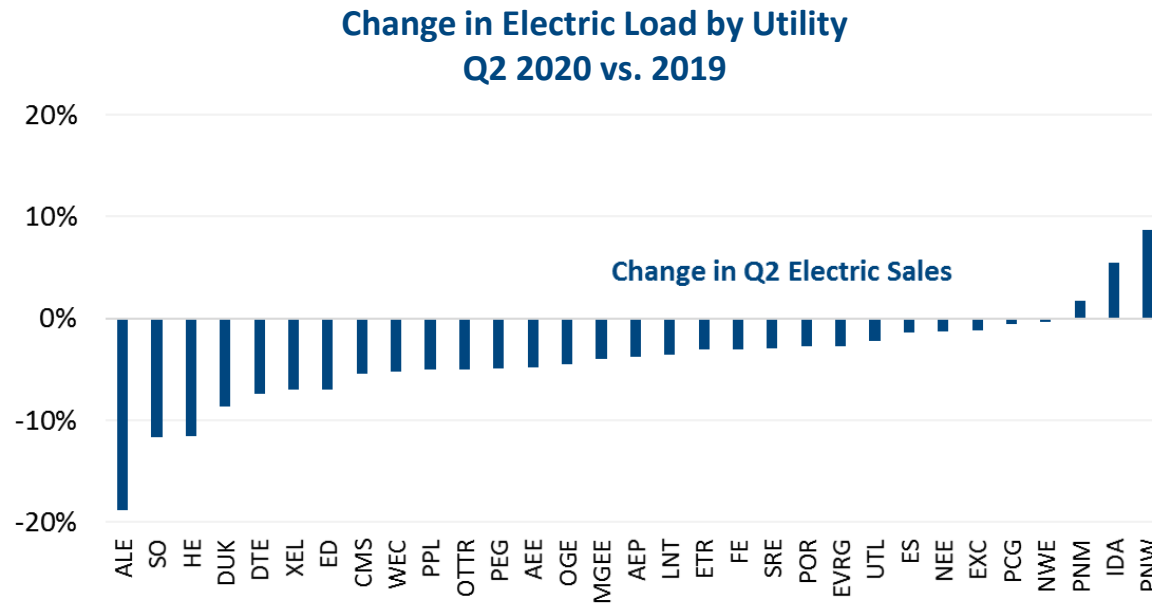
* "Federal Aid Has So Far Averted Personal Bankruptcies, but Trouble Looms", *The New York Times*, July 17, 2020.

** "COVID-19 Electric Utility Disconnections", Congressional Research Service, June 9, 2020

Insights From Q2 2020

a) Economic Contraction – Individual IOU Experiences

- Q2 load for 35 individual investor-owned utilities was down 4% on average from Q2 2019
- Individual utilities had different results, based partly on customer mix
- 10 utilities had overall load reductions over 5% (but this masks C&I load reductions in the mid-teens or higher in some cases)



Source: Company 10-Qs, Quarter 2 2020.



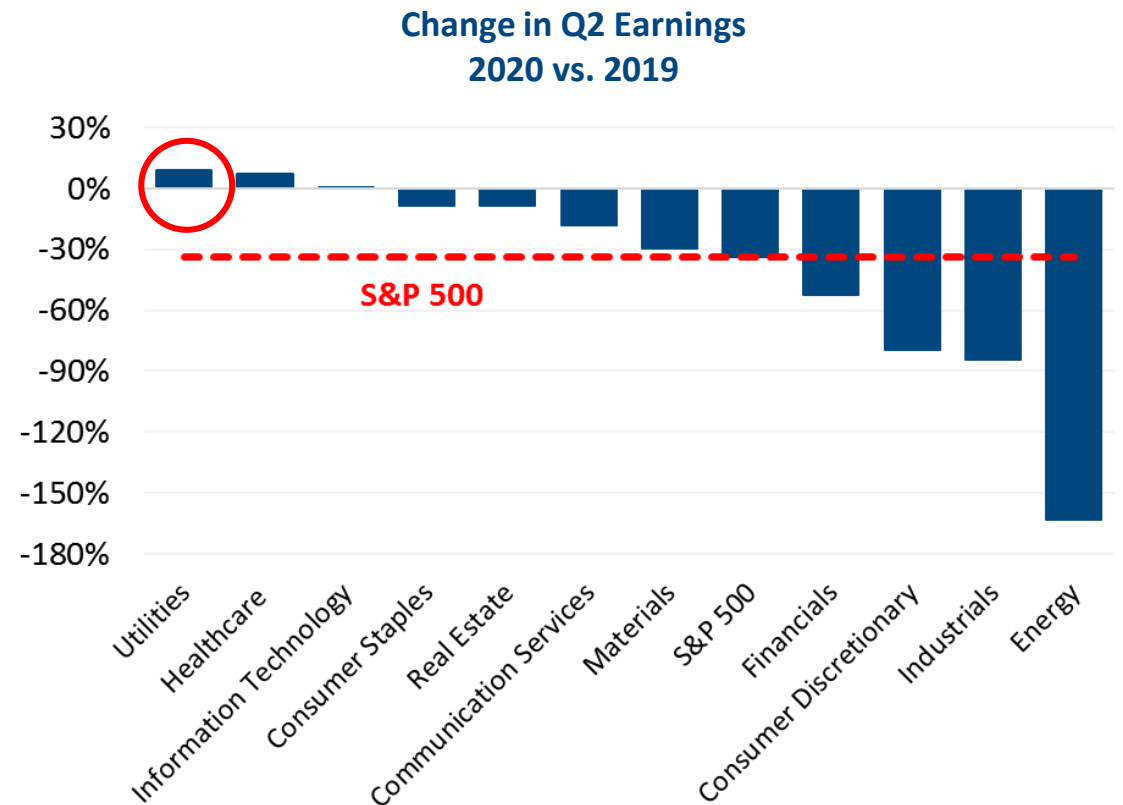
Load reductions may still worsen if economic stresses persist

Insights From Q2 2020

b) Utility Financial Results – Industry Earnings

Notwithstanding load reduction and economic distress among customers, utility earnings proved highly resilient in Q2 2020

- So far, utilities have been much more insulated from general economic conditions than other sectors of the economy
- Factset reported year-over-year utility earnings growth of 8.9% in Q2 2020, as shown at right



Source: Butters, John, "S&P 500 Earnings Season Update: August 7, 2020," August 7, 2020, <https://insight.factset.com/sp-500-earnings-season-update-august-7-2020>.

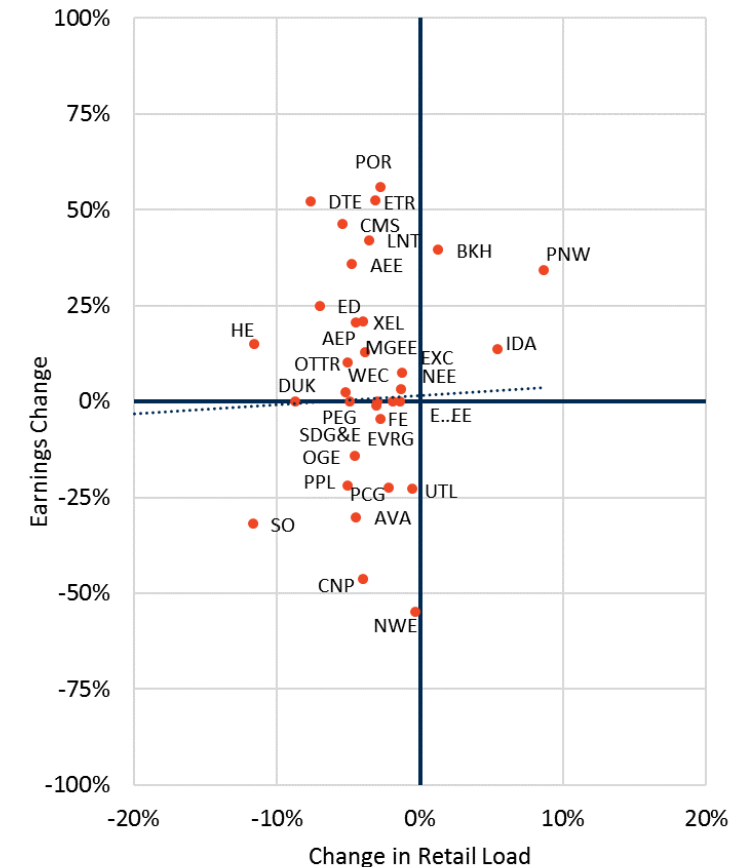
Insights From Q2 2020

b) Utility Financial Results – Electric Utility Earnings by Company (Consolidated)

- Like the broader utility sector, Q2 earnings for electric utilities were up, on average
- Earnings were only weakly correlated to load and thus driven principally by other factors
 - Q2 earnings announcements have cited effective expense management*
 - Natural gas prices were also substantially down from Q2 2019

➔ *A key question is whether expense management can outlast the effects of load reduction in the future, should it persist (see also Appendix A for longer term patterns)*

Change in Consolidated Earnings vs. Retail Load
Q2 2020 vs. Q2 2019



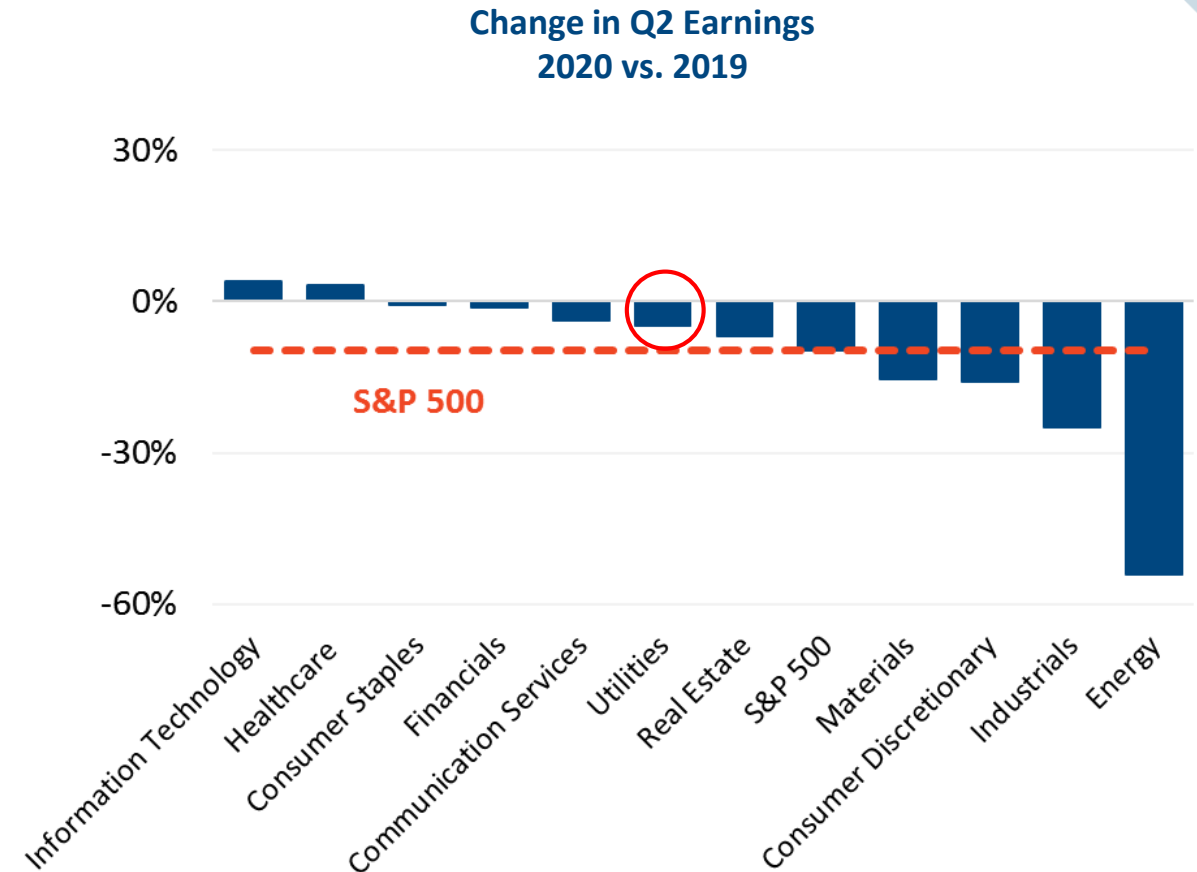
* See also “Utilities, responding to COVID-19, reduce O&M expense in Q2'20”, SNL, September 17, 2020

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b) Utility Financial Results – Industry Revenues

The story is somewhat different for utility revenues, which declined relative to Q2 2019

- Factset reported year-over year utility revenue losses of 4.9% in Q2 2020, as shown at right
- From this perspective, utilities have been less insulated relative to other sectors of the economy



Source: Butters, John, "S&P 500 Earnings Season Update: August 7, 2020," August 7, 2020, <https://insight.factset.com/sp-500-earnings-season-update-august-7-2020>.

Insights From Q2 2020

b) Utility Financial Results – Regulated Revenues by Electric Utility

- Q2 regulated electric revenues were down by 1.4% for the 35 IOUs, on average
- Removing high-end outliers* with possibly non-recurring factors, the reduction would have been 3.8%
- Relative to earnings, regulated revenues were much more correlated to load reduction
- This is intuitive, since there would have been less opportunity to manage revenues than costs

➔ *Earnings could in due course go more the way of revenues, if load reductions persist (see also Appendix A for longer term patterns)*

* Defined as having significant revenue increases despite load reductions such as PCG, SRE (SDG&E), DTE, PEG, and ED

Change in Regulated Revenues vs. Retail Load
Q2 2020 vs. Q2 2019



Source: Company 10Qs and earnings announcements

Insights From Q2 2020

b) Utility Financial Results – Regulated Revenues by Electric Utility

While not a universal experience, some major utilities lost regulated revenue at a rate close to or exceeding a “1-to-1” relationship to load reduction

Co.	Change In Retail Electric Load	Change In Retail Electric Revenue	Change In Rev./ Chg. In Load	C&I Electric Load (Avg = ~60%)	Electric Decoup. or Equiv.	Key Factors Cited
<i>Opco Revenues Highly Responsive to Reduction In Retail Load:</i>						
ALE	-24%	-20%	0.8x	High	No	30% loss of C&I load.
SO	-12%	-10%	0.9x	Avg +	Partial	Revenues down from COVID-driven load reduction, fuel costs, weather.
HE	-12%	-16%	1.4x	High	Yes	Tourism drastically reduced.
DUK	-9%	-8%	0.9x	Avg	Partial	Revenue loss due to lower load, plus COVID refunds in resi.-heavy FLA.

- Factors include:
 - Relatively high reliance on C&I load, and/or
 - Lack of comprehensive decoupling or equivalent mechanisms (pending emerging regulatory action)

Insights From Q2 2020

b) Utility Financial Results – Regulated Revenues by Electric Utility

Some other electric utilities were better insulated from load reduction

Co.	Change In Retail Electric Load	Change In Retail Electric Revenue	Change In Rev./ Chg. In Load	C&I Electric Load (Avg = ~60%)	Electric Decoup. or Equiv.	Key Factors Cited
<i>Opco Revenues Highly Insulated from Reduction In Retail Load:</i>						
DTE	-8%	10%	(1.3x)	Avg	No	35% + increase in resi. revs. offset C&I; per 10Q, "favorable rate mix"
ED	-7%	1%	(0.1x)	High	Yes	Electricity revenues insulated by decoupling regime
PEG	-5%	3%	(0.7x)	Avg +	No	EDIT-driven step-ups in ratebase, possibly non-recurring.
SRE *	-3%	13%	(4.4x)	Avg	Yes	Strong decoupling regime plus non-recurring factors

* SDG&E

- However, this insulation may have been based on potentially transitory load reduction “buffers”:
 - In some jurisdictions, existing decoupling and equivalent mechanisms
 - Fixed payments under C&I tariffs
 - Higher residential load (at higher per-unit rates)
 - Lagged effects of customer financial distress
 - Non-recurring events

The Leveraged Effect of Reduced Revenues

All else equal, a deferral of revenues will have an amplified effect on cash flow and earnings

- For a generic utility, a 10% revenue loss could mean a 26% loss in cash flow or a 43% loss in earnings*
- A 20% revenue loss would have a proportionately greater effect
- For a utility with revenues of \$10 billion per year, this could mean an annual cash flow shortfall of \$0.6 to \$1.1 billion
- Unmitigated, these outcomes would be unsustainable with any semblance of ongoing service provision

Revenue Loss		0%	-10%	-20%
Revenues	\$ Mil.	10,000	9,000	8,000
Expenses	\$ Mil.	6,667	6,447	6,227
EBITDA	\$ Mil.	3,333	2,553	1,773
Interest and Taxes	\$ Mil.	1,171	953	734
Funds from Operations (FFO)	\$ Mil.	2,162	1,601	1,039
Depreciation	\$ Mil.	845	845	845
Net Income	\$ Mil.	1,318	756	194
Realized ROE	%	10.0%	3.0%	0.8%
Debt	\$ Mil.	12,162	12,162	12,162
FFO/ Debt	%	17.8%	13.2%	8.5%
Change in FFO	%		-26%	-52%
Change in Net Income	%		-43%	-85%

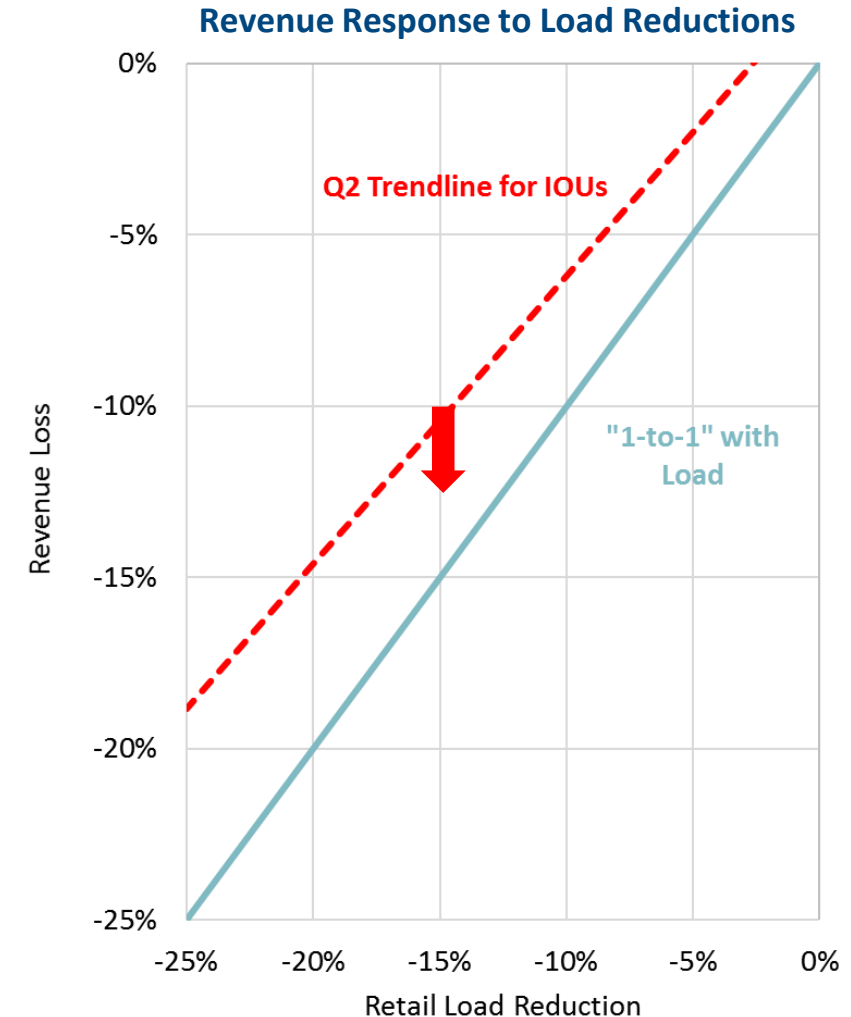
➡ ***If COVID and depressed economic conditions persist, an erosion of revenue and cost buffers could push utilities in this direction***

* Assumes variable costs of 33%, and thus some cost savings with load reduction

Continuing Drivers of Deferred Revenues

Revenue Buffers May be Subject to Erosion

- The Q2 2020 trendline for IOUs is shown at right
- As discussed above, it has been buffered to date from a “1-to-1” relationship between revenue and load reduction
- Continued load reduction may in due course:
 - Overwhelm traditional decoupling and equivalent mechanisms
 - Erode fixed payments under C&I tariffs, as customers rationalize operations
- At any level of load reduction, a loss of these buffers will exacerbate revenue loss

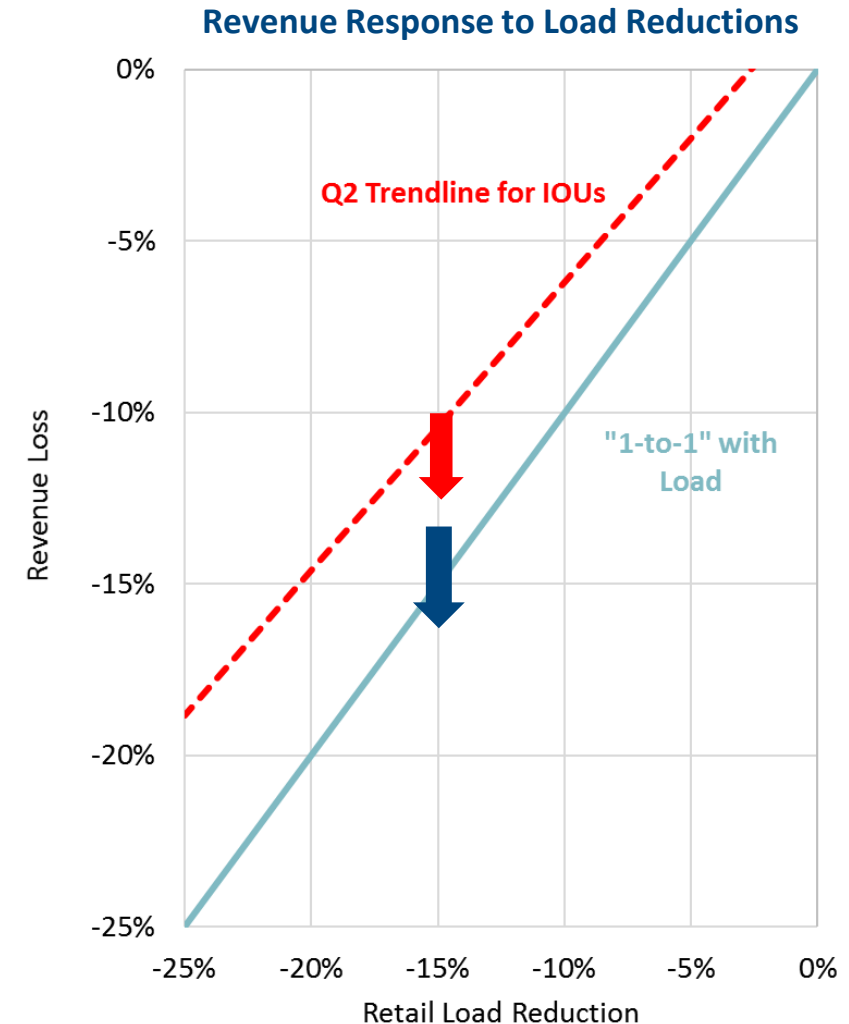


Continuing Drivers of Deferred Revenues

Customer Distress May Get Worse

- Ongoing C&I bankruptcies would continue to reduce load (and further erode fixed charge buffers)
- Ongoing residential distress could be more threatening:
 - With disconnection moratoriums, residential load may remain high
 - But this means nonpayment could reduce revenues disproportionately more than aggregate load reduction*
- Thus, revenue loss could ultimately be proportionally greater than load reduction

* Additionally, below the revenue line, disconnection moratoriums will preempt cost reductions.



The Potential For Future Rate Shock

Based on persistent load reduction and customer distress per above, a utility could have “catch-up” requirements as high as 25% or more in a subsequent year

- Illustrative annual revenue catch-up requirements are shown at right
- They vary both with:
 - Percentage load reduction, and
 - Revenue responsiveness to load reduction
- At 20% load reduction and 1.2x revenue responsiveness, this could result in average “rate shock” of 25%

➡ ***This degree of rate shock could call for special recovery mechanisms, to be discussed in a future report.***

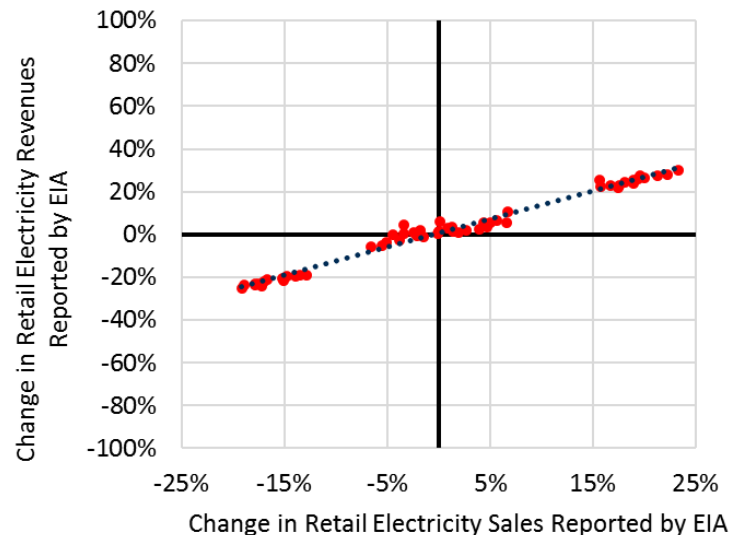
Load Reduction		0%	-10%	-20%
<u>1-to-1 Revenue Loss</u>				
Revenues	\$ Mil.	10,000	9,000	8,000
Revenue Loss	\$ Mil.	-	1,000	2,000
Variable Cost Savings	\$ Mil.	-	(220)	(440)
Net Recovery	\$ Mil.	-	780	1,560
% of Base Revenue	%	0%	8%	16%
Gross up for Ongoing Load Reduction	%	<u>0%</u>	<u>1%</u>	<u>4%</u>
Total	%	0%	9%	20%
<u>1.2-to-1 Revenue Loss</u>				
Revenues	\$ Mil.	10,000	8,800	7,600
Revenue Loss	\$ Mil.	-	1,200	2,400
Variable Cost Savings	\$ Mil.	-	(220)	(440)
Net Recovery	\$ Mil.	-	980	1,960
% of Base Revenue	%	0%	10%	20%
Gross up for Ongoing Load Reduction	%	<u>0%</u>	<u>1%</u>	<u>5%</u>
Total	%	0%	11%	25%

Historical Impact of Changes in Retail Electricity Sales

Quarterly Revenues (reported by EIA):

- Industry revenues have been highly responsive to quarterly changes in load
- Much of this is of course seasonal swings (shown in graph by load changes $< -10\%$ / $> 10\%$)
- However, persistent load changes—from COVID or other drivers--could have a significant impact on revenues

**Change in Electric Industry Revenues (EIA)
Quarterly 2006-2019**

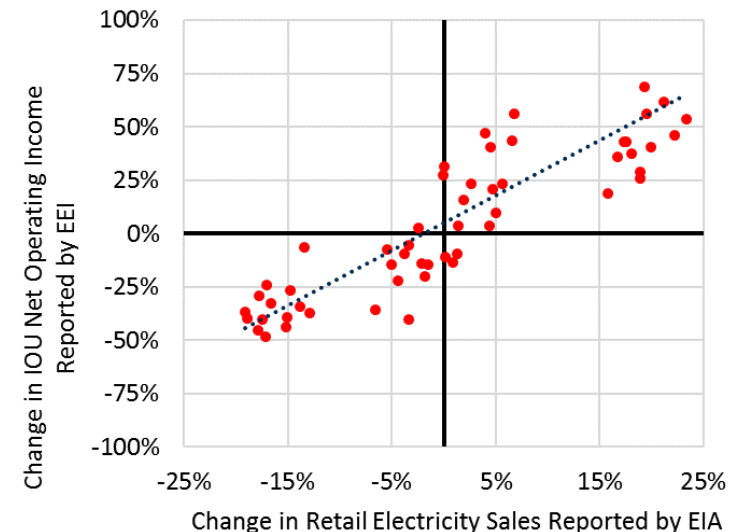


Source: Energy Information Administration

Quarterly Net Operating Income (reported by EEI):

- IOU net operating income reported by EEI also appears responsive to load changes
- Net operating income is less correlated to load than revenues, but with amplifications from leverage
- Again, persistent load changes can be expected to affect net operating income

**Change in IOU Net Operating Income (EEI)
Quarterly 2006-2019**



Source: Energy Information Administration and Edison Electric Institute

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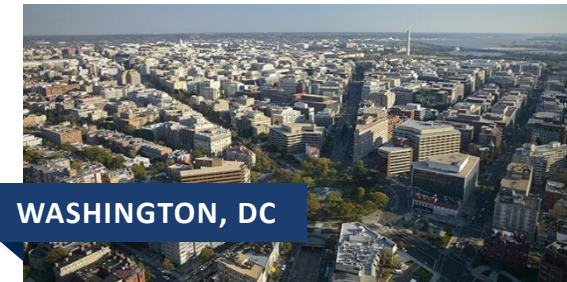
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