

## FORMULA RATE SUMMARY TABLE - 4TH QUARTER 2016 FORMULA RATE CALCULATIONS

Fiscal Year	Quarter	Start of Quarter	End of Quarter	LT GSR (\$/kW/mo)	SHORT-TERM GSR			FPT Rate Factor	IR Base Rate (\$/kw/mo)
					Days 1 through 5 (\$/kW/day)	Day 6 and Beyond (\$/kW/day)	Hourly Firm and Non-Firm Service (mills/kilowatt-hour)		
2016	1	10/1/2015	12/31/2015	\$0.000	\$0.000	\$0.000	\$0.000	1.000	\$ 1.790
2016	2	1/1/2016	3/31/2016	\$0.000	\$0.000	\$0.000	\$0.000	1.000	\$ 1.790
2016	3	4/1/2016	6/30/2016	\$0.000	\$0.000	\$0.000	\$0.000	1.000	\$ 1.790
2016	4	7/1/2016	9/30/2016	\$0.000	\$0.000	\$0.000	\$0.000	1.000	\$ 1.790
2017	1*	10/1/2016	12/31/2016	\$0.000	\$0.000	\$0.000	\$0.000	1.000	\$ 1.790
2017	2*	1/1/2017	3/31/2017	\$0.000	\$0.000	\$0.000	\$0.000	1.000	\$ 1.790
2017	3*	4/1/2017	6/30/2017	\$0.000	\$0.000	\$0.000	\$0.000	1.000	\$ 1.790
2017	4*	7/1/2017	9/30/2017	\$0.000	\$0.000	\$0.000	\$0.000	1.000	\$ 1.790

\* Indicates forecast rates

**4TH QUARTER 2016: GENERATION SUPPLIED REACTIVE (GSR) FORMULA RATE CALCULATION: LONG-TERM SERVICE**

Fiscal Year	Quarter	Start of Quarter	End of Quarter	bd (MW-mo/yr)	Nq (\$)	Uq-1 (\$)	Sq (MW-mo/qtr)	Zq-1 (\$)	LT GSR Rate (\$/kW/mo)
2016	1	10/1/2015	12/31/2015	513,961	\$ -	\$ -	0	\$ -	\$ -
2016	2	1/1/2016	3/31/2016	513,961	\$ -	\$ -	0	\$ -	\$ -
2016	3	4/1/2016	6/30/2016	513,961	\$ -	\$ -	0	\$ -	\$ -
2016	4	7/1/2016	9/30/2016	513,961	\$ -	\$ -	0	\$ -	\$ -
2017	1	10/1/2016	12/31/2016	513,961	\$ -	\$ -	0	\$ -	\$ -
2017	2	1/1/2017	3/31/2017	513,961	\$ -	\$ -	0	\$ -	\$ -
2017	3	4/1/2017	6/30/2017	513,961	\$ -	\$ -	0	\$ -	\$ -
2017	4	7/1/2017	9/30/2017	513,961	\$ -	\$ -	0	\$ -	\$ -

GSR RATE FORMULA FOR LONG-TERM FIRM PTP TRANSMISSION SERVICE AND NT SERVICE

$$\frac{4(Nq + Uq-1 + Zq-1)}{bd - 4Sq}$$

**PARAMETERS AND DEFINITIONS**

RATE PERIOD CONSTANTS			
Variable	Value	Unit	Parameter Definition
bd	470,532	MW-mo/yr	Average of forecasted FY 2016 and FY 2017 GSR Service billing determinants. Each annual billing determinant is the sum of 12 monthly billing determinants.
RATE PERIOD VARIABLES			
Variable	Value	Unit	Parameter Definition
Nq	See Detail	\$	Non-federal GSR costs to be paid by BPA-TBL under a FERC-approved rate during the relevant quarter, as anticipated prior to the quarter.
Uq-1	See Detail	\$	Payments of non-federal GSR costs made in preceding quarter(s) that were not included in the effective rate for the preceding quarter(s). Any refunds received by BPA-TBL would reduce this cost. Uq-1 is a true-up for any deviation of non-federal GSR costs from the amount used in a previous quarter's GSR rate calculation. For calculating the GSR rate effective October 1, 2015, Uq-1 is zero.
Sq	See Detail	MW-mo/qtr	Reduction in effective billing demand for approved self-supply of reactive during the relevant quarter, as anticipated prior to the quarter.
Zq-1	See Detail	\$	A dollar true-up for under- or overstatement of reactive self-supply in rate calculations for the preceding quarter(s). For calculating the GSR rate effective October 1, 2015, Zq-1 is zero. Zq-1 will be calculated by multiplying the under- or overstated megawatt amount of self-supply by the GSR rate that was effective during the quarter of self-supply deviation.

**QUARTERLY PARAMETER DETAIL**

Nq - (Non-Federal GSR Costs Payable based on FERC Approved GSR Rates (\$))													
					FY 2016				FY 2017				
Customer	FERC Docket No.	Effective Date	End Date	Annual Payment	Q1	Q2	Q3	Q4	Q1*	Q2*	Q3*	Q4*	Notes
Sum				\$ -									

Uq-1 - (True-up for non-Federal GSR from preceding quarters (\$))													
							FY 2015	FY 2016				FY 2017	
Customer	FERC Docket No.	Effective Date	End Date	Annual Payment	(U)nderpaid or (O)verpaid? [Enter U or O]	Q4	Q1	Q2	Q3	Q4	Q1*	Q2*	Q3*
Sum						\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Sq - (Reduction in billing demand for approved self-supply (MW-mo/qtr))														
						FY 2016				FY 2017				
Customer	Tx Contract No.	Start Date of Self-Supply	End Date of Self-Supply	Reserved Capacity (MW)	Contribution Factor	Q1	Q2	Q3	Q4	Q1*	Q2*	Q3*	Q4*	Notes
Sum						0	0	0	0	0	0	0	0	

Zq-1 - (True-up for self-supply from previous quarters (\$))																
										FY 2015	FY 2016				FY 2017	
Customer	Tx Contract No.	Start Date of Under/Over Recovery	End Date of Under/Over Recovery	MW Under/Over Recovered (MW-mo/qtr)	Were MW (U)nder or (O)ver Stated? [Enter U or O]	Rate in Effect during Under/Over Recovery (\$/kW-mo)	Fiscal Year in which to Apply Adjustment	Quarter in which to Apply Adjustment	Q4	Q1	Q2	Q3	Q4	Q1*	Q2*	Q3*
Sum									\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

\*Indicates forecast

**4TH QUARTER 2016**  
**GENERATION SUPPLIED REACTIVE (GSR) FORMULA RATE CALCULATION:**  
**SHORT-TERM FIRM AND NON-FIRM PTP TRANSMISSION SERVICE**

SHORT-TERM GSR RATE					
Fiscal Year	Quarter	LT GSR Rate (\$/kW-mo)	Days 1 through 5 <sup>1</sup> (\$/kW/day)	Day 6 and beyond <sup>2</sup> (\$/kW/day)	Hourly Firm and Non-Firm Service <sup>3</sup> (mills/kilowatt-hour)
2016	1	\$ -	\$ -	\$ -	\$ -
2016	2	\$ -	\$ -	\$ -	\$ -
2016	3	\$ -	\$ -	\$ -	\$ -
2016	4	\$ -	\$ -	\$ -	\$ -
2017	1*	\$ -	\$ -	\$ -	\$ -
2017	2*	\$ -	\$ -	\$ -	\$ -
2017	3*	\$ -	\$ -	\$ -	\$ -
2017	4*	\$ -	\$ -	\$ -	\$ -

Notes:

<sup>1</sup> Formula for Days 1 through 5: **Long-Term Service Rate \* (12 months/(52 weeks \* 5 days))**

<sup>2</sup> Formula for Day 6 and beyond: **Long-Term Service Rate \* (12 months/(52 weeks \* 7 days))**

<sup>3</sup> Formula Rate for Hourly Firm and Non-Firm Service: **Long-Term Service Rate \* (12 months/(52 weeks \* 5 days \* 16 hours))**

\* Indicates forecast

**4TH QUARTER 2016**  
**GENERATION SUPPLIED REACTIVE (GSR) FORMULA RATE CALCULATION:**  
**FPT RATE FACTOR AND IR BASE RATE**

Fiscal Year	Quarter	LT GSR Rate (\$/kW-mo)	FPT Rate Factor <sup>1</sup>	IR Base Rate <sup>2</sup> (\$/kW-mo)
2016	1	\$ -	1.000	\$ 1.736
2016	2	\$ -	1.000	\$ 1.736
2016	3	\$ -	1.000	\$ 1.736
2016	4*	\$ -	1.000	\$ 1.736
2017	1*	\$ -	1.000	\$ 1.736
2017	2*	\$ -	1.000	\$ 1.736
2017	3*	\$ -	1.000	\$ 1.736
2017	4*	\$ -	1.000	\$ 1.736

Notes

- <sup>1</sup> Formula for FPT.1 Rate Factor:  $(1 + ((\text{LT GSR Rate}/\text{kW}/\text{mo})/1.634/\text{kW}/\text{mo}))$   
 Formula for FPT.3 Rate Factor for FY 16:  $(1 + ((\text{LT GSR Rate}/\text{kW}/\text{mo})/1.666/\text{kW}/\text{mo}))$   
 Formula for FPT.3 Rate Factor for FY 17:  $(1 + ((\text{LT GSR Rate}/\text{kW}/\text{mo})/1.634/\text{kW}/\text{mo}))$

- <sup>2</sup> Formula for IR Base Rate: **\$1.790kW/mo + LT GSR Rate**

\* Indicates Forecast