

# Appendix



## Definition of Terms

- TSR<sup>1</sup> – Transmission Service Request
- Authorized TSRs – Requests that can be granted without a capital project based on available transmission capacity.
- Capital Costs used in CIFA analysis for NOS 2010 projects include an allocation of capital costs from NOS 2008 projects required to offer the subscriptions for NOS 2010.
- Rate Pressure – Rate pressure is the expected impact to rates across all network customers (PTP and NT), all else remaining equal as a result of moving forward with the project(s).
  - 20 year rate pressure is the average rate pressure over 20 years which indicates the effect on rates in order to recover the costs of the first 20 years of the project in those 20 years.

<sup>1</sup> In the CIFA analysis MW demand for NT and PTP redirect requests are excluded.



## Example of Credit Allocation

- For NOS 2010 project groups that required a NOS 2008 project a pro-rata share of the project cost was allocated
- Using the CUP (West), CF-Lomo group as an example:
  - The demand of the original PTP TSRs from NOS 2008, 2009 & 2010 that require the CF-Lomo build is totaled (this included project groups that required CF Lomo and other NOS 2008 projects ONLY):

Project Group	Associated MW
CF Lomo	200 MW
WOMR-CFLomo	550 MW
WOMR-15-CFLomo	100 MW
<b>Total</b>	<b>850 MW</b>

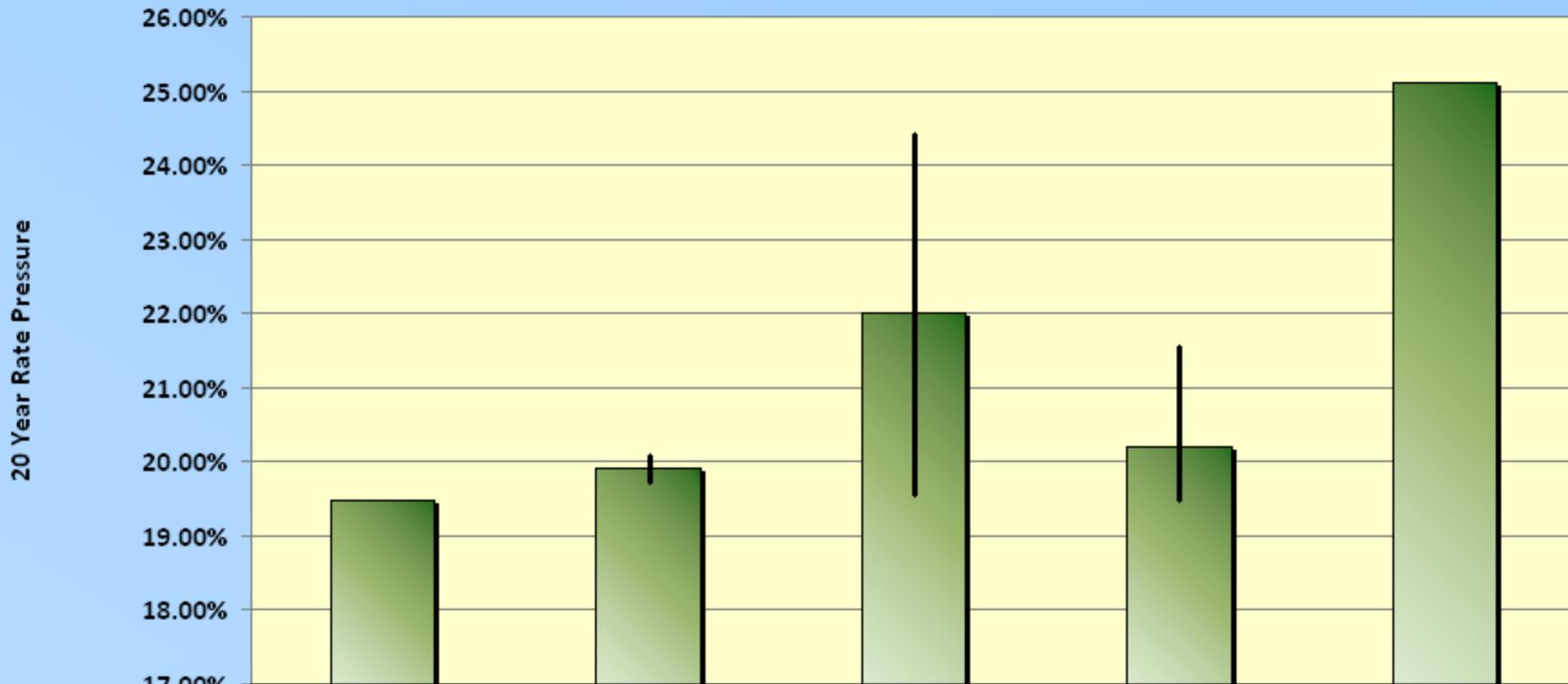
- Then the total original PTP MW that require CUP (West) and CFLomo is divided by the total original PTP MW demand that can be met CF-Lomo if all the NOS 2008 project groups and CUP (West) are constructed:

$$- \text{CUP 480 MW} / (\text{CUP 480 MW} + \text{NOS 2008 Project Group 850 MW}) = \mathbf{36\%}$$

- 36% of the total CF Lomo Costs were assigned to the CUP(West) Group



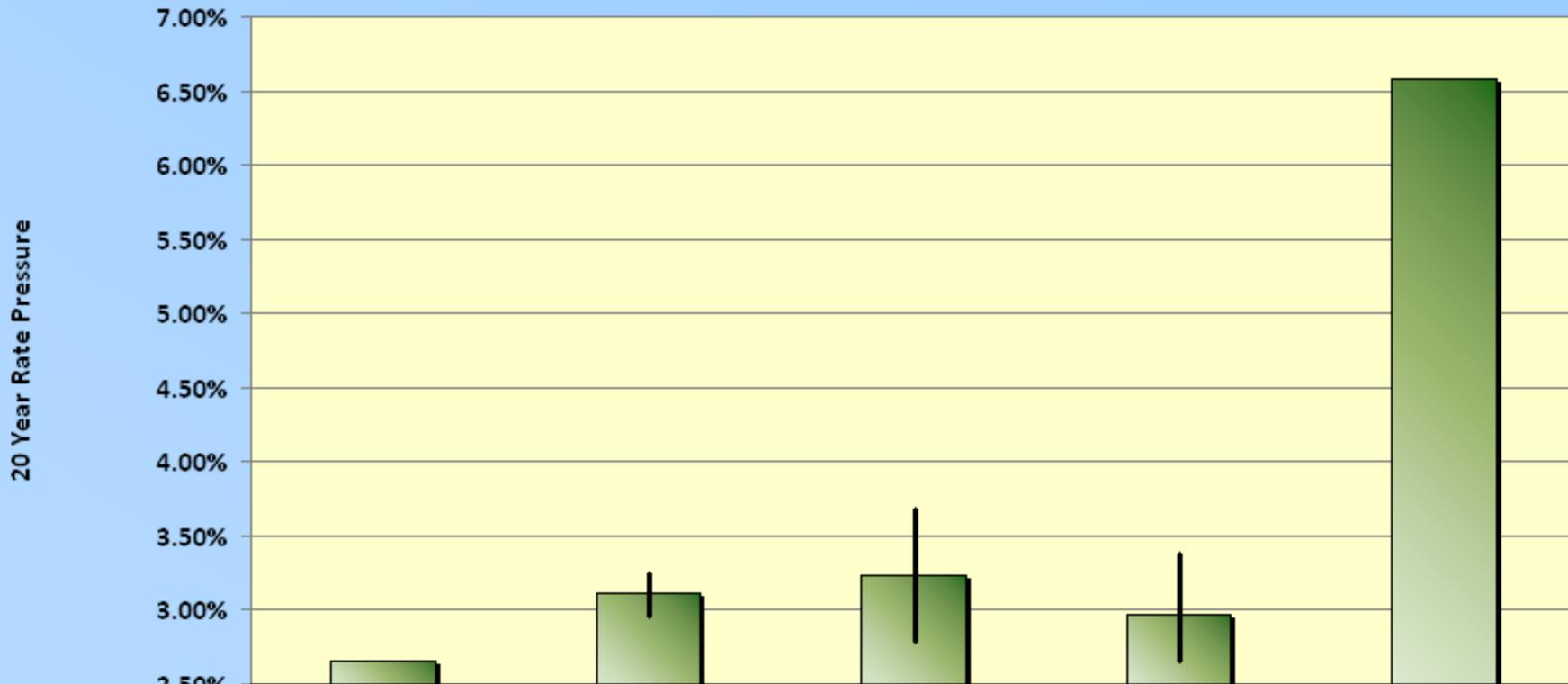
**All NOS 2010 Projects 20 Year Rate Pressure Ranges  
(Includes allocated costs from NOS 2008 Projects)**



	Base Case	Tariff Rights	Capital	Default	NOS 2008 Projects Aren't Completed
■ Mean	19.47%	19.92%	22.01%	20.20%	25.11%
Upper Range		20.09%	24.41%	21.55%	
Lower Range		19.72%	19.54%	19.47%	



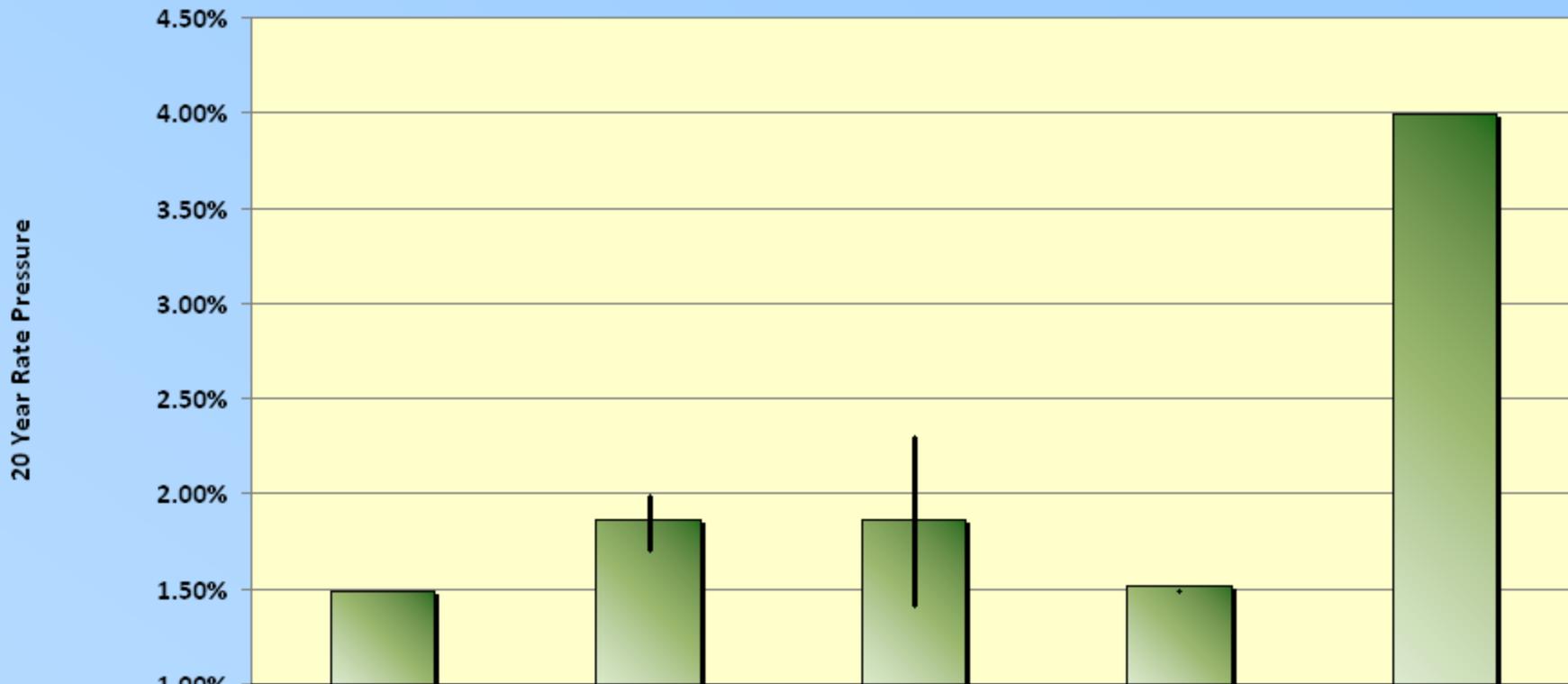
**All NOS 2010 Northern Intertie Projects & CUP 20 Year Rate Pressure Ranges  
(Includes allocated costs from NOS 2008 Projects)**



	Base Case	Tariff Rights	Capital	Default	NOS 2008 Projects Aren't Completed
Mean	2.66%	3.12%	3.24%	2.97%	6.58%
Upper Range		3.25%	3.67%	3.38%	
Lower Range		2.95%	2.78%	2.66%	



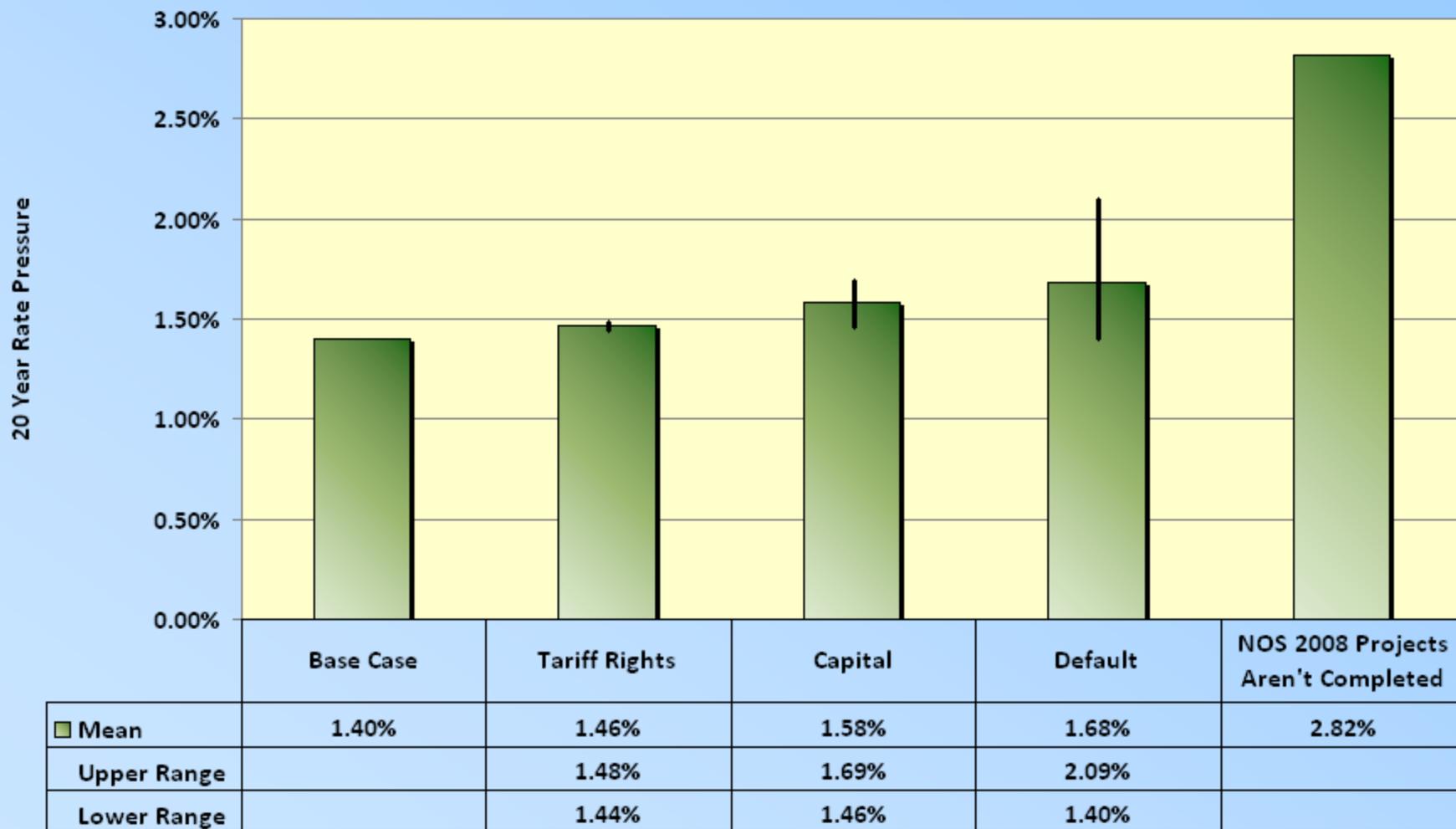
**All NOS 2010 Northern Intertie Projects 20 Year Rate Pressure Ranges  
(Includes allocated costs from NOS 2008 Projects)**



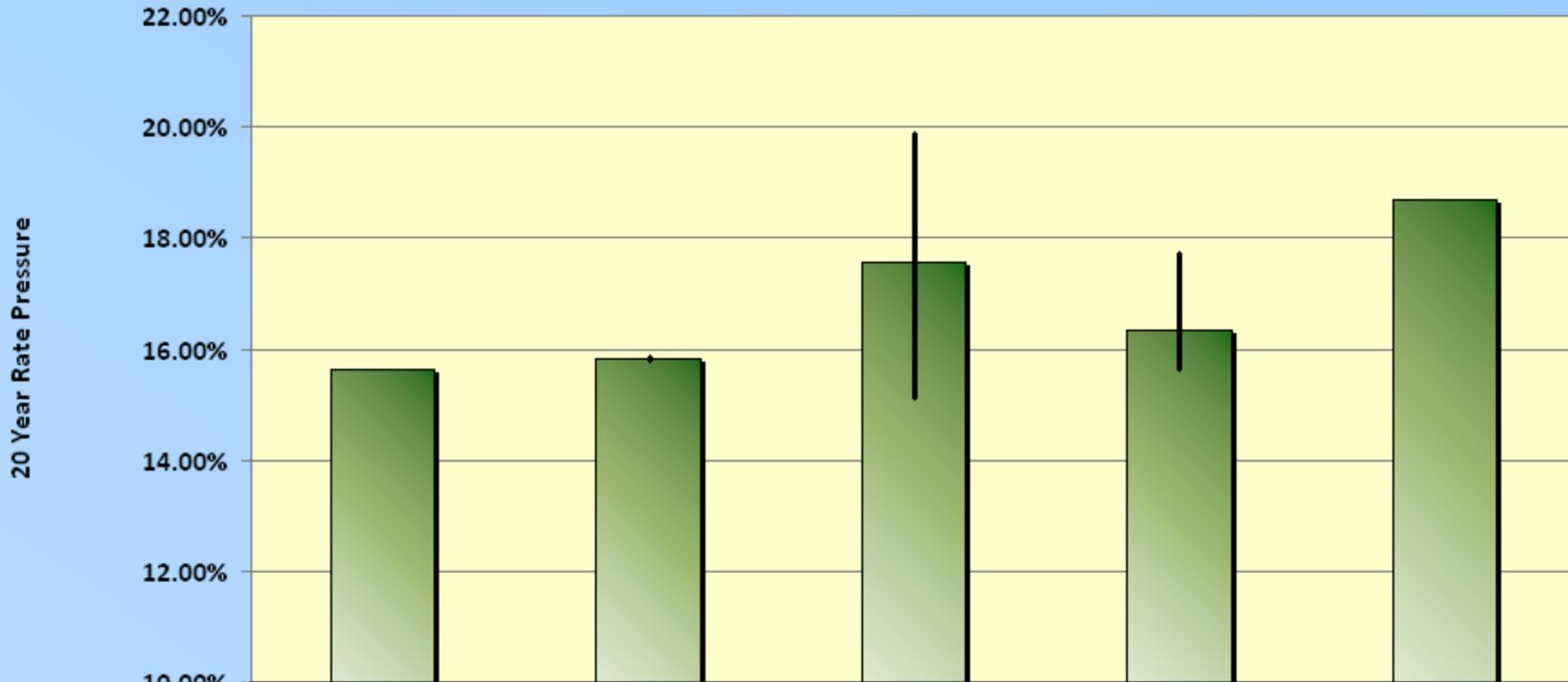
	Base Case	Tariff Rights	Capital	Default	NOS 2008 Projects Aren't Completed
■ Mean	1.49%	1.86%	1.87%	1.51%	3.99%
Upper Range		1.99%	2.30%	1.49%	
Lower Range		1.71%	1.42%	1.49%	



**CUP (West) with CF Lomo 20 Year Rate Pressure Ranges  
(Includes allocated costs from NOS 2008 Projects)**



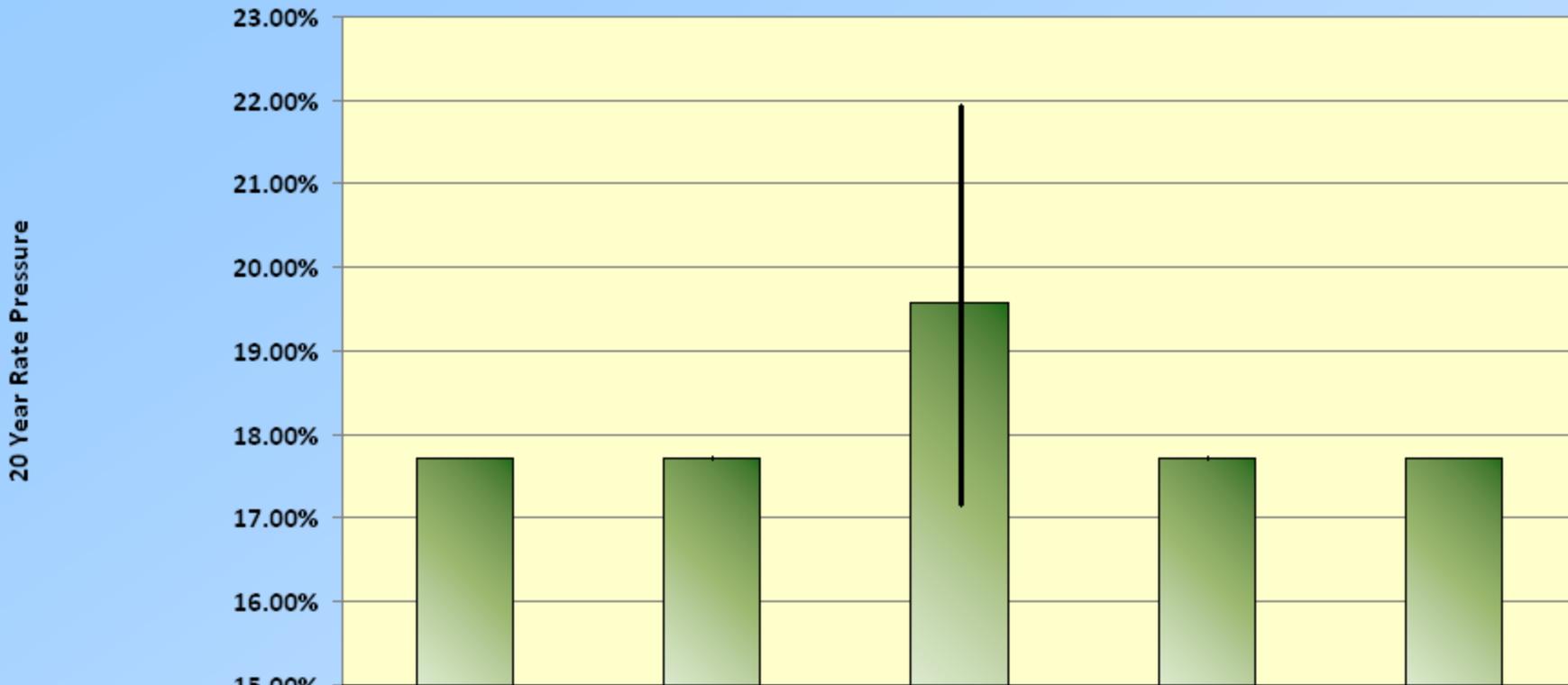
**GASH with CF Lomo 20 Year Rate Pressure Ranges  
(Includes allocated costs from NOS 2008 Projects)**



	Base Case	Tariff Rights	Capital	Default	NOS 2008 Projects Aren't Completed
■ Mean	15.63%	15.83%	17.56%	16.35%	18.70%
Upper Range		15.86%	19.88%	17.71%	
Lower Range		15.80%	15.10%	15.63%	



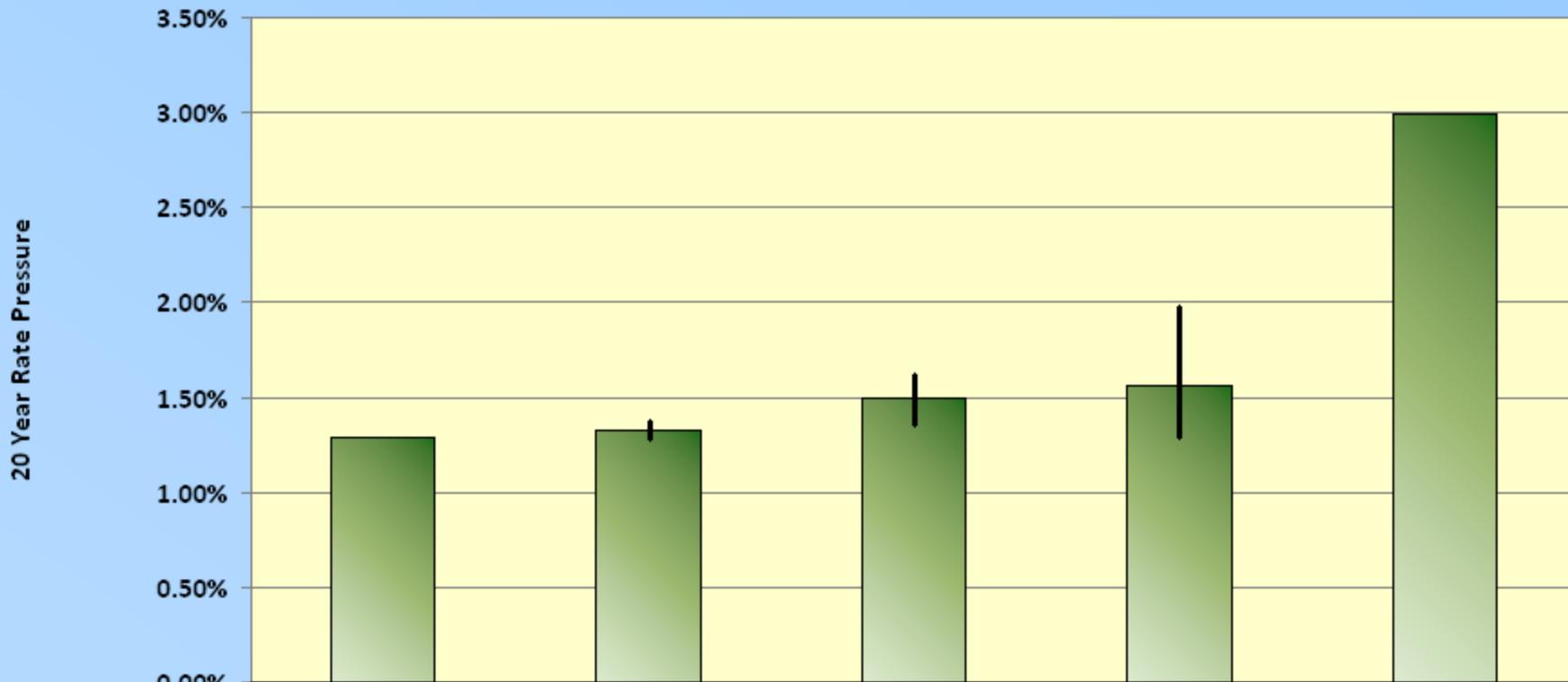
**GASH 20 Year Rate Pressure Ranges**  
 (Includes allocated costs from NOS 2008 Projects)



	Base Case	Tariff Rights	Capital	Default	NOS 2008 Projects Aren't Completed
■ Mean	17.72%	17.72%	19.58%	17.72%	17.72%
Upper Rate Pressure		17.72%	21.92%	17.72%	
Lower Rate Pressure		17.72%	17.15%	17.72%	



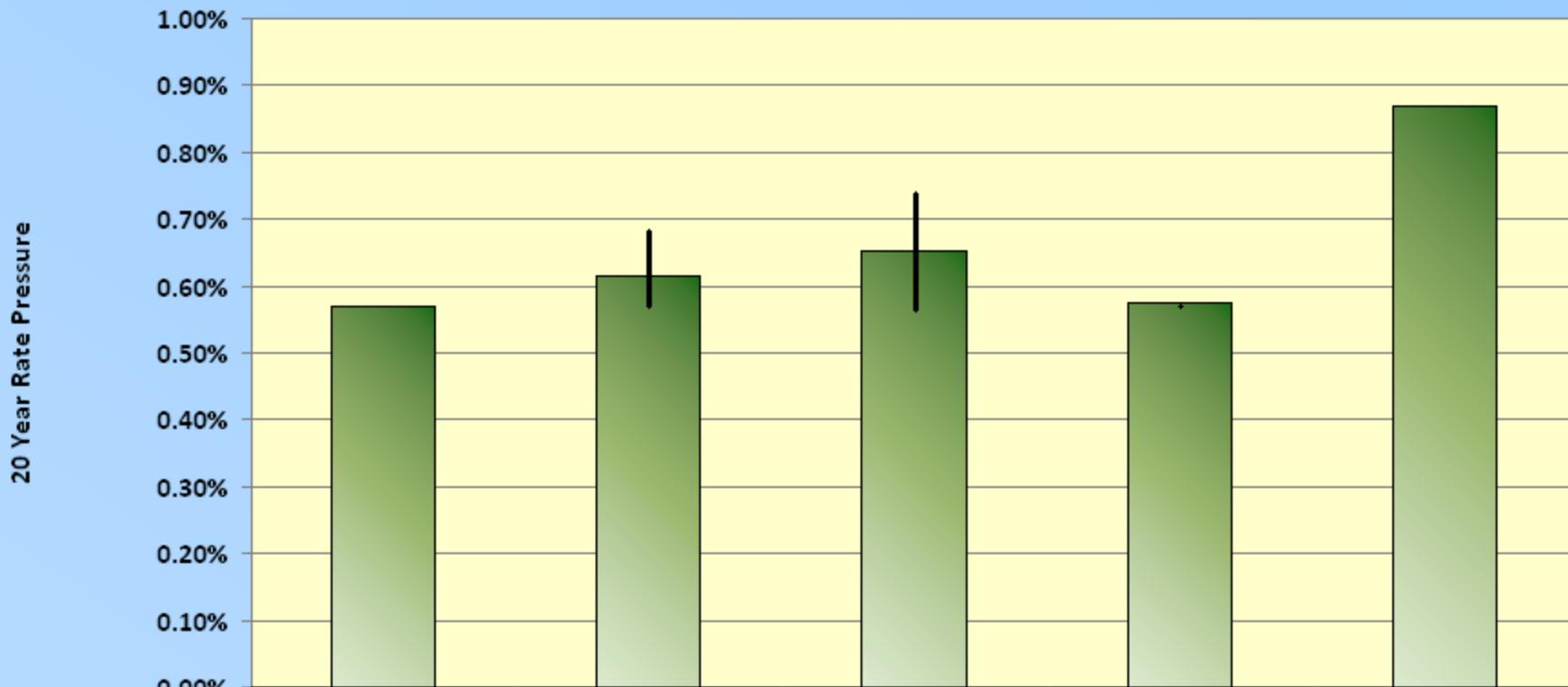
**NI (East) N-S & CUP (West) with I-5, WOMR & CF Lomo 20 Year Rate Pressure Ranges  
(Includes allocated costs from NOS 2008 Projects)**



	Base Case	Tariff Rights	Capital	Default	NOS 2008 Projects Aren't Completed
■ Mean	1.29%	1.33%	1.49%	1.56%	2.99%
Upper Range		1.37%	1.62%	1.98%	
Lower Range		1.28%	1.35%	1.29%	



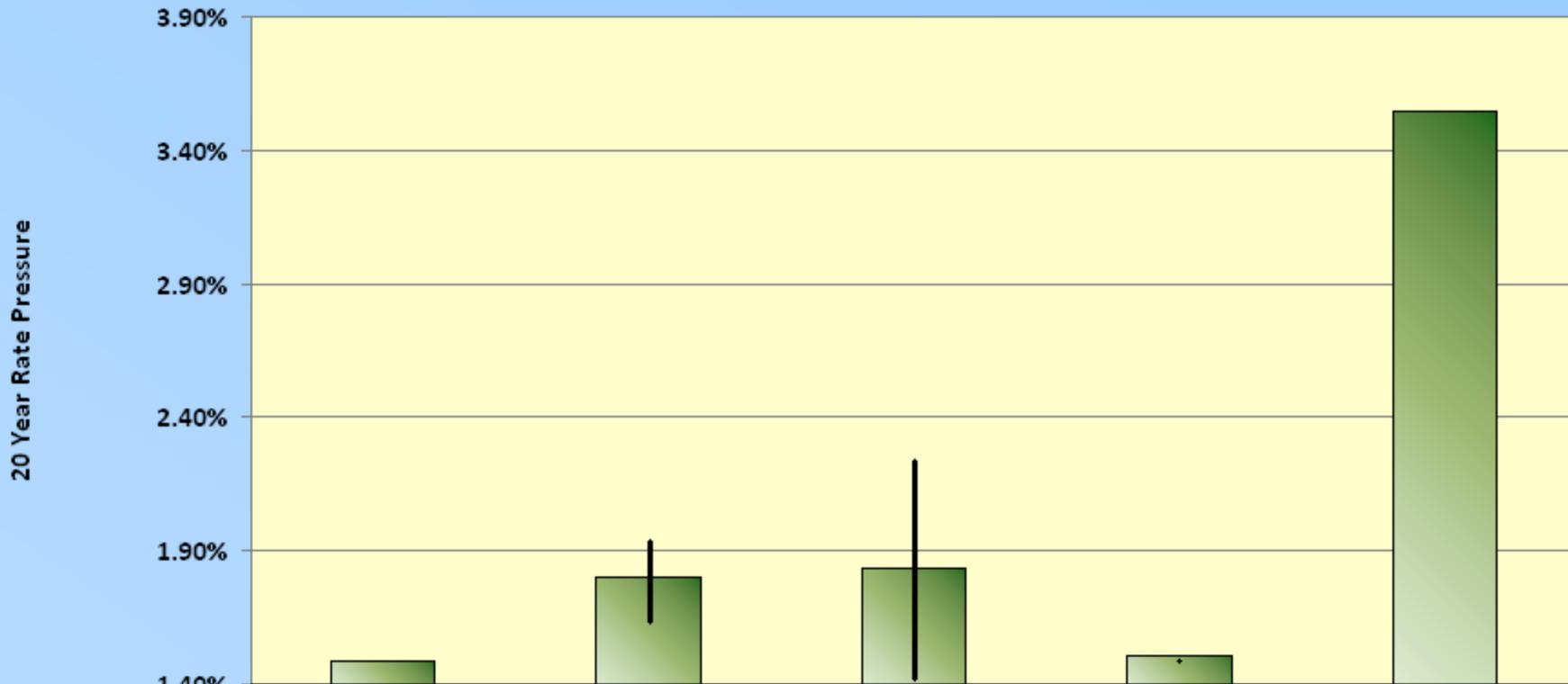
**NI (East) N-S with I5, WOMR & CF Lomo 20 Year Rate Pressure Ranges  
(Includes allocated costs from NOS 2008 Projects)**



	Base Case	Tariff Rights	Capital	Default	NOS 2008 Projects Aren't Completed
■ Mean	0.57%	0.62%	0.65%	0.57%	0.87%
Upper Range		0.68%	0.74%	0.57%	
Lower Range		0.57%	0.56%	0.57%	



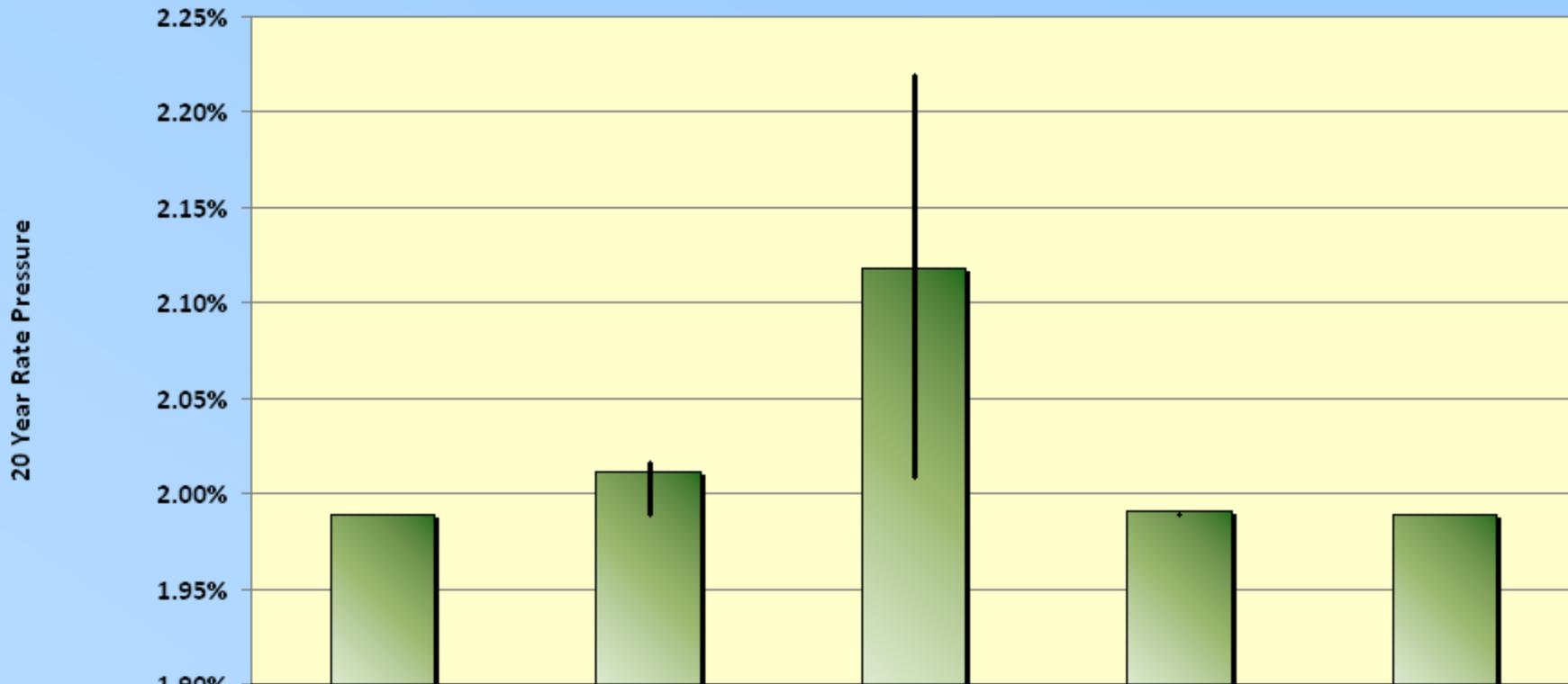
**NI (West) N-S with I-5 & WOMR 20 Year Rate Pressure Ranges  
(Includes allocated costs from NOS 2008 Projects)**



	Base Case	Tariff Rights	Capital	Default	NOS 2008 Projects Aren't Completed
■ Mean	1.48%	1.80%	1.84%	1.51%	3.55%
Upper Range		1.94%	2.23%	1.48%	
Lower Range		1.63%	1.42%	1.48%	



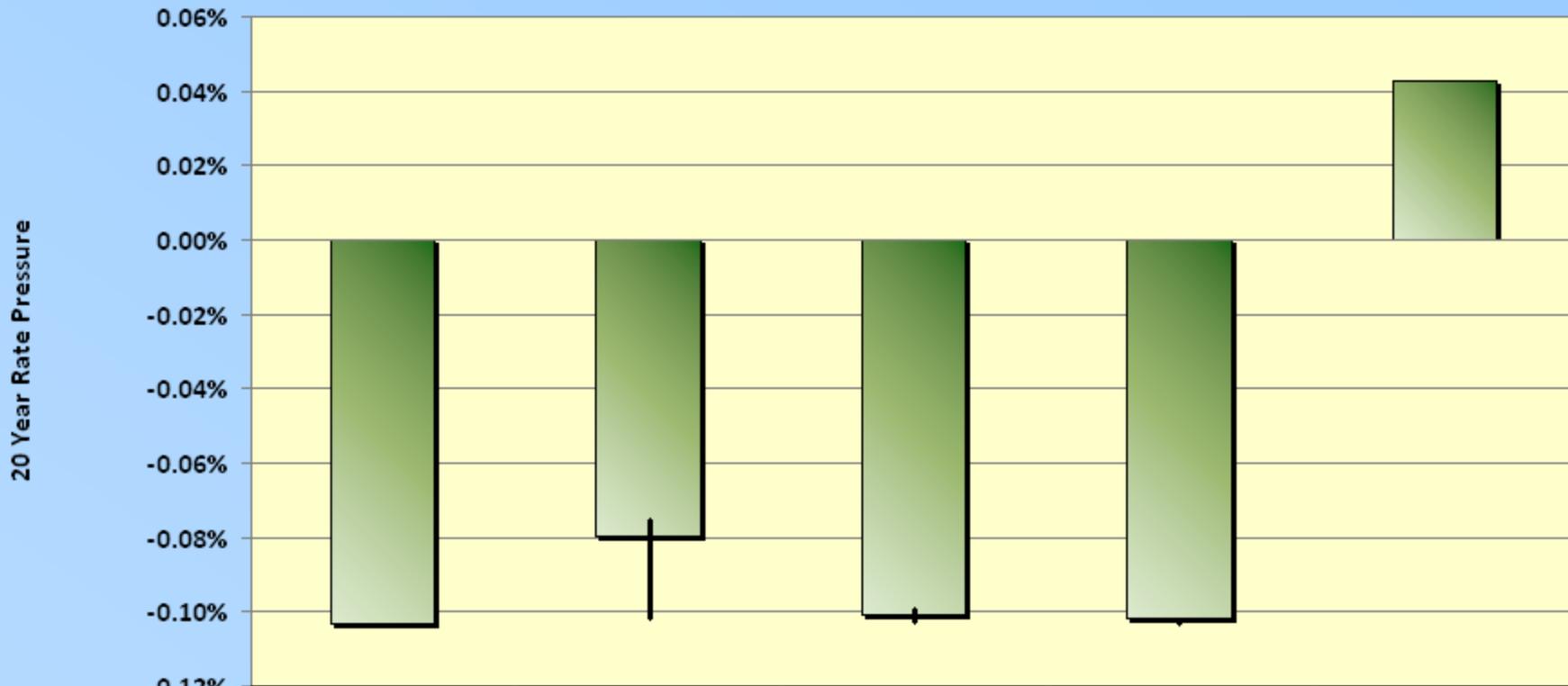
NI (East) S-N & CUP (West) 20 Year Rate Pressure Ranges  
 (Includes allocated costs from NOS 2008 Projects)



	Base Case	Tariff Rights	Capital	Default	NOS 2008 Projects Aren't Completed
■ Mean	1.99%	2.01%	2.12%	1.99%	1.99%
Upper Range		2.02%	2.22%	1.99%	
Lower Range		1.99%	2.01%	1.99%	



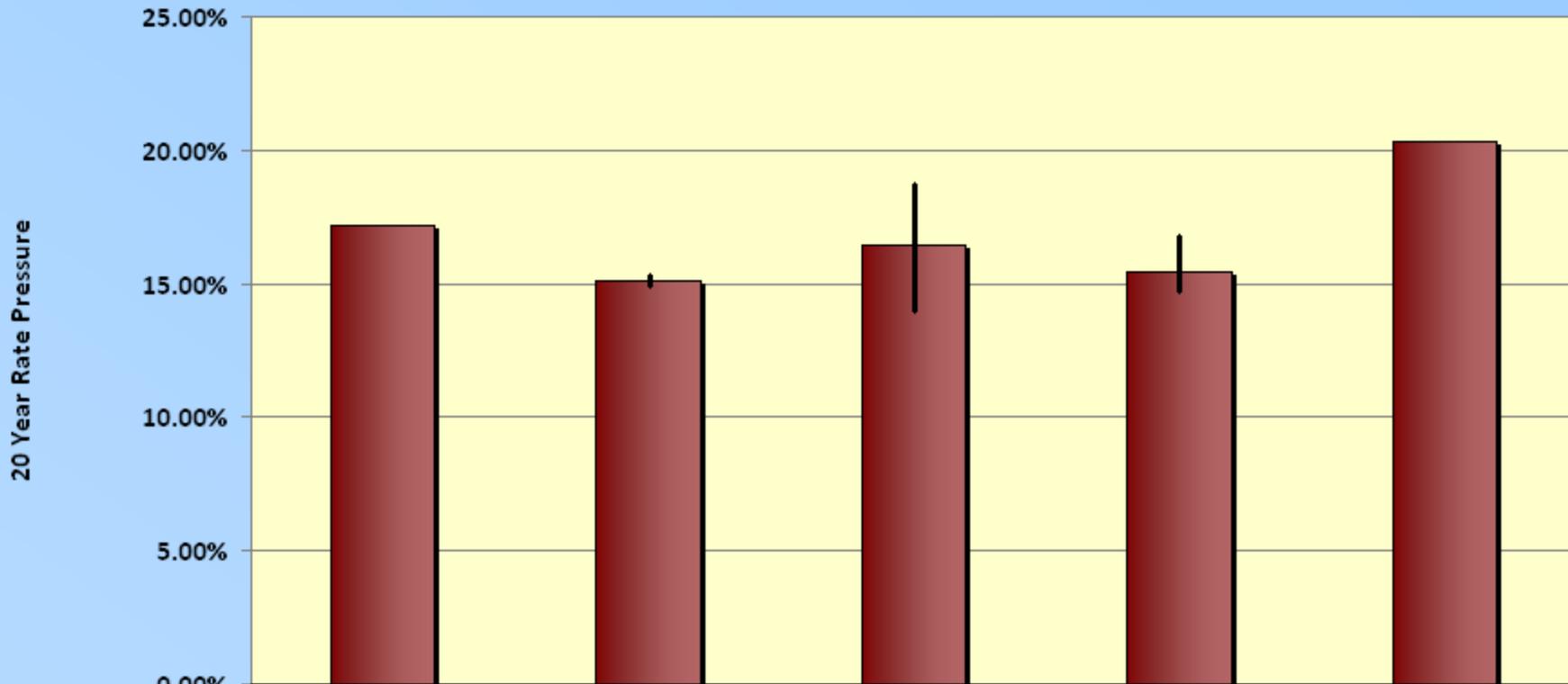
NI (West) S-N with WOMR 20 Year Rate Pressure Ranges  
 (Includes allocated costs from NOS 2008 Projects)



	Base Case	Tariff Rights	Capital	Default	NOS 2008 Projects Aren't Completed
■ Mean	-0.10%	-0.08%	-0.10%	-0.10%	0.04%
Upper Range		-0.08%	-0.10%	-0.10%	
Lower Range		-0.10%	-0.10%	-0.10%	



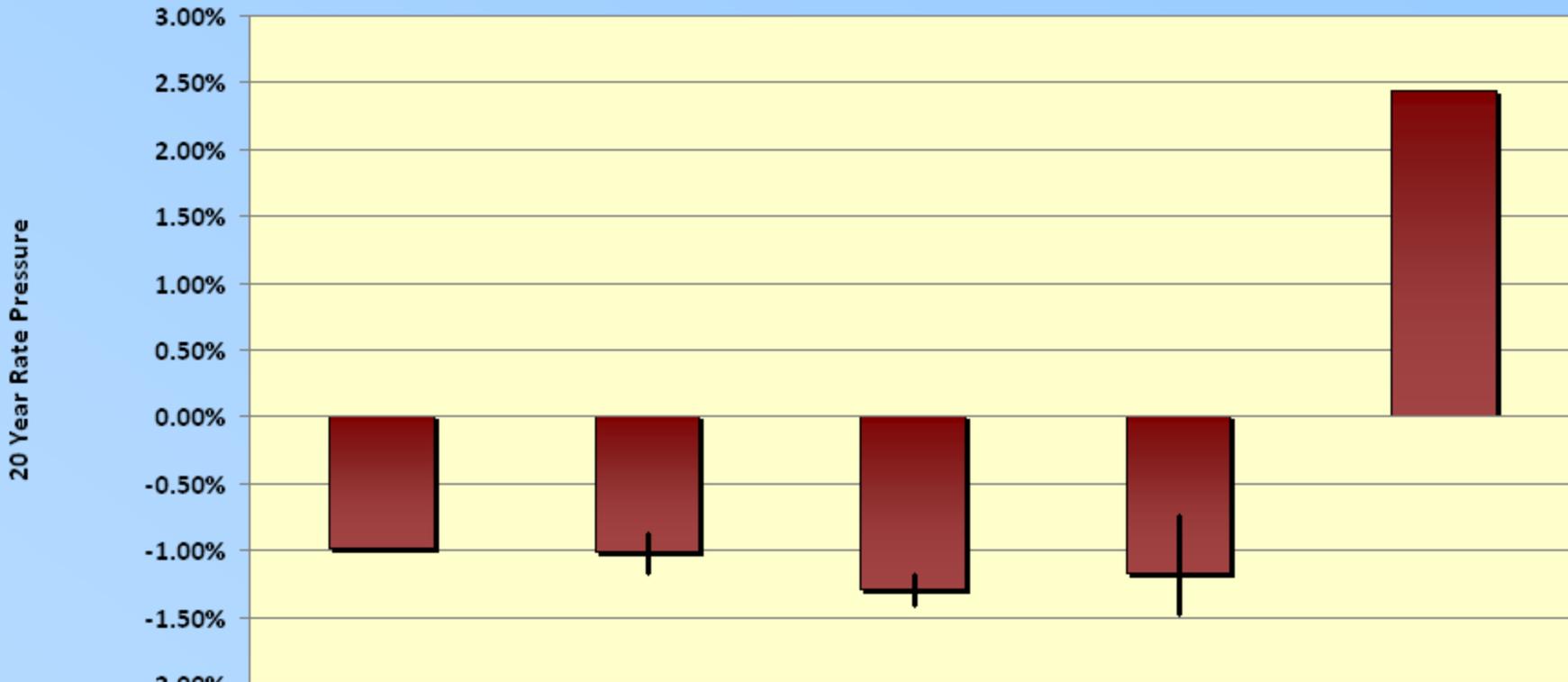
**All NOS 2010 Projects 20 Year Rate Pressure Ranges  
2010 Project Costs Only**



	Base Case	Tariff Rights	Capital	Default	NOS 2008 Projects Aren't Completed
■ Mean	17.18%	15.14%	16.42%	15.43%	20.32%
Upper Range		15.31%	18.74%	16.80%	
Lower Range		14.93%	14.00%	14.67%	



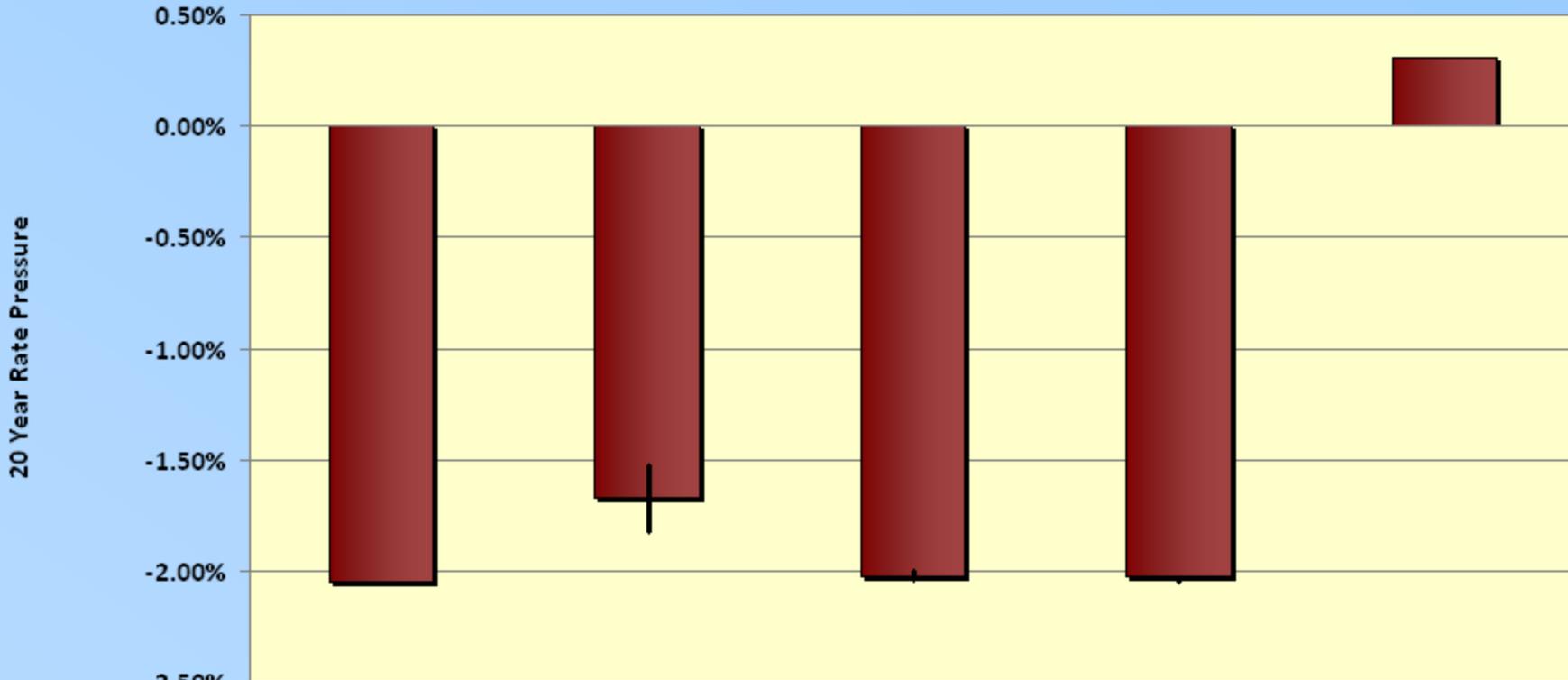
**All NOS 2010 Northern Intertie Projects & CUP 20 Year Rate Pressure Ranges  
2010 Project Costs Only**



	Base Case	Tariff Rights	Capital	Default	NOS 2008 Projects Aren't Completed
■ Mean	-0.98%	-1.02%	-1.29%	-1.17%	2.44%
Upper Range		-0.87%	-1.19%	-0.74%	
Lower Range		-1.18%	-1.41%	-1.48%	



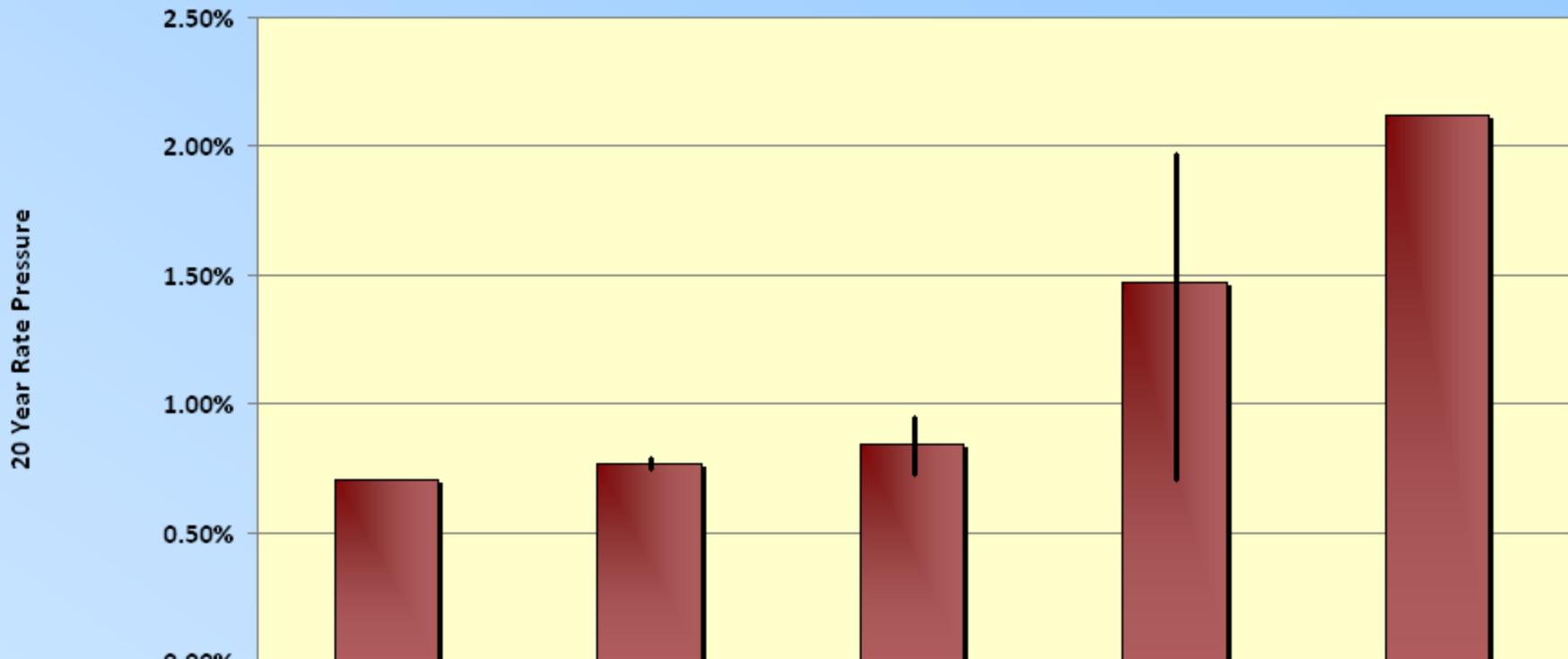
### All NOS 2010 Northern Intertie Projects 20 Year Rate Pressure Ranges 2010 Project Costs Only



	Base Case	Tariff Rights	Capital	Default	NOS 2008 Projects Aren't Completed
■ Mean	-2.05%	-1.67%	-2.02%	-2.03%	0.30%
Upper Range		-1.53%	-2.00%	-2.05%	
Lower Range		-1.83%	-2.05%	-2.05%	



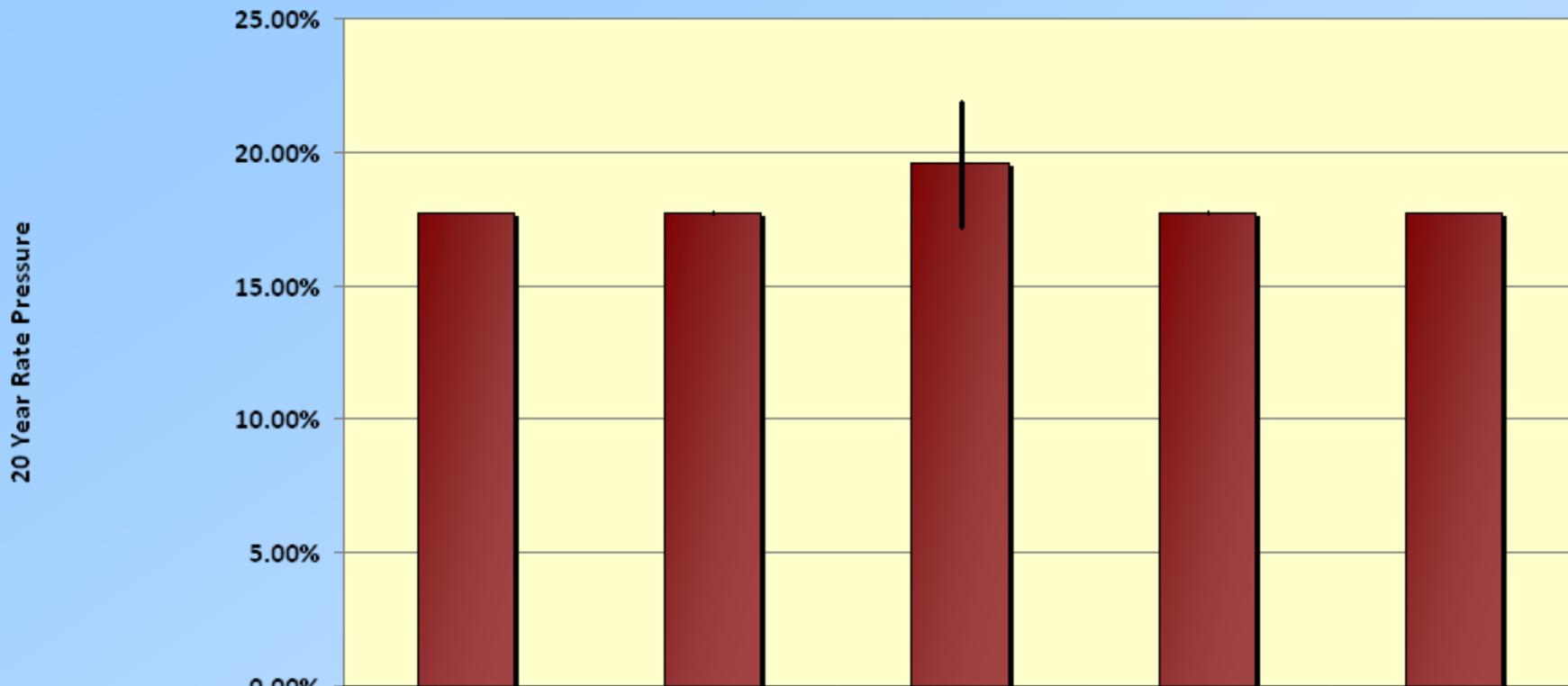
**CUP (West) with CF Lomo 20 Year Rate Pressure Ranges  
2010 Project Costs Only**



	Base Case	Tariff Rights	Capital	Default	NOS 2008 Projects Aren't Completed
■ Mean	0.70%	0.77%	0.84%	1.47%	2.12%
Upper Range		0.79%	0.95%	1.97%	
Lower Range		0.75%	0.73%	0.70%	



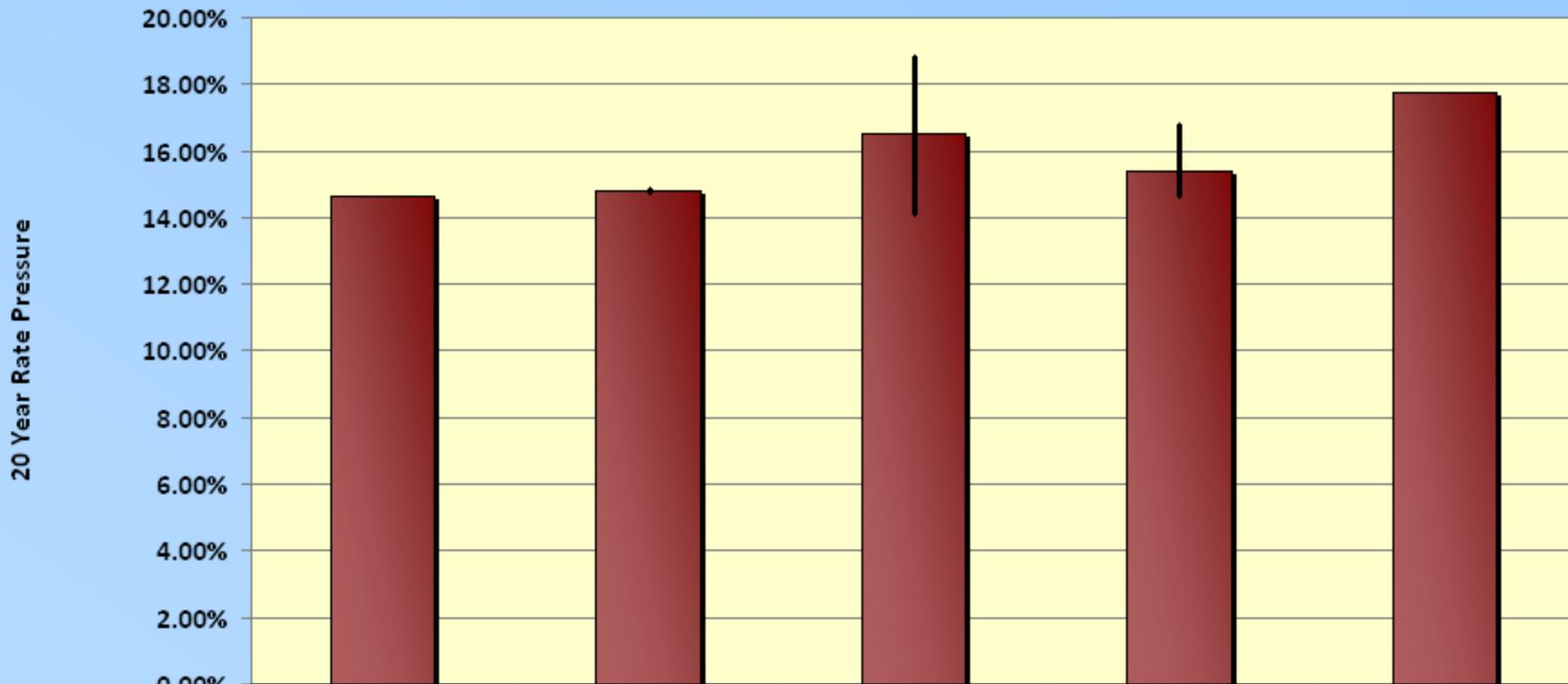
### GASH 20 Year Rate Pressure Ranges 2010 Project Costs Only



	Base Case	Tariff Rights	Capital	Default	NOS 2008 Projects Aren't Completed
■ Mean	17.72%	17.72%	19.58%	17.72%	17.72%
Upper Rate Pressure		17.72%	21.86%	17.72%	
Lower Rate Pressure		17.72%	17.17%	17.72%	



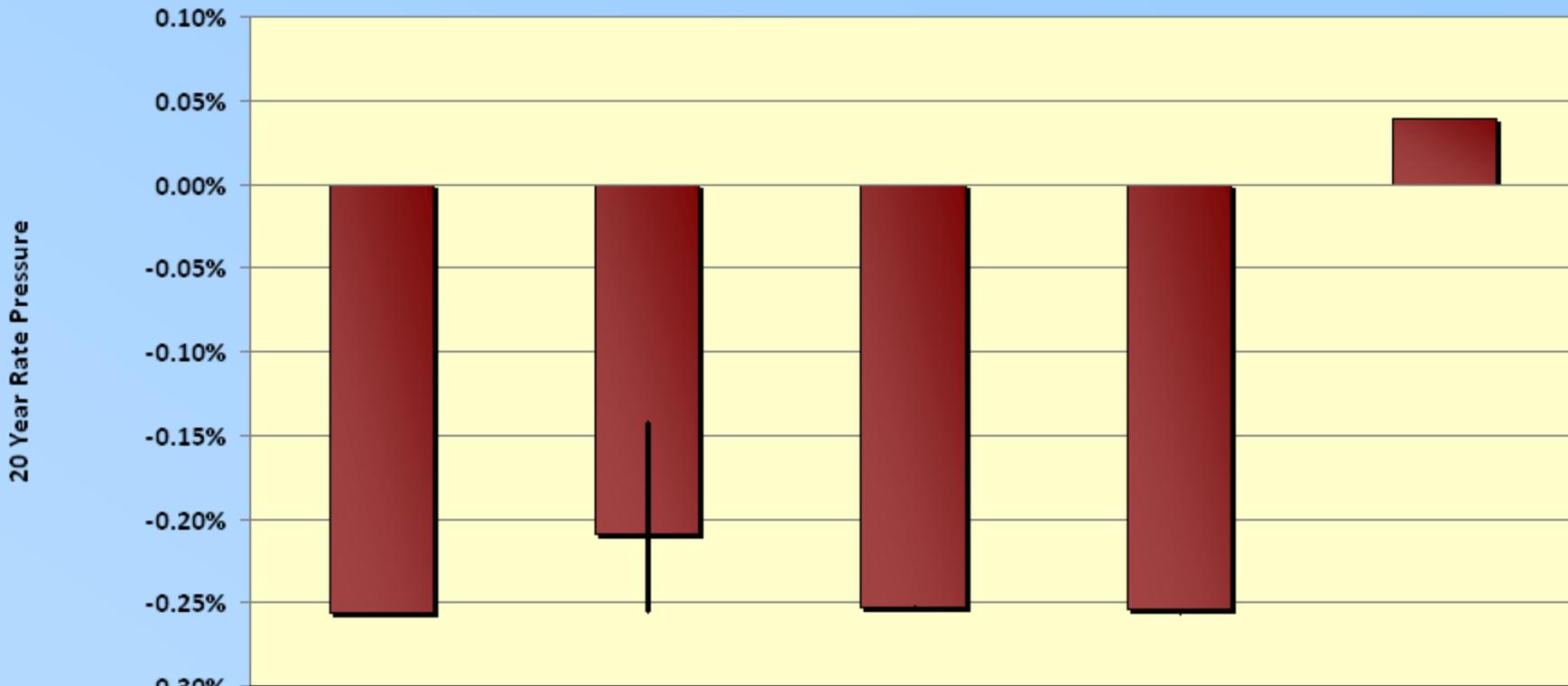
### GASH with CF Lomo 20 Year Rate Pressure Ranges 2010 Project Costs Only



	Base Case	Tariff Rights	Capital	Default	NOS 2008 Projects Aren't Completed
■ Mean	14.66%	14.80%	16.54%	15.40%	17.72%
Upper Range		14.83%	18.81%	16.79%	
Lower Range		14.77%	14.13%	14.66%	



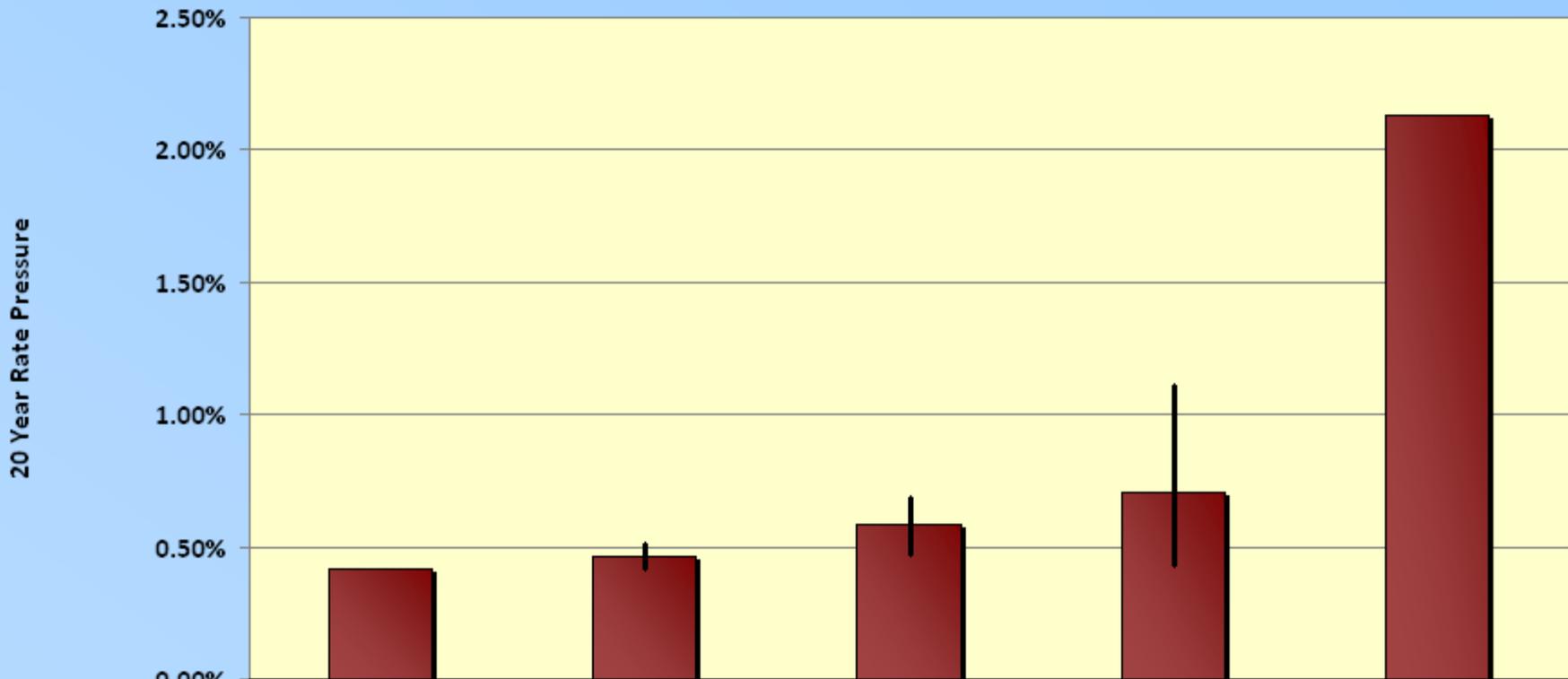
NI (East) N-S with I5, WOMR & CF Lomo 20 Year Rate Pressure Ranges  
2010 Project Costs Only



	Base Case	Tariff Rights	Capital	Default	NOS 2008 Projects Aren't Completed
■ Mean	-0.26%	-0.21%	-0.25%	-0.25%	0.04%
Upper Range		-0.14%	-0.25%	-0.26%	
Lower Range		-0.25%	-0.25%	-0.26%	



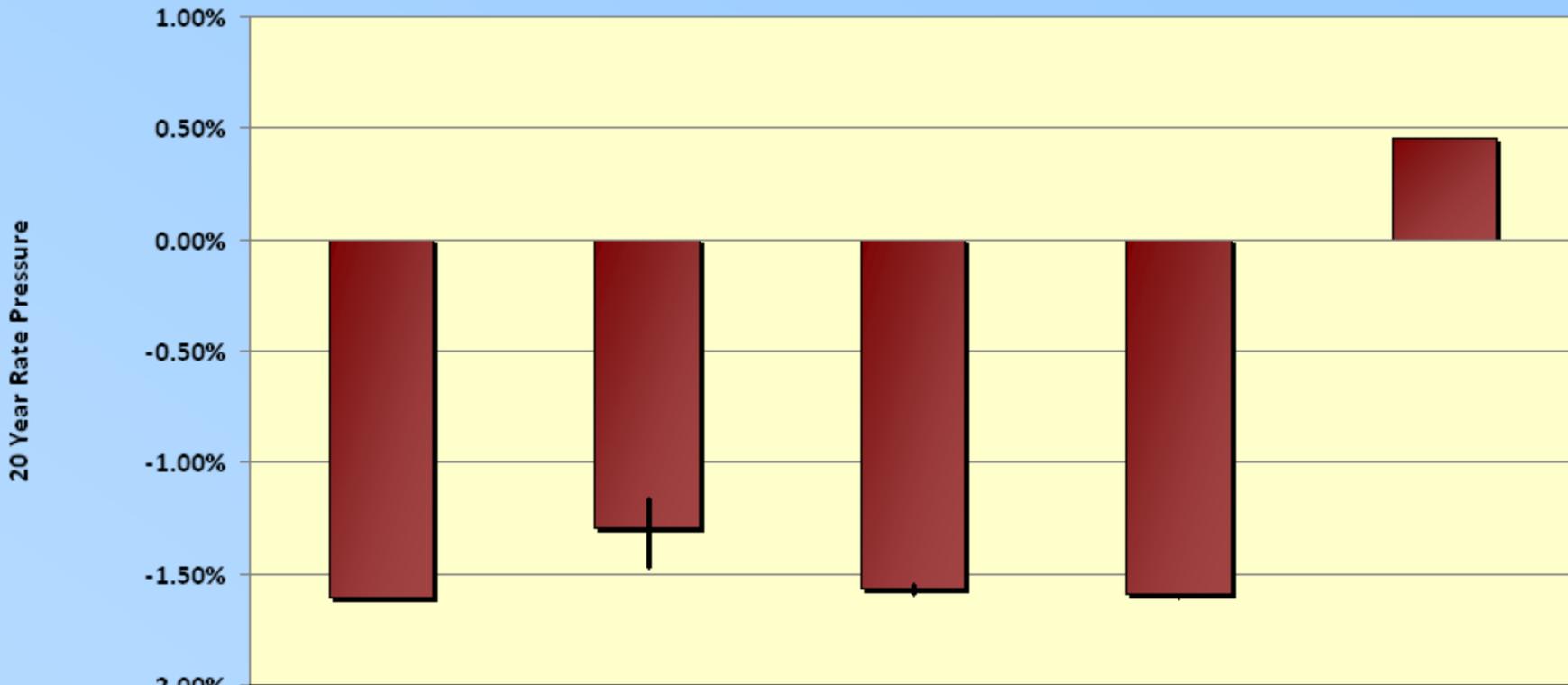
NI (East) N-S & CUP (West) with I-5, WOMR & CF Lomo 20 Year Rate Pressure Ranges  
2010 Project Costs Only



	Base Case	Tariff Rights	Capital	Default	NOS 2008 Projects Aren't Completed
■ Mean	0.42%	0.46%	0.58%	0.71%	2.13%
Upper Range		0.51%	0.69%	1.11%	
Lower Range		0.42%	0.47%	0.43%	



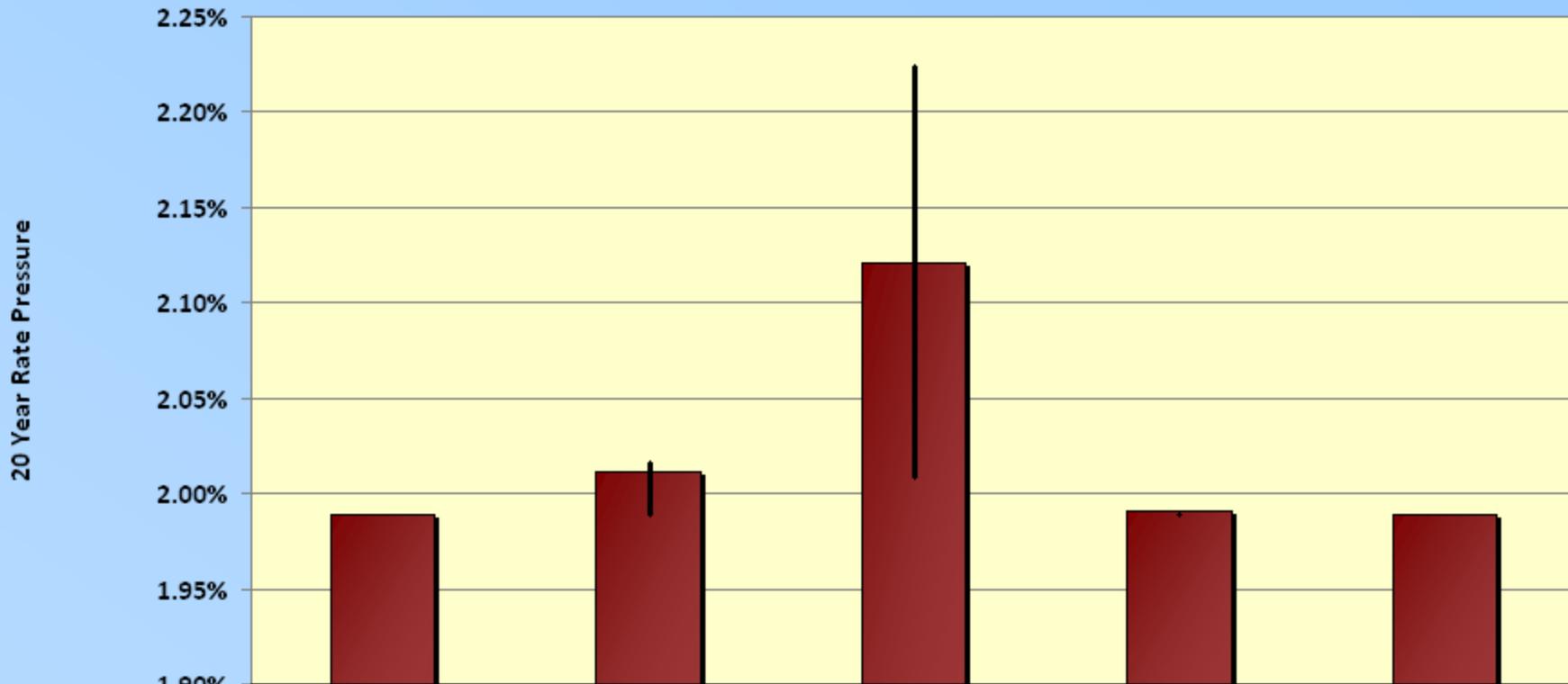
NI (West) N-S with I-5 & WOMR 20 Year Rate Pressure Ranges  
2010 Project Costs Only



	Base Case	Tariff Rights	Capital	Default	NOS 2008 Projects Aren't Completed
■ Mean	-1.61%	-1.29%	-1.57%	-1.59%	0.45%
Upper Range		-1.16%	-1.55%	-1.61%	
Lower Range		-1.47%	-1.59%	-1.61%	



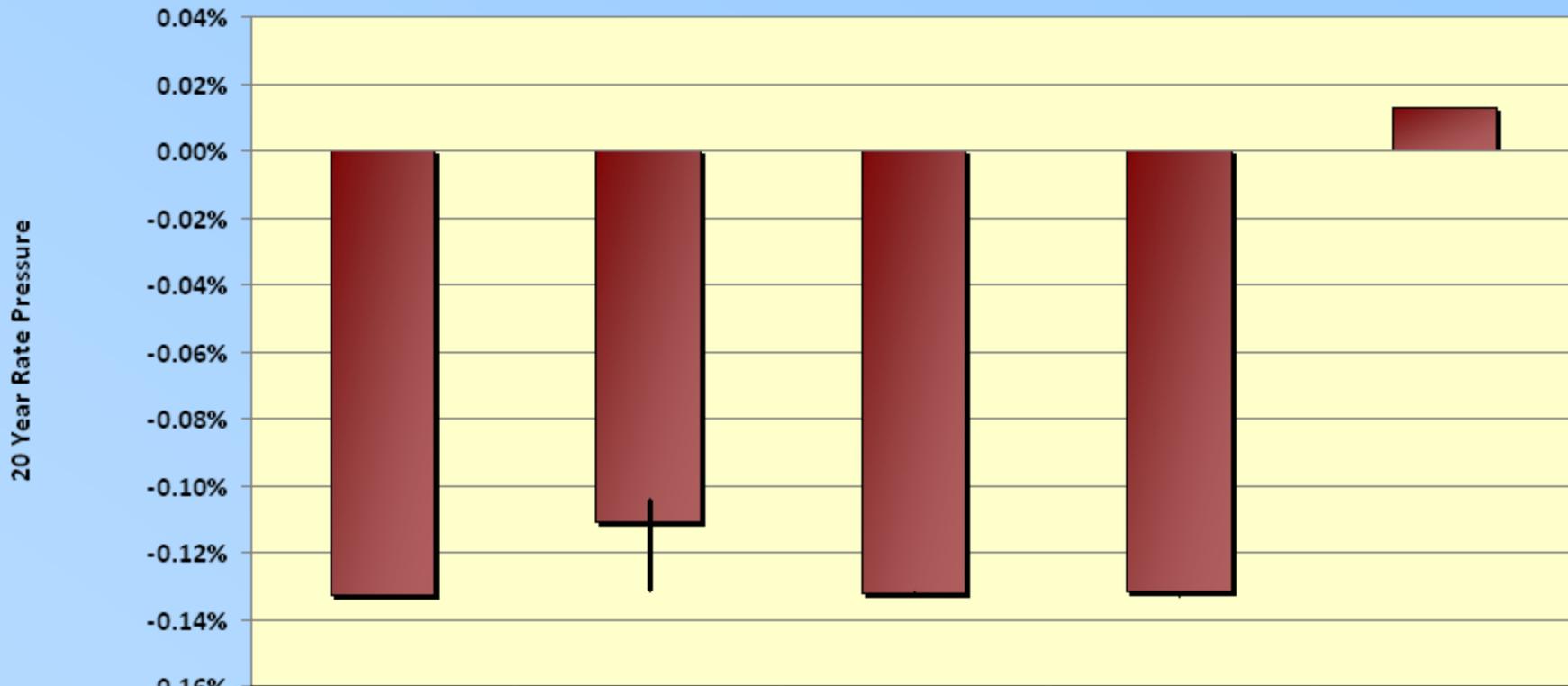
NI (East) S-N & CUP (West) 20 Year Rate Pressure Ranges  
2010 Project Costs Only



	Base Case	Tariff Rights	Capital	Default	NOS 2008 Projects Aren't Completed
■ Mean	1.99%	2.01%	2.12%	1.99%	1.99%
Upper Range		2.02%	2.22%	1.99%	
Lower Range		1.99%	2.01%	1.99%	



NI (West) S-N with WOMR 20 Year Rate Pressure Ranges  
2010 Project Costs Only



	Base Case	Tariff Rights	Capital	Default	NOS 2008 Projects Aren't Completed
■ Mean	-0.13%	-0.11%	-0.13%	-0.13%	0.01%
Upper Range		-0.10%	-0.13%	-0.13%	
Lower Range		-0.13%	-0.13%	-0.13%	



## Commercial Infrastructure Modeling

#	Cluster Study Outputs that go into the Commercial Infrastructure Model consist of:
<b>1</b>	<b>Direct Costs</b>
	a. By project, by year of construction
<b>2</b>	<b>Demand Megawatts</b>
	a. By project, by year in megawatts
	b. Several projects have multiple streams of megawatts coming on later in the project life.
	c. The demand megawatts are assumed to renew indefinitely if the initial subscription is 5 years or greater.
	d. Only viewing demand megawatts can be misleading considering subscription contract durations and renewals.
	e. NT and redirect demand is not included in the analysis.
<b>3</b>	<b>Benefits from delaying a planned projects</b>
	a. Planned reliability projects identified that can be delayed due to a new project.
	b. Project is modeled as planned, then delayed project is modeled and net cost savings is modeled as a benefit.
	c. Average rate calculations start averaging the first year the projects are energized over 5, 10 and 20 years.



# Commercial Infrastructure Modeling Assumptions

#	Modeling Base Assumptions
<b>1</b>	<b>Rates</b>
	a. Discount Rate = 9%
	b. Borrowing Rate = 6.97%, 3rd party taxable borrowing rate, this is the average of the 15 and 50 year rates from 2016 to 2040 in the official BPA FY 2011 rate forecast
	c. Construction Inflation rate = 1.3%
	d. PTP inflation rate = 1%, used on the PTP rate beginning in FY 2014
<b>2</b>	<b>Overhead Loadings</b>
	a. For the NPV calculation, an incremental loading cost of \$2 million per project per year of construction on all projects. For projects where capital costs from a previous NOS project is allocated to the total project cost, a portion of the \$2 million for overhead loadings is also allocated
	b. For the embedded rate calculation, the average IPR forecasted composite loading percentage of 23% is used.
<b>3</b>	<b>Embedded Rate Calculation</b>
	a. Using the assumption where \$6.0 million = 1% rate pressure, does not inflate over time (Rule of Thumb).
	b. Rule of thumb is divided into incremental costs from repayment assumptions by year.
	c. Average rate calculations start averaging the first year the projects are energized over 5, 10 and 20 years. If a scenario includes multiple builds, the average rate pressure calculations start averaging the first year that ALL projects in the scenario are energized.
<b>4</b>	<b>PTP Rate Calculation</b>
	a. Base TPTP rate = \$1.298/kW-mo, used to calculate subscription revenues
<b>5</b>	<b>Subscription MW</b>
	a. Less than 5-year subscription contracts do not have right of first refusal rights and are assumed not to renew.
	b. Subscriptions 5 years or greater have right of first refusal rights and are assumed to renew indefinitely.
	c. TSR authorized without project build are not included in analysis for individual projects, but are included in project groupings. If a project group only has NOS 2010 proposed builds, then only authorized MWs submitted in NOS 2010 were used, otherwise all MW that have been authorized in NOS were included.
	d. TSR assumed in the revenue forecast for the FY 10-11 Rate Case are excluded from the authorized TSRs.
<b>6</b>	<b>2008 NOS Projects</b>
	a. When a proposed NOS 2010 project requires a NOS 2008 project to enable MW, an portion of the costs of the NOS 2008 project was allocated to the NOS 2010 project. This allocation is based on a \$ per MW pro-rata share spreading capital costs for the project over all original PTP demand MW that will be enabled by the NOS 2008 project. Calculation of this demand assumes all proposed NOS 2008 projects will move forward, as well as the NOS 2010 projects included in the project group being studied.
	b. Costs and MW associated with the McNary-John Day build are not included in the NOS 2008 total because that build is already moving forward and those costs and benefits are treated as sunk.

# 2010 Network Open Season Roadmap & Timeline

*Modified December 2010*

