BEFORE THE

PUBLIC UTILITY COMMISSION OF OREGON

UG 490

In the Matter of	)
	)
NORTHWEST NATURAL GAS COMPANY, dba NW Natural,	)
	)
	)
Request for General Rate Revision.	)

REBUTTAL AND CROSS ANSWERING TESTIMONY OF BRADLY G. MULLINS

ON BEHALF OF THE

ALLIANCE OF WESTERN ENERGY CONSUMERS

July 2, 2024

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I. INTRODUCTION AND SUMMARY

Q. PLEASE STATE YOUR NAME AND OCCUPATION.

A. My name is Bradley G. Mullins. My witness qualifications were provided in **Exhibit Stipulating Parties/103**.

Q. ARE YOU THE SAME WITNESS THAT PREVIOUSLY FILED OPENING TESTIMONY IN THIS DOCKET?

A. Yes. I previously filed Opening Testimony on behalf of the Alliance of Western Energy Consumers ("AWEC") regarding the proposed cost of capital, revenue requirement and rate spread of Northwest Natural Gas Company, *dba* NW Natural ("NW Natural") in its general rate case filing.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL AND CROSS ANSWERING TESTIMONY?

A. I respond to the Reply Testimony of NW Natural witnesses Wilson, Coyne, and Nelson regarding cost of capital issues. I also respond to the Reply Testimony of NW Natural witness Walker regarding revenue requirement issues. Finally, I respond to Reply Testimony of NW Natural witness Wyman and the Opening Testimony of Staff witness Shierman regarding rate spread and rate design.

Q. PLEASE SUMMARIZE YOUR REVISED REVENUE REQUIREMENT RECOMMENDATION.

A. **Table 1** below provides AWEC's updated revenue requirement recommendation. In addition, **Table 1** includes the approximate impact of the depreciation rate revisions that have been agreed to in Docket UM 2312. The data behind this **Table 1** may be found in **Exhibit AWEC/201.**

Table 1
AWEC Updated Revenue Requirement

NW Natural Initial Proposal		**154,913**
% Margin		*29.2%*
Impact of Adjustments		
	Cost of Capital	(16,326)
a	Rate Base Valuation Period	(42,757)
b	Test Period Rev. and Exp.	(927)
c	RWIP Forecast	(720)
d	RWIP ADIT	(1,947)
e	Pre 1981 Flow Through	-
f	ARAM Adjustment	(301)
g	Accrued Vacation	(272)
h	Lead-Lag Study: Revenues	(11,389)
i	Lead-Lag Study: Taxes	-
j	Software Retirements	(483)
k	Directors' Fees & Expense	(2,149)
l	D&O Insurance	(387)
m	Water Company Insurance	-
n	Water Company Expense	(52)
o	Depreciation Settlement	(23,459)
	Interest Coordination	4,069
Total Adjustments		**(97,100)**
Adjusted Revenue Requirement		**57,813**
Adjusted % Margin		*11.0%*

Q. WHAT RATE SPREAD ARE YOUR RECOMMENDING?

A. My proposed rate spread is detailed in **Table 2** below, including the approximate effects of the purchased gas adjustment filings based on NW Natural’s response to Bench Request 1 in this Docket. I have revised my recommendation to include a rate increase for above parity rate schedules equal to 0.15 times the average, to respond to the concerns raised by Staff. As shown below, my recommended rate spread is more favorable towards residential customers than NW Natural’s, while still moving the various rate classes towards their relative cost of service. Details behind these calculations can be found in **Exhibit AWEC/202**.

Table 2
AWEC Recommended Rate Spread

Schedule	Ratio of Increase	Margin Increase	Nov. 1 Increase
02R	1.038	11.31%	3.75%
03C	1.300	14.17%	7.21%
03I	0.150	1.63%	2.17%
27R	1.300	14.17%	5.76%
31CSF	0.150	1.63%	-0.28%
31CTF	0.150	1.63%	10.73%
31ISF	0.150	1.63%	3.08%
31ITF	0.150	1.63%	10.43%
32CSF	0.150	1.63%	3.17%
32ISF	0.150	1.63%	4.30%
32CTF	0.150	1.63%	9.73%
32ITF	0.150	1.63%	5.73%
32CSI	0.150	1.63%	4.31%
32ISI	0.150	1.63%	4.59%
32CTI	0.150	1.63%	6.53%
32ITI	0.150	1.63%	-2.07%
Total	1.000	10.90%	4.37%

II. COST OF CAPITAL

Q. WHAT CAPITAL STRUCTURE DID YOU RECOMMEND IN OPENING TESTIMONY?

A. In Opening Testimony, I recommended using a capital structure that was informed by NW Natural's actual expected capital structure at the time rates go into effect, or 52/48 debt to equity.

Q. HOW DID NW NATURAL RESPOND?

A. NW Natural responded that the use of a 52/48 debt to equity capital structure was unreasonable because it alleges that the circumstances at the time rates go into effect will be abnormal.[1]

[1] See NW Natural/2500, Coyne-Nelson/19:1-22:5.

Q. DO YOU AGREE THAT THE CIRCUMSTANCES SURROUNDING NW NATURAL'S CAPITAL STRUCTURE WILL BE ABNORMAL?

A. No. NW Natural's assertion that the rate effective date capital structure is abnormally low due to unique circumstances at the time of the rate effective date is inconsistent with its own data. NW Natural calculated an average capital structure of 51/49 debt to equity measured over the whole rate effective period.[2] The minor, single percentage point difference in my recommended equity ratio and NW Natural's is not indicative of abnormal circumstances. Nor is it a reason to disregard the actual capital structure when determining NW Natural's cost of capital. Only modest changes to NW Natural's capital structure are expected over the test period. Since those changes will not be known, measurable and verifiable by the time rates go into effect, however, I have not considered them in my recommendation. While NW Natural alleges that it is targeting a higher equity percentage, there will be no way to verify that those increases will indeed occur. Thus, I view my approach to be reasonable approach, consistent with the known and measurable standard.

Q. IS A 48% EQUITY PERCENTAGE REASONABLE?

A. Yes. NW Natural provides no valid evidence that using its actual capital structure, including a 48% equity percentage, is unreasonable. NW Natural points to the authorized capital structure of other utilities as the basis for arguing that a higher capital structure is warranted.[3] As detailed in the figure at Coyne-Nelson/22, a 48% equity ratio is within the range of capital structures approved for other utilities. Therefore, the data NW Natural presents does not support its own conclusion.

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[2] NW Natural/300, Wilson/3:13-15.
[3] NW Natural/2500, Coyne-Nelson/22.

Q. ARE THE EQUITY PERCENTAGES APPROVED FOR OTHER UTILITIES RELEVANT?

A. No. Not only are NW Natural's conclusions unsupported, but the data is both irrelevant and misses the point. Stating that a 48% equity ratio is unreasonable, simply because other commissions have approved different equity ratios for other utilities ignores the unique facts and circumstances of this case, as well as the unique facts and circumstances of the utilities in the other cases to which NW Natural is being compared. In this case, there is no doubt that NW Natural's actual equity percentage has been declining and that the amount of debt in its capital structure has been increasing. These are unique facts of this case, which cannot be ignored when comparing to outcomes in proceedings for other utilities.

Q. IS IT REASONABLE TO USE A HYPOTHETICAL CAPITAL STRUCTURE?

A. Yes, in some cases. NW Natural cites to the Commission's decision to adopt a hypothetical capital structure in PacifiCorp's 2020 rate case Docket No UE 374, as rationale for its proposed 50/50 capital structure.[4] To be clear, use of a hypothetical capital structure is not an unreasonable approach in some cases, but it is equally appropriate for the Commission to consider a utility's actual capital structure when evaluating the reasonableness of a hypothetical one. A utility has complete control over its capital structure, which is dependent on, among other things, the amount of debt it issues and the amount of dividends it pays to its parent company. NW Natural can increase or decrease its leverage ratio, for example, by paying more, or less, dividends to its sole shareholder, NW Natural Holdings, and these dividends are entirely within its discretion. Accordingly, a utility's capital structure needs to be established at a level to strike an appropriate balance between the interest of shareholders

4 NW Natural/2500, Coyne-Nelson/16:7-17.

and ratepayers. The Washington Utilities and Transportation Commission has described this balance as follows:

> A central tenet of ratemaking is that a Company's capital structure must strike an appropriate balance between safety and economy. In other words, the capital structure must contain sufficient equity to provide financial security, but no more than necessary to keep ratepayer costs at a reasonable level.[5]

In the circumstances of this case—where a utility is operating at high leverage, and a low equity ratio—it is appropriate to consider the lower equity level, even if such a level is lower than the hypothetical capital structures used in past proceedings. A rational utility will not reduce its actual equity to a level below that which it finds to be sufficient. Therefore, using NW Natural's actual equity percentage will result in a capital structure with sufficient equity to provide financial security, while keeping ratepayer costs at a reasonable level.

Q. HOW DO YOU RESPOND TO NW NATURAL'S CRITICISMS OF YOUR 9.2% COST OF EQUITY RECOMMENDATION?

A. NW Natural proposed 10.1% cost of equity is aggressive and, if approved, would be an outlier compared to other regulated utilities in the region. NW Natural's general argument for this major increase to its currently authorized 9.4% ROE is its self-serving and faulty perception that a utility's return on equity is influenced only by treasury rates, and no other factors. NW Natural's consultants provide anecdotal information showing that treasury rates have increased, and they infer that NW Natural's cost of equity should increase proportionally. This, however, is not valid logic, and not how equity costs should be developed. Equity costs are not the same as treasury rates. It is not necessarily true that if treasury rates increase, equity costs will also increase by the same amount. If this were the case, there would be no reason to perform a cost of equity analysis in the first place. The Commission could merely peg NW Natural's cost of

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5 *WUTC v. PacifiCorp*, Docket UE-100749, Order 06 ¶ 39 (Mar. 25, 2011).

equity to be equal to a specified number of basis points above the risk free rate. While this approach is irrational and unreasonable, it is precisely the type of analysis NW Natural's consultants are using to justify a nearly 70 basis point increase to NW Natural's ROE.

Q. IS IT REASONABLE TO USE A HISTORICALLY CALCULATED MARKET RISK PREMIUM?

A. NW Natural's consultants continue to insist that historical equity risk premiums are a valid way to estimate forward looking equity costs. I disagree. A bank does not set mortgage rates based on historical rates over the past 100 years, nor should the Commission calculate equity costs in such a manner. As I noted in my Opening Testimony, equity costs do not necessarily move in tandem with treasury rates. Risk free rates may be increasing, while equity costs decline. Both are dynamic markets. Historical market risk premiums are irrelevant in calculating a forward looking cost of equity. The market risk premium changes dynamically as market conditions change, and therefore, using a forward looking estimate is the most accurate way to establish a reasonable cost of equity for a utility.

Q. HAVE MARKET RISK PREMIUMS BEEN DECLINING?

A. Yes. Market risk premiums have been declining rapidly. In **Exhibit AWEC/203**, I provide the most recent guidance from Kroll regarding their forward looking equity risk premium ("ERP"). The report states the following:

> The Kroll Recommended U.S. ERP is decreasing from 5.5% to 5.0% when developing USD denominated discount rates as of June 5, 2024, and thereafter, until further notice.

Thus, contrary to the assertions of NW Natural's consultants, equity risk premiums have been declining. The equity risk premiums of 7.1% to 9.2% based on backward looking data is not relevant; is inconsistent with the equity risk premiums being develop by professional forecasting firms and should not be relied on by the Commission to estimate the cost of equity.

Q. WHY DO NW NATURAL'S CONSULTANTS ARGUE AGAINST USING AN UNBIASED, THIRD PARTY ESTIMATE OF THE ERP?

A. I suspect it's because doing so helps NW Natural justify its proposed ROE. It is telling that NW Natural's consultants rely on historical data from Kroll when estimating their proposed ERP yet argue that the Commission should completely ignore Kroll's forward-looking guidance when establishing NW Natural's cost of capital in this case. NW Natural's consultants' sole argument against using the Kroll estimate is that "it does not appear to move in relation to the risk-free rate."[6] They argue that this observation is inconsistent with academic studies, which show based on after-the-fact calculations "[a]s the risk-free rate decreases, the MRP increases and vice versa." Since Kroll's, unbiased, third-party guidance does not match perfectly with the pattern they expect from that research, they conclude that it is inaccurate.[7] This, however, is unsound reasoning. The Kroll ERP is based on its view of the forward looking market expectation, not a backward-looking analysis, such as those NW Natural cited. Further, if the Kroll estimate is wrong, why would anyone rely on it? What NW Natural's testimony demonstrates is that, if anything, the relationship between risk free rates and the cost of equity is complicated, and cannot be summarized in a single statistic, which was the very point I was attempting to make in Opening Testimony.

Q. IF THE ERP AND RISK FREE RATE ARE NEGATIVELY CORRELATED, DOESN'T THAT UNDERMINE NW NATURAL'S ENTIRE CASE?

A. Yes. If it is true that a rising risk free rate leads to a lower ERP, then one would otherwise expect the ERP and equity costs to be declining in this case, not increasing. NW Natural's reliance on historical ERP's assumes that the ERP remains constant over times, whereas the

6 NW Natural/2500, Coyne-Nelson/57:4-6.
7 NW Natural/2500, Coyne-Nelson/57:2.

research it cites suggests that it is not. NW Natural has not considered this negative correlation in its analysis, which is therefore irrelevant in determining the ERP. The assertions that Staff and AWEC "disregard the effect of higher inflation and interest rates on the Company's cost of equity,"[8] are entirely misplaced, as according to NW Natural's consultants rising interest rates lead to lower ERP's, putting downward pressure on equity costs, which we have considered.

Q. HAVE YOU UPDATED YOUR COST OF CAPITAL RECOMMENDATION?

A. No. Incorporating the lower 5.0% equity risk premium recommended by Kroll, would result in a lowering of my mid-point cost of equity results. Since I was using a point estimate of 9.2%, which was on the high end of my range, I am making no change to that recommendation at this time.

III. REVENUE REQUIREMENT

Q. WHAT WAS YOUR RECOMMENDATION REGARDING RATE BASE VALUATION?

A. In my Opening Testimony, I recommended using an average of monthly averages rate base calculation over the 12-months ending October 31, 2024. I continue to support that recommendation, as well as the proposal for NW Natural to file an officer's attestation for all capital projects exceeding $1 million.

Q. HOW DID NW NATURAL RESPOND?

A. NW Natural states that its approach is "consistent with all of NW Natural's recently filed general rate cases in Oregon over at least the last 22 years."[9]

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[8] NW Natural/2500, Coyne-Nelson/5:19-6:1.

[9] NW Natural/3800, Walker/2:11-15.

Q. DO YOU AGREE?

A. No. I have not reviewed every case NW Natural cited in this regard. Notwithstanding, I would observe that just because NW Natural included test period capital in every one of its filed cases, does not mean that it was accepted by the Commission, nor does it mean that doing so was appropriate or reasonable. The assumptions included in a utility's initial filing do not establish a precedent by which the Commission is bound. In fact, in every NW Natural rate case where I have filed testimony, my recollection is that test period capital was included in the filing, but never accepted in terms of the settled results of the case. Thus, NW Natural's assertion that the assumptions in its initially filed rate cases over the last 22-years serves as precedent for how rate base should be calculated in Oregon is misplaced.

Q. DOES NW NATURAL IDENTIFY ANY VALID REASON WHY THE COMMISSION SHOULD NOT ACCEPT YOUR RATE BASE VALUATION RECOMMENDATION?

A. No. NW Natural makes statements such as "[t]here is no basis for excluding Test Year capital simply because the costs are forecasts."[10] NW Natural is wrong. The justification for excluding Test Year capital is founded on Oregon's well-established used and useful standard, which I explained in my Opening Testimony. Utilities are continuing to aggressively push the bounds of ratemaking in Oregon to the detriment of customers. The pendulum has continually moved in favor of the utilities, and at some point, it needs to go back in the favor of ratepayers. Use of rate base valuations based on speculative forecasted investment in plant in the rate effective period is not accepted practice in Oregon, and using a traditional test period approach is not novel, unsupported, or unreasonable. It is the way revenue requirement has been

[10] NW Natural/3800 Walker/14:6-7.

calculated since the beginning of public utility regulation and applying that approach in this case is in no way unreasonable.

Q. DO YOU ALSO CONTINUE TO RECOMMEND REMOVING ALL TEST YEAR REVENUES IN YOUR REVENUE REQUIREMENT CALCULATION?

A. Yes. I removed the test period revenues, as well as generic escalation from revenue requirement to conform with my rate base valuation approach and to create a consistent revenue requirement calculation. This assumption is necessary due in part to the fact that some of the capital additions expected in the rate effective period are being made to accommodate customer growth. If the capital made to accommodate that growth is excluded from revenue requirement, it is necessary to also remove the corresponding revenues derived from that growth. Notably, I did not remove known and measurable changes that NW Natural identified, such as known and measurable changes to wages and known cost increases. This approach is favorable to NW Natural because it will receive the benefit of known and measurable expense changes in the rate effective period, even though offsetting revenues have not been considered.

Q. DID NW NATURAL SUPPORT YOUR RECOMMENDATION?

A. No. NW Natural states that my approach is somehow inconsistent, but I disagree. Using the same time-period for expenses, revenues, and rate base can not be viewed as being inconsistent. That is the very definition of consistency. To the extent that there are other minor items, such as other rate base items, that are necessary to be adjusted for the test period, I would not oppose making those adjustments. NW Natural alleges that there are other items to consider but fails to identify what those are except at a high level, nor the impact of considering them.[11]

[11] NW Natural/3800 Walker/31:1-32:8

Q. WHAT WAS YOUR RECOMMENDATION REGARDING REVENUE LEAD TIME IN THE LEAD LAG STUDY?

A. In Opening Testimony, I noted that because revenue requirement is calculated on an annual basis, NW Natural received cash from ratepayers much sooner than it expends the cash because it receives a higher proportion of revenues in the first few months of the rate period. This is how gas utilities operate in the Pacific Northwest—more gas is used for heating load in the winter months. I recommended that this factor be considered in the lead lag study, which more than offsets the revenue lag that NW Natural had calculated.

Q. HOW DID NW NATURAL RESPOND?

A. NW Natural states that it "spends cash over a service period as customers use our services, but we do not receive the actual cash until the customer pays their bill."[12] This, however, is precisely the point. This is why it is necessary to consider the revenue lead time that I have identified in Opening Testimony as an offset to NW Natural's cash working capital calculation. The bills that customers pay are front loaded due the fact that NW Natural receives significantly more revenues in the winter months than it does in the summer months. NW Natural's non-gas costs, however, are not; they are incurred ratably over the period, with a tendency to be higher at the end of the rate period due to inflation. The fact that customers pay their bills a few weeks after NW Natural records the revenues, is insignificant compared to the fact that these customers financed a significantly higher portion of NW Natural's margin in the first few months of the rate effective period. There is a reason why NW Natural increases its rates immediately prior to the winter heating season. Doing so provides a massive upfront benefit due to the higher throughput during those winter months. NW Natural's margins,

[12] NW Natural/3800, Walker/17

however, do not follow that same trajectory, leading to a massive financing benefit over the course of the rate year. This financing benefit is appropriate to consider in revenue requirement, and I continue to recommend that the Commission approve it.

Q. DID YOU FIND NW NATURAL'S EXPLANATIONS REGARDING DIRECTOR'S AND OFFICERS INSURANCE AND DIRECTORS FEES COMPELLING?

A. No. NW Natural witness, Davilla discusses these charges. NW Natural believes that the entirety of these cost items is a benefit to ratepayers, with no benefit to shareholders. I disagree and continue to support those items as an adjustment to revenue requirement for the reasons explained in my Opening Testimony.

Q. DID YOU AGREE WITH NW NATURAL'S RECOMMENDATIONS REGARDING WATER COMPANY INSURANCE?

A. Yes. I was able to verify that those charges were reversed, thought I am concerned that they were booked on NW Natural's ledger to begin with. I have removed that adjustment from my recommendation in **Table 1** above.

Q. HAVE YOU MODIFIED YOUR RECOMMENDATIONS RELATED TO THE WATER COMPANY EMPLOYEE EXPENSES?

A. No. In my Opening Testimony, I noted transactions that NW Natural did not remove in its proposed adjustment to operating expenses, and accordingly, I continue to support my adjustment.

Q. DO YOU AGREE WITH NW NATURAL'S RECOMMENDATION REGARDING THE TIMING OF TAX EXPENSE IN THE WORKING CAPITAL CALCULATION?

A. Yes. I have removed that from my revised recommendation in **Table 1.**

Q. HOW DO YOU RESPOND TO NW NATURAL'S TESTIMONY ON THE PRE-1981 DEPRECIATION FLOW THROUGH ADJUSTMENT?

A. I found NW Natural's testimony to be helpful in explaining the differences between my calculations and theirs. For that reason, I am withdrawing that recommendation.

Q. DO YOU CONTINUE TO SUPPORT YOUR RECOMMENDATION REGARDING SOFTWARE RETIREMENTS?

A. Yes. The software retirements were not considered in NW Natural's filing and have a major impact on revenue requirement. Based on the settlement reached in Docket No 2312, I am revising my estimate of the impact of retirements based both on the reduced depreciation rate for that account and re distributed plant vintaging agreed in that docket. I am recommending that $6,193,379 of software retirements be included in 2024, corresponding to the amounts predicted in my depreciation study modeling. Based on this revised estimate, my analysis resulted in a revised $483,235 reduction to revenue requirement. The impact of this revision is further detailed in **Exhibit AWEC/201**.

Q. DO YOU CONTINUE TO SUPPORT YOUR RECOMMENDATION RELATED TO ACCRUED VACATION?

A. Yes. Accrued vacation was not considered in NW Natural's filing and represents a material financing difference to NW Natural. Accordingly, I continue to recommend it be considered in revenue requirement.

Q. DO YOU SUPPORT NW NATURAL'S RECOMMENDATION TO CONSIDER AWEC'S UM 2309 AMORTIZATION IN THE CONTEXT OF THE PURCHASED GAS ADJUSTMENT FILINGS?

A. Yes. Accordingly, it is not necessary for the Commission to decide that issue in this docket.

Q. ARE THERE ADJUSTMENTS THAT NW NATURAL ACCEPTED THAT YOU WERE UNABLE TO DUPLICATE?

A. Yes. NW Natural accepted several of AWEC's adjustments, although I was unable to duplicate several of them. For that reason, I have retained the original adjustment values for these items from my Opening Testimony.

First, NW Natural's adjustment to remove the double counting of RWIP is based on a different forecast of removal costs than was presented in its initial filing. I have used the specific plant forecasts as the basis for incremental RWIP incurred between the historical period and the rate base valuation period. NW Natural uses an entirely different number, that is not supported by the actual forecast of RWIP by plant account it had included in its filing.

Further, for its adjustment related to RWIP, accumulated deferred income taxes ("ADIT"), NW Natural used a rate base value that was inconsistent with the amount of RWIP included in its filing. Since removal costs are deductible when incurred, the entire RWIP balance is subject to ADIT, meaning the ADIT balance can be calculated by multiplying the RWIP balance by the corresponding tax rate. My calculation does this based on the RWIP balance that I recommended and included in revenue requirement, as opposed to NW Natural's calculation, which uses a value that is only a fraction of the RWIP benefits financed by customers.

Q. HAVE YOU ALSO CONSIDERED THE EFFECTS OF THE SETTLEMENT IN DOCKET UM 2312?

A. Yes. In a settlement reached shortly before filing this testimony, Parties reached a settlement that reduced depreciation expenses by approximately $22.7 million, an amount that I have considered in **Table 1** of Section I.

IV. RATE SPREAD AND RATE DESIGN

Q. HOW DID NW NATURAL RESPOND TO YOUR RECOMMENDED CHANGES TO ITS COST OF SERVICE STUDY?

A. I proposed two adjustments to the cost of service study. First, I recommended a full, uniformly applied demand credit for interruptible customers, as opposed to a 50% credit. Second, I recommended allocating the cost of services in a consistent manner for all customers. NW Natural was open to certain aspects of AWEC's recommendations and proposed addressing those recommendations in future filings. Given that either approaches, AWEC's or NW

Natural's, demonstrates that large volume customers are paying rates far exceeding their cost of service, AWEC is amenable to NW Natural's recommendation to consider these issues in future proceedings. More important in this proceeding is adopting a reasonable rate spread that recognizes this undisputed fact.

Q. WHAT DID STAFF PROPOSE FOR RATE SPREAD?

A. Staff provides a recommendation that, on face value, appears to be similar to AWEC's, albeit proposing a rate floor at 0.75 times the average increase and a cap at 1.05 time the average increase.[13] Yet, on closer inspection, Staff recommends that these values be calculated based on the net rate increase inclusive of gas costs. This part of its recommendation results in a skewed and unfair rate spread because it results in a higher allocation of costs to high volume rate schedules, regardless of the results of the cost of service study. Staff justifies its recommendation based on its view that "in the face of exceptional overall rate increases a narrower rate spread should be adopted."[14]

Q. DO YOU AGREE WITH STAFF'S RATIONALE?

A. No. I agree that this is a challenging rate case and that the impacts will have real world consequences on many of the individuals and businesses in the states. Notwithstanding, it is still critical that rates be established based on sound economic principles and costs causation. The fact that the overall rate increase is large, does not necessarily mean that all rate classes should be subject to the same large increase when some rate schedules are served at rates far above their relative cost of service, and other rate schedules are served at rates below their relative cost of service. This is particularly true in this case, where 85% of NW Natural's

[13] Staff/1800, Shierman/15, Table 5.
[14] Id. at 14:10-17.

revenues are derived from Schedules 2 and 3, which are both under parity in the cost of service study. The large volume schedules comprise only a small part of NW Natural's revenues, yet regardless of the cost of service assumptions that are used, they are paying rates that are significantly higher than their relative cost of service. Correspondingly, moving large volume rate schedules towards parity does not materially exacerbate the rate impacts of Schedules 2 and 3, nor does increasing their rates even further above their cost of service, as Staff proposes, result in any meaningful rate mitigation for those residential or commercial rate schedules.

Q. DOES STAFF'S ANALYSIS CONTAIN ANY CONCEPTUAL ERRORS?

A. Yes. Staff applies its cap and floor based on total revenues, including gas costs, which results in a highly skewed allocation method that allocates a much higher rate increase to those rate classes that purchase higher gas volumes. Allocating costs as a percentage of total revenues, as opposed to marginal revenues, will inherently result in more costs being allocated to higher volume customers, which is inconsistent with the margin revenues that are being calculated in this docket. Effectively Staff's approach would treat margin revenues as a volumetric charge and would reallocate costs to high volume classes at the expense of the low volume classes. The impact of this skewed approach is demonstrated in **Table 3**, below. Staff's approach will also not address the rate subsidies that have been embedded in rates for years and will in fact make it worse.

Q. HAVE YOU REVISED YOUR RECOMMENDATION IN RESPONSE TO STAFF?

A. Yes. In response to Staff, I have increased the rate floor 0.15 times the average rate increase. Correspondingly, I have set the rate cap equal to 1.3 times the average rate increase. The impact of this recommendation using AWEC's proposed revenue requirement was detailed in **Table 2** of my introduction. A comparison between my method, Staff's method, and NW

Natural's method is detailed in **Table 3**, below. Given the range of revenue requirement recommendations at issue in the is case, I have assumed $90 million rate increase, and have also incorporated the expected impacts of the PGA filing as shown in NW Natural's response to Bench Request 1.

Table 3

Comparison of Proposed Rate Spreads, after PGA impacts at a $90 Million rate increase

	NWN		Staff		AWEC	
	Ratio of Avg.	**% Increase**	**Ratio of Avg.**	**% Increase**	**Ratio of Avg.**	**% Increase**
02R	1.04	7.7%	0.97	6.9%	1.04	7.6%
03C	1.05	9.2%	1.06	9.2%	1.30	11.5%
03I	0.70	6.9%	0.91	8.6%	0.15	2.6%
27R	1.22	9.5%	1.06	7.9%	1.30	10.2%
31CSF	0.70	4.2%	0.96	6.2%	0.15	0.1%
31CTF	0.50	17.6%	0.50	17.6%	0.15	11.6%
31ISF	0.70	6.7%	1.19	9.7%	0.15	3.4%
31ITF	0.50	17.3%	0.50	17.3%	0.15	11.3%
32CSF	0.70	6.7%	1.21	9.8%	0.15	3.5%
32ISF	0.50	6.0%	1.73	11.1%	0.15	4.5%
32CTF	0.50	16.6%	0.50	16.6%	0.15	10.6%
32ITF	0.50	12.6%	0.51	12.7%	0.15	6.6%
32CSI	0.70	6.2%	2.24	11.2%	0.15	4.5%
32ISI	0.70	6.4%	2.41	11.5%	0.15	4.8%
32CTI	0.50	13.4%	0.50	13.4%	0.15	7.4%
32ITI	0.50	4.8%	0.50	4.8%	0.15	-1.2%
Total	1.00	7.8%	1.00	7.8%	1.00	7.8%

In **Table 3,** I have detailed the percentage increase after the Purchased Gas Adjustment, using the NW Natural's response to Bench Request 1.[15] I have also detailed the ratios used in the various proposals, stated as a percentage of the margin increase. In other words, I recalculated Staff's ratios using the margin ratio that resulted from its ratios, which were applied to the

15 See NW Natural's response to 3/7/24 Bench Request

overall rate increase, including gas costs. As shown above, all of the proposals result in November 1, 2024 rate increases for large volume customer classes, notwithstanding the fact that those customer classes have the highest parity ratios and are already paying far in excess of their cost of service. Thus, if any rate mitigation is to be afforded in this case, it should be applied in favor of AWEC's rate spread, which results in amore levelized impact across the various rate schedules. Under the recommendations of both Staff and NW Natural, Schedule 32CTF will be allocated a 16.6% rate increase, notwithstanding the fact that, by NW Natural's calculation, its parity ratio is 2.20. The rates for Schedule 32CTF are double its cost of service, yet it is receiving the highest rate increase of any schedule. This is not fair, just or reasonable. While some of that increase is due to changes in supplemental schedules, the so called rate mitigation that Staff and NW Natural are proposing to implement in their rate spreads is resulting in rate shock for the rate schedule with the highest parity ratios.

Q. WHY IS IT PARTICULARLY IMPORTANT TO MOVE RATE SCHEDULES TOWARDS PARITY IN THIS PROCEEDING?

A. The Climate Protection Plan was invalidated by Oregon Court of Appeals, but a new program is expected by January 1, 2025. The costs of the new climate program are expected to be significant, and therefore it is important that all customer classes move towards parity to remove the subsidies currently embedded in rates. The rate impact of the program is expected to be proportionately higher for large volume schedules than for low volume schedules because the costs of the program will likely be spread on an equal cents per therm basis. Accordingly, as these costs begin to be experienced by rate payers, it is important that base rates adequately reflect costs to ensure that all customer classes will pay their fair share of the new program.

Q. DOES THIS CONCLUDE YOUR REBUTTAL AND CROSS ANSWERING TESTIMONY?

A. Yes.

BEFORE THE

PUBLIC UTILITY COMMISSION OF OREGON

UG 490

REBUTTAL AND CROSS ANSWERING TESTIMONY OF BRADLEY G. MULLINS

ON BEHALF OF THE

ALLIANCE OF WESTERN ENERGY CONSUMERS

EXHIBIT 201

Revised Revenue Requirement Calculations

Natural Gas Revenue Requirement Summary ($000)

			Revenue Requirement			Impact of AWEC Adjustments			
Line	Adj. No.	Description	Net Oper. Income	Rate Base	Rev. Req. Def. / (Suf.)	Pre-Tax Net Oper. Income	Net Oper. Income	Rate Base	Rev. Req. Def. / (Suf.)
1		**Filed Revenue Requirement**	**$49,266**	**$2,136,361**	**154,913**				
Adjustments:									
2		Cost of Capital	$49,266	$2,136,361	138,588	-	-	-	(16,326)
3	a	Rate Base Valuation Period	$65,138	$1,934,557	95,830	21,743	15,872	($201,803)	(42,757)
4	b	Test Period Rev. and Exp.	$65,793	$1,934,557	94,903	897	655		(927)
5	c	RWIP Forecast	$65,793	$1,927,155	94,184	-	-	(7,403)	(720)
6	d	RWIP ADIT	$65,793	$1,907,123	92,237	-	-	(20,031)	(1,947)
7	e	Pre 1981 Flow Through	$65,793	$1,907,123	92,237	-	-	-	-
8	f	ARAM Adjustment	$65,793	$1,904,023	91,935	-	-	(3,100)	(301)
9	g	Accrued Vacation	$65,793	$1,901,230	91,664		-	(2,794)	(272)
10	h	Lead-Lag Study: Revenues	$65,793	$1,784,059	80,274		-	(117,171)	(11,389)
11	i	Lead-Lag Study: Taxes	$65,793	$1,784,059	80,274		-	-	-
12	j	Software Retirements	$66,134	$1,784,059	79,791	468	341	-	(483)
13	k	Directors' Fees & Expense	$67,652	$1,784,059	77,642	2,079	1,518	-	(2,149)
14	l	D&O Insurance	$67,925	$1,784,059	77,255	374	273	-	(387)
15	m	Water Company Insurance	$67,925	$1,784,059	77,255	-	-	-	-
16	n	Water Company Expense	$67,962	$1,784,059	77,204	50	37	-	(52)
17	o	Depreciation Settlement	$84,533	$1,784,059	53,745	22,700	16,571	-	(23,459)
21		Interest Coordination	$81,659	$1,784,059	57,813		(2,874)		4,069
22		**Adjusted Results**	**$81,659**	**$1,784,059**	57,813	**48,311**	**32,393**	**(352,302)**	**(97,100)**

BEFORE THE

PUBLIC UTILITY COMMISSION OF OREGON

UG 490

REBUTTAL AND CROSS ANSWERING TESTIMONY OF BRADLEY G. MULLINS

ON BEHALF OF THE

ALLIANCE OF WESTERN ENERGY CONSUMERS

EXHIBIT 202

Rate Spread Calculations

AWEC Rate Spread Proposal at AWEC Rev. Req.

Class	Customers	Filed Revenue	LRIC %	LRIC Increase	LRIC Revenues	Cap	Floor	31				
						1.30	0.15	0.15				
						14.2%	1.6%	1.6%				
						Apply Cap	Apply Floor	Net Surplus	Reallocate	Reallocation	Net Increase	Margin % Increase
02R	644,228	360,714,888	16.17%	58,318,326	419,033,214	(7,220,776)	-	(7,220,776)	1	(10,316,810)	40,780,740	11.3%
03C	60,059	113,389,442	17.67%	20,040,306	133,429,747	(3,977,972)	-	(3,977,972)	-	-	16,062,333	14.2%
03I	339	2,405,057	-14.88%	(357,876)	2,047,181	-	397,187	397,187	-	-	39,311	1.6%
27R	1,524	593,328	36.16%	214,520	807,849	(130,471)	-	(130,471)	-	-	84,049	14.2%
31CSF	682	10,045,606	-34.96%	(3,512,167)	6,533,439	-	3,676,363	3,676,363	-	-	164,195	1.6%
31CTF	59	1,140,610	-45.14%	(514,891)	625,719	-	533,534	533,534	-	-	18,643	1.6%
31ISF	181	3,467,751	-33.32%	(1,155,326)	2,312,425	-	1,212,006	1,212,006	-	-	56,680	1.6%
31ITF	7	156,930	-53.14%	(83,396)	73,534	-	85,961	85,961	-	-	2,565	1.6%
32CSF	546	14,016,743	-31.44%	(4,407,377)	9,609,367	-	4,636,480	4,636,480	-	-	229,103	1.6%
32ISF	83	3,667,040	-42.19%	(1,547,302)	2,119,738	-	1,607,240	1,607,240	-	-	59,938	1.6%
32CTF	26	994,454	-50.11%	(498,306)	496,148	-	514,560	514,560	-	-	16,254	1.6%
32ITF	99	6,714,797	-31.48%	(2,113,663)	4,601,135	-	2,223,416	2,223,416	-	-	109,753	1.6%
32CSI	45	2,566,247	-41.31%	(1,060,041)	1,506,206	-	1,101,986	1,101,986	-	-	41,945	1.6%
32ISI	60	2,990,958	-53.56%	(1,602,018)	1,388,940	-	1,650,905	1,650,905	-	-	48,887	1.6%
32CTI	3	515,000	-81.10%	(417,681)	97,318	-	426,099	426,099	-	-	8,418	1.6%
32ITI	71	5,539,411	-63.00%	(3,489,752)	2,049,658	-	3,580,294	3,580,294	-	-	90,541	1.6%
Sp. Cont.		$1,642,981	0.00%	-	1,642,981							
Total		530,561,242	10.90%	57,813,356	588,374,598	(11,329,220)	21,646,030	10,316,810	1	(10,316,810)	57,813,356	10.9%

Times Average	Total Revenue*	Total Rev. % Increase	Approx. PGA Reduction	Approx % After PGA
1.038	587,008,625	6.95%	-3.2%	3.7%
1.300	208,409,273	7.71%	-0.5%	7.2%
0.150	5,120,734	0.77%	1.4%	2.2%
1.300	1,055,526	7.96%	-2.2%	5.8%
0.150	22,704,926	0.72%	-1.0%	-0.3%
0.150	1,140,610	1.63%	9.1%	10.7%
0.150	9,697,979	0.58%	2.5%	3.1%
0.150	156,930	1.63%	8.8%	10.4%
0.150	39,930,829	0.57%	2.6%	3.2%
0.150	14,892,281	0.40%	3.9%	4.3%
0.150	994,454	1.63%	8.1%	9.7%
0.150	6,714,797	1.63%	4.1%	5.7%
0.150	13,483,573	0.31%	4.0%	4.3%
0.150	16,881,514	0.29%	4.3%	4.6%
0.150	515,000	1.63%	4.9%	6.5%
0.150	5,539,411	1.63%	-3.7%	-2.1%
	1,642,981			
	935,889,442	6.18%	-1.81%	4.37%

AWEC Rate Spread Proposal at $90M

Class	Customers	Filed Revenue	Times Average	Net Increase	Margin % Increase	Total Revenue*	Total Rev. % Increase	Approx. PGA Reduction	Approx % After PGA
02R	644,228	360,714,888	1.04	63,484,753	17.6%	587,008,625	10.81%	-3.2%	7.6%
03C	60,059	113,389,442	1.30	25,004,775	22.1%	208,409,273	12.00%	-0.5%	11.5%
03I	339	2,405,057	0.15	61,196	2.5%	5,120,734	1.20%	1.4%	2.6%
27R	1,524	593,328	1.30	130,841	22.1%	1,055,526	12.40%	-2.2%	10.2%
31CSF	682	10,045,606	0.15	255,608	2.5%	22,704,926	1.13%	-1.0%	0.1%
31CTF	59	1,140,610	0.15	29,023	2.5%	1,140,610	2.54%	9.1%	11.6%
31ISF	181	3,467,751	0.15	88,236	2.5%	9,697,979	0.91%	2.5%	3.4%
31ITF	7	156,930	0.15	3,993	2.5%	156,930	2.54%	8.8%	11.3%
32CSF	546	14,016,743	0.15	356,653	2.5%	39,930,829	0.89%	2.6%	3.5%
32ISF	83	3,667,040	0.15	93,307	2.5%	14,892,281	0.63%	3.9%	4.5%
32CTF	26	994,454	0.15	25,304	2.5%	994,454	2.54%	8.1%	10.6%
32ITF	99	6,714,797	0.15	170,856	2.5%	6,714,797	2.54%	4.1%	6.6%
32CSI	45	2,566,247	0.15	65,298	2.5%	13,483,573	0.48%	4.0%	4.5%
32ISI	60	2,990,958	0.15	76,104	2.5%	16,881,514	0.45%	4.3%	4.8%
32CTI	3	515,000	0.15	13,104	2.5%	515,000	2.54%	4.9%	7.4%
32ITI	71	5,539,411	0.15	140,949	2.5%	5,539,411	2.54%	-3.7%	-1.2%
Sp. Cont.		$1,642,981				$1,642,981			
Total		530,561,242		90,000,000	17.0%	935,889,442	9.62%	-1.81%	7.81%
				-					

*includes misc. revs.

Staff Rate Spread Proposal at 90 Million

Class	Customers	Filed Revenue	Times Average	Net Increase	Margin % Increase	Total Revenue*	Total Rev. % Increase	Approx. PGA Reduction	Approx % After PGA
02R	644,228	360,714,888	0.971	59,435,752	16.5%	587,008,625	10.13%	-3.2%	6.9%
03C	60,059	113,389,442	1.055	20,297,960	17.9%	208,409,273	9.74%	-0.5%	9.2%
03I	339	2,405,057	0.908	370,346	15.4%	5,120,734	7.23%	1.4%	8.6%
27R	1,524	593,328	1.062	106,874	18.0%	1,055,526	10.13%	-2.2%	7.9%
31CSF	682	10,045,606	0.964	1,642,084	16.3%	22,704,926	7.23%	-1.0%	6.2%
31CTF	59	1,140,610	0.500	96,791	8.5%	1,140,610	8.49%	9.1%	17.6%
31ISF	181	3,467,751	1.192	701,385	20.2%	9,697,979	7.23%	2.5%	9.7%
31ITF	7	156,930	0.500	13,317	8.5%	156,930	8.49%	8.8%	17.3%
32CSF	546	14,016,743	1.215	2,887,909	20.6%	39,930,829	7.23%	2.6%	9.8%
32ISF	83	3,667,040	1.731	1,077,051	29.4%	14,892,281	7.23%	3.9%	11.1%
32CTF	26	994,454	0.500	84,388	8.5%	994,454	8.49%	8.1%	16.6%
32ITF	99	6,714,797	0.506	576,284	8.6%	6,714,797	8.58%	4.1%	12.7%
32CSI	45	2,566,247	2.240	975,170	38.0%	13,483,573	7.23%	4.0%	11.2%
32ISI	60	2,990,958	2.406	1,220,918	40.8%	16,881,514	7.23%	4.3%	11.5%
32CTI	3	515,000	0.500	43,702	8.5%	515,000	8.49%	4.9%	13.4%
32ITI	71	5,539,411	0.500	470,067	8.5%	5,539,411	8.49%	-3.7%	4.8%
Sp. Cont.		$1,642,981				$1,642,981			
Total		530,561,242		90,000,000	17.0%	935,889,442	9.62%	-1.81%	7.81%
				-					

*includes misc. revs.

NW Natural Rate Spread Proposal at $90M

Class	Customers	Filed Revenue	Times Average	Net Increase	Margin % Increase	Total Revenue*	Total Rev. % Increase	Approx. PGA Reduction	Approx % After PGA
02R	644,228	360,714,888	1.04	63,833,896	17.7%	587,008,625	10.87%	-3.2%	7.7%
03C	60,059	113,389,442	1.05	20,258,900	17.9%	208,409,273	9.72%	-0.5%	9.2%
03I	339	2,405,057	0.70	283,969	11.8%	5,120,734	5.55%	1.4%	6.9%
27R	1,524	593,328	1.22	123,171	20.8%	1,055,526	11.67%	-2.2%	9.5%
31CSF	682	10,045,606	0.70	1,186,103	11.8%	22,704,926	5.22%	-1.0%	4.2%
31CTF	59	1,140,610	0.50	97,042	8.5%	1,140,610	8.51%	9.1%	17.6%
31ISF	181	3,467,751	0.70	409,444	11.8%	9,697,979	4.22%	2.5%	6.7%
31ITF	7	156,930	0.50	13,352	8.5%	156,930	8.51%	8.8%	17.3%
32CSF	546	14,016,743	0.70	1,654,982	11.8%	39,930,829	4.14%	2.6%	6.7%
32ISF	83	3,667,040	0.50	311,989	8.5%	14,892,281	2.09%	3.9%	6.0%
32CTF	26	994,454	0.50	84,607	8.5%	994,454	8.51%	8.1%	16.6%
32ITF	99	6,714,797	0.50	571,290	8.5%	6,714,797	8.51%	4.1%	12.6%
32CSI	45	2,566,247	0.70	303,001	11.8%	13,483,573	2.25%	4.0%	6.2%
32ISI	60	2,990,958	0.70	353,148	11.8%	16,881,514	2.09%	4.3%	6.4%
32CTI	3	515,000	0.50	43,816	8.5%	515,000	8.51%	4.9%	13.4%
32ITI	71	5,539,411	0.50	471,289	8.5%	5,539,411	8.51%	-3.7%	4.8%
Sp. Cont.		$1,642,981				$1,642,981			
Total		530,561,242		90,000,000	17.0%	935,889,442	9.62%	-1.81%	7.81%
				-					

*includes misc. revs.

BEFORE THE

PUBLIC UTILITY COMMISSION OF OREGON

UG 490

REBUTTAL AND CROSS ANSWERING TESTIMONY OF BRADLEY G. MULLINS

ON BEHALF OF THE

ALLIANCE OF WESTERN ENERGY CONSUMERS

EXHIBIT 203

Updated Kroll Risk Premium Recommendation

June 6, 2024

Kroll Lowers its Recommended U.S. Equity Risk Premium to 5.0%, Effective June 5, 2024

Executive Summary

Kroll regularly reviews fluctuations in global economic and financial market conditions that may warrant changes to our equity risk premium (ERP) and accompanying risk-free rate recommendations. The risk-free rate and ERP are key inputs used to calculate the cost of equity capital in the context of the Capital Asset Pricing Model (CAPM) and other models used to develop discount rates. We also update country risk data on a quarterly basis for 175+ countries using various models.

The Kroll Recommended U.S. ERP is decreasing from 5.5% to 5.0% when developing USD-denominated discount rates as of June 5, 2024, and thereafter, until further notice.

Notwithstanding the current recommendation, we are monitoring economic and geopolitical events that may change our views and impact our guidance toward the end of 2024 and into 2025. In particular, the U.S. Presidential Election in November 2024 has the potential to cause turmoil in U.S. and global financial markets. Of particular concern is any potential promise of a significant increase in government spending and a corresponding rise in the U.S. budget deficit, which could place upward pressure on long-term interest rates and disrupt financial markets. Other global geopolitical events that warrant close watch include, but are not limited to, the impact of general elections in other major economies (e.g., Mexico, India, UK), trade conflicts between the U.S. and China, rising tensions in the Middle East and the protracted Russia's war on Ukraine.

Background

The Kroll U.S. Recommended ERP was last changed on June 8, 2023, when it was lowered from 6.0% to 5.5%. This ERP guidance was applicable when developing USD-denominated discount rates and was to be used in conjunction with our U.S. risk-free guidance—the higher of the spot 20-year U.S. Treasury yield (prevailing as of the valuation date) and the Kroll normalized U.S. risk-free rate of 3.5%.

In the "Kroll Cost of Capital Recommendations and Potential Upcoming Changes – February 8, 2024 Update", Kroll reaffirmed its Recommended U.S. ERP guidance at 5.5%. However, that communication also indicated that a "risk-on" attitude in U.S. equity markets meant that the ERP was likely to come down in 2024. At the time, we balanced new stock market record highs (which were partly boosted by optimism around generative artificial intelligence (GenAI), an expected improvement in earnings growth and a resilient U.S. economy), with the potential negative impact from restrictive monetary policies (keeping interest rates higher for a longer period of time) and the risk of major geopolitical events broadening to the global economy (e.g., escalating conflicts in the Middle East).

At this juncture, the U.S. economy continues to be resilient, but there are signs that the labor market is cooling, and consumer spending is slowing. These latest indicators actually increase the probability of a soft-landing scenario (i.e., lower inflation, lower real growth, but no recession) and create the conditions for the U.S. central bank (the Federal Reserve Bank, or the Fed) to start cutting interest rates. This, in turn, is likely to create more favorable financing conditions and continue to support U.S. equity markets.

Based on current economic and financial market conditions, the Kroll Recommended ERP is being lowered from 5.5% to 5.0% when developing USD-denominated discount rates as of June 5, 2024, and thereafter, until further notice. In addition, we continue to recommend using the spot 20-year U.S. Treasury yield as the proxy for the risk-free rate if the prevailing spot yield as of the valuation date is higher than the Kroll normalized U.S. risk-free rate of 3.5%.

The decision to lower the U.S. ERP Recommendation is based on the following trends in economic indicators and financial market conditions:

- In late 2023 and early in 2024, investors began pricing several cuts in the Fed funds rate—the central bank's policy interest rate—which helped fuel a surge in equity markets. However, a surprising resilience in the U.S. economy and a sudden increase in inflation readings in December 2023 and again in February and March 2024, led to a delay in expectations on the number and timing of Fed rate cuts in 2024. Markets reacted by pricing a single-rate cut later this year (contrary to prior expectations of three cuts taking place earlier in the year), with some economists even suggesting a rate hike as a possibility. More recently, however, economic activity has shown signs of slowing down. First quarter real GDP growth was downwardly revised to 1.3%, partly due to a deceleration in consumer spending, as pandemic-related excess savings have been mostly depleted and the overhang of inflation has diminished purchasing power. This slowdown (together with the inflation and unemployment trends discussed below), actually makes it more likely that the Fed will begin cutting interest rates earlier this year relative to recent expectations.

- Major equity indices have recently reached new all-time highs, supported by investors' continued optimism. The surge in technology stocks due to potential productivity gains from GenAI has broadened to other sectors in the economy. Since their respective cycle lows in late October 2023 through May 28, 2024, the S&P 500 Index (a market-cap-weighted index) has increased 28.9% in price terms, whereas the NASDAQ Composite surged by 35.1%. The S&P 500 Equal-Weight Index also gained 22.9% since its October low. For perspective, a 20% or higher increase in equity markets relative to recent lows is considered to be a "bull" market. In addition, during the month of May 2024, all major equity indices reached all-time highs: the S&P 500 Index hit a new record on May 21, 2024, while the NASDAQ Composite did so on May 28, 2024. The Dow Jones Industrial Average (DJIA), an equal-weighted index that no longer attracts significant global investment allocations, surpassed the psychological level of 40,000 for the first time on May 17, 2024.[1]

- The VIX (the volatility index on the S&P 500), also referred to as the "fear index," has been generally low during 2024. Since the beginning of 2024 through May 28, the index has averaged 14.1, with a low of 11.9 reached on May 21, 2024—the lowest level since November 2019. These levels are also much lower than the long-term historical average of 20.1 and the average observed since the height of COVID-19. For perspective, during 2022 and 2023, the VIX averaged 25.6 and 16.8, respectively.

- U.S. corporate credit spreads have been fairly tight and are currently lower than in June 2023, when we last changed our ERP recommendation. They are also significantly lower than their long-term historical average (from late 1996 through the present). The underlying corporate yields on investment-grade and speculative-grade bonds have generally been on a downward trend since 2023.

- ERP indications from forward-looking models based on Professor Aswath Damodaran are at similar levels as when we last changed our U.S. ERP recommendation, while the Default Spread model points to a sustained decline in ERP.

[1] According to an analysis by S&P Dow Jones Indices, at the end of 2019, there were over USD 11.2 trillion index-linked products and derivative contracts benchmarked to the S&P 500, which included USD 4.6 trillion passively tracking the index. In comparison, there were USD 32 billion benchmarked to the DJIA, which included USD 28 billion in passive assets. For more details see "Comparing Iconic Indices: The S&P 500® and DJIA®", S&P Dow Jones Indices – A Division of S&P Global, June 2021. Available here: https://www.spglobal.com/spdji/en/documents/education/education-comparing-iconic-indices-the-sp-500-and-djia.pdf.

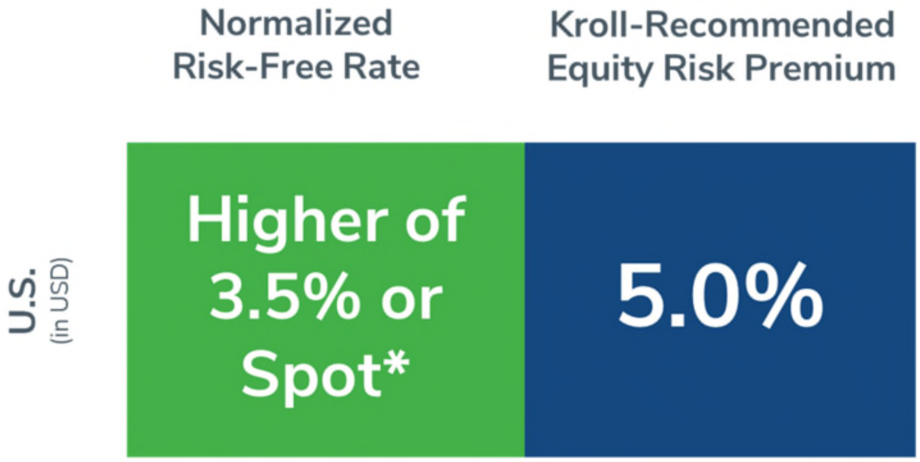
- Even though the U.S. unemployment rate has increased recently, it is still relatively low on a historical basis: in April 2024, the unemployment rate ticked up to 3.9%, from 3.8% in March 2024 and from 3.4% in April 2023, a post-pandemic low. For perspective, unemployment rates of 3.4% were last observed in the late 1960s. The persistence of low unemployment is one of the major reasons why economists believe that a soft landing is achievable, and the probability of a U.S. recession in the near term is relatively low. During past recessions, the unemployment rate saw significant increases. In the U.S., the average unemployment rate during a recession is 6.3%, which is far above the current level.

- Inflation, as measured by Consumer Price Index (CPI), is still above the Fed's 2.0% target, but far below its multiple-decades high of 9.1% (before seasonal adjustments) in the 12-month period ending in June 2022. The process of disinflation has been a bumpy one, supporting the Fed's decision to keep interest rates at their current high level for a longer period. In June 2023, CPI inflation reached a local low of 3.0%, only to continue moving range-bound between 3.1% and 3.7%. The latest CPI inflation was 3.4% as of April 2024, a downtick from the prior month and a welcome reading after two consecutive months of rate acceleration. The Fed's preferred gauge for inflation, the Personal Consumer Expenditures (PCE) Price Index, has actually accelerated in March to 2.7% and remained at that level in April 2024. The core PCE index (i.e., excluding food and energy) dropped to 2.8% in February, but has remained at that level since then. Nevertheless, wage price pressures appear to be easing and the cooling job market may bode well for inflation trends.

Notwithstanding these positive factors that support a decrease in the U.S. ERP, we are monitoring economic and geopolitical events that may change our views and impact our guidance toward the end of 2024 and into 2025. In particular, the U.S. Presidential Election in November 2024 has the potential to cause turmoil in U.S. and global financial markets. The growing level of government debt in the U.S., especially in an election year when candidates propose different fiscal packages to sway voters, may worsen the fiscal position for the country and create upward pressures on long-term interest rates. The acrimonious political debate regarding the debt ceiling that took place in the first half of 2023 was a contributing factor to Fitch Ratings' decision to lower its U.S. sovereign credit rating from AAA to AA+. S&P Global Ratings had already downgraded the U.S. credit rating to AA+ back in 2011 under similar circumstances. Moreover, Moody's Investor Services, the last major credit agency assigning the coveted Aaa rating to the U.S., has lowered its outlook, citing political and financial concerns. Therefore, this will be an area that will warrant close monitoring. Other geopolitical events with potential for escalation to global markets will also be monitored.

Summary of U.S. Cost of Capital Recommendations

- **Kroll is lowering its Recommended U.S. ERP from 5.5% to 5.0% when developing USD-denominated discount rates as of June 5, 2024, and thereafter, until further notice.** This is matched with the higher of the spot 20-year U.S. Treasury yield as of the valuation date and the Kroll normalized U.S. risk-free rate of 3.5%.



* We recommend using the spot 20-year U.S. Treasury yield as the proxy for the risk-free rate, if the prevailing yield as of the valuation date is higher than our recommended U.S. normalized risk-free rate of 3.5%. This guidance is effective when developing USD-denominated discount rates as of June 16, 2022, and thereafter.

- Regarding risk-free rates, as investors attempt to predict the pace and magnitude of potential rate cuts by major central banks, we continue to observe high levels of volatility in spot yields of government bonds of major economies. Long-term bonds yields may continue to fluctuate considerably in the near future, before stabilizing. During these periods, project teams may need to consider using a moving average of spot yields to mitigate the impact of this volatility in their valuation analyses (e.g., weekly or monthly averages).

- Notwithstanding the current recommendations, we are monitoring economic and geopolitical events that may change our views and impact our guidance toward the end of 2024 and into 2025. In particular, the U.S. Presidential Election in November 2024 has the potential to cause disruption in U.S. and global financial markets. Of particular concern is any potential promise of significant increases in government spending that lead to a significant rise in the budget deficit, which could place upward pressures on long-term interest rates and disrupt equity markets. Other global geopolitical events that warrant close watch include, but are not limited to, the impact of general elections in other major economies (e.g., Mexico, India, UK), trade conflicts between the U.S. and China, rising tensions in the Middle East and the protracted Russia's war on Ukraine.

Please contact our support team with any questions: costofcapital.support@kroll.com