COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the matter of:	)	
	)	
THE ELECTRONIC APPLICATION OF	)	
COLUMBIA GAS OF KENTUCKY, INC. FOR AN	)	
ADJUSTMENT OF RATES; APPROVAL OF	)	
DEPRECIATION STUDY; APPROVAL OF TARIFF	)	Case No. 2021-00183
REVISIONS; ISSUANCE OF A CERTIFICATE OF	)	
PUBLIC CONVENIENCE AND NECESSITY; AND	)	
OTHER RELIEF	)	
	)	

COLUMBIA GAS OF KENTUCKY, INC.'S
RESPONSES TO COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

FILED: July 21, 2021

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:	)	
	)	
THE ELECTRONIC APPLICATION OF COLUMBIA GAS OF KENTUCKY, INC. FOR AN ADJUSTMENT OF RATES; APPROVAL OF DEPRECIATION STUDY; APPROVAL OF TARIFF REVISIONS; ISSUANCE OF A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY; AND OTHER RELIEF	)	Case No. 2021-00183
	)	

VERIFICATION OF KIMRA COLE

COMMONWEALTH OF KENTUCKY	)
	)
COUNTY OF FAYETTE	)

Kimra Cole, President of Columbia Gas of Kentucky, Inc., being duly sworn, states that she has supervised certain responses to Commission Staff's Request for Information in the above-referenced case and that the matters and things set forth therein are true and accurate to the best of her knowledge, information and belief, formed after reasonable inquiry.

Kimra Cole
Kimra Cole

The foregoing Verification was signed, acknowledged and sworn to before me this 19th day of July, 2021, by Kimra Cole.

Evelyn Long Dunn

Notary Commission No. 600778

Commission expiration: 5-15-2022

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:	)	
	)	
THE ELECTRONIC APPLICATION OF	)	
COLUMBIA GAS OF KENTUCKY, INC. FOR AN	)	
ADJUSTMENT OF RATES; APPROVAL OF	)	
DEPRECIATION STUDY; APPROVAL OF TARIFF	)	Case No. 2021-00183
REVISIONS; ISSUANCE OF A CERTIFICATE OF	)	
PUBLIC CONVENIENCE AND NECESSITY; AND	)	
OTHER RELIEF	)	

VERIFICATION OF DAVID ROY

COMMONWEALTH OF KENTUCKY	)
	)
COUNTY OF FAYETTE	)

David Roy, Vice President of Operations and Construction of Columbia Gas of Kentucky, Inc., being duly sworn, states that he has supervised the preparation of certain responses to Commission Staff's Request for Information in the above-referenced case and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.

David Roy

The foregoing Verification was signed, acknowledged and sworn to before me this 21st day of July, 2021, by David Roy.

Evelyn Long Dunn

Notary Commission No. 600778

Commission expiration: 05-15-2022

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE ELECTRONIC APPLICATION OF COLUMBIA GAS OF KENTUCKY, INC. FOR AN ADJUSTMENT OF RATES; APPROVAL OF DEPRECIATION STUDY; APPROVAL OF TARIFF REVISIONS; ISSUANCE OF A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY; AND OTHER RELIEF

Case No. 2021-00183

VERIFICATION OF JUDY COOPER

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF FAYETTE)

Judy Cooper, Director of Regulatory Affairs of Columbia Gas of Kentucky, Inc., being duly sworn, states that she has supervised the preparation of certain responses to Commission Staff's Request for Information in the above-referenced case and that the matters and things set forth therein are true and accurate to the best of her knowledge, information and belief, formed after reasonable inquiry.

Judy Cooper

Judy Cooper

The foregoing Verification was signed, acknowledged and sworn to before me this 21st day of July, 2021, by Judy Cooper.

Evelyn Long Dunn

Notary Commission No. 600778

Commission expiration: 05-15-2022

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:	)	
	)	
THE ELECTRONIC APPLICATION OF	)	
COLUMBIA GAS OF KENTUCKY, INC. FOR AN	)	
ADJUSTMENT OF RATES; APPROVAL OF	)	
DEPRECIATION STUDY; APPROVAL OF TARIFF	)	Case No. 2021-00183
REVISIONS; ISSUANCE OF A CERTIFICATE OF	)	
PUBLIC CONVENIENCE AND NECESSITY; AND	)	
OTHER RELIEF	)	

VERIFICATION OF CHUN-YI LAI

STATE OF OHIO	)
	)
COUNTY OF FRANKLIN	)

Chun-Yi Lai, Financial Planning Manager for NiSource Corporate Services Company, on behalf of Columbia Gas of Kentucky, Inc., being duly sworn, states that she has supervised the preparation of certain responses to Commission Staff's Request for Information in the above-referenced case and that the matters and things set forth therein are true and accurate to the best of her knowledge, information and belief, formed after reasonable inquiry.

Chun Yi Lai
Chun-Yi Lai

The foregoing Verification was signed, acknowledged and sworn to before me this 16 day of July, 2021, by Chun-Yi Lai.

Courtney Lauren Kitchen

COURTNEY LAUREN KITCHEN - NOTARY PUBLIC
STATE OF OHIO
COMM EXP: NOV 3, 2024

Notary Commission No. RE - 806804

Commission expiration: 11/03/2024

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:	)	
	)	
THE ELECTRONIC APPLICATION OF COLUMBIA GAS OF KENTUCKY, INC. FOR AN ADJUSTMENT OF RATES; APPROVAL OF DEPRECIATION STUDY; APPROVAL OF TARIFF REVISIONS; ISSUANCE OF A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY; AND OTHER RELIEF	)	Case No. 2021-00183

VERIFICATION OF JEFFERY GORE

STATE OF OHIO	)
	)
COUNTY OF FRANKLIN	)

Jeffery Gore, Regulatory Manager for NiSource Corporate Services Company, on behalf of Columbia Gas of Kentucky, Inc., being duly sworn, states that he has supervised the preparation of certain response to Commission Staff's Request for Information in the above-referenced case and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.

Jeffery Gore

The foregoing Verification was signed, acknowledged and sworn to before me this 15 day of July, 2021, by Jeffery Gore.

John R Ryan III
Attorney At Law
Notary Public, State of Ohio
My commission has no expiration date
Sec. 147.03 R.C.

NOTARIAL SEAL STATE OF OHIO

Notary Commission No. N/A

Commission expiration: N/A

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:	)	
	)	
THE ELECTRONIC APPLICATION OF COLUMBIA GAS OF KENTUCKY, INC. FOR AN ADJUSTMENT OF RATES; APPROVAL OF DEPRECIATION STUDY; APPROVAL OF TARIFF REVISIONS; ISSUANCE OF A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY; AND OTHER RELIEF	)	Case No. 2021-00183

VERIFICATION OF JENNIFER HARDING

STATE OF OHIO)
)
COUNTY OF FRANKLIN)

Jennifer Harding, Director, Income Tax Operations for NiSource Corporate Services Company, on behalf of Columbia Gas of Kentucky, Inc., being duly sworn, states that she has supervised the preparation of certain responses to Commission Staff's Request for Information in the above-referenced case and that the matters and things set forth therein are true and accurate to the best of her knowledge, information and belief, formed after reasonable inquiry.

Jennifer Harding

The foregoing Verification was signed, acknowledged and sworn to before me this 26th day of July, 2021, by Jennifer Harding.

NOTARIAL SEAL STATE OF OHIO

JOSEPH M. CLARK, Attorney At Law
NOTARY PUBLIC - STATE OF OHIO
My commission has no expiration date
Sec. 147.03 R.C.

Notary Commission No. n/a

Commission expiration: None

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:	)	
	)	
THE ELECTRONIC APPLICATION OF	)	
COLUMBIA GAS OF KENTUCKY, INC. FOR AN	)	
ADJUSTMENT OF RATES; APPROVAL OF	)	
DEPRECIATION STUDY; APPROVAL OF TARIFF	)	Case No. 2021-00183
REVISIONS; ISSUANCE OF A CERTIFICATE OF	)	
PUBLIC CONVENIENCE AND NECESSITY; AND	)	
OTHER RELIEF	)	
	)	

VERIFICATION OF JOHN SPANOS

COMMONWEALTH OF PENNSYLVANIA	)
	)
COUNTY OF CUMBERLAND	)

John Spanos, President of Gannett Fleming Valuation and Rate Consultants, LLC, on behalf of Columbia Gas of Kentucky, Inc., being duly sworn, states that he has supervised the preparation of certain responses to Commission Staff's Request for Information in the above-referenced case and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.

John J. Spanos

John Spanos

The foregoing Verification was signed, acknowledged and sworn to before me this 16th day of July, 2021, by John Spanos.

Commonwealth of Pennsylvania - Notary Seal
MEGAN LYNN ECKRICH - Notary Public
Cumberland County
My Commission Expires Sep 16, 2023
Commission Number 1264513

Meg Lynn Eckrich

Notary Commission No. 1264513

Commission expiration: Sep. 16, 2023

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:	)	
	)	
THE ELECTRONIC APPLICATION OF	)	
COLUMBIA GAS OF KENTUCKY, INC. FOR AN	)	
ADJUSTMENT OF RATES; APPROVAL OF	)	
DEPRECIATION STUDY; APPROVAL OF TARIFF	)	Case No. 2021-00183
REVISIONS; ISSUANCE OF A CERTIFICATE OF	)	
PUBLIC CONVENIENCE AND NECESSITY; AND	)	
OTHER RELIEF	)	

VERIFICATION OF JUDITH SIEGLER

STATE OF INDIANA	)	
	)	
COUNTY OF LAKE	)	

NOTARY PUBLIC SEAL STATE OF INDIANA
CHRISTINA P. CONIGLIO
Commission Number 0732443
My Commission Expires
March 16, 2029

Judith Siegler, Lead Regulatory Studies Analyst for NiSource Corporate Services Company, on behalf of Columbia Gas of Kentucky, Inc., being duly sworn, states that she has supervised the preparation of certain responses to Commission Staff's Request for Information in the above-referenced case and that the matters and things set forth therein are true and accurate to the best of her knowledge, information and belief, formed after reasonable inquiry.

Judith Siegler

Judith Siegler

The foregoing Verification was signed, acknowledged and sworn to before me this 19th day of July, 2021, by Judith Siegler.

Christina P. Coniglio

Notary Commission No. 0732443

Commission expiration: 03/16/29

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:	)	
	)	
THE ELECTRONIC APPLICATION OF	)	
COLUMBIA GAS OF KENTUCKY, INC. FOR AN	)	
ADJUSTMENT OF RATES; APPROVAL OF	)	
DEPRECIATION STUDY; APPROVAL OF TARIFF	)	Case No. 2021-00183
REVISIONS; ISSUANCE OF A CERTIFICATE OF	)	
PUBLIC CONVENIENCE AND NECESSITY; AND	)	
OTHER RELIEF		

VERIFICATION OF KEVIN JOHNSON

STATE OF OHIO	)
	)
COUNTY OF FRANKLIN	)

Kevin Johnson, Lead Regulatory Analyst for NiSource Corporate Services Company, on behalf of Columbia Gas of Kentucky, Inc., being duly sworn, states that he has supervised the preparation of certain responses to Commission Staff's Request for Information in the above-referenced case and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.

Kevin Johnson

Kevin Johnson

The foregoing Verification was signed, acknowledged and sworn to before me this 15 day of July, 2021, by Kevin Johnson.

LAWRENCE W CULVER
Notary Public State of Ohio
My Comm. Expires June 12, 2022

Notary Commission No. 2017-RE-652468

Commission expiration: 12 June 2022

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:	)	
	)	
THE ELECTRONIC APPLICATION OF	)	
COLUMBIA GAS OF KENTUCKY, INC. FOR AN	)	
ADJUSTMENT OF RATES; APPROVAL OF	)	
DEPRECIATION STUDY; APPROVAL OF TARIFF	)	Case No. 2021-00183
REVISIONS; ISSUANCE OF A CERTIFICATE OF	)	
PUBLIC CONVENIENCE AND NECESSITY; AND	)	
OTHER RELIEF	)	

VERIFICATION OF KIMBERLY CARTELLA

STATE OF OHIO	)
	)
COUNTY OF LORAIN	)

Kimberly Cartella, Director Compensation for NiSource Corporate Services Company, on behalf of Columbia Gas of Kentucky, Inc., being duly sworn, states that she has supervised the preparation of certain responses to Commission Staff's Request for Information in the above-referenced case and that the matters and things set forth therein are true and accurate to the best of her knowledge, information and belief, formed after reasonable inquiry.

Kimberly Cartella

Kimberly Cartella

The foregoing Verification was signed, acknowledged and sworn to before me this 19th day of July, 2021, by Kimberly Cartella.

Emily L. Brady, Attorney at Law
Resident Summit County
Notary Public, State of Ohio
My Commission Has No Expiration Date
Sec 147.03 RC

Notary Commission No. ______________

Commission expiration: NO EXP.

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:	)	
	)	
THE ELECTRONIC APPLICATION OF COLUMBIA GAS OF KENTUCKY, INC. FOR AN ADJUSTMENT OF RATES; APPROVAL OF DEPRECIATION STUDY; APPROVAL OF TARIFF REVISIONS; ISSUANCE OF A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY; AND OTHER RELIEF	)	Case No. 2021-00183

VERIFICATION OF MELISSA BARTOS

STATE OF MASSACHUSETTS	)
	)
COUNTY OF MIDDLESEX	)

Melissa Bartos, Vice President for Concentric Energy Advisors, on behalf of Columbia Gas of Kentucky, Inc., being duly sworn, states that she has supervised the preparation of certain responses to Commission Staff's Request for Information in the above-referenced case and that the matters and things set forth therein are true and accurate to the best of her knowledge, information and belief, formed after reasonable inquiry.

Melissa Fay Bartos

Melissa Bartos

The foregoing Verification was signed, acknowledged and sworn to before me this 21st day of July, 2021, by Melissa Bartos.

Kristina D. Bruce

KRISTINA D. BRUCE
Notary Public
Commonwealth of Massachusetts
My Commission Expires
November 4, 2027

Notary Commission No. ________________

Commission expiration: November 4, 2021

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:	)	
	)	
THE ELECTRONIC APPLICATION OF	)	
COLUMBIA GAS OF KENTUCKY, INC. FOR AN	)	
ADJUSTMENT OF RATES; APPROVAL OF	)	
DEPRECIATION STUDY; APPROVAL OF TARIFF	)	Case No. 2021-00183
REVISIONS; ISSUANCE OF A CERTIFICATE OF	)	
PUBLIC CONVENIENCE AND NECESSITY; AND	)	
OTHER RELIEF	)	

VERIFICATION OF MICHAEL ROZSA

STATE OF OHIO	)
	)
COUNTY OF FRANKLIN	)

Michael Rozsa, Chief Information Officer for NiSource Corporate Services Company, on behalf of Columbia Gas of Kentucky, Inc., being duly sworn, states that he has supervised the preparation of certain responses to Commission Staff's Request for Information in the above-referenced case and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.

Michael Rozsa

Michael Rozsa

The foregoing Verification was signed, acknowledged and sworn to before me this 14th day of July, 2021, by Michael Rozsa.

Rebecca J Vansickle

NOTARIAL SEAL
STATE OF OHIO

REBECCA J VANSICKLE
Notary Public
In and for the State of Ohio
My Commission Expires
November 22, 2024

Notary Commission No. ____________

Commission expiration: 11/22/2024

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:	)	
	)	
THE ELECTRONIC APPLICATION OF COLUMBIA GAS OF KENTUCKY, INC. FOR AN ADJUSTMENT OF RATES; APPROVAL OF DEPRECIATION STUDY; APPROVAL OF TARIFF REVISIONS; ISSUANCE OF A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY; AND OTHER RELIEF	)	Case No. 2021-00183

VERIFICATION OF SUSAN TAYLOR

STATE OF OHIO	)
	)
COUNTY OF FRANKLIN	)

Susan Taylor, Director of Financial Planning for NiSource Corporate Services Company, on behalf of Columbia Gas of Kentucky, Inc., being duly sworn, states that she has supervised the preparation of certain responses to Commission Staff's Request for Information in the above-referenced case and that the matters and things set forth therein are true and accurate to the best of her knowledge, information and belief, formed after reasonable inquiry.

Susan M. Taylor

Susan Taylor

The foregoing Verification was signed, acknowledged and sworn to before me this 2th day of July, 2021, by Susan Taylor.

NOTARIAL SEAL STATE OF OHIO

JOSEPH M. CLARK, Attorney At Law
NOTARY PUBLIC - STATE OF OHIO
My commission has no expiration date
Sec. 147.03 R.C.

Notary Commission No. n/a

Commission expiration: none

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:	)	
	)	
THE ELECTRONIC APPLICATION OF COLUMBIA GAS OF KENTUCKY, INC. FOR AN ADJUSTMENT OF RATES; APPROVAL OF DEPRECIATION STUDY; APPROVAL OF TARIFF REVISIONS; ISSUANCE OF A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY; AND OTHER RELIEF	))))))	Case No. 2021-00183

VERIFICATION OF SUZANNE K. SURFACE

STATE OF OHIO)
)
COUNTY OF FRANKLIN)

Suzanne K. Surface, Senior Vice President for NiSource Corporate Services Company, on behalf of Columbia Gas of Kentucky, Inc., being duly sworn, states that she has supervised the preparation of certain responses to Commission Staff's Request for Information in the above-referenced case and that the matters and things set forth therein are true and accurate to the best of her knowledge, information and belief, formed after reasonable inquiry.

Suzanne K. Surface
Suzanne K. Surface

The foregoing Verification was signed, acknowledged and sworn to before me this 21st day of July, 2021, by Suzanne K. Surface.

Joseph M. Clark

Notary Commission No. n/a

Commission expiration: none

NOTARIAL SEAL STATE OF OHIO

JOSEPH M. CLARK, Attorney At Law
NOTARY PUBLIC - STATE OF OHIO
My commission has no expiration date
Sec. 147.03 R.C

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE ELECTRONIC APPLICATION OF COLUMBIA GAS OF KENTUCKY, INC. FOR AN ADJUSTMENT OF RATES; APPROVAL OF DEPRECIATION STUDY; APPROVAL OF TARIFF REVISIONS; ISSUANCE OF A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY; AND OTHER RELIEF) Case No. 2021-00183

VERIFICATION OF VINCENT REA

STATE OF NORTH CAROLINA)
)
COUNTY OF MOORE)

Vincent Rea, Managing Director of Regulatory Finance Associates, LLC, on behalf of Columbia Gas of Kentucky, Inc., being duly sworn, states that he has supervised the preparation of certain responses to Commission Staff's Request for Information in the above-referenced case and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.

Vincent Rea

The foregoing Verification was signed, acknowledged and sworn to before me this 16 day of July, 2021, by Vincent Rea.

Sanjeev Bhuta

Notary Commission No. 201826100005

Commission expiration: 9/12/2023

Sanjeev Bhuta Notary Public Moore County, North Carolina My Commission Expires 09/12/2023

**COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S FIRST REQUEST FOR INFORMATION
DATED JULY 7, 2021**

Refer to the Application, Tab 35, the table listing the major construction projects in Columbia Kentucky's forecasted capital budget. State whether Columbia Kentucky used the estimated end dates therein as the in service dates for those major construction projects for the purpose of projecting rate base in the forecast period. If not, explain in detail why it did not use those dates.

Response:

The plant in service projection for the 2022 calendar year (forecasted period) was not prepared using the specific in-service dates as noted in Application, Tab 35.

As noted in the testimony of Columbia witness Gore (Page 8), the intangible IT investments in Gas Plant Account 303 were prepared using a project by project review of an updated IT project plan.

For the remaining tangible plant additions, the company used a historic analysis of in-service additions to estimate the movement from Construction Work in Progress (Account 107) into plant in service (Accounts 101 and 106). The in-service amounts by month for the forecasted test year is as follows:

2022 - In-Service Curve

January	2.6%
February	6.4%
March	6.9%
April	5.4%
May	4.9%
June	5.5%
July	6.2%
August	9.0%
September	6.6%
October	10.6%
November	16.5%
December	19.4%

Using this curve, 46.5% of the tangible capital additions are placed into service in the last quarter of the forecast period. This methodology was used for all the forecasted test year capital investment regardless of the estimated timelines. This methodology indirectly allows for the timing of large projects which require multi months to complete.

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Application, Tab 36, the table listing the smaller projects in Columbia Kentucky's forecasted capital budget. Explain how Columbia Kentucky projected the in service dates for the capital spending reflected in that tab for the purpose of calculating additions during the forecast period.

Response:

Refer to Columbia's Response to Staff's Second Set of Requests for Information, No. 1.

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S FIRST REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Application, Volume 8, Tab 79, page 5 of 7. Provide support for the projected outstanding short-term debt balances.

Response:

Please refer to KY PSC Case No. 2021-00183, Staff 2-3, Attachment A for the requested information.

ATTACHMENTS
ARE EXCEL
SPREADSHEETS
AND UPLOADED
SEPARATELY

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S FIRST REQUEST FOR INFORMATION
DATED JULY 7, 2021

Provide support for the short-term forecasted interest rate of 1.40 percent.

Response:

Please refer to KY PSC Case No. 2021-00183, Staff 2-4, Attachment A for the short-term interest rate support.

Short-Term Debt Borrowing Rate

	12/31/21	3/31/22	6/30/22	9/30/22	12/31/22	Average
1 Month LIBOR Forward Rate (1)	0.2614%	0.2118%	0.2552%	0.3342%	0.5241%	0.3173%
Revolver Eurodollar BBB+ Spread (2)	1.0750%	1.0750%	1.0750%	1.0750%	1.0750%	1.0750%
Short-Term Borrowing Rate	1.3364%	1.2868%	1.3302%	1.4092%	1.5991%	1.3923%
Short-Term Borrowing Rate - Rounded	1.30%	1.30%	1.30%	1.40%	1.60%	1.40%

(1) Bloomberg data as of March 29, 2021
(2) Pricing grid from current revolving credit facility agreement

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Application, Tab 82, page 42 of 94, Schedule M-2.3, page 1 of 21, Annualized Test Year Revenues at Proposed Rates for the 12 Months Ended December 31, 2022. a. Explain how the amount of $460,638 listed for Forfeited Discounts was derived and provide the underlying data used to arrive at that amount. b. Provide the amount of the $460,638 that is attributable to residential customers and the underlying data used to arrive at that amount.

Response:

a. Refer to Attachment KLJ-RDES-2 of Company witness Kevin Johnson. Test year forfeited discounts of $390,078 shown on line two of Attachment KLJ-RDES-2 is the amount forecasted in the Company's most recent budget for the year 2022. Lines 4 through 24 show the revenue forecasted in the Company's most recent budget for the year 2022 that is subject to late payment penalties. $146,292,960 on line 25 is a sum of the test year revenue. Line 26 divides line 2 by line 25 to show the ratio of test year forfeited discounts to test year revenue (.002666414 = $390,078 / $146,292,960). Lines 28 through 38 show the revenue at proposed rates by rate schedule as shown in Attachment KLJ-RDES-1, Page 1 that is subject to late payment penalties. $172,755,664 on line 39 is a sum of the revenue at proposed rates. Line 26 (ratio of test year forfeited discounts to test year revenue) is multiplied by line 39 (sum of the revenue at proposed rates) to produce the $460,638 of forfeited associated with revenue at proposed rates ($460,638 = .002666414 x $172,755,664).

b. Attachment KLJ-ACOS-3, Page 2 of 130, Line 3, column E shows total proposed revenues for the GS-residential rate class of $112,177,008. The amount is the sum of $101,822,303 proposed base revenue for sales customers plus $747,086 other gas department revenue plus $9,311,302 proposed Choice Transportation base revenue plus $296,317 proposed forfeited discounts revenue.

   $296,317 proposed forfeited discounts assigned to the GS-Residential class was calculated as follows:

   GS-Residential proposed fortified discounts = ((GSR/GTR residential proposed base revenue + G1R residential proposed base revenue) / Total proposed base revenue) x Total Company proposed forfeited discounts revenue.

   $296,317 = (($111,127,535 + $4,821) / $172,760,485) x $460,638

KY PSC Case No. 2021-00183
Response to Staff's Data Request Set Two No. 6
Respondent: Kimra Cole

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Direct Testimony of Kimra H. Cole, page 9, lines 10–12. a. Provide the number of customers on payment plans and the associated total dollar amount due from those customers as a results of the COVID-19 pandemic. b. Provide the monthly number of disconnections due to nonpayment since the moratorium was lifted.

Response:

a. Since the onset of the COVID-19 pandemic in March of 2020, 14,415 Columbia customers enrolled in payment plans accounting for $3,019,208.68

b. The number of monthly disconnections due to non-payment since the moratorium was lifted are as follows:

December 2020	4
January 2021	0
February 2021	152
March 2021	721
April 2021	575

May 2021	721
June 2021	515

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Direct Testimony of David A. Roy (Roy Testimony), page 5. Provide the location of this remaining bare steel and cast or wrought iron pipe, describe its condition, and when is it likely to be replaced.

Response:

As stated on page 5 of the Direct Testimony of David A. Roy, as of the end of 2020, there was approximately 321 miles of bare steel main and approximately 4 miles of cast or wrought iron remaining in the Columbia system. These facilities are located interspersed throughout Columbia's service territory. The condition of these facilities vary depending on many different physical and environmental factors and as a result it is impossible to provide in detail. Columbia plans on having all known cast/wrought iron replaced by the end of 2022 and all known bare steel by the end of 2037 in conjunction with the approved SMRP. The replacement of these facilities was specified at the top of page 11 in the Direct Testimony of David A. Roy.

KY PSC Case No. 2021-00183
Response to Staff's Data Request Set Two No. 8
Respondent: David Roy

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Roy Testimony, page 50, lines 7–8. Provide the analysis used to assess various products and provide support for the selection of Uptime MRP.

Response:

In September of 2019, Columbia drafted a request for proposal for the implementation of a probabilistic risk assessment ("PRA") model that would be used in conjunction with DIMP. The new tool would generate a PRA score that could be fed into a replacement prioritization tool. Three vendors provided responses to this request. The proposals were graded on pricing, ability to meet technical requirements of the risk model, and ability to meet IT technical requirements. The proposal submitted by DNV-GL was the highest overall scoring proposal and was chosen (DNV-GL is the vendor who owns Uptime MRP). See the attached presentation, CONFIDENTIAL KY PSC Case No. 2021-00183, Staff 2-08, Attachment A for the analysis.

ATTACHMENT FILED UNDER SEAL PURSUANT TO A MOTION FOR CONFIDENTIAL TREATMENT

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Roy Testimony, page 35, line 1. a. Provide any financial analysis performed to support the cost of the proposed Picarro pilot. b. If Columbia Kentucky determines to move forward with this leak survey technology, explain how the cost and benefits will be analyzed to support the decision to utilize this technology

Response:

a.) A detailed breakdown of the $300,000 proposed expenditure is shown below:

1. **Unit – $75,000**...Will be rented from Columbia Gas of Ohio for use in Kentucky; Cost of unit is $1.2M new. Spread over its 5-year useful life, cost to rent unit would be $20,000 a month. Additionally, Picarro annual application costs are $60,000 a year. Three months of this cost is $15,000
2. **Driver - ~$22,000**…Costs for 3 months of individual driving the vehicle
3. **Analyst – ~$13,000**...Cost for 3 months of individual doing analytics.
4. **Indication Investigation - ~$40,000**…These costs involve investigating the various leak indications found from data collected during the field driving

surveys. It's an approximate cost based on similar investigative work in other Columbia affiliates.

5. **Leak Repair – ~$150,000**…Based on Columbia Gas of Ohio leak findings and expected condition of facilities in Kentucky.
6. **Total O&M Costs - ~$300,000**

b.) The Picarro equipment has the potential to significantly advance the standard approach used today to programmatically identify leakage on a gas distribution system. However, there are pros and cons that need to be evaluated to determine whether it would be a good fit for use with Columbia's system. Columbia proposed the pilot program with the involvement of Commission Staff so both parties could collaboratively assess the products viability to use as a substitute for traditional leak survey methods amongst other things. Columbia believes that Staff's engagement is important as adoption of this equipment is a significant departure from current tools and methods. To that end, should the pilot project be approved, Columbia would work with Commission Staff to jointly develop evaluation and decision protocol used to assess the equipment. The results would be shared to both parties. Should Columbia believe that it would be in its customers best interest to procure the Picarro equipment, Columbia would request to purchase the equipment in a future SMRP or Rate Case filing.

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Roy Testimony, page 35, line 3. Confirm that Columbia Kentucky will provide results of the Picarro pilot with the Commission's Pipeline Safety Staff to ensure all requirements of 49 C.F.R. Subpart M 192.721 are met.

Response:

Columbia would share the results of the Picarro pilot with the Commission's Pipeline Safety Staff. Please see Columbia's Response to Staff's Request for Information Set Two No. 9.

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Roy Testimony, page 29, line 10. Provide when Columbia Kentucky plans to include the costs of the Cross Bore program into the budget.

Response:

Columbia is ramping up the program in the last half of 2021 with a spend of $500,000 and plans to include the $1.3 million for the full program in a budget that will be developed late in the summer of 2021 and into the early fall of 2021.

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Roy Testimony, page 35, line 13. If approved, explain whether Columbia Kentucky would consider allowing the training facility to be utilized by other gas utilities, such as Kentucky municipal gas systems, for much needed training purposes when Columbia Kentucky is not using the facility.

Response:

Columbia would typically have no problem allowing the training facility to be utilized by other gas utilities like Kentucky municipal gas systems when Columbia is not using the facility; however, under the current proposal the inside labs and classrooms would be interspersed throughout a large section of Columbia's headquarters that includes all local operating employees and leadership, as well as, a storeroom and equipment area. There is no way to seal these areas off from one another so that visitors would not be disruptive to business.

That being said, a stand-alone training facility could accomplish the requested question and would likely bolster the capability of all small/independent operators throughout the state. As mentioned in the testimony of David A. Roy, Page 38, rows 5-9, other Columbia companies have recently constructed facilities to support local training needs. The most recent facility was constructed in Virginia in 2017. At that time, the total construction costs were just over $11 million. This includes the land, building, all labs, outside piping & training facilities and all furnishings. Although, this is a substantial increase from Columbia's current request, it is worth considering when the incremental costs could support the substantial need within the State for modern pipeline training programs. Upon the request of the Commission, Columbia could perform an analysis to estimate the cost of such a stand-alone facility, utilizing the Virginia facility as a model.

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S FIRST REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Roy Testimony, page 51, line 1, through page 52, line 9, regarding the proposed addition of the replacement of first generation pipe to the Safety Modification and Replacement Program Rider (SMRP). a. Explain whether the replacement of first generation pipe would be incidental to larger SMRP projects or whether it would be a separate, distinct project. b. For the past five calendar years, provide the amount spent replacing first generation pipe. c. For the next ten calendar years, provide the projected amount that will be spent replacing first generation pipe.

Response:

a. Generally, the majority of all first generation plastic pipe to be replaced and included in the SMRP would be separate, distinct projects. These projects would only be included if they have higher risk scores than other bare steel projects.
b. See KY PSC Case No 2021-00183, Staff 2-13, Attachment A. First generation plastic pipe is also retired in isolated segments as part of a larger bare steel or cast iron replacement project. Those costs are not tracked precisely to the cost of the first generation plastic pipe; rather, to the project as a whole.

c. It’s impossible to predict the projected costs of replacing first generation plastic pipe over the next ten years. First generation plastic pipe projects would only be selected if they have a higher risk score than that of bare steel.

Columbia Gas of Kentucky, Inc
KY PSC Case No 2021-00183
Amount spent replacing first generation
plastic main for Years 2016 - 2020

Line No	In Service Year	Amount Spent (dollars)
1	2016	100,775
2	2017	420,931
3	2018	226,289
4	2019	579,232
5	2020	234,781

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Roy Testimony, page 52, line 16. Confirm that the unapproved rider costs proposed in the 2020-00327 SMRP involving the modifications to be made to the DE transmission line are included in this case, and if so, provide where those costs are included in the 2021-00183 filing.

Response:

The DE transmission line modification are capital additions in Case No. 2021-00183. The investments are included in Gas Plant Account 376 within the plant details of rate base and reflect investments of $10,000,000 in calendar year 2021 and $7,000,000 in 2022 (forecast year).

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Direct Testimony of Judy M. Cooper (Cooper Testimony), page 4, line 16, through page 5, line 3, regarding the modification of the Tax Act Adjustment Factor (TAAF).

a. List each NiSource, Gas Distribution Group Inc. subsidiary that currently utilizes a rider similar to Columbia Kentucky's proposed TAAF.

b. List the jurisdictions in which a NiSource, Gas Distribution Group Inc. (NiSource) subsidiary's application to implement a rider similar to Columbia Kentucky's proposed TAAF was denied, and provide the most recent Order from the state's utility regulatory commission denying the requested rider.

c. List the jurisdictions in which a NiSource subsidiary's application to implement a rider similar to Columbia Kentucky's proposed TAAF was granted and provide the most recent Order from the state's utility regulatory commission granting the requested rider.

Response:

a. Currently, Columbia Gas of Pennsylvania, Inc. utilizes a State Tax Adjustment ("STAS") rider[1] similar to the Columbia's proposed TAAF. The STAS provides for the automatic adjustment of rates for changes in state taxes, including the Pennsylvania Corporate Net Income Tax, Capital Stock Tax, Gross Receipts Tax and Public Utility Realty Tax. Pursuant to Section 69.52, a utility which has a State tax adjustment surcharge or gross receipts tax rider shall maintain its surcharge and rider rates at 0% unless there has been a change in the applicable tax rates. Procedurally under Section 69.52 Exhibit A, every public utility which has been subjected to new or increased taxes enacted by the General Assembly shall compute the surcharge as prescribed by the Commission and submit the computation to this Commission. Additionally, the following NiSource Gas Distribution Group Inc. (NGD) subsidiaries have submitted a similar rider in their most recent rate case applications.

- Columbia Gas of Pennsylvania, Inc. (Federal Tax Reform)
- Columbia Gas of Maryland, Inc. (Federal & State Tax Reform)
- Columbia Gas of Ohio, Inc. (Federal & State Tax Reform)

b. There are no jurisdictions in which a NGD subsidiary's application to implement a similar rider has been denied.

[1] 52 Pa. Code § 69.51 - § 69

c. There are no jurisdictions in which a NGD subsidiary's application to implement a similar rider has been granted.

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Cooper Testimony, page 5, line 10, through page 6, line 3, regarding the modification of Gas Quality Standards

a. Explain whether Columbia Kentucky has had issues in the last five years with any impurities from gas it has received from its suppliers. If so, identify those impurity issues.

b. State whether Columbia Kentucky's suppliers have been notified of the revisions to the Gas Quality Standards. If so, explain how they were notified.

Response:

a. No, Columbia has not had any issues with impurities from gas received in the last five years. The upgraded standards are proposed to position Columbia to be able to accept Renewable Natural Gas ("RNG") and Columbia has not received any RNG in the last five years.
b. Columbia's suppliers were not notified of the proposed changes because none of the suppliers are supplying RNG into Columbia's system.

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Direct Testimony of Kevin L. Johnson (Johnson Testimony), page 31, lines 4–10. Provide support analysis for the proposed revenue allocation.

Response:

As mentioned on Page 31, Line 5, of Johnson Testimony, Attachment KLJ-RDES-1, Page 4, Line 17 reflects the proposed base rate revenue allocation percent to each rate class. The Average ACOS study (Attachment KLJ-ACOS-3 to Johnson Testimony) was used to determine the current rates of return by rate class. The Proposed Unitized Return (Attachment KLJ-RDES-1, Page 4, Line 4) was then adjusted for each class to gradually move each class closer to parity based on the Average study. Table 3 on Page 33 of Johnson Testimony shows the movement towards parity for each rate class. Also, as noted in Johnson Testimony, in the interest of gradualism, the Company limited the increase in delivery service revenue requirement for any of the rate classes to no more than 1% above the total company increase of 27.95%. Table 2 on Page 32 of Johnson Testimony shows the percentage increase in delivery charge revenue for each rate class being no more than 1% above the total company 27.95% increase. Staff 2-018 further discusses gradualism and the company not increasing more than 1% above the total company increase.

**COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021**

Refer to the Johnson Testimony, page 32, lines 9–12. Provide support analysis to the decision that the revenue requirement for any of the rate classes would be limited to no more than 1.0 percent above the total company increase of 27.95 percent.

Response:

While there is no hard and fast rule with respect to applying the concept of gradualism in developing a revenue distribution, typically an increase of 1.5 to 2.0 times the system average increase is considered a maximum range to still be consistent with the concept of gradualism. However, in consideration of a gradual movement toward parity in the unitized return for each rate class as a result of the Company's allocation of revenue requirement among the rate classes even though the Company has set a limited to no more than 1.0 percent above the total company increase for any one rate class, the Company's rate design proposal is just and reasonable and will not be unduly discriminatory. Limiting the increase to no more than 1.0 percent is also consistent with Columbia Kentucky's approach in the 2016 Rate Case.

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Johnson Testimony, page 35, Table 4. a. For the GSO/GTO/GDS rate classes, explain why Columbia Kentucky proposes to increase the customer charge based upon an across the board estimate and not based upon the cost of service study (COSS) estimate, especially since the across the board charge is greater than the COSS estimate. b. For the IUS rate class, explain why Columbia Kentucky proposes to increase the customer charge based upon an across the board estimate and not keep the customer charge the same since the rate class is already being charged more than its cost to serve.

Response:

Columbia's proposed increase in the Customer Charge keeps its fixed cost recovery proportion the same as currently billed for each rate class.

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Johnson Testimony, page 35, lines 10–13, and page 36, line 1. Provide the analysis supporting the 55 percent recovery through the fixed delivery charges for the GRS/GTR rate schedule for the current and proposed rates

Response:

Information related to the GSR/GTR rate design calculation is included on Attachment KLJ-RDES-1 Page 5 in Witness Johnson's Testimony.

KY PSC Case No. 2021-00183, Staff 2-20, Attachment A contains an additional calculation showing how the 55 percent of current and proposed fixed charges were determined. Please refer to Line 5 for the Current Revenue – Fixed Portion of Bill % and Line 14 for the Proposed Revenue – Fixed Portion of Bill % (both ~ 55%).

It should be noted that the Current Customer Charge Revenue (Line 1) and Current SMRP Rider (Line 2) represent $22.63 in fixed charges on the GSR/GTR customer current bill (55%). The Company is requesting the proposed revenue fixed portion of the bill for the GRS/GTR customer class remain consistent at 55%.

ATTACHMENTS
ARE EXCEL
SPREADSHEETS
AND UPLOADED
SEPARATELY

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Johnson Testimony, Exhibit KLJ-ACOS-3, page 51 of 129. Also refer to Case No. 2016-001622 (2016 Rate Case), Direct Testimony of Chad Notestone, Attachment CEN-3, page 51 of 129. In the 2016 Rate Case, the minimum system mains allocation was 64.825 percent customer and 35.175 percent demand whereas the same allocation percentages have been updated to be 75.386 percent and 24.614 percent. Explain why the customer component increased more than 10 percentage points, or by 16 percent.

Response:

KY PSC Case No. 2021-00183, Staff 2-21, Attachment A ("Attachment A") presents a side-by-side comparison of Columbia Kentucky's minimum system study as prepared in the current rate case and the 2016 Rate Case.

As noted in Attachment KLJ-ACOS-5 to the Direct Testimony of Kevin Johnson, plant records were used as the basis for the minimum system study. The concept is based on the assumption that in order for a customer to obtain service, mains of at least the most common, minimum size in the distribution system must be present. That portion of the Mains Account investment is considered customer-related and is computed by multiplying the total pipe quantity in the system by the cost per foot for the most prevalent size of mains, that being two inch.

In analyzing the 2016 results for this data response, it has been discovered that both the "Total All Pipe" footage and amounts are incorrect for the 2016 2" minimum system calculation. The 2016 amounts included non-pipe costs (ie. costs included in Account 376 other than the cost of pipe such as labor, anodes, valves, etc.) In addition, a quantity of non-pipe assets in Account 376 were added to the quantity of pipe footage. Therefore, Columbia has also provided a corrected 2" minimum system calculation in Attachment A using 2016 pipe footage and pipe cost.

Comparing 2021 to the corrected 2016, total pipe per plant records increased 124,833 feet (14,002,869 –13,878,036) as shown on Line 3 of Attachment A, an increase of 0.90%. This shows that as old steel and cast iron pipe at various diameters and pressure are replaced by 2" plastic pipe at higher pressures, a larger percentage of Columbia's distribution is made up of 2" pipe. This is reflected in the comparison of the cost of 2" pipe as compared to the total cost of all pipe which also increased from 2016 to present (Current - $78,444,502 / $276,336,418 = 28.39% vs. 2016 (Corrected) – $45,155,907 / $172,920,744 = 26.11%). This results in a Unit Cost (Line 6 of Attachment A) increase of $5.67 (Current - $14.87 vs. 2016 – $9.20).

It is important to note that although the Customer component of mains has increased since 2016, the amount of increase is by a factor of .0152 (.75386 - .73865) or 2% using the corrected 2016 data, not by an increase of more than 10 percentage points, or by 16%.

ATTACHMENTS ARE EXCEL SPREADSHEETS AND UPLOADED SEPARATELY

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Johnson Testimony, Exhibit KLJ-ACOS-5. a. Provide the supporting minimum system study used in the factor development. b. Explain whether the zero-intercept method was analyzed for determining the customer and demand component of the mains.

Response:

a. As noted in Attachment KLJ-ACOS-5, the company's plant records for distribution mains were used as the basis for the minimum system study. These plant records are included in KY PSC Case No. 2021-00183, Staff 2-022, Attachment A as well as in the Excel version of the minimum system study.

b. A zero-intercept study was not completed for the preparation of Columbia's Application. However, Columbia recognizes the benefit of completing such a study, and as a result has retained an outside consultant to perform a zero-intercept study. Columbia will provide the results of said study as a supplement to the docket for this case upon its completion.

ATTACHMENTS ARE EXCEL SPREADSHEETS AND UPLOADED SEPARATELY

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Direct Testimony of Melissa Bartos (Bartos Testimony), page 4, lines 12–13. a. Explain why 20-year average heating degree day (HDD) data is used in the demand forecast. b. Provide a table comparing the demand forecast by rate class using 10-year average HDD data and 30-year average HDD data. c. Provide the work sheets supporting the weather normalization adjustment, including the adjustments to usage and customer numbers, or indicate the location of this information in the record if already provided. The information should be provided in Excel spread sheet format.

Response:

a. The use of a 20-year average HDD is consistent with the definition of normal weather used by the Company in its last several rate cases. The Company began using a 20-year average as the definition of normal weather in its 2007 rate case (Case No. 2007-00008), and continued using this definition in all subsequent rate cases, including Case Nos. 2009-00141, 2013-00167, and 2016-00162.

b. The following table provides the demand forecast using 10-year, 20-year, and 30-year average HDD.

	Residential Demand (CCF)			Commercial Demand (CCF)		
	10-Year Ave	20-Year Ave	30-Year Ave	10-Year Ave	20-Year Ave	30-Year Ave
2021*	82,845,015	84,035,173	84,875,318	85,400,321	86,069,554	86,673,993
2022	80,588,899	82,827,442	83,811,807	83,428,562	84,726,366	85,458,766
2023	83,528,477	85,772,227	86,759,119	83,257,213	84,556,744	85,289,605
2024	83,762,367	86,012,849	87,002,853	83,563,206	84,864,214	85,598,309

**2021 includes actuals for January and February*

c. No weather normalization adjustment was performed for this rate case, therefore, no worksheets exist.

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Bartos Testimony, page 11, lines 6–10. Provide support for the assertion that for the indicated months residential use per customers was significantly affected by the shutdowns associated with COVID-19, but for the month of November 2020, it was not.

Response:

The assertion that residential use per customer ("UPC") was significantly affected by COVID-19 in the indicated months but not in November 2020 is supported by the statistical significance of the indicator variables for each of the relevant months. The following table contains the parameter estimates for the residential UPC model used to develop the forecast, but with the addition of an indicator variable for November 2020. As shown in the table, the indicator variables for April 2020 (i.e., D202004), May 2020 (i.e., D202005), October 2020 (i.e., D202010), December 2020 (i.e., D202012), January 2021 (i.e., D202101) and February 2021 (i.e., D202102) are all statistically significant (i.e., Approx Pr > |t| <0.02); however, the indicator variable for November 2020 (i.e., D202011) is not statistically significant when included in the residential UPC model (i.e., Approx Pr > |t|

= 0.1224). As a result, the indicator variable for November 2020 was excluded from the model used to develop the forecasted residential UPC.

Parameter Estimates					
Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	13.1210	3.6855	3.56	0.0007
HDD	1	0.0147	0.000146	100.48	<.0001
LKYPR	1	-4.4179	1.3206	-3.35	0.0014
M1	1	-0.7193	0.1498	-4.80	<.0001
M3	1	-0.4607	0.1255	-3.67	0.0005
M4	1	-0.6991	0.1332	-5.25	<.0001
M5	1	-0.6729	0.1258	-5.35	<.0001
M10	1	-0.6235	0.1271	-4.91	<.0001
M11	1	-1.6737	0.1353	-12.37	<.0001
M12	1	-1.4353	0.1579	-9.09	<.0001
D201912	1	1.0714	0.3163	3.39	0.0012
D202001	1	1.2410	0.3149	3.94	0.0002
D202004	1	-0.7645	0.3146	-2.43	0.0178
D202005	1	-0.8114	0.3155	-2.57	0.0124
D202010	1	-0.8775	0.3170	-2.77	0.0073
D202011	1	-0.5208	0.3328	-1.56	0.1224
D202012	1	-0.9770	0.3326	-2.94	0.0046
D202101	1	-0.9104	0.3269	-2.79	0.0070
D202102	1	-1.1460	0.3276	-3.50	0.0008

Key:

- HDD = Heating Degree Days
- LKYPR = Gas Price
- M1, M3…M12 = Indicator variable for month; M1=January; M3=March, etc.
- D201912 = Indicator variable for December 2019
- D202001 = Indicator variable for January 2020

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Bartos Testimony, page 16. a. Refer to Table 1. Explain why the number of transportation customers is expected to decrease over years. b. Refer to Table 2. Explain why the transportation volume of commercial customers is expected to increase from 2023 to 2024 while the number of commercial customers is expected to decrease.

Response:

a. The forecasted decline in transportation customers is driven by forecasted declines in residential and commercial transportation customers. Both residential and commercial Choice transportation customers have been declining on a net basis (i.e., customer losses are greater than customer additions) for the last decade, and this trend is assumed to continue into the forecast period. Please also refer to the Bartos Testimony, page 14, lines 6-7.

b. The forecasted commercial transportation volumes are based on an allocation of total commercial volumes, as explained in the Bartos Testimony, page 14, lines 10-11. Since total commercial volume is expected to increase between 2023 and 2024, commercial transportation volume is also expected to increase between 2023 and 2024. A net commercial transportation customer loss, but a net commercial transportation volume gain between 2023 and 2024 could occur if customers leaving commercial transportation service between 2023 and 2024 have lower usage than the customers that join commercial transportation service between 2023 and 2024.

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Application Direct Testimony of Vincent V. Rea (Rea Testimony). Provide all work papers in Excel spreadsheet format with all formulas, columns, and rows unprotected and fully accessible.

Response:

All of Mr. Rea's supporting work papers in Excel format are contained within the attachments to his direct testimony. Please see KY PSC Case No. 2021-00183, Staff 2-26 Attachments A through Attachment H, which can be further identified as follows.

Staff 2-26 - Attachment A - (Attachments VVR-2, VVR-5 and VVR-6 to Mr. Rea's testimony).
Staff 2-26 - Attachment B - (Attachments VVR-3 and VVR-10 to Mr. Rea's testimony).
Staff 2-26 - Attachment C - (Attachment VVR-4 to Mr. Rea's testimony).
Staff 2-26 - Attachment D - (Attachment VVR-7 to Mr. Rea's testimony).
Staff 2-26 - Attachment E - (Attachment VVR-8 to Mr. Rea's testimony).
Staff 2-26 - Attachment F - (Attachment VVR-9 to Mr. Rea's testimony).
Staff 2-26 - Attachment G - (Attachment VVR-11 to Mr. Rea's testimony).
Staff 2-26 - Attachment H- (Attachment VVR-12 to Mr. Rea's testimony).

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

27. Refer to the Rea Testimony. Provide the most recent Value Line Investment Survey profiles on Columbia/NiSource and each of the companies in the LDC Gas Group and the Combination Utility Group. Consider this as an ongoing request throughout the course of this proceeding and provide updates as they become available.

Response:

Please see CONFIDENTIAL KY PSC Case No. 2021-00183, Staff 2-27, Attachment A for the requested information.

ATTACHMENT FILED UNDER SEAL PURSUANT TO A MOTION FOR CONFIDENTIAL TREATMENT

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Rea Testimony. Provide the most recent ratings reports for Columbia and for NiSource from S&P and Moody's for 2020 to the present. Consider this an ongoing request throughout the course of this proceeding and provide updates as they become available.

Response:

Please see CONFIDENTIAL KY PSC Case No. 2021-00183, Staff 2-28, Attachment A for the requested reports for NiSource. The rating agencies do not prepare ratings reports for Columbia.

ATTACHMENT FILED UNDER SEAL PURSUANT TO A MOTION FOR CONFIDENTIAL TREATMENT

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Rea Testimony. Provide the most recent regulatory Commission return on equity (ROE) award for each of NiSource's affiliated gas or combination gas and electric companies. Include in the response the date of the award and the state regulatory commission.

Response:

Please see KY PSC Case No. 2021-00183, Staff 2-29, Attachment A for the requested information.

Company	Docket Number	Filing Date	Approved as of:	Effective as of:	Requested Overall Fair Rate of Return	Approved Overall Fair Rate of Return [1]	Requested Return on Equity	Approved Return on Equity [1]
Columbia Gas of Kentucky, Inc. [2]	C-2016-00162	May 27, 2016	December 22, 2016	December 27, 2016	8.41%	Black Box	11.00%	Black Box
Columbia Gas of Maryland, Inc.	C-9644	May 15, 2020	November 9, 2020	December 11, 2020	7.87%	7.16%	10.95%	9.60%
Columbia Gas of Pennsylvania, Inc.[3]	D-R-2020-3018835	April 24, 2020	February 19, 2021	January 23, 2021	7.98%	7.41%	10.95%	9.86%
Columbia Gas of Virginia, Inc.	PUR-2018-00131 [4]	August 28, 2018	June 12, 2019	February 1, 2019	7.041%	Black Box	10.95%	Black Box
NIPSCO Gas	Ca-44988	September 27, 2017	September 19, 2018	March 1, 2019	6.74%	6.54%	10.70%	9.85%
NIPSCO Electric	Ca-45159	October 31, 2018	December 4, 2019	March 1, 2020	7.02%	6.43%	10.80%	9.75%

(1) Indicates ROE's where Final Approved Orders were a part of a "Black Box" Settlement, however an ROE was stated for use in an infrastructure tracker filing.

(2) Per CKY's most recent base rate case C-2016-00162 the ROE for AMRP/SMRP is 9.50% and implied ROR is 7.62%.

(3) Per CPA's base rate case R-2018-2647577 provision number 5: For purposes of calculating its DSIC, Columbia shall use the equity return rate for gas utilities contained in the Commission's most recent Quarterly Report on the Earnings of Jurisdictional Utilities and shall update the equity return rate each quarter consistent with any changes to the equity return rate for gas utilities contained in the most recent Quarterly Earnings Report, consistent with 66 Pa.C.S. § 1357(b)(3), until such time as the DSIC is reset pursuant to the provisions of 66 Pa.C.S. § 1358(b)(1). (Joint Petition ¶ 30.)

(4) Per CVA's most recent base rate case PUR-2018-00131 the ROE for SAVE is 9.70% (6.682% ROR) and the ROE for Expedited Cases is 9.75%.

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Rea Testimony pages 11–12. For each of the business risks enumerated, explain specifically how Columbia Kentucky has been affected.

Response:

Similar to virtually all gas utility operating companies nationwide, Columbia has been subjected to each of business risks enumerated within pages 11-12 of Mr. Rea's testimony.

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Rea Testimony page 13. For each of Columbia Kentucky's industrial and transportation customers, explain how close it is to the nearest competing pipeline in order to bypass Columbia Kentucky.

Response:

Significant portions of Columbia Kentucky's service territory are within close proximity to competing pipelines. Some of Columbia Kentucky's largest industrial and transportation customers have a competing pipeline on, adjacent to, or within a short proximity of their property.

Of the top ten largest throughput customers in 2020, [redacted] have competing pipeline(s) on their property, including: [redacted] Collectively, they accounted for roughly half of the total industrial and transportation throughput in 2020. These ten are listed in the table below.

[redacted]

Columbia Kentucky serves a large number of industrial and transportation customers that vary in distance to competitor pipelines. A listing of the bypass distances to each would be extensive. Smaller industrial and transportation customers do not pose as much of a bypass risk as larger customers. This is due to the economic feasibility of the bypass. As shown in this response, Columbia Kentucky has several of its largest throughput customers, making up roughly half of the total industrial and transportation throughput, with competing pipeline(s) nearby.

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Rea Testimony, pages 21–22, lines 16 and 1–9, respectively. a. Explain the rationale for the 60 percent cutoff in criteria (iv) and provide the percentage of operating income to consolidated operating income that is attributable to regulated gas distribution operations for Columbia Kentucky. b. Explain the 2020 effect of COVID-19 on reduced dividends for criteria (v), and whether this requirement excluded certain companies that otherwise met the criteria in years 2016–2019. c. Explain whether Columbia Kentucky's parent company, NiSource, meets all the criteria set forth in the "Gas LDC Group." d. Explain whether seven utility companies comprise a large enough representative sample to derive ROE estimates for Columbia Kentucky.

Response:

(a) The 60 percent minimum operating income requirement ensures that the utility holding company's most substantial business operations relate to the provision of gas utility services. It is important to note that the 60 percent threshold is a *minimum* threshold for screening purposes, as setting the initial screening threshold too high could potentially result in an insufficient number of gas utility holding companies in the final proxy group. This is particularly the case considering the declining number of gas utility holding companies seen in the U.S. in recent years as a result of merger and acquisition activity.

(b) Among the initial group of ten gas utility holding companies evaluated by Mr. Rea, none of the companies were eliminated as a result of the effects of COVID-19 during 2020. Specifically, none of the companies evaluated experienced a temporary suspension of dividend payments or a year-over-year decrease in the company's annual dividend payment amount. Nevertheless, NiSource was eliminated from the Gas LDC Group because the company reduced its annual dividend payment amount during calendar year 2016.

(c) NiSource Inc. did not meet all of the criteria set forth for inclusion in the Gas LDC Group. As noted in (b) above, NiSource was eliminated from the Gas LDC Group because the company reduced its dividend payment during calendar year 2016.

(d) As a standard practice, Mr. Rea prefers to compile the largest utility proxy group possible to enhance the statistical reliability of his cost of capital analyses. For this reason, Mr. Rea also evaluated a complementary proxy group of combination gas and electric utilities with comparable risk profiles, which he believes further enhances the statistical reliability of his analysis. Therefore, while it is Mr. Rea's position that the seven companies comprising the Gas LDC Group do provide a reasonable basis for deriving ROE estimates for the Company, it is also his position that evaluating complementary proxy groups, such as his Combination Utility Group and his Non-Regulated Group, further enhances the statistical reliability of his analyses, and also ensures that a broader array of investor perspectives are incorporated into his cost of equity estimates.

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Rea Testimony pages 22 and 35. Explain why NiSource is not included in one of these groups.

Response:

Please see Columbia's Response to Staff's Second Set of Requests for Information, Numbers 32b and 32c.

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Rea Testimony page 25. Explain whether Columbia Kentucky is aware that this Commission has typically rejected size adjustments in recent proceedings.

Response:

Yes, Mr. Rea and Columbia Kentucky are aware that the Commission has typically rejected size adjustments in recent proceedings. However, the finance literature[1] has demonstrated that the size premium is a necessary adjunct to the traditional CAPM in order to properly correct for the inability of the CAPM to adequately explain the level of excess returns that have historically been earned by small capitalization stocks. Indeed, the empirical research strongly suggests that beta, or systematic risk alone, does not fully explain the higher relative returns earned by small capitalization stocks. Support for the use of the size premium in the utility industry comes from at least two of the

[1] See, Eugene F. Fama and Kenneth R. French, "The Cross-Section of Expected Stock Returns," *The Journal of Finance*, 48 (June 1992), at 427-465; R. Grabowski, *The Size Effect Continues to be Relevant When Estimating the Cost of Capital,* Business Valuation Review, Volume 37, Number 3 (Fall 2018, at 93 and 109); M. Annin, *Equity and the Small-Stock Effect,* Public Utilities Fortnightly, October 15, 1995, 133, at 42; T. Zepp, *Utility Stocks and the Size Effect–Revisited,* The Quarterly Review of Economics and Finance, (2003), at 578-582; and *2020 SBBI Yearbook*, (Duff & Phelps, LLC), at 7-1, 7-3 and 7-5.

aforementioned studies[2] which have demonstrated that the size effect does in fact apply to utilities. Moreover, in a recent opinion[3], the FERC characterized the small size premium as a "generally accepted approach" to CAPM analyses.

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[2] M. Annin, *Equity and the Small-Stock Effect*, Public Utilities Fortnightly, October 15, 1995, 133, at 42, and T. Zepp, *Utility Stocks and the Size Effect–Revisited,* The Quarterly Review of Economics and Finance, 43 (2003), at 578-582.

[3] Federal Energy Regulatory Commission, Opinion 531-B, 61,165 at P117 (2015).

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Rea Testimony, Table VVR-6, page 61, and Attachment VVR7. Explain how the unadjusted DCF estimate of 9.70 percent was calculated

Response:

As further discussed on page 61 of the Direct Testimony of Vincent Rea, Columbia placed the greatest emphasis on the EPS growth estimates of equity analysts, which the finance literature has demonstrated to be a primary driver of stock valuations. Accordingly, Columbia applied an approximate one-third weighting to the consensus EPS growth estimates of sell-side equity analysts (including consensus EPS growth estimates from Yahoo Finance and Zacks); an approximate one-third weighting to the equity analyst EPS growth estimates published by Value Line; an approximate one-sixth weighting to the historical EPS growth rates reported by Value Line; and an approximate one-sixth weighting to the retention growth rate forecasts published by Value Line.

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Rea Testimony, Table VVR-6, page 61; Table VVR-7, page 63; and Table VVR-8, page 65. a. Explain whether any utility regulatory commission has accepted a market value–book value financial risk adjustment in any regulated NiSource gas or combination gas and electric utility rate case. If so, provide the state, utility, case number, whether the case was fully litigated or settled, and a copy of the order accepting the adjustment. b. Explain whether Columbia Kentucky is aware that flotation cost adjustments have routinely not been accepted in ROE analyses.

Response:

(a) It is a widely-accepted financial precept that increasing levels of financial leverage in a firm's capital structure will increase the firm's financial risk profile and therefore result in both higher borrowing costs and a higher cost of equity for the firm. The relationship between financial leverage and a firm's cost of equity was demonstrated in the classic financial theorems of Nobel laureates Modigliani and Miller[1]. In the instant proceeding,

[1] Franco Modigliani and Merton H. Miller, "Taxes and the Cost of Capital: A Correction," *American Economic Review,* 53 (June 1963), 433-443; Franco Modigliani and Merton H. Miller, *The Cost of Capital, Corporation Finance and the Theory of Investments, American Economic Review* 48 (June 1958) at 261-297.

the cost of equity estimates derived by Mr. Rea for the respective proxy groups were based upon the market value based capital structures of the proxy group companies, which generally possess a lower level of financial risk as compared to the book value based capital structures referenced for rate-making purposes. This explains why the financial leverage adjustments proposed by Mr. Rea are an integral component in estimating the cost of equity for Columbia's jurisdictional gas utility operations. Mr. Rea is not aware of any state regulatory commission decisions involving a NiSource utility subsidiary that explicitly states that the commission adopted the form of financial leverage adjustment proposed by Mr. Rea. However, this does not necessarily indicate that Mr. Rea's market value-to-book value financial risk adjustment was not factored into the final ROE decisions in these proceedings, since in many of the cases where Mr. Rea has proposed the same financial risk adjustment, the commission's final order was silent on the matter of the proposed risk adjustment in both litigated and settled proceedings.

It is also notable that the Pennsylvania Public Utility Commission has adopted the same form of market value-to-book value financial risk adjustments as proposed by Mr. Rea in no fewer than six utility regulatory proceedings in Pennsylvania, as outlined below:

PPL Gas Utilities Corp., Docket No. R-00061398, February 8, 2007.

PPL Electric Utilities Corp., Docket No. R-00049255, December 2, 2004.

Aqua Pennsylvania, Inc., Docket No. R-00038805, July 23, 2004.

Pennsylvania-American Water Co., Docket No. R-00038304, January 16, 2004.

Philadelphia Suburban Water Co., Docket No. R-0016750, July 18, 2002.

Pennsylvania-American Water Co., Docket No. R-00016339, January 10, 2002.

Copies of the above decisions can be accessed at:

http://www.puc.state.pa.us/about_puc/search_results.aspx

(b) Yes, Mr. Rea is aware that the Commission has not routinely adopted flotation cost adjustments in ROE analyses. However, it is Mr. Rea's strongly held position that the Company's equity investors will not be allowed the opportunity to earn a fair return on their entire investment in the absence of a flotation cost adjustment.

When common equity is employed to finance a utility's rate base, it is either derived from new stock sales or from the retention of undistributed earnings. In cases where a utility or its parent company "floats" a new equity issuance, significant issuance or flotation costs are involved, including underwriting discounts, legal fees, accounting fees and printing costs. After subtracting these out-of-pocket costs from the transaction's gross proceeds, the company is left with net proceeds which are materially lower than the amount invested by the company's equity investors. Considering that only net proceeds can be invested into a company's rate base, the amount invested by equity investors which funds flotation related costs will never earn a fair return for those investors unless an appropriate adjustment is made to the cost of equity. As such, if a flotation cost adjustment is not made to the "bare-bones" cost of equity determined by the various market-based models, the company's equity investors will not earn a fair return on their entire investment, thereby understating the company's legitimate revenue requirement. This is contrary to established regulatory practice for debt issuance costs, which are typically capitalized at the time of issuance and amortized over the life of the outstanding debt, therefore being fully recoverable through the cost of service ratemaking process.

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Rea Testimony, page 70, lines 12–17. a. Explain why the S&P 500 Index and Value Line 1,700 Stock Universe were selected to represent total market return in the CAPM analysis. b. Explain whether the S&P 500 has historically yielded higher returns than the "total market."

Response:

(a) In developing an estimate of the expected market return and expected market risk premium, Mr. Rea first evaluated the S&P 500 Index, as it is a generally accepted proxy[1] for estimating the overall market return for purposes of the CAPM. In implementing his CAPM analysis, Mr. Rea first referenced the S&P 500 Index for purposes of conducting a DCF analysis on the market index to estimate the expected market return going forward. Specifically, Mr. Rea's DCF analysis evaluated the expected dividend yield and expected constant growth rate

[1] See, D. Parcell, *The Cost of Capital – A Practitioner's Guide*, Society of Utility and Regulatory Financial Analysts (2010), at 106; R. Morin, *New Regulatory Finance*, Public Utilities Reports, Inc. 2006, at 119 and 159; and FERC Opinion 569-B, *Association of Businesses Advocating Tariff Equity et al., v. Midcontinent Independent System Operator et al.*, 173 FERC ¶ 61,159, Docket No. EL14-12-015, at P21.

assumption for the S&P 500 Index for purposes of estimating the overall market return in the CAPM.

However, in order to present a balanced analysis, Mr. Rea also elected to estimate the expected market return and expected market premium on the basis of relative valuation data for the U.S. equity market, rather than relying exclusively upon the DCF approach noted above. Under this relative valuation approach, Mr. Rea evaluated the Value Line estimated median price appreciation potential over a 3-5 year horizon for the Value Line universe of 1,700 stocks, which accounts for approximately 90% of the market capitalization of all stocks traded on the U.S. stock exchanges.

(b) Please see Staff 2-37 Attachment A, which provides recent historical returns data for the both the S&P 500 Index and the S&P 500 Total Market Index. While the S&P 500 Index is currently comprised of 505 constituent companies, the S&P 500 Total Market Index is comprised of approximately 3,955 companies. Considering that both of these indices are weighted by the market capitalization of the stocks comprising the indices, their relative return performance over the past decade has been very similar. This can be seen in Staff 2-37, Attachment A, which shows that the 10-year average annualized historical return for the S&P 500 Index has been 14.84%, while for this same 10-year period, the annualized return for the S&P 500 Total Market Index has been 14.66%.

S&P Dow Jones Indices

A Division of S&P Global

Equity

S&P 500®

Description

The S&P 500® is widely regarded as the best single gauge of large-cap U.S. equities. There is over USD 11.2 trillion indexed or benchmarked to the index, with indexed assets comprising approximately USD 4.6 trillion of this total. The index includes 500 leading companies and covers approximately 80% of available market capitalization.

Index Attributes

Created in 1957, the S&P 500 was the first U.S. market-cap-weighted stock market index. Today, it's the basis of many listed and over-the-counter investment instruments. This world-renowned index includes 500 of the top companies in leading industries of the U.S. economy.

The S&P 500 is part of a series of S&P Dow Jones U.S. equity indices that can be used as mutually exclusive building blocks; the index does not overlap holdings with the S&P MidCap 400® or S&P SmallCap 600®. Together, they constitute the S&P Composite 1500®.

Methodology Construction

Universe. All constituents must be U.S. companies.
Eligibility Market Cap. To be included, companies must have an unadjusted market cap of USD 13.1 billion or greater, and must have a float-adjusted market cap that is at least 50% of the unadjusted minimum market cap threshold.
Public Float. Companies must have an investable weight factor (IWF) of at least 0.10.
Financial Viability. Companies must have positive as-reported earnings over the most recent quarter, as well as over the most recent four quarters (summed together).
Adequate Liquidity and Reasonable Price. Using composite pricing and volume, the ratio of annual dollar value traded (defined as average closing price over the period multiplied by historical volume) to float-adjusted market capitalization should be at least 1.00, and the stock should trade a minimum of 250,000 shares in each of the six months leading up to the evaluation date.
Sector Representation. Sector balance, as measured by a comparison of each GICS® sector's weight in an index with its weight in the S&P Total Market Index, in the relevant market capitalization range, is also considered in the selection of companies for the indices.
Company Type. All eligible U.S. common equities listed on eligible U.S. exchanges can be included. REITs are also eligible for inclusion. Closed-end funds, ETFs, ADRs, ADS, and certain other types of securities are ineligible for inclusion.

Quick Facts

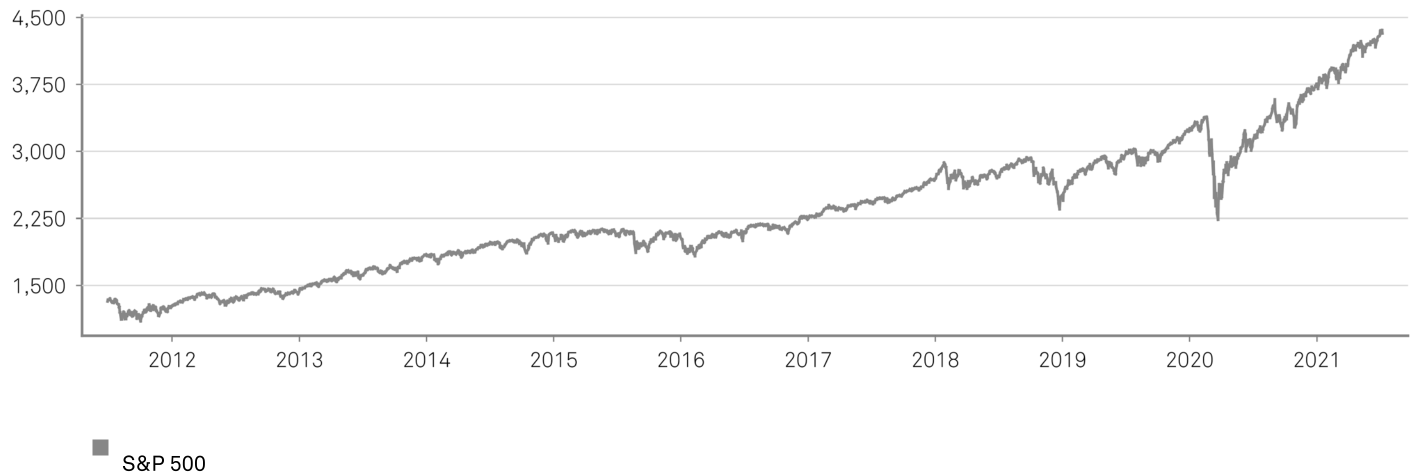
WEIGHTING METHOD	Float-adjusted market cap weighted
REBALANCING FREQUENCY	Quarterly in March, June, September, and December
CALCULATION FREQUENCY	Real time
CALCULATION CURRENCIES	USD, AUD, BRL, CAD, CHF, EUR, GBP, HKD, JPY, MXN, SGD
LAUNCH DATE	March 4, 1957
FIRST VALUE DATE	January 3, 1928
REGULATORY AUTHORIZATION	European Union

For more information, including the complete methodology document, please visit:
https://www.spglobal.com/spdji/en/indices/equity/sp-500

All information for an index prior to its Launch Date is hypothetical back-tested, not actual performance, based on the index methodology in effect on the Launch Date. Back-tested performance reflects application of an index methodology and selection of index constituents with the benefit of hindsight and knowledge of factors that may have positively affected its performance, cannot account for all financial risk that may affect results and may be considered to reflect survivor/look ahead bias. Actual returns may differ significantly from, and be lower than, back-tested returns. Past performance is not an indication or guarantee of future results. This back-tested data may have been created using a "Backward Data Assumption". For more information on "Backward Data Assumption" and back-testing in general, please see the Performance Disclosure at the end of this material.

Historical Performance

Depending on index launch date, all charts below may include back-tested data.



Performance

INDEX LEVEL	RETURNS			ANNUALIZED RETURNS			
	1 MO	3 MOS	YTD	1 YR	3 YRS	5 YRS	10 YRS
Total Return							
8,942.78	2.33%	8.55%	15.25%	40.79%	18.67%	17.65%	14.84%
Price Return							
4,297.5	2.22%	8.17%	14.41%	38.62%	16.49%	15.41%	12.52%
Net Total Return							
7,861.08	2.3%	8.44%	15%	40.14%	18.01%	16.97%	14.14%

Calendar Year Performance

2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Total Return									
18.4%	31.49%	-4.38%	21.83%	11.96%	1.38%	13.69%	32.39%	16%	2.11%
Price Return									
16.26%	28.88%	-6.24%	19.42%	9.54%	-0.73%	11.39%	29.6%	13.41%	0%
Net Total Return									
17.75%	30.7%	-4.94%	21.1%	11.23%	0.75%	12.99%	31.55%	15.22%	1.47%

Risk

	ANNUALIZED RISK			ANNUALIZED RISK-ADJUSTED RETURNS		
	3 YRS	5 YRS	10 YRS	3 YRS	5 YRS	10 YRS
Total Return	18.52%	14.99%	13.59%	1.01	1.18	1.09
Price Return	18.52%	14.98%	13.58%	0.89	1.03	0.92
Net Total Return	18.52%	14.98%	13.58%	0.97	1.13	1.04

Risk is defined as standard deviation calculated based on total returns using monthly values.

Fundamentals

P/E (TRAILING)	P/E (PROJECTED)	P/B	INDICATED DIV YIELD	P/SALES	P/CASH FLOW
30.99	21.83	4.29	1.38%	2.85	27.95

P/E (Projected) and Dividend Yield are as of June 30, 2021; P/E (Trailing), P/B, P/Sales, and P/Cash Flow are as of March 31, 2021. Fundamentals are updated on approximately the fifth business day of each month.

Index Characteristics

NUMBER OF CONSTITUENTS	505
CONSTITUENT MARKET [USD MILLION]	
MEAN TOTAL MARKET CAP	75,717
LARGEST TOTAL MARKET CAP	2,285,537.8
SMALLEST TOTAL MARKET CAP	3,989.36
MEDIAN TOTAL MARKET CAP	29,865.73
WEIGHT LARGEST CONSTITUENT [%]	5.9
WEIGHT TOP 10 CONSTITUENTS [%]	27.4

ESG Carbon Characteristics

CARBON TO VALUE INVESTED (METRIC TONS CO_2e/$1M INVESTED)*	50.41
CARBON TO REVENUE (METRIC TONS CO_2e/$1M REVENUES)*	196.81
WEIGHTED AVERAGE CARBON INTENSITY (METRIC TONS CO_2e/$1M REVENUES)*	180.11
FOSSIL FUEL RESERVE EMISSIONS (METRIC TONS CO_2/$1M INVESTED)	440.01

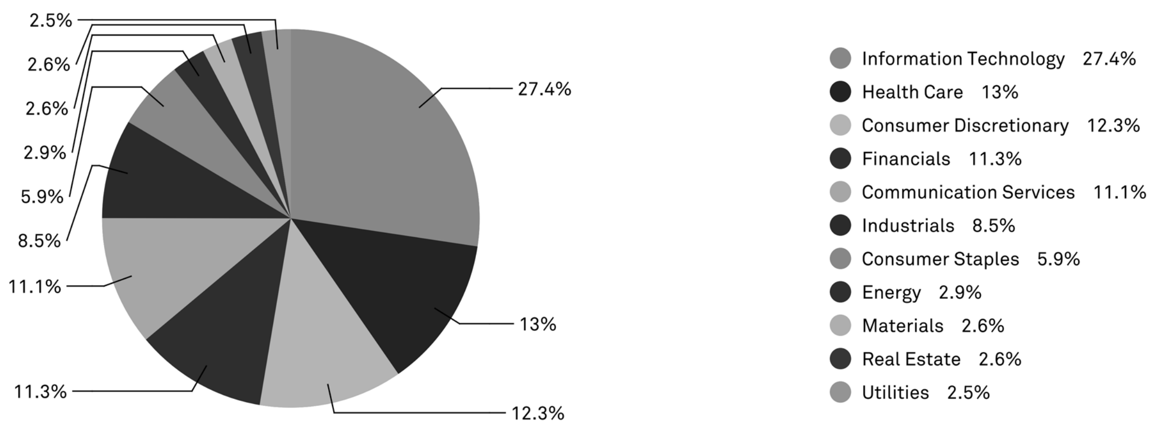
*Operational and first-tier supply chain greenhouse gas emissions.
For more information, please visit: www.spglobal.com/spdji/en/esg-metrics.

Top 10 Constituents By Index Weight

CONSTITUENT	SYMBOL	SECTOR*
Apple Inc.	AAPL	Information Technology
Microsoft Corp	MSFT	Information Technology
Amazon.com Inc	AMZN	Consumer Discretionary
Facebook Inc A	FB	Communication Services
Alphabet Inc A	GOOGL	Communication Services
Alphabet Inc C	GOOG	Communication Services
Berkshire Hathaway B	BRK.B	Financials
Tesla, Inc	TSLA	Consumer Discretionary
Nvidia Corp	NVDA	Information Technology
JP Morgan Chase & Co	JPM	Financials

*Based on GICS® sectors

Sector* Breakdown



*Based on GICS® sectors

The weightings for each sector of the index are rounded to the nearest tenth of a percent; therefore, the aggregate weights for the index may not equal 100%.

Country/Region Breakdown

COUNTRY/REGION	NUMBER OF CONSTITUENTS	TOTAL MARKET CAP [USD MILLION]	INDEX WEIGHT [%]
United States	505	38,237,084.06	100

Based on index constituents' country of domicile.

Tickers

	TICKER	REUTERS
Price Return	SPX	.SPFIV
Total Return	SPXT	.SPXT
Net Total Return	SPTR500N	.SPXNTR

Related Products

This list includes investable products traded on certain exchanges currently linked to this selection of indices. While we have tried to include all such products, we do not guarantee the completeness or accuracy of such lists. Please refer to the disclaimers at the end of this document or here for more information about S&P Dow Jones Indices' relationship to such third party product offerings.

PRODUCT NAME	PRODUCT TYPE	EXCHANGE	TICKER
1nvest S&P500 Feeder ETF	ETF	JOHANNESBURG STOCK EXCHANGE	ETF500
AllianzIM US Large Cap Buffer10 Apr ETF	ETF	NYSE ARCA	AZAA
AllianzIM US Large Cap Buffer10 Jan ETF	ETF	NYSE Arca	AZAJ
AllianzIM US Large Cap Buffer10 Jul ETF	ETF	NYSE ARCA	AZAL
AllianzIM US Large Cap Buffer10 Oct ETF	ETF	NYSE ARCA	AZAO
AllianzIM US Large Cap Buffer20 Apr ETF	ETF	NYSE ARCA	AZBA
AllianzIM US Large Cap Buffer20 Jan ETF	ETF	NYSE Arca	AZBJ
AllianzIM US Large Cap Buffer20 Jul ETF	ETF	NYSE ARCA	AZBL
AllianzIM US Large Cap Buffer20 Oct ETF	ETF	NYSE ARCA	AZBO
Amundi ETF PEA S&P 500 Daily Hgd EUR A/I	ETF	EURONEXT - EURONEXT PARIS	P500H
Amundi ETF PEA S&P 500 EUR A/I	ETF	EURONEXT - EURONEXT PARIS	PE500
Amundi IS S&P 500 ETF C EUR	ETF	EURONEXT - EURONEXT PARIS	500
Amundi IS S&P 500 ETF C EUR Hdg	ETF	EURONEXT - EURONEXT PARIS	500H
Amundi IS S&P 500 ETF C USD	ETF	EURONEXT - EURONEXT PARIS	500U
ARIRANG S&P500	ETF	KOREA EXCHANGE (STOCK MARKET)	269540
BetaPro S&P 500® -2x Daily Bear ETF	ETF	TORONTO STOCK EXCHANGE	HSD
BetaPro S&P 500® 2x Daily Bull ETF	ETF	TORONTO STOCK EXCHANGE	HSU
BetaPro S&P 500® Daily Inverse ETF	ETF	TORONTO STOCK EXCHANGE	HIU
BetaShares Geared US Eq Ccy Hdg ETF	ETF	ASX - ALL MARKETS	GGUS
BetaShares S&P 500 Yield Maximiser ETF	ETF	ASX - ALL MARKETS	UMAX
BetaShares US Eqs Strong Bear H CcyH ETF	ETF	ASX - ALL MARKETS	BBUS
BMO Concentrated US Equity ETF Ser	ETF	TORONTO STOCK EXCHANGE	ZCU
BMO S&P 500 ETF (CAD)	ETF	TORONTO STOCK EXCHANGE	ZSP
BMO S&P 500 ETF (USD)	ETF	TORONTO STOCK EXCHANGE	ZSP.U
BMO S&P 500 Hedged to CAD ETF	ETF	TORONTO STOCK EXCHANGE	ZUE
BNPP Easy S&P 500 ETF EUR C	ETF	EURONEXT - EURONEXT PARIS	ESE
BNPP Easy S&P 500 ETF EUR H	ETF	EURONEXT - EURONEXT PARIS	ESEH
BNPP Easy S&P 500 ETF USD C	ETF	EURONEXT - EURONEXT PARIS	ESD
BNPP Easy S&P 500 ETF USD C/D	ETF	EURONEXT - EURONEXT PARIS	ESDD
Bosera S&P 500 QDII Fd	ETF	SHANGHAI STOCK EXCHANGE	513500
Bristol Gate Concentrated US Equity ETF	ETF	TORONTO STOCK EXCHANGE	BGU

PRODUCT NAME	PRODUCT TYPE	EXCHANGE	TICKER
CoreShares S&P 500 ETF	ETF	JOHANNESBURG STOCK EXCHANGE	CSP500
Direxion Daily S&P 500® Bear 1X ETF	ETF	NYSE Arca	SPDN
Direxion Daily S&P 500® Bear 3X ETF	ETF	NYSE ARCA	SPXS
Direxion Daily S&P 500® Bull 2X ETF	ETF	NYSE ARCA	SPUU
Direxion Daily S&P500® Bull 3X ETF	ETF	NYSE ARCA	SPXL
Eaton Vance Stock NextShares™	ETF	NASDAQ	EVSTC
Evolve S&P 500 CleanBeta™ H CAD	ETF	Toronto Stock Exchange	FIVE.B
Evolve S&P 500 CleanBeta™ Unh CAD	ETF	Toronto Stock Exchange	FIVE
Evolve S&P 500 CleanBeta™ Unh USD	ETF	Toronto Stock Exchange	FIVE.U
FT Cboe Vest US Equity Buffer ETF Apr	ETF	BATS Z-Exchange	FAPR
FT Cboe Vest US Equity Buffer ETF Aug	ETF	BATS Z-EXCHANGE	FAUG
FT Cboe Vest US Equity Buffer ETF Dec	ETF	BATS Z-Exchange	FDEC
FT Cboe Vest US Equity Buffer ETF Feb	ETF	BATS Z-EXCHANGE	FFEB
FT Cboe Vest US Equity Buffer ETF Jan	ETF	BATS Z-Exchange	FJAN
FT Cboe Vest US Equity Buffer ETF Jul	ETF	BATS Z-EXCHANGE	FJUL
FT Cboe Vest US Equity Buffer ETF Jun	ETF	BATS Z-EXCHANGE	FJUN
FT Cboe Vest US Equity Buffer ETF Mar	ETF	BATS Z-Exchange	FMAR
FT Cboe Vest US Equity Buffer ETF May	ETF	BATS Z-EXCHANGE	FMAY
FT Cboe Vest US Equity Buffer ETF Nov	ETF	BATS Z-EXCHANGE	FNOV
FT Cboe Vest US Equity Buffer ETF Oct	ETF	BATS Z-Exchange	FOCT
FT Cboe Vest US Equity Buffer ETF Sep	ETF	BATS Z-EXCHANGE	FSEP
FT Cboe Vest US Equity Deep Bffr ETF Feb	ETF	BATS Z-EXCHANGE	DFEB
FT Cboe Vest US Equity Deep Bffr ETF Jul	ETF	BATS Z-EXCHANGE	DJUL
FT Cboe Vest US Equity Deep Bffr ETF Mar	ETF	BATS Z-Exchange	DMAR
FT Cboe Vest US Equity Deep Bffr ETF May	ETF	BATS Z-EXCHANGE	DMAY
FT Cboe Vest US Equity Deep Bffr ETF Nov	ETF	BATS Z-EXCHANGE	DNOV
FT Cboe Vest US Equity Deep Bffr ETF Oct	ETF	BATS Z-Exchange	DOCT
FT Cboe Vest US Equity Deep Bfr ETF Aug	ETF	BATS Z-EXCHANGE	DAUG
FT Cboe Vest US Equity Deep Bfr ETF Jun	ETF	BATS Z-EXCHANGE	DJUN
FT Cboe Vest US Equity Dp Bffr ETF Apr	ETF	BATS Z-Exchange	DAPR
FT Cboe Vest US Equity Dp Bffr ETF Jan	ETF	BATS Z-Exchange	DJAN
FT Cboe Vest US Equity Dp Bffr ETF Sep	ETF	BATS Z-EXCHANGE	DSEP
FT Cboe Vest US Equity Dp Bfr ETF Dec	ETF	BATS Z-Exchange	DDEC
Global X S&P 500 Daily (-1x) Inverse	ETF	XFMQ--Unlisted Fund Manager Quote	N/A
Harel Sal S&P 500	ETF		HRLF25
Harel Sal S&P 500 Currency Hedged	ETF		HRLF50
Horizons S&P 500 CAD Hedged ETF	ETF	TORONTO STOCK EXCHANGE	HSH
Horizons S&P 500 ETF	ETF	TORONTO STOCK EXCHANGE	HXS
HSBC S&P 500 ETF	ETF	LONDON STOCK EXCHANGE	HSPD
Innovator S&P 500 Buffer ETF	ETF	BATS Z-EXCHANGE	BJUN
Innovator S&P 500 Buffer ETF - Aug	ETF	BATS Z-EXCHANGE	BAUG
Innovator S&P 500 Buffer ETF - September	ETF	BATS Z-EXCHANGE	BSEP

S&P Dow Jones Indices

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PRODUCT NAME	PRODUCT TYPE	EXCHANGE	TICKER
Innovator S&P 500 Buffer ETF Apr New	ETF	BATS Z-EXCHANGE	BAPR
Innovator S&P 500 Buffer ETF Dec	ETF	BATS Z-EXCHANGE	BDEC
Innovator S&P 500 Buffer ETF January	ETF	BATS Z-EXCHANGE	BJAN
Innovator S&P 500 Buffer ETF July	ETF	BATS Z-EXCHANGE	BJUL
Innovator S&P 500 Buffer ETF Nov	ETF	BATS Z-EXCHANGE	BNOV
Innovator S&P 500 Buffer ETF October	ETF	BATS Z-EXCHANGE	BOCT
Innovator S&P 500 Buffer ETF™ Feb	ETF	BATS Z-EXCHANGE	BFEB
Innovator S&P 500 Buffer ETF™ March	ETF	BATS Z-EXCHANGE	BMAR
Innovator S&P 500 Buffer ETF™ May	ETF	BATS Z-EXCHANGE	BMAY
Innovator S&P 500 Power Bffr ETF Apr New	ETF	BATS Z-EXCHANGE	PAPR
Innovator S&P 500 Power Buffer ETF - Aug	ETF	BATS Z-EXCHANGE	PAUG
Innovator S&P 500 Power Buffer ETF - Sep	ETF	BATS Z-EXCHANGE	PSEP
Innovator S&P 500 Power Buffer ETF Dec	ETF	BATS Z-EXCHANGE	PDEC
Innovator S&P 500 Power Buffer ETF Jan	ETF	BATS Z-EXCHANGE	PJAN
Innovator S&P 500 Power Buffer ETF July	ETF	BATS Z-EXCHANGE	PJUL
Innovator S&P 500 Power Buffer ETF New	ETF	BATS Z-EXCHANGE	PJUN
Innovator S&P 500 Power Buffer ETF Nov	ETF	BATS Z-EXCHANGE	PNOV
Innovator S&P 500 Power Buffer ETF Oct	ETF	BATS Z-EXCHANGE	POCT
Innovator S&P 500 Power Buffer ETF™ Feb	ETF	BATS Z-EXCHANGE	PFEB
Innovator S&P 500 Power Buffer ETF™ Mar	ETF	BATS Z-EXCHANGE	PMAR
Innovator S&P 500 Power Buffer ETF™ May	ETF	BATS Z-EXCHANGE	PMAY
Innovator S&P 500 Ultra Bffr ETF Apr New	ETF	BATS Z-EXCHANGE	UAPR
Innovator S&P 500 Ultra Buffer ETF	ETF	BATS Z-EXCHANGE	UJUN
Innovator S&P 500 Ultra Buffer ETF - Aug	ETF	BATS Z-EXCHANGE	UAUG
Innovator S&P 500 Ultra Buffer ETF - Sep	ETF	BATS Z-EXCHANGE	USEP
Innovator S&P 500 Ultra Buffer ETF Dec	ETF	BATS Z-EXCHANGE	UDEC
Innovator S&P 500 Ultra Buffer ETF Jan	ETF	BATS Z-EXCHANGE	UJAN
Innovator S&P 500 Ultra Buffer ETF July	ETF	BATS Z-EXCHANGE	UJUL
Innovator S&P 500 Ultra Buffer ETF Nov	ETF	BATS Z-EXCHANGE	UNOV
Innovator S&P 500 Ultra Buffer ETF Oct	ETF	BATS Z-EXCHANGE	UOCT
Innovator S&P 500 Ultra Buffer ETF™ Feb	ETF	BATS Z-EXCHANGE	UFEB
Innovator S&P 500 Ultra Buffer ETF™ Mar	ETF	BATS Z-EXCHANGE	UMAR
Innovator S&P 500 Ultra Buffer ETF™ May	ETF	BATS Z-EXCHANGE	UMAY
Invesco S&P 500 Equal Weight ETF CAD	ETF	TORONTO STOCK EXCHANGE	EQL
Invesco S&P 500 Equal Weight ETF CAD H	ETF	TORONTO STOCK EXCHANGE	EQL.F
Invesco S&P 500 Equal Weight ETF USD	ETF	TORONTO STOCK EXCHANGE	EQL.U
Invesco S&P 500 ETF	ETF	LONDON STOCK EXCHANGE	SPXS
Invesco S&P 500 ETF (Dist)	ETF	SIX SWISS EXCHANGE	SPXD
Invesco S&P 500 ETF (EUR Hdg)	ETF	XETRA	E500
Invesco S&P 500 ETF (GBP Hdg)	ETF	LONDON STOCK EXCHANGE	N/A
Invesco S&P 500 Hi Div Low Vol ETF CAD	ETF	AEQUITAS NEO EXCHANGE	UHD
Invesco S&P 500 Hi Div Low Vol ETF CAD H	ETF	AEQUITAS NEO EXCHANGE	UHD.F

PRODUCT NAME	PRODUCT TYPE	EXCHANGE	TICKER
Invesco S&P 500 Hi Div Low Vol ETFUSD	ETF	AEQUITAS NEO EXCHANGE	UHD.U
iShares Core S&P 500 ETF	ETF	NYSE ARCA	IVV
iShares Core S&P 500 ETF	ETF	TORONTO STOCK EXCHANGE	XUS
iShares Core S&P 500 ETF (CAD-Hedged)	ETF	TORONTO STOCK EXCHANGE	XSP
iShares Core S&P 500 ETF GBPH Dist	ETF	LONDON STOCK EXCHANGE	GSPX
iShares Core S&P 500 ETF MXNH Acc	ETF	BATS CHI-X EUROPE -CXE ORDER BOOKS	CSPXX
iShares Core S&P 500 ETF USD Acc	ETF	SIX SWISS EXCHANGE	CSSPX
iShares Core S&P 500 ETF USD Dist	ETF	LONDON STOCK EXCHANGE	IDUS
iShares S&P 500 AUD Hedged ETF	ETF	ASX - ALL MARKETS	IHVV
iShares S&P 500 CHF Hedged ETF Acc	ETF	SIX SWISS EXCHANGE	IUSC
iShares S&P 500 ETF	ETF	TOKYO STOCK EXCHANGE	1655
iShares S&P 500 ETF	ETF	ASX - ALL MARKETS	IVV
iShares S&P 500 EUR Hedged ETF Acc	ETF	LONDON STOCK EXCHANGE	IUSE
iShares S&P 500 FIC FI IE	ETF	BM&FBOVESPA S.A. - BOLSA DE VALORES, MERCADORIAS E FUTUROS	IVVB11
iShares S&P 500 GBP Hedged ETF Acc	ETF	LONDON STOCK EXCHANGE	IGUS
iShares S&P 500 JPY Hedged ETF	ETF	TOKYO STOCK EXCHANGE	2563
iShares S&P 500 Peso Hedged TRAC	ETF	BOLSA MEXICANA DE VALORES (MEXICAN STOCK EXCHANGE)	IVVPESO
It Now S&P500® TRN Fund ETF	ETF	BM&FBOVESPA S.A. - BOLSA DE VALORES, MERCADORIAS E FUTUROS	SPXI11
KBSTAR S&P500	ETF	Korea Exchange (Stock Market)	379780
KINDEX S&P500	ETF	KOREA EXCHANGE (STOCK MARKET)	360200
KODEX S&P500 Total Return	ETF	Korea Exchange (Stock Market)	379800
KSM ETF Composite Gov Bond (55%) Corp Bond (30%) Equity (15%) Monthly Currency Hedged	ETF		KSMF141
KSM ETF Composite US Equity Monthly	ETF		KSMF150
KSM ETF Leveraged S&P 500 x3 Monthly	ETF		KSMF111
KSM ETF S&P 500	ETF		KSMF80
KSM ETF S&P 500 Currency Hedged	ETF		KSMF82
KSM ETF Short Leveraged S&P 500 x3 Monthly	ETF		KSMF114
Listed Index Fund US Eq S&P500 Ccy Hdg	ETF	TOKYO STOCK EXCHANGE	2521
Listed Index Fund US Equity (S&P500)	ETF	TOKYO STOCK EXCHANGE	1547

PRODUCT NAME	PRODUCT TYPE	EXCHANGE	TICKER
Lyxor PEA S&P 500 ETF Capi	ETF	EURONEXT - EURONEXT PARIS	PSP5
Lyxor PEA S&P 500 ETF Couverte en EUR C	ETF	EURONEXT - EURONEXT PARIS	PSPH
Lyxor S&P 500 ETF C EUR	ETF	EURONEXT - EURONEXT PARIS	SP5C
Lyxor S&P 500 ETF D EUR	ETF	XETRA	LYPS
Lyxor S&P 500 ETF D USD	ETF	LONDON STOCK EXCHANGE	LSPU
Lyxor S&P 500 ETF Daily Hdg to GBP Dist	ETF	LONDON STOCK EXCHANGE	SP5G
Lyxor S&P 500 ETF Daily Hedged C CHF	ETF	SIX SWISS EXCHANGE	LYSPH
Lyxor S&P 500 ETF Daily Hedged C EUR	ETF	XFMQ--Unlisted Fund Manager Quote	N/A
Lyxor S&P 500 ETF Daily Hedged D EUR	ETF	BORSA ITALIANA S.P.A.	SPXH
MAXIS S&P500 US Equity ETF	ETF	TOKYO STOCK EXCHANGE	2558
MAXIS S&P500 US Equity ETF (JPY Hedged)	ETF	Tokyo Stock Exchange	2630
More Sal S&P 500	ETF		MORES1
More Sal S&P 500 Currency Hedged	ETF		MORES2
MTF SAL(4A) S&P 500	ETF		MTFF23
MTF SAL(4A) S&P 500 - Hedged	ETF		MTFF52
NEXT FUNDS S&P 500 (Unhedged) ETF	ETF	Tokyo Stock Exchange	2633
ProShares Short S&P500	ETF	NYSE ARCA	SH
ProShares Ultra S&P500	ETF	NYSE ARCA	SSO
ProShares UltraPro S&P500	ETF	NYSE ARCA	UPRO
ProShares UltraPro Short S&P500	ETF	NYSE ARCA	SPXU
ProShares UltraShort S&P500	ETF	NYSE ARCA	SDS
Psagot ETF (4A) S&P 500 Currency-Hedged	ETF		PSGF137
Psagot ETF (4D) S&P 500	ETF		PSGF65
Satrix S&P 500 ETF	ETF	JOHANNESBURG STOCK EXCHANGE	STX500
Smartshares US 500	ETF	NEW ZEALAND EXCHANGE LTD	USF
SPDR S&P 500 ETF EUR Acc H	ETF	XETRA	SPPE
SPDR® Portfolio S&P 500 ETF	ETF	NYSE ARCA	SPLG
SPDR® S&P 500 ETF	ETF	ASX - ALL MARKETS	SPY
SPDR® S&P 500 ETF	ETF	LONDON STOCK EXCHANGE	SPY5
SPDR® S&P 500 ETF Trust	ETF	NYSE ARCA	SPY
Sygnia Itrix S&P 500 ETF	ETF	JOHANNESBURG STOCK EXCHANGE	SYG500
Tachlit Sal Composite Global Equity Currency-Hedged Monthly	ETF		TCHF105
Tachlit Sal Composite INT. Equity Currency-Hedged Monthly	ETF		TCHF40
Tachlit Sal Composite Large Cap Developed Currency-Hedged Monthly	ETF		TCHF48
Tachlit Sal Composite US Equity Monthly	ETF		TCHF134
Tachlit Sal S&P 500	ETF		TCHF76
Tachlit Sal S&P 500 Currency Hedged	ETF		TCHF11

PRODUCT NAME	PRODUCT TYPE	EXCHANGE	TICKER
TIGER S&P500	ETF	KOREA EXCHANGE (STOCK MARKET)	360750
TIGER Synth-S&P500 Leverage(H)	ETF	KOREA EXCHANGE (STOCK MARKET)	225040
UBS ETF S&P 500 A CHF H Acc	ETF	SIX SWISS EXCHANGE	SP500S
UBS ETF S&P 500 A EUR H Acc	ETF	SIX SWISS EXCHANGE	SP500E
UBS ETF S&P 500 A EUR H Inc	ETF	XETRA	UEQ7
UBS ETF S&P 500 A GBP H Inc	ETF	SIX SWISS EXCHANGE	SP500H
UBS ETF S&P 500 USD A dis	ETF	SIX SWISS EXCHANGE	SP5USY
Vanguard S&P 500 ETF	ETF	HONG KONG EXCHANGES AND CLEARING LTD	3140
Vanguard S&P 500 ETF	ETF	TORONTO STOCK EXCHANGE	VFV
Vanguard S&P 500 ETF	ETF	NYSE ARCA	VOO
Vanguard S&P 500 ETF CAD-H	ETF	TORONTO STOCK EXCHANGE	VSP
Vanguard S&P 500 ETF USD Acc	ETF	LONDON STOCK EXCHANGE	VUAA
Vanguard S&P 500 UCITS ETF	ETF	LONDON STOCK EXCHANGE	VUSD
Xtrackers S&P 500 ETF 1C - EUR H	ETF	XETRA	XDPE
Xtrackers S&P 500 ETF 1D - EUR H	ETF	XETRA	XDPD
Xtrackers S&P 500 ETF 2C - GBP H	ETF	LONDON STOCK EXCHANGE	XDPG
Xtrackers S&P 500 ETF 3C - CHF H	ETF	SIX SWISS EXCHANGE	XDPC
Xtrackers S&P 500 Swap ETF 1C	ETF	LONDON STOCK EXCHANGE	XSPU
Yuanta S&P 500 ETF	ETF	TAIWAN STOCK EXCHANGE	00646

CONTACT US

spdji.com
index_services@spglobal.com

S&P Dow Jones Custom Indices
customindices@spglobal.com

New York
1 212 438 7354
1 877 325 5415

Mexico City
52 (55) 1037 5290

London
44 207 176 8888

Dubai
971 (0)4 371 7131

Mumbai
91-22-2272-5312

Beijing
86.10.6569.2770

Hong Kong
852 2532 8000

Tokyo
81 3 4550 8564

Sydney
61 2 9255 9802

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Source: S&P Dow Jones Indices LLC.

The launch date of the S&P 500 was March 4, 1957.

S&P Dow Jones Indices defines various dates to assist our clients in providing transparency. The First Value Date is the first day for which there is a calculated value (either live or back-tested) for a given index. The Base Date is the date at which the index is set to a fixed value for calculation purposes. The Launch Date designates the date when the values of an index are first considered live: index values provided for any date or time period prior to the index's Launch Date are considered back-tested. S&P Dow Jones Indices defines the Launch Date as the date by which the values of an index are known to have been released to the public, for example via the company's public website or its data feed to external parties. For Dow Jones-branded indices introduced prior to May 31, 2013, the Launch Date (which prior to May 31, 2013, was termed "Date of introduction") is set at a date upon which no further changes were permitted to be made to the index methodology, but that may have been prior to the Index's public release date.

Please refer to the methodology for the Index for more details about the index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations.

Information presented prior to an index's launch date is hypothetical back-tested performance, not actual performance, and is based on the index methodology in effect on the launch date applied retroactively. However, when creating back-tested history for periods of market anomalies or other periods that do not reflect the general current market environment, index methodology rules may be relaxed to capture a large enough universe of securities to simulate the target market the index is designed to measure or strategy the index is designed to capture. For example, market capitalization and liquidity thresholds may be reduced. Back-tested performance reflects application of an index methodology and selection of index constituents with the benefit of hindsight and knowledge of factors that may have positively affected its performance, cannot account for all financial risk that may affect results and may be considered to reflect survivor/look ahead bias. Actual returns may differ significantly from, and be lower than, back-tested returns. Past performance is not an indication or guarantee of future results.

Typically, when S&P DJI creates back-tested index data, S&P DJI uses actual historical constituent-level data (e.g., historical price, market capitalization, and corporate action data) in its calculations. As ESG investing is still in early stages of development, certain datapoints used to calculate S&P DJI's ESG indices may not be available for the entire desired period of back-tested history. The same data availability issue could be true for other indices as well. In cases when actual data is not available for all relevant historical periods, S&P DJI may employ a process of using "Backward Data Assumption" (or pulling back) of ESG data for the calculation of back-tested historical performance. "Backward Data Assumption" is a process that applies the earliest actual live data point available for an index constituent company to all prior history of index performance. For example, Backward Data Assumption inherently assumes that companies currently not involved in a specific business activity (also known as "product involvement") were never involved historically and similarly also assumes that companies currently involved in a specific business activity were involved historically too. The Backward Data Assumption allows the hypothetical back-test to be extended over more historical years than would be feasible using only actual data. For more information on "Backward Data Assumption", please see https://www.spglobal.com/spdji/en/documents/education/faq-spdji-esg-back-testing-backward-data-assumption-overview.pdf. The methodology and factsheets of any index that employs backward assumption in the back-tested history will explicitly state so. The methodology will include an Appendix with a table setting forth the specific data points and relevant time period for which backward projected data was used.

Index returns shown do not represent the results of actual trading of investable assets/securities. S&P Dow Jones Indices maintains the index and calculates the index levels and performance shown or discussed but does not manage actual assets. Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the Index or investment funds that are intended to track the performance of the Index. The imposition of these fees and charges would cause actual and back-tested performance of the securities/fund to be lower than the Index performance shown. As a simple example, if an index returned 10% on a US $100,000 investment for a 12-month period (or US $10,000) and an actual asset-based fee of 1.5% was imposed at the end of the period on the investment plus accrued interest (or US $1,650), the net return would be 8.35% (or US $8,350) for the year. Over a three-year period, an annual 1.5% fee taken at year end with an assumed 10% return per year would result in a cumulative gross return of 33.10%, a total fee of US $5,375, and a cumulative net return of 27.2% (or US $27,200).

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S&P Dow Jones Indices

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Equity

S&P TOTAL MARKET INDEX

Description

The S&P Total Market Index (TMI) is designed to track the broad equity market, including large-, mid-, small-, and micro-cap stocks. The S&P 500® and the S&P Completion Index are subsets of the S&P TMI.

Quick Facts

WEIGHTING METHOD	Float-adjusted market cap weighted
REBALANCING FREQUENCY	Quarterly in March, June, September, and December
CALCULATION FREQUENCY	Real time
CALCULATION CURRENCIES	USD, CAD
LAUNCH DATE	March 27, 2006
FIRST VALUE DATE	December 31, 2004
REGULATORY AUTHORIZATION	European Union

For more information, including the complete methodology document, please visit:
https://www.spglobal.com/spdji/en/indices/equity/sp-total-market-index-tmi

All information for an index prior to its Launch Date is hypothetical back-tested, not actual performance, based on the index methodology in effect on the Launch Date. Back-tested performance reflects application of an index methodology and selection of index constituents with the benefit of hindsight and knowledge of factors that may have positively affected its performance, cannot account for all financial risk that may affect results and may be considered to reflect survivor/look ahead bias. Actual returns may differ significantly from, and be lower than, back-tested returns. Past performance is not an indication or guarantee of future results. This back-tested data may have been created using a "Backward Data Assumption". For more information on "Backward Data Assumption" and back-testing in general, please see the Performance Disclosure at the end of this material.

Historical Performance

Depending on index launch date, all charts below may include back-tested data.

S&P Dow Jones Indices
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Equity
S&P TOTAL MARKET INDEX

Performance

INDEX LEVEL	RETURNS			ANNUALIZED RETURNS			
	1 MO	3 MOS	YTD	1 YR	3 YRS	5 YRS	10 YRS
Total Return							
6,161.98	2.53%	8.29%	15.27%	44.29%	18.69%	17.87%	14.66%
Price Return							
4,531.64	2.42%	7.94%	14.49%	42.21%	16.62%	15.74%	12.49%

Calendar Year Performance

2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Total Return									
20.79%	30.9%	-5.3%	21.16%	12.65%	0.47%	12.46%	33.4%	16.44%	0.92%
Price Return									
18.72%	28.42%	-7.04%	18.89%	10.34%	-1.49%	10.35%	30.79%	14.03%	-0.99%

Risk

ANNUALIZED RISK			ANNUALIZED RISK-ADJUSTED RETURNS		
3 YRS	5 YRS	10 YRS	3 YRS	5 YRS	10 YRS
Total Return					
19.45%	15.67%	14.18%	0.96	1.14	1.03
Price Return					
19.45%	15.67%	14.18%	0.85	1	0.88

Risk is defined as standard deviation calculated based on total returns using monthly values.

Fundamentals

P/E (TRAILING)	P/E (PROJECTED)	P/B	INDICATED DIV YIELD	P/SALES	P/CASH FLOW
38.62	24.61	4.47	1.27%	3.09	21.53

As of June 30, 2021. Fundamentals are updated on approximately the fifth business day of each month.

Index Characteristics

NUMBER OF CONSTITUENTS	3955
CONSTITUENT MARKET [USD MILLION]	
MEAN TOTAL MARKET CAP	12,093.41
LARGEST TOTAL MARKET CAP	2,285,537.8
SMALLEST TOTAL MARKET CAP	8.78
MEDIAN TOTAL MARKET CAP	1,298.47
WEIGHT LARGEST CONSTITUENT [%]	4.8
WEIGHT TOP 10 CONSTITUENTS [%]	22.5

ESG Carbon Characteristics

CARBON TO VALUE INVESTED (METRIC TONS CO_2e/$1M INVESTED)*	54.75
CARBON TO REVENUE (METRIC TONS CO_2e/$1M REVENUES)*	201.69
WEIGHTED AVERAGE CARBON INTENSITY (METRIC TONS CO_2e/$1M REVENUES)*	177.85
FOSSIL FUEL RESERVE EMISSIONS (METRIC TONS CO_2/$1M INVESTED)	774.21

*Operational and first-tier supply chain greenhouse gas emissions.
For more information, please visit: www.spglobal.com/spdji/en/esg-metrics.

Top 10 Constituents By Index Weight

CONSTITUENT	SYMBOL	SECTOR*
Apple Inc.	AAPL	Information Technology
Microsoft Corp	MSFT	Information Technology
Amazon.com Inc	AMZN	Consumer Discretionary
Facebook Inc A	FB	Communication Services
Alphabet Inc A	GOOGL	Communication Services
Alphabet Inc C	GOOG	Communication Services
Berkshire Hathaway B	BRK.B	Financials
Tesla, Inc	TSLA	Consumer Discretionary
Nvidia Corp	NVDA	Information Technology
JP Morgan Chase & Co	JPM	Financials

*Based on GICS® sectors

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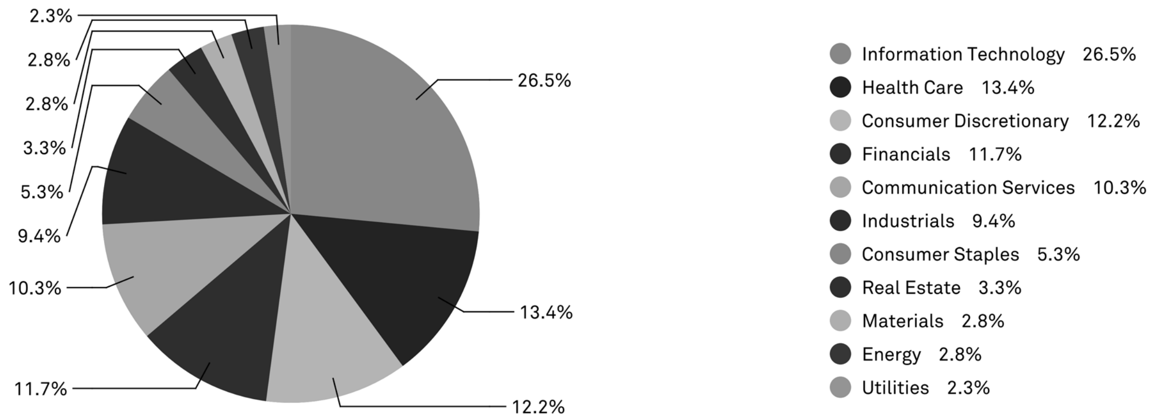
Sector* Breakdown



*Based on GICS® sectors

The weightings for each sector of the index are rounded to the nearest tenth of a percent; therefore, the aggregate weights for the index may not equal 100%.

Country/Region Breakdown

COUNTRY/REGION	NUMBER OF CONSTITUENTS	TOTAL MARKET CAP [USD MILLION]	INDEX WEIGHT [%]
United States	3,955	47,829,435.7	100

Based on index constituents' country of domicile.

Tickers

	TICKER	REUTERS
Price Return	SPTMI	.SPTMI
Total Return	SPTRTMI	.SPTMITR

Related Products

This list includes investable products traded on certain exchanges currently linked to this selection of indices. While we have tried to include all such products, we do not guarantee the completeness or accuracy of such lists. Please refer to the disclaimers at the end of this document or here for more information about S&P Dow Jones Indices' relationship to such third party product offerings.

PRODUCT NAME	PRODUCT TYPE	EXCHANGE	TICKER
iShares Core S&P Total US Stock Mkt ETF	ETF	NYSE ARCA	ITOT
iShares Core S&P US Total Mkt ETF	ETF	TORONTO STOCK EXCHANGE	XUU
iShares Core S&P US Total Mkt ETF CADH	ETF	TORONTO STOCK EXCHANGE	XUH
iShares Core S&P US Total Mkt ETF USD	ETF	TORONTO STOCK EXCHANGE	XUU.U

CONTACT US

spdji.com
index_services@spglobal.com

S&P Dow Jones Custom Indices
customindices@spglobal.com

New York
1 212 438 7354
1 877 325 5415

Mexico City
52 (55) 1037 5290

London
44 207 176 8888

Dubai
971 (0)4 371 7131

Mumbai
91-22-2272-5312

Beijing
86.10.6569.2770

Hong Kong
852 2532 8000

Tokyo
81 3 4550 8564

Sydney
61 2 9255 9802

PERFORMANCE DISCLOSURE

Source: S&P Dow Jones Indices LLC.

The launch date of the S&P Total Market Index (TMI) was March 27, 2006.

S&P Dow Jones Indices defines various dates to assist our clients in providing transparency. The First Value Date is the first day for which there is a calculated value (either live or back-tested) for a given index. The Base Date is the date at which the index is set to a fixed value for calculation purposes. The Launch Date designates the date when the values of an index are first considered live: index values provided for any date or time period prior to the index's Launch Date are considered back-tested. S&P Dow Jones Indices defines the Launch Date as the date by which the values of an index are known to have been released to the public, for example via the company's public website or its data feed to external parties. For Dow Jones-branded indices introduced prior to May 31, 2013, the Launch Date (which prior to May 31, 2013, was termed "Date of introduction") is set at a date upon which no further changes were permitted to be made to the index methodology, but that may have been prior to the Index's public release date.

Please refer to the methodology for the Index for more details about the index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations.

Information presented prior to an index's launch date is hypothetical back-tested performance, not actual performance, and is based on the index methodology in effect on the launch date applied retroactively. However, when creating back-tested history for periods of market anomalies or other periods that do not reflect the general current market environment, index methodology rules may be relaxed to capture a large enough universe of securities to simulate the target market the index is designed to measure or strategy the index is designed to capture. For example, market capitalization and liquidity thresholds may be reduced. Back-tested performance reflects application of an index methodology and selection of index constituents with the benefit of hindsight and knowledge of factors that may have positively affected its performance, cannot account for all financial risk that may affect results and may be considered to reflect survivor/look ahead bias. Actual returns may differ significantly from, and be lower than, back-tested returns. Past performance is not an indication or guarantee of future results.

Typically, when S&P DJI creates back-tested index data, S&P DJI uses actual historical constituent-level data (e.g., historical price, market capitalization, and corporate action data) in its calculations. As ESG investing is still in early stages of development, certain datapoints used to calculate S&P DJI's ESG indices may not be available for the entire desired period of back-tested history. The same data availability issue could be true for other indices as well. In cases when actual data is not available for all relevant historical periods, S&P DJI may employ a process of using "Backward Data Assumption" (or pulling back) of ESG data for the calculation of back-tested historical performance. "Backward Data Assumption" is a process that applies the earliest actual live data point available for an index constituent company to all prior history of index performance. For example, Backward Data Assumption inherently assumes that companies currently not involved in a specific business activity (also known as "product involvement") were never involved historically and similarly also assumes that companies currently involved in a specific business activity were involved historically too. The Backward Data Assumption allows the hypothetical back-test to be extended over more historical years than would be feasible using only actual data. For more information on "Backward Data Assumption", please see https://www.spglobal.com/spdji/en/documents/education/faq-spdji-esg-back-testing-backward-data-assumption-overview.pdf. The methodology and factsheets of any index that employs backward assumption in the back-tested history will explicitly state so. The methodology will include an Appendix with a table setting forth the specific data points and relevant time period for which backward projected data was used.

Index returns shown do not represent the results of actual trading of investable assets/securities. S&P Dow Jones Indices maintains the index and calculates the index levels and performance shown or discussed but does not manage actual assets. Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the Index or investment funds that are intended to track the performance of the Index. The imposition of these fees and charges would cause actual and back-tested performance of the securities/fund to be lower than the Index performance shown. As a simple example, if an index returned 10% on a US $100,000 investment for a 12-month period (or US $10,000) and an actual asset-based fee of 1.5% was imposed at the end of the period on the investment plus accrued interest (or US $1,650), the net return would be 8.35% (or US $8,350) for the year. Over a three-year period, an annual 1.5% fee taken at year end with an assumed 10% return per year would result in a cumulative gross return of 33.10%, a total fee of US $5,375, and a cumulative net return of 27.2% (or US $27,200).

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COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Rea Testimony, pages 70–71 and 92–93. Explain why both the S&P 500 index and the much broader Value Line 1,700 Stock Universe are both used in the DCF Market Return analysis and not simply the latter since it is the broader index. Include in the explanation why it would not be more appropriate to rely the broader index.

Response:

Please see Columbia's Response to the Staff's Second Set of Requests for Information, No. 37(a). Mr. Rea's objective in referencing both indices was to provide a balanced approach in estimating the expected market return, and therefore the expected market risk premium. This is the case because referencing the S&P 500 Index supported Mr. Rea's constant growth DCF approach to estimating the market return, while referencing the Value Line 1,700 stock universe supported Mr. Rea's relative valuation approach to estimating the expected market return.

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Rea Testimony, pages 72–72, and Attachment VVR-11, page 3 of 8, Footnote (8). a. A forecast is simply that–a forecast. However, real time bond market rates for 30-year Treasuries necessarily encompass investors' expectations of the future. Explain further why current 30-year Treasury are not appropriate for use as the risk free rate in the CAPM model calculations. b. Provide the two interest rate forecasts from Blue Chip Financial Forecasts used to derive the 2.94 percent risk free rate.

Response:

a. The CAPM is a forward-looking ex ante model which requires expectational inputs, including the expected risk-free rate of return. Considering that U.S. Treasury security yields have been quite volatile in recent years and have reflected the impact of a so-called "flight to quality" by investors resulting from the recent COVID-19 pandemic, referencing forecasted interest rates provides a superior measure of investor expectations going forward. Moreover, the Federal Reserve Board's unprecedented monetary policy interventions in recent years, and in particular, the Fed's quantitative easing programs, have had the effect of putting downward pressure on intermediate and long-term U.S.

Treasury security yields. Along these lines, the Fed's economists have stated that intermediate-term Treasury security yields would be as much as *100 basis points higher* if the Fed had not implemented its quantitative easing programs in recent years[1]. Therefore, consistent with the statements of the Fed's economists, and as a result of the Fed's monetary policy interventions, today's Treasury security yields do not reflect normal supply and demand dynamics in the U.S. capital markets, and therefore do not likely reflect the forward-looking return expectations of investors. This is an additional reason why spot interest rates do not represent an appropriate input for use in the CAPM, which again, requires expectational inputs.

b. Please see CONFIDENTIAL KY PSC Case No. 2021-00183, Staff 2-039, Attachment A for the requested information.

[1] Bonis, Brian, Jane Ihrig, and Min Wei (2017). "The Effect of the Federal Reserve's Securities Holdings on Longer-Term Interest Rates," FEDS Notes. Washington: Board of Governors of the Federal Reserve System, April 20, 2017, https://doi.org/10.17016/2380-7172.1977.

ATTACHMENT FILED UNDER SEAL PURSUANT TO A MOTION FOR CONFIDENTIAL TREATMENT

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Rea Testimony pages 77–79. Explain whether any utility regulatory commission has accepted a re-levered Beta adjustment in a CAPM ROE model in any regulated NiSource gas or combination gas and electric utility rate case. If so, provide the state, utility, case number, whether the case was fully litigated or settled, and a copy of the Order accepting the adjustment.

Response:

Mr. Rea's CAPM beta adjustment methodology (Hamada method adjustment) is based upon the same financial concepts advanced by Modigliani and Miller, which established the relationship between the level of financial leverage in a firm's capital structure and its corresponding cost of equity. As discussed in the Columbia's Response to Staff 2-036(a), the Pennsylvania Public Utility Commission has accepted the Modigliani and Miller form of this financial risk adjustment on numerous occasions.

Mr. Rea is not aware of any state regulatory commission decisions involving a NiSource utility subsidiary that explicitly states that the commission adopted the form of re-levered beta adjustment proposed by Mr. Rea. However, this does not necessarily indicate that Mr. Rea's re-levered beta adjustment was not factored into the final ROE decisions in these proceedings, since in many of the cases where Mr. Rea has proposed the same beta adjustment, the commission's final order was silent on the matter of the beta adjustment in both litigated and settled proceedings.

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Rea Testimony, page 94, and Attachment VVR-12. Explain whether there is a Value Line utility index comparable to the S&P 500 Utilities Index. If so, provide the analysis using the Value Line index.

Response:

There is not a Value Line utility index that is comparable to the S&P 500 Utilities Index.

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Rea Testimony, Appendix A, page 1, lines 8–12, and to page 6, lines 3–6, discussing model inputs. a. Explain whether the forward looking projection variables sourced externally have a forecast uncertainty. If so, also explain how forecast uncertainty might influence investor behavior. b. Explain whether any uncertainty was propagated throughout the models and whether this data can be provided for the ROE point estimates calculated under each of the methods.

Response:

a. While all forward-looking projections have some degree of forecast uncertainty, the expected dividend payments for the next 12 months that are reported by Value Line are generally considered to be highly reliable. This is because Value Line derives its estimates of dividends over the next 12 months on the basis of a company's recent historical dividend payment pattern. Therefore, any differences between the Value Line forecasted dividend payment and the actual dividend payment ultimately made would be expected to be relatively insignificant, and should not affect the resulting cost of capital estimates in a material way.

Considering that Value Line is a widely-referenced independent investment publication, the expected dividend payments reported by Value Line would be expected to influence investor expectations and investor behavior. The same is also true of the growth estimates reported by Value Line, including growth estimates for EPS, DPS and BVPS. However, as further discussed in Mr. Rea's direct testimony, the finance literature is quite clear that it is the EPS growth estimates of equity analysts in particular that are a primary driver of stock valuations.

b. Estimates of dividend yields and the growth rate to employ in the constant growth DCF model will invariably be subject to measurement and forecasting errors. In order to mitigate these potential errors to the maximum extent possible, Mr. Rea assembles the largest utility proxy group possible within the constraints of his screening criteria, and he also evaluates multiple proxy groups. This approach serves to increase the number of forecast observations evaluated by Mr. Rea and therefore enhances the statistical reliability of his DCF analyses, which is ultimately reflected in his point estimate of the DCF-derived cost of equity.

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Rea Testimony, Exhibit VVR-6, page 1 of 1. a. Provide support for the forecasted interest rate of 3.90 percent for September 2021 debt issuance. b. Provide support for the forecasted interest rate of 4.00 percent for the March 2022 debt issuance.

Response:

Please refer to KY PSC Case No. 2021-00183, Staff 2-043, Attachment A for the requested support.

ATTACHMENTS ARE EXCEL SPREADSHEETS AND UPLOADED SEPARATELY

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Provide support for the forecasted interest rate of 4.00 percent for the June 2022 debt issuance.

Response:

Please refer to KY PSC Case No. 2021-00183, Staff 2-44, Attachment A for the requested support.

ATTACHMENTS ARE EXCEL SPREADSHEETS AND UPLOADED SEPARATELY

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to the Direct Testimony of Kimberly K. Cartella, page 29, lines 4–6. Explain why non-exempt, non-union employees contribute a different percentage share to health care costs than exempt employees.

Response:

The company's contribution strategy provides for a slightly more generous cost share to non-exempt (including bargaining unit) employees in an attempt to be more equitable when comparing total rewards packages across exempt and nonexempt employment categories.

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to Columbia Kentucky's Response to Commission Staff's First Request for Information (Staff's First Request), Item 52, Attachment A. a. Provide the information by customer class. b. Provide a detailed explanation of what is included in the following columns: (1) Rent from Gas Property; (2) Third Party Billing; (3) Customer Billing Service; (4) OMO/OFO Demand Penalty; (5) Customer Rate Change Fee; (6) Other Revenue; and (7) Misc. Service Lists.

Response:

a. Information is not recorded on the Company's books on a customer class basis. Some of the revenues are billed to a Choice marketer or a sister company that provide services to more than one customer class.

b. Please refer to the below explanations:

(1) <u>Rent from Gas Property</u>: Columbia Gas of Kentucky's building in Lexington is partially utilized by NiSource Corporate Service Company (NCSC) employees and therefore collects rent from NCSC.

(2) Third Party Billing: Columbia charges two Choice marketers for bill inserts and this column reflects the amount charged.

(3) Customer Billing Service: Columbia charges the Kentucky State Treasurer for Sales & Use tax collections.

(4) OMO/OFO Demand Penalty: Columbia charges penalties when a transportation customer's consumption exceeds what has been delivered to Columbia's distribution system on behalf of the customer during a cold weather Operating Flow Order (OFO) or Operating Matching Order (OMO). Columbia also charges penalties to a transportation customer when volumes delivered to Columbia's distribution system on behalf of the customer exceeds the customer's consumption during a warm weather Operating Flow Order (OFO) or Operating Matching Order (OMO).

(5) Customer Rate Change Fee: Columbia charges Choice gas marketers for changing the rates charged to customers by Columbia on behalf of the Choice marketer.

(6) Other Revenue: this is essentially all other revenue collected by Columbia that is not already included in another revenue classification. They can be for billing credits or adjustments that have not been classified under any other category. For example, TCO or CGT penalty credits (pipeline credits).

(7) Misc. Service Lists: Columbia charges Choice Marketers for customer listings generated for the marketer.

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to Columbia Kentucky's response to Staff's First Request, Item 52, in which Columbia Kentucky states that non-recurring charges for forecasted months in 2022 were based on the three-year average of historical actual data from the general ledger for the years 2018, 2019, and 2020. Explain whether any adjustments were made to the forecasts to account for the COVID-19 pandemic. If not, explain why not

Response:

By including 2020 in the three-year average (2018-2020), the Company did adjust the forecast to account for pandemic level spend adjustments while also using historical data from 2018 and 2019 to reflect a normalization for a more accurate prediction of 2022 in response to the lifting of pandemic-related restrictions with the exception of Forfeited Discounts (Account 487).

The level of Forfeited Discount revenue was impacted by COVID-19 for the months of March 2020 through December 2020 for residential customers and for the months of March 2020 through October 2020 for non-residential customers.

By using historical data for the years 2018-2020 in the three-year average (2018-2020), the Company did inadvertently include the impact of COVID-19 when calculating a normalization of Forfeited Discounts for the year 2022.

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to Columbia Kentucky's Response to Staff's First Request, the Excel spreadsheet "KY PSC Case No. 2021-00183, Staff 1-54, CONFIDENTIAL ATTACHMENT A.xlsx" at Tabs "B-6 ADIT & EDIT (Base) NEW" and "B-6 ADIT & EDIT (Forecast) NEW."

a. Describe the book/tax differences that gave rise to the deferred taxes assets and liabilities, if any, recorded in Account 190 under the Rate Base ADIT and Excess ADIT subject line.

b. Describe the book/tax differences that gave rise to the deferred taxes assets and liabilities, if any, recorded in Account 282 under the Rate Base ADIT and Excess ADIT subject line.

c. Explain how Columbia Kentucky projected the change in Account 190 under the Rate Base ADIT and Excess ADIT subject line from $6,450,992 at the end of August 2021 to $6,870,189 at the end of December 2021, and explain specifically why the balance in that account decreased through the base period but is projected to increase between the base and the forecasted period.

d. Explain how Columbia Kentucky projected the change in Account 282 under the Rate Base ADIT and Excess ADIT subject line from ($69,151,930) at the end of August 2021 to ($70,296,229) at the end of December 2021.

e. Explain why Columbia Kentucky did not project any change to Account 190 or Account 282 under the Rate Base ADIT and Excess ADIT subject line during the forecasted period.

Response:

a. The book/tax differences that gave rise to the federal and state deferred taxes assets recorded in Account 190 included in Rate Base ADIT on Schedules B-6 (Base), Lines 30 and 34-37 and (Forecast), Lines 38 and 42-45 include 1) the Federal net operating loss, 2) customer advances and 3) capitalized inventory.

   The net excess ADIT included in Rate Base ADIT on Schedules B-6 (Base), Lines 130-133 and (Forecast), Lines 138-141 include the deferred taxes that were re-measured as of 12/31/2017 at 21% federal income tax rate as a result of TCJA, including 1) deficient ADIT for the Federal net operating loss, 2) deficient ADIT for customer advances, 3) deficient ADIT for capitalized inventory and 4) excess ADIT for the Federal book/tax property basis difference. Additionally, the net excess ADIT included in Rate Base ADIT on Schedules B-6 (Base), Lines 137-139 and (Forecast), Lines 145-147 include the deferred taxes that were re-measured as of 12/31/2017 at 5% state income tax rate, including 1) deficient ADIT for customer advances, 2) deficient ADIT for capitalized inventory and 3) excess ADIT for the state book/tax property basis difference.

b. The book/tax differences that gave rise to the federal and state deferred taxes assets and liabilities, if any, recorded in Account 282 under the Rate Base ADIT represents the cumulative book/tax differences related to plant in service, including the reversal of book depreciation & gain/loss and deduction for bonus depreciation (prior to 2018), tax repairs deduction, 263A mixed service costs deduction, and MACRS depreciation & tax gain/loss.

c. Columbia Kentucky projected the change in Account 190 under the Rate Base ADIT and Excess ADIT subject line from $6,450,992 at the end of August 2021 to $6,870,189 at the end of December 2021, primarily related to an increase in the Federal net operating loss ("NOL") balance due to the taxable loss for the base period at present rates. The balance increase between the base and the forecasted period is attributed to utilization of the Federal NOL under the tax sharing agreement (Please reference Columbia's Response to the Attorney General's First Set of Requests for Information, No. 110, Attachment A). Please reference the discussion under question e. below as it relates to change in the presentation of excess ADIT from before gross up to after gross up and inclusion of the gross up for income taxes gross-up for deferred income tax recorded in Account 190 presented to Lines 86 and 87. This change increased the Account 190 Deferred Income Taxes (Line 4) with an offset to Account 254 (Excess ADIT). The net change has a zero impact on the Total Rate Base ADIT (Line 9).

d. Columbia Kentucky projected the change in Account 282 under the Rate Base ADIT and Excess ADIT subject line from ($69,151,930) at the end of August 2021 to ($70,296,229) at the end of December 2021 based on the annual forecasted book/tax differences based on the forecasted plant in service additions, including the addback of straight-line book deprecation, deduction of tax repairs, deduction of 263A mixed service costs, and accelerated MACRS tax depreciation. The annual forecasted book/tax differences are pro-rated monthly and included in the monthly income tax accrual.

e. The Company does not forecast the change in balance for capitalized inventory or customer advances captured in Account 190. Consequently, the ADIT balance is held constant.

With respect to Account 282, the Company had an inadvertent formula error on Schedule B-6 (Forecast) that included the wrong excel cell for 'EXCESS ACCELERATED DEPRECIATION – FED' and 'EXCESS ACCELERATED DEPRECIATION – STATE' in its computation of rate base ADIT presented on

Schedule B-6 (Forecast), Lines 91 and 92 for the forecasted period which resulted in zero amounts included for the 12-month forecasted current year activity for Excess Tax Depreciation (addback of book depreciation and deduction for MACRS tax depreciation), 'Repairs Deduction', '263A Mixed Service Costs Deduction' and State Bonus Disallowance' adjustments presented on Schedule E-1.1, Page 2, Lines 33, 35, 36 and 59, respectively. The Company has attached an updated Schedule B-6 in KY PSC Case No. 2021-00183, AG 1 -101, Attachment A with the corrected balance of ADIT for 'EXCESS ACCELERATED DEPRECIATION – FED' and 'EXCESS ACCELERATED DEPRECIATION – STATE' to include the activity from December 31, 2021 to December 31, 2022. Please reference KY PSC Case No. 2021-00183, AG 1-101, Attachment A, Page 2, Column 20 for the 12-Month ADIT Activity.

The correction results in an increase in rate base ADIT of $2,099,769 for the forecasted test year as detailed on Line 9, Column 19 as follows:

- As filed Schedule B-6 - $(90,516,529)
- Attachment AG-1-101 $(92,616,298)

The Company also updated Schedule B-6 (Forecast) for presentation purposes for the Excess ADIT presented on Lines 137 through 148 to reflect the balances after gross up, as well, the gross-up for deferred income tax recorded in Account 190 presented to Lines 86 and 87, and updated the reference classification to RB to include in rate base.

The previous presentation excluded the gross-up for deferred income taxes from rate base ADIT and Excess ADIT balances were presented before gross-up. This change increased the Account 190 Deferred Income Taxes (Line 4) with an offset to Account 254 (Excess ADIT). The net change has a zero impact on the Total Rate Base ADIT (Line 9).

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to Columbia Kentucky's Response to Staff's First Request, the Excel spreadsheet "KY PSC Case No. 2021-00183, Staff 1-54, CONFIDENTIAL ATTACHMENT A.xlsx" at Tab "WPB2.2 Plant detail." a. Explain how the amount and timing of retirements from plant in service shown in this tab were projected. b. Explain how the amount and timing of the "Cost of Removal" shown in this tab were projected.

Response:

a) The retirements included for Gas Plant Account 303.30 relate to IT investments. These retirements were developed based on a project by project analysis of when the existing amortizations would be completed.

All other retirements were forecasted based on a historical analysis of retirements versus capital spend. This analysis indicated retirements/plant investment were 13.4%. This factor was applied based on the capital spend pattern used for each forecasted period to determine amount and timing of retirements.

b) A three year average of monthly actual Cost of Removal amounts were used to project the amounts.

KY PSC Case No. 2021-00183
Response to Staff's Data Request Set Two No. 50
Respondent: Judy Cooper

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to Columbia Kentucky's current tariff on file with the Commission, P.S.C. Ky. No. 5, Fifth Revised Sheet No. 70. a. Provide cost support for Columbia Kentucky's $25 reconnect fee. If the fee includes labor, explain whether the service is performed by Columbia Kentucky employees or contract labor. b. For a customer who requests discontinuance of service and then requests reconnection five months after requesting discontinuance, explain why such a customer is required to pay eight months, instead of five months, of the minimum charge as a reconnect fee.

Response:

a. Reconnects that would be subject to the reconnect fee are performed by company labor. The cost of which is currently $56.18, based on one hour base labor, determined as below:

Cost of CKY Service Technician	$46.11
Overheads and Vehicle Charges	$10.08
Total Cost	$56.18

The reconnect fee is a special non-recurring charge assessed for reconnection of service due to disconnection for non-payment of bills or violations of Columbia's rules and regulations. It is, of course, preceded by a premise visit to disconnect the customer. The cost of working a disconnect order is approximately equivalent to the cost of working a reconnect order. The actions of a customer resulting in the creation of two work orders for the same premise are largely subsidized by other customers when the cost is not fully recovered by the fee for reconnection of service. The intent of the special charge is to assign the cost that the company incurs to the cost-causer. This is a ratemaking principle to which the Commission has historically adhered.

b. The seasonal reconnect fee is applicable to a customer that requests reconnection of service at the same premises within eight months of having requested discontinuance of service at the same location. The charge was initially authorized in 2007. The intent of this fee is to eliminate an unintended incentive to engage in seasonal disconnection of service by virtue of a reconnect fee that is less than the aggregate minimum monthly charge. The fee is a fixed amount determined as Columbia's minimum monthly charge for each applicable customer class times eight.

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Refer to Columbia Kentucky's current tariff on file with the Commission, P.S.C. Ky. No. 5, Fourth Revised Sheet No. 74. Provide detailed cost support for Columbia Kentucky's 5 percent late payment penalty.

Response: Kentucky Administrative Regulation 807 KAR 5:006 permits a late payment penalty but does not specify an amount. In Case No. 2009-00141 Columbia was authorized to apply its existing 5% late charge to all customer classes. No cost support was created for the charge. It is intended to be an incentive for customers to pay their bills on time and is a common business and government practice.

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S SECOND REQUEST FOR INFORMATION
DATED JULY 7, 2021

Provide detailed cost support for Columbia Kentucky's $15 returned payment fee. If the fee includes labor, explain whether the service is performed by Columbia Kentucky employees or contract labor.

Response: Columbia's $15 returned payment fee was last revised in 2007. At the time, the estimated cost associated with a returned payment was $17.33. As with other special charges, the intent was to assign the cost that the company incurs to the cost-causer in keeping with the predominant ratemaking theory of the time to more correctly align the amount of the charge with the actual cost, thus assigning the appropriate costs to the appropriate customers.