Cascade Natural Gas Integrated Resource Planning Feedback Report

Item #	Date	TAG Meeting	Name/Company	Comment/Question	Cascade Response
1	2/12/2024	Targeted TAG 2	WUTC	On slide 7, Cascade notes Environmental Compliance Costs as an element of its avoided cost calculation. Is Cascade considering how these costs will change over time? Both tendentially going up as more allowances are required and the price ceiling increases, and how there might be downward pressure on compliance costs due to the possibility of declining customer counts or per customer demand?	Environmental compliance costs are modeled on an increase price curve for all values considered. Marginal Compliance costs will increase over time as identified by Staff, while the Social Cost of Carbon is already presented on an increasing price curve. Declining customer counts/demand would only impact the avoided cost if it entirely eliminates the need for the highest cost resource, creating a potential stepwise impact on the compliance cost element of the avoided cost. Cascade is evaluating the marginal cost to serve the next highest cost unit of one therm of demand with traditional natural gas, to evaluate whether it would be more cost effective to reduce this demand via energy efficiency or not. Unless demand reductions fully eliminated the need for the highest cost tranche of environmental compliance, declining demand will not impact this element. To preempt a potential question about the need to look at this more holistically, as one could potentially argue that there could be enough demand reduction to exogenously move Cascade into a lower tranche of the stepwise function, the volumes we identified in the 2023 as part of the highest tier of the marginal abatement cost curve are significant, to the point that even aggressive conservation acquisition projections and projected demand decreases as outlined in prior IRPs would not move Cascade to a different step of the curve.
2	2/12/2024	Targeted TAG 2	WUTC	• On slide 8: o Are there avoided costs associated with keeping customers on the system or avoided costs associated with declining customer counts? o "Commodity Costs are taken from Cascade's 27-year price forecast." Has this forecast changed since the previous IRP? Does it include non-conventional fuels? o "Cascade will be requesting feedback regarding its methodology related to environmental compliance costs" Will cascade be reaching out to the Department of Ecology? Or is this a generalized request for the IRP process? o "The Company's distribution system cost calculation looks at forecasted capital expenses related ONLY to growth, and uses the company's load growth forecast to translate these costs to a per therm basis." Staff would like to hear more. What is meant by "related only to growth"? o "Risk premium is calculated as the delta from deterministic and stochastic pricing" How might this differ if Cascade were to use the brownian motion prices from the previous IRP?	o This is an interesting question and one that Cascade does not have a response to yet. The Company stated during the Targeted TAG 2 meeting that we'll discuss this idea internally to determine if this shoould be included and how it would be quantified. Cascade also asked Staff if they had any thoughts on how this would be quantified, and they responded that they would provide some thoughts a week after the Targeted TAG meeting. o It has been shifted one year from last year's 28-year forecast as Cascade ultimately aims to have projections out to 2050. Slide 11 discusses why this specific element only uses traditional fuels. o This is requested of the all participants of the TAG. o Distribution system projects can be broken down into two classifications: "System Integrity Enhancements" and "Growth Related Projects." System Integrity projects would only be avoidable if the demand associated with the project were eliminated entirely. Reducing demand, as is the objective of the twin processes of avoided cost calculations and conservation efforts, does not prevent embrittled pipes from needing to be replaced, for instance. Thus, these projects are not avoidable. Growth related projects, on the other hand, are projects that are identified as needed to support forecast demand growth on a given distribution system. Since the need is purely related to growth, these are potentially avoidable, or at the very least deferrable, and thus part of the avoided cost calculation. This line can become blurred when projections are identified as system integrity projects but also involve an upsizing of pipe. The system integrity side would not be avoidable or deferrable as there is a significant safety risk identified, but the upsizing element could theoretically be deferred. There are further economic challenges with deferral here, however, as you have already acquired permitting and committed labor toward digging up the pipe. It would rarely make sense to replace it twice, once for integrity and then again for growth, but a qualitative decision would need to be made as to whether that would make sense. o The stochastic element of this calculated does use the Geometric Brownian motion prices from the previous IRP for the "Shock" element of the "Drift & Shock" methodology as discussed in the IRP
3	2/12/2024	Targeted TAG 2	WUTC	• Slide 10, "For Cascade's system, all storage is off-system and provides a net-positive benefit to customers, so it does not qualify as an avoided cost" Staff would appreciate more explanation of this distinction.	Cascade fills its storage assets during the non-heating season, when gas prices are significantly lower than in the winter. When performing a life cycle analysis of a therm that is purchases from a basin, stored in the summer, and then injected in the winter, the cost savings of the summer/winter spread far supersede any costs associated with the storage of that therm, thus the statement that it is a net positive, and not a cost one would be able to avoid.
4	2/12/2024	Targeted TAG 2	WUTC	• Slide 12, "With the passing of the Climate Commitment Act, Cascade believes it may be more accurate to utilize the company's marginal compliance cost associated with this rule." What is the statutory/rule basis for excluding either cost?	Staff's historical position has been that Cascade has need to follow RCW 80.28.395 when evaluating the cost of carbon, which dictates the use of the Social Cost of Carbon with a 2.5% Discount rate, adjusted to real dollars, as the cost of carbon. With the passing of the Climate Commitment Act, Cascade knows what its marginal abatement cost for carbon is with regards to this piece of legislature, and believes this may be a more accurate representation of the Company's cost of carbon. Both of these items attempt to quantify the cost to abate one metric ton of CO2e, and thus using both would be double counting this this element.
5	2/12/2024	Targeted TAG 2	WUTC	• Slide 13, o "The Company's new distribution system cost calculation looks at forecasted capital expenses related ONLY to growth, and uses the company's load growth forecast to translate these costs to a per therm basis." Staff inquires if there are avoided costs associated with the possibility of declining customer counts – either avoided costs in customers leaving or policies designed to retain customers. Put another way, would an energy efficiency rebate program that might function to keep customers on the system and works to avoid of some CCA compliance obligations be cheaper (to ratepayers) than the loss of customers due to the possibility of declining price competitiveness of gas service relative to electric service? Has Cascade considered this as a basis for avoided costs? o "Since Avoided Cost is based on peak day, this deferral value is then multiplied by the ratio of peak day demand to an average day's demand to get the impact on peak day." Might the possible retention of customers through EE programs have broader impacts beyond peak day? o Staff would like clarification about the savings in deferring system enhancements might go to if there are savings?	o In response to bullet 1 and 2, this is an interesting question and one that Cascade does not have a response to yet. The Company stated during the Targeted TAG 2 meeting that we'll discuss this idea internally to determine if this shoould be included and how it would be quantified. Cascade also asked Staff if they had any thoughts on how this would be quantified, and they responded that they would provide some thoughts a week after the Targeted TAG meeting. o There isn't really a savings persay, but delaying the system enhancement, or removing it all together, would avoid costs being passed to the ratepayers through a rate case.

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6	2/12/2024	Targeted TAG 2	WUTC	• Slides 14-21, how might the dynamics communicated in these slides work with a declining customer count? How would a decrease or decreasing peak load impact the model?	Addressed in item 5 response.
7	2/12/2024	Targeted TAG 2	WUTC	• Slides 18-20, Staff would appreciate more information regarding the calculation of present value of deferral.	To illustrate this with an example, suppose Cascade had a hypothetical project in Kennewick scheduled for 2026 to spend $1,000,000 towards what was identified as a needed distribution system expansion to satisfy growth. Relating to the figure on slide 15, this would represent the hypothetical point of deficit occurring in 2026. Furthermore, let's assume that peak day growth from 2026 to 2027 is 10,000. Finally, let's assume that the real discount rate is 4%. It's important to use the real discount rate as it's assumed that year over year costs will increase by inflation, so that must be backed out of the discount rate. The Company would now know that by reducing demand through conservation by 10,000 therms, Cascade would delay the point of deficit by one year. To quantify this value, first Cascade would need to adjust the capital outlay to 2024 dollars with a simple PV calculation of 1,000,000*(1/((1+Real Discount Rate)^(2026-2024)) or 1/1.04^2. This gives the Company the value of the cash outlay in today's dollars. From here, Cascade calculates the value of not spending the money in 2026, but rather spending it in 2027, by multiplying the PV of the 1,000,000 by the real discount rate, which represents Cascade's Real Weighted Average Cost of Capital. The value is deferral value, which the next step is to divide by the number of therms needed to avoid, 10,000 in this example, to get your deferral value per therm.
8	2/12/2024	Targeted TAG 2	WUTC	• Slide 25, "Accurately captures the increasing uncertainty around pricing, as nominal risk premium generally increases over time" Does this premium include CCA compliance cost uncertainties such as variations in prices at auction? Additionally, can you speak to Cascade's preference here for Stochastic prices over Brownian price forecasts?	Currently compliance costs are modeled at the Social Cost of Carbon which is a known quantity. If Cascade does shift to the Company's marginal abatement cost, there might be value in the certainty of conservation versus the risk in CCA Allowance price variance. Cascade will need more data to discern the nature of allowance price movements. If they ultimately follow a normal distribution, for instance, the risk of rising and falling prices would be equivalent, and thus no quantifiable value to mitigate. Cascade's position regarding stochastic modeling is that, due to the seasonal nature of natural gas pricing, it is most appropriate to use the "Drift and Shock" model as described in the IRP versus a pure Geometric Brownian price forecast. A Geometric Brownian Motion model is appropriate when there are no discernable seasonalities to what is being modeled, as is the case, typically speaking, with stock prices, a common application of Brownian or Geometric Brownian motion models. If applied to natural gas prices, such a model could commonly result in summer prices higher than winter prices which, while not impossible, is certainly improbable. The "Drift" or deterministic trend element of Cascade's model allows the model to consider this seasonality while still allowing for the desired variance of a stochastic model.
9	2/12/2024	Targeted TAG 2	WUTC	• Slide 28, "% CH4 per unit of natural gas: 93.4%". Are there CO2e emissions associated with the remaining 6.6%?	The remaining 6.6% is made up of N2, CO2, Ethane, Propane, Ibutane, Nbutane, Ipentane, Npentane, and Hexanes. It's Cascade's understanding that, other than CO2 and methane, the other gases don't have as much of a global warming impact and are not defined as Greenhouse gases under HB 1257. In the 2023 IRP, Cascade noted that in several areas where Cascade serves, the methane and CO2 content was approximately 93.5%, which is very similar to what others are reporting at 93.4%. Cascade will re-evaluate this figure for the 2025 IRP.
10	2/12/2024	Targeted TAG 2	WUTC	• Slide 28, How has Cascade considered distribution system emissions?	The distribution system emissions are captured in the Upstream Emission Loss Factor. The Upstream Emmission Loss Factor is supposed to represent the loss of fuel in emissions from production to delivery to the customer before it's combusted.