

## **Exhibit IEc-2**

## **LIST OF REFERENCES INCLUDED IN EXHIBIT IEC-2**

1. Strategic Repositioning of PPL Corporation, March 18, 2021, download available at [Strategic Repositioning of PPL \(investorroom.com\)](https://pplweb.investorroom.com/Strategic-Repositioning-of-PPL), <https://pplweb.investorroom.com/Strategic-Repositioning-of-PPL>.
2. Averch, Harvey, and Leland L. Johnson. "Behavior of the Firm Under Regulatory Constraint." The American Economic Review, vol. 52, no. 5, American Economic Association, 1962, pp. 1052–69, <http://www.jstor.org/stable/1812181>.
3. Q2 2021 report, included here and can be downloaded here <https://pplweb.investorroom.com/financials-2021>.
4. <https://www.nationalgrid.com/document/142126/download> page 34.
5. Docket No. R-2021-3024296, OCA Statement No. 1 at 20-21.

## **LIST OF ADDITIONAL REFERENCES IN TESTIMONY**

6. Petition of PPL Corporation, PPL Rhode Island Holdings, LLC, National Grid USA, and The Narragansett Electric Company for Authority to Transfer Ownership of The Narragansett Electric Company to PPL Rhode Island Holdings, LLC and Related Approvals, Division Docket No. D-21-09 (May 4, 2021) (the "Petition").
7. PPL-Div-2-36.
8. Pre-Filed Direct Testimony of Vincent Sorgi at 11, 16.
9. Pre-Filed Direct Testimony of Gregory N. Dudkin at 21- 23, 31-35.
10. Pre-Filed Direct Testimony of Terence Sobolewski at 5, 6.
11. NG-Div-7-34.
12. NG-Div-7-36-2-4.
13. NG-Div-7-36-2-5.
14. PPL-Div-1-54-1 Supplemental.
15. PPL-AG-1-8.
16. PPL-AG-1-10.
17. CONFIDENTIAL PPL-Div-6-2-3.
18. PPL-Div-8-13.
19. PPL-AG-1-11(c).

20. PPL-Div-8-8.
21. PPL-Div-8-5.
22. PPL-Div-8-6.
23. PPL-AG-1-7-1.
24. PPL-Div-6-3.
25. PPL-Div-8-7.
26. NG-Div-8-5-1.
27. PPL-Div-8-11.
28. PPL-Div-8-14.
29. PPL-Div-8-16.
30. PPL-AG-1-2.
31. CONFIDENTIAL PPL-Div-1-11-7
32. CONFIDENTIAL PPL-Div-1-11-9.
33. CONFIDENTIAL PPL-Div-1-11-11.
34. CONFIDENTIAL PPL-Div-1-11-2.
35. CONFIDENTIAL PPL-Div-9-21.
36. CONFIDENTIAL Attachment PPL-Div-6-2-5 pages 1-3.
37. NG-AG-1-10.
38. CONFIDENTIAL NG-Div-6-4-2 page 28.
39. Pre-Filed Direct Testimony of Lonnie Bellar at 4-5.
40. PPL-AG-1-25.
41. PPL-Div-2-14(f).
42. PPL-DIV-2-3
43. NG-AG-1-11.
44. PPL-AG-1-9.

45. NG-Div-4-6.
46. PPL-DIV-4-7.
47. NG-Div-1-28.
48. CONFIDENTIAL PPL-Div--6-1(d, e).
49. NG-Div-1-28-4.
50. NG-Div-1-28-5.
51. CONFIDENTIAL PPL-Div-9-16.
52. PPL-Div-1-54-1 at 6-7.
53. PPL-AG-1-36.
54. PPL-Div-3-5.
55. NG-Div-11-25.
56. NG-Div-11-28.
57. PPL-Div-1-45.
58. Attachment NG-Div-7-36-2-5, page 32.
59. PPL-AG-2-8.
60. PPL-AG-2-9.
61. PPL-AG-2-6
62. PPL-AG-1-20.





# Strategic Repositioning of PPL Corporation

March 18, 2021



# Cautionary Statements and Factors That May Affect Future Results



Statements made in this presentation about future operating results or other future events, including the anticipated sale of PPL Corporation's U.K. business, the anticipated acquisition of The Narragansett Electric Company (Narragansett) from National Grid, and the impact of each transaction on PPL Corporation, are forward-looking statements under the Safe Harbor provisions of the Private Securities Litigation Reform Act of 1995. Actual results may differ materially from the forward-looking statements. A discussion of some of the factors that could cause actual results or events to vary is contained in the Appendix to this presentation and in the Company's SEC filings. Unless otherwise expressly specified, the figures in this presentation do not reflect the effects of any sale of the U.K. business.

Management utilizes non-GAAP financial measures such as, "adjusted gross margins" or "margins" in this presentation. For additional information on non-GAAP financial measures and reconciliations to the appropriate GAAP measure, refer to the Appendix of this presentation and PPL's SEC filings.

# Agenda

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**Transaction Announcements and Strategic Rationale**

**PPL Investment Highlights Post Transactions**

**Transaction Approvals**

**Closing Remarks and Questions**



# Overview of Transactions

## Unlocking value for shareowners



- **PPL entered into an agreement to sell its U.K. utility business to National Grid, netting cash proceeds of approximately \$10.2 billion<sup>(1)</sup>**
  - Total transaction value of \$19.4 billion<sup>(2)</sup>
  - National Grid will assume \$8.9 billion of WPD debt<sup>(2)</sup>
  - Expected to close within 4 months with full cash payment at closing
- **PPL also entered into a separate agreement to acquire The Narragansett Electric Company (Narragansett) from National Grid for \$3.8 billion, to be financed with proceeds from the sale of the U.K. utility business**
  - Net equity purchase price of \$3.3 billion after consideration of approximately \$0.5 billion of tax benefits expected to result from the transaction
  - Total transaction value of \$5.3 billion, including assumption of \$1.5 billion of Narragansett debt
  - Expected to close within 12 months
- **Residual net cash proceeds of \$6.4 billion to further strengthen PPL's balance sheet and capitalize on incremental organic and strategic growth opportunities**
  - Targeting CFO(FFO) to debt ratio of 16% - 18%
  - Continue to evaluate best use of remaining proceeds to maximize shareowner value, including incremental capital investments at PPL's utilities, additional disciplined investments in renewables, and/or share repurchases

(1) Based on average foreign currency rate of \$1.35/£ as of March 12, 2021, inclusive of hedges. Assumes approximately \$300 million of transaction-related cash taxes and fees.

(2) Assumes foreign currency rate of \$1.35/£ for comparability purposes.

# Strategically Repositioning PPL

Transformation to a high-growth, low-risk U.S. energy company



Strategic Objective	Strategic Repositioning
Address valuation discount and improve expected long-term earnings growth	<ul style="list-style-type: none"> <li>✓ Simplifies structure with clear focus on U.S. rate-regulated utilities</li> <li>✓ Removes U.K. political, regulatory and foreign currency risk</li> <li>✓ Increases long-term earnings growth and dividend growth rate</li> </ul>
Increase relative size of U.S. operations; mitigate earnings from coal-fired generation	<ul style="list-style-type: none"> <li>✓ Further diversifies current U.S. regulated operations with addition of U.S. utility in a constructive jurisdiction</li> <li>✓ Pro forma earnings related to coal-fired generation estimated at ~15-20%<sup>(1)</sup></li> </ul>
Leverage superior operating performance to enhance value for customers and shareowners	<ul style="list-style-type: none"> <li>✓ Provides immediate opportunity to execute PPL's proven operating model through investment in advanced technologies and grid modernization</li> <li>✓ Supports improved reliability and customer service for Rhode Island</li> </ul>
Improve balance sheet and credit metrics	<ul style="list-style-type: none"> <li>✓ Enhances pro forma qualitative and quantitative credit metrics to support strong investment grade credit ratings</li> <li>✓ Supports additional growth and provides financial flexibility with no planned equity issuances<sup>(2)</sup></li> </ul>
<ul style="list-style-type: none"> <li>✓ <b>Sale of U.K. business at a compelling value</b></li> <li>✓ <b>Narragansett acquisition expected to be value accretive to earnings and credit</b></li> </ul>	

(1) Based on estimate for pro forma combined PPL and Narragansett earnings post transaction closing.

(2) Excluding immaterial equity issuances for DRIP and compensation programs.

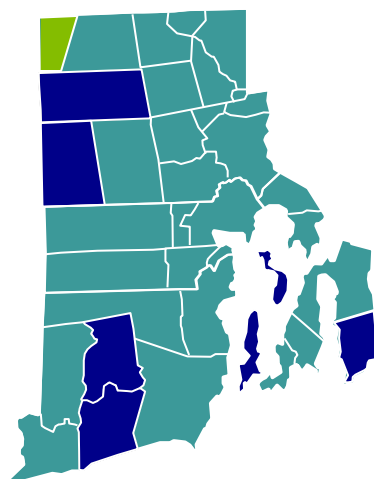
# Narragansett Business Profile

Attractive electric and gas utility in a constructive jurisdiction



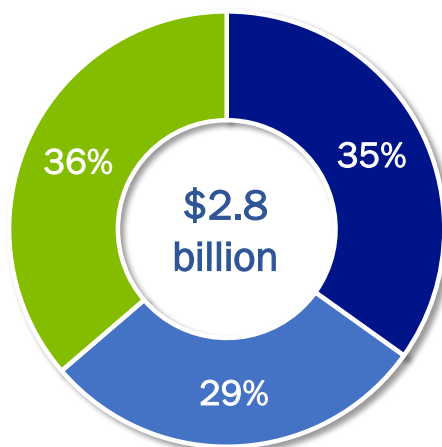
## Narragansett Service Territory & Rate Base

### Service Territory



- Electric Only
- Electric and Gas
- Gas Only

### Rate Base (2020)<sup>(1)</sup>



- Electric Distribution
- Electric Transmission
- Gas Distribution

## Narragansett Highlights

- **Largest electricity T&D and gas distribution provider in Rhode Island**
  - ~510,000 electric customers
  - ~270,000 gas customers
  - No ownership of generation facilities
- **Adjusted net income estimate of \$150 million for FY ended March 31, 2021<sup>(2)</sup>**
- **Significant geographical overlap across electric and gas operational territories**
- **Rhode Island is a constructive regulatory jurisdiction (RRA – Average/2)<sup>(3)</sup>**
  - Recovery mechanisms reduce regulatory lag
- **Further opportunities to invest in electric and gas infrastructure**
  - Annual rate base growth greater than 9% over past 5 years

(1) Represents estimated year-end rate base.

(2) Adjusted for estimated COVID-19 related expenses and other non-recurring and timing-related items.

(3) Source: S&P Global's Regulatory Research Associates (RRA) Rankings.

# Narragansett Regulatory Overview

## Constructive regulatory features



	Rate Base (\$bn) <sup>(1)</sup>	Base Allowed ROE (%)	Equity Layer (%)	Incentives & Recovery Mechanisms	Regulator
Electric Distribution	\$1.0	9.275% <sup>(2)</sup>	51%	<ul style="list-style-type: none"> <li>▪ Multi-year framework</li> <li>▪ Capital recovery mechanisms</li> <li>▪ Performance Incentive revenues</li> </ul>	<ul style="list-style-type: none"> <li>▪ Public Utilities Commission (RIPUC)</li> </ul>
Gas Distribution	\$1.0	9.275% <sup>(2)</sup>	51%	<ul style="list-style-type: none"> <li>▪ Revenue decoupling mechanism</li> <li>▪ Storm cost recovery</li> <li>▪ Energy Efficiency tracker</li> </ul>	<ul style="list-style-type: none"> <li>▪ Rhode Island Division of Public Utilities and Carriers (Division)</li> </ul>
Electric Transmission	\$0.8	10.57% <sup>(3)</sup>	50%	<ul style="list-style-type: none"> <li>▪ Recovery under formula rates</li> <li>▪ Incentives on Pool Transmission Facilities and the New England East West Project</li> </ul>	<ul style="list-style-type: none"> <li>▪ Federal Energy Regulatory Commission (FERC)</li> </ul>

(1) Represents estimated year-end rate base for 2020.

(2) Reflects base allowed ROE. Narragansett can earn higher returns than the base allowed ROE through incentive mechanisms and efficiencies that are supported by customer sharing mechanisms.

(3) Reflects base allowed ROE. Narragansett receives a 50-basis point RTO adder and additional project adder mechanisms that may increase the allowed ROE up to 11.74%.

# Narragansett Investment Overview

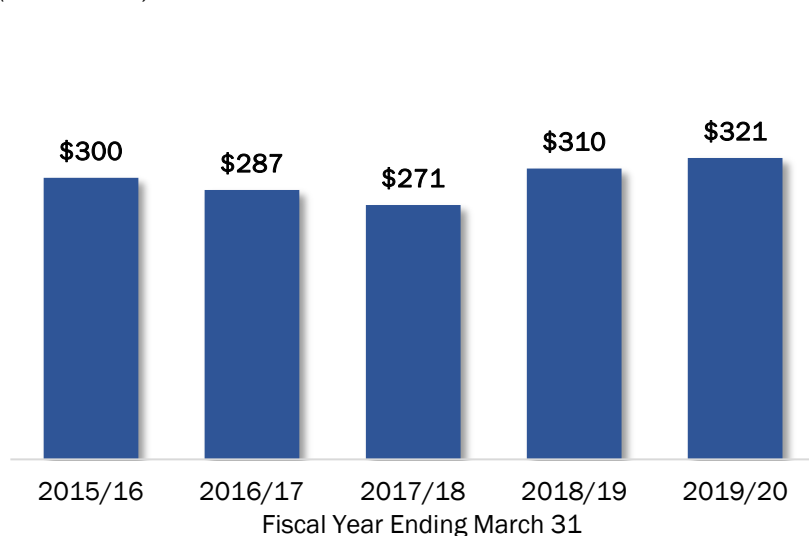
Historically robust capital profile with stable growth



**Over 90% of capital recovered through efficient rider and tracker mechanisms**

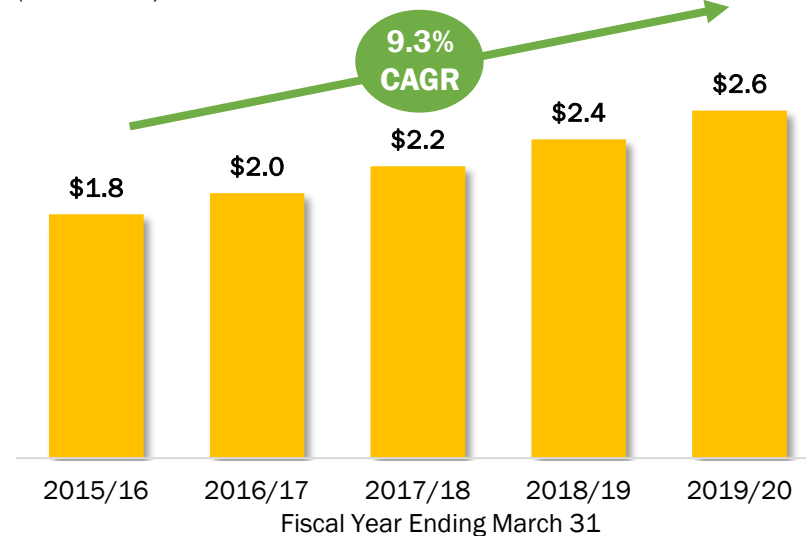
## Narragansett Historical Capital<sup>(1)</sup>

(\$ in millions)



## Narragansett Historical Rate Base Growth<sup>(1)</sup>

(\$ in billions)



- ISR mechanism allows for recovery of certain natural gas and electricity distribution capital investments and expenses related to infrastructure, safety and reliability outside of base rate proceedings<sup>(2)</sup>
- Recovery through FERC formula rates for electric transmission investments

(1) Source: National Grid data book – fiscal year ended March 31, 2020.

(2) ISR – an annual recovery mechanism for certain capital and O&M costs for electric and gas Infrastructure, Safety and Reliability (ISR) projects filed with the RIPUC.

# PPL's Superior Track Record: Electric

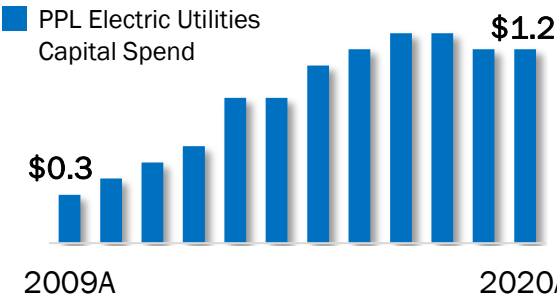
## Proven ability to drive value for customers and shareholders



**Our success in Pennsylvania demonstrates a clear value proposition for Rhode Island's electric T&D customers**

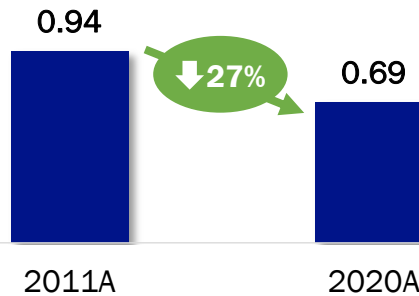
### Prudent Capital Investments

(\$ in billions)



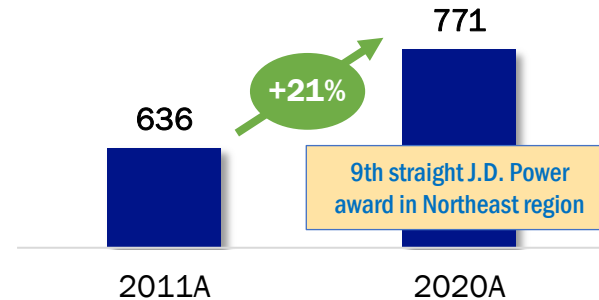
### Better Reliability - SAIFI<sup>(2)</sup>

(Avg. Outages per customer)



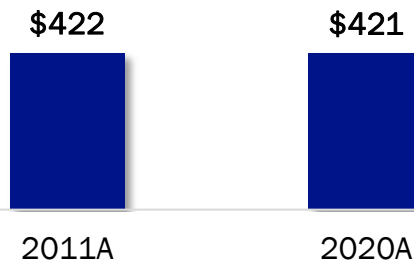
### Higher Customer Satisfaction<sup>(3)</sup>

(J.D. Power customer satisfaction scores)



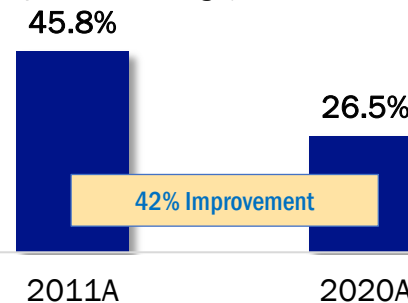
### Effective O&M Management<sup>(1)</sup>

(\$ in millions)



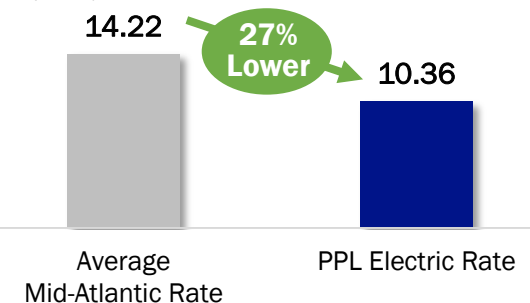
### Improved Cost Efficiency<sup>(1)</sup>

(O&M/Adjusted Gross Margin)



### Affordable Rates<sup>(4)</sup>

(Cents/kWh)



**Prudent investments and operational efficiency lead to strong reliability and premier customer satisfaction**

Note: See Appendix for the reconciliation of Adjusted Gross Margins to Operating Income.

(1) Reflects O&M costs excluding certain pass-through costs and rider costs.

(2) System Average Interruption Frequency Index: the average number of interruptions that a customer experiences over a specific period of time for each customer served.

(3) Based on J.D. Power Electric Utility Residential Customer Satisfaction Study.

(4) Source: EEI, Typical Bills and Average Rates Report, Summer 2020, and includes distribution, transmission, and generation charges.

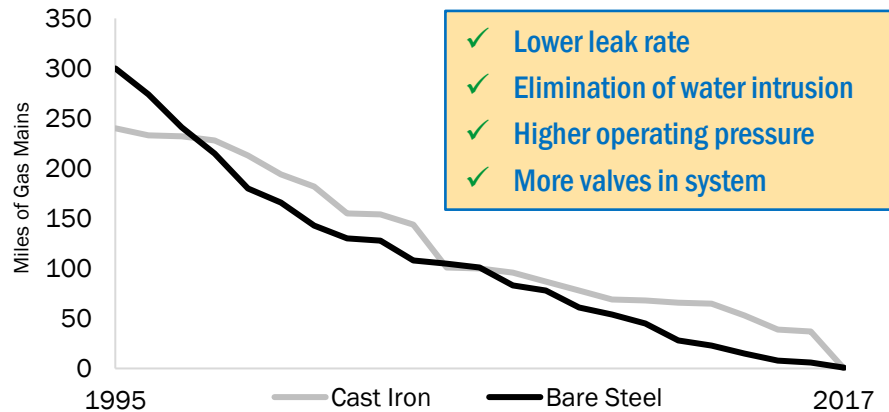
# PPL's Superior Track Record: Gas

Focus on investments that provide a safe and reliable system

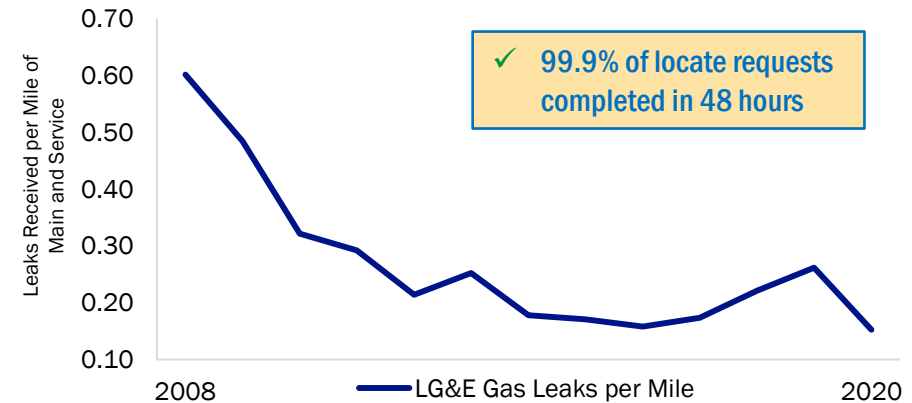


**Our advanced approach to upgrading LG&E's gas infrastructure has significantly improved safety and reliability...**

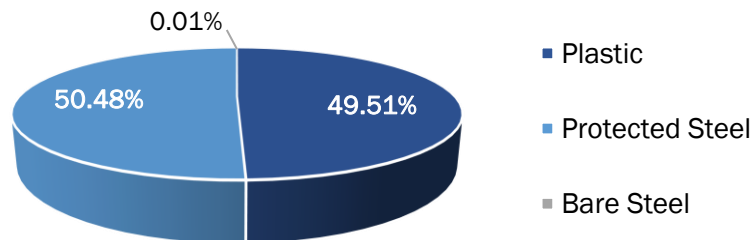
## Cast Iron and Bare Steel Main Replacement



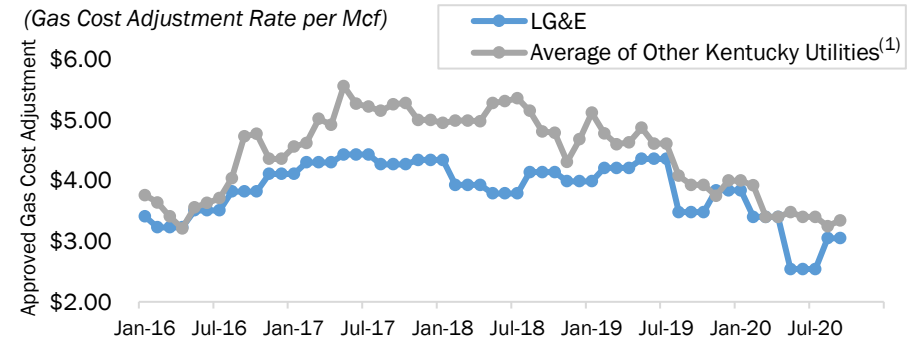
## Gas Leaks per Distribution Mile



## Gas Distribution Pipeline by Material Type



## Gas Cost of LG&E vs. Other Kentucky LDCs



**...while effectively managing costs and commodity price risk at rates lower than other gas utilities in the state**

(1) Represents average of other major gas utilities in Kentucky (Atmos, Columbia, Delta, and Duke).

# Why Narragansett and PPL Are a Great Fit

An opportunity for both RI customers and PPL shareowners



**We believe PPL's customer-focused strategies can deliver real value to Rhode Island**

- **PPL's utilities are premier operators that have consistently demonstrated proficiency in delivering affordable electricity and gas safely and reliably**
  - ✓ PPL Electric is one of the most advanced, reliable electricity networks in the country and is designed to be the utility of the future
  - ✓ LG&E's forward-thinking gas strategy has reduced leak rates and enhanced safety
  - ✓ PPL has earned 54 total J.D. Power Awards across Pennsylvania and Kentucky for customer satisfaction in both electric and gas utilities
- **Our experience in designing and developing automated electricity networks can support Rhode Island's vision of 100% renewable electricity by 2030**
  - ✓ This objective will require advanced smart grid technology to maintain reliability and power quality – technologies that PPL is already implementing in Pennsylvania
  - ✓ Rhode Island's decarbonization goals align well with PPL's clean energy transition strategy



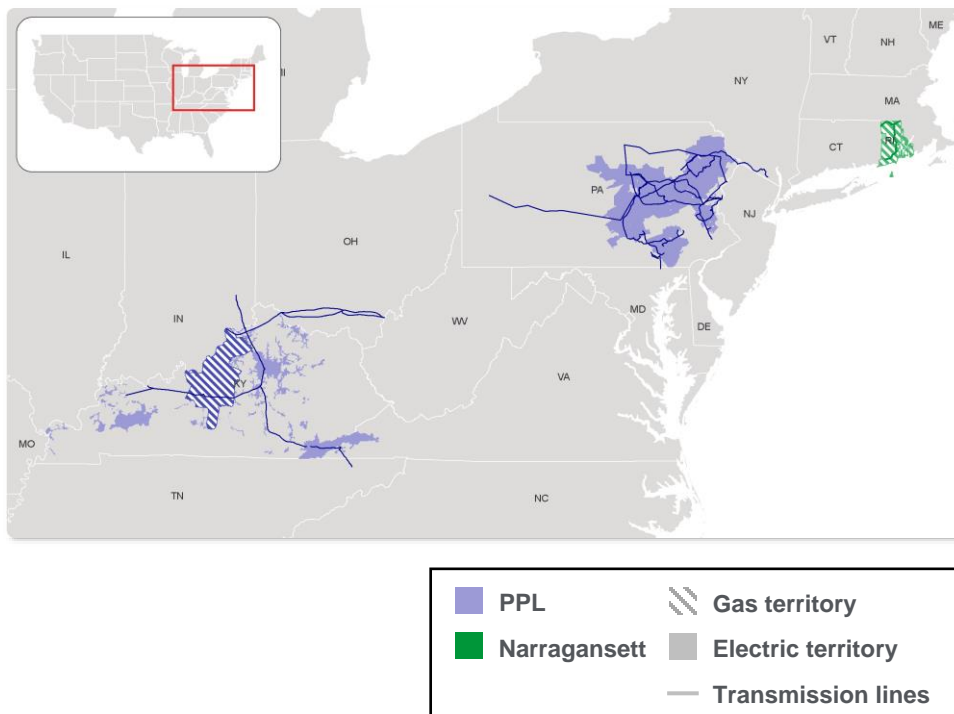
# Pro forma PPL Overview

A compelling, low-risk investment opportunity



**Leading U.S. energy company focused on strong, high-performing, rate-regulated electricity and natural gas utilities**

## Attractive Portfolio of U.S. Regulated Utilities



## Regulated Utility Combined Statistics

	RI	KY	PA	Total
Total Customers	780,000	1.3M	1.4M	3.5M
Electric	507,000	989,000	1.4M	2.9M
Gas	273,000	332,000	0	605,000
Services Provided:				
Electric Distribution	✓	✓	✓	✓
Electric Transmission	✓	✓	✓	✓
Gas Distribution	✓	✓		✓
Regulated Generation		✓		✓
Service Area (square miles)	1,200	9,400	10,000	20,600
Electricity Delivered (GWh) <sup>(1)</sup>	7,244	29,016	36,008	72,268
Operating Revenues <sup>(1)</sup>	\$1.6B	\$3.1B	\$2.3B	\$7.0B

(1) Represents 2020A for Pennsylvania and Kentucky. Rhode Island represents 2019A based on publicly available information per S&P Global Market Intelligence.

# Pro forma Rate Base

Significant scale with asset and regulatory diversification

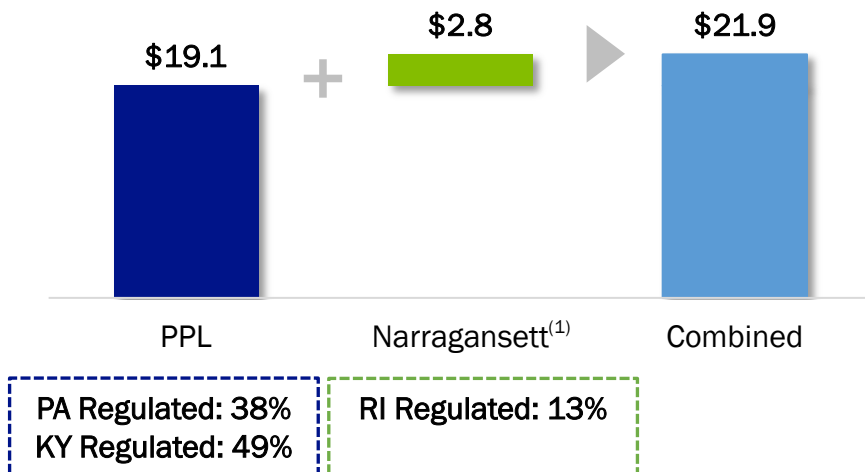


**Portfolio of U.S. rate-regulated utility asset base totaling approximately \$22 billion**

## Increasing PPL's U.S. Rate Base

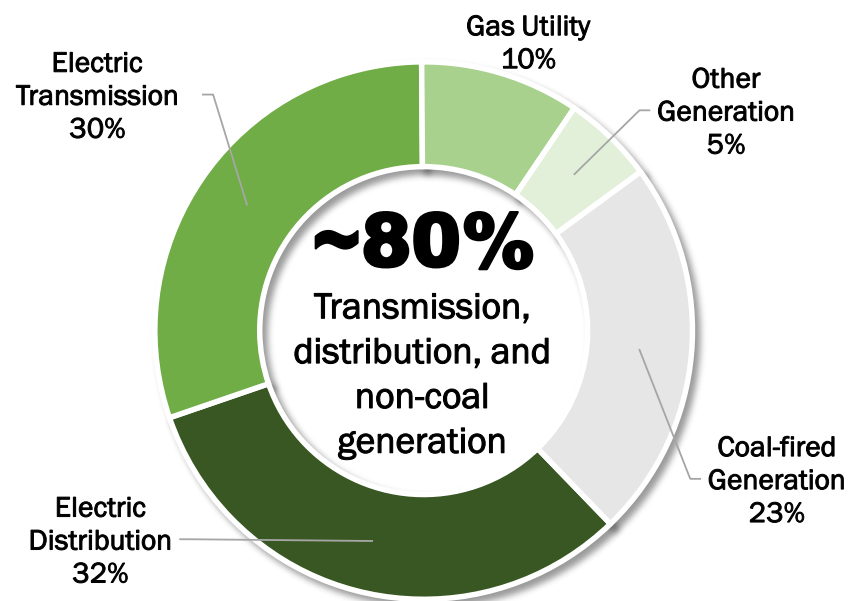
### 2020 Rate Base

(\$ in billions)



- ✓ Enhanced scale and scope
- ✓ Adds geographic diversification

## Rate Base by Regulated Asset Type (2020)<sup>(2)</sup>



- ✓ Predominantly T&D asset base
- ✓ Planned investments will increase T&D asset base, while coal-related declines

(1) Represents estimated year-end rate base.

(2) Represents 2020 pro forma rate base, including Narragansett.

# Pro forma Financial Outlook

## Strong earnings growth and credit metrics



- **Expect earnings growth rate to be competitive with U.S. utility peers post transactions**
  - Underpinned by rate base growth prospects, improved credit profile, and proven track record of delivering operational efficiencies
- **Lower parent leverage combined with Narragansett's strong credit profile is expected to support strong investment grade credit ratings**
  - Targeting CFO(FFO) to debt ratio of 16% - 18%
  - Expected to reduce Holding Company debt to Total debt ratio to below 25%
  - Targeting Debt-to-Total Capitalization ratio of 45% - 55%
- **No planned equity issuances<sup>(1)</sup>**
- **Dividend considerations<sup>(2)</sup>**
  - Payout projected to be 60% - 65% of earnings per share post closing of transactions
  - Dividend growth aligned with earnings per share growth post closing of transactions
  - No change expected in quarterly dividends prior to Narragansett transaction closing

(1) Excluding immaterial equity issuances for DRIP and compensation programs.

(2) Actual dividends to be determined by Board of Directors.

# Transaction Approvals

## Expected regulatory and other transaction approvals



### Sale of U.K. Utility Business (expected approval within 4 months)

U.K. Financial Conduct Authority (FCA)

Guernsey Financial Services Commission (GFSC)

National Grid Shareowners

### Acquisition of Narragansett (expected approval within 12 months)

#### **Federal Approvals:**

Hart-Scott-Rodino (DOJ)

Federal Communications Commission (FCC)

Federal Energy Regulatory Commission (FERC)

#### **State Approvals:**

Rhode Island Division of Public Utilities and Carriers

Massachusetts Department of Public Utilities (waiver)<sup>(1)</sup>

(1) National Grid obligation for Massachusetts Department of Public Utilities waiver relating to its foreign utility change in control provision.

# Summary



- **Transactions to reposition PPL as a high-growth, low-risk, U.S.-based energy company focused on building the utilities of the future**
  - Leverages PPL's culture of operational excellence to further enhance growth, while eliminating risks associated with foreign ownership
- **Significantly improves PPL's prospects for long-term shareowner return**
  - Expect earnings growth to be competitive to peers with commensurate dividend growth
- **Strengthens PPL's investment grade balance sheet to support future growth and provide financial flexibility**
- **Aligns with PPL's strategy and commitments to all our stakeholders**
  - Achieve industry-leading performance in safety, reliability, customer satisfaction and operational efficiency
  - Advance a clean energy transition while maintaining affordability and reliability
  - Maintain a strong financial foundation and create long-term value for our shareowners
  - Foster a diverse and exceptional workplace
  - Build strong communities in the areas we serve



# Select Combined Regulatory Attributes



Utility	2020 Rate Base (\$bn) <sup>(1)</sup>	Cap. Structure (Equity/Debt)	Allowed ROE	Decoupling	Energy Supply Costs	Storms	Forward Test Year	Other
<b>KY – Fully Integrated</b>	\$10.8	53:47	9.725%		✓	✓	✓	✓ <sup>(4)</sup>
<b>PA – Distribution</b>	\$3.7	55:45	(2)		✓	✓	✓	✓ <sup>(4)</sup>
<b>PA – Transmission</b>	\$4.6	55:45	11.68%	<i>Formula rates &amp; costs fully reconciled; revenues reset annually based on prior year sales</i>				
<b>Narragansett (RI) – Electric</b>	\$1.0	51:49	9.275%	✓	✓	✓	(3)	✓ <sup>(5)</sup>
<b>Narragansett (RI) – Gas</b>	\$1.0	51:49	9.275%	✓	✓	✓	(3)	✓ <sup>(6)</sup>
<b>Narragansett (RI) – Transmission</b>	\$0.8	50:50	10.57%	<i>Formula rates with actual cost pass through each month including capital and Pension/Other Post Employee benefits</i>				

(1) Narragansett rate base represents estimated year-end rate base.

(2) Last PA Distribution rate case was effective 1/1/2016 with an un-disclosed ROE.

(3) Based on regulatory framework shift in 2018, which established a multiyear framework for Narragansett Electric and Gas based on a historical test year but with the ability to forecast certain O&M categories for future years. All other O&M is increased by inflation each year. Includes annual rate reconciliation mechanism that incorporates allowance for anticipated capital investments.

(4) PPL other rate mechanisms include Smart Meter Rider, DSIC (Distribution System Improvement Charge), Environmental Cost Recovery (ECR), Fuel/Cost of Energy Adjustment Clauses, Gas Line Tracker varying by business.

(5) Narragansett Electric has numerous incentives including Bits Revenue (revenues associated with Block Island cable recovered), EE Incentive (revenues earned based on energy efficiency metrics), LTCRER incentive (remuneration 2.75% greater than amount paid to renewable generators with long-term contracts), REG remunerations (recoverable costs through customer surcharge by which renewable generation is paid a Performance-Based Incentive for energy generated).

(6) Narragansett Gas has an EE Incentive (revenues earned based on energy efficiency metrics)



# Non-GAAP Measure Reconciliation

## Adjusted Gross Margins to Operating Income



(Unaudited) (millions of dollars)	Twelve Months Ended,	
	<u>December 31, 2011</u> PA Adjusted Gross Margins	<u>December 31, 2020</u> PA Adjusted Gross Margins
Operating Revenues	\$ 1,892	\$ 2,331
Operating Expenses		
Fuel		
Energy purchases	738	491
Energy purchases from affiliate	26	
Other operation and maintenance	108	91
Depreciation		53
Taxes, other than income	99	107
Total Operating Expenses	971	742
Total	\$ 921	\$ 1,589



# Forward-Looking Information Statement



Statements contained in this presentation, including statements with respect to future earnings, cash flows, dividends, financing, regulation and corporate strategy, including the anticipated sale of PPL Corporation's U.K. business, the anticipated acquisition of Narragansett from National Grid, and the impact of each transaction on PPL Corporation, are "forward-looking statements" within the meaning of the federal securities laws. Although PPL Corporation believes that the expectations and assumptions reflected in these forward-looking statements are reasonable, these statements are subject to a number of risks and uncertainties, and actual results may differ materially from the results discussed in the statements. The following are among the important factors that could cause actual results to differ materially from the forward-looking statements: the COVID-19 pandemic or other pandemic health events or other catastrophic events, including severe weather, and their effect on financial markets, economic conditions and our businesses; asset or business acquisitions and dispositions, including our ability to successfully divest our U.K. business or that such sale may not yield the anticipated benefits, including (i) the ability to obtain the requisite National Grid shareholder approval; (ii) the risk that the parties may be unable to obtain governmental and regulatory approvals required for the transaction, or that required governmental and regulatory approvals may delay the transaction or result in the imposition of conditions that could cause the parties to abandon the transaction; (iii) the risk that other conditions to closing of the transaction may not be satisfied; (iv) the timing to consummate the transaction; (v) the risk that Narragansett will not be integrated successfully; (vi) disruption from the transaction making it more difficult to maintain relationships with customers, employees or suppliers; and (vii) the diversion of management time on transaction-related issues; market demand for energy in our U.S. service territories; weather conditions affecting customer energy usage and operating costs; the effect of any business or industry restructuring; the profitability and liquidity of PPL Corporation and its subsidiaries; new accounting requirements or new interpretations or applications of existing requirements; operating performance of our facilities; the length of scheduled and unscheduled outages at our generating plants; environmental conditions and requirements, and the related costs of compliance; system conditions and operating costs; development of new projects, markets and technologies; performance of new ventures; receipt of necessary government permits, approvals, rate relief and regulatory cost recovery; capital market conditions, including interest rates, and decisions regarding capital structure; the impact of state, federal or foreign investigations applicable to PPL Corporation and its subsidiaries; the outcome of litigation involving PPL Corporation and its subsidiaries; stock price performance; the market prices of debt and equity securities and the impact on pension income and resultant cash funding requirements for defined benefit pension plans; the securities and credit ratings of PPL Corporation and its subsidiaries; political, regulatory or economic conditions in states, regions or countries where PPL Corporation or its subsidiaries conduct business, including any potential effects of threatened or actual cyberattack, terrorism, or war or other hostilities; British pound sterling to U.S. dollar exchange rates; new state, federal or foreign legislation or regulatory developments, including new tax legislation; and the commitments and liabilities of PPL Corporation and its subsidiaries. Any such forward-looking statements should be considered in light of such important factors and in conjunction with factors and other matters discussed in PPL Corporation's Form 10-K and other reports on file with the Securities and Exchange Commission.

# Definitions of non-GAAP Financial Measures



Management also utilizes the following non-GAAP financial measures as indicators of performance for its businesses:

"Pennsylvania Adjusted Gross Margins" is a single financial performance measure of the electricity transmission and distribution operations of the Pennsylvania Regulated segment. In calculating this measure, utility revenues and expenses associated with approved recovery mechanisms, including energy provided as a PLR, are offset with minimal impact on earnings. Costs associated with these mechanisms are recorded in "Energy purchases," "Other operation and maintenance," (which are primarily Act 129, Storm Damage and Universal Service program costs), "Depreciation" (which is primarily related to the Act 129 Smart Meter program) and "Taxes, other than income," (which is primarily gross receipts tax) on the Statements of Income. This measure represents the net revenues from the Pennsylvania Regulated segment's electricity delivery operations.

These measures are not intended to replace "Operating Income," which is determined in accordance with GAAP, as an indicator of overall operating performance. Other companies may use different measures to analyze and report their results of operations. Management believes these measures provide additional useful criteria to make investment decisions. These performance measures are used, in conjunction with other information, by senior management and PPL's Board of Directors to manage operations and analyze actual results compared with budget.

Reconciliations of adjusted gross margins for future periods are not provided as certain items excluded from Operating Income are inherently subject to change and are not significant.



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# BEHAVIOR OF THE FIRM UNDER REGULATORY CONSTRAINT

By HARVEY AVERCH AND LELAND L. JOHNSON\*

In judging the level of prices charged by firms for services subject to public control, government regulatory agencies commonly employ a "fair rate of return" criterion: After the firm subtracts its operating expenses from gross revenues, the remaining net revenue should be just sufficient to compensate the firm for its investment in plant and equipment. If the rate of return, computed as the ratio of net revenue to the value of plant and equipment (the rate base), is judged to be excessive, pressure is brought to bear on the firm to reduce prices. If the rate is considered to be too low, the firm is permitted to increase prices.

The purpose here is (a) to develop a theory of the monopoly firm seeking to maximize profit but subject to such a constraint on its rate of return, and (b) to apply the model to one particular regulated industry—the domestic telephone and telegraph industry. We conclude in the theoretical analysis that a "regulatory bias" operates in the following manner: (1) The firm does not equate marginal rates of factor substitution to the ratio of factor costs; therefore the firm operates inefficiently in the sense that (social) cost is not minimized at the output it selects. (2) The firm has an incentive to expand into other regulated markets, even if it operates at a (long-run) loss in these markets; therefore, it may drive out other firms, or discourage their entry into these other markets, even though the competing firms may be lower-cost producers. Applying the theoretical analysis to the telephone and telegraph industry, we find that the model does raise issues relevant to evaluating market behavior.

## I. *The Single-Market Model*

First we shall consider a geometrical and a mathematical framework showing the effect of the regulatory constraint on the cost curves of the

\* The authors, research economists at The RAND Corporation, are indebted to Kenneth Arrow who suggested a mathematical framework when the ideas in this paper were in an early state of development. Any views expressed in this paper are those of the authors. They should not be interpreted as reflecting the views of The RAND Corporation or the official opinion or policy of any of its governmental or private research sponsors. An earlier version of this paper was presented at the Econometric Society meetings on December 28, 1961 in New York.

firm employing two factors. The essential characteristic to be demonstrated is: if the rate of return allowed by the regulatory agency is greater than the cost of capital but is less than the rate of return that would be enjoyed by the firm were it free to maximize profit without regulatory constraint, then the firm will substitute capital for the other factor of production and operate at an output where cost is not minimized.

Figure 1 denotes the firm's production where capital  $x_1$  is plotted on the horizontal axis and labor  $x_2$  on the vertical axis. The market or

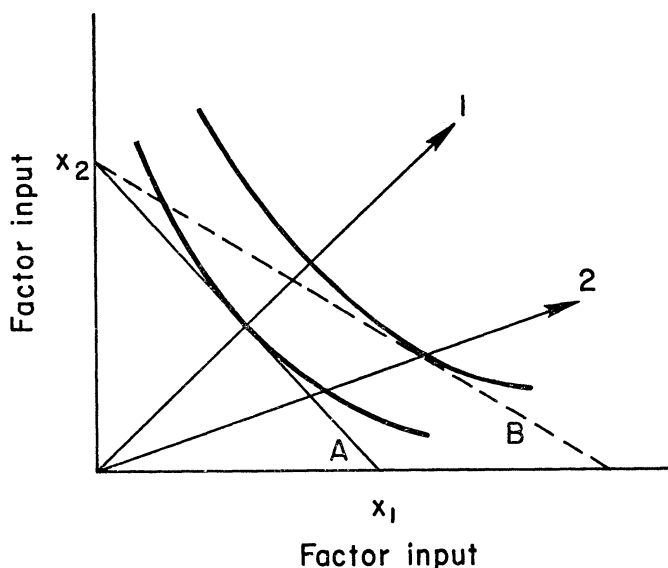


FIGURE 1

“social” cost of capital and labor generates the isocost curve *A* and the *unregulated* firm would move along expansion path 1 where market cost is minimized for any given output. With regulation, however, the cost of capital to the firm—the “private” cost—is no longer equal to market cost. For each additional unit of capital input, the firm is permitted to earn a profit (equal to the difference between the market cost of capital and rate of return allowed by the regulatory agency) that it otherwise would have to forego. Therefore, private cost is less than market cost by an amount equal to this difference. The effect of regulation is analogous to that of changing the relative prices of capital  $x_1$  and labor  $x_2$ : isocost curve *B* becomes relevant and the firm moves along expansion path 2—a path along which market cost is not minimized for any given output. The firm finds path 2 advantageous simply because it is along

that path that the firm is able to maximize total profit given the constraint on its rate of return.

Treating the problem mathematically, we now consider a monopoly producing a single homogeneous product using two inputs. Define

$$\begin{aligned} z &= z(x_1, x_2), & x_1 &\geq 0, & x_2 &\geq 0 \\ (1) \quad \frac{\partial z}{\partial x_1} &> 0, & \frac{\partial z}{\partial x_2} &> 0, \\ z(0, x_2) &= z(x_1, 0) = 0 \end{aligned}$$

as the firm's production function. That is, marginal products are positive, and production requires both inputs.

We write the inverse demand function as

$$(2) \quad p = p(z).$$

Profit is defined by

$$(3) \quad \pi = pz - r_1x_1 - r_2x_2$$

where the  $r_i$  ( $i=1, 2$ ) are factor costs presumed constant for all levels of factor input.

Let  $x_1$  denote the physical quantity of plant and equipment in the rate base,  $c_1$  the acquisition cost per unit of plant and equipment in the rate base,  $u_1$  the value of depreciation of plant and equipment during a time period in question, and  $U_1$  the cumulative value of depreciation. Let  $x_2$  denote the quantity of labor input and  $r_2$  the labor wage rate. The regulatory constraint is:

$$(4) \quad \frac{pz - r_2x_2 - u_1}{c_1x_1 - U_1} \leq s_1$$

where the profit net of labor cost and capital depreciation constitutes a percentage of the rate base (net of depreciation) no greater than a specified maximum  $s_1$ .

For simplicity, we assume that depreciation ( $u_1$  and  $U_1$ ) is zero and we define capital so that its acquisition cost or value  $c_1$  is equal to 1, i.e., the value of the rate base is equal to the physical quantity of capital.<sup>1</sup> The "cost of capital"  $r_1$  (to be distinguished from the acquisition cost of plant and equipment measured by  $c_1$ ) is the interest cost involved in holding plant and equipment. The allowable rate of return  $s_1$  is the rate of return allowed by the regulatory agency on plant and equipment in order to compensate the firm for the cost of capital—the interest

<sup>1</sup> Alternatively, one could construct a dynamic rather than a static model and consider positive values for depreciation; but to do so would complicate the results without contributing much additional insight into the behavior of the firm.

cost—involved in holding plant and equipment. Therefore, the constraint may be rewritten as

$$(5) \quad \frac{pz - r_2x_2}{x_1} \leq s_1$$

or

$$(6) \quad pz - s_1x_1 - r_2x_2 \leq 0.$$

For  $s_1 < r_1$ , the allowable rate of return is less than the actual cost of capital, and the firm withdraws from the market. For, from (6), if  $x_1 > 0$ ,

$$pz - r_1x_1 - r_2x_2 = pz - s_1x_1 + (s_1 - r_1)x_1 - r_2x_2 \leq (s_1 - r_1)x_1 < 0.$$

If  $x_1 = 0$ ,  $\pi = -r_2x_2$  from (3), and the firm can further reduce its loss by setting  $x_2 = 0$ . Then  $\pi = 0$ . Therefore,  $s_1 \geq r_1$ ; the allowable rate of return must at least cover the actual cost of capital.

The problem then is to maximize (3) subject to (6).<sup>2</sup> Define the Lagrangian expression:

$$(7) \quad L(x_1, x_2, \lambda) = pz - r_1x_1 - r_2x_2 - \lambda[pz - s_1x_1 - r_2x_2].$$

The Kuhn-Tucker necessary conditions<sup>3</sup> for a maximum at  $\bar{x}_1$ ,  $\bar{x}_2$ ,  $\bar{\lambda}$  are

$$(8.1) \quad r_1 \geq (1 - \lambda) \left[ p + z \frac{dp}{dz} \right] \frac{\partial z}{\partial x_1} + \lambda s_1, \quad x_1 \geq 0$$

$$(8.2) \quad r_1 > (1 - \lambda) \left[ p + z \frac{dp}{dz} \right] \frac{\partial z}{\partial x_1} + \lambda s_1 \quad \text{implies} \quad \bar{x}_1 = 0$$

$$(8.3) \quad (1 - \lambda)r_2 \geq (1 - \lambda) \left[ p + z \frac{dp}{dz} \right] \frac{\partial z}{\partial x_2}, \quad \bar{x}_2 \geq 0$$

$$(8.4) \quad (1 - \lambda)r_2 > (1 - \lambda) \left[ p + z \frac{dp}{dz} \right] \frac{\partial z}{\partial x_2} \quad \text{implies} \quad \bar{x}_2 = 0$$

$$(8.5) \quad pz - s_1x_1 - r_2x_2 \leq 0, \quad \bar{\lambda} \geq 0$$

$$(8.6) \quad pz - r_2x_2 < s_1x_1 \quad \text{implies} \quad \bar{\lambda} = 0.$$

Assuming  $\bar{\lambda} > 0$ , it is clear from (8.1) that  $\lambda = 1$  if and only if  $r_1 = s_1$ . If  $\lambda = 1$ ,  $r_1 = s_1$ . This does not involve any variables, and it follows that any  $x_1$ ,  $x_2$  which satisfies (8.5) is a solution.

<sup>2</sup> Since (6) is an inequality, we are faced with a nonlinear programming problem. However, the similarity of the results to ordinary marginal conditions is obvious.

<sup>3</sup> If the total revenue function,  $pz$ , is concave in the relevant range of operation, it is clear that the Kuhn-Tucker conditions in this case are also sufficient. Given a concave  $pz$ , it is possible to define the dynamic gradient process corresponding to the static Kuhn-Tucker conditions showing the firm's input variation over time. But we do not do this here since we are primarily interested in equilibrium and the optimal inputs under regulation.



For  $s_1 > r_1$ , which is the interesting case, it follows that  $0 \leq \lambda < 1$ : From (8.6),  $s_1$  may be chosen large enough so that  $\lambda = 0$  (i.e., at some high level of allowable rate of return  $s_1$ , the value  $x_1 (s_1 - r_1)$  exceeds the level of unconditionally maximized profit, and the constraint is ineffective). If we now let  $s_1 \rightarrow r_1$ ,  $\lambda$  varies continuously, and since  $\lambda \neq 1$ , we have  $0 < \lambda < 1$ . For the unregulated monopoly, the marginal conditions are:

$$(9) \quad r_i = \left[ p + z \frac{dp}{dz} \right] \frac{\partial z}{\partial x_i}, \quad (i = 1, 2).$$

Under conditions of effective regulatory constraint ( $\lambda > 0$ ) equations (8.3) and (9) disclose that, as in the case of unregulated monopoly, the input of  $x_2$  is such that its marginal cost  $r_2$  is equal to its marginal value product. In contrast, equations (8.1) and (9) disclose that the input of  $x_1$  is such that its marginal cost  $r_1$  is greater than its marginal value product,<sup>4</sup> i.e., its use is expanded beyond the point at which its marginal cost would be equal to its marginal value product.

From equations (8.1) and (8.3) when the equalities hold, the marginal rate of substitution of factor 1 for factor 2 is:

$$(10) \quad \frac{-dx_2}{dx_1} = \frac{r_1}{r_2} - \frac{\lambda}{(1 - \lambda)} \frac{(s_1 - r_1)}{r_2}.$$

Since

$$\frac{\lambda}{(1 - \lambda)} \frac{(s_1 - r_1)}{r_2} > 0, \quad \lambda > 0, \quad s_1 > r_1,$$

then

$$(11) \quad \frac{-dx_2}{dx_1} < \frac{r_1}{r_2}.$$

The firm adjusts to the constraint, then, by substituting capital for the cooperating factor and by expanding total output. Comparative equilibrium outputs are shown in Figure 2. If the regulated firm were constrained to move along the socially efficient expansion path 1 in Figure 1, it would operate at  $OC$  in Figure 2. Here price is slightly above

<sup>4</sup> Clearly

$$\frac{r_1 - \lambda s_1}{1 - \lambda} = r_1 - \frac{\lambda}{1 - \lambda} (s_1 - r_1) \geq \left[ p + z \frac{dp}{dz} \right] \frac{\partial z}{\partial x_1}.$$

Since  $0 < \lambda < 1$ ,  $s_1 > r_1$ , it follows immediately that:

$$r_1 > \left[ p + z \frac{dp}{dz} \right] \frac{\partial z}{\partial x_1}.$$

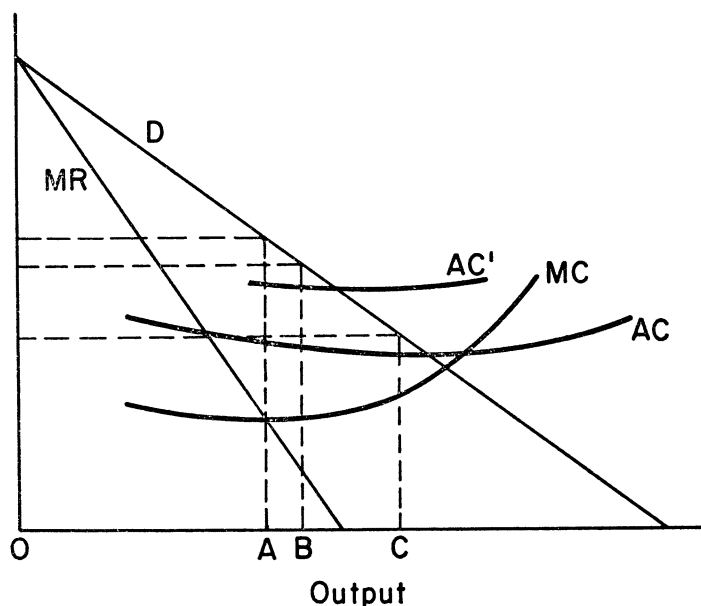


FIGURE 2

average cost  $AC$  to reflect the fact that  $s_1 > r_1$  (profit is not entirely eliminated). Since the regulated firm moves along path 2, the social cost curve rises from  $AC$  to  $AC'$ , and the regulatory constraint is satisfied at the lower output  $OB$ . The effect of regulation is to force the firm to expand output from the unregulated position  $OA$ , but output does not expand to  $C$  because a portion of what would otherwise be profit is absorbed by cost. The extent to which regulation affects output depends upon the nature of the production function. If it involves fixed proportions, i.e.,  $\min\left(\frac{x_1}{a}, \frac{x_2}{b}\right)$ , the regulated firm is constrained to the efficient expansion path and it moves all the way to  $OC$ . If the production function is linear and if the iso-output curves have a slope equal to  $-\frac{r_1}{r_2}$ , the firm could substitute  $x_1$  for  $x_2$  and, with no change in marginal rate of substitution, hold output constant. In this case it could remain at  $OA$ , the unregulated monopoly output, under the condition that at output  $OA$

$$pz - s_1x_1 - r_2x_2 \leq 0, \quad x_2 = 0.$$

## II. The Multimarket Case

Suppose that in addition to operating in a single market, the firm can also enter other regulated markets, and that the regulatory agency

bases its "fair rate of return" criterion on the firm's over-all value of plant and equipment for all markets taken together rather than computing a separate rate of return for each market. In this case the firm may have an incentive (that it would not have in the absence of regulation) to enter these other markets, even if the cost of so doing exceeds the additional revenues. Expanding into other markets may enable the firm to inflate its rate base to satisfy the constraint and permit it to earn a greater total constrained profit than would have been possible in the absence of second markets.

A noteworthy implication is that the firm operating in oligopolistic second markets may have an advantage over competing firms. The regulated firm can "afford" to take (long-run) losses in these second markets while competing firms cannot. Under these circumstances, it is conceivable that the firm could drive out lower-cost producers—the loss it willingly takes in second markets could exceed the difference between its costs and the lower costs of other firms. It may succeed, therefore, in either driving lower cost firms out of these markets or of discouraging their entry into them. This is unlike the textbook case of "predatory price-cutting" where the regulated monopolist may temporarily cut prices in outside competitive markets to drive out rivals and subsequently raise prices to monopoly levels. The monopolist would ordinarily engage in such a practice only if he had the expectation that in the long run he would make a positive profit in these additional markets; but here even in the case of a long-run loss the regulated firm may find operations in such markets to be advantageous as long as the firm is permitted to include its capital input in these markets in its rate base.

Moving to a mathematical treatment, let us consider an extreme example where operating in a second market permits the firm to act as an unconstrained monopoly in the first market, i.e., operating in the second market permits satisfaction of the regulatory constraint such that the firm can operate in the first market at output  $OA$  in Figure 2. We shall assume that for any combination of factors along the socially optimal expansion path in market 2 the firm is just able to break even in that market. That is, for any equilibrium  $x_{12}$ ,  $x_{22}$

$$(12) \quad p_2 z_2 - r_1 x_{12} - r_2 x_{22} = 0.$$

The constraint for  $n$  markets is written:

$$(13) \quad \sum_{i=1}^n p_i z_i - s_1 \sum_{i=1}^n x_{1i} - r_2 \sum_{i=1}^n x_{2i} \leq 0.$$

Denoting output and factor inputs in market 1 as  $\bar{z}_{11}$  and  $\bar{x}_{11}$ ,  $\bar{x}_{21}$  respectively at the output at which profit is unconditionally maximized

in market 1, we have

$$(14) \quad p_1 \bar{x}_1 - s_1 \bar{x}_{11} - r_2 \bar{x}_{21} = m, \quad m > 0$$

where  $m$  is the value of "excess" profit in market 1 that would violate the constraint (13) if the firm operated only in market 1. However, by moving along its expansion path in market 2 the firm can choose a level of capital input such that

$$(15) \quad p_2 \bar{x}_2 - s_1 \bar{x}_{12} - r_2 \bar{x}_{22} = -m.$$

Adding (14) and (15) we see that the firm can now satisfy constraint (13) without foregoing any profit in market 1. While the unregulated firm would be indifferent about operating in market 2, the regulated firm in this example finds market 2 attractive because it can add capital to the rate base at "no loss"; i.e., for any capital input in market 2 the output generates revenues just equal to factor cost. Since in market 2 the actual cost of capital is below the allowed rate of return, the firm can apply the difference in satisfying the constraint in market 1 and thereby enjoy additional profit equal to  $s_1 - r_1$  for each unit of capital in market 2.

This analysis suggests that even if the firm suffers a loss in market 2 (measured in terms of social costs  $r_1$  and  $r_2$ ) it may still operate there provided the value of  $x_{12}$  ( $s_1 - r_1$ ) exceeds this level of loss. If it suffers a loss it would no longer operate in market 1 at the profit-maximizing output  $OA$  in Figure 1; seeking to equate the marginal value product of capital in both markets, it would move toward  $OB$ .

In the literature on public utility economics, concern is frequently expressed that the firm will attempt to inflate its rate base to increase its profit. However, the problem is generally viewed as one of proper valuation of rate base, i.e., the firm would always have an incentive to have its property stated at a value higher than its cost. The problem has given rise to a great deal of controversy about proper valuation, especially concerning original versus reproduction cost, and depreciation policy.<sup>5</sup> In the present study the problem of rate-base inflation is not viewed as one of valuation but rather as one of *acquisition*—quite apart from the problem of placing a valuation upon the rate base, the firm has an incentive to acquire additional capital if the allowable rate of return exceeds the cost of capital.

### III. *The Telephone and Telegraph Industry*

Turning to the domestic telephone and telegraph industry, we find that the market structure and the regulatory setting are consistent with

<sup>5</sup> For examples of the manner in which the problems has previously been treated see [5, Ch. 19, 20] [10, Ch. 12, 17] [14, pp. 515–16].

those described in the model. And the implications drawn from the model, concerning relative factor inputs and incentives to operate in some markets even at a loss, raise issues relevant to assessing market behavior of firms in the industry.

For our purposes, the notable feature of the industry's market structure is that the degree of competition does vary from one subsector to another. Common carriers have monopoly positions with regard to public message telephone and telegraph services, while they compete with each other in supplying private line services to customers who, in addition, are free to construct private wire facilities for their own use as an alternative to purchasing from the common carriers.

The principal supplier of public message telephone service is the Bell Telephone System. Besides the parent corporation, American Telephone and Telegraph Company, the Bell system includes 22 subsidiary "associated" companies of which 20 are primarily or wholly owned by AT&T. Each of the associated carriers provides local exchange and toll service within the state or group of (contiguous) states that comprises its "operating territory."<sup>6</sup> The Bell system holds about 98 per cent of all facilities employed in long-distance message toll telephone service in the United States, and about 85 per cent of all facilities employed in local telephone service. The remaining 15 per cent of local exchange facilities are in the hands of about 3,200 "independent" telephone firms, most of which are very small. These carriers connect with the Bell system, under service- and revenue-sharing agreements, and provide an integrated nationwide network. Competition does not exist among firms in the public message telephone business. Although many firms are in the industry, each has its own exclusive local marketing area.<sup>7</sup>

In the telegraph field, in contrast to telephone, public message telegraph service is offered only by the Western Union Telegraph Company. This is a much smaller subsector in terms of revenues than public message telephone service. In 1959 Western Union revenues for the former were about \$170 million, while Bell and independent connecting carrier revenues for the latter were \$7 billion.

Bell and Western Union compete in common markets in providing other services. Until recently Bell (together with independent connecting carriers) was sole supplier of private-line telephone service. How-

<sup>6</sup> AT&T, through its Long Lines Department, provides interstate line and radio facilities to connect the separate operating territories of the associated companies; in addition, in some cases Long Lines participates in providing interstate service internally within the territories of the multistate associated companies.

<sup>7</sup> A good description of the industry and its present-day market structure is contained in [8, pp. 4-34].

ever, in 1961 Bell and Western Union negotiated facilities contracts<sup>8</sup> that enable Western Union to offer private-line telephone service in competition with Bell. Western Union and Bell both provide telegraph exchange service and private-line telegraph service—Bell's teletype-writer or TWX service is similar to Western Union's Telex, and Bell's teletype private-wire service is similar to Western Union's leased circuit teleprinter offering. In addition, a new competitive element has recently been introduced: as an alternative to purchasing private-line telephone and telegraph services from the common carriers, firms outside the communications industry may now operate their own microwave facilities to provide communication among their geographically separated plants.<sup>9</sup>

Intrastate services of the common carriers are regulated by individual state regulatory commissions; interstate operations are regulated by the Federal Communications Commission. These agencies use a "fair rate of return" criterion in regulating prices within their respective jurisdictions. The services of each common carrier are generally lumped together in computing the rate of return to be regulated. For example, in regulating Bell's service the FCC routinely considers together all revenues, plant investment, and operating costs of Bell's interstate services in computing a rate of return to serve as the basis for decisions about price adjustments.<sup>10</sup> Likewise, most state agencies compute an over-all rate of return for each carrier for all of its intrastate operations within the state in question.

Since the interesting implications of the model rest on the assumption that the allowable rate of return exceeds the actual cost of capital, the question arises as to whether revenues of the industry do exceed factor costs. While it is impossible to treat this question exhaustively here, there is some reason to believe that revenues are generally in excess of costs. We have been told by representatives in both the industry and in regulatory agencies that justification exists for allowing a return in excess of cost to give firms an incentive to develop and adopt cost-saving techniques. If the firm is left only indifferent as among a wide range of activities it has no positive incentive to mini-

<sup>8</sup> These contracts permit Western Union to lease Bell communications facilities in order to enter markets that it could not feasibly serve if confined to its own facilities.

<sup>9</sup> While railroads and public utilities, the so called "right-of-way" companies, have historically been permitted by law to employ privately owned radio communications facilities for their internal needs, it was not until 1960 that the way was cleared (by a final decision of the Federal Communications Commission in Docket 11866) for other firms to provide their own communications facilities.

<sup>10</sup> It is true that special studies of the separate services are occasionally made by the FCC in order to determine individual rates of return. Evidence from one such study will be presented below.

mize costs for any given activity. Consequently, regulatory agencies do not typically view with disfavor rates of return which are (within broad limits) somewhat in excess of rates they would judge to reflect cost. Positive profit is sometimes generated by the "regulatory lag" phenomenon: As the firm adopts new cost-saving technology or as its business volume rises for output subject to decreasing costs, its rate of return rises. However, the regulatory agency does not react immediately to force prices down. Rather, a lag of years may be involved. An example of this can be drawn from the interstate telephone operations of the Bell System. In its over-all interstate operations Bell experienced a decline in its rate of return from 7.5 per cent to 5.2 per cent from 1950 to 1953. Reasoning that a rate in the neighborhood of 5 per cent was too low, it filed revised tariff schedules increasing interstate message toll rates by about 8 per cent—an increase expected to bring the rate of return up to about 6.5 per cent. The FCC, agreeing that earnings under the old tariff were inadequate, allowed the new tariff to go into effect. There is a strong implication in the FCC staff memoranda written at the time that a fair rate of return was considered to be in the neighborhood of 6 per cent.<sup>11</sup> After the increase went into effect in 1953, the rate of return rose to 6.6 per cent in 1954, 7.7 per cent in 1955, reached a peak of 8.5 per cent in early 1956, and continued in excess of 7 per cent during 1957 and 1958. Despite an interstate toll rate reduction in 1959, the rate of return amounted to almost 8 per cent in 1959 and 1960. The fact that the rate of return remained above a 6 per cent level during most of the decade meant that for a number of years revenues in interstate operations exceeded the FCC Staff estimate of cost.<sup>12</sup>

One implication drawn from the model is that the firm increases its ratio of capital input to cooperating factor input in a manner that increases social costs at the equilibrium output. Do the common carriers in this industry overinvest in this fashion? Unfortunately, empirical evidence is not available to us on the issue of bias in favor of investment

<sup>11</sup> A clear, concise account of the manner in which the FCC regulates interstate telephone and telegraph services is contained in [12, pp. 3427–45].

<sup>12</sup> The rise in Bell's rate of return is partly attributable to Bell's striking success in developing and adopting new cost-saving technology. The average book cost per circuit mile of Long Lines plant declined from roughly \$230 in 1925 to \$30 in 1960. The strong long-run incentives apparent in Bell's activities to cut costs may be construed as *prima-facie* evidence that it enjoys positive profits. Of course, one could argue that another factor is present—entrepreneurship—whose cost would more or less offset the positive profit; i.e., in the economic sense (in contrast to the accounting sense) revenue may just cover cost and the firm still has incentive to minimize cost. But here we are concerned with the *marginal* cost of capital to the firm compared to the *marginal* return to capital allowed by the regulatory agency. If the latter exceeds the former, the "regulatory bias" emerges regardless of whether total cost includes a fixed charge attributable to an additional factor.



in plant and equipment. However, one point should be made: the regulatory agencies exert little direct control over investment decisions that would force the firm to follow the socially optimal expansion path. The FCC, for example, follows a "used and useful" criterion in judging whether a given item is to be included in the rate base of plant and equipment. If the item is being employed in operations, and if it is useful (judged partially on subjective grounds), it is included. While common carriers are required routinely to provide a formidable list of reports concerning current operations, the relatively small staffs of the regulatory agencies available for research and investigative tasks, the lack of satisfactory criteria upon which to make judgments, and the heterogeneity of both factor inputs and service outputs would make extremely difficult if not impossible the task of detecting such bias.

The second implication drawn from the model is that due to the nature of regulation the firm has an incentive to operate in some markets even at a loss. Again, there is no clear-cut evidence which shows whether common carriers in this industry do, in fact, operate at a loss in some markets. However, evidence is available disclosing that (1) fears of "unfair" competition based on operations at "noncompensating" prices play a prominent role as a source of conflict between the carriers themselves and between the carriers and the FCC; and (2) in attempting to establish a commercial communications satellite system, the federal government has enacted a law containing provisions that (to serve "public ends") appear to exploit the willingness of common carriers to operate in markets at a loss. We shall now discuss some of this evidence.

The FCC undertook a study in 1956 of interstate private-line services offered by the common carriers in order to determine the relationship between price and cost for these services on a more precise basis than is possible by considering only the over-all rate of return for each carrier on all its interstate services. In the course of the study Bell submitted data (based on 1955 operations) showing that its telephone grade services were earning at a rate of 11.7 per cent, and its teletypewriter (telegraph) grade services at 2.6 per cent.<sup>13</sup> On the basis of this evidence, the FCC ordered interim price reductions in telephone grade services (in which Bell at the time was sole supplier) and permitted an increase for both Bell and Western Union for telegraph services (in which the two carriers do compete). The FCC expected the price adjustments to reduce substantially the spread between Bell's rates of return on telephone and telegraph grade services and to increase Western Union's rate of return on telegraph services.

<sup>13</sup> The initial decision of the FCC staff in this study (not adopted by the Commission at this writing) is contained in [6].



During the study Western Union criticized Bell's behavior that allegedly resulted in Bell's relatively low rate of return on the telegraph services competitive with Western Union's own offerings. In the words of the FCC staff [6, p. 54]:

Western Union refers to evidence of record indicating that during the twenty-year period preceding this investigation, all principal private line telegraph rate adjustments were initiated by AT&T and, with one exception, all were rate reductions. Western Union alleges that AT&T has received a noncompensatory return on its private line telegraph service while enjoying a substantial return from services not competitive with Western Union. . . . According to Western Union, it follows that AT&T has engaged in unfair competition by maintaining unreasonably low rates for a competitive service and shifting the resulting financial burden to other services.<sup>14</sup>

Western Union's allegations, if true, would indicate that in conformity with the model, Bell is operating in private-line telegraph at a loss. However, it is impossible, for two reasons, to determine from the evidence in the FCC study whether this is in fact the case. First, the evidence in the record is simply not sufficient to determine what earnings level is "proper", i.e., what earnings level would just cover the cost of capital.<sup>15</sup> Second, the rates of return quoted above are based on "fully allocated cost" as opposed to marginal cost. In our model, the firm operates at a loss in a market only if the additional revenues it receives by operating in that market are below the additional costs it incurs. And whether operations in that market impose a "financial burden" (to use Western Union's words) on the other services depends on whether additional revenues do cover the additional costs.<sup>16</sup> But fully allocated costs are something else again. These include the costs of facilities used solely for the service in question and, in addition, they include an allocation of the "common" costs incurred by the carrier. For example, the telephone instrument itself is necessary in providing both intrastate and interstate message toll service as well as local exchange service; a transcontinental microwave system carries both public message toll and private-line traffic. In computing a rate of return for each of these services, it is necessary to allocate the costs of facilities having multiple uses. In general, the FCC allocates these costs in accordance with relative time of use. If a given facility is employed by service A 50 per

<sup>14</sup> For AT&T's reply see [4, pp. 14-18].

<sup>15</sup> The FCC staff concluded that AT&T's proper earnings levels is  $7\frac{3}{4}$  per cent and for Western Union 9 per cent. This conclusion was contested by Bell in its reply brief: "These [FCC staff] findings are made despite the fact that there is not a word of testimony in the record concerning the over-all costs of capital to either carrier, much less the costs of capital for their private line services" [4, p. 3]. See also [2, p. 27].

<sup>16</sup> A good statement of this point is contained in [1, pp. 7-10].

cent of the time and by service B 50 per cent of the time, the cost of the facility is split equally between A and B. For our purposes, however, the crucial question is whether the cost of the facility could have been cut in half if either service A or service B had not been offered.<sup>17</sup> Is allocation on the basis of relative time in use an accurate reflection of marginal costs generated by each service? We may presume an affirmative answer only if the industry is subject to constant costs. However, the available evidence is not sufficient to determine whether the industry is, in general, subject to constant costs in the relevant range of output. If, on the contrary, it is subject either to decreasing or to increasing costs, use of the conventional cost allocation procedures would tend either to overstate or to understate marginal costs for particular services. Because of these possibilities, the rates of return commonly quoted for a particular communications service cannot be used as a reliable guide in determining whether a loss, in the relevant sense, is being incurred in providing that service and whether a financial burden is thereby being imposed upon the other services.

Competition between Bell and Western Union will probably continue to be a lively issue in future FCC investigations. In February 1962, the FCC was reported to have had "under consideration for some time an over-all study of telephone vs. telegraph competition"; in the same month the American Communications Association (a union representing Western Union employees) "formally petitioned for an investigation into the extent and effect of participation by the American Telephone and Telegraph Co. in domestic and international telegraph communications."<sup>18</sup>

Our model suggests that apprehension about the nature of competition in the industry is justified since a common carrier, regulated as described above, would (under certain conditions) have an incentive to operate at a loss in competitive markets and to shift the financial burden to its other services. In this sense, it would have an "unfair" advantage over other firms which do not have other markets sufficiently profitable to bear the loss of competing with it.<sup>19</sup> Unfortunately, however, the FCC and other regulatory bodies are so wedded to the fully allocated cost criteria rather than to marginal cost criteria in judging the "fairness" of competition, that evidence drawn from future hearings and investigations will probably not throw much light on the question

<sup>17</sup> For purposes of this simple illustration, we are assuming a zero elasticity of demand substitution between A and B.

<sup>18</sup> [9, February 26, 1962, p. 1].

<sup>19</sup> That is, the unconditionally maximized profits of the other regulated firms may be sufficiently low so that imposition of the regulatory constraint does not induce them to operate at a loss in competitive markets.

whether common carriers in some markets do, in fact, operate at a loss measured in the relevant economic sense.

Finally, the model appears useful in treating economic implications of the Communications Satellite Act passed by Congress in August 1962, after long and bitter debate [13]. The Act specifies establishment of a new, private corporation regulated as a separate entity by the FCC to develop and operate the satellite system. The corporation is to be financed in two ways: (1) It may issue capital stock, carrying voting rights and eligible for dividends, to be sold "in a manner to encourage the widest distribution to the American public [13, Sec. 304 (a)]. Purchase of this stock is also permitted by "authorized" communications common carriers<sup>20</sup> subject to the constraint that the aggregate of shares held by these carriers together not exceed 50 per cent of the total shares issued and outstanding. This stock is *not* eligible for inclusion in the carrier's rate base. For convenience in subsequent analysis we shall refer to these securities as "type I securities." (2) The Corporation may issue "nonvoting securities, bonds, debentures and other certificates of indebtedness as it may determine." Communications common carriers are permitted to hold these securities without specified limit, and these securities *are* eligible for inclusion in the rate base of the carrier "to the extent allowed by the Commission [FCC]" [13, Sec. 304 (b)]. For convenience we shall refer to these as "type II securities."

The model suggests that, given the provisions of the Act, communications common carriers would have a special incentive to invest in type II securities, and that their financial support might constitute a partial subsidy for the satellite corporation. By holding type II securities the common carrier incurs an interest cost ( $r_1$ ) and collects whatever interest or dividends are forthcoming on type II securities ( $r_1'$ ). Were the carrier unregulated or were the securities not eligible for inclusion in its rate base it would purchase securities only under the condition that  $r_1' \geq r_1$ . Since, however, the investment in type II securities can be included in the over-all rate base of the carrier, the carrier has an incentive (again under certain conditions) to invest more than would otherwise be the case.

Consider the example where the carrier receives a zero return on its investment in type II securities, i.e.,  $r_1' = 0$  at all levels of investment; therefore, the carrier suffers a loss of  $r_1$  for each dollar of investment. If, however, the allowable rate of return ( $s_1$ ) is greater than the interest cost ( $r_1$ ) the regulatory constraint on the carrier's other services is relaxed, permitting prices and profits to be raised in the other

<sup>20</sup> Authorized common carriers presumably would include AT&T, Western Union and eight U.S. overseas radio and cable telegraph companies.

sectors. For each dollar in type II securities, the carrier's over-all profit would *rise* by the value  $(s_1 - r_1)$ : The loss involved in the investment in type II securities would be more than offset by the increased profits elsewhere resulting from inflation of the rate base and relaxation of the regulatory constraint. The carrier, then, may have an incentive to hold type II securities even if a direct loss is involved.

Two closely related implications arise from this analysis: First, the costs to the satellite corporation of obtaining money capital will fall if it can sell type II securities to common carriers at a return that is below their own interest cost (and if their own rate of interest is no higher than that which the satellite corporation would otherwise have to pay). To the extent that these funds provided at reduced cost to the satellite corporation permit a shift downward in its cost curves, the communications toll rates it charges to users of satellite services would also fall below the level that would have been established had the satellite corporation been forced to resort to conventional financing.<sup>21</sup>

Interestingly, a reduction in satellite communications toll rates by reducing financing costs to the satellite corporation, shifting the burden to other services, was intended by the sponsors of the bill that led to the Satellite Act. Senator Kerr, when introducing the bill to the Senate in February 1962, stated [11, p. 1670]:

[This bill strives for] . . . a privately owned corporation in which the existing American companies engaged in the international communications business would be able to invest, with their investments treated the same as the acquisition of new equipment and thus includable in their rate bases. This important feature permitting the rate of return for all communication services to be spread over a broad base would insure lower charges for communication satellite services.

Second, inclusion of type II securities in the carrier's rate base may permit the satellite corporation to operate even if its total revenues do not cover total market costs. In this case type I securities issues may be small, since little if any dividends would be earned, and the bulk of financial support might come from common carriers holding type II securities at a return below the market rate of interest.<sup>22</sup> Again, the losses in satellite operations would be covered by revenues from telephone and telegraph services provided by the carriers.

<sup>21</sup> These users include both U.S. and foreign international common carriers who would employ the satellite relays primarily for transoceanic communications links in combination with or as a substitute for submarine cable and radio. To the extent that users of the satellite system are the same carriers which invest in type II securities, their subsidy to the satellite corporation would be more or less offset by the reduction in toll rates they pay to the satellite corporation. However the Act specifies no particular relationship between the amount of type II securities they respectively hold and their relative use of the satellite system.

<sup>22</sup> In this case type I securities would be attractive primarily because of the voting rights they confer.

#### IV. *Conclusions*

The preceding analysis discloses that a misallocation of economic resources may result from the use by regulatory agencies of the rate-of-return constraint for price control. The firm has an incentive to substitute between factors in an uneconomic fashion that is difficult for the regulatory agency to detect. Moreover, if a large element of common costs exists for the firm's outputs in the various markets, the widely used "fully allocated" cost basis for rate-of-return computation is likely to prove unsatisfactory in determining whether the firm is operating at a loss in any given market, or whether its activities in some markets tend to restrict competition in an undesirable manner. At the same time, regulatory practices that provide an incentive for the firm to operate in some markets even at a loss may constitute a convenient mechanism through which certain activities of the firm judged to be in the "public interest" can be subsidized.

Our analysis suggests lines of further inquiry: We have considered only the telephone and telegraph industry, but the issues raised by the model may be relevant to evaluating market behavior in other industries as well. It is notable that Gardner Means in a recent study [7] has advocated that certain large nonregulated firms judged to be "collective enterprises" be encouraged, by tax incentive, to engage in "target pricing" where they aim for a profit equal to a fair rate of return on investment. By following this approach to pricing, which is similar to that employed in public utilities, the danger exists (which he does not recognize) that these firms would be exposed to the same pressures discussed above of inflating their rate bases by substituting capital for labor and by expanding into unprofitable new lines in order to satisfy the authorities that they were using "proper" target pricing. It might prove worthwhile to examine the effect of target pricing in steel and other industries discussed by Means in the light of the preceding analysis. Furthermore, it might be interesting to explore alternative forms of government control that, by avoiding the return-on-investment criterion for price regulation, do not generate the bias disclosed here.

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# news release

www.pplnewsroom.com



Contacts: For news media: Ryan Hill, 610-774-4033  
For financial analysts: Andy Ludwig, 610-774-3389

## **PPL Corporation Reports Second-Quarter 2021 Earnings;** **Announces Net-Zero Carbon Emissions Goal**

- *Continues to advance strategic repositioning with sale of U.K. utility business completed June 14 and acquisition of Narragansett Electric on track to close by March 2022.*
- *Announces plan to repurchase approximately \$500 million in PPL shares in 2021.*
- *Sets new 2050 net-zero carbon emissions goal, targeting 80% reduction by 2040 and 70% reduction by 2035.*

ALLENTOWN, Pa. (Aug. 5, 2021) - PPL Corporation (NYSE: PPL) on Thursday (8/5) announced second-quarter 2021 reported earnings (GAAP) of \$19 million, or \$0.03 per share, compared with second-quarter 2020 reported earnings of \$344 million, or \$0.45 per share.

PPL reported a net loss of \$1.82 billion, or \$2.37 per share, for the first six months of 2021, compared with reported earnings of \$898 million, or \$1.17 per share, for the first six months of 2020.

Adjusting for special items, second-quarter 2021 earnings from ongoing operations (non-GAAP) were \$147 million, or \$0.19 per share, compared with \$159 million, or \$0.20 per share, a year ago.

Earnings from ongoing operations for the first six months of 2021 were \$366 million, or \$0.47 per share, compared with \$365 million, or \$0.47 per share, for the first six months of 2020.

Special items in the second quarter included a U.K. tax rate change and a loss on the early extinguishment of debt, partially offset by earnings from the operations of the U.K. utility business prior to the completion of its sale on June 14, 2021. Special items for the first six months of 2021 included the above factors, as well as a non-cash net loss from discontinued operations primarily due to the realization of accumulated other comprehensive losses associated with the U.K. utility business.

“In the second quarter, PPL continued to execute on its strategic repositioning, including completing the sale of our U.K. utility business,” said Vincent Sorgi, PPL president and chief executive officer. “Having achieved exceptional value for the U.K. assets, we strengthened our balance sheet by retiring \$3.5 billion in corporate debt. We also advanced the process to acquire The Narragansett Electric Company in Rhode Island with several key approvals, and we accomplished key priorities in our Kentucky rate review, which will support continued investment in technology and infrastructure to improve service to our customers. Most importantly, we delivered electricity and natural gas safely and reliably for those we serve.”



Sorgi said the company will seek to build on this momentum in the remainder of 2021 while continuing to lay a strong foundation for long-term growth and success.

With a view toward maximizing shareowner value, PPL continues to evaluate the best uses for the remaining proceeds from the U.K. sale, which resulted in net cash proceeds of \$10.4 billion after taxes and fees. In addition to utilizing a portion of the proceeds to strengthen its balance sheet, the company plans to use an additional \$3.8 billion to acquire Narragansett Electric. Potential uses for the remaining proceeds include investing incremental capital at PPL's utilities or in renewable energy, as well as repurchasing PPL shares. PPL's Board of Directors recently authorized a new share repurchase program pursuant to which the company may purchase up to \$3 billion in outstanding common shares at the discretion of management. The company said it expects to repurchase approximately \$500 million in common shares by the end of 2021 and will continue to assess opportunities to deploy the remaining proceeds.

PPL said it remains focused on securing the final approvals for the Narragansett Electric acquisition in order to close on the transaction by March 2022. PPL continues to coordinate closely with National Grid on planning to ensure a seamless transition for Narragansett employees and customers upon regulatory approval and closing of the transaction. In June, the company announced its planned leadership team for the Rhode Island utility.

PPL also announced today that it has set a new goal to achieve net-zero carbon emissions by 2050 and is on track to achieve an 80% reduction from 2010 levels by 2040 and a 70% reduction by 2035.

PPL said its new net-zero emissions goal and interim targets, which cover greenhouse gas emissions from generation and other sources, reflect updated forecasts, analyses and ongoing business planning, as well as the company's expanded efforts to invest in research and development of clean energy technologies. The company currently is undertaking an enterprise-wide initiative to enhance its clean energy transition strategy and has engaged an industry-leading global consulting firm to assist it in this effort.

"PPL is fully committed to driving innovation that enables us to achieve net-zero carbon emissions by 2050 and ensuring a balanced, responsible and just transition for our employees, communities and customers as we advance toward our clean energy goals," said Sorgi.

### **Second-Quarter 2021 Earnings Details**

As discussed in this news release, reported earnings are calculated in accordance with U.S. Generally Accepted Accounting Principles (GAAP). "Earnings from ongoing operations" is a non-GAAP financial measure that is adjusted for special items. See the tables at the end of this news release for a reconciliation of reported earnings (net income) to earnings from ongoing operations, including an itemization of special items.

(Dollars in millions, except for per-share amounts)

	2nd Quarter			Year to Date		
	2021	2020	Change	2021	2020	Change
Reported earnings	\$ 19	\$ 344	(94)%	\$ (1,821)	\$ 898	NM*
Reported earnings per share	\$ 0.03	\$ 0.45	(93)%	\$ (2.37)	\$ 1.17	NM*

	2nd Quarter			Year to Date		
	2021	2020	Change	2021	2020	Change
Earnings from ongoing operations	\$ 147	\$ 159	(8)%	\$ 366	\$ 365	0 %
Earnings from ongoing operations per share	\$ 0.19	\$ 0.20	(5)%	\$ 0.47	\$ 0.47	0 %

\*NM: Not meaningful

## Second-Quarter 2021 Earnings by Segment

Per share	2nd Quarter		Year to Date	
	2021	2020	2021	2020
<b>Reported earnings</b>				
Kentucky Regulated	\$ 0.11	\$ 0.10	\$ 0.30	\$ 0.26
Pennsylvania Regulated	0.12	0.15	0.27	0.31
Corporate and Other	(0.92)	(0.05)	(1.01)	(0.10)
Discontinued Operations	0.72	0.25	(1.93)	0.70
Total	\$ 0.03	\$ 0.45	\$ (2.37)	\$ 1.17

	2nd Quarter		Year to Date	
	2021	2020	2021	2020
<b>Special items (expense) benefit</b>				
Kentucky Regulated	\$ —	\$ —	\$ 0.01	\$ —
Pennsylvania Regulated	(0.01)	—	(0.03)	—
Corporate and Other	(0.87)	—	(0.89)	—
Discontinued Operations	0.72	0.25	(1.93)	0.70
Total	\$ (0.16)	\$ 0.25	\$ (2.84)	\$ 0.70

	2nd Quarter		Year to Date	
	2021	2020	2021	2020
<b>Earnings from ongoing operations</b>				
Kentucky Regulated	\$ 0.11	\$ 0.10	\$ 0.29	\$ 0.26
Pennsylvania Regulated	0.13	0.15	0.30	0.31
Corporate and Other	(0.05)	(0.05)	(0.12)	(0.10)
Discontinued Operations	—	—	—	—
Total	\$ 0.19	\$ 0.20	\$ 0.47	\$ 0.47

## **Key Factors Impacting Earnings**

In addition to the segment drivers outlined below, PPL's reported earnings for the second quarter of 2021 included net special-item after-tax charges of \$128 million, or \$0.16 per share, primarily attributable to a U.K. tax rate change and a loss on the early extinguishment of debt, partially offset by earnings from the operations of the U.K. utility business prior to the completion of its sale on June 14, 2021. Reported earnings for the second quarter of 2020 included net special-item after-tax benefits of \$185 million, or \$0.25 per share, primarily attributable to U.K. earnings that were reclassified to discontinued operations.

Reported earnings for the first six months of 2021 included net special-item after-tax charges of \$2.19 billion, or \$2.84 per share, primarily attributable to discontinued operations associated with the U.K. utility business, a U.K. tax rate change and a loss on the early extinguishment of debt. The special-item charges attributable to discontinued operations included a non-cash net loss on the sale of the U.K. utility business, primarily due to the realization of accumulated other comprehensive losses and forecasted federal taxes associated with the sale, partially offset by earnings from the operations of the U.K. utility business until completion of its sale on June 14, 2021. Reported earnings for the first six months of 2020 included net special-item after-tax benefits of \$533 million, or \$0.70 per share, primarily attributable to U.K. earnings that were reclassified to discontinued operations.

### **Kentucky Regulated Segment**

PPL's Kentucky Regulated segment primarily consists of the regulated electricity and natural gas operations of Louisville Gas and Electric Company and the regulated electricity operations of Kentucky Utilities Company.

Reported earnings and earnings from ongoing operations in the second quarter of 2021 increased by \$0.01 per share compared with a year ago. Factors driving earnings results primarily included higher commercial and industrial demand revenue due to the 2020 impact of COVID-19 and lower interest expense primarily due to interest costs allocated to the Kentucky Regulated segment in 2020 that were not allocated in 2021, partially offset by higher operation and maintenance expense.

Reported earnings for the first six months of 2021 increased by \$0.04 per share compared with a year ago. Earnings from ongoing operations for the first six months of 2021 increased by \$0.03 per share compared with a year ago. Factors driving earnings results primarily included higher sales volumes primarily due to weather, lower interest expense primarily due to interest costs allocated to the Kentucky Regulated segment in 2020 that were not allocated in 2021, and higher commercial and industrial demand revenue due to the 2020 impact of COVID-19, partially offset by higher operation and maintenance expense.

### **Pennsylvania Regulated Segment**

PPL's Pennsylvania Regulated segment consists of the regulated electricity delivery operations of PPL Electric Utilities.

Reported earnings in the second quarter of 2021 decreased by \$0.03 per share compared with a year ago. Earnings from ongoing operations in the second quarter of 2021 decreased by \$0.02 per share compared with a year ago. Factors driving earnings results primarily included lower peak transmission demand, an increase in the reserve amount recorded as a result of a challenge to the transmission formula

rate return on equity and favorable tax-related items recognized in 2020, partially offset by returns on additional capital investments in transmission.

Reported earnings for the first six months of 2021 decreased by \$0.04 per share compared with a year ago. Earnings from ongoing operations for the first six months of 2021 decreased by \$0.01 per share compared with a year ago. Factors driving earnings results primarily included lower peak transmission demand, a reserve recorded as a result of a challenge to the transmission formula rate return on equity and favorable tax-related items recognized in 2020, partially offset by returns on additional capital investments in transmission, lower operation and maintenance expense and higher sales volumes due to weather.

### **Corporate and Other**

PPL's Corporate and Other category primarily includes unallocated corporate-level financing and other costs.

Reported earnings in the second quarter of 2021 decreased by \$0.87 per share compared with a year ago. Earnings from ongoing operations in the second quarter of 2021 were flat compared with a year ago.

Reported earnings for the first six months of 2021 decreased by \$0.91 per share compared with a year ago. Earnings from ongoing operations for the first six months of 2021 decreased by \$0.02 per share compared with a year ago. Factors driving earnings results primarily included higher interest expense primarily due to interest costs reflected in Corporate and Other in 2021 that were previously allocated to the operating segments in 2020.

### **About PPL**

PPL Corporation (NYSE:PPL), based in Allentown, Pennsylvania, is a leading U.S. energy company focused on providing electricity and natural gas safely, reliably and affordably to more than 2.5 million customers in the U.S. PPL's high-performing, award-winning utilities are addressing energy challenges head-on by building smarter, more resilient and more dynamic power grids and advancing sustainable energy solutions. For more information, visit [www.pplweb.com](http://www.pplweb.com).

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*(Note: All references to earnings per share in the text and tables of this news release are stated in terms of diluted earnings per share unless otherwise noted.)*

### **Conference Call and Webcast**

**PPL invites interested parties to listen to a live Internet webcast of management's teleconference with financial analysts about second-quarter 2021 financial results at 11 a.m. Eastern time on Thursday, Aug. 5. The call will be webcast live, in audio format, together with slides of the presentation. For those who are unable to listen to the live webcast, a replay with slides will be accessible at [www.pplweb.com/investors](http://www.pplweb.com/investors) for 90 days after the call. Interested individuals can access the live conference call via telephone at 1-888-346-8683. International participants should call 1-412-902-4270. Participants will need to enter the following "Elite Entry" number to join the conference: 7482815. Callers can access the webcast link at [www.pplweb.com/investors](http://www.pplweb.com/investors) under "Events."**

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*Management utilizes “Earnings from Ongoing Operations” as a non-GAAP financial measure that should not be considered as an alternative to reported earnings, or net income, an indicator of operating performance determined in accordance with GAAP. PPL believes that Earnings from Ongoing Operations is useful and meaningful to investors because it provides management’s view of PPL’s earnings performance as another criterion in making investment decisions. In addition, PPL’s management uses Earnings from Ongoing Operations in measuring achievement of certain corporate performance goals, including targets for certain executive incentive compensation. Other companies may use different measures to present financial performance.*

*Earnings from Ongoing Operations is adjusted for the impact of special items. Special items are presented in the financial tables on an after-tax basis with the related income taxes on special items separately disclosed. Income taxes on special items, when applicable, are calculated based on the statutory tax rate of the entity where the activity is recorded. Special items may include items such as:*

- Gains and losses on sales of assets not in the ordinary course of business.*
- Impairment charges.*
- Significant workforce reduction and other restructuring effects.*
- Acquisition and divestiture-related adjustments.*
- Significant losses on early extinguishment of debt.*
- Other charges or credits that are, in management’s view, non-recurring or otherwise not reflective of the company’s ongoing operations.*

*Statements contained in this news release, including statements with respect to future earnings, cash flows, dividends, financing, regulation and corporate strategy, are “forward-looking statements” within the meaning of the federal securities laws. Although PPL Corporation believes that the expectations and assumptions reflected in these forward-looking statements are reasonable, these statements are subject to a number of risks and uncertainties, and actual results may differ materially from the results discussed in the statements. The following are among the important factors that could cause actual results to differ materially from the forward-looking statements: asset or business acquisitions and dispositions; the novel coronavirus pandemic or other pandemic health events or other catastrophic events and their effect on financial markets, economic conditions and our businesses; market demand for energy in our service territories; weather conditions affecting customer energy usage and operating costs; the effect of any business or industry restructuring; the profitability and liquidity of PPL Corporation and its subsidiaries; new accounting requirements or new interpretations or applications of existing requirements; operating performance of our facilities; the length of scheduled and unscheduled outages at our generating plants; environmental conditions and requirements and the related costs of compliance; system conditions and operating costs; development of new projects, markets and technologies; performance of new ventures; any impact of severe weather on our business; receipt of necessary government permits, approvals, rate relief and regulatory cost recovery; capital market conditions and decisions regarding capital structure; the impact of state, federal or foreign investigations applicable to PPL Corporation and its subsidiaries; the outcome of litigation against PPL Corporation and its subsidiaries; stock price performance; the*

*market prices of equity securities and the impact on pension income and resultant cash funding requirements for defined benefit pension plans; the securities and credit ratings of PPL Corporation and its subsidiaries; political, regulatory or economic conditions in jurisdictions where PPL Corporation or its subsidiaries conduct business, including any potential effects of threatened or actual cyberattack, terrorism, or war or other hostilities; new state, federal or foreign legislation, including new tax legislation; and the commitments and liabilities of PPL Corporation and its subsidiaries. Any such forward-looking statements should be considered in light of such important factors and in conjunction with factors and other matters discussed in PPL Corporation's Form 10-K and other reports on file with the Securities and Exchange Commission.*

***Note to Editors: Visit our media website at [www.pplnewsroom.com](http://www.pplnewsroom.com) for additional news and background about PPL Corporation.***

**PPL CORPORATION AND SUBSIDIARIES**  
**CONDENSED CONSOLIDATED FINANCIAL INFORMATION<sup>(1)</sup>**  
**Condensed Consolidated Balance Sheets (Unaudited)**  
**(Millions of Dollars)**

	June 30, 2021	December 31, 2020
<b>Assets</b>		
Cash and cash equivalents	\$ 7,629	\$ 442
Accounts receivable	658	689
Unbilled revenues	247	301
Fuel, materials and supplies	265	302
Other current assets	219	183
Current assets held for sale	—	18,983
Property, Plant and Equipment		
Regulated utility plant	29,757	29,040
Less: Accumulated depreciation - regulated utility plant	6,314	6,008
Regulated utility plant, net	23,443	23,032
Non-regulated property, plant and equipment	246	237
Less: Accumulated depreciation - non-regulated property, plant and equipment	40	37
Non-regulated property, plant and equipment, net	206	200
Construction work in progress	1,296	1,268
Property, Plant and Equipment, net	24,945	24,500
Noncurrent regulatory assets	1,281	1,262
Goodwill and other intangibles	1,063	1,067
Pension benefit asset	67	24
Other noncurrent assets	385	363
<b>Total Assets</b>	<b>\$ 36,759</b>	<b>\$ 48,116</b>
<b>Liabilities and Equity</b>		
Short-term debt	\$ —	\$ 1,168
Long-term debt due within one year	2,200	1,074
Accounts payable	683	745
Other current liabilities	1,289	1,045
Current liabilities held for sale	—	11,023
Long-term debt	11,095	13,615
Deferred income taxes and investment tax credits	3,199	2,658
Accrued pension obligations	189	189
Asset retirement obligations	140	132
Noncurrent regulatory liabilities	2,468	2,530
Other deferred credits and noncurrent liabilities	544	564
Common stock and additional paid-in capital	12,289	12,278
Earnings reinvested	2,854	5,315
Accumulated other comprehensive loss	(191)	(4,220)
<b>Total Liabilities and Equity</b>	<b>\$ 36,759</b>	<b>\$ 48,116</b>

(1) The Financial Statements in this news release have been condensed and summarized for purposes of this presentation. Please refer to PPL Corporation's periodic filings with the Securities and Exchange Commission for full financial statements, including note disclosure.

**PPL CORPORATION AND SUBSIDIARIES**  
**Condensed Consolidated Statements of Income (Unaudited)**  
(Millions of Dollars, except share data)

	<b>Three Months Ended June 30,</b>		<b>Six Months Ended June 30,</b>	
	<b>2021</b>	<b>2020</b>	<b>2021</b>	<b>2020</b>
<b>Operating Revenues</b>	\$ 1,288	\$ 1,263	\$ 2,786	\$ 2,703
<b>Operating Expenses</b>				
Operation				
Fuel	159	138	336	301
Energy purchases	137	133	357	334
Other operation and maintenance	404	353	771	708
Depreciation	269	255	536	505
Taxes, other than income	49	37	101	84
Total Operating Expenses	1,018	916	2,101	1,932
<b>Operating Income</b>	270	347	685	771
Other Income (Expense) - net	13	10	13	5
Interest Expense	474	164	627	318
<b>Income (Loss) From Continuing Operations Before Income Taxes</b>	(191)	193	71	458
Income Taxes	345	40	404	101
<b>Income (Loss) from Continuing Operations After Income Taxes</b>	(536)	153	(333)	357
Income (Loss) from Discontinued Operations (net of income taxes)	555	191	(1,488)	541
<b>Net Income (Loss)</b>	\$ 19	\$ 344	\$ (1,821)	\$ 898
<b>Earnings Per Share of Common Stock:</b>				
<b>Basic and Diluted</b>				
Income (Loss) from Continuing Operations After Income Taxes	\$ (0.69)	\$ 0.20	\$ (0.44)	\$ 0.47
Income (Loss) from Discontinued Operations (net of income taxes)	0.72	0.25	(1.93)	0.70
Net Income (Loss) Available to PPL Common Shareowners	\$ 0.03	\$ 0.45	\$ (2.37)	\$ 1.17
<b>Weighted-Average Shares of Common Stock Outstanding (in thousands)</b>				
Basic	769,466	768,768	769,313	768,358
Diluted	769,466	769,408	769,313	769,073



**PPL CORPORATION AND SUBSIDIARIES**  
**Condensed Consolidated Statements of Cash Flows (Unaudited)**  
(Millions of Dollars)

	<b>Six Months Ended June 30,</b>	
	<b>2021</b>	<b>2020</b>
<b>Cash Flows from Operating Activities</b>		
Net income (loss)	\$ (1,821)	\$ 898
Loss (income) from discontinued operations (net of income taxes)	1,488	(541)
Income from continuing operations (net of income taxes)	(333)	357
Adjustments to reconcile net income to net cash provided by operating activities - continuing operations		
Depreciation	536	505
Amortization	40	22
Deferred income taxes and investment tax credits	29	113
Loss on extinguishment of debt	322	—
Other	28	22
Change in current assets and current liabilities		
Accounts payable	(26)	(81)
Prepayments	(62)	(67)
Taxes payable	192	(34)
Unbilled revenues	53	61
Regulatory assets and liabilities, net	39	(47)
Other	59	76
Other operating activities		
Defined benefit plans - funding	(36)	(56)
Other	(46)	(5)
Net cash provided by operating activities - continuing operations	795	866
Net cash provided by operating activities - discontinued operations	726	433
Net cash provided by operating activities	1,521	1,299
<b>Cash Flows from Investing Activities</b>		
Expenditures for property, plant and equipment	(969)	(1,158)
Proceeds from sale of discontinued operations, net of cash divested	10,560	—
Other investing activities	(8)	9
Net cash provided by (used in) investing activities - continuing operations	9,583	(1,149)
Net cash provided by (used in) investing activities - discontinued operations	(607)	(424)
Net cash provided by (used in) investing activities	8,976	(1,573)
<b>Cash Flows from Financing Activities</b>		
Issuance of long-term debt	650	1,598
Retirement of long-term debt	(2,379)	—
Issuance of common stock	—	33
Payment of common stock dividends	(640)	(636)
Issuance of term loan	—	300
Retirement of term loan	(300)	—
Retirement of commercial paper	(73)	—
Net increase (decrease) in short-term debt	(795)	(638)
Other financing activities	(19)	73
Net cash provided by (used in) financing activities - continuing operations	(3,556)	730
Net cash provided by (used in) financing activities - discontinued operations	(411)	(23)
Contributions (to) from discontinued operations	365	38
Net cash provided by (used in) financing activities	(3,602)	745
<b>Effect of Exchange Rates on Cash, Cash Equivalents and Restricted Cash included in Discontinued Operations</b>	<b>8</b>	<b>(6)</b>
<b>Net (Increase) Decrease in Cash, Cash Equivalents and Restricted Cash included in Discontinued Operations</b>	<b>284</b>	<b>20</b>
<b>Net Increase (Decrease) in Cash, Cash Equivalents and Restricted Cash</b>	<b>7,187</b>	<b>485</b>
Cash, Cash Equivalents and Restricted Cash at Beginning of Period	443	660
Cash, Cash Equivalents and Restricted Cash at End of Period	\$ 7,630	\$ 1,145
<b>Supplemental Disclosures of Cash Flow Information</b>		
Significant non-cash transactions:		
Accrued expenditures for property, plant and equipment at June 30,	\$ 222	\$ 250

**Operating - Electricity Sales (Unaudited)**

(GWh)	Three Months Ended June 30,			Six Months Ended June 30,		
	2021	2020	Percent Change	2021	2020	Percent Change
<b>PA Regulated Segment</b>						
Retail Delivered	8,543	8,089	5.6 %	18,404	17,535	5.0 %
<b>KY Regulated Segment</b>						
Retail Delivered	6,921	6,404	8.1 %	14,493	13,632	6.3 %
Wholesale <sup>(1)</sup>	191	104	83.7 %	467	230	103.0 %
Total	7,112	6,508	9.3 %	14,960	13,862	7.9 %
<b>Total</b>	<b>15,655</b>	<b>14,597</b>	<b>7.2 %</b>	<b>33,364</b>	<b>31,397</b>	<b>6.3 %</b>

(1) Represents FERC-regulated municipal and unregulated off-system sales.

**Reconciliation of Segment Reported Earnings to Earnings from Ongoing Operations**  
**(After-Tax)**  
**(Unaudited)**

2nd Quarter 2021

(millions of dollars)

	KY Reg.	PA Reg.	Corp. & Other	Disc. Ops. <sup>(2)</sup>	Total
<b>Reported Earnings<sup>(1)</sup></b>	\$ 84	\$ 96	\$ (716)	\$ 555	\$ 19
Less: Special Items (expense) benefit:					
Income (Loss) from Discontinued Operations	—	—	—	555	555
Talen litigation costs, net of tax of \$1	—	—	(6)	—	(6)
Strategic corporate initiatives, net of tax of \$1	—	—	(2)	—	(2)
Challenge to transmission formula rate return on equity reserve, net of tax of \$2	—	(7)	—	—	(7)
Acquisition integration, net of tax of \$1	—	—	(2)	—	(2)
U.K. tax rate change	—	—	(383)	—	(383)
Solar panel impairment, net of tax of \$9 <sup>(3)</sup>	—	—	(28)	—	(28)
Loss on early extinguishment of debt, net of tax of \$67	—	—	(255)	—	(255)
<b>Total Special Items</b>	<b>—</b>	<b>(7)</b>	<b>(676)</b>	<b>555</b>	<b>(128)</b>
<b>Earnings from Ongoing Operations</b>	<b>\$ 84</b>	<b>\$ 103</b>	<b>\$ (40)</b>	<b>\$ —</b>	<b>\$ 147</b>

(per share - diluted)

	KY Reg.	PA Reg.	Corp. & Other	Disc. Ops. <sup>(2)</sup>	Total
<b>Reported Earnings<sup>(1)</sup></b>	\$ 0.11	\$ 0.12	\$ (0.92)	\$ 0.72	\$ 0.03
Less: Special Items (expense) benefit:					
Income (Loss) from Discontinued Operations	—	—	—	0.72	0.72
Challenge to transmission formula rate return on equity reserve	—	(0.01)	—	—	(0.01)
U.K. tax rate change	—	—	(0.50)	—	(0.50)
Solar panel impairment <sup>(3)</sup>	—	—	(0.04)	—	(0.04)
Loss on early extinguishment of debt	—	—	(0.33)	—	(0.33)
<b>Total Special Items</b>	<b>—</b>	<b>(0.01)</b>	<b>(0.87)</b>	<b>0.72</b>	<b>(0.16)</b>
<b>Earnings from Ongoing Operations</b>	<b>\$ 0.11</b>	<b>\$ 0.13</b>	<b>\$ (0.05)</b>	<b>\$ —</b>	<b>\$ 0.19</b>

(1) Reported Earnings represents Net Income.

(2) PPL sold its U.K. utility business on June 14, 2021, and its earnings were treated as a special item.

(3) Reflects solar panel write-down due to extension of federal government's solar investment tax credits, technological advances resulting in more efficient modules available on the market, and rising commodity prices for materials used in various solar projects.

**Reconciliation of Segment Reported Earnings to Earnings from Ongoing Operations**  
**(After-Tax)**  
**(Unaudited)**

Year-to-Date June 30, 2021

(millions of dollars)

	KY Reg.	PA Reg.	Corp. & Other	Disc. Ops. <sup>(2)</sup>	Total
<b>Reported Earnings<sup>(1)</sup></b>	\$ 230	\$ 209	\$ (772)	\$ (1,488)	\$ (1,821)
Less: Special Items (expense) benefit:					
Income (Loss) from Discontinued Operations	—	—	—	(1,492)	(1,492)
Talen litigation costs, net of tax of \$2	—	—	(9)	—	(9)
Strategic corporate initiatives, net of tax of \$1	—	—	(2)	—	(2)
Valuation allowance adjustment	4	—	(4)	4	4
Challenge to transmission formula rate return on equity reserve, net of tax of \$8	—	(20)	—	—	(20)
Acquisition integration, net of tax of \$1	—	—	(2)	—	(2)
U.K. tax rate change	—	—	(383)	—	(383)
Solar panel impairment, net of tax of \$9 <sup>(3)</sup>	—	—	(28)	—	(28)
Loss on early extinguishment of debt, net of tax of \$67	—	—	(255)	—	(255)
<b>Total Special Items</b>	4	(20)	(683)	(1,488)	(2,187)
<b>Earning from Ongoing Operations</b>	<u>\$ 226</u>	<u>\$ 229</u>	<u>\$ (89)</u>	<u>\$ —</u>	<u>\$ 366</u>

(per share - diluted)

	KY Reg.	PA Reg.	Corp. & Other	Disc. Ops. <sup>(2)</sup>	Total
<b>Reported Earnings<sup>(1)</sup></b>	\$ 0.30	\$ 0.27	\$ (1.01)	\$ (1.93)	\$ (2.37)
Less: Special Items (expense) benefit:					
Income (Loss) from Discontinued Operations	—	—	—	(1.94)	(1.94)
Talen litigation costs	—	—	(0.01)	—	(0.01)
Valuation allowance adjustment	0.01	—	(0.01)	0.01	0.01
Challenge to transmission formula rate return on equity reserve	—	(0.03)	—	—	(0.03)
U.K. tax rate change	—	—	(0.50)	—	(0.50)
Solar panel impairment <sup>(3)</sup>	—	—	(0.04)	—	(0.04)
Loss on early extinguishment of debt	—	—	(0.33)	—	(0.33)
<b>Total Special Items</b>	0.01	(0.03)	(0.89)	(1.93)	(2.84)
<b>Earnings from Ongoing Operations</b>	<u>\$ 0.29</u>	<u>\$ 0.30</u>	<u>\$ (0.12)</u>	<u>\$ —</u>	<u>\$ 0.47</u>

(1) Reported Earnings represents Net Income.

(2) PPL sold its U.K. utility business on June 14, 2021, and its earnings were treated as a special item.

(3) Reflects solar panel write-down due to extension of federal government's solar investment tax credits, technological advances resulting in more efficient modules available on the market, and rising commodity prices for materials used in various solar projects.

**Reconciliation of Segment Reported Earnings to Earnings from Ongoing Operations**  
**(After-Tax)**  
**(Unaudited)**

2nd Quarter 2020

(millions of dollars)

	KY Reg.	PA Reg.	Corp. & Other <sup>(2)</sup>	Disc. Ops. <sup>(3)</sup>	Total
<b>Reported Earnings<sup>(1)</sup></b>	\$ 74	\$ 118	\$ (39)	\$ 191	\$ 344
Less: Special Items (expense) benefit:					
Income (Loss) from Discontinued Operations	—	—	—	191	191
Talen litigation costs, net of tax of \$0	—	—	(2)	—	(2)
COVID-19 impact, net of tax of \$1	(4)	—	—	—	(4)
<b>Total Special Items</b>	(4)	—	(2)	191	185
<b>Earnings from Ongoing Operations</b>	<u>\$ 78</u>	<u>\$ 118</u>	<u>\$ (37)</u>	<u>\$ —</u>	<u>\$ 159</u>

(per share - diluted)

	KY Reg.	PA Reg.	Corp. & Other <sup>(2)</sup>	Disc. Ops. <sup>(3)</sup>	Total
<b>Reported Earnings<sup>(1)</sup></b>	\$ 0.10	\$ 0.15	\$ (0.05)	\$ 0.25	\$ 0.45
Less: Special Items (expense) benefit:					
Income (Loss) from Discontinued Operations	—	—	—	0.25	0.25
<b>Total Special Items</b>	—	—	—	0.25	0.25
<b>Earnings from Ongoing Operations</b>	<u>\$ 0.10</u>	<u>\$ 0.15</u>	<u>\$ (0.05)</u>	<u>\$ —</u>	<u>\$ 0.20</u>

(1) Reported Earnings represents Net Income.

(2) The amount for the period ended June 30, 2020, has been adjusted for certain costs that were previously included in the U.K. Regulated segment.

(3) PPL sold its U.K. utility business on June 14, 2021, and its earnings were treated as a special item.

**Reconciliation of Segment Reported Earnings to Earnings from Ongoing Operations**  
**(After-Tax)**  
**(Unaudited)**

Year-to-Date June 30, 2020

(millions of dollars)

	KY Reg.	PA Reg.	Corp. & Other <sup>(2)</sup>	Disc. Ops. <sup>(3)</sup>	Total
<b>Reported Earnings<sup>(1)</sup></b>	\$ 201	\$ 236	\$ (80)	\$ 541	\$ 898
Less: Special Items (expense) benefit:					
Income (Loss) from Discontinued Operations	—	—	—	541	541
Talen litigation costs, net of tax of \$1	—	—	(4)	—	(4)
COVID-19 impact, net of tax of \$1	(4)	—	—	—	(4)
<b>Total Special Items</b>	(4)	—	(4)	541	533
<b>Earnings from Ongoing Operations</b>	<u>\$ 205</u>	<u>\$ 236</u>	<u>\$ (76)</u>	<u>\$ —</u>	<u>\$ 365</u>

(per share - diluted)

	KY Reg.	PA Reg.	Corp. & Other <sup>(2)</sup>	Disc. Ops. <sup>(3)</sup>	Total
<b>Reported Earnings<sup>(1)</sup></b>	\$ 0.26	\$ 0.31	\$ (0.10)	\$ 0.70	\$ 1.17
Less: Special Items (expense) benefit:					
Income (Loss) from Discontinued Operations	—	—	—	0.70	0.70
<b>Total Special Items</b>	—	—	—	0.70	0.70
<b>Earnings from Ongoing Operations</b>	<u>\$ 0.26</u>	<u>\$ 0.31</u>	<u>\$ (0.10)</u>	<u>\$ —</u>	<u>\$ 0.47</u>

(1) Reported Earnings represents Net Income.

(2) The amount for the period ended June 30, 2020, has been adjusted for certain costs that were previously included in the U.K. Regulated segment.

(3) PPL sold its U.K. utility business on June 14, 2021, and its earnings were treated as a special item.



# Financial review continued

## Capital investment, asset growth and Value Added

Value Added is a measure that reflects the value to shareholders of our dividend and the growth in National Grid's regulated and non-regulated assets (as measured in our regulated asset base, for regulated entities), net of the growth in overall debt. It is a key metric used to measure our performance and underpins our approach to sustainable decision-making and long-term management incentive arrangements.

A key part of our investor proposition is growth in our regulated asset base. The regulated asset base is a regulatory construct, representing the invested capital on which we are authorised to earn a cash return. By investing efficiently in our networks, we add to our regulatory asset base over the long term and this in turn contributes to delivering shareholder value. Our regulated asset base comprises our regulatory asset value in the UK, plus our rate base in the US. We also invest in related activities that are not subject to network regulation and this further contributes to asset growth.

### Capital investment

Capital investment comprises capital expenditure in critical energy infrastructure, equity investments, funding contributions and loans to joint ventures and associates, the acquisition of Geronimo during 2019/20 and, in the case of National Grid Partners, investments in financial assets.

£m	At actual exchange rates			At constant currency		
	2020/21	2019/20	Change	2020/21	2019/20	Change
UK Electricity Transmission	1,072	1,043	3 %	1,072	1,043	3 %
UK Gas Transmission	176	249	(29)%	176	249	(29)%
US Regulated	3,223	3,228	— %	3,223	3,098	4 %
NGV and Other activities	576	885	(35)%	576	867	(34)%
<b>Total</b>	<b>5,047</b>	<b>5,405</b>	<b>(7)%</b>	<b>5,047</b>	<b>5,257</b>	<b>(4)%</b>

Investment in UK Electricity Transmission increased primarily due to Hinkley-Seabank, London Power Tunnels 2 and Smartwires spend. In UK Gas Transmission, investment reduced due to completion of the Feeder 9 gas pipeline replacement project and Peterborough and Huntingdon compressor stations. In the US, investment was up 4% on a constant currency basis, reflecting increased capital expenditure in our US New York electric businesses, mainly damage repair driven by storm activity and accelerated spend in REV (New York's 'Reforming the Energy Vision' programme) and Grid Modernisation; increased investment in wholesale networks (including line and cable relocation in NECO, higher LNG spend and also asset refurbishment in New England Power) and higher IT spend and lease additions, partly offset by reduced investment in downstate New York (gas pipe replacement and mandated gas works) which were impacted by disruptions due to COVID-19. Investment in NGV was significantly lower due to the £209 million acquisition of Geronimo in the prior year, lower investment in IFA2, which became operational this year, reduced cable and converter spend on North Sea Link (Norway), but increased investment in Viking Link (Denmark). In addition, a total amount of £38 million (including joint ventures) was invested by National Grid Partners in 2020/21, compared to £68 million in the prior year.

### Asset growth and Value Added

To help readers' assessment of the financial position of the Group, the table below shows an aggregated position for the Group, as viewed from a regulatory perspective. The measures included in the table below are calculated in part from financial information used to derive measures sent to and used by our regulators in the UK and US, and accordingly inform certain of the Group's regulatory performance measures, but are not derived from, and cannot be reconciled to, IFRS.

There are certain significant assets and liabilities included in our IFRS balance sheet, which are treated differently in the analysis below, and to which we draw readers' attention. The UK RAV is higher than the IFRS value of property, plant and equipment and intangibles, principally because of the annual indexation (inflationary uplift) adjustment applied to RAV, compared to the IFRS value of these assets (held at amortised cost). In addition, under IFRS we recognise liabilities in respect of US environmental remediation costs, and pension and OPEB costs. For regulatory purposes, these are not shown as obligations because we are entitled to full recovery of costs through our existing rate plans. The impact of US tax reform in 2017/18 which resulted in a reduction in IFRS deferred tax liabilities, and from a regulatory perspective remains as a future obligation, results in a regulatory liability within US rate base (£1.6 billion at 31 March 2021). In our Value Added calculation, we have recognised an asset to reflect expected future recovery of £282 million COVID-19 related provision for bad and doubtful debts that we have included in 2019/20 and 2020/21. Regulatory IOUs which reflect net over- or under-recoveries compared to our regulatory allowances are treated within this table as obligations but do not qualify for recognition as liabilities (or assets) under IFRS. Adjusted net debt movements exclude the beneficial proceeds from the Cadent disposal in 2019/20 and movements on derivatives which are designated in cash flow hedging arrangements and for which there is no corresponding movement in total assets and other balances. Within our Value Added calculation, total assets and other balances, goodwill and adjusted net debt movement all exclude the impact of reclassifications to held for sale for NECO in 2020/21.

£m	2020/21			2019/20		
	31 March 2021	31 March 2020	Change	31 March 2020	31 March 2019	Change
UK RAV	20,872	20,431	2%	20,431	19,692	4%
US rate base	20,041	18,598	8%	20,644	18,407	12%
<b>Total RAV and rate base</b>	<b>40,913</b>	<b>39,029</b>	<b>5%</b>	<b>41,075</b>	<b>38,099</b>	<b>8%</b>
NGV and Other	4,458	3,942	13%	4,105	3,351	23%
<b>Total assets</b>	<b>45,371</b>	<b>42,971</b>	<b>6%</b>	<b>45,180</b>	<b>41,450</b>	<b>9%</b>
UK other regulated balances <sup>1</sup>	(160)	(368)		(357)	(302)	
US other regulated balances <sup>2</sup>	1,974	1,613		1,791	1,987	
Other balances	(336)	(514)		(514)	(679)	
<b>Total assets and other balances</b>	<b>46,849</b>	<b>43,702</b>	<b>3,147</b>	<b>46,100</b>	<b>42,456</b>	<b>3,644</b>
Increase in goodwill			—			81
Cash dividends			1,413			892
Adjusted net debt movement			(2,752)			(2,577)
<b>Value added</b>			<b>1,808</b>			<b>2,040</b>

1. Includes totex-related regulatory IOUs of £310 million (2020: £411 million), under-recovered timing balances of £150 million (2020: £24 million over-recovered) and under-recovered legacy balances related to previous price controls of £nil (2020: £78 million).

2. Includes assets for construction work-in-progress of £1,639 million (2020: £1,510 million), other regulatory assets related to timing and other cost deferrals of £806 million (2020: £642 million) and net working capital liabilities of £471 million (2020: £361 million).





BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC  
UTILITY COMMISSION

v.

COLUMBIA GAS OF  
PENNSYLVANIA, INC.

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Docket No. R-2021-3024296

DIRECT TESTIMONY OF

DAVID J. EFFRON

ON BEHALF OF THE

OFFICE OF CONSUMER ADVOCATE

JUNE 16, 2021

DOCKET NO. R-2021-3024296  
COLUMBIA GAS OF PENNSYLVANIA  
DIRECT TESTIMONY OF DAVID J. EFFRON  
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1    **I.       STATEMENT OF QUALIFICATIONS**

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

3    A.       My name is David J. Effron. My address is 12 Pond Path, North Hampton, New  
4           Hampshire.

6    **Q.       What is your present occupation?**

7    A.       I am a consultant specializing in utility regulation.

9    **Q.       Please summarize your professional experience.**

10   A.       My professional career includes over thirty years as a regulatory consultant, two years  
11           as a supervisor of capital investment analysis and controls at Gulf & Western Industries  
12           and two years at Touche Ross & Co. as a consultant and staff auditor. I am a Certified  
13           Public Accountant, and I have served as an instructor in the business program at  
14           Western Connecticut State College.

16   **Q.       What experience do you have in the area of utility rate setting proceedings?**

17   A.       I have analyzed numerous electric, gas, telephone, and water filings in different  
18           jurisdictions. Pursuant to those analyses, I have prepared testimony, assisted attorneys  
19           in case preparation, and provided assistance during settlement negotiations with various  
20           utility companies.

21           I have testified in over two hundred cases before regulatory commissions in  
22           Alabama, Colorado, Connecticut, Florida, Georgia, Illinois, Indiana, Kansas, Kentucky,  
23           Maine, Maryland, Massachusetts, Missouri, Nevada, New Jersey, New York, North

1 Dakota, Ohio, Pennsylvania, Rhode Island, South Carolina, Texas, Vermont, Virginia,  
2 and Washington.

3

4 **Q. Please describe your other work experience.**

5 A. As a supervisor of capital investment analysis at Gulf & Western Industries, I was  
6 responsible for reports and analyses concerning capital spending programs, including  
7 project analysis, formulation of capital budgets, establishment of accounting  
8 procedures, monitoring capital spending and administration of the leasing program. At  
9 Touche Ross & Co., I was an associate consultant in management services for one year  
10 and a staff auditor for one year.

11

12 **Q. Have you earned any distinctions as a Certified Public Accountant?**

13 A. Yes. I received the Gold Charles Waldo Haskins Memorial Award for the highest  
14 scores in the May 1974 certified public accounting examination in New York State.

15

16 **Q. Please describe your educational background.**

17 A. I have a Bachelor's degree in Economics (with distinction) from Dartmouth College  
18 and a Masters of Business Administration Degree from Columbia University.

19

20 **II. PURPOSE OF TESTIMONY**

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

22 A. I am testifying on behalf of the Pennsylvania Office of Consumer Advocate ("OCA").

23

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

2   A.     I have calculated the measures of value (or rate base) and pro forma operating income  
3           under present rates of Columbia Gas of Pennsylvania, Inc. ("Columbia," or "the  
4           Company") in this rate case, based on the adjustments to the Company's position that  
5           I am presenting in this testimony. I have also incorporated the overall rate of return  
6           recommended by Mr. O'Donnell into my calculation of the present revenue  
7           deficiency of the Company. The calculation of the Company's revenue deficiency in  
8           this testimony is based on issues that I have identified. At the time of the preparation  
9           of this testimony, the Company had not responded to all of the OCA's data requests.  
10          I reserve the right to modify or amend my testimony based on responses to those  
11          outstanding data requests.

12

13   **III.   REVENUE REQUIREMENT ISSUES**

14   A.     **SUMMARY**

15   **Q.     What revenue deficiency or excess have you calculated based on the Company's**  
16           **fully projected future test year ("FPFTY") as filed?**

17   A.     Based on the FPFTY consisting of the 12 months ending December 31, 2022, I have  
18           calculated jurisdictional rate base (measures of value) of \$2,596,006,000 and pro forma  
19           jurisdictional operating income under present rates of \$161,664,000. Based on the  
20           overall rate of return of 6.48% recommended by Mr. O'Donnell, the Company  
21           presently has an operating income deficiency of \$6,537,000. This translates into a  
22           revenue deficiency of \$8,903,000 under present rates. This is \$89,375,000 less than the  
23           revenue deficiency of \$98,278,000 presented by the Company in its filing. My

1 calculation of the Company's revenue deficiency is summarized on my Schedule A. I  
2 have also prepared Table I and Table II, which summarize the effect of my adjustments  
3 in the format used by the Commission.  
4

5 **B. MEASURES OF VALUE**

6 **1. PLANT IN SERVICE**

7 **Q. Have you analyzed the Company's forecast of plant in service included in the**  
8 **FPFTY rate base?**

9 A. Yes. The forecasted additions to plant in service by month from December 2020  
10 through December 2022 are shown on Company Exhibit 108, Schedule 1. The  
11 budgeted capital expenditures by activity are shown in the response to OCA Data  
12 Request II-1. Company Witness Brumley also addresses the Company's capital  
13 spending programs for the years 2020 – 2022 in his direct testimony. The Company  
14 is projecting net plant additions (gross plant additions less retirements) of  
15 \$335,340,000 in 2021 and \$324,536,000 in 2022.  
16

17 **Q. How does this compare to net plant additions in recent years?**

18 A. The forecasted plant additions for both 2021 and 2022 are significantly higher than  
19 the net plant additions in recent years. In 2018, the net plant additions were  
20 approximately \$210 million, in 2019 the net plant additions were approximately \$294  
21 million, and in 2020 the net plant additions were approximately \$278 million.  
22

1   **Q.     What accounts for the increased level of plant additions being forecasted for**  
2       **2021 and 2022?**

3   A.     As can be seen in the table on Company Statement No. 7, Page 4, the increase from  
4       2020 to 2021 is related mainly to “Betterment,” which includes mains and services  
5       improvements and major projects. The increase in 2022 relates mainly to plant  
6       additions related to age and condition.

7  
8   **Q.     Should the Company’s forecast of additions to plant in service in 2021 and 2022**  
9       **be modified?**

10  A.     Yes. As noted above, the forecasted plant additions for both 2021 and 2022 are well  
11       in excess of the actual plant additions in recent years. Further, referring to Exhibit  
12       108, Schedule 1, it can be seen that the magnitude of the forecasted net additions to  
13       plant in service in the last quarter of both 2021 and 2022 are well in excess of the net  
14       additions in the earlier months of the year. In both of those years, the forecasted net  
15       additions in the last quarter account for almost one-half of the forecasted net additions  
16       for the whole year. Obviously, we will not know if those forecasts for the final  
17       quarters are accurate before the close of the record in this case.

18  
19  **Q.     Did the Company explain why the rate of additions in the last quarter is so much**  
20       **greater than the rate of additions in the earlier months?**

21  A.     With regard to the forecasted additions in the last months of the FPFTY, the  
22       Company stated that “Plan [sic] additions for the year follow those seen in historical  
23       actuals, adjusted for major projects, etc. that may impact the historical average. Most



1 work is performed during the summer/fall months, making it complete and placed  
2 into service in Q4” (Response to OCA Data Request I-002).

3

4 **Q. Does the pattern of net plant additions in the historic test year (“HTY”) in the**  
5 **present case support the Company’s forecasted pattern of net plant additions in**  
6 **the future test year (“FTY”) and FPFTY?**

7 A. No. The net additions in the last quarter of 2020 were approximately \$81 million.  
8 This accounted for about 29% of the net plant additions for the whole year. So while  
9 the rate of net additions for the last quarter of 2020 was slightly greater than rate of  
10 net additions for 2020 as a whole, the differential is nowhere near as far out of  
11 proportion as what the Company is reflecting in the FTY and FPFTY, the explanation  
12 in the response to OCA Data Request I-002 notwithstanding.

13

14 **Q. What do you recommend?**

15 A. In 2019, the net additions to plant in service were \$294,610,000. In 2020, the net  
16 additions to plant in service were \$277,795,000. The average of the net plant  
17 additions for those two years is \$286,203,000. Given the relatively stable level of  
18 plant additions over this two-year period, I believe that it reasonable to use this two-  
19 year average as an estimate of net plant additions for the FTY and FPFTY.

20 The two-year average is \$49,138,000 less than the net plant additions  
21 forecasted by the Company for the FTY and \$38,334,000 less than the net plant  
22 additions forecasted by the Company for the FPFTY. Therefore, I recommend that

1 the plant in service included by the Company in the 2022 FPFTY rate base be  
2 reduced by \$87,471,000.

3 Consistent with this adjustment to plant, I am also proposing to reduce the  
4 related test year balances of depreciation reserve and accumulated deferred income  
5 taxes. The resulting net reduction to the test year rate base is \$82,165,000 (my  
6 Schedule B-1). The reduction to plant in service also results in a reduction to test  
7 year depreciation expense of \$2,187,000 (my Schedule C-2). I have also adjusted rate  
8 base to reflect a \$1,095,000 correction to the balance of accumulated deferred income  
9 taxes referenced in the Company's response to OCA Data Request I-008 (my  
10 Schedule B).

11

12 **Q. Does your proposed adjustment to the balance of plant in service in the FPFTY**  
13 **impose any risk of under-recovery on the Company?**

14 A. No. Company Witness Kempic addresses the availability of the Distribution System  
15 Improvement Charge ("DSIC") in his Direct Testimony (Columbia Statement No. 1,  
16 page 6). Once the Company's investment in DSIC eligible plant exceeds the  
17 projected balances from the prior rate case, the Company will be able to restart its  
18 DSIC to recover the incremental investment that exceeds the projected test year  
19 balances. Thus, if the Company's forecast of FPFTY plant balances in the present  
20 case is reduced as I am proposing, then the DSIC would "kick in" when those reduced  
21 balances are exceeded. The Company would then be made whole through the  
22 operation of the DSIC.

1           If there is no adjustment to the Company's forecasts and the Company's  
2           actual additions in the FTY and FPFTY are short of its forecasts, the customers will  
3           be paying for the cost of plant that does not exist in FPFTY. On the other hand, if my  
4           adjustment is accepted and the Company's actual additions are in excess of my  
5           proposed plant additions, the Company will be able to recover any such excess  
6           through the DSIC. I believe that it is worth noting that in Columbia's last case, with  
7           regard to a similar proposal made by the OCA, the Commission found that "the  
8           OCA's proposal, that if the Company in fact spends more in investment than its  
9           average spending from actual 2018 through its projection in 2020, the DSIC is  
10          available to recover those additional expenses as necessary, is reasonable and protects  
11          customers from overpaying for plant not in service if the Company's significant  
12          increase in spending does not come to fruition."<sup>1</sup>

13           Accordingly, I believe that my proposed adjustment to the Company's  
14          projection of FPFTY plant is reasonable, and it poses no risk of under-recovery to the  
15          Company.

16  
17      **C.     OPERATING INCOME**

18          **1.     OPERATION AND MAINTENANCE EXPENSE**

19           **a.     Labor Expense**

20      **Q.     What labor expense does the Company include in pro forma FPFTY operation**  
21          **and maintenance expenses?**

22      **A.     The Company includes salaries and wages of \$39,678,000 in FPFTY test year**  
23          **expenses (Columbia Exhibit 104, Schedule 1). This represents an increase of**

---

<sup>1</sup> Columbia Gas of Pennsylvania, Inc, R-2020-3018835, Opinion and Order, February 19, 2021, at 62

1       \$3,294,000 from the actual salaries and wages expense of \$36,384,000 incurred in the  
2       HTY. The adjustments to get from the HTY to the FPFTY include wage increases,  
3       the filling of budgeted vacancies, employee reductions related to the NiSource Next  
4       initiative (“NiNext,” described in Columbia Statement No. 1, at Pages 11-12),  
5       reallocation between expense and capital, and what the Company labels as “Rate  
6       Making Adjustments” and “Other” (Standard Data Request Gas-RR-26).

7

8       **Q. Are you proposing to adjust the Company’s forecast of pro forma FPFTY labor**  
9       **expense?**

10      A. Yes. I am proposing to adjust the number of employees included by the Company in  
11      the FPFTY labor expense. I am also proposing to eliminate the adjustments to labor  
12      expense designated as “Other” in Standard Data Request Gas-RR-26.

13

14      **Q. Please summarize the net changes in the number employees being forecasted by**  
15      **the Company from the HTY to the FPFTY.**

16      A. As of the end of the HTY, November 30, 2020, there were 767 employees (Standard  
17      Data Request Gas-RR-26). The Company is forecasting that the filling of vacancies  
18      existing at that time will result in an increase of 47 employees by the end of the FTY.  
19      This will be partially offset by a decrease of 16 employees due to the NiNext  
20      program. Thus, the Company is forecasting a net increase of 31 employees, from 767  
21      to 798, from the end of the HTY to the end of the FTY. No further change is  
22      forecasted from the end of the FTY to the end of the FPFTY.

23

1   **Q.    Is the increase in the number employees taking place as forecasted by the**  
2       **Company in the FTY?**

3    A.    No. The Company provided the actual number of employees by month through April  
4       2021 in the response to OCA VII-13. As of November 30, 2020 there were 767  
5       employees. This number had decreased to 759 employees as of January 31, 2021, and  
6       then increased to 771 employees as of April 30, 2021. Thus, the number of  
7       employees as of April 30, 2021 was four more than the number of employees as of  
8       November 30, 2020. As such, this increase does not appear to be anything more than  
9       the normal “ebb and flow” in the number of employees that take place from time to  
10      time. For example, even with that slight increase in April 2021, the employee  
11      complement as of April 30 2021 was still lower than it was one year earlier.

12               While there was a small net increase in the number of employees since the end  
13      of the HTY, the increase is not of the magnitude forecasted by the Company.  
14      Therefore, the number of employees used in determining the pro forma FPFTY labor  
15      expense should be adjusted.

16

17   **Q.    How are you proposing to adjust the Company’s forecast of the number of**  
18       **FPFTY employees?**

19    A.    As noted above, the number of employees as of April 30, 2021 was 771. While it is  
20       not clear that this represents a permanent increase in the number of employees since  
21       the end of the HTY, I do not believe that it is unreasonable to use this number as the  
22       normal level of employees for the purpose of determining the pro forma FPFTY labor  
23       expense.

1 Further, Columbia Statement No. 7 at 17 notes that “most recently, Columbia  
2 hired two new Public Affairs Specialists to work with its Manager of Municipal  
3 Affairs to work directly with municipalities to review proposed or passed local public  
4 policies that may impact Columbia’s proposed work.” Based on the Company’s  
5 description, it appears that the activities of these two recently hired employees are  
6 akin to lobbying, which should not be recoverable in the cost of service. The number  
7 of employees as of April 30, 2021, exclusive of the two new Public Affairs  
8 Specialists is 769. This is 29 fewer than the 798 FPFTY employees projected by the  
9 Company. Therefore, I am proposing to reduce the Company’s projected FPFTY  
10 employee complement by 29.

11  
12 **Q. What is the effect of your proposed reduction to the number of FPFTY**  
13 **employees?**

14 A. On my Schedule C-1.1, I have calculated that reducing the FPFTY employee  
15 complement by 29 results in a decrease of \$1,076,000 to labor costs included in pro  
16 forma FPFTY operation and maintenance expenses.

17  
18 **Q. Please describe your elimination of the adjustments to labor expense designated**  
19 **as “Other” on Standard Data Request Gas-RR-26.**

20 A. OCA Data Request I-018, asked the Company to “explain what the ‘Other’  
21 Adjustments in Columns (9) and (16) represent, and provide all documentation and  
22 workpapers supporting those adjustments.” The response gave a general explanation  
23 of the “Other” adjustments, but did not provide any documentation or workpapers

1 supporting those adjustments. As the “Other” adjustments lack any substantive  
2 support, I have eliminated them from pro forma FPFTY labor expense. Elimination  
3 of the “Other” adjustments reduces pro forma labor expense by \$87,000 (my  
4 Schedule C-1.1).

5  
6 **Q. Please summarize your adjustments to pro forma FPFTY labor expense.**

7 A. I have reduced pro forma FPFTY labor expense by \$1,076,000 to eliminate the  
8 addition of 29 employees, and I have reduced pro forma FPFTY labor expense by  
9 \$87,000 to eliminate the Company’s “Other” adjustments, for a total reduction to  
10 labor expense of \$1,163,000. In addition, I have also calculated a \$306,000 decrease  
11 to FPFTY employee benefits expense (my Schedule C-1.1) related to the reduction of  
12 27 employees.

13

14 **b. Incentive Compensation**

15 **Q. Does the FPFTY include incentive compensation expense?**

16 A. Yes. The FPFTY includes \$2,445,000 of incentive compensation (SDR-GAS-RR-  
17 026) in operations and maintenance expense. This represents an increase of 56% over  
18 the \$1,566,000 of normalized incentive compensation expense incurred in the HTY,  
19 (as corrected in the response to I&E Data Request RE-017). This increase takes place  
20 mainly in the FTY, where the forecasted incentive compensation expense increases  
21 from the normalized HTY level of \$1,566,000 to \$2,363,000. Based on the response  
22 to I&E Data Request RE-017, this incentive compensation represents payments to all  
23 classes of employees, not executive bonuses.

1

2 **Q. Was the Company asked to explain how the FTY and FPFTY incentive**  
3 **compensation expense was determined?**

4 A. Yes. I&E Data Request RE-017 asked the Company to “provide supporting  
5 workpapers and detailed calculations used to determine” the incentive compensation  
6 for the HTY, FTY, and FPFTY.

7

8 **Q. Did the Company provide documentation that explained the increased incentive**  
9 **compensation from the HTY to the FTY and FPFTY?**

10 A. No. With regard to the FTY, the Company stated that “This amount was budgeted  
11 based upon the salary and incentive potential percentage for each position. Each  
12 employee has annual eligible earnings that are defined as base wages plus, for  
13 nonexempt employees, overtime wages and shift premiums. The budget estimate is  
14 based upon the eligible earnings of each employee multiplied by their incentive value  
15 at 100% of target. Budgeting at target represents a normalized expected level of  
16 expense for the year” (Response to I&E Data Request RE-017). However, other than  
17 a table showing the breakout of incentive compensation between O&M and capital,  
18 there were no supporting workpapers, and there was no explanation of why the  
19 incentive compensation increased from a normalized level of \$1,566,000 in the HTY  
20 to \$2,363,000 in the FTY.

21

22 **Q. Are you proposing to adjust the incentive compensation included in the total**  
23 **FPFTY labor expense?**



1 A. Yes. Given the lack of documentation to support the increase in incentive  
2 compensation, I believe that it is more reasonable to assume that the ratio of incentive  
3 compensation to payroll expense in the FPFTY will be the same as the ratio of the  
4 normalized incentive compensation to payroll expense in the normalized HTY.

5 In the normalized HTY, the ratio of incentive compensation to payroll  
6 expense was approximately 4.12%. Applying this ratio to the FPFTY payroll expense  
7 of \$39,678,000, the calculated incentive compensation is \$1,635,000. This is  
8 \$810,000 less than the \$2,445,000 of incentive compensation included in the FPFTY  
9 by the Company. I have reflected this adjustment to FPFTY operation and  
10 maintenance expense on my Schedule C-1.

11

12 **c. Stock Rewards**

13 **Q. Are stock rewards expenses included in FPFTY operation and maintenance**  
14 **expenses?**

15 A. Yes. As described in the response to OCA Data Request I-25, Labor Expense  
16 includes \$559,000 of stock rewards expense and the NCSC Shared Services Expense  
17 includes \$2,217,000 of stock rewards expense.

18

19 **Q. Is this expense appropriately includable in the Company's revenue**  
20 **requirement?**

21 A. No. Stock rewards are a form of incentive compensation whose ultimate value is  
22 based solely on the attainment of financial goals by the parent company. Incentive  
23 compensation based solely on the attainment of financial goals, such as earnings,

1 return on equity, or appreciation in the value of common stock of the utility's parent  
2 company should not be recoverable from ratepayers.

3

4 **Q. Why is it inappropriate to include incentive compensation based on appreciation**  
5 **in the value of common stock of the parent company in the utility's revenue**  
6 **requirement?**

7 A. Appreciation in the value of common stock is a shareholder-oriented goal, not a  
8 customer-oriented goal. For example, if all else is equal, higher rates will result in  
9 higher revenues, which in turn will result in higher earnings that increase the value of  
10 common stock. Thus, including such incentive compensation in the revenue  
11 requirement would, in effect, require customers to reward company management on a  
12 contingency basis for getting them to pay higher rates. If the incentive compensation  
13 program is successful in increasing earnings and common stock values, the  
14 shareholders should be happy to reward management accordingly and absorb the cost  
15 of the program. As shareholders are the beneficiaries of increases to common stock  
16 valuations, it should be those shareholders, not customers, who bear the cost of the  
17 stock rewards.

18

19 **Q. What do you recommend?**

20 A. I recommend that \$2,776,000 of stock rewards expense (\$559,000 Columbia expense  
21 plus \$2,217,000 allocated from the parent company) be eliminated from pro forma  
22 test year operation and maintenance expense (my Schedule C-1).

23

1           **d.       Outside Services Expense**

2   **Q.     What level of outside services expense does the Company include in FPFTY**  
3       **operation and maintenance?**

4   A.     The Company includes \$28,437,000 of outside service expense in FPFTY operation  
5       and maintenance (Company Exhibit 104, Schedule 1, Page 2).  
6

7   **Q.     How does this compare to the actual normalized outside services expense**  
8       **incurred in the HTY?**

9   A.     It is significantly higher. The actual normalized outside services expense in HTY was  
10       \$18,737,000. The normalized outside services expense increases by \$8,641,000  
11       (nearly half) to \$27,378,000 in the FTY and then by another \$1,059,000 to  
12       \$28,437,000 in the FPFTY. Outside services expense in the FPFTY is approximately  
13       52% greater than the outside services expenses in the HTY.  
14

15   **Q.     Did the Company provide any direct explanation or quantification of the factors**  
16       **causing the increase in outside services expense from the HTY to the FTY and**  
17       **the FPFTY in its Direct case?**

18   A.     As far as I can determine, it did not.  
19

20   **Q.     Did the Company provide any further explanation of the increases in response to**  
21       **information requests?**

22   A.     Yes. In response to OCA Data Request I-036, the Company summarized “Budget  
23       Increases” from the HTY to the FTY totaling \$8.6 million. There are nine separate

1 activities ranging from \$0.2 million to \$1.7 million. There is no documentation  
2 supporting the amounts shown, no workpapers showing how the amounts were  
3 calculated, or any explanation of how the amounts were developed.

4 In the “OCA I-38” Tab included in the response to OCA Data Request I-037,  
5 the Company briefly described \$1 million of the increase in outside services expenses  
6 from the FTY to the FPFTY as being the result of “increases in various field  
7 operational programs: Cross bores, Field Assembled Risers (Company and Customer  
8 owned), right[t]s of way clearing, and GPS Legacy.” Again, there is no support for  
9 the amount shown.

10  
11 **Q. Was the Company asked to provide any additional support for the expense**  
12 **increases from the HTY to the FTY as shown in the response to OCA Data**  
13 **Request I-036?**

14 A. Yes. OCA Data Request VII-008 asked the Company to provide documentation and  
15 workpapers supporting each “Budget Increase over HTY” in the response to OCA  
16 Data Request I-036. The Company cross referenced its response to I&E-RE-070.

17 The response to I&E-RE-070 shows the actual spending on each of the  
18 activities in the response to OCA Data Request I-036 in the HTY, the budgeted  
19 spending on each of the activities for the FTY, the differences between them, and the  
20 actual spending on each of the activities in the FTY through April 2021. However,  
21 there is no further documentation or explanation of how the budgeted expenses for  
22 the FTY were developed.

1   **Q.    Are you proposing to modify the outside services expense included in the**  
2       **Company’s FPFTY revenue requirement?**

3   A.    Yes. I do not believe that the Company has adequately supported its projected  
4       increases in outside services expense. Therefore, I am proposing to adjust the FPFTY  
5       outside services expense.

6               Company Exhibit No. 4, Schedule 1, Page 2 shows the actual outside services  
7       expense for the HTY and the two preceding years. Referring to this schedule, the  
8       actual outside services expense in the HTY was noticeably lower than the outside  
9       services for the two previous years. Based on Exhibit No. 4, Schedule 3, Page 2 and  
10      the responses to OCA Data Requests I-034 and VII-06, the decrease in the HTY  
11      appears to be due in part to reductions in reconnect services and line location  
12      expenses because of COVID-19 restrictions.

13             Taking the actual outside services expenses in the twelve month periods ended  
14      November 30, 2018 and 2019, and then using the Company’s escalation factors to  
15      escalate the average of those expenses to the HTY to establish a normalized expense  
16      level for the HTY, the result is \$23,469,000 (my Schedule C-1.2). Further escalating  
17      that amount to the FPFTY, the projected expense is \$24,130,000. I recommend that  
18      the Company’s forecasted FPFTY outside services expense be adjusted to reflect this  
19      amount.

20

21   **Q.    What is the effect of your proposed adjustment?**

22   A.    The effect is to reduce the Company’s pro forma test year outside services expense by  
23      \$4,307,000 (my Schedule C-1.3). I would note that even after this adjustment, the

1 outside services expense that I am proposing to include in the Company's FPFTY  
2 revenue requirement is still \$5.4 million (or approximately 29%) greater than the  
3 normalized outside services expense incurred in the HTY.

4

5 **e. Rate Case Expense**

6 **Q. Has the Company included rate case expense in pro forma FPFTY operating**  
7 **expenses?**

8 A. Yes. The Company includes \$1,060,000 of rate case expense in pro forma test year  
9 operation and maintenance expenses. This consists of the estimated cost of the  
10 present rate case normalized over one year (Company Exhibit 4, Schedule 2, Page  
11 27).

12

13 **Q. Are you proposing to modify the pro forma rate case expense included in the**  
14 **Company's revenue requirement?**

15 A. Yes. The Company's last four rate cases before the present case were filed in March  
16 2015, March 2016, March 2018, and April 2020. Based on this experience, I believe  
17 that a normalization period of 1.5 years is more reasonable than the one-year  
18 normalization period used by the Company.<sup>2</sup>

19 Normalizing the estimated cost of the present case over 1.5 years, rather than  
20 one year, results in a reduction of \$353,000 to the annual rate case expense included  
21 in the Company's revenue requirement (my Schedule C-1).

22

---

<sup>2</sup> The average time between the March 2015 case to the present case is calculated as  $((1+2+25/12+11/12)/4)$   
= 1.5

1           **f.       NCSC Expense**

2   **Q.     Does the FPFTY revenue requirement include expenses allocated from NiSource**  
3       **Corporate Services Company (“NCSC”)?**

4   A.     Yes. The FPFTY revenue requirement includes \$76,860,000 of expenses allocated  
5       from NCSC.

6

7   **Q.     How does this compare to the actual NCSC expenses allocated to Columbia Gas**  
8       **of Pennsylvania in the HTY?**

9   A.     It is significantly higher. The actual NCSC expense allocated to the Company in  
10       HTY was \$60,507,000. After elimination of non-recurring and non-recoverable  
11       expenses, the normalized NCSC expense in the HTY was \$58,867,000. The  
12       normalized NCSC expense increases by \$14,639,000 (over 25%) to \$73,507,000 in  
13       the FTY and then by another \$3,353,000 to \$76,860,000 in the FPFTY.

14

15   **Q.     Did the Company provide any direct explanation or quantification of the factors**  
16       **causing the increase in the allocation of NCSC expenses from the HTY to the**  
17       **FTY in its Direct case?**

18   A.     As far as I can determine, it did not.

19

20   **Q.     Did the Company provide a breakdown of the NCSC increases in response to**  
21       **data requests?**

22   A.     In response to OCA Data Request I-037, the Company summarized the factors  
23       causing the increase from the HTY to the FTY. The increase was caused mainly by

1 two factors: the divestiture by NiSource of Columbia Gas of Massachusetts (“CMA”),  
2 \$11.4 million, and “Safety Plan,” \$5.1 million. The NCSC FTY expenses are also  
3 affected by the NiNext program savings and other factors.  
4

5 **Q. Why did the divestiture of CMA cause an increase in NCSC expenses allocated**  
6 **to the Columbia Gas of Pennsylvania?**

7 A. As explained by the Company, as a result of the sale of CMA in 2020 “there was one  
8 less company in which to allocate NCSC costs.” In other words there was one less  
9 affiliate over which to spread the fixed costs incurred by NCSC. The Company  
10 calculated that the share of NCSC costs allocated to Columbia Gas of Pennsylvania  
11 would increase from 13.94% to 16.41%. Applying this increase of 2.47% to total  
12 2019 NCSC expenses of \$461.1 million, the increase in NCSC expenses allocated to  
13 the Company is \$11.4 million as a result of the CMA divestiture.  
14

15 **Q. What are the increased NCSC Safety Plan expenses allocated to the Company in**  
16 **the FTY?**

17 A. The Company states that “increase in safety plan expenses relate to the expansion of  
18 Columbia's Safety Management (SMS) system.” The components of the SMS shown  
19 in the response to OCA Data Request I-037 include: Staffing (\$3.0 million), Picarro  
20 Leak Detection (\$0.6 million), Isometric Drawing (\$0.7 million) and Pipeline and  
21 Hazardous Materials Safety Administration compliance (\$0.8 million). Company  
22 Witness Kempic further describes the expansion of the SMS in Columbia Statement  
23 No. 1.



1

2 **Q. Has the Company justified the increase in the allocation of NCSC expenses as a**  
3 **result of the CMA sale?**

4 A. The response to OCA Data Request I-037 provides no documentation, workpapers, or  
5 other support for the increase in the allocation of NCSC expenses from 13.94% in  
6 2019 to 16.41% in 2021.<sup>3</sup> Further, although the Company stated that “2019  
7 represents the last full year expenses were incurred by Columbia Gas of  
8 Massachusetts,” the increase in question took place from the HTY, the twelve months  
9 ended November 30, 2020, to the FTY, not from 2019 to 2021. In this regard, it is  
10 worth noting that the sale of CMA closed in early October 2020, meaning that the  
11 HTY already included nearly two months post-sale, and any increase in the allocation  
12 ratio from the HTY to the FPFTY should accordingly be less than the increase from  
13 calendar 2019 to calendar 2021. In addition, the Company’s calculation appears to  
14 implicitly assume that there will be no reduction to the total NCSC expenses as a  
15 result of the CMA sale in the two-year period following that sale, an assumption that I  
16 find to be questionable.

17 Finally, there is little evidence that an increase in NCSC costs in the  
18 magnitude forecasted by the Company is actually taking place. The response to OCA  
19 Data Request VII-014 includes actual NCSC expenses by month for each month of  
20 the FTY through April 2021. While the charges in December 2020 were more than  
21 forecasted by the Company, the charges in each month of 2021 were consistently and  
22 significantly below the amounts forecasted by the Company. The average NCSC

---

<sup>3</sup> OCA Data Request VIII-05 asked the Company to provide all documentation and workpapers supporting the effect of the CMA sale on the allocation percentages. The response was circular in nature and provided nothing of substance in addition to the response to OCA Data Request I-037.

1 expense per month budgeted by the Company for the first four months of 2021 is  
2 approximately \$7.0 million (Exhibit No. 104, Schedule No. 1, Page 5). The actual  
3 expense per month for the first four months of 2021 was approximately \$5.4 million,  
4 which is \$1.6 million, or 23%, less.

5  
6 **Q. Assuming it could be established that the sale of CMA does result in an increase**  
7 **in NCSC expenses allocated to the Company, does it follow that such an increase**  
8 **in costs should be included in the Company's revenue requirement and**  
9 **recovered from ratepayers?**

10 A. No. The circumstances of the sale of CMA must be considered.

11 As described by NiSource Inc., in its 2019 Form 10-K Annual Report filed  
12 with the Securities and Exchange Commission:

13 On September 13, 2018, a series of fires and explosions occurred in  
14 Lawrence, Andover and North Andover, Massachusetts related to the delivery  
15 of natural gas by Columbia of Massachusetts (the "Greater Lawrence  
16 Incident"). The Greater Lawrence Incident resulted in one fatality and a  
17 number of injuries, damaged multiple homes and businesses, and caused the  
18 temporary evacuation of significant portions of each municipality.

19  
20 NiSource Inc. 2019 Form 10-K, Page 111

21  
22 Further, as a result of the Greater Lawrence Incident (also referred to as the  
23 Merrimack Valley Incident):

24 On February 26, 2020, [NiSource Inc.] and Columbia of Massachusetts  
25 entered into agreements with the U.S. Attorney's Office to resolve the U.S.  
26 Attorney's Office's investigation relating to the Greater Lawrence Incident.  
27 Columbia of Massachusetts agreed to plead guilty in the United States District  
28 Court for the District of Massachusetts (the "Court") to violating the Natural  
29 Gas Pipeline Safety Act (the "Plea Agreement"), and the Company entered  
30 into a DPA [Deferred Prosecution Agreement].  
31

1 Under the Plea Agreement, which must be approved by the Court, Columbia  
2 of Massachusetts will be subject to the following terms, among others: (i) a  
3 criminal fine in the amount of \$53,030,116 paid within 30 days of sentencing;  
4 (ii) a three year probationary period that will early terminate upon a sale of  
5 Columbia of Massachusetts or a sale of its gas distribution business to a  
6 qualified third-party buyer consistent with certain requirements; (iii)  
7 compliance with each of the NTSB recommendations stemming from the  
8 Greater Lawrence Incident; and (iv) employment of an in-house monitor  
9 during the term of the probationary period.

10  
11 NiSource Inc. 2019 Form 10-K, Page 113  
12

13 On February 26, 2020, NiSource and Columbia of Massachusetts entered into  
14 an Asset Purchase Agreement with Eversource Energy (“Eversource”) for the sale of  
15 CMA to Eversource. The sale was approved by the Massachusetts Department of  
16 Public Utilities on October 7, 2020, and closed on October 9, 2020.

17 The sale by NiSource of CMA to Eversource was the direct result of criminal  
18 liability for the Merrimack Valley Incident. Thus, the increase in the allocation of  
19 NCSC expenses to Columbia Gas of Pennsylvania resulting from the sale of CMA  
20 and consequent loss of scale, if any, originated from the criminal liability for the  
21 Merrimack Valley Incident. In effect, including any increased allocation of NCSC  
22 expenses due to the CMA sale in the Company’s revenue requirement would be  
23 imposing the derivative cost effects of the criminal responsibility for the Merrimack  
24 Valley Incident on customers. In my opinion, this would not be appropriate.  
25

26 **Q. Are the increased NCSC Safety Plan expenses allocated to the Company in the**  
27 **FTY adequately supported?**

28 A. No. There is little support for the increased NCSC Safety Plan expenses. For  
29 example, with regard to staffing, which accounts for approximately 60% of the

1 increase, the Company states that “additional headcount of approximately 60  
2 individuals will be added to provide enhanced ongoing safety training, quality  
3 assurance and quality control training and operator qualification training. These  
4 positions are in the process of being posted, and it is the Company’s intention to fill  
5 them as quickly as possible.” There is no explanation of how the addition of 60  
6 individuals was determined, the assumptions regarding the salaries of those  
7 individuals, or the assignment of the costs to Columbia Gas of Pennsylvania. While  
8 the Company states that is its intention to fill these positions as quickly as possible,  
9 there is no indication of the extent to which these positions are actually being filled,  
10 nearly halfway into the FTY.

11 With regard to the other elements of the increased NCSC Safety Plan  
12 expenses, the support is similarly sparse. There is a description of these other  
13 expense increases and a dollar amount assigned to those increases. However, there is  
14 no documentation or calculations showing how those expense increases were  
15 determined.<sup>4</sup>

16

17 **Q. Did the Company explain the increase in normalized NCSC expense of**  
18 **\$3,353,000 from the FTY to the FPFTY?**

19 **A.** No. There is a brief explanation of part of the increase in the NCSC expense before  
20 normalization from the FTY to the FPFTY. The Company shows that increase as  
21 being \$1,197,000 and presents a brief explanation for \$400,000 of that increase. As

---

<sup>4</sup> OCA Data Request VIII-06 asked the Company to provide all documentation and workpapers supporting each of the “SMS Expenses” comprising the safety plan. The response provided dollar amounts for sub-categories of the categories of SMS expenses shown in the response to OCA Data Request I-037, but there is no support for how those dollar amounts were developed.

1 far as I can determine, the increase of normalized NCSC expenses from \$73,507,000  
2 in the FTY to \$76,860,000 in the FPFTY is not explained.

3

4 **Q. Are you proposing to adjust the NCSC expenses included in the Company's**  
5 **FPFTY revenue requirement?**

6 A. Yes. The Company has not adequately explained or supported the increase in the  
7 actual normalized NCSC expense in the HTY to the projected NCSC expense in the  
8 FPFTY, especially considering the magnitude of the increases being forecasted.

9

10 **Q. What do you recommend?**

11 A. The response to OCA Data Request I-037, Attachment A shows the total NCSC  
12 expenses increasing from \$461.1 million in 2019 to \$483.9 million in 2021. This  
13 translates into an increase of 2.44% per year over this two year period, which does  
14 not seem unreasonable. Therefore, I am proposing to calculate the NCSC expense for  
15 the FPFTY by escalating the actual normalized NCSC expense for the HTY by 2.44%  
16 per year.

17

18 **Q. What is the effect of using your proposed method to project the NCSC expense**  
19 **for the FPFTY?**

20 A. The effect is to reduce the NCSC expense included in FPFTY operation and  
21 maintenance expense by \$14,959,000 (my Schedule C-1.2).

22

1           **g.       Safety Management Systems**

2   **Q.     Did the Company adjust FPFTY expenses for Safety Management System**  
3       **(“SMS”) costs?**

4   A.     Yes. On Exhibit No.104, Schedule 2, Page 19, there is an adjustment of \$250,000 for  
5       SMS expenses in the FPFTY.

6

7   **Q.     Are you proposing to modify that adjustment?**

8   A.     Yes. In OCA Data Request I-44, the Company was asked to provide documentation  
9       supporting this adjustment. The Company provided calculations supporting \$20,000  
10      of this adjustment, which is related to the cost of tags. The remaining \$230,000 was  
11      described as being “used to purchase replacement parts to have on hand in the event  
12      of equipment failure.” There was no documentation or calculations supporting this  
13      \$230,000. Further, based on the Company’s description, it appears that that the cost  
14      of the replacement parts is more properly charged to inventory than to expense.  
15      Accordingly, I am proposing to eliminate this \$230,000 item from pro forma FPFTY  
16      expenses (my Schedule C-1).

17

18           **2.       DEPRECIATION AND AMORTIZATION**

19   **Q.     Have you reflected an adjustment to the FPFTY depreciation expense in your**  
20       **calculation of pro forma operating income under present rates?**

21   A.     Yes. Consistent with my adjustment to FPFTY plant in service, I am proposing to  
22       adjust the Company’s FPFTY depreciation expense. My adjustment to depreciation  
23       expense is shown on my Schedule C-2.

1

2 **Q. Are you proposing any other adjustments to the depreciation and amortization**  
3 **expenses included in the FPFTY revenue requirement?**

4 A. Yes. I am proposing to adjust the plant amortization as shown on Company Exhibit  
5 109, Page 9. My proposed adjustments apply to the amortization of Account 303 –  
6 Miscellaneous Intangible Plant and the amortization of Account 375.71 – Structures  
7 and Improvements – Leased.

8

9 **Q. Please describe your proposed adjustment to the amortization of Account 303 –**  
10 **Miscellaneous Intangible Plant.**

11 A. The balance of Miscellaneous Intangible Plant as of the end of the HTY was \$32.5  
12 million, and the amortization of that plant was \$4.1 million. As of the end of the  
13 FTY, the balance had decreased slightly to \$32.3 million, but the amortization for the  
14 FTY increased to \$5.8 million. For the FPFTY, the forecasted balance is \$41.5  
15 million, and the forecasted amortization is \$8.0 million. Thus, while the plant  
16 balance increases by approximately 28% from the HTY to the FPFTY, the  
17 amortization increases by approximately 95%.

18 OCA Data Request VIII-001 asked the Company to provide all workpapers  
19 supporting the FTY amortization and an explanation of the increase in the  
20 amortization from the HTY to the FTY. OCA Data Request VIII-002 asked the  
21 Company to provide all workpapers supporting the FPFTY amortization and an  
22 explanation of the increase in the amortization from the FTY to the FPFTY.

1           The Company responded to OCA Data Request VIII-001 with a narrative  
2 explanation of factors that could cause the increase in amortization from the HTY to  
3 the FTY. The only numerical support for the FTY amortization was a statement that  
4 the FTY amortization is the average of the estimated amortization of \$4,886,725 for  
5 the December 2020 to November 2021 period and the estimated amortization of  
6 \$6,697,197 for the December 2021 to November 2022 period. There was no support  
7 for the \$4,886,725 or for the \$6,697,197.

8           The Company similarly responded to OCA Data Request VIII-002, with a  
9 generalized description of the FPFTY amortization and a statement that the FPFTY  
10 amortization is the average of the estimated amortization of \$6,697,197 for the  
11 December 2021 to November 2022 period and the estimated amortization of  
12 \$9,359,653 for the December 2022 to December 2023 period.<sup>5</sup> Again, there was no  
13 support for the \$6,697,197 or for the \$9,359,653.

14           Given the magnitude of the increase in the amortization of Miscellaneous  
15 Intangible Plant from the HTY to the FPFTY, especially relative to the increase in the  
16 plant balance, the Company's explanations are not adequate. I have estimated the  
17 FPFTY amortization of Miscellaneous Intangible Plant by beginning with the actual  
18 HTY amortization and assuming that the additions from the HTY to the FPFTY  
19 would be amortized over five years. This method results in annual amortization of  
20 \$5,923,000 (my Schedule C-2). This is \$2,106,000 less than the FPFTY amortization  
21 of \$8,028,000 reflected by the Company. Accordingly, I recommend that the

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<sup>5</sup> The Company did not specify whether the amortization for the "December 2022 to December 2023 period," includes the amortization of intangible plant additions in 2023. If so, this would obviously not be appropriate to include in the determination of FPFTY amortization.



1 Company's FPFTY amortization of Miscellaneous Intangible Plant be reduced by  
2 \$2,106,000.

3

4 **Q. Please describe your proposed adjustment to the amortization of Account 375.71**  
5 **– Structures and Improvements – Leased.**

6 A. Referring to Company Exhibit 109, Page 9, it can be seen that net balance (original  
7 cost less book reserve, representing the remaining net cost of the plant to be  
8 recovered) of Account 375.71 – Structures and Improvements – Leased for the  
9 FPFTY is \$1,440,000. Yet the annual amortization of this net balance is \$2,356,000.  
10 OCA Data Request VIII-004 asked the Company to provide all workpapers  
11 supporting the amortization and to explain why the FPFTY amortization is greater  
12 than "Future Book Accrual" (the original cost less book reserve).

13 The Company responded to OCA Data Request VIII-004 with a general  
14 description of how amortization is calculated and stated that the Account 375.71 –  
15 Structures and Improvements amortization amount of \$2,355,592 in the FPFTY is the  
16 average of the estimated amortization of \$2,281,817 for the December 2021 to  
17 November 2022 period and the estimated amortization of \$2,429,366 for the  
18 December 2022 to December 2023 period. The Company also stated that the future  
19 accruals reflect the end of the test year period recovery and the annual accruals reflect  
20 that annualized amount based on the average. There was no support for the  
21 \$2,281,817 or for the \$2,429,366.

22 The Company's response does not adequately explain why the FPFTY  
23 amortization for this account is greater than the net FPFTY cost of this account

1 remaining to be recovered. I have estimated the FPFTY amortization of Structures  
2 and Improvements – Leased by beginning with the actual HTY amortization and  
3 assuming that the additions from the HTY to the FPFTY would be amortized over  
4 five years. This method results in annual amortization of \$397,000 (my Schedule C-  
5 2). This is \$1,959,000 less than the FPFTY amortization of \$2,356,000 reflected by  
6 the Company. Accordingly, I recommend that the FPFTY amortization of Structures  
7 and Improvements – Leased be reduced by \$1,959,000.

8

9 **Q. Please summarize your proposed adjustments to FPFTY plant amortization.**

10 A. I am proposing to reduce the amortization of Miscellaneous Intangible Plant by  
11 \$2,106,000 and the amortization of Structures and Improvements – Leased by  
12 \$1,959,000. I am proposing a total reduction to FPFTY plant amortization of  
13 \$4,065,000.

14

### 15 **3. TAXES OTHER THAN INCOME TAXES**

16 **Q. Are you proposing to adjust the pro forma FPFTY year taxes other than income**  
17 **taxes?**

18 A. Yes. Consistent with my adjustments to FPFTY labor expense, I am proposing to  
19 adjust payroll taxes. My adjustment to payroll taxes is shown on Schedule C-3.

20

### 21 **4. INCOME TAXES**

22 **Q. Please explain the calculation of your pro forma adjustments to FPFTY income**  
23 **tax expenses.**

1 A. The calculation of my adjustments to income tax expenses is shown on my Schedule  
2 C-4. This schedule shows the adjustments to taxable income from the other  
3 adjustments to operating income that I am proposing. I also calculate the adjustment  
4 to interest expense (the weighted cost of debt times rate base) resulting from my  
5 proposed adjustments to rate base. I apply the effective state income tax rate, after  
6 taking account of the use of net operating loss carry-forwards, to the adjustments to  
7 taxable income to calculate the adjustment to state income tax expense, and I then  
8 apply the federal income tax rate to the adjustments to taxable income net of state  
9 income taxes to calculate the adjustment to federal income tax expense.

10

11 **Q. Does this conclude your direct testimony?**

12 A. Yes.

## RESUME OF DAVID J. EFFRON

### UTILITY REGULATION EXPERIENCE

Assistance to offices representing customer interests in Rhode Island, Maryland, Massachusetts, Illinois, and Texas regarding electric utility restructuring matters.

Presentation of testimony on various utility regulation matters involving electric, gas, telephone, and water utilities in the following jurisdictions: Alabama, Arizona, Colorado, Connecticut, Florida, Georgia, Illinois, Indiana, Kansas, Kentucky, Maine, Maryland, Massachusetts, Missouri, Nevada, New Jersey, New York, North Dakota, Ohio, Pennsylvania, Rhode Island, South Carolina, Texas, Vermont, Virginia, Washington, and FERC.

Assistance to attorneys in preparing discovery, cross-examination, post-hearing briefs, and analysis of orders; provision of technical assistance during settlement negotiations.

### CABLE CONSULTING EXPERIENCE

Assistance to local franchising authorities in financial feasibility reviews, regulation of cable rates, franchise fee audits, and negotiation of franchise agreements.

### OTHER BUSINESS EXPERIENCE

Supervision of capital project analysis, capital budgets, spending reports, leasing program, and special studies; feasibility studies, accounting systems, statistical surveys; audits of publicly held companies in various industries.

### EMPLOYMENT HISTORY

<u>Dates</u>	<u>Company</u>
March 1982 - Present	Berkshire Consulting Services (Self-employed)
January 1977 - February 1982	Georgetown Consulting Group
April 1975 - January 1977	Gulf & Western Industries
February 1973 - March 1975	Touche Ross & Company

### EDUCATION

Columbia University, MBA, 1973  
Dartmouth College, BA Economics, 1968

### HONORS AND AWARDS

Gold Charles Waldo Haskins Memorial Award for the highest scores in the May 1974 Certified Public Accounting Examination in New York State.  
Graduated from Dartmouth College with distinction in the field of Economics

TABLE I  
INCOME SUMMARY  
(\$000)

	<u>Pro Forma Present Rates</u>	<u>Recommended Adjustments</u>	<u>Adjusted Present Rates</u>	<u>Revenue Adjustment</u>	<u>Total Allowable Revenue</u>
Operating Revenue	\$ 661,207	\$ -	\$ 661,207	\$ 8,903	\$ 670,110
Deductions					
O&M Expense	386,081	(24,904)	361,177	101	361,278
Depreciation	109,970	(6,252)	103,718		103,718
Taxes:					
State	1,276	1,888	3,164	528	3,692
Federal	21,688	6,219	27,907	1,738	29,645
Deferred and ITC	-		-		-
Other	<u>3,716</u>	<u>(141)</u>	<u>3,575</u>	<u>-</u>	<u>3,575</u>
Total Deductions	<u>522,731</u>	<u>(23,188)</u>	<u>499,543</u>	<u>2,366</u>	<u>501,909</u>
					-
Net Income Available for Return	<u>\$ 138,476</u>	<u>\$ 23,188</u>	<u>\$ 161,664</u>	<u>\$ 6,537</u>	<u>\$ 168,201</u>
Rate Base					<u>\$ 2,596,006</u>
Return on Rate Base					<u>6.48%</u>

TABLE II  
SUMMARY OF ADJUSTMENTS  
(\$000)

Recommended Adjustment	Exhibit Reference		Rate Base Effect	Revenue Effect	Expense Effect	Depreciation Effect	Effect on Other Taxes	State Tax Effect	Federal Tax Effect
			\$	\$	\$	\$	\$	\$	\$
FPFTY Plant Additions	OCA St.1	Sch. B-1, C-2	(82,165)			(2,187)		131	432
Correction to ADIT Balance	OCA St.1	Sch. B-1	1,095						
Labor Expense	OCA St.1	Sch. C-1, C-3		-	(1,163)		(141)	78	257
Employee Benefits Expense	OCA St.1	Sch. C-1			(810)			49	160
Incentive Compensation	OCA St.1	Sch. C-1			(2,776)			166	548
Stock Rewards	OCA St.1	Sch. C-1			(306)			18	60
Outside Services Expense	OCA St.1	Sch. C-1			(4,307)			258	850
Rate Case Expense	OCA St.1	Sch. C-1			(353)			21	70
NCSC Expense	OCA St.1	Sch. C-1			(14,959)			897	2,953
Safety Management Systems	OCA St.1	Sch. C-1		-	(230)			14	45
Plant Amortization	OCA St.1	Sch. C-2	4,065			(4,065)		244	802
Interest Synchronization	OCA St.1	Sch. C-4						12	41
Total Adjustment			(77,006)	-	(24,904)	(6,252)	(141)	1,888	6,219
Company Rate Base	CPA Exh. 108, Page 3		2,673,012						
Recommended Rate Base			2,596,006						

COLUMBIA GAS OF PENNSYLVANIA, INC.  
REVENUE DEFICIENCY  
(\$000)

	(1) Company Position	Adjustments		Proposed Position
Measures of Value (Rate Base)	\$ 2,673,012	\$ (77,006)	(2)	\$ 2,596,006
Rate of Return	<u>7.88%</u>	<u>-1.40%</u>	(3)	<u>6.48%</u>
Operating Income Requirement	210,633	(42,432)		168,201
Adjusted Operating Income	<u>138,476</u>	<u>23,188</u>	(4)	<u>161,664</u>
Income Deficiency (Excess)	72,157	(65,621)		6,537
Gross Revenue Conversion Factor	<u>1.3620</u>	<u>-</u>	(5)	<u>1.3620</u>
Revenue Deficiency (Excess)	<u>\$ 98,278</u>	<u>\$ (89,375)</u>		<u>\$ 8,903</u>

## Sources:

- (1) CPA Exhibit 102, Schedule 3, Page 3
- (2) Schedule B
- (3) Schedule D
- (4) Schedule C
- (5) CPA Exhibit 102, Schedule 3, Page 5

Revenue		1.0000
Uncollectible Accounts		<u>0.0114</u>
Pre-Tax Income		0.9886
State Income Tax	5.99%	<u>0.0593</u>
Federal Taxable Income		0.9294
Federal Income Tax	21%	<u>0.1952</u>
Net Income		0.7342
Gross Revenue Conversion Factor		<u>1.3620</u>

COLUMBIA GAS OF PENNSYLVANIA, INC.  
MEASURES OF VALUE (RATE BASE)  
(\$000)

	(1) Company Position	Adjustments		Proposed Position
Total Gas Plant	\$3,673,219	\$ (87,471)	(2)	\$3,585,748
Reserve for Accumulated Depreciation	<u>(614,349)</u>	<u>(6,387)</u>	(3)	<u>(607,962)</u>
Net Utility Plant in Service	3,058,870	(81,084)		2,977,786
Working Capital	-			-
Materials and Supplies	1,213			1,213
Prepayments	3,707			3,707
Gas Stored Underground	<u>34,854</u>	<u>-</u>		<u>34,854</u>
Subtotal	39,774	-		39,774
Deduct				
Accumulated Deferred Income Taxes	422,195	(4,079)	(4)	418,116
Customer Deposits	3,456	-		3,456
Customer Advances	<u>(19)</u>	<u>-</u>		<u>(19)</u>
Subtotal	425,632	(4,079)		421,553
Net Measures of Value (Rate Base)	<u>\$2,673,012</u>	<u>\$ (77,006)</u>		<u>\$2,596,006</u>

## Sources:

(1)	CPA Exhibit 108, Page 3	
(2)	Schedule B-1	
(3)	Schedule B-1	(2,322)
	Schedule C-2	<u>(4,065)</u>
	Total Adjustment	<u>(6,387)</u>
(4)	Schedule B-1	(2,984)
	OCA I-8	<u>(1,095)</u>
	Total Adjustment	<u>(4,079)</u>



COLUMBIA GAS OF PENNSYLVANIA, INC.  
PLANT ADDITIONS  
(\$000)

		<u>2021</u>	<u>2022</u>	<u>Total</u>
Average Plant Additions 2019 - 2020	(1)	286,203	286,203	
Plant Additions, per Company	(2)	<u>335,340</u>	<u>324,536</u>	
Adjustment to Plant in Service		(49,138)	(38,334)	\$ (87,471)
Adjustment to Depreciation Reserve	(3)	(614)	(1,708)	(2,322)
Adjustment to ADIT	(4)	(1,897)	(1,087)	<u>(2,984)</u>
Net Rate Base Adjustment				<u>\$ (82,165)</u>

## Sources:

- |     |  |                       |                                   |
|-----|--|-----------------------|-----------------------------------|
| (1) | Plant Additions 2019                                       | 294,610               | Exhibit NMS-3, Docket 20203018835 |
|     | Plant Additions 2020                                       | <u>277,795</u>        | Exhibit NMS-1                     |
|     | Average  | <u><u>286,203</u></u> |                                   |
| (2) | Exhibit 108, Schedule 1                                    |                       |                                   |
| (3) | Depreciation Rate - Schedule C-2                           | 2.50%                 |                                   |
| (4) | CPA Exhibit 108, Schedule 8                                |                       |                                   |
|     | Assumes change in ADIT is proportional to plant adjustment |                       |                                   |

## Schedule C

COLUMBIA GAS OF PENNSYLVANIA, INC.  
OPERATING INCOME  
(\$000)

	(1) Company Position	Adjustments		Proposed Position
Sales Revenue	\$ 659,933			\$ 659,933
Other Operating Revenue	<u>1,274</u>	-		<u>1,274</u>
Operating Revenue	\$ 661,207	\$ -		\$ 661,207
Gas Supply Expense	161,368			161,368
Operation and Maintenance Expense	224,713	(24,904)	(2)	199,809
Depreciation and Amortization	109,970	(6,252)	(3)	103,718
Taxes other than Income Taxes	3,716	(141)	(4)	3,575
State Income Tax Expense	1,276	1,888	(5)	3,164
Federal Income Tax Expense	<u>21,688</u>	<u>6,219</u>	(5)	<u>27,907</u>
				-
Total Operating Expenses	<u>522,731</u>	<u>(23,188)</u>		<u>499,543</u>
Adjusted Operating Income	<u>\$ 138,476</u>	<u>\$ 23,188</u>		<u>\$ 161,664</u>

## Sources:

- (1) CPA Exhibit 102, Schedule 3, Page 3
- (2) Schedule C-1
- (3) Schedule C-2
- (4) Schedule C-3
- (5) Schedule C-4

COLUMBIA GAS OF PENNSYLVANIA, INC.  
 OPERATION AND MAINTENANCE EXPENSE  
 (\$000)

Labor Expense	(1)	\$ (1,163)
Employee Benefits Expense	(1)	(306)
Incentive Compensation	(2)	(810)
Stock Rewards	(3)	(2,776)
Outside Services Expense	(4)	(4,307)
Rate Case Expense	(5)	(353)
NCSC Expense	(6)	(14,959)
Safety Management Systems	(7)	<u>(230)</u>
Total Adjustment to Operation and Maintenance Expense		<u>\$ (24,904)</u>

## Sources:

- (1) Schedule C-1.1
- (2) I&E RE-017-D, SDR GAS-RR-026 1566/38012\*39678-2445
- (3) Response to OCA I-25 (559+2217)
- (4) Schedule C-1.2
- (5) CPA Exhibit 104, Schedule 2, Page 16 1060\*2/3-1060
- (6) Schedule C-1.3
- (7) Response to OCA I-44

COLUMBIA GAS OF PENNSYLVANIA, INC.  
LABOR AND BENEFITS EXPENSE  
(\$000)

Employees April 30, 2021	(1)	771
Public Affairs Specialists	(2)	<u>2</u>
Adjusted Employee Complement April 30, 2021		769
Forecasted FPFTY Employees	(3)	<u>798</u>
Adjustment to Number of Employees		(29)
O&M Labor Expense per Incremental Employee	(4)	<u>\$ 37.097</u>
Adjustment to FPFTY Labor Expense for Employee Complement		\$ (1,076)
"Other" Labor Adjustments	(5)	<u>(87)</u>
Total Adjustment to FPFTY Labor Expense		<u><u>\$ (1,163)</u></u>
Other Employee Benefits Expense per Employee	(5)	\$ 10.54
Adjustment to FPFTY Employees		<u>(29)</u>
Adjustment to Benefits Expense		<u><u>\$ (306)</u></u>

## Sources:

- (1) Response to OCA VII-13
- (2) Columbia Statement No. 7, Page 17
- (3) SDR GAS-RR-026
- (4) SDR GAS-RR-026 (1957-807)/(47-16)
- (5) SDR GAS-RR-026 457-370
- (6) CPA Exhibit 104, Schedule 1, Page 2 8408/798

COLUMBIA GAS OF PENNSYLVANIA, INC.  
OUTSIDE SERVICES EXPENSE  
(\$000)

		Outside Services Expense	(1) Deflator Index to HTY	Escalated Expense
12/17-11/18	(2)	\$ 22,319	0.9632	\$ 23,171
12/18-11/19	(2)	23,300	0.9803	<u>23,768</u>
Average Escalated to HTY				23,469
Escalation to FTY			(3) 1.64%	23,854
Escalation to FPPTY			(3) 1.85%	24,295
Lobbying Expense			(4)	<u>(165)</u>
Normalized FPPTY Outside Services Expense				24,130
FPPTY Outside Services Expense per Company			(5)	<u>28,437</u>
Adjustment to Company Outside Services Expense				<u>\$ (4,307)</u>

## Sources:

- (1) CPA Exhibit 4, Schedule 2, Page 11
- (2) CPA Exhibit 4, Schedule 1, Page 2
- (3) CPA Exhibit 104, Schedule 2, Page 20
- (4) CPA Exhibit 104, Schedule 2, Page 4
- (5) CPA Exhibit 104, Schedule 1, Page 4

COLUMBIA GAS OF PENNSYLVANIA, INC.  
NCSC BENEFITS EXPENSE  
(\$000)

Normalized HTY NCSC Expense	(1)	\$ 58,867
Escalation of NCSC Expense to FTY	(2)	<u>2.44%</u>
FTY NCSC Expense		60,305
Escalation of NCSC Expense to FPFTY	(3)	<u>2.65%</u>
FPFTY NCSC Expense		61,901
Normalized FPFTY NCSC Expense, per Company	(1)	<u>76,860</u>
Adjustment to FPFTY NCSC Expense		<u><u>\$(14,959)</u></u>

## Sources:

- (1) CPA Exhibit 104, Schedule 1, Page 2
- (2) Responses to OCA I-37, Attachment A  $(483.9/461.1)^{(1/2)}-1$
- (3) Annual escalation rate \* 13/12

COLUMBIA GAS OF PENNSYLVANIA, INC.  
DEPRECIATION EXPENSE  
(\$000)

Adjustment to Plant in Service (1) \$ (87,471)

Composite Depreciation Rate (2) 2.50%

Adjustment to Depreciation Expense \$ (2,187)

Adjustment to Plant Amortization:

	(3)	(4)	(5)	(6)	(2)	
	HTY	Adds to	Amort.	Total	Amort	
	<u>Amort.</u>	<u>FPFTY</u>	<u>of Adds</u>	<u>Amort.</u>	<u>per Co.</u>	<u>Adjstmt.</u>
Misc, Intangible Plant	\$4,138	\$ 8,925	\$1,785	\$5,923	\$ 8,028	\$ (2,106)
Struct. & Impr.- Leased	<u>302</u>	<u>474</u>	<u>95</u>	<u>397</u>	<u>2,356</u>	<u>(1,959)</u>
Totals	<u>\$4,439</u>	<u>\$ 9,399</u>	<u>\$1,880</u>	<u>\$6,319</u>	<u>\$10,384</u>	<u>\$ (4,065)</u>

Total Adjustment to Depreciation and Amortization Expense \$ (6,252)

Sources

- (1) Schedule B-1
- (2) CPA Exhibit 105, Page 9
- (3) CPA Exhibit 5, Page 4
- (4) CPA Exhibits 105, Page 9; 5 Page 4
- (5) Additions to FPFTY/5
- (6) HTY Amortization + Amortization of Additions

COLUMBIA GAS OF PENNSYLVANIA, INC.  
TAXES OTHER THAN INCOME TAXES  
(\$000)

Adjustment to FPFTY Payroll	(1)	\$ (1,973)
Payroll Tax Rate	(2)	<u>7.13%</u>
Adjustment to Payroll Taxes		<u>\$ (141)</u>

Sources

- (1) Schedule C-1.1
- (2) CPA Exhibit 106, Page 3



COLUMBIA GAS OF PENNSYLVANIA, INC.  
INCOME TAXES  
(\$000)

## Adjustments to Taxable Income:

Revenue	(1)	\$ -
Operation and Maintenance Expense	(1)	(24,904)
Depreciation and Amortization	(1)	(6,252)
Taxes other than Income Taxes	(1)	(141)
Interest	(2)	<u>(208)</u>
Adjustment to Expenses		<u>(31,504)</u>
Net Adjustment to Taxable Income		31,504
Effective Pennsylvania Income Tax Rate (Net of NOL)		<u>5.99%</u>
Adjustment to Pennsylvania Income Tax		<u>\$ 1,888</u>
Adjustment to Federal Taxable Income		29,616
Federal Income Tax Rate		<u>21%</u>
Net Adjustment to Federal Income Tax		<u>\$ 6,219</u>

## Sources:

(1)	Schedule C		
(2)	Rate Base	2,596,006	Schedule B
	Weighted Debt Cost	<u>1.98%</u>	Schedule D
	Interest Deduction	51,381	
	Company Interest Deduction	<u>51,589</u>	CPA Exhibit 107, Page 16
	Adjustment	<u>(208)</u>	

COLUMBIA GAS OF PENNSYLVANIA, INC.  
RATE OF RETURN  
(\$000)

**Company Position**

	<u>Percent of Total</u>	<u>Cost Rate</u>	<u>Weighted Cost</u>
Long Term Debt	41.77%	4.54%	1.90%
Short Term Debt	3.89%	0.85%	0.03%
Common Equity	<u>54.34%</u>	10.95%	<u>5.95%</u>
Total Capital	<u>100.00%</u>		<u>7.88%</u>

**OCA Position**

	<u>Percent of Total</u>	<u>Cost Rate</u>	<u>Weighted Cost</u>
Long Term Debt	42.12%	4.54%	1.91%
Short Term Debt	7.88%	0.85%	0.07%
Common Equity	<u>50.00%</u>	9.00%	<u>4.50%</u>
Total Capital	<u>100.00%</u>		<u>6.48%</u>

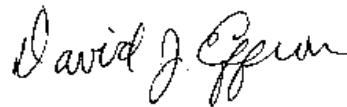
Sources: OCA Statement No. 2, Page 5  
Testimony of Mr. O'Donnell

BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
	:	
v.	:	Docket No. R-2021-3024296
	:	
Columbia Gas of Pennsylvania, Inc.	:	

VERIFICATION

I, David J. Effron, hereby state that the facts set forth in my Direct Testimony, OCA Statement 1, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa. C.S. § 4904 (relating to unsworn falsification to authorities).



DATED: June 16, 2021

Signature: \_\_\_\_\_

\*311182

David J. Effron

Consultant Address: Berkshire Consulting Services  
12 Pond Path  
North Hampton, NH 03862