

BEFORE  
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of	)	
Ohio Power Company for Authority to	)	
Establish a Standard Service Offer	)	Case No. 16-1852-EL-SSO
Pursuant to Section 4928.143, Revised Code,	)	
in the Form of an Electric Security Plan	)	

In the Matter of the Application of	)	
Ohio Power Company for Approval of	)	Case No. 16-1853-EL-AAM
Certain Accounting Authority	)	

**OHIO POWER COMPANY'S APPLICATION  
TO AMEND ITS ELECTRIC SECURITY PLAN**

**WORKPAPERS  
For  
David R. Gill**

## Rate / Typical Bill Assumptions

<u>Description</u>		<u>Current</u>	<u>Proposed</u>	
Base Distribution Rates		Rates as of 11/1/2016	Revenue Neutral Residential Redesign	1/
USF	Universal Service Fund Rider	Rates as of 11/1/2016	No change	
BDR	Bad Debt Rider	Rates as of 11/1/2016	No change	
kWh Tax	kWh Tax Rider	Rates as of 11/1/2016	No change	
RDCR	Residential Distribution Credit Rider	Rates as of 11/1/2016	No change	
PTBAR	Pilot Throughput Balancing Adjustment Rider	Rates as of 11/1/2016	No change	2/
DAPIR	Deferred Asset Phase-In Rider	Rates as of 11/1/2016	No change in 2017; Expires in 2019	3/
GENE	Generation Energy	Rates as of 11/1/2016	GENE Estimate	4/
GENC	Generation Capacity	Rates as of 11/1/2016	GENC Estimate	4/
ACRR	Auction Cost Reconciliation Rider	Rates as of 11/1/2016	No change	5/
ETR	Electronic Transfer Rider	Rates as of 11/1/2016	No change	
PPA	Power Purchase Agreement Rider	Rates as of 11/1/2016	Replaced	
N/A	Pilot Demand Response Rider	Rates as of 11/1/2016	No change	
EE/PDR	Energy Efficiency/Peak Demand Reduction	Rates as of 11/1/2016	EE/PDR Estimate	6/
ESRR	Enhanced Service Reliability	Rates as of 11/1/2016	ESRR Estimate	7/
gridSMART® 1	gridSMART Phase 1 Rider	Rates as of 11/1/2016	No change	
gridSMART® 2	gridSMART Phase 2 Rider	Rates as of 11/1/2016	No change	
RSR	Retail Stability Rider	Rates as of 11/1/2016	No change in 2017; expires in 2018	8/
DIR	Distribution Investment Rider	Rates as of 11/1/2016	DIR Estimate	9/
SDRR	Storm Damage Cost Recovery Rider	Rates as of 11/1/2016	No change	
AER	Alternative Energy Rider	Rates as of 11/1/2016	No change	
PIRR	Phase-In Recovery Rider	Rates as of 11/1/2016	No change in 2017; Expires in 2019	10/
IRP	Interruptible Power Rider	Not shown	Not shown	11/
BTCR	Basic Transmission Cost Rider	Rates as of 11/1/2016	BTCR Estimate	12/
EDR	Economic Development Cost Recovery Rider	Rates as of 11/1/2016	EDR Estimate	13/
ACR	Automaker Credit Rider	N/A	Not shown	11/
CIR	Competition Incentive Rider	N/A	CIR Estimate	14/
SSOCR	SSO Credit Rider	N/A	SSOCR Estimate	14/
RGR	Renewable Generation Rider	N/A	Not shown	15/
SR	Submetering Rider	N/A	Not shown	15/
DTR	Distribution Technology Rider	N/A	DTR Estimate	16/

1/ See Exhibit DRG-6 for revenue neutral residential rate redesign.

2/ PTBAR Energy Revenue Target will reduce pursuant to Exhibit DRG-7; this change is not modeled in the typical bills.

3/ DAPIR is currently set to expire as designed in Case No. 12-1969-EL-ATS.

4/ See WP DRG-6 for estimate of GENE and GENC rates.

5/ No basis exists to project proposed ACRR rates that are different than current.

6/ See WP DRG-3 for estimate of proposed EE/PDR rates.

7/ See WP DRG-2 for restatement of ESP III spend estimate and estimate of proposed ESP III extension rates.

8/ RSR is currently projected to expire in February 2018.

9/ See WP DRG-2 for restatement of ESP III caps (as of 10-1-2016) and estimate of ESP III extension rates.

10/ PIRR is currently set to expire as designed in Case No. 11-4920-EL-RDR.

11/ IRP and ACR credits are not applicable to "typical" customers.

12/ See WP DRG-7 for application of County Fair Transmission Supplement to BTCR.

13/ See WP DRG-4 for estimate of proposed EDR rates.

14/ See Exhibits DRG-3 and DRG-4 for estimates of proposed CIR and SSO CR rates.

15/ RGR and SR are placeholders, so no basis exists to project rates.

16/ See Exhibit DRG-5 for estimate of proposed DTR rates.

## ESRR and DIR Rate Estimates

### Enhanced Service Reliability Rider Rate Estimate

	Year	Annual Capital	Cumulative Capital	Carrying Charge	Carrying Costs	O&M	Total	Base D**	Rate
ESP I	2009	\$ 5,000,000	\$ 5,000,000	14.19%	\$ 354,750	\$ 26,000,000	\$ 26,354,750		
	2010	\$ 7,000,000	\$ 12,000,000	14.19%	\$ 1,206,150	\$ 28,000,000	\$ 29,206,150		
	2011	\$ 8,000,000	\$ 20,000,000	14.19%	\$ 2,270,400	\$ 30,000,000	\$ 32,270,400		
ESP II	2012	\$ 5,000,000	\$ 25,000,000	14.19%	\$ 3,192,750	\$ 30,000,000	\$ 33,192,750		
	2013	\$ 5,000,000	\$ 30,000,000	14.19%	\$ 3,902,250	\$ 34,000,000	\$ 37,902,250		
	2014	\$ 5,000,000	\$ 35,000,000	14.19%	\$ 4,611,750	\$ 34,000,000	\$ 38,611,750		
ESP III	2015	\$ 1,000,000	\$ 36,000,000	15.02%	\$ 5,332,100	\$ 25,000,000	\$ 30,332,100		
	2016	\$ 1,000,000	\$ 37,000,000	15.02%	\$ 5,482,300	\$ 25,000,000	\$ 30,482,300		7.34119% ***
	2017	\$ 1,000,000	\$ 38,000,000	15.02%	\$ 5,632,500	\$ 25,000,000	\$ 30,632,500	\$ 633,702,536	4.83389%
Amended ESP III	2018	\$ 1,162,863	\$ 39,162,863	15.84% *	\$ 6,111,299	\$ 26,467,382	\$ 32,578,681	\$ 633,702,536	5.14101%
	2019	\$ 1,282,674	\$ 40,445,537	15.84%	\$ 6,304,985	\$ 27,643,327	\$ 33,948,312	\$ 633,702,536	5.35714%
	2020	\$ 1,405,481	\$ 41,851,019	15.84%	\$ 6,517,887	\$ 28,848,670	\$ 35,366,557	\$ 633,702,536	5.58094%
	2021	\$ 1,531,358	\$ 43,382,377	15.84%	\$ 6,750,485	\$ 30,084,148	\$ 36,834,633	\$ 633,702,536	5.81261%
	2022	\$ 1,660,381	\$ 45,042,758	15.84%	\$ 7,003,271	\$ 31,350,512	\$ 38,353,782	\$ 633,702,536	6.05233%
	2023	\$ 1,792,630	\$ 46,835,388	15.84%	\$ 7,276,749	\$ 32,648,535	\$ 39,925,284	\$ 633,702,536	6.30032%
	2024	\$ 1,928,186	\$ 48,763,574	15.84%	\$ 7,571,438	\$ 33,979,008	\$ 41,550,446	\$ 633,702,536	6.55677%

\* From Exhibit MDK-5, using 9.29% Return component that results from the 12.5% ROE ceiling, supported by Company witness Kyle, in modification of WACC calculation in Exhibit MDK-3

\*\* Calendar year 2015 actual

\*\*\* 2016 ESRR rate is actual 11/1/2016 rate

### Distribution Investment Rider Rate Estimate

Year	Revenue Cap	Base D	Rate
2016*			29.13302%
2017	\$ 190,000,000	\$ 633,702,536	29.98252%
2018**	\$ 226,000,000	\$ 633,702,536	35.66342%
2019	\$ 312,000,000	\$ 633,702,536	49.23446%
2020	\$ 343,000,000	\$ 633,702,536	54.12634%
2021	\$ 373,000,000	\$ 633,702,536	58.86042%
2022	\$ 401,000,000	\$ 633,702,536	63.27890%
2023	\$ 427,000,000	\$ 633,702,536	67.38177%
2024	\$ 444,000,000	\$ 633,702,536	70.06442%

\* 2016 DIR rate is actual 11/1/2016 DIR rate

\*\* 2018 DIR rate is the sum of the DIR cap for the first five months of 2018 approved in Case No. 13-2385-EL-SSO plus the cap for the last seven months of 2018 as proposed in this proceeding

Energy Efficiency and Peak Demand Reduction Rider Rate Estimate**November 1, 2016 Rates (Case No. 13-1201-EL-RDR):**

Tariffs	Program Costs	Shared Savings	Total	Rider Revenue	2013-2014 Costs	Forecasted Metered Energy	EE&PDR Rider	Revenue Verification	2009-2011 Rider True-Up	IRP Portion EE&PDR Rider	EE&PDR Rider
	(\$)	(\$)	(\$)			(kWh)	(\$/kWh)	(\$)	(\$/kWh)	(\$/kWh)	(\$/kWh)
RS	\$ 120,828,016	\$ 37,209,147	\$ 158,037,163	\$ 41,803,243	\$ 116,233,920	28,926,410,940	0.0040183	116,233,920	0.0000419	\$ 0.000506	0.0045666
All Other C&I	\$ 119,823,996	\$ 51,110,254	\$ 170,934,250	\$ 50,917,786	\$ 120,016,464	38,166,532,976	0.0031445	120,016,464	(0.0003120)	\$ 0.000506	0.0033390
GS4/IRP	\$ 12,563,563	\$ 5,358,584	\$ 17,922,147	\$ 4,956,945	\$ 12,965,202	26,311,221,470	0.0004928	12,965,202	(0.0000459)	\$ 0.000506	0.0009533
Total	\$ 253,215,574	\$ 93,677,985	\$ 346,893,559	\$ 97,677,974	\$ 249,215,585	93,404,165,386		249,215,586			

Tariffs	IRP Credits	Forecasted Metered Energy	IRP Portion EE&PDR Rider	Revenue Verification
	(\$)	(kWh)	(\$/kWh)	(\$)
RS	\$ 14,648,951	28,926,410,940	\$ 0.000506	14,648,951
All Other C&I	\$ 19,328,346	38,166,532,976	\$ 0.000506	19,328,346
GS4/IRP	\$ 13,324,564	26,311,221,470	\$ 0.000506	13,324,564
Total	\$ 47,301,862	93,404,165,386		47,301,862

**Estimated Implementation Month Rates:**

Tariffs	Program Costs	Shared Savings	Total	Rider Revenue	Adjusted 2013-2014 Costs	Forecasted Metered Energy	EE&PDR Rider	Revenue Verification	2009-2011 Rider True-Up	IRP Portion EE&PDR Rider	EE&PDR Rider
	(\$)	(\$)	(\$)			(kWh)	(\$/kWh)	(\$)	(\$/kWh)	(\$/kWh)	(\$/kWh)
RS	\$ 120,828,016	\$ 37,209,147	\$ 158,037,163	\$ 41,803,243	\$ 116,233,920	28,926,410,940	0.0040183	116,233,920	0.0000419	\$ 0.000304	0.0043642
All Other C&I	\$ 119,823,996	\$ 51,110,254	\$ 170,934,250	\$ 50,917,786	\$ 116,092,742	38,166,532,976	0.0030417	116,092,742	(0.0003120)	\$ 0.000304	0.0030338
GS4/IRP	\$ 12,563,563	\$ 5,358,584	\$ 17,922,147	\$ 4,956,945	\$ 6,482,601	26,311,221,470	0.0002464	6,482,601	(0.0000459)	\$ 0.000304	0.0005046
Total	\$ 253,215,574	\$ 93,677,985	\$ 346,893,559	\$ 97,677,974	\$ 238,809,262	93,404,165,386		238,809,263			

Tariffs	IRP Credits*	Forecasted Metered Energy	IRP Portion EE&PDR Rider	Revenue Verification	Cost Adjustment Factors		
	(\$)	(kWh)	(\$/kWh)	(\$)	2015 Billed Rider Revenue, Less RS and GS4/IRP		
					Sec/Pri	Sub/Tran	Total
RS	\$ 8,795,752	28,926,410,940	\$ 0.000304	8,795,752	\$ 60,806,429	\$ 4,254,072	\$ 65,060,500
All Other C&I	\$ 11,605,427	38,166,532,976	\$ 0.000304	11,605,427	93%	7%	
GS4/IRP	\$ 8,000,542	26,311,221,470	\$ 0.000304	8,000,542			
Total	\$ 28,401,721	93,404,165,386		28,401,721			

\* Total equal to \$47,301,862 divided by \$8.21/kW, that quotient added to twice 275 MW, that sum multiplied by \$8.21/kW, and then that product divided by two

**Estimated June 1, 2018 Rates:**

Tariffs	Program Costs	Shared Savings	Total	Rider Revenue	Adjusted 2013-2014 Costs	Forecasted Metered Energy	EE&PDR Rider	Revenue Verification	2009-2011 Rider True-Up	IRP Portion EE&PDR Rider	EE&PDR Rider
	(\$)	(\$)	(\$)			(kWh)	(\$/kWh)	(\$)	(\$/kWh)	(\$/kWh)	(\$/kWh)
RS	\$ 120,828,016	\$ 37,209,147	\$ 158,037,163	\$ 41,803,243	\$ 116,233,920	28,926,410,940	0.0040183	116,233,920	0.0000419	\$ 0.000333	0.0043935
All Other C&I	\$ 119,823,996	\$ 51,110,254	\$ 170,934,250	\$ 50,917,786	\$ 116,092,742	38,166,532,976	0.0030417	116,092,742	(0.0003120)	\$ 0.000333	0.0030631
GS4/IRP	\$ 12,563,563	\$ 5,358,584	\$ 17,922,147	\$ 4,956,945	\$ 6,482,601	26,311,221,470	0.0002464	6,482,601	(0.0000459)	\$ 0.000333	0.0005338
Total	\$ 253,215,574	\$ 93,677,985	\$ 346,893,559	\$ 97,677,974	\$ 238,809,262	93,404,165,386		238,809,263			

Tariffs	IRP Credits**	Forecasted Metered Energy	IRP Portion EE&PDR Rider	Revenue Verification
	(\$)	(kWh)	(\$/kWh)	(\$)
RS	\$ 9,642,115	28,926,410,940	\$ 0.000333	9,642,115
All Other C&I	\$ 12,722,149	38,166,532,976	\$ 0.000333	12,722,149
GS4/IRP	\$ 8,770,387	26,311,221,470	\$ 0.000333	8,770,387
Total	\$ 31,134,651	93,404,165,386		31,134,651

\*\* Total equal to \$28,401,721 divided by \$8.21/kW then that quotient multiplied by \$9/kW

**Economic Development Cost Recovery Rider Rate Estimate**

<u>November 1, 2016 Rates (Case No. 16-1684-EL-RDR)</u>		<u>Estimated Implementation Month Rates</u>		<u>Estimated June 1, 2018 Rates</u>	
6 mos. Delta Revenue and CCs	\$ 3,354,329	Annual Delta Revenue and CCs	\$ 6,708,658	Annual Delta Revenue and CCs	\$ 6,708,658
Half Sub/Tran EE/PDR Costs	\$ -	Half Sub/Tran EE/PDR Costs*	\$ 10,406,323	Half Sub/Tran EE/PDR Costs*	\$ 10,406,323
Half IRP Credits	\$ -	Half IRP Credits*	\$ 28,401,721	Half IRP Credits*	\$ 31,134,651
Automaker Credits	\$ -	Automaker Credits **	\$ 500,000	Automaker Credits**	\$ 500,000
Total Revenue Requirement	\$ 3,354,329	Total Revenue Requirement	\$ 46,016,702	Total Revenue Requirement	\$ 48,749,632
Half Base Distribution Revenue	\$ 316,851,268	Base Distribution Revenue	\$ 633,702,536	Base Distribution Revenue	\$ 633,702,536
Rate (% of base d)	1.05864%	Rate (% of base d)	7.26156%	Rate (% of base d)	7.69283%

\* See WP DRG-3

\*\* Equal to annual maximum

**Bill Impact Table for Testimony**

<b>Columbus Southern Power Rate Zone</b>				
	<b>SSO Monthly Bills</b>			<b><u>Tariff</u></b>
	<b>Current</b>	<b>Proposed</b>	<b>Change</b>	
<b>Household</b>				
1,000 kWh usage	\$134	\$135	1.2%	R-R Bill
2,000 kWh usage	\$254	\$250	-1.8%	R-R Bill
4,000 kWh usage	\$495	\$478	-3.5%	R-R Bill
<b>Small Business</b>				
1,000 kW demand and 100,000 kWh usage	\$15,349	\$15,353	0.0%	GS-2 Primary
1,000 kW demand and 350,000 kWh usage	\$33,108	\$32,674	-1.3%	GS-3 Primary
<b>Industrial Business</b>				
20,000 kW demand and 8 million kWh usage	\$552,042	\$528,806	-4.2%	GS-4
20,000 kW demand and 12 million kWh usage	\$791,094	\$756,216	-4.4%	GS-4
<b>Ohio Power Rate Zone</b>				
	<b>SSO Monthly Bills</b>			<b><u>Tariff</u></b>
	<b>Current</b>	<b>Proposed</b>	<b>Change</b>	
<b>Household</b>				
1,000 kWh usage	\$142	\$143	1.1%	RS Bill
2,000 kWh usage	\$271	\$266	-1.7%	RS Bill
4,000 kWh usage	\$527	\$510	-3.2%	RS Bill
<b>Small Business</b>				
1,000 kW demand and 100,000 kWh usage	\$16,933	\$16,963	0.2%	GS-2 Primary
1,000 kW demand and 300,000 kWh usage	\$32,692	\$32,370	-1.0%	GS-2 Primary
<b>Industrial Business</b>				
20,000 kW demand and 8 million kWh usage	\$608,677	\$585,416	-3.8%	GS-4 Transmission
20,000 kW demand and 12 million kWh usage	\$876,246	\$841,343	-4.0%	GS-4 Transmission

### Calculation of Capacity Revenue Requirement in \$/MWh

<u>Line</u>	<u>Description</u>	<b>2017/2018</b>			
		<u>Secondary</u>	<u>Primary</u>	<u>Sub/Tran</u>	<u>Total</u>
1	SSO Load - 5 CP at Meter	2,515	32	161	2,708 MW
2	Transmission and Distribution Losses	1.09	1.06	1.03	
3	5 CP at Generator (1) x (2)	2,749	34	166	2,950 MW
4	Days in Period				365
5	MW-days (3) x (4)				1,076,597
6	Zonal Capacity Price*				\$173.08 /MW-day
7	Capacity Revenue Requirement (5) x (6)				\$ 186,338,589

<u>Line</u>	<u>Description</u>	<u>Secondary</u>	<u>Primary</u>	<u>Sub/Tran</u>	<u>Total</u>
8	Energy at Meter (MWh)	11,804,747	223,573	1,665,605	13,693,925
9	Transmission and Distribution Losses **	1.0604	1.0235	1.0031	
10	Energy for PJM Settlement (MWh) (8) x (9)	12,517,801	228,837	1,670,730	14,417,368
11	Capacity Revenue Requirement (\$/MWh) (7) / (10)				\$ 12.92

* Zonal Capacity Price consists of:	RPM Auction Clearing Price***	\$151.26 /MW-day
	Zonal Scaling Factor***	1.04413
	Forecast Pool Requirement***	1.0959

\*\* Loss Factors reduced by 3% for marginal loss deration

\*\*\* Reflects Second Incremental Auction results

## Calculation of Generation Capacity Rider Rates

2017/2018

<u>Line</u>	<u>Description</u>	<u>Total</u>	<u>Residential</u>	GS Non Demand <u>Secondary</u>	<u>GS Secondary</u>	<u>GS Primary</u>	<u>GS Sub/Tran</u>	<u>Lighting</u>
1	SSO Load - 5 CP at Meter	2,708	2,138	57	321	32	161	-
2	Transmission and Distribution Losses		1.0932	1.0932	1.0932	1.0552	1.0341	1.0932
3	5 CP at Generator (1) x (2)	2,950	2,337	62	350	34	166	-
4	Capacity Revenue Requirement on (3)	\$ 186,338,589	147,630,000.22	3,929,654	22,135,211	2,155,177	10,488,547	-
5	Energy at the Meter (MWh)	13,693,925	9,555,176	342,327	1,794,745	223,573	1,665,605	112,498
6	Capacity Rate (\$/MWh) (4) / (5)		\$ 15.45	\$ 11.48	\$ 12.33	\$ 9.64	\$ 6.30	\$ -
7	Tax Gross-up*		1.00435	1.00435	1.00435	1.00435	1.00435	1.00435
8	Rider GENC (\$/MWh) (6) x (7)		\$ 15.52	\$ 11.53	\$ 12.39	\$ 9.68	\$ 6.32	\$ -
9	Generation Capacity Rider Rate (¢/kWh)		1.55200	1.15300	1.23900	0.96800	0.63200	0.00000

\* Tax Gross-up includes: CAT Tax, PUCO and OCC Assessments



## Generation Capacity Rider Design for Time-of-Day Rates

## CSP Rate Zone - RLM

Description	Generation Capacity Rider Rate Design Usage (kWh)	Jan-May 2015 Generation Capacity Rider Rates	Billing	June 2017 - May 2018			
				Residential Service Generation Capacity Rider	Billing	Generation Capacity Rider	Billing
Winter Season							
First 750 kWh per Month	277,398	\$ 0.024344	\$ 6,753	\$ 0.015520	\$ 4,305	\$ 0.0215282	\$ 5,972
Next 150 kWh per kW Over 5 kW per Month	1,090,206	\$ 0.013174	\$ 14,363	\$ 0.015520	\$ 16,920	\$ 0.0116503	\$ 12,701
All Additional kWh per Month	1,381,854	\$ 0.015407	\$ 21,291	\$ 0.015520	\$ 21,446	\$ 0.0136251	\$ 18,828
Summer Season							
First 750 kWh per Month	126,228	\$ 0.024344	\$ 3,073	\$ 0.015520	\$ 1,959	\$ 0.0215282	\$ 2,717
Next 150 kWh per kW Over 5 kW per Month	454,573	\$ 0.023126	\$ 10,512	\$ 0.015520	\$ 7,055	\$ 0.0204506	\$ 9,296
All Additional kWh per Month	600,445	\$ 0.021638	\$ 12,992	\$ 0.015520	\$ 9,319	\$ 0.0191352	\$ 11,490
Total			\$ 68,984		\$ 61,005		\$ 61,004

## CSP Rate Zone - RS-ES / RS-TOD

Description	Generation Capacity Rider Rate Design Usage (kWh)	Jan-May 2015 Generation Capacity Rider Rates	Billing	June 2017 - May 2018			
				Residential Service Generation Capacity Rider	Billing	Generation Capacity Rider	Billing
On-Peak kWh	30,565	\$ 0.030371	\$ 928	\$ 0.015520	\$ 474	\$ 0.0268578	\$ 821
Off-Peak kWh	54,955	\$ 0.010419	\$ 573	\$ 0.015520	\$ 853	\$ 0.0092141	\$ 506
Total			\$ 1,501		\$ 1,327		\$ 1,327

## CSP Rate Zone - Experimental RS-TOD2

Description	Generation Capacity Rider Rate Design Usage (kWh)	Jan-May 2015 Generation Capacity Rider Rates	Billing	June 2017 - May 2018			
				Residential Service Generation Capacity Rider	Billing	Generation Capacity Rider	Billing
High Cost Hours	1,589,576	\$ 0.175869	\$ 279,557	\$ 0.015520	\$ 24,670	\$ 0.1555259	\$ 247,220
Low Cost Hours	18,387,409	\$ 0.003864	\$ 71,040	\$ 0.015520	\$ 285,373	\$ 0.0034166	\$ 62,822
Total			\$ 350,597		\$ 310,043		\$ 310,043

## CSP Rate Zone - RS-CPP

Description	Generation Capacity Rider Rate Design Usage (kWh)	Jan-May 2015 Generation Capacity Rider Rates	Billing	June 2017 - May 2018			
				Residential Service Generation Capacity Rider	Billing	Generation Capacity Rider	Billing
Winter Season							
First 800 kWh	6,400	\$ 0.016017	\$ 103	\$ 0.015520	\$ 99	\$ 0.0141643	\$ 91
Over 800 kWh	2,172	\$ -	\$ -	\$ 0.015520	\$ 34	\$ -	\$ -
Critical Peak Hours	28	\$ 0.387317	\$ 11	\$ 0.015520	\$ 0	\$ 0.3425158	\$ 10
Summer Season							
Low Cost Hours	2,289	\$ 0.003873	\$ 9	\$ 0.015520	\$ 36	\$ 0.0034252	\$ 8
Medium Cost Hours	1,082	\$ 0.012144	\$ 13	\$ 0.015520	\$ 17	\$ 0.0107392	\$ 12
High Cost Hours	892	\$ 0.024824	\$ 22	\$ 0.015520	\$ 14	\$ 0.0219526	\$ 20
Critical Peak Hours	184	\$ 0.387317	\$ 71	\$ 0.015520	\$ 3	\$ 0.3425158	\$ 63
Total			\$ 229		\$ 202		\$ 202

## CSP Rate Zone - RS-RTP

Description	Generation Capacity Rider Rate Design Usage (kWh)	Jan-May 2015 Generation Capacity Rider Rates	Billing	June 2017 - May 2018			
				Residential Service Generation Capacity Rider	Billing	Generation Capacity Rider	Billing

# Generation Capacity Rider Design for Time-of-Day Rates

WP DRG-6

Page 4 of 5

Fixed Energy Charge	14,595	\$	21.35	\$	256	\$ 0.015520	\$	227	\$	18.88	\$	227
Total				\$	256		\$	227			\$	227

## CSP Rate Zone - GS-2-LMTOD / GS-2-TOD

Description	Generation Capacity Rider Rate Design Usage (kWh)	Jan-May 2015 Generation Capacity Rider Rates	Billing	June 2017 - May 2018				Generation Capacity Rider	Billing
				General Service Non Demand Generation Capacity Rider	Billing				
On-Peak kWh	1,973,797	\$ 0.038071	\$ 75,144	\$ 0.011530	\$ 22,758			\$ 0.0345092	\$ 68,114
Off-Peak kWh	3,974,408	\$ 0.000130	\$ 517	\$ 0.011530	\$ 45,825			\$ 0.0001179	\$ 469
Total			\$ 75,661		\$ 68,583				\$ 68,583

## OP Rate Zone - RS-ES / RS-TOD

Description	Generation Capacity Rider Rate Design Usage (kWh)	Jan-May 2015 Generation Capacity Rider Rates	Billing	June 2017 - May 2018				Generation Capacity Rider	Billing
				Residential Service Generation Capacity Rider	Billing				
On-Peak kWh	2,046,613	\$ 0.036343	\$ 74,380	\$ 0.015520	\$ 31,763			\$ 0.0321391	\$ 65,776
Off-Peak kWh	5,102,322	\$ 0.010012	\$ 51,084	\$ 0.015520	\$ 79,188			\$ 0.0088538	\$ 45,175
Total			\$ 125,464		\$ 110,951				\$ 110,951

## OP Rate Zone - RDMS

Description	Generation Capacity Rider Rate Design Usage (kWh)	Jan-May 2015 Generation Capacity Rider Rates	Billing	June 2017 - May 2018				Generation Capacity Rider	Billing
				Residential Service Generation Capacity Rider	Billing				
(No Data, Use RS-ES / RS-TOD Scaling)									
Winter Season									
kWh > 400 times billing demand	-	\$ 0.020158	\$ -	\$ 0.015520	\$ -			\$ 0.0178259	\$ -
First 500 on-peak kWh	-	\$ 0.025186	\$ -	\$ 0.015520	\$ -			\$ 0.0222727	\$ -
Over 500 on-peak kWh	-	\$ 0.018756	\$ -	\$ 0.015520	\$ -			\$ 0.0165869	\$ -
All Additional kWh per Month	-	\$ 0.005710	\$ -	\$ 0.015520	\$ -			\$ 0.0050494	\$ -
Total			\$ -		\$ -				\$ -

## OP Rate Zone - GS-1-ES

Description	Generation Capacity Rider Rate Design Usage (kWh)	Jan-May 2015 Generation Capacity Rider Rates	Billing	June 2017 - May 2018				Generation Capacity Rider	Billing
				General Service Non Demand Generation Capacity Rider	Billing				
On-Peak kWh	95,196	\$ 0.026019	\$ 2,477	\$ 0.011530	\$ 1,098			\$ 0.0235846	\$ 2,245
Off-Peak kWh	179,823	\$ 0.005680	\$ 1,021	\$ 0.011530	\$ 2,073			\$ 0.0051484	\$ 926
Total			\$ 3,498		\$ 3,171				\$ 3,171

## OP Rate Zone - GS-2-ES / GS-TOD

Description	Generation Capacity Rider Rate Design Usage (kWh)	Jan-May 2015 Generation Capacity Rider Rates	Billing	June 2017 - May 2018				Generation Capacity Rider	Billing
				General Service Non Demand Generation Capacity Rider	Billing				
On-Peak kWh	18,875,479	\$ 0.020841	\$ 393,380	\$ 0.011530	\$ 217,634			\$ 0.0188911	\$ 356,579
Off-Peak kWh	27,663,099	\$ 0.007179	\$ 198,591	\$ 0.011530	\$ 318,956			\$ 0.0065073	\$ 180,012
Total			\$ 591,971		\$ 536,590				\$ 536,591

## Calculation of Generation Energy Rider Rates

					2017/20178	
Blended Competitive Bid Price					\$	51.71 /MWh
Capacity Revenue Requirement					\$	12.92 /MWh
Residual Energy Price					\$	38.79 /MWh
Tax Gross-up*					1.00435	
	Rate	Season	Factors		RIDER GENE***	Generation Energy Rider Rate (¢/kWh)
	Schedule		Loss**	Season		
Residential		Summer	1.0604	1.00	\$ 41.31	4.13100
		Winter	1.0604	1.00	\$ 41.31	4.13100
PIPP Residential		Summer	1.0604	1.00		
		Winter	1.0604	1.00		
GS Non Demand Secondary		Summer	1.0604	1.00	\$ 41.31	4.13100
		Winter	1.0604	1.00	\$ 41.31	4.13100
GS Secondary		Summer	1.0604	1.00	\$ 41.31	4.13100
		Winter	1.0604	1.00	\$ 41.31	4.13100
GS Primary		Summer	1.0235	1.00	\$ 39.88	3.98800
		Winter	1.0235	1.00	\$ 39.88	3.98800
GS Sub/Tran		Summer	1.0031	1.00	\$ 39.08	3.90800
		Winter	1.0031	1.00	\$ 39.08	3.90800
Lighting		Summer	1.0604	1.00	\$ 41.31	4.13100
		Winter	1.0604	1.00	\$ 41.31	4.13100

\* Tax Gross-up includes: Commercial Activities Tax and PUCO and OCC Assessments

\*\* Loss Factors reduced by 3% for marginal loss deration

\*\*\* Residual Energy Price x Tax Gross-up x Loss Factor x Seasonal Factor

Current (as of November 1, 2016) Methodology - Case No. 15-1105-EL-RDR					Implement County Fair Transmission Supplement								
Class	Ohio Power Company Class Contribution to NSPL				Class	Ohio Power Company Class Contribution to NSPL							
	Metered		Loss Factor	At Generation Class MW		Metered		Loss Factor	At Generation Class MW				
	Class MW					Class MW							
Residential		2,907	1.0932	3,178.27	Residential		2,907	1.0932	3,178.27				
GS Non Demand Secondary		120	1.0932	131.31	GS Non Demand Secondary		120	1.0932	131.59				
GS Secondary		1,849	1.0932	2,021.87	GS Non Demand Primary		1	1.0552	1.32				
GS Primary		797	1.0552	841.21	GS Secondary		1,849	1.0932	2,021.60				
GS Sub/Tran		1,243	1.0341	1,285.61	GS Primary		796	1.0552	839.89				
Lighting		11	1.0932	11.90	GS Sub/Tran		1,243	1.0341	1,285.61				
EHG		7	1.0932	7.22	Lighting		11	1.0932	11.90				
Total		6,934.8		7,477.4	EHG		7	1.0932	7.22				
					Total		6,934.8		7,477.4				
	Metered		Loss	Units @ Secondary		Metered		Loss	Units @ Secondary				
	Energy	Demand	Factor	Energy		Energy	Demand	Factor	Energy				
Residential	14,225,492,718	-	1.0000	14,225,492,718	Residential	14,225,492,718	-	1.0000	14,225,492,718				
GS Non Demand Secondary	789,208,983	-	1.0000	789,208,983	GS Non Demand Secondary	791,665,805	-	1.0000	791,665,805				
GS Secondary	11,665,976,600	34,121,449	1.0000	11,665,976,600	GS Non Demand Primary	13,182,110	-	0.9652	12,723,895				
GS Primary	6,221,462,006	13,649,825	0.9652	6,005,201,892	GS Secondary	11,663,519,778	34,095,784	1.0000	11,663,519,778				
GS Sub/Tran	10,451,543,324	21,277,569	0.9459	9,886,517,519	GS Primary	6,208,279,896	13,545,696	0.9652	5,992,477,997				
Lighting	217,033,547		1.0000	217,033,547	GS Sub/Tran	10,451,543,324	21,277,569	0.9459	9,886,517,519				
EHG	19,740,746	98,920	1.0000	19,740,746	Lighting	217,033,547		1.0000	217,033,547				
	43,590,457,923	69,147,763		42,809,172,004	EHG	19,740,746	98,920	1.0000	19,740,746				
						43,590,457,923	69,017,969		42,809,172,004				
	Demand	Demand Cost	Loss Adjusted kWh Energy	Energy Cost	Total Cost		Demand	Demand Cost	Loss Adjusted kWh Energy	Energy Cost	Total Cost		
Forecast						Forecast							
Residential	3,178.3	\$ 177,638,527	14,225,492,718	\$ 5,461,697.63	\$ 183,100,225	Residential	3,178.3	\$ 177,638,527	14,225,492,718	\$ 5,461,697.63	\$ 183,100,225		
GS Non Demand Secondary	131.3	\$ 7,339,290	789,208,983	\$ 303,006.79	\$ 7,642,297	GS Non Demand Secondary	131.6	\$ 7,354,565	791,665,805	\$ 303,950.05	\$ 7,658,515		
GS Secondary	2,021.9	\$ 113,005,566	11,665,976,600	\$ 4,479,003.85	\$ 117,484,570	GS Non Demand Primary	1.3	\$ 73,721	12,723,895	\$ 4,885.18	\$ 78,606		
GS Primary	841.2	\$ 47,016,533	6,005,201,892	\$ 2,305,621.15	\$ 49,322,154	GS Secondary	2,021.6	\$ 112,990,291	11,663,519,778	\$ 4,478,060.59	\$ 117,468,352		
GS Sub/Tran	1,285.6	\$ 71,854,922	9,886,517,519	\$ 3,795,803.09	\$ 75,650,725	GS Primary	839.9	\$ 46,942,812	5,992,477,997	\$ 2,300,735.97	\$ 49,243,548		
Lighting	11.9	\$ 664,959	217,033,547	\$ 83,327.28	\$ 748,286	GS Sub/Tran	1,285.6	\$ 71,854,922	9,886,517,519	\$ 3,795,803.09	\$ 75,650,725		
EHG	7.2	\$ 403,448	19,740,746	\$ 7,579.21	\$ 411,027	Lighting	11.9	\$ 664,959	217,033,547	\$ 83,327.28	\$ 748,286		
Total	7,477.4	\$ 417,923,245	42,809,172,004	\$ 16,436,039	\$ 434,359,284	EHG	7.2	\$ 403,448	19,740,746	\$ 7,579.21	\$ 411,027		
						Total	7,477.4	\$ 417,923,245	42,809,172,004	\$ 16,436,039	\$ 434,359,284		
	Costs		Billing Units		Rates		Costs		Billing Units		Rates		
	Demand Cost	Energy Cost	KW	kWh	Demand	Energy	Demand Cost	Energy Cost	KW	kWh	Demand	Energy	
Residential	\$ 177,638,527	\$ 5,461,698	-	14,225,492,718		\$ 0.0128713	Residential	\$ 177,638,527	\$ 5,461,698	-	14,225,492,718		\$ 0.0128713
GS Non Demand Secondary	\$ 7,339,290	\$ 303,007	-	789,208,983		\$ 0.0096835	GS Non Demand Secondary	\$ 7,354,565	\$ 303,950	-	791,665,805		\$ 0.0096739
GS Secondary	\$ 113,005,566	\$ 4,479,004	34,121,449	11,665,976,600	\$ 3.31	\$ 0.0003839	GS Non Demand Primary	\$ 73,721	\$ 4,885	-	13,182,110		\$ 0.0059631
GS Primary	\$ 47,016,533	\$ 2,305,621	13,649,825	6,221,462,006	\$ 3.44	\$ 0.0003706	GS Secondary	\$ 112,990,291	\$ 4,478,061	34,095,784	11,663,519,778	\$ 3.31	\$ 0.0003839
GS Sub/Tran	\$ 71,854,922	\$ 3,795,803	21,277,569	10,451,543,324	\$ 3.38	\$ 0.0003632	GS Primary	\$ 46,942,812	\$ 2,300,736	13,545,696	6,208,279,896	\$ 3.47	\$ 0.0003706
Lighting	\$ 664,959	\$ 83,327	-	217,033,547		\$ 0.0034478	GS Sub/Tran	\$ 71,854,922	\$ 3,795,803	21,277,569	10,451,543,324	\$ 3.38	\$ 0.0003632
EHG	\$ 403,448	\$ 7,579	98,920	19,740,746	\$ 1.66	\$ 0.0125281	Lighting	\$ 664,959	\$ 83,327	-	217,033,547		\$ 0.0034478
Total	\$ 417,923,245	\$ 16,436,039	69,147,763	43,590,457,923			EHG	\$ 403,448	\$ 7,579	98,920	19,740,746	\$ 1.66	\$ 0.0125281
							Total	\$ 417,923,245	\$ 16,436,039	69,017,969	43,590,457,923		

### Distribution Technology Rider Rate Estimates

Monthly Charge (\$)		
	Residential	Non-Residential
2017	0.11	0.49
2018	0.61	2.59
2019	1.20	5.11
2020	1.75	7.48
2021	2.08	8.88
2022	2.10	8.95
2023	2.03	8.66
2024	1.96	8.36

2017

## Calculation of Distribution Technology Rider

Incremental Investment	O&M Spending	Capital Carrying Charge	Revenue Requirement
O&M	\$ 2,228,961		\$ 2,228,961
Capital - EV Charging, Account 398		\$ 15,219	\$ 15,219
Capital - Microgrid, Account 363		\$ 93,336	\$ 93,336
Capital - Microgrid, Account 371		\$ 68,959	\$ 68,959
Capital - Smart Lighting, Account 371		\$ 55,287	\$ 55,287
Capital - Smart Lighting, Account 373		\$ 53,423	\$ 53,423
Capital - NextGen UCS, Account 397		\$ 236,525	\$ 236,525
Capital - Substation, Account 362		\$ 73,619	\$ 73,619
Total			\$ 2,825,328
Tax Gross Up Rate			100.938%
Total Revenue Requirement			<u>\$ 2,851,840</u>
Residential Base Distribution	\$ 389,395,583	Residential Revenue Requirement	\$ 1,752,390
Non-Res Base Distribution	\$ 244,306,952	Non-Res Revenue Requirement	\$ 1,099,450
Residential Customers		1,276,366	1.37
Non-Residential Customers		187,702	5.86
Residential Customers		Monthly Rate	\$ 0.11
Non-Residential Customers		Monthly Rate	\$ 0.49

2018

## Calculation of Distribution Technology Rider

Incremental Investment	O&M Spending	Capital Carrying Charge	Revenue Requirement
O&M	\$ 3,851,434		\$ 3,851,434
Capital - EV Charging, Account 398		\$ 287,441	\$ 287,441
Capital - Microgrid, Account 363		\$ 1,744,629	\$ 1,744,629
Capital - Microgrid, Account 371		\$ 1,283,224	\$ 1,283,224
Capital - Smart Lighting, Account 371		\$ 1,018,742	\$ 1,018,742
Capital - Smart Lighting, Account 373		\$ 991,150	\$ 991,150
Capital - NextGen UCS, Account 397		\$ 4,422,282	\$ 4,422,282
Capital - Substation, Account 362		\$ 1,386,826	\$ 1,386,826
Total			\$ 14,985,727
Tax Gross Up Rate			<u>100.938%</u>
Total Revenue Requirement			<u><u>\$ 15,126,347</u></u>
Residential Base Distribution	\$ 389,395,583	Residential Revenue Requirement	\$ 9,294,791
Non-Res Base Distribution	\$ 244,306,952	Non-Res Revenue Requirement	\$ 5,831,556
		Residential Customers	1,276,366 7.28
		Non-Residential Customers	187,702 31.07
		Residential Customers	Monthly Rate \$ 0.61
		Non-Residential Customers	Monthly Rate \$ 2.59

2019

## Calculation of Distribution Technology Rider

Incremental Investment	O&M Spending	Capital Carrying Charge	Revenue Requirement
O&M	\$ 5,609,297		\$ 5,609,297
Capital - EV Charging, Account 398		\$ 710,186	\$ 710,186
Capital - Microgrid, Account 363		\$ 3,861,040	\$ 3,861,040
Capital - Microgrid, Account 371		\$ 2,822,156	\$ 2,822,156
Capital - Smart Lighting, Account 371		\$ 2,072,848	\$ 2,072,848
Capital - Smart Lighting, Account 373		\$ 2,037,548	\$ 2,037,548
Capital - NextGen UCS, Account 397		\$ 9,366,918	\$ 9,366,918
Capital - Substation, Account 362		\$ 3,102,366	\$ 3,102,366
Total			\$ 29,582,359
Tax Gross Up Rate			<u>100.938%</u>
Total Revenue Requirement			<u><u>\$ 29,859,947</u></u>
Residential Base Distribution	\$ 389,395,583	Residential Revenue Requirement	\$ 18,348,248
Non-Res Base Distribution	\$ 244,306,952	Non-Res Revenue Requirement	\$ 11,511,699
		Residential Customers	1,276,366
		Non-Residential Customers	187,702
		Residential Customers	Monthly Rate \$ 1.20
		Non-Residential Customers	Monthly Rate \$ 5.11



2020

## Calculation of Distribution Technology Rider

Incremental Investment	O&M Spending	Capital Carrying Charge	Revenue Requirement
O&M	\$ 6,928,640		\$ 6,928,640
Capital - EV Charging, Account 398		\$ 1,244,918	\$ 1,244,918
Capital - Microgrid, Account 363		\$ 5,873,926	\$ 5,873,926
Capital - Microgrid, Account 371		\$ 4,263,904	\$ 4,263,904
Capital - Smart Lighting, Account 371		\$ 2,961,378	\$ 2,961,378
Capital - Smart Lighting, Account 373		\$ 2,943,933	\$ 2,943,933
Capital - NextGen UCS, Account 397		\$ 14,322,740	\$ 14,322,740
Capital - Substation, Account 362		\$ 4,774,947	\$ 4,774,947
Total			\$ 43,314,385
Tax Gross Up Rate			<u>100.938%</u>
Total Revenue Requirement			<u>\$ 43,720,829</u>
Residential Base Distribution	\$ 389,395,583	Residential Revenue Requirement	\$ 26,865,440
Non-Res Base Distribution	\$ 244,306,952	Non-Res Revenue Requirement	\$ 16,855,389
		Residential Customers	1,276,366 21.05
		Non-Residential Customers	187,702 89.8
		Residential Customers	Monthly Rate \$ 1.75
		Non-Residential Customers	Monthly Rate \$ 7.48

2021

## Calculation of Distribution Technology Rider

Incremental Investment	O&M Spending	Capital Carrying Charge	Revenue Requirement
O&M	\$ 7,239,483		\$ 7,239,483
Capital - EV Charging, Account 398		\$ 1,757,818	\$ 1,757,818
Capital - Microgrid, Account 363		\$ 7,689,951	\$ 7,689,951
Capital - Microgrid, Account 371		\$ 5,539,508	\$ 5,539,508
Capital - Smart Lighting, Account 371		\$ 3,731,976	\$ 3,731,976
Capital - Smart Lighting, Account 373		\$ 3,755,289	\$ 3,755,289
Capital - NextGen UCS, Account 397		\$ 15,363,478	\$ 15,363,478
Capital - Substation, Account 362		\$ 6,330,949	\$ 6,330,949
Total Revenue Requirement			\$ 51,408,452
Tax Gross Up Rate			<u>100.938%</u>
Total Revenue Requirement			<u><u>\$ 51,890,847</u></u>
Residential Base Distribution	\$ 389,395,583	Residential Revenue Requirement	\$ 31,885,728
Non-Res Base Distribution	\$ 244,306,952	Non-Res Revenue Requirement	\$ 20,005,119
		Residential Customers	1,276,366
		Non-Residential Customers	187,702
		Residential Customers	24.98
		Non-Residential Customers	106.58
		Residential Customers Monthly Rate	\$ 2.08
		Non-Residential Customers Monthly Rate	\$ 8.88

2022

## Calculation of Distribution Technology Rider

Incremental Investment	O&M Spending	Capital Carrying Charge	Revenue Requirement
O&M	\$ 7,475,204		\$ 7,475,204
Capital - EV Charging, Account 398		\$ 1,793,400	\$ 1,793,400
Capital - Microgrid, Account 363		\$ 7,844,493	\$ 7,844,493
Capital - Microgrid, Account 371		\$ 5,572,622	\$ 5,572,622
Capital - Smart Lighting, Account 371		\$ 3,731,505	\$ 3,731,505
Capital - Smart Lighting, Account 373		\$ 3,835,183	\$ 3,835,183
Capital - NextGen UCS, Account 397		\$ 14,973,700	\$ 14,973,700
Capital - Substation, Account 362		\$ 6,604,403	\$ 6,604,403
Total Revenue Requirement			\$ 51,830,511
Tax Gross Up Rate			100.938%
Total Revenue Requirement			<u>\$ 52,316,866</u>
Residential Base Distribution	\$ 389,395,583	Residential Revenue Requirement	\$ 32,147,507
Non-Res Base Distribution	\$ 244,306,952	Non-Res Revenue Requirement	\$ 20,169,359
Residential Customers		1,276,366	25.19
Non-Residential Customers		187,702	107.45
Residential Customers		Monthly Rate	\$ 2.10
Non-Residential Customers		Monthly Rate	\$ 8.95

2023

## Calculation of Distribution Technology Rider

Incremental Investment	O&M Spending	Capital Carrying Charge	Revenue Requirement
O&M	\$ 7,688,495		\$ 7,688,495
Capital - EV Charging, Account 398		\$ 1,666,948	\$ 1,666,948
Capital - Microgrid, Account 363		\$ 7,430,392	\$ 7,430,392
Capital - Microgrid, Account 371		\$ 5,183,883	\$ 5,183,883
Capital - Smart Lighting, Account 371		\$ 3,469,239	\$ 3,469,239
Capital - Smart Lighting, Account 373		\$ 3,663,681	\$ 3,663,681
Capital - NextGen UCS, Account 397		\$ 14,583,922	\$ 14,583,922
Capital - Substation, Account 362		\$ 6,432,564	\$ 6,432,564
Total Revenue Requirement			\$ 50,119,124
Tax Gross Up Rate			100.938%
Total Revenue Requirement			<u>\$ 50,589,420</u>
Residential Base Distribution	\$ 389,395,583	Residential Revenue Requirement	\$ 31,086,031
Non-Res Base Distribution	\$ 244,306,952	Non-Res Revenue Requirement	\$ 19,503,389
Residential Customers		1,276,366	24.36
Non-Residential Customers		187,702	103.91
Residential Customers		Monthly Rate	\$ 2.03
Non-Residential Customers		Monthly Rate	\$ 8.66

2024

## Calculation of Distribution Technology Rider

Incremental Investment	O&M Spending	Capital Carrying Charge	Revenue Requirement
O&M	\$ 7,908,184		\$ 7,908,184
Capital - EV Charging, Account 398		\$ 1,540,495	\$ 1,540,495
Capital - Microgrid, Account 363		\$ 7,016,291	\$ 7,016,291
Capital - Microgrid, Account 371		\$ 4,795,145	\$ 4,795,145
Capital - Smart Lighting, Account 371		\$ 3,206,973	\$ 3,206,973
Capital - Smart Lighting, Account 373		\$ 3,492,178	\$ 3,492,178
Capital - NextGen UCS, Account 397		\$ 14,194,144	\$ 14,194,144
Capital - Substation, Account 362		\$ 6,260,725	\$ 6,260,725
Total Revenue Requirement			\$ 48,414,135
Tax Gross Up Rate			100.938%
Total Revenue Requirement			<u>\$ 48,868,433</u>
Residential Base Distribution	\$ 389,395,583	Residential Revenue Requirement	\$ 30,028,524
Non-Res Base Distribution	\$ 244,306,952	Non-Res Revenue Requirement	\$ 18,839,909
Residential Customers		1,276,366	23.53
Non-Residential Customers		187,702	100.37
Residential Customers		Monthly Rate	\$ 1.96
Non-Residential Customers		Monthly Rate	\$ 8.36

### Distribution Technology Investment Plan Spending

<u>O&amp;M - Direct</u>	2017	2018	2019	2020	2021	2022	2023	2024	Sum
EV Charging	125,000	293,000	534,000	775,000	798,250	822,198	846,863	872,269	5,066,580
Public charging station usage	2,367	45,921	121,263	227,086	336,883	365,526	365,526	365,526	1,830,098
Microgrid	375,000	750,000	1,125,000	1,500,000	1,545,000	1,591,350	1,639,091	1,688,263	10,213,704
Smart Lighting	657,424	1,142,224	1,627,024	2,111,824	2,175,179	2,240,434	2,307,647	2,376,877	14,638,632
NextGen UCS	333,000	333,000	334,000	-	-	-	-	-	1,000,000
Substation	100,000	200,000	300,000	400,000	412,000	424,360	437,091	450,204	2,723,654
	1,592,791	2,764,145	4,041,287	5,013,910	5,267,312	5,443,868	5,596,218	5,753,139	35,472,669

<u>O&amp;M - Loaded</u>	2017	2018	2019	2020	2021	2022	2023	2024	Sum
EV Charging	175,000	410,200	747,600	1,085,000	1,117,550	1,151,077	1,185,609	1,221,177	7,093,212
Public charging station usage	2,367	45,921	121,263	227,086	336,883	365,526	365,526	365,526	1,830,098
Microgrid	525,000	1,050,000	1,575,000	2,100,000	2,163,000	2,227,890	2,294,727	2,363,569	14,299,185
Smart Lighting	920,394	1,599,114	2,277,834	2,956,554	3,045,250	3,136,608	3,230,706	3,327,627	20,494,085
NextGen UCS	466,200	466,200	467,600	-	-	-	-	-	1,400,000
Substation	140,000	280,000	420,000	560,000	576,800	594,104	611,927	630,285	3,813,116
	2,228,961	3,851,434	5,609,297	6,928,640	7,239,483	7,475,204	7,688,495	7,908,184	48,929,697

<u>Capital - Direct</u>	2017	2018	2019	2020	2021	2022	2023	2024	Sum
EV Charging	1,111,000	1,429,780	1,928,673	1,932,684	-	-	-	-	6,402,137
Microgrid	12,967,500	12,967,500	12,967,500	12,967,500	-	-	-	-	51,870,000
Smart Lighting	8,873,490	7,257,490	6,868,495	6,868,495	-	-	-	-	29,867,970
NextGen UCS	24,150,000	20,700,000	24,150,000	-	-	-	-	-	69,000,000
Substation	7,500,000	7,500,000	7,500,000	7,500,000	-	-	-	-	30,000,000
	54,601,990	49,854,770	53,414,668	29,268,679	-	-	-	-	187,140,107

<u>Capital - Loaded</u>	2017	2018	2019	2020	2021	2022	2023	2024	Sum
EV Charging	1,488,740	1,915,905	2,584,422	2,589,796	-	-	-	-	8,578,864
Microgrid	17,376,450	17,376,450	17,376,450	17,376,450	-	-	-	-	69,505,800
Smart Lighting	11,890,477	9,725,037	9,203,783	9,203,783	-	-	-	-	40,023,080
NextGen UCS	32,361,000	27,738,000	32,361,000	-	-	-	-	-	92,460,000
Substation	10,050,000	10,050,000	10,050,000	10,050,000	-	-	-	-	40,200,000
	73,166,667	66,805,392	71,575,656	39,220,029	-	-	-	-	250,767,743

	A	B	C	D	E	F	G	H	I	J	K	L	M
1													
2	Depreciation Tables					EV Charging							
3													
4	Monthly Rate					0.833%							
5													
6													
7				Capital Expenditure	Cummulative Gross Plant	Net Plant	Depreciation	Accumulated Depreciation	Depreciation Expense	Return Carrying Charge Rate	Depreciation Carrying Charge Rate	Property Carrying Charge	Annual Carrying Charge
8	2017	January											
9		February			-	-	-	-		-	-	-	
10		March			-	-	-	-		-	-	-	
11		April			-	-	-	-		-	-	-	
12		May			-	-	-	-		-	-	-	
13		June			-	-	-	-		-	-	-	
14		July			-	-	-	-		-	-	-	
15		August			-	-	-	-		-	-	-	
16		September			-	-	-	-		-	-	-	
17		October		124,061.67	124,061.67	123,027.82	(1,033.85)	(1,033.85)		1,204.65	1,033.85	306.54	
18		November		124,061.67	248,123.33	245,021.79	(2,067.69)	(3,101.54)		2,399.17	2,067.69	610.51	
19		December		124,061.67	372,185.00	365,981.92	(3,101.54)	(6,203.08)	(6,203.08)	3,583.57	3,101.54	911.90	15,219.44
20	2018	January		124,061.67	496,246.67	485,908.19	(4,135.39)	(10,338.47)		4,757.85	4,135.39	1,210.72	
21		February		124,061.67	620,308.33	604,800.63	(5,169.24)	(15,507.71)		5,922.01	5,169.24	1,506.96	
22		March		124,061.67	744,370.00	722,659.21	(6,203.08)	(21,710.79)		7,076.04	6,203.08	1,800.63	
23		April		124,061.67	868,431.67	839,483.94	(7,236.93)	(28,947.72)		8,219.95	7,236.93	2,091.71	
24		May		124,061.67	992,493.33	955,274.83	(8,270.78)	(37,218.50)		9,353.73	8,270.78	2,380.23	
25		June		124,061.67	1,116,555.00	1,070,031.88	(9,304.63)	(46,523.13)		10,477.40	9,304.63	2,666.16	
26		July		124,061.67	1,240,616.67	1,183,755.07	(10,338.47)	(56,861.60)		11,590.94	10,338.47	2,949.52	
27		August		124,061.67	1,364,678.33	1,296,444.42	(11,372.32)	(68,233.92)		12,694.35	11,372.32	3,230.31	
28		September		124,061.67	1,488,740.00	1,408,099.92	(12,406.17)	(80,640.08)		13,787.65	12,406.17	3,508.52	
29		October		159,658.77	1,648,398.77	1,554,022.03	(13,736.66)	(94,376.74)		15,216.47	13,736.66	3,872.10	
30		November		159,658.77	1,808,057.53	1,698,613.65	(15,067.15)	(109,443.89)		16,632.26	15,067.15	4,232.38	
31		December		159,658.77	1,967,716.30	1,841,874.78	(16,397.64)	(125,841.52)	(119,638.44)	18,035.02	16,397.64	4,589.34	287,440.67
32	2019	January		159,658.77	2,127,375.07	1,983,805.42	(17,728.13)	(143,569.65)		19,424.76	17,728.13	4,942.98	
33		February		159,658.77	2,287,033.83	2,124,405.57	(19,058.62)	(162,628.26)		20,801.47	19,058.62	5,293.31	
34		March		159,658.77	2,446,692.60	2,263,675.23	(20,389.11)	(183,017.37)		22,165.15	20,389.11	5,640.32	
35		April		159,658.77	2,606,351.37	2,401,614.40	(21,719.59)	(204,736.96)		23,515.81	21,719.59	5,984.02	
36		May		159,658.77	2,766,010.13	2,538,223.09	(23,050.08)	(227,787.05)		24,853.43	23,050.08	6,324.41	
37		June		159,658.77	2,925,668.90	2,673,501.28	(24,380.57)	(252,167.62)		26,178.03	24,380.57	6,661.47	
38		July		159,658.77	3,085,327.67	2,807,448.98	(25,711.06)	(277,878.68)		27,489.60	25,711.06	6,995.23	
39		August		159,658.77	3,244,986.43	2,940,066.20	(27,041.55)	(304,920.24)		28,788.15	27,041.55	7,325.66	
40		September		159,658.77	3,404,645.20	3,071,352.92	(28,372.04)	(333,292.28)		30,073.66	28,372.04	7,652.79	
41		October		215,368.53	3,620,013.73	3,256,554.67	(30,166.78)	(363,459.06)		31,887.10	30,166.78	8,114.25	
42		November		215,368.53	3,835,382.26	3,439,961.68	(31,961.52)	(395,420.58)		33,682.96	31,961.52	8,571.24	
43		December		215,368.53	4,050,750.79	3,621,573.95	(33,756.26)	(429,176.84)	(303,335.32)	35,461.24	33,756.26	9,023.76	710,186.14
44	2020	January		215,368.53	4,266,119.32	3,801,391.49	(35,550.99)	(464,727.83)		37,221.96	35,550.99	9,471.80	
45		February		215,368.53	4,481,487.85	3,979,414.28	(37,345.73)	(502,073.56)		38,965.10	37,345.73	9,915.37	
46		March		215,368.53	4,696,856.38	4,155,642.34	(39,140.47)	(541,214.03)		40,690.66	39,140.47	10,354.48	
47		April		215,368.53	4,912,224.91	4,330,075.67	(40,935.21)	(582,149.24)		42,398.66	40,935.21	10,789.11	
48		May		215,368.53	5,127,593.44	4,502,714.25	(42,729.95)	(624,879.19)		44,089.08	42,729.95	11,219.26	
49		June		215,368.53	5,342,961.97	4,673,558.10	(44,524.68)	(669,403.87)		45,761.92	44,524.68	11,644.95	
50		July		215,368.53	5,558,330.50	4,842,607.21	(46,319.42)	(715,723.29)		47,417.20	46,319.42	12,066.16	
51		August		215,368.53	5,773,699.03	5,009,861.58	(48,114.16)	(763,837.45)		49,054.89	48,114.16	12,482.91	
52		September		215,368.53	5,989,067.56	5,175,321.21	(49,908.90)	(813,746.35)		50,675.02	49,908.90	12,895.18	
53		October		215,816.34	6,204,883.89	5,339,430.18	(51,707.37)	(865,453.71)		52,281.92	51,707.37	13,304.08	
54		November		215,816.34	6,420,700.23	5,501,740.68	(53,505.84)	(918,959.55)		53,871.21	53,505.84	13,708.50	
55		December		215,816.34	6,636,516.56	5,662,252.71	(55,304.30)	(974,263.85)	(545,087.01)	55,442.89	55,304.30	14,108.45	1,244,917.77
56	2021	January		215,816.34	6,852,332.90	5,820,966.27	(57,102.77)	(1,031,366.63)		56,996.96	57,102.77	14,503.91	
57		February		215,816.34	7,068,149.23	5,977,881.36	(58,901.21)	(1,090,267.87)		58,533.42	58,901.21	14,894.89	
58		March		215,816.34	7,283,965.57	6,132,997.99	(60,699.74)	(1,150,967.58)		60,052.27	60,699.74	15,281.39	
59		April		215,816.34	7,499,781.90	6,286,316.14	(62,498.18)	(1,213,465.77)		61,553.51	62,498.18	15,663.40	
60		May		215,816.34	7,715,598.24	6,437,835.82	(64,296.65)	(1,277,762.42)		63,037.14	64,296.65	16,040.94	
61		June		215,816.34	7,931,414.58	6,587,557.04	(66,095.12)	(1,343,857.54)		64,503.16	66,095.12	16,414.00	
62		July		215,816.34	8,147,230.91	6,735,479.78	(67,893.59)	(1,411,751.13)		65,951.57	67,893.59	16,782.57	
63		August		215,816.34	8,363,047.25	6,881,604.06	(69,692.06)	(1,481,443.19)		67,382.37	69,692.06	17,146.66	
64		September		215,816.34	8,578,863.58	7,025,929.86	(71,490.53)	(1,552,933.72)		68,795.56	71,490.53	17,506.28	
65		October		-	8,578,863.58	6,954,439.33	(71,490.53)	(1,624,424.25)		68,095.55	71,490.53	17,328.14	
66		November		-	8,578,863.58	6,882,948.80	(71,490.53)	(1,695,914.78)		67,395.54	71,490.53	17,150.01	
67		December		-	8,578,863.58	6,811,458.27	(71,490.53)	(1,767,405.31)	(793,141.46)	66,695.53	71,490.53	16,971.88	1,757,818.14
68	2022	January		-	8,578,863.58	6,739,967.74	(71,490.53)	(1,838,895.84)		65,995.52	71,490.53	16,793.75	
69		February		-	8,578,863.58	6,668,477.21	(71,490.53)	(1,910,386.37)		65,295.51	71,490.53	16,615.62	
70		March		-	8,578,863.58	6,596,986.68	(71,490.53)	(1,981,876.90)		64,595.49	71,490.53	16,437.49	
71		April		-	8,578,863.58	6,525,496.15	(71,490.53)	(2,053,367.43)		63,895.48	71,490.53	16,259.36	
72		May		-	8,578,863.58	6,454,005.62	(71,490.53)	(2,124,857.96)		63,195.47	71,490.53	16,081.23	
73		June		-	8,578,863.58	6,382,515.09	(71,490.53)	(2,196,348.49)		62,495.46	71,490.53	15,903.10	
74		July		-	8,578,863.58	6,311,024.56	(71,490.53)	(2,267,839.02)		61,795.45	71,490.53	15,724.97	
75		August		-	8,578,863.58	6,239,534.03	(71,490.53)	(2,339,329.55)		61,095.44	71,490.53	15,546.84	
76		September		-	8,578,863.58	6,168,043.50	(71,490.53)	(2,410,820.08)		60,395.43	71,490.53	15,368.71	
77		October		-	8,578,863.58	6,096,552.97	(71,490.53)	(2,482,310.61)		59,695.41	71,490.53	15,190.58	
78		November		-	8,578,863.58	6,025,062.45	(71,490.53)	(2,553,801.14)		58,995.40	71,490.53	15,012.45	
79		December		-	8,578,863.58	5,953,571.92	(71,490.53)	(2,625,291.67)	(857,886.36)	58,295.39	71,490.53	14,834.32	1,793,400.23
80	2023	January		-	8,578,863.58	5,882,081.39	(71,490.53)	(2,696,782.20)		57,595.38	71,490.53	14,656.19	
81		February		-	8,578,863.58	5,810,590.86	(71,490.53)	(2,768,272.73)		56,895.37	71,490.53	14,478.06	
82		March		-	8,578,863.58	5,739,100.33	(71,490.53)	(2,839,763.26)		56,195.36	71,490.53	14,299.92	
83		April		-	8,578,863.58	5,667,609.80	(71,490.53)	(2,911,253.79)		55,495.35	71,490.53	14,121.79	
84		May		-	8,578,863.58	5,596,119.27	(71,490.53)	(2,982,744.32)		54,795.33	71,490.53	13,943.66	
85		June		-	8,578,863.58	5,524,628.74	(71,490.53)	(3,054,234.85)		54,095.32	71,490.53	13,765.53	
86		July		-	8,578,863.58	5,453,138.21	(71,490.53)	(3,125,725.38)		53,395.31	71,490.53	13,587.40	
87		August		-	8,578,863.58	5,381,647.68	(71,490.53)	(3,197,215.91)		52,695.30	71,490.53	13,409.27	
88		September		-	8,578,863.58	5,310,157.15	(71,490.53)	(3,268,706.44)					

	A	B	N	O	P	Q	R	S	T	U	V	W	X
1													
2	Depreciation Tables					Microgrid	Account 363						
3													
4	Monthly Rate					0.556%							
5													
6				Capital	Cummulative			Accumulated	Depreciation	Return	Depreciation	Property	Annual
7				Expenditure	Gross Plant	Net Book Value	Depreciation	Depreciation	Expense	Carrying	Carrying	Carrying	Carrying
										Charge Rate	Charge Rate	Charge	Charge
8	2017	January											
9		February			-	-	-	-	-	-	-	-	-
10		March			-	-	-	-	-	-	-	-	-
11		April			-	-	-	-	-	-	-	-	-
12		May			-	-	-	-	-	-	-	-	-
13		June			-	-	-	-	-	-	-	-	-
14		July			-	-	-	-	-	-	-	-	-
15		August			-	-	-	-	-	-	-	-	-
16		September			-	-	-	-	-	-	-	-	-
17		October		877,489.06	877,489.06	872,611.68	(4,877.38)	(4,877.38)		8,544.32	4,877.38	2,174.26	
18		November		877,489.06	1,754,978.12	1,740,345.99	(9,754.75)	(14,632.13)		17,040.89	9,754.75	4,336.36	
19		December		877,489.06	2,632,467.18	2,603,202.92	(14,632.13)	(29,264.26)	(29,264.26)	25,489.70	14,632.13	6,486.31	93,336.10
20	2018	January		877,489.06	3,509,956.23	3,461,182.47	(19,509.51)	(48,773.77)		33,890.74	19,509.51	8,624.11	
21		February		877,489.06	4,387,445.29	4,314,284.64	(24,386.88)	(73,160.65)		42,244.04	24,386.88	10,749.76	
22		March		877,489.06	5,264,934.35	5,162,509.44	(29,264.26)	(102,424.91)		50,549.57	29,264.26	12,863.25	
23		April		877,489.06	6,142,423.41	6,005,856.86	(34,141.64)	(136,566.55)		58,807.35	34,141.64	14,964.59	
24		May		877,489.06	7,019,912.47	6,844,326.91	(39,019.01)	(175,585.56)		67,017.37	39,019.01	17,053.78	
25		June		877,489.06	7,897,401.53	7,677,919.58	(43,896.39)	(219,481.95)		75,179.63	43,896.39	19,130.82	
26		July		877,489.06	8,774,890.59	8,506,634.87	(48,773.77)	(268,255.72)		83,294.13	48,773.77	21,195.70	
27		August		877,489.06	9,652,379.64	9,330,472.78	(53,651.14)	(321,906.86)		91,360.88	53,651.14	23,248.43	
28		September		877,489.06	10,529,868.70	10,149,433.32	(58,528.52)	(380,435.38)		99,379.87	58,528.52	25,289.00	
29		October		877,489.06	11,407,357.76	10,963,516.48	(63,405.90)	(443,841.28)		107,351.10	63,405.90	27,317.43	
30		November		877,489.06	12,284,846.82	11,772,722.27	(68,283.27)	(512,124.55)		115,274.57	68,283.27	29,333.70	
31		December		877,489.06	13,162,335.88	12,577,050.68	(73,160.65)	(585,285.20)	(556,020.94)	123,150.29	73,160.65	31,337.82	1,744,628.87
32	2019	January		877,489.06	14,039,824.94	13,376,501.71	(78,038.03)	(663,323.23)		130,978.25	78,038.03	33,329.78	
33		February		877,489.06	14,917,314.00	14,171,075.36	(82,915.40)	(746,238.63)		138,758.45	82,915.40	35,309.60	
34		March		877,489.06	15,794,803.05	14,960,771.64	(87,792.78)	(834,031.41)		146,490.89	87,792.78	37,277.26	
35		April		877,489.06	16,672,292.11	15,745,590.54	(92,670.16)	(926,701.57)		154,175.57	92,670.16	39,232.76	
36		May		877,489.06	17,549,781.17	16,525,532.07	(97,547.53)	(1,024,249.10)		161,812.50	97,547.53	41,176.12	
37		June		877,489.06	18,427,270.23	17,300,596.22	(102,424.91)	(1,126,674.01)		169,401.67	102,424.91	43,107.32	
38		July		877,489.06	19,304,759.29	18,070,782.99	(107,302.29)	(1,233,976.30)		176,943.08	107,302.29	45,026.37	
39		August		877,489.06	20,182,248.35	18,836,092.38	(112,179.66)	(1,346,155.96)		184,436.74	112,179.66	46,933.26	
40		September		877,489.06	21,059,737.41	19,596,524.40	(117,057.04)	(1,463,213.01)		191,882.63	117,057.04	48,820.01	
41		October		877,489.06	21,937,226.47	20,352,079.04	(121,934.42)	(1,585,147.42)		199,280.77	121,934.42	50,710.60	
42		November		877,489.06	22,814,715.52	21,102,756.31	(126,811.79)	(1,711,959.22)		206,631.16	126,811.79	52,581.03	
43		December		877,489.06	23,692,204.58	21,848,556.20	(131,689.17)	(1,843,648.39)	(1,258,363.18)	213,933.78	131,689.17	54,439.32	3,861,040.10
44	2020	January		877,489.06	24,569,693.64	22,589,478.71	(136,566.55)	(1,980,214.93)		221,188.65	136,566.55	56,285.45	
45		February		877,489.06	25,447,182.70	23,325,523.84	(141,443.92)	(2,121,658.86)		228,395.75	141,443.92	58,119.43	
46		March		877,489.06	26,324,671.76	24,056,691.60	(146,321.30)	(2,267,980.16)		235,555.11	146,321.30	59,941.26	
47		April		877,489.06	27,202,160.82	24,782,981.98	(151,198.68)	(2,419,178.84)		242,666.70	151,198.68	61,750.93	
48		May		877,489.06	28,079,649.88	25,504,394.99	(156,076.05)	(2,575,254.89)		249,730.53	156,076.05	63,548.45	
49		June		877,489.06	28,957,138.93	26,220,930.61	(160,953.43)	(2,736,208.32)		256,746.61	160,953.43	65,333.82	
50		July		877,489.06	29,834,627.99	26,932,588.87	(165,830.81)	(2,902,039.13)		263,714.93	165,830.81	67,107.03	
51		August		877,489.06	30,712,117.05	27,639,369.74	(170,708.18)	(3,072,747.31)		270,635.50	170,708.18	68,868.10	
52		September		877,489.06	31,589,606.11	28,341,273.24	(175,585.56)	(3,248,332.87)		277,508.30	175,585.56	70,617.01	
53		October		877,489.06	32,467,095.17	29,038,299.36	(180,462.94)	(3,428,795.81)		284,333.35	180,462.94	72,353.76	
54		November		877,489.06	33,344,584.23	29,730,448.10	(185,340.31)	(3,614,136.12)		291,110.64	185,340.31	74,078.37	
55		December		877,489.06	34,222,073.29	30,417,719.47	(190,217.69)	(3,804,353.81)	(1,960,705.43)	297,840.17	190,217.69	75,790.82	5,873,926.08
56	2021	January		877,489.06	35,099,562.34	31,100,113.46	(195,095.07)	(3,999,448.88)		304,521.94	195,095.07	77,491.12	
57		February		877,489.06	35,977,051.40	31,777,630.08	(199,972.44)	(4,199,421.32)		311,155.96	199,972.44	79,179.26	
58		March		877,489.06	36,854,540.46	32,450,269.32	(204,849.82)	(4,404,271.15)		317,742.22	204,849.82	80,855.25	
59		April		877,489.06	37,732,029.52	33,118,031.18	(209,727.20)	(4,613,998.34)		324,280.72	209,727.20	82,519.09	
60		May		877,489.06	38,609,518.58	33,780,915.66	(214,604.57)	(4,828,602.92)		330,771.47	214,604.57	84,170.78	
61		June		877,489.06	39,487,007.64	34,438,922.77	(219,481.95)	(5,048,084.87)		337,214.45	219,481.95	85,810.32	
62		July		877,489.06	40,364,496.70	35,092,052.50	(224,359.33)	(5,272,444.20)		343,609.68	224,359.33	87,437.70	
63		August		877,489.06	41,241,985.75	35,740,304.85	(229,236.70)	(5,501,680.90)		349,957.15	229,236.70	89,052.93	
64		September		877,489.06	42,119,474.81	36,383,679.83	(234,114.08)	(5,735,794.98)		356,256.87	234,114.08	90,656.00	
65		October		-	42,119,474.81	36,149,565.75	(234,114.08)	(5,969,909.06)		353,964.50	234,114.08	90,072.67	
66		November		-	42,119,474.81	35,915,451.67	(234,114.08)	(6,204,023.14)		351,672.13	234,114.08	89,489.33	
67		December		-	42,119,474.81	35,681,337.59	(234,114.08)	(6,438,137.22)	(2,633,783.41)	349,379.76	234,114.08	88,906.00	7,689,950.72
68	2022	January		-	42,119,474.81	35,447,223.51	(234,114.08)	(6,672,251.30)		347,087.40	234,114.08	88,322.67	
69		February		-	42,119,474.81	35,213,109.43	(234,114.08)	(6,906,365.38)		344,795.03	234,114.08	87,739.33	
70		March		-	42,119,474.81	34,978,995.35	(234,114.08)	(7,140,479.47)		342,502.66	234,114.08	87,156.00	
71		April		-	42,119,474.81	34,744,881.27	(234,114.08)	(7,374,593.55)		340,210.30	234,114.08	86,572.66	
72		May		-	42,119,474.81	34,510,767.19	(234,114.08)	(7,608,707.63)		337,917.93	234,114.08	85,989.33	
73		June		-	42,119,474.81	34,276,653.10	(234,114.08)	(7,842,821.71)		335,625.56	234,114.08	85,405.99	
74		July		-	42,119,474.81	34,042,539.02	(234,114.08)	(8,076,935.79)		333,333.19	234,114.08	84,822.66	
75		August		-	42,119,474.81	33,808,424.94	(234,114.08)	(8,311,049.87)		331,040.83	234,114.08	84,239.33	
76		September		-	42,119,474.81	33,574,310.86	(234,114.08)	(8,545,163.95)		328,748.46	234,114.08	83,655.99	
77		October		-	42,119,474.81	33,340,196.78	(234,114.08)	(8,779,278.03)		326,456.09	234,114.08	83,072.66	
78		November		-	42,119,474.81	33,106,082.70	(234,114.08)	(9,013,392.11)		324,163.73	234,114.08	82,489.32	
79		December		-	42,119,474.81	32,871,968.62	(234,114.08)	(9,247,506.19)	(2,809,368.97)	321,871.36	234,114.08	81,905.99	7,844,493.43
80	2023	January		-	42,119,474.81	32,637,854.54	(234,114.08)	(9,481,620.27)		319,578.99	234,114.08	81,322.65	
81		February		-	42,119,474.81	32,403,740.46	(234,114.08)	(9,715,734.35)		317,286.63	234,114.08	80,739.32	
82		March		-	42,119,474.81	32,169,626.38	(234,114.08)	(9,949,848.44)		314,994.26	234,114.08	80,155.99	
83		April		-	42,119,474.81	31,935,512.30	(234,114.08)	(10,183,962.52)		312,701.89	234,114.08	79,572.65	
84		May		-	42,119,474.81	31,701,398.22	(234,114.08)	(10,418,076.60)		310,409.52	234,114.08	78,989.32	
85		June		-	42,119,474.81								



	A	B	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI
1													
2	Depreciation Tables					Microgrid	Account 371						
3													
4	Monthly Rate					0.803%							
5													
6					Capital	Cummulative		Accumulated	Depreciation	Return	Depreciation	Property	Annual
7					Expenditure	Gross Plant	Net Book Value	Depreciation	Depreciation	Carrying	Carrying	Carrying	Carrying
									Expense	Charge Rate	Charge Rate	Charge	Charge
8	2017	January											
9		February				-	-	-		-	-	-	
10		March				-	-	-		-	-	-	
11		April				-	-	-		-	-	-	
12		May				-	-	-		-	-	-	
13		June				-	-	-		-	-	-	
14		July				-	-	-		-	-	-	
15		August				-	-	-		-	-	-	
16		September				-	-	-		-	-	-	
17		October		570,548.44	570,548.44	565,969.79	(4,578.65)	(4,578.65)		5,541.79	4,578.65	1,410.21	
18		November		570,548.44	1,141,096.88	1,127,360.93	(9,157.30)	(13,735.95)		11,038.74	9,157.30	2,809.01	
19		December		570,548.44	1,711,645.32	1,684,173.42	(13,735.95)	(27,471.91)	(27,471.91)	16,490.86	13,735.95	4,196.40	68,958.92
20	2018	January		570,548.44	2,282,193.77	2,236,407.25	(18,314.60)	(45,786.51)		21,898.15	18,314.60	5,572.38	
21		February		570,548.44	2,852,742.21	2,784,062.44	(22,893.26)	(68,679.77)		27,260.61	22,893.26	6,936.96	
22		March		570,548.44	3,423,290.65	3,327,138.97	(27,471.91)	(96,151.68)		32,578.24	27,471.91	8,290.12	
23		April		570,548.44	3,993,839.09	3,865,636.85	(32,050.56)	(128,202.23)		37,851.03	32,050.56	9,631.88	
24		May		570,548.44	4,564,387.53	4,399,556.09	(36,629.21)	(164,831.44)		43,078.99	36,629.21	10,962.23	
25		June		570,548.44	5,134,935.97	4,928,896.67	(41,207.86)	(206,039.31)		48,262.11	41,207.86	12,281.17	
26		July		570,548.44	5,705,484.41	5,453,658.60	(45,786.51)	(251,825.82)		53,400.41	45,786.51	13,588.70	
27		August		570,548.44	6,276,032.86	5,973,841.87	(50,943.81)	(302,190.98)		58,493.87	50,943.81	14,884.82	
28		September		570,548.44	6,846,581.30	6,489,446.50	(54,943.81)	(357,134.80)		63,542.50	54,943.81	16,169.54	
29		October		570,548.44	7,417,129.74	7,000,472.48	(59,522.47)	(416,657.26)		68,546.29	59,522.47	17,442.84	
30		November		570,548.44	7,987,678.18	7,506,919.80	(64,101.12)	(480,758.38)		73,505.26	64,101.12	18,704.74	
31		December		570,548.44	8,558,226.62	8,008,788.47	(68,679.77)	(549,438.15)	(521,966.24)	78,419.39	68,679.77	19,955.23	1,283,223.69
32	2019	January		570,548.44	9,128,775.06	8,506,078.49	(73,258.42)	(622,696.57)		83,288.69	73,258.42	21,194.31	
33		February		570,548.44	9,699,323.50	8,998,789.96	(77,837.07)	(700,533.64)		88,113.15	77,837.07	22,421.98	
34		March		570,548.44	10,269,871.95	9,486,922.58	(82,415.72)	(782,949.36)		92,892.78	82,415.72	23,638.25	
35		April		570,548.44	10,840,420.39	9,970,476.65	(86,994.37)	(869,943.74)		97,627.58	86,994.37	24,843.10	
36		May		570,548.44	11,410,968.83	10,449,452.07	(91,573.02)	(961,516.76)		102,317.55	91,573.02	26,036.55	
37		June		570,548.44	11,981,517.27	10,923,848.83	(96,151.68)	(1,057,668.44)		106,962.69	96,151.68	27,218.59	
38		July		570,548.44	12,552,065.71	11,393,666.95	(100,730.33)	(1,158,398.76)		111,562.99	100,730.33	28,389.22	
39		August		570,548.44	13,122,614.15	11,858,906.41	(105,308.98)	(1,263,707.74)		116,118.46	105,308.98	29,548.44	
40		September		570,548.44	13,693,162.59	12,319,567.22	(109,887.63)	(1,373,595.37)		120,629.10	109,887.63	30,696.25	
41		October		570,548.44	14,263,711.03	12,775,649.38	(114,466.28)	(1,488,061.65)		125,094.90	114,466.28	31,832.66	
42		November		570,548.44	14,834,259.48	13,227,152.89	(119,044.93)	(1,607,106.59)		129,515.87	119,044.93	32,957.66	
43		December		570,548.44	15,404,807.92	13,674,077.75	(123,623.58)	(1,730,730.17)	(1,181,292.02)	133,892.01	123,623.58	34,071.24	2,822,156.06
44	2020	January		570,548.44	15,975,356.36	14,116,423.95	(128,202.23)	(1,858,932.40)		138,223.32	128,202.23	35,173.42	
45		February		570,548.44	16,545,904.80	14,554,191.51	(132,780.89)	(1,991,713.29)		142,509.79	132,780.89	36,264.19	
46		March		570,548.44	17,116,453.24	14,987,380.41	(137,359.54)	(2,129,072.83)		146,751.43	137,359.54	37,343.56	
47		April		570,548.44	17,687,001.68	15,415,990.67	(141,938.19)	(2,271,011.02)		150,948.24	141,938.19	38,411.51	
48		May		570,548.44	18,257,550.12	15,840,022.27	(146,516.84)	(2,417,527.86)		155,100.22	146,516.84	39,468.06	
49		June		570,548.44	18,828,098.57	16,259,475.22	(151,095.49)	(2,568,623.35)		159,207.36	151,095.49	40,513.19	
50		July		570,548.44	19,398,647.01	16,674,349.52	(155,674.14)	(2,724,297.49)		163,269.67	155,674.14	41,546.92	
51		August		570,548.44	19,969,195.45	17,084,645.17	(160,252.79)	(2,884,550.28)		167,287.15	160,252.79	42,569.24	
52		September		570,548.44	20,539,743.89	17,490,362.16	(164,831.44)	(3,049,381.73)		171,259.80	164,831.44	43,580.15	
53		October		570,548.44	21,110,292.33	17,891,500.51	(169,410.10)	(3,218,791.82)		175,187.61	169,410.10	44,579.66	
54		November		570,548.44	21,680,840.77	18,288,060.20	(173,988.75)	(3,392,780.57)		179,070.59	173,988.75	45,567.75	
55		December		570,548.44	22,251,389.21	18,680,041.25	(178,567.40)	(3,571,347.97)	(1,840,617.80)	182,908.74	178,567.40	46,544.44	4,263,903.81
56	2021	January		570,548.44	22,821,937.66	19,067,443.64	(183,146.05)	(3,754,494.02)		186,702.05	183,146.05	47,509.71	
57		February		570,548.44	23,392,486.10	19,450,267.38	(187,724.70)	(3,942,218.72)		190,450.53	187,724.70	48,463.58	
58		March		570,548.44	23,963,034.54	19,828,512.47	(192,303.35)	(4,134,522.07)		194,154.18	192,303.35	49,406.04	
59		April		570,548.44	24,533,582.98	20,202,178.90	(196,882.00)	(4,331,404.08)		197,813.00	196,882.00	50,337.10	
60		May		570,548.44	25,104,131.42	20,571,266.69	(201,460.65)	(4,532,864.73)		201,426.99	201,460.65	51,256.74	
61		June		570,548.44	25,674,679.86	20,935,775.83	(206,039.31)	(4,738,904.04)		204,996.14	206,039.31	52,164.97	
62		July		570,548.44	26,245,228.30	21,295,706.31	(210,617.96)	(4,949,521.99)		208,520.46	210,617.96	53,061.80	
63		August		570,548.44	26,815,776.75	21,651,058.14	(215,196.61)	(5,164,718.60)		211,999.94	215,196.61	53,947.22	
64		September		570,548.44	27,386,325.19	22,001,831.33	(219,775.26)	(5,384,493.86)		215,434.60	219,775.26	54,821.23	
65		October		-	27,386,325.19	21,782,056.07	(219,775.26)	(5,604,269.12)		213,282.63	219,775.26	54,273.62	
66		November		-	27,386,325.19	21,562,280.81	(219,775.26)	(5,824,044.38)		211,130.67	219,775.26	53,726.02	
67		December		-	27,386,325.19	21,342,505.55	(219,775.26)	(6,043,819.64)	(2,472,471.67)	208,978.70	219,775.26	53,178.41	5,539,508.02
68	2022	January		-	27,386,325.19	21,122,730.29	(219,775.26)	(6,263,594.90)		206,826.73	219,775.26	52,630.80	
69		February		-	27,386,325.19	20,902,955.03	(219,775.26)	(6,483,370.16)		204,674.77	219,775.26	52,083.20	
70		March		-	27,386,325.19	20,683,179.77	(219,775.26)	(6,703,145.42)		202,522.80	219,775.26	51,535.59	
71		April		-	27,386,325.19	20,463,404.51	(219,775.26)	(6,922,920.68)		200,370.84	219,775.26	50,987.98	
72		May		-	27,386,325.19	20,243,629.25	(219,775.26)	(7,142,695.94)		198,218.87	219,775.26	50,440.38	
73		June		-	27,386,325.19	20,023,853.99	(219,775.26)	(7,362,471.20)		196,066.90	219,775.26	49,892.77	
74		July		-	27,386,325.19	19,804,078.73	(219,775.26)	(7,582,246.46)		193,914.94	219,775.26	49,345.16	
75		August		-	27,386,325.19	19,584,303.47	(219,775.26)	(7,802,021.72)		191,762.97	219,775.26	48,797.56	
76		September		-	27,386,325.19	19,364,528.21	(219,775.26)	(8,021,796.98)		189,611.01	219,775.26	48,249.95	
77		October		-	27,386,325.19	19,144,752.95	(219,775.26)	(8,241,572.24)		187,459.04	219,775.26	47,702.34	
78		November		-	27,386,325.19	18,924,977.69	(219,775.26)	(8,461,347.50)		185,307.07	219,775.26	47,154.74	
79		December		-	27,386,325.19	18,705,202.43	(219,775.26)	(8,681,122.76)	(2,637,303.12)	183,155.11	219,775.26	46,607.13	5,572,621.76
80	2023	January		-	27,386,325.19	18,485,427.17	(219,775.26)	(8,900,898.01)		181,003.14	219,775.26	46,059.52	
81		February		-	27,386,325.19	18,265,651.91	(219,775.26)	(9,120,673.27)		178,851.17	219,775.26	45,511.92	
82		March		-	27,386,325.19	18,045,876.65	(219,775.26)	(9,340,448.53)		176,699.21	219,775.26	44,964.31	
83		April		-	27,386,325.19	17,826,101.39	(219,775.26)	(9,560,223.79)		174,547.24	219,775.26	44,416.70	
84		May		-	27,386,325.19	17,606,326.13	(219,775.26)	(9,779,999.05)		172,395.28	219,775.26	43,869.10	
85		June		-	27,386,325.19	17,386,550.87	(219,775.26)	(9,999,774.31)					

	A	B	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT
1													
2	Depreciation Tables					Smart Lighting	Account 371						
3													
4	Monthly Rate					0.803%							
5													
6				Capital	Cummulative			Accumulated	Depreciation	Return	Depreciation	Property	Annual
7				Expenditure	Gross Plant	Net Book Value	Depreciation	Depreciation	Expense	Carrying	Carrying	Carrying	Carrying
8	2017	January								Charge Rate	Charge Rate	Charge	Charge
9		February			-	-	-	-		-	-	-	-
10		March			-	-	-	-		-	-	-	-
11		April			-	-	-	-		-	-	-	-
12		May			-	-	-	-		-	-	-	-
13		June			-	-	-	-		-	-	-	-
14		July			-	-	-	-		-	-	-	-
15		August			-	-	-	-		-	-	-	-
16		September			-	-	-	-		-	-	-	-
17		October		457,431.19	457,431.19	453,760.31	(3,670.89)	(3,670.89)		4,443.07	3,670.89	1,130.62	
18		November		457,431.19	914,862.38	903,849.73	(7,341.77)	(11,012.66)		8,850.20	7,341.77	2,252.09	
19		December		457,431.19	1,372,293.57	1,350,268.26	(11,012.66)	(22,025.31)		13,221.38	11,012.66	3,364.42	55,287.08
20	2018	January		457,431.19	1,829,724.76	1,793,015.91	(14,683.54)	(36,708.85)		17,556.61	14,683.54	4,467.60	
21		February		457,431.19	2,287,155.95	2,232,092.67	(18,354.43)	(55,063.28)		21,855.91	18,354.43	5,561.63	
22		March		457,431.19	2,744,587.14	2,667,498.55	(22,025.31)	(77,088.59)		26,119.26	22,025.31	6,646.52	
23		April		457,431.19	3,202,018.34	3,099,233.55	(25,696.20)	(102,784.79)		30,346.66	25,696.20	7,722.26	
24		May		457,431.19	3,659,449.53	3,527,297.66	(29,367.08)	(132,151.87)		34,538.12	29,367.08	8,788.85	
25		June		457,431.19	4,116,880.72	3,951,690.88	(33,037.97)	(165,189.84)		38,693.64	33,037.97	9,846.30	
26		July		457,431.19	4,574,311.91	4,372,413.22	(36,708.85)	(201,898.69)		42,813.21	36,708.85	10,894.60	
27		August		457,431.19	5,031,743.10	4,789,464.67	(40,379.74)	(242,278.43)		46,896.84	40,379.74	11,933.75	
28		September		457,431.19	5,489,174.29	5,202,845.24	(44,050.62)	(286,329.05)		50,944.53	44,050.62	12,963.76	
29		October		374,125.88	5,863,300.17	5,529,918.14	(47,052.98)	(333,382.04)		54,147.12	47,052.98	13,778.71	
30		November		374,125.88	6,237,426.06	5,853,988.68	(50,055.34)	(383,437.38)		57,320.31	50,055.34	14,586.19	
31		December		374,125.88	6,611,551.94	6,175,056.86	(53,057.70)	(436,495.09)	(414,469.77)	60,464.10	53,057.70	15,386.18	1,018,742.41
32	2019	January		374,125.88	6,985,677.83	6,493,122.68	(56,060.06)	(492,555.15)		63,578.49	56,060.06	16,178.70	
33		February		374,125.88	7,359,803.71	6,808,186.13	(59,062.42)	(551,617.58)		66,663.49	59,062.42	16,963.73	
34		March		374,125.88	7,733,929.59	7,120,247.23	(62,064.78)	(613,682.36)		69,719.09	62,064.78	17,741.28	
35		April		374,125.88	8,108,055.48	7,429,305.97	(65,067.15)	(678,749.51)		72,745.29	65,067.15	18,511.35	
36		May		374,125.88	8,482,181.36	7,735,362.35	(68,069.51)	(746,819.01)		75,742.09	68,069.51	19,273.94	
37		June		374,125.88	8,856,307.25	8,038,416.37	(71,071.87)	(817,890.88)		78,709.49	71,071.87	20,029.05	
38		July		374,125.88	9,230,433.13	8,338,468.03	(74,074.23)	(891,965.10)		81,647.50	74,074.23	20,776.68	
39		August		374,125.88	9,604,559.02	8,635,517.33	(77,076.59)	(969,041.69)		84,556.11	77,076.59	21,516.83	
40		September		374,125.88	9,978,684.90	8,929,564.26	(80,078.95)	(1,049,120.64)		87,435.32	80,078.95	22,249.50	
41		October		354,073.07	10,332,757.97	9,200,716.95	(82,920.38)	(1,132,041.02)		90,090.35	82,920.38	22,925.12	
42		November		354,073.07	10,686,831.04	9,469,028.20	(85,761.82)	(1,217,802.84)		92,717.57	85,761.82	23,593.66	
43		December		354,073.07	11,040,904.11	9,734,498.02	(88,603.26)	(1,306,406.09)	(869,911.01)	95,316.96	88,603.26	24,255.12	2,072,847.73
44	2020	January		354,073.07	11,394,977.18	9,997,126.40	(91,444.69)	(1,397,850.78)		97,888.53	91,444.69	24,908.51	
45		February		354,073.07	11,749,050.25	10,256,913.34	(94,286.13)	(1,492,136.91)		100,432.28	94,286.13	25,556.81	
46		March		354,073.07	12,103,123.32	10,513,858.84	(97,127.56)	(1,589,264.48)		102,948.20	97,127.56	26,197.03	
47		April		354,073.07	12,457,196.39	10,767,962.91	(99,969.00)	(1,689,233.48)		105,436.30	99,969.00	26,830.17	
48		May		354,073.07	12,811,269.46	11,019,225.55	(102,810.44)	(1,792,043.92)		107,896.58	102,810.44	27,456.24	
49		June		354,073.07	13,165,342.53	11,267,646.74	(105,651.87)	(1,897,695.79)		110,329.04	105,651.87	28,075.22	
50		July		354,073.07	13,519,415.60	11,513,226.50	(108,493.31)	(2,006,189.10)		112,733.68	108,493.31	28,687.12	
51		August		354,073.07	13,873,488.67	11,755,964.82	(111,334.75)	(2,117,523.85)		115,110.49	111,334.75	29,291.95	
52		September		354,073.07	14,227,561.74	11,995,861.71	(114,176.18)	(2,231,700.03)		117,459.48	114,176.18	29,889.69	
53		October		354,073.07	14,581,634.81	12,232,917.16	(117,017.62)	(2,348,717.65)		119,780.65	117,017.62	30,480.35	
54		November		354,073.07	14,935,707.88	12,467,131.18	(119,859.06)	(2,468,576.70)		122,073.99	119,859.06	31,063.94	
55		December		354,073.07	15,289,780.95	12,698,503.75	(122,700.49)	(2,591,277.20)	(1,284,871.10)	124,339.52	122,700.49	31,640.44	2,961,378.30
56	2021	January		354,073.07	15,643,854.02	12,927,034.90	(125,541.93)	(2,718,819.12)		126,577.22	125,541.93	32,209.86	
57		February		354,073.07	15,997,927.09	13,152,724.60	(128,393.36)	(2,845,202.49)		128,787.10	128,393.36	32,772.21	
58		March		354,073.07	16,352,000.16	13,375,572.87	(131,224.80)	(2,976,427.29)		130,969.15	131,224.80	33,327.47	
59		April		354,073.07	16,706,073.23	13,595,579.70	(134,066.24)	(3,110,493.53)		133,123.38	134,066.24	33,875.65	
60		May		354,073.07	17,060,146.30	13,812,745.10	(136,907.67)	(3,247,401.20)		135,249.80	136,907.67	34,416.76	
61		June		354,073.07	17,414,219.37	14,027,069.06	(139,749.11)	(3,387,150.31)		137,348.38	139,749.11	34,950.78	
62		July		354,073.07	17,768,292.44	14,238,551.58	(142,590.55)	(3,529,740.86)		139,419.15	142,590.55	35,477.72	
63		August		354,073.07	18,122,365.51	14,447,192.67	(145,431.98)	(3,675,172.84)		141,462.09	145,431.98	35,997.59	
64		September		354,073.07	18,476,438.58	14,652,992.32	(148,273.42)	(3,823,446.26)		143,477.22	148,273.42	36,510.37	
65		October		-	18,476,438.58	14,504,718.90	(148,273.42)	(3,971,719.68)		142,025.37	148,273.42	36,140.92	
66		November		-	18,476,438.58	14,356,445.48	(148,273.42)	(4,119,993.10)		140,573.53	148,273.42	35,771.48	
67		December		-	18,476,438.58	14,208,172.06	(148,273.42)	(4,268,266.52)	(1,676,989.33)	139,121.68	148,273.42	35,402.03	3,731,976.24
68	2022	January		-	18,476,438.58	14,059,898.64	(148,273.42)	(4,416,539.94)		137,669.84	148,273.42	35,032.58	
69		February		-	18,476,438.58	13,911,625.22	(148,273.42)	(4,564,813.36)		136,218.00	148,273.42	34,663.13	
70		March		-	18,476,438.58	13,763,351.80	(148,273.42)	(4,713,086.78)		134,766.15	148,273.42	34,293.68	
71		April		-	18,476,438.58	13,615,078.38	(148,273.42)	(4,861,360.20)		133,314.31	148,273.42	33,924.24	
72		May		-	18,476,438.58	13,466,804.96	(148,273.42)	(5,009,633.62)		131,862.47	148,273.42	33,554.79	
73		June		-	18,476,438.58	13,318,531.54	(148,273.42)	(5,157,907.04)		130,410.62	148,273.42	33,185.34	
74		July		-	18,476,438.58	13,170,258.12	(148,273.42)	(5,306,180.46)		128,958.78	148,273.42	32,815.89	
75		August		-	18,476,438.58	13,021,984.70	(148,273.42)	(5,454,453.88)		127,506.93	148,273.42	32,446.45	
76		September		-	18,476,438.58	12,873,711.28	(148,273.42)	(5,602,727.30)		126,055.09	148,273.42	32,077.00	
77		October		-	18,476,438.58	12,725,437.86	(148,273.42)	(5,751,000.72)		124,603.25	148,273.42	31,707.55	
78		November		-	18,476,438.58	12,577,164.44	(148,273.42)	(5,899,274.14)		123,151.40	148,273.42	31,338.10	
79		December		-	18,476,438.58	12,428,891.02	(148,273.42)	(6,047,547.56)	(1,779,281.04)	121,699.56	148,273.42	30,968.65	3,731,504.83
80	2023	January		-	18,476,438.58	12,280,617.60	(148,273.42)	(6,195,820.98)		120,247.71	148,273.42	30,599.21	
81		February		-	18,476,438.58	12,132,344.19	(148,273.42)	(6,344,094.40)		118,795.87	148,273.42	30,229.76	
82		March		-	18,476,438.58	11,984,070.77	(148,273.42)	(6,492,367.82)		117,344.03	148,273.42	29,860.31	
83		April		-	18,476,438.58	11,835,797.35	(148,273.42)	(6,640,641.24)		115,892.18	148,273.42	29,490.86	
84		May		-	18,476,438.58	11,687,523.93	(148,273.42)	(6,788,914.66)		114,440.34	148,273.42	29,121.41	
85		June		-	18,476,438.58	11,539,250.51	(148,273.42)	(6,937,188.08)		112,988.49	148,273.42	28,751.97	
86		July		-	18,476,438.58	11,390,977							

	A	B	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE
1													
2	Depreciation Tables					Smart Lighting	Account 373						
3													
4	Monthly Rate					0.450%							
5													
6				Capital	Cummulative			Accumulated	Depreciation	Return	Depreciation	Property	Annual
7				Expenditure	Gross Plant	Net Book Value	Depreciation	Depreciation	Expense	Carrying	Carrying	Carrying	Carrying
										Charge Rate	Charge Rate	Charge	Charge
8	2017	January											
9		February			-	-	-	-		-	-	-	
10		March			-	-	-	-		-	-	-	
11		April			-	-	-	-		-	-	-	
12		May			-	-	-	-		-	-	-	
13		June			-	-	-	-		-	-	-	
14		July			-	-	-	-		-	-	-	
15		August			-	-	-	-		-	-	-	
16		September			-	-	-	-		-	-	-	
17		October		533,441.86	533,441.86	531,041.37	(2,400.49)	(2,400.49)		5,199.78	2,400.49	1,323.18	
18		November		533,441.86	1,066,883.72	1,059,682.25	(4,800.98)	(7,201.47)		10,376.06	4,800.98	2,640.37	
19		December		533,441.86	1,600,325.58	1,585,922.65	(7,201.47)	(14,402.93)		15,528.83	7,201.47	3,951.59	53,422.74
20	2018	January		533,441.86	2,133,767.44	2,109,762.55	(9,601.95)	(24,004.88)		20,658.09	9,601.95	5,256.83	
21		February		533,441.86	2,667,209.30	2,631,201.97	(12,002.44)	(36,007.33)		25,763.85	12,002.44	6,556.08	
22		March		533,441.86	3,200,651.16	3,150,240.90	(14,402.93)	(50,410.26)		30,846.11	14,402.93	7,849.35	
23		April		533,441.86	3,734,093.01	3,666,879.34	(16,803.42)	(67,213.67)		35,904.86	16,803.42	9,136.64	
24		May		533,441.86	4,267,534.87	4,181,117.29	(19,203.91)	(86,417.58)		40,940.11	19,203.91	10,417.95	
25		June		533,441.86	4,800,976.73	4,692,954.76	(21,604.40)	(108,021.98)		45,951.85	21,604.40	11,693.28	
26		July		533,441.86	5,334,418.59	5,202,391.73	(24,004.88)	(132,026.86)		50,940.09	24,004.88	12,962.63	
27		August		533,441.86	5,867,860.45	5,709,428.22	(26,405.37)	(158,432.23)		55,904.82	26,405.37	14,225.99	
28		September		533,441.86	6,401,302.31	6,214,064.22	(28,805.86)	(187,238.09)		60,846.05	28,805.86	15,483.38	
29		October		436,293.83	6,837,596.14	6,619,588.87	(30,769.18)	(218,007.28)		64,816.81	30,769.18	16,493.81	
30		November		436,293.83	7,273,889.98	7,023,150.20	(32,732.50)	(250,739.78)		68,768.35	32,732.50	17,499.35	
31		December		436,293.83	7,710,183.81	7,424,748.20	(34,695.83)	(285,435.61)	(271,032.68)	72,700.66	34,695.83	18,500.00	991,149.58
32	2019	January		436,293.83	8,146,477.64	7,824,392.88	(36,659.15)	(322,094.76)		76,613.75	36,659.15	19,495.75	
33		February		436,293.83	8,582,771.47	8,222,054.24	(38,622.47)	(360,717.23)		80,507.61	38,622.47	20,486.62	
34		March		436,293.83	9,019,065.31	8,617,762.28	(40,585.79)	(401,303.02)		84,382.26	40,585.79	21,472.59	
35		April		436,293.83	9,455,359.14	9,011,507.00	(42,549.12)	(443,852.14)		88,237.67	42,549.12	22,453.67	
36		May		436,293.83	9,891,652.97	9,403,288.39	(44,512.44)	(488,364.58)		92,073.87	44,512.44	23,429.86	
37		June		436,293.83	10,327,946.80	9,793,106.47	(46,475.76)	(534,840.34)		95,890.83	46,475.76	24,401.16	
38		July		436,293.83	10,764,240.64	10,180,961.21	(48,439.08)	(583,279.42)		99,688.58	48,439.08	25,367.56	
39		August		436,293.83	11,200,534.47	10,566,852.64	(50,402.41)	(633,681.83)		103,467.10	50,402.41	26,329.07	
40		September		436,293.83	11,636,828.30	10,950,780.75	(52,365.73)	(686,047.55)		107,226.39	52,365.73	27,285.70	
41		October		412,908.87	12,049,737.17	11,309,465.80	(54,223.82)	(740,271.37)		110,738.52	54,223.82	28,179.42	
42		November		412,908.87	12,462,646.04	11,666,292.77	(56,081.91)	(796,353.28)		114,232.45	56,081.91	29,068.51	
43		December		412,908.87	12,875,554.91	12,021,261.64	(57,940.00)	(854,293.27)	(568,857.67)	117,708.19	57,940.00	29,952.98	2,037,547.78
44	2020	January		412,908.87	13,288,463.79	12,374,372.43	(59,798.09)	(914,091.36)		121,165.73	59,798.09	30,832.81	
45		February		412,908.87	13,701,372.66	12,725,625.12	(61,656.18)	(975,747.54)		124,605.08	61,656.18	31,708.02	
46		March		412,908.87	14,114,281.53	13,075,019.72	(63,514.27)	(1,039,261.81)		128,026.23	63,514.27	32,578.59	
47		April		412,908.87	14,527,190.40	13,422,556.24	(65,372.36)	(1,104,634.16)		131,429.20	65,372.36	33,444.54	
48		May		412,908.87	14,940,099.27	13,768,234.66	(67,230.45)	(1,171,864.61)		134,813.96	67,230.45	34,305.85	
49		June		412,908.87	15,353,008.14	14,112,055.00	(69,088.54)	(1,240,953.15)		138,180.54	69,088.54	35,162.54	
50		July		412,908.87	15,765,917.02	14,454,017.24	(70,946.63)	(1,311,899.77)		141,528.92	70,946.63	36,014.59	
51		August		412,908.87	16,178,825.89	14,794,121.40	(72,804.72)	(1,384,704.49)		144,859.11	72,804.72	36,862.02	
52		September		412,908.87	16,591,734.76	15,132,367.46	(74,662.81)	(1,459,367.29)		148,171.10	74,662.81	37,704.82	
53		October		412,908.87	17,004,643.63	15,468,755.44	(76,520.90)	(1,535,888.19)		151,464.90	76,520.90	38,542.98	
54		November		412,908.87	17,417,552.50	15,803,285.32	(78,378.99)	(1,614,267.18)		154,740.50	78,378.99	39,376.52	
55		December		412,908.87	17,830,461.37	16,135,957.12	(80,237.08)	(1,694,504.25)	(840,210.98)	157,997.91	80,237.08	40,205.43	2,943,932.86
56	2021	January		412,908.87	18,243,370.25	16,466,770.83	(82,095.17)	(1,776,599.42)		161,237.13	82,095.17	41,029.70	
57		February		412,908.87	18,656,279.12	16,795,726.44	(83,953.26)	(1,860,552.68)		164,458.15	83,953.26	41,849.35	
58		March		412,908.87	19,069,187.99	17,122,823.97	(85,811.35)	(1,946,364.02)		167,660.98	85,811.35	42,664.37	
59		April		412,908.87	19,482,096.86	17,448,063.40	(87,669.44)	(2,034,033.46)		170,845.62	87,669.44	43,474.76	
60		May		412,908.87	19,895,005.73	17,771,444.75	(89,527.53)	(2,123,560.98)		174,012.06	89,527.53	44,280.52	
61		June		412,908.87	20,307,914.60	18,092,968.00	(91,385.62)	(2,214,946.60)		177,160.31	91,385.62	45,081.65	
62		July		412,908.87	20,720,823.47	18,412,633.17	(93,243.71)	(2,308,190.30)		180,290.37	93,243.71	45,878.14	
63		August		412,908.87	21,133,732.35	18,730,440.25	(95,101.80)	(2,403,292.10)		183,402.23	95,101.80	46,670.01	
64		September		412,908.87	21,546,641.22	19,046,389.23	(96,959.89)	(2,500,251.99)		186,495.89	96,959.89	47,457.25	
65		October		-	21,546,641.22	18,949,429.35	(96,959.89)	(2,597,211.87)		185,546.50	96,959.89	47,215.66	
66		November		-	21,546,641.22	18,852,469.46	(96,959.89)	(2,694,171.76)		184,597.10	96,959.89	46,974.07	
67		December		-	21,546,641.22	18,755,509.58	(96,959.89)	(2,791,131.64)	(1,096,627.39)	183,647.70	96,959.89	46,732.48	3,755,289.40
68	2022	January		-	21,546,641.22	18,658,549.69	(96,959.89)	(2,888,091.53)		182,698.30	96,959.89	46,490.89	
69		February		-	21,546,641.22	18,561,589.81	(96,959.89)	(2,985,051.41)		181,748.90	96,959.89	46,249.29	
70		March		-	21,546,641.22	18,464,629.92	(96,959.89)	(3,082,011.30)		180,799.50	96,959.89	46,007.70	
71		April		-	21,546,641.22	18,367,670.03	(96,959.89)	(3,178,971.18)		179,850.10	96,959.89	45,766.11	
72		May		-	21,546,641.22	18,270,710.15	(96,959.89)	(3,275,931.07)		178,900.70	96,959.89	45,524.52	
73		June		-	21,546,641.22	18,173,750.26	(96,959.89)	(3,372,890.95)		177,951.30	96,959.89	45,282.93	
74		July		-	21,546,641.22	18,076,790.38	(96,959.89)	(3,469,850.84)		177,001.91	96,959.89	45,041.34	
75		August		-	21,546,641.22	17,979,830.49	(96,959.89)	(3,566,810.73)		176,052.51	96,959.89	44,799.74	
76		September		-	21,546,641.22	17,882,870.61	(96,959.89)	(3,663,770.61)		175,103.11	96,959.89	44,558.15	
77		October		-	21,546,641.22	17,785,910.72	(96,959.89)	(3,760,730.50)		174,153.71	96,959.89	44,316.56	
78		November		-	21,546,641.22	17,688,950.84	(96,959.89)	(3,857,690.38)		173,204.31	96,959.89	44,074.97	
79		December		-	21,546,641.22	17,591,990.95	(96,959.89)	(3,954,650.27)	(1,163,518.63)	172,254.91	96,959.89	43,833.38	3,835,183.47
80	2023	January		-	21,546,641.22	17,495,031.06	(96,959.89)	(4,051,610.15)		171,305.51	96,959.89	43,591.79	
81		February		-	21,546,641.22	17,398,071.18	(96,959.89)	(4,148,570.04)		170,356.11	96,959.89	43,350.19	
82		March		-	21,546,641.22	17,301,111.29	(96,959.89)	(4,245,529.92)		169,406.71	96,959.89	43,108.60	
83		April		-	21,546,641.22	17,204,151.41	(96,959.89)	(4,342,489.81)		168,457.32	96,959.89	42,867.01	
84		May		-	21,546,641.22	17,107,191.52	(96,959.89)	(4,439,449.70)		167,507.92	96,959.89	42,625.42	
85		June		-	21,546,641.22	17,010,231.64	(96,959.89)	(4,536,409.58)		166,558.52	96,959.89	42,383.83	
86		July		-	21,546,641.22	16,913,271.75	(96,959.89)						

	A	B	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP
1													
2	Depreciation Tables			NextGen UCS									
3													
4	Monthly Rate					0.238%							
5													
6				Capital	Cummulative			Accumulated	Depreciation	Return	Depreciation	Property	Annual
7				Expenditure	Gross Plant	Net Plant	Depreciation	Depreciation	Expense	Carrying	Carrying	Carrying	Carrying
8	2017	January								Charge Rate	Charge Rate	Charge	Charge
9		February			-	-	-	-	-	-	-	-	-
10		March			-	-	-	-	-	-	-	-	-
11		April			-	-	-	-	-	-	-	-	-
12		May			-	-	-	-	-	-	-	-	-
13		June			-	-	-	-	-	-	-	-	-
14		July			-	-	-	-	-	-	-	-	-
15		August			-	-	-	-	-	-	-	-	-
16		September			-	-	-	-	-	-	-	-	-
17		October		2,696,750.00	2,696,750.00	2,690,322.75	(6,427.25)	(6,427.25)		26,342.74	6,427.25	6,703.39	
18		November		2,696,750.00	5,393,500.00	5,374,218.24	(12,854.51)	(19,281.76)		52,622.55	12,854.51	13,390.76	
19		December		2,696,750.00	8,090,250.00	8,051,686.48	(19,281.76)	(38,563.53)		78,839.43	19,281.76	20,062.12	236,524.52
20	2018	January		2,696,750.00	10,787,000.00	10,722,727.46	(25,709.02)	(64,272.54)		104,993.37	25,709.02	26,717.46	
21		February		2,696,750.00	13,483,750.00	13,387,341.19	(32,136.27)	(96,408.81)		131,084.38	32,136.27	33,356.79	
22		March		2,696,750.00	16,180,500.00	16,045,527.66	(38,563.53)	(134,972.34)		157,112.46	38,563.53	39,980.11	
23		April		2,696,750.00	18,877,250.00	18,697,286.88	(44,990.78)	(179,963.12)		183,077.60	44,990.78	46,587.41	
24		May		2,696,750.00	21,574,000.00	21,342,618.85	(51,418.03)	(231,381.15)		208,979.81	51,418.03	53,178.69	
25		June		2,696,750.00	24,270,750.00	23,981,523.56	(57,845.29)	(289,226.44)		234,819.08	57,845.29	59,753.96	
26		July		2,696,750.00	26,967,500.00	26,614,001.02	(64,272.54)	(353,498.98)		260,595.43	64,272.54	66,313.22	
27		August		2,696,750.00	29,664,250.00	29,240,051.23	(70,699.80)	(424,198.78)		286,308.83	70,699.80	72,856.46	
28		September		2,696,750.00	32,361,000.00	31,859,674.18	(77,127.05)	(501,325.83)		311,959.31	77,127.05	79,383.69	
29		October		2,311,500.00	34,672,500.00	34,088,538.05	(82,636.13)	(583,961.95)		333,783.60	82,636.13	84,937.27	
30		November		2,311,500.00	36,984,000.00	36,311,892.85	(88,145.20)	(672,107.15)		355,553.95	88,145.20	90,477.13	
31		December		2,311,500.00	39,295,500.00	38,529,738.58	(93,654.28)	(765,761.43)	(727,197.90)	377,270.36	93,654.28	96,003.27	4,422,281.55
32	2019	January		2,311,500.00	41,607,000.00	40,742,075.23	(99,163.35)	(864,924.78)		398,932.82	99,163.35	101,515.67	
33		February		2,311,500.00	43,918,500.00	42,948,902.80	(104,672.43)	(969,587.20)		420,541.34	104,672.43	107,014.35	
34		March		2,311,500.00	46,230,000.00	45,150,221.30	(110,181.50)	(1,079,778.70)		442,095.92	110,181.50	112,499.30	
35		April		2,311,500.00	48,541,500.00	47,346,030.73	(115,690.58)	(1,195,469.28)		463,596.55	115,690.58	117,970.53	
36		May		2,311,500.00	50,853,000.00	49,536,331.08	(121,199.65)	(1,316,668.93)		485,043.24	121,199.65	123,428.02	
37		June		2,311,500.00	53,164,500.00	51,721,122.35	(126,708.73)	(1,443,377.65)		506,435.99	126,708.73	128,871.80	
38		July		2,311,500.00	55,476,000.00	53,900,404.55	(132,217.80)	(1,575,595.45)		527,774.79	132,217.80	134,301.84	
39		August		2,311,500.00	57,787,500.00	56,074,177.68	(137,726.88)	(1,713,322.33)		549,059.66	137,726.88	139,718.16	
40		September		2,311,500.00	60,099,000.00	58,242,441.73	(143,235.95)	(1,856,558.28)		570,290.58	143,235.95	145,120.75	
41		October		2,696,750.00	62,795,750.00	60,789,528.52	(149,663.20)	(2,006,221.48)		595,230.80	149,663.20	151,467.24	
42		November		2,696,750.00	65,492,500.00	63,330,188.06	(156,090.46)	(2,162,311.94)		620,108.09	156,090.46	157,797.72	
43		December		2,696,750.00	68,189,250.00	65,864,420.35	(162,517.71)	(2,324,829.65)	(1,559,068.23)	644,922.45	162,517.71	164,112.18	9,366,918.01
44	2020	January		2,696,750.00	70,886,000.00	68,392,225.38	(168,944.97)	(2,493,774.62)		669,673.87	168,944.97	170,410.63	
45		February		2,696,750.00	73,582,750.00	70,913,603.16	(175,372.22)	(2,669,146.84)		694,362.36	175,372.22	176,693.06	
46		March		2,696,750.00	76,279,500.00	73,428,553.69	(181,799.48)	(2,850,946.31)		718,987.92	181,799.48	182,959.48	
47		April		2,696,750.00	78,976,250.00	75,937,076.96	(188,226.73)	(3,039,173.04)		743,550.55	188,226.73	189,209.88	
48		May		2,696,750.00	81,673,000.00	78,439,172.98	(194,653.98)	(3,233,827.03)		768,050.24	194,653.98	195,444.27	
49		June		2,696,750.00	84,369,750.00	80,934,841.74	(201,081.24)	(3,434,908.26)		792,486.99	201,081.24	201,662.65	
50		July		2,696,750.00	87,066,500.00	83,424,083.25	(207,508.49)	(3,642,416.75)		816,860.82	207,508.49	207,865.01	
51		August		2,696,750.00	89,763,250.00	85,906,897.50	(213,935.75)	(3,856,352.50)		841,171.70	213,935.75	214,051.35	
52		September		2,696,750.00	92,460,000.00	88,383,284.50	(220,363.00)	(4,076,715.50)		865,419.66	220,363.00	220,221.68	
53		October		-	92,460,000.00	88,162,921.50	(220,363.00)	(4,297,078.50)		863,261.94	220,363.00	219,672.61	
54		November		-	92,460,000.00	87,942,558.50	(220,363.00)	(4,517,441.50)		861,104.22	220,363.00	219,123.54	
55		December		-	92,460,000.00	87,722,195.50	(220,363.00)	(4,737,804.50)	(2,412,974.85)	858,946.50	220,363.00	218,574.47	14,322,740.26
56	2021	January		-	92,460,000.00	87,501,832.50	(220,363.00)	(4,958,167.50)		856,788.78	220,363.00	218,025.40	
57		February		-	92,460,000.00	87,281,469.50	(220,363.00)	(5,178,530.50)		854,631.06	220,363.00	217,476.33	
58		March		-	92,460,000.00	87,061,106.50	(220,363.00)	(5,398,893.50)		852,473.33	220,363.00	216,927.26	
59		April		-	92,460,000.00	86,840,743.50	(220,363.00)	(5,619,256.50)		850,315.61	220,363.00	216,378.19	
60		May		-	92,460,000.00	86,620,380.50	(220,363.00)	(5,839,619.50)		848,157.89	220,363.00	215,829.11	
61		June		-	92,460,000.00	86,400,017.50	(220,363.00)	(6,059,982.50)		846,000.17	220,363.00	215,280.04	
62		July		-	92,460,000.00	86,179,654.50	(220,363.00)	(6,280,345.50)		843,842.45	220,363.00	214,730.97	
63		August		-	92,460,000.00	85,959,291.50	(220,363.00)	(6,500,708.50)		841,684.73	220,363.00	214,181.90	
64		September		-	92,460,000.00	85,738,928.50	(220,363.00)	(6,721,071.50)		839,527.01	220,363.00	213,632.83	
65		October		-	92,460,000.00	85,518,565.50	(220,363.00)	(6,941,434.50)		837,369.29	220,363.00	213,083.76	
66		November		-	92,460,000.00	85,298,202.50	(220,363.00)	(7,161,797.50)		835,211.57	220,363.00	212,534.69	
67		December		-	92,460,000.00	85,077,839.50	(220,363.00)	(7,382,160.50)	(2,644,356.00)	833,053.85	220,363.00	211,985.62	15,363,477.83
68	2022	January		-	92,460,000.00	84,857,476.50	(220,363.00)	(7,602,523.50)		830,896.12	220,363.00	211,436.55	
69		February		-	92,460,000.00	84,637,113.50	(220,363.00)	(7,822,886.50)		828,738.40	220,363.00	210,887.47	
70		March		-	92,460,000.00	84,416,750.50	(220,363.00)	(8,043,249.50)		826,580.68	220,363.00	210,338.40	
71		April		-	92,460,000.00	84,196,387.50	(220,363.00)	(8,263,612.50)		824,422.96	220,363.00	209,789.33	
72		May		-	92,460,000.00	83,976,024.50	(220,363.00)	(8,483,975.50)		822,265.24	220,363.00	209,240.26	
73		June		-	92,460,000.00	83,755,661.50	(220,363.00)	(8,704,338.50)		820,107.52	220,363.00	208,691.19	
74		July		-	92,460,000.00	83,535,298.50	(220,363.00)	(8,924,701.50)		817,949.80	220,363.00	208,142.12	
75		August		-	92,460,000.00	83,314,935.50	(220,363.00)	(9,145,064.50)		815,792.08	220,363.00	207,593.05	
76		September		-	92,460,000.00	83,094,572.50	(220,363.00)	(9,365,427.50)		813,634.36	220,363.00	207,043.98	
77		October		-	92,460,000.00	82,874,209.50	(220,363.00)	(9,585,790.50)		811,476.63	220,363.00	206,494.91	
78		November		-	92,460,000.00	82,653,846.50	(220,363.00)	(9,806,153.50)		809,318.91	220,363.00	205,945.83	
79		December		-	92,460,000.00	82,433,483.50	(220,363.00)	(10,026,516.50)	(2,644,356.00)	807,161.19	220,363.00	205,396.76	14,973,699.75
80	2023	January		-	92,460,000.00	82,213,120.50	(220,363.00)	(10,246,879.50)		805,003.47	220,363.00	204,847.69	
81		February		-	92,460,000.00	81,992,757.50	(220,363.00)	(10,467,242.50)		802,845.75	220,363.00	204,298.62	
82		March		-	92,460,000.00	81,772,394.50	(220,363.00)	(10,687,605.50)		800,688.03	220,363.00	203,749.55	
83		April		-	92,460,000.00	81,552,031.50	(220,363.00)	(10,907,968.50)		798,530.31	220,363.00	203,200.48	
84		May		-	92,460,000.00	81,331,668.50	(220,363.00)	(11,128,331.50)		796,372.59	220,363.00	202,651.41	
85													

	A	B	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA
1													
2	Depreciation Tables					Substation							
3													
4	Monthly Rate					0.242%							
5													
6				Capital	Cummulative			Accumulated	Depreciation	Return	Depreciation	Property	Annual
7				Expenditure	Gross Plant	Net Plant	Depreciation	Depreciation	Expense	Carrying	Carrying	Carrying	Carrying
8	2017	January								Charge Rate	Charge Rate	Charge	Charge
9		February			-	-	-	-	-	-	-	-	-
10		March			-	-	-	-	-	-	-	-	-
11		April			-	-	-	-	-	-	-	-	-
12		May			-	-	-	-	-	-	-	-	-
13		June			-	-	-	-	-	-	-	-	-
14		July			-	-	-	-	-	-	-	-	-
15		August			-	-	-	-	-	-	-	-	-
16		September			-	-	-	-	-	-	-	-	-
17		October		837,500.00	837,500.00	835,476.04	(2,023.96)	(2,023.96)		8,180.70	2,023.96	2,081.73	
18		November		837,500.00	1,675,000.00	1,668,928.13	(4,047.92)	(6,071.88)		16,341.59	4,047.92	4,158.41	
19		December		837,500.00	2,512,500.00	2,500,356.25	(6,071.88)	(12,143.75)	(12,143.75)	24,482.65	6,071.88	6,230.05	73,618.89
20	2018	January		837,500.00	3,350,000.00	3,329,760.42	(8,095.83)	(20,239.58)		32,603.90	8,095.83	8,296.65	
21		February		837,500.00	4,187,500.00	4,157,140.63	(10,119.79)	(30,359.38)		40,705.34	10,119.79	10,358.21	
22		March		837,500.00	5,025,000.00	4,982,496.88	(12,143.75)	(42,503.13)		48,786.95	12,143.75	12,414.72	
23		April		837,500.00	5,862,500.00	5,805,829.17	(14,167.71)	(56,670.83)		56,848.74	14,167.71	14,466.19	
24		May		837,500.00	6,700,000.00	6,627,137.50	(16,191.67)	(72,862.50)		64,890.72	16,191.67	16,512.62	
25		June		837,500.00	7,537,500.00	7,446,421.88	(18,215.63)	(91,078.13)		72,912.88	18,215.63	18,554.00	
26		July		837,500.00	8,375,000.00	8,263,682.29	(20,239.58)	(111,317.71)		80,915.22	20,239.58	20,590.34	
27		August		837,500.00	9,212,500.00	9,078,918.75	(22,263.54)	(133,581.25)		88,897.75	22,263.54	22,621.64	
28		September		837,500.00	10,050,000.00	9,892,131.25	(24,287.50)	(157,868.75)		96,860.45	24,287.50	24,647.89	
29		October		837,500.00	10,887,500.00	10,703,319.79	(26,311.46)	(184,180.21)		104,803.34	26,311.46	26,669.11	
30		November		837,500.00	11,725,000.00	11,512,484.38	(28,335.42)	(212,515.63)		112,726.41	28,335.42	28,685.27	
31		December		837,500.00	12,562,500.00	12,319,625.00	(30,359.38)	(242,875.00)	(230,731.25)	120,629.66	30,359.38	30,696.40	1,386,825.66
32	2019	January		837,500.00	13,400,000.00	13,124,741.67	(32,383.33)	(275,258.33)		128,513.10	32,383.33	32,702.48	
33		February		837,500.00	14,237,500.00	13,927,834.38	(34,407.29)	(309,665.63)		136,376.71	34,407.29	34,703.52	
34		March		837,500.00	15,075,000.00	14,728,903.13	(36,431.25)	(346,096.88)		144,220.51	36,431.25	36,699.52	
35		April		837,500.00	15,912,500.00	15,527,947.92	(38,455.21)	(384,552.08)		152,044.49	38,455.21	38,690.47	
36		May		837,500.00	16,750,000.00	16,324,968.75	(40,479.17)	(425,031.25)		159,848.65	40,479.17	40,676.38	
37		June		837,500.00	17,587,500.00	17,119,965.63	(42,503.13)	(467,534.38)		167,633.00	42,503.13	42,657.25	
38		July		837,500.00	18,425,000.00	17,912,938.54	(44,527.08)	(512,061.46)		175,397.52	44,527.08	44,633.07	
39		August		837,500.00	19,262,500.00	18,703,887.50	(46,551.04)	(558,612.50)		183,142.23	46,551.04	46,603.85	
40		September		837,500.00	20,100,000.00	19,492,812.50	(48,575.00)	(607,187.50)		190,867.12	48,575.00	48,569.59	
41		October		837,500.00	20,937,500.00	20,279,713.54	(50,598.96)	(657,786.46)		198,572.20	50,598.96	50,530.29	
42		November		837,500.00	21,775,000.00	21,064,590.63	(52,622.92)	(710,409.38)		206,257.45	52,622.92	52,485.94	
43		December		837,500.00	22,612,500.00	21,847,443.75	(54,646.88)	(765,056.25)	(522,181.25)	213,922.89	54,646.88	54,436.55	3,102,366.02
44	2020	January		837,500.00	23,450,000.00	22,628,272.92	(56,670.83)	(821,727.08)		221,568.51	56,670.83	56,382.11	
45		February		837,500.00	24,287,500.00	23,407,078.13	(58,694.79)	(880,421.88)		229,194.31	58,694.79	58,322.64	
46		March		837,500.00	25,125,000.00	24,183,859.38	(60,718.75)	(941,140.63)		236,800.29	60,718.75	60,258.12	
47		April		837,500.00	25,962,500.00	24,958,616.67	(62,742.71)	(1,003,883.33)		244,386.45	62,742.71	62,188.55	
48		May		837,500.00	26,800,000.00	25,731,350.00	(64,766.67)	(1,068,650.00)		251,952.80	64,766.67	64,113.95	
49		June		837,500.00	27,637,500.00	26,502,059.38	(66,790.63)	(1,135,440.63)		259,499.33	66,790.63	66,034.30	
50		July		837,500.00	28,475,000.00	27,270,744.79	(68,814.58)	(1,204,255.21)		267,026.04	68,814.58	67,949.61	
51		August		837,500.00	29,312,500.00	28,037,406.25	(70,838.54)	(1,275,093.75)		274,532.94	70,838.54	69,859.87	
52		September		837,500.00	30,150,000.00	28,802,043.75	(72,862.50)	(1,347,956.25)		282,020.01	72,862.50	71,765.09	
53		October		837,500.00	30,987,500.00	29,564,657.29	(74,886.46)	(1,422,842.71)		289,487.27	74,886.46	73,665.27	
54		November		837,500.00	31,825,000.00	30,325,246.88	(76,910.42)	(1,499,753.13)		296,934.71	76,910.42	75,560.41	
55		December		837,500.00	32,662,500.00	31,083,812.50	(78,934.38)	(1,578,687.50)	(813,631.25)	304,362.33	78,934.38	77,450.50	4,774,946.65
56	2021	January		837,500.00	33,500,000.00	31,840,354.17	(80,958.33)	(1,659,645.83)		311,770.13	80,958.33	79,335.55	
57		February		837,500.00	34,337,500.00	32,594,871.88	(82,982.29)	(1,742,628.13)		319,158.12	82,982.29	81,215.56	
58		March		837,500.00	35,175,000.00	33,347,365.63	(85,006.25)	(1,827,634.38)		326,526.29	85,006.25	83,090.52	
59		April		837,500.00	36,012,500.00	34,097,835.42	(87,030.21)	(1,914,664.58)		333,874.64	87,030.21	84,960.44	
60		May		837,500.00	36,850,000.00	34,846,281.25	(89,054.17)	(2,003,718.75)		341,203.17	89,054.17	86,825.32	
61		June		837,500.00	37,687,500.00	35,592,703.13	(91,078.13)	(2,094,796.88)		348,511.88	91,078.13	88,685.15	
62		July		837,500.00	38,525,000.00	36,337,101.04	(93,102.08)	(2,187,898.96)		355,800.78	93,102.08	90,539.94	
63		August		837,500.00	39,362,500.00	37,079,475.00	(95,126.04)	(2,283,025.00)		363,069.86	95,126.04	92,389.69	
64		September		837,500.00	40,200,000.00	37,819,825.00	(97,150.00)	(2,380,175.00)		370,319.12	97,150.00	94,234.40	
65		October		-	40,200,000.00	37,722,675.00	(97,150.00)	(2,477,325.00)		369,367.86	97,150.00	93,992.33	
66		November		-	40,200,000.00	37,625,525.00	(97,150.00)	(2,574,475.00)		368,416.60	97,150.00	93,750.27	
67		December		-	40,200,000.00	37,528,375.00	(97,150.00)	(2,671,625.00)	(1,092,937.50)	367,465.34	97,150.00	93,508.20	6,330,948.66
68	2022	January		-	40,200,000.00	37,431,225.00	(97,150.00)	(2,768,775.00)		366,514.08	97,150.00	93,266.14	
69		February		-	40,200,000.00	37,334,075.00	(97,150.00)	(2,865,925.00)		365,562.82	97,150.00	93,024.07	
70		March		-	40,200,000.00	37,236,925.00	(97,150.00)	(2,963,075.00)		364,611.56	97,150.00	92,782.00	
71		April		-	40,200,000.00	37,139,775.00	(97,150.00)	(3,060,225.00)		363,660.30	97,150.00	92,539.94	
72		May		-	40,200,000.00	37,042,625.00	(97,150.00)	(3,157,375.00)		362,709.04	97,150.00	92,297.87	
73		June		-	40,200,000.00	36,945,475.00	(97,150.00)	(3,254,525.00)		361,757.78	97,150.00	92,055.81	
74		July		-	40,200,000.00	36,848,325.00	(97,150.00)	(3,351,675.00)		360,806.52	97,150.00	91,813.74	
75		August		-	40,200,000.00	36,751,175.00	(97,150.00)	(3,448,825.00)		359,855.26	97,150.00	91,571.68	
76		September		-	40,200,000.00	36,654,025.00	(97,150.00)	(3,545,975.00)		358,903.99	97,150.00	91,329.61	
77		October		-	40,200,000.00	36,556,875.00	(97,150.00)	(3,643,125.00)		357,952.73	97,150.00	91,087.55	
78		November		-	40,200,000.00	36,459,725.00	(97,150.00)	(3,740,275.00)		357,001.47	97,150.00	90,845.48	
79		December		-	40,200,000.00	36,362,575.00	(97,150.00)	(3,837,425.00)	(1,165,800.00)	356,050.21	97,150.00	90,603.42	6,604,403.06
80	2023	January		-	40,200,000.00	36,265,425.00	(97,150.00)	(3,934,575.00)		355,098.95	97,150.00	90,361.35	
81		February		-	40,200,000.00	36,168,275.00	(97,150.00)	(4,031,725.00)		354,147.69	97,150.00	90,119.29	
82		March		-	40,200,000.00	36,071,125.00	(97,150.00)	(4,128,875.00)		353,196.43	97,150.00	89,877.22	
83		April		-	40,200,000.00	35,973,975.00	(97,150.00)	(4,226,025.00)		352,245.17	97,150.00	89,635.15	
84		May		-	40,200,000.00	35,876,825.00	(97,150.00)	(4,323,175.00)		351,293.91	97,150.00	89,393.09	
85		June		-	40,200,000.00	35,779,675.00	(97,150.00)	(4,420,325.00)		350,342.65	97,150.00	89,151.02	
86		July		-	40,200,000.00	35,682,525.00	(97,150.00)	(4,517,475.00)		349,391.3			



Annual Investment Carrying Charges  
Distribution Technology Rider

	EV Charging	Microgrid	Microgrid	Smart Lighting	Smart Lighting	NextGen UCS	Substation
Account Title	Miscellaneous Equipment	Storage Battery Equipment	Installations on Customer Premises	Installations on Customer Premises	Street Light and Signal Systems	Communication Equipment	Station Equipment
Account	398.XX	363	371	371	373	397	362
Return % (1)	11.75	11.75	11.75	11.75	11.75	11.75	11.75
Depreciation % (2)	10.00	6.67	9.63	9.63	5.40	2.86	2.90
Property Taxes % (3)	<u>2.99</u>	<u>2.99</u>	<u>2.99</u>	<u>2.99</u>	<u>2.99</u>	<u>2.99</u>	<u>2.99</u>
Total %	24.74	21.41	24.37	24.37	20.14	17.60	17.64

(1) Source: Exhibit MDK-3 WACC calculation plus 75 basis point addition to ROE supported by Company witness Moore

(2) Source: 10% EV Charging rate based on testimony of Scott Osterholt, other rates as approved in Case No. 11-351-EL-AIR

(3) Source: Exhibit MDK-5

**AEP OHIO**  
**CASE No. 13-2385-EL-SSO AND CASE No. 13-2386-EL-AAM**  
**Cost of Capital**  
**(\$000)**

**Date of Capital Structure: December 31, 2015**

<b>Line No.</b>	<b>Class of Capital</b>	<b>(\$) Amount</b>	<b>% of Total</b>	<b>(%) Cost</b>	<b>Weighted Cost (%)</b>	<b>Pre-Tax Weighted Cost (%)</b>
1	Long-Term Debt	\$ 1,950,000	49.54%	6.01%	2.98%	2.98%
2	Short-Term Debt	\$ -	0.00%	0.00%	0.00%	0.00%
3	Common Equity	<u>1,986,600</u>	<u>50.46%</u>	<u>11.16% *</u>	<u>5.63%</u>	<u>8.78%</u>
4	Total Capital	<u><u>\$ 3,936,600</u></u>	<u><u>100%</u></u>	<u><u></u></u>	<u><u>8.61%</u></u>	<u><u>11.75%</u></u>

\* 11.16% equal to 10.41% from Exhibit MDK-3 plus 75 basis points as supported by Company witness Moore

**OHIO POWER COMPANY**  
**Computation of Gross Revenue Conversion Factor**  
**For The Twelve Months Ending December 31, 2015**

Line No.	Description		% of Incremental Gross Revenues
(A)	(B)	(C)	(D)
1	Operating Revenues		100.000%
2			
3	Less:		
4	Uncollectible Accounts Expense	0.670%	
5	Commercial Activities Tax	0.260% [A]	
6			0.930%
7			
8	Income Before Income Tax (Line 1- Line 7)		99.070%
9			
10	Gross Revenue Conversion Factor (100% / 99.070366%)		100.938%

Notes:

[A] Statutory rate



**Ohio Power Company Balances for 12 Months Ending December 2015**

Retail Sales	\$	2,757,997,591.00
Bad Debt Expense	\$	18,468,493.00

**Estimated Capitalization %s of Microgrid and Smart Lighting Assets**

<b>Microgrid</b>	FERC Account	<u>363</u>	<u>371</u>	sum
	Cost	\$ 2,430,000	\$ 1,580,000	\$ 4,010,000
	Allocation %	60.6%	39.4%	
<b>Smart Lighting</b>	FERC Account	<u>371</u>	<u>373</u>	sum
	Bulbs	121,118	141,244	262,362
	Allocation %	46.2%	53.8%	

**Estimated Electricity Bills for EV Charging Stations**

		<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>sum</u>
Deployment:	L2	30	50	85	85	0	0	0	0	250
	DCFC	5	6	7	7	0	0	0	0	25
Bills*:	L2	15	295	852.5	1767.5	2745	3000	3000	3000	14675
	DCFC	2.5	48	117.5	198.5	279	300	300	300	1545.5
Pricing:	L2	\$ 1,018.65	\$ 20,033.45	\$ 57,893.28	\$ 120,030.93	\$ 186,412.95	\$ 203,730.00	\$ 203,730.00	\$ 203,730.00	\$ 996,579.25
	DCFC	\$ 1,348.30	\$ 25,887.36	\$ 63,370.10	\$ 107,055.02	\$ 150,470.28	\$ 161,796.00	\$ 161,796.00	\$ 161,796.00	\$ 833,519.06
	total	\$ 2,366.95	\$ 45,920.81	\$ 121,263.38	\$ 227,085.95	\$ 336,883.23	\$ 365,526.00	\$ 365,526.00	\$ 365,526.00	\$ 1,830,098.31

\* Assumes, as in depreciation table, that one-twelfth of the annual amount goes into service per month, starting with October of the given year.

**Ohio Power Company**  
**Columbus Southern Power Rate Zone**  
**GS-1 Bundled Service\* for single L2 charger**

**Billing Parameters**

Metered kWh Usage: 510 kWh

				Rates				Billing			
				Generation	Transmission	Distribution	Total	Generation	Transmission	Distribution	Total
Customer Charge						\$ 6.47	\$ 6.47			\$ 6.47	\$ 6.47
Energy Charge: (First 1000 kWh)				510 kWh	x	\$ 0.0147707	\$ 0.0147707			\$ 7.53	\$ 7.53
(Over 1000 kWh)				0 kWh	x	\$ 0.0147707	\$ 0.0147707			\$ -	\$ -
<b>Base Charges</b>										<b>\$ 14.00</b>	<b>\$ 14.00</b>

**Riders**

Universal Service Fund (first 833,000 kWh)	510 kWh	x			\$ 0.0059258	\$ 0.0059258	/kWh			\$ 3.02	\$ 3.02
Universal Service Fund (in excess of 833,000 kWh)	0 kWh	x			\$ 0.0001830	\$ 0.0001830	/kWh			\$ -	\$ -
kWh Tax (first 2000 kWh)	510 kWh	x			\$ 0.00465	\$ 0.00465	/kWh			\$ 2.37	\$ 2.37
kWh Tax (next 13,000 kWh)	0 kWh	x			\$ 0.00419	\$ 0.00419	/kWh			\$ -	\$ -
kWh Tax (in excess of 15,000 kWh)	0 kWh	x			\$ 0.00363	\$ 0.00363	/kWh			\$ -	\$ -
Pilot Throughput Balancing Adjustment Rider	510 kWh	x			\$ 0.0007517	\$ 0.0007517	/kWh			\$ 0.38	\$ 0.38
Deferred Asset Phase-In Rider	\$14.00 Base (Dist)	x			7.7300%	7.7300%				\$ 1.08	\$ 1.08
Generation Energy Rider	510 kWh	x	\$ 0.0466600			\$ 0.0466600	/kWh	\$ 23.80			\$ 23.80
Generation Capacity Rider	510 kWh	x	\$ 0.0076300			\$ 0.0076300	/kWh	\$ 3.89			\$ 3.89
Auction Cost Reconciliation Rider	510 kWh	x	\$ 0.0019232			\$ 0.0019232	/kWh	\$ 0.98			\$ 0.98
Basic Transmission Cost Rider	510 kWh	x		\$ 0.0096835		\$ 0.0096835	/kWh		\$ 4.94		\$ 4.94
Energy Efficiency and Peak Demand Reduction Cost Recovery	510 kWh	x			\$ 0.0033390	\$ 0.0033390	/kWh			\$ 1.70	\$ 1.70
Economic Development Cost Recovery	\$14.00 Base (Dist)	x			1.05864%	1.05864%				\$ 0.15	\$ 0.15
Enhanced Service Reliability	\$14.00 Base (Dist)	x			7.34119%	7.34119%				\$ 1.03	\$ 1.03
gridSMART Phase 1 Rider	Month				\$ 4.22	\$ 4.22				\$ 4.22	\$ 4.22
Retail Stability Rider	510 kWh	x				\$ 0.0034143	/kWh			\$ 1.74	\$ 1.74
Distribution Investment Rider	\$14.00 Base (Dist)	x			29.13302%	29.13302%				\$ 4.08	\$ 4.08
Alternative Energy Rider	510 kWh	x	\$ 0.0010472			\$ 0.0010472	/kWh	\$ 0.53			\$ 0.53
<b>Riders Total</b>								<b>\$ 29.20</b>	<b>\$ 4.94</b>	<b>\$ 18.03</b>	<b>\$ 53.91</b>

**Base + Rider Total** **\$ 67.91**

\* Rates current as of 11-1-2016

**Ohio Power Company**  
**Columbus Southern Power Rate Zone**  
**GS-2 Secondary Bundled Service\* for single DCF**

WP DRG-8  
Page 25 of 25

**Billing Parameters**

	Metered	Adjusted
On-Peak Demand:	50.0	50.0 kW
Off-Peak Demand:	0.0	0.0 kW
kWh Usage:	842	842 kWh
Metered Voltage Adjustment:	1.00	

**Bill Calculation**

				Rates				Billing			
				Generation	Transmission	Distribution	Total	Generation	Transmission	Distribution	Total
Customer Charge						\$ 9.04	\$ 9.04			\$ 9.04	\$ 9.04
Energy Charge	842 kWh	x									
Demand Charge	50.0 kW	x				\$ 4.033	\$ 4.033			\$ 201.65	\$ 201.65
Off-Peak Excess Demand Charge	0.0 kW	x				\$ 4.033	\$ 4.033			\$ -	\$ -
<b>Base Charges</b>										<b>\$ 210.69</b>	<b>\$ 210.69</b>

**Riders**

Universal Service Fund (first 833,000 kWh)	842 kWh	x			\$ 0.0059258	\$ 0.0059258	/kWh			\$ 4.99	\$ 4.99
Universal Service Fund (in excess of 833,000 kWh)	0 kWh	x			\$ 0.0001830	\$ 0.000183	/kWh			\$ -	\$ -
kWh Tax (first 2000 kWh)	842 kWh	x			\$ 0.00465	\$ 0.00465	/kWh			\$ 3.91	\$ 3.91
kWh Tax (next 13,000 kWh)	0 kWh	x			\$ 0.00419	\$ 0.00419	/kWh			\$ -	\$ -
kWh Tax (in excess of 15,000 kWh)	0 kWh	x			\$ 0.00363	\$ 0.00363	/kWh			\$ -	\$ -
Deferred Asset Phase-In Rider	<b>\$210.69</b> Base (Dist)	x			7.73000%	7.73000%				\$ 16.29	\$ 16.29
Generation Energy Rider	842 kWh	x	\$ 0.0466600			\$ 0.0466600	/kWh	\$ 39.26			\$ 39.26
Generation Capacity Rider	842 kWh	x	\$ 0.0082000			\$ 0.0082000	/kWh	\$ 6.90			\$ 6.90
Auction Cost Reconciliation Rider	842 kWh	x	\$ 0.0019232			\$ 0.0019232	/kWh	\$ 1.62			\$ 1.62
Basic Transmission Cost Rider	842 kWh	x		\$ 0.0003839		\$ 0.0003839	/kWh		\$ 0.32		\$ 0.32
Basic Transmission Cost Rider	50.0 kW	x		\$ 3.31		\$ 3.31	/kWh		\$ 165.50		\$ 165.50
Energy Efficiency & Peak Demand Reduction Cost Recovery	842 kWh	x			\$ 0.0033390	\$ 0.0033390	/kWh			\$ 2.81	\$ 2.81
Economic Development Cost Recovery	<b>\$210.69</b> Base (Dist)	x			1.05864%	1.05864%				\$ 2.23	\$ 2.23
Enhanced Service Reliability	<b>\$210.69</b> Base (Dist)	x			7.34119%	7.34119%				\$ 15.47	\$ 15.47
gridSmart Phase 1 Rider	Month				\$ 4.22	\$ 4.22				\$ 4.22	\$ 4.22
Retail Stability Rider	842 kWh	x				\$ 0.0033897	/kWh				\$ 2.85
Distribution Investment Rider	<b>\$210.69</b> Base (Dist)	x			29.13302%	29.13302%				\$ 61.38	\$ 61.38
Alternative Energy Rider	842 kWh	x	\$ 0.0010472			\$ 0.0010472	/kWh	\$ 0.88			\$ 0.88
<b>Riders Total</b>								<b>\$ 48.66</b>	<b>\$ 165.82</b>	<b>\$ 111.30</b>	<b>\$ 328.63</b>
<b>Base + Rider Total</b>										<b>\$ 539.32</b>	

\* Rates current as of 11-1-2016

## Current Rates with Billing Units from Case No. 11-351-EL-AIR Schedule E-4.1

## Revenue-neutral Rate Redesign

Rate Code (1)	Class/ Descript. (2)	Customer Bills (3)	Sales KW / KWH (4)	Current Rate (5)	Current Annualized Revenue (6)	Proposed Revenue Neutral Rate (7)	Proposed Revenue (8)	Difference from Current Revenue (9)
Schedule RR Tariff: 013	Residential Service							
<u>Distribution Charges</u>								
Customer Charge:								
Bills		5,627,434		\$8.40	\$47,270,446	\$13.40	\$75,407,616	\$28,137,170
Energy Charge - Winter								
First 800 kWh per month			2,500,491,683	\$0.0182747	\$45,695,837	\$0.0134246	\$33,568,101	-\$12,127,737
All Excess kWh per month			1,586,334,371	\$0.0182747	\$28,989,849	\$0.0134246	\$21,295,904	-\$7,693,945
Total Energy Charge - Winter					\$74,685,686		\$54,864,005	-\$19,821,681
Energy Charge - Summer:								
First 800 kWh per month			1,535,578,135	\$0.0182747	\$28,062,292	\$0.0134246	\$20,614,522	-\$7,447,770
All Excess kWh per month			1,118,894,019	\$0.0182747	\$20,447,498	\$0.0134246	\$15,020,705	-\$5,426,793
Total Energy Charge - Summer					\$48,509,790		\$35,635,227	-\$12,874,563
Water Heating Energy Charge			37,346,141	\$0.0182747	\$682,491	\$0.0134246	\$501,357	-\$181,134
Total RR Revenues before Riders		<u>5,627,434</u>	<u>6,778,644,349</u>		<u>\$171,148,413</u>		<u>\$166,408,205</u>	<u>-\$4,740,209</u>

## Current Rates with Billing Units from Case No. 11-351-EL-AIR Schedule E-4.1

## Revenue-neutral Rate Redesign

Rate Code (1)	Class/ Descript. (2)	Customer Bills (3)	Sales KW / KWH (4)	Current Rate (5)	Current Annualized Revenue (6)	Proposed Revenue Neutral Rate (7)	Proposed Revenue (8)	Difference from Current Revenue (9)
Schedule RR1	Residential Small Use Load Management Service							
Tariff: 014	14							
<u>Distribution Charges</u>								
Customer Charge:								
Bills		2,218,108		\$8.40	\$18,632,107	\$13.40	\$29,722,647	\$11,090,540
Energy Charge - Summer:								
First 700 kWh per month			235,269,047	\$0.0182747	\$4,299,481	\$0.0134246	\$3,158,393	-\$1,141,088
Energy Charge - Winter:								
First 700 kWh per month			584,306,088	\$0.0182747	\$10,678,042	\$0.0134246	\$7,844,076	-\$2,833,967
For the next 100 kWh per month			20,481,755	\$0.0182747	\$374,299	\$0.0134246	\$274,959	-\$99,339
All Excess kWh per month			140,025,233	\$0.0182747	\$2,558,925	\$0.0134246	\$1,879,783	-\$679,142
Total Energy Charge - Winter					\$13,611,266		\$9,998,818	-\$3,612,448
Water Heating Energy Charge			8,441,238	\$0.0182747	\$154,261	\$0.0134246	\$113,320	-\$40,941
Total RR1 Revenues before Riders		<u>2,218,108</u>	<u>988,523,361</u>		<u>\$36,697,115</u>		<u>\$42,993,178</u>	<u>\$6,296,063</u>

## Current Rates with Billing Units from Case No. 11-351-EL-AIR Schedule E-4.1

## Revenue-neutral Rate Redesign

Rate Code (1)	Class/ Descript. (2)	Customer Bills (3)	Sales KW / KWH (4)	Current Rate (5)	Current Annualized Revenue (6)	Proposed Revenue Neutral Rate (7)	Proposed Revenue (8)	Difference from Current Revenue (9)
Schedule RLM Residential Optional Demand Service Tariff: 019								
<u>Distribution Charges</u>								
Customer Charge:								
Bills		846		\$8.90	\$7,529	\$13.90	\$11,759	\$4,230
Energy Charge - Winter:								
First 750 kWh			430,162	\$0.0182747	\$7,861	\$0.0134246	\$5,775	-\$2,086
Next 150 kWh in excess of 5 kW demand			1,710,752	\$0.0182747	\$31,264	\$0.0134246	\$22,966	-\$8,297
Excess kWh			2,030,550	\$0.0182747	\$37,108	\$0.0134246	\$27,259	-\$9,848
Total Energy Charge - Winter					\$76,232		\$56,000	-\$20,232
Energy Charge - Summer:								
First 750 kWh			206,781	\$0.0182747	\$3,779	\$0.0134246	\$2,776	-\$1,003
Next 150 kWh in excess of 5 kW demand			837,934	\$0.0182747	\$15,313	\$0.0134246	\$11,249	-\$4,064
Excess kWh			1,151,493	\$0.0182747	\$21,043	\$0.0134246	\$15,458	-\$5,585
Total Energy Charge - Summer					\$40,135		\$29,483	-\$10,652
Demand Charge								
			22,341	\$0.00	\$0	\$0.00	\$0	\$0
Storage Water Heating Energy Charge								
			3,687	\$0.0182747	\$67	\$0.0134246	\$49	-\$18
Total RLM Revenues before Riders		846	6,371,359		\$123,964		\$97,292	-\$26,672



Current Rates with Billing Units from Case No. 11-351-EL-AIR Schedule E-4.1						Revenue-neutral Rate Redesign		
Rate Code (1)	Class/ Descript. (2)	Customer Bills (3)	Sales KW / KWH (4)	Current Rate (5)	Current Annualized Revenue Less Gas or Fuel Cost Revenue (6)	Proposed Revenue Neutral Rate (7)	Proposed Revenue (8)	Difference from Current Revenue (9)
Schedule RS-ES Residential Energy Storage Tariff: 032								
<u>Distribution Charges</u>								
Customer Charge:		24		\$9.25	\$222	\$14.25	\$342	\$120
Energy Charge:								
On-Peak			7,314	\$0.0182747	\$134	\$0.0134246	\$98	-\$35
Off-Peak			9,550	\$0.0182747	\$175	\$0.0134246	\$128	-\$46
Total					\$308		\$226	-\$82
Total RS-ES Revenue Before Riders		24	16,864		\$530		\$568	\$38

## Current Rates with Billing Units from Case No. 11-351-EL-AIR Schedule E-4.1

## Revenue-neutral Rate Redesign

Rate Code (1)	Class/ Descript. (2)	Customer Bills (3)	Sales KW / KWH (4)	Current Rate (5)	Current Annualized Revenue Less Gas or Fuel Cost Revenue (6)	Proposed Revenue Neutral Rate (7)	Proposed Revenue (8)	Difference from Current Revenue (9)
Schedule RS-TOD Residential Time of Day Tariff: 030								
<u>Distribution Charges:</u>								
Customer Charge		76		\$9.25	\$703	\$14.25	\$1,083	\$380
Energy Charge:								
On-Peak			20,738	\$0.0182747	\$379	\$0.0134246	\$278	-\$101
Off-Peak			44,301	\$0.0182747	\$810	\$0.0134246	\$595	-\$215
Total					\$1,189		\$873	-\$315
Total RS-TOD Revenue Before Riders		76	65,039		\$1,892		\$1,956	\$65

## Current Rates with Billing Units from Case No. 11-351-EL-AIR Schedule E-4.1

## Revenue-neutral Rate Redesign

Rate Code (1)	Class/ Descript. (2)	Customer Bills (3)	Sales KW / KWH (4)	Current Rate (5)	Current Annualized Revenue (6)	Proposed Revenue Neutral Rate (7)	Proposed Revenue (8)	Difference from Current Revenue (9)
Schedule RS Residential Service Tariffs: 001, 003, 004, 005, 007, 008, 015, 017, 022, 038, 062								
<u>Distribution Charges</u>								
Customer Charge:								
Bills		7,207,281		\$8.40	\$60,541,160	\$13.40	\$96,577,565	\$36,036,405
Energy Charge:								
First 800 kWh			4,620,925,075	\$0.0182747	\$84,446,208	\$0.0134246	\$62,034,071	-\$22,412,137
All Excess kWh			2,980,891,915	\$0.0182747	\$54,475,027	\$0.0134246	\$40,017,282	-\$14,457,745
Total Energy Charge					\$138,921,234		\$102,051,352	-\$36,869,882
Storage Water Heater Energy Charge			139,400,516	\$0.0182747	\$2,547,508	\$0.0134246	\$1,871,396	-\$676,112
Total RS Revenue Before Riders		<u>7,207,281</u>	<u>7,741,217,506</u>		<u>\$202,009,903</u>		<u>\$200,500,314</u>	<u>-\$1,509,589</u>

Current Rates with Billing Units from Case No. 11-351-EL-AIR Schedule E-4.1

Revenue-neutral Rate Redesign

Rate Code (1)	Class/ Descript. (2)	Customer Bills (3)	Sales KW / KWH (4)	Current Rate (5)	Current Annualized Revenue (6)	Proposed Revenue Neutral Rate (7)	Proposed Revenue (8)	Difference from Current Revenue (9)
Schedule RS-TOD	Residential - Time of Day Service							
Schedule RS-ES	Residential - Energy Storage							
Tariffs: 030, 032, 034								
<u>Distribution Charges</u>								
Customer Charge:								
Bills		4,902		\$9.25	\$45,344	\$14.25	\$69,854	\$24,510
Energy Charge:								
On-Peak			2,696,466	\$0.0182747	\$49,277	\$0.0134246	\$36,199	-\$13,078
Off-Peak			6,657,564	\$0.0182747	\$121,665	\$0.0134246	\$89,375	-\$32,290
Total					\$170,942		\$125,574	-\$45,368
Total RS-TOD, ES Revenue Before Riders		4,902	9,354,030		\$216,286		\$195,428	-\$20,858

## Current Rates with Billing Units from Case No. 11-351-EL-AIR Schedule E-4.1

## Revenue-neutral Rate Redesign

Rate Code (1)	Class/ Descript. (2)	Customer Bills (3)	Sales KW / KWH (4)	Current Rate (5)	Current Annualized Revenue (6)	Proposed Revenue Neutral Rate (7)	Proposed Revenue (8)	Difference from Current Revenue (9)
Schedule RR Tariff: 013	Residential Service							
<u>Distribution Charges</u>								
Customer Charge:								
Bills		5,627,434		\$8.40	\$47,270,446	\$18.40	\$103,544,786	\$56,274,340
Energy Charge - Winter								
First 800 kWh per month			2,500,491,683	\$0.0182747	\$45,695,837	\$0.0085745	\$21,440,466	-\$24,255,371
All Excess kWh per month			1,586,334,371	\$0.0182747	\$28,989,849	\$0.0085745	\$13,602,024	-\$15,387,825
Total Energy Charge - Winter					\$74,685,686		\$35,042,490	-\$39,643,196
Energy Charge - Summer:								
First 800 kWh per month			1,535,578,135	\$0.0182747	\$28,062,292	\$0.0085745	\$13,166,815	-\$14,895,478
All Excess kWh per month			1,118,894,019	\$0.0182747	\$20,447,498	\$0.0085745	\$9,593,957	-\$10,853,541
Total Energy Charge - Summer					\$48,509,790		\$22,760,771	-\$25,749,019
Water Heating Energy Charge			37,346,141	\$0.0182747	\$682,491	\$0.0085745	\$320,224	-\$362,267
Total RR Revenues before Riders		<u>5,627,434</u>	<u>6,778,644,349</u>		<u>\$171,148,413</u>		<u>\$161,668,272</u>	<u>-\$9,480,142</u>

## Current Rates with Billing Units from Case No. 11-351-EL-AIR Schedule E-4.1

## Revenue-neutral Rate Redesign

Rate Code (1)	Class/ Descript. (2)	Customer Bills (3)	Sales KW / KWH (4)	Current Rate (5)	Current Annualized Revenue (6)	Proposed Revenue Neutral Rate (7)	Proposed Revenue (8)	Difference from Current Revenue (9)
Schedule RR1	Residential Small Use Load Management Service							
Tariff: 014	14							
<u>Distribution Charges</u>								
Customer Charge:								
Bills		2,218,108		\$8.40	\$18,632,107	\$18.40	\$40,813,187	\$22,181,080
Energy Charge - Summer:								
First 700 kWh per month			235,269,047	\$0.0182747	\$4,299,481	\$0.0085745	\$2,017,314	-\$2,282,166
Energy Charge - Winter:								
First 700 kWh per month			584,306,088	\$0.0182747	\$10,678,042	\$0.0085745	\$5,010,133	-\$5,667,910
For the next 100 kWh per month			20,481,755	\$0.0182747	\$374,299	\$0.0085745	\$175,621	-\$198,678
All Excess kWh per month			140,025,233	\$0.0182747	\$2,558,925	\$0.0085745	\$1,200,646	-\$1,358,278
Total Energy Charge - Winter					\$13,611,266		\$6,386,400	-\$7,224,866
Water Heating Energy Charge			8,441,238	\$0.0182747	\$154,261	\$0.0085745	\$72,379	-\$81,882
Total RR1 Revenues before Riders		<u>2,218,108</u>	<u>988,523,361</u>		<u>\$36,697,115</u>		<u>\$49,289,281</u>	<u>\$12,592,165</u>

## Current Rates with Billing Units from Case No. 11-351-EL-AIR Schedule E-4.1

## Revenue-neutral Rate Redesign

Rate Code (1)	Class/ Descript. (2)	Customer Bills (3)	Sales KW / KWH (4)	Current Rate (5)	Current Annualized Revenue (6)	Proposed Revenue Neutral Rate (7)	Proposed Revenue (8)	Difference from Current Revenue (9)
Schedule RLM Residential Optional Demand Service Tariff: 019								
<u>Distribution Charges</u>								
Customer Charge:								
Bills		846		\$8.90	\$7,529	\$18.90	\$15,989	\$8,460
Energy Charge - Winter:								
First 750 kWh			430,162	\$0.0182747	\$7,861	\$0.0085745	\$3,688	-\$4,173
Next 150 kWh in excess of 5 kW demand			1,710,752	\$0.0182747	\$31,264	\$0.0085745	\$14,669	-\$16,595
Excess kWh			2,030,550	\$0.0182747	\$37,108	\$0.0085745	\$17,411	-\$19,697
Total Energy Charge - Winter					\$76,232		\$35,768	-\$40,464
Energy Charge - Summer:								
First 750 kWh			206,781	\$0.0182747	\$3,779	\$0.0085745	\$1,773	-\$2,006
Next 150 kWh in excess of 5 kW demand			837,934	\$0.0182747	\$15,313	\$0.0085745	\$7,185	-\$8,128
Excess kWh			1,151,493	\$0.0182747	\$21,043	\$0.0085745	\$9,873	-\$11,170
Total Energy Charge - Summer					\$40,135		\$18,831	-\$21,304
Demand Charge			22,341	\$0.00	\$0	\$0.00	\$0	\$0
Storage Water Heating Energy Charge			3,687	\$0.0182747	\$67	\$0.0085745	\$32	-\$36
Total RLM Revenues before Riders		846	6,371,359		\$123,964		\$70,621	-\$53,344

Current Rates with Billing Units from Case No. 11-351-EL-AIR Schedule E-4.1						Revenue-neutral Rate Redesign		
Rate Code (1)	Class/ Descript. (2)	Customer Bills (3)	Sales KW / KWH (4)	Current Rate (5)	Current Annualized Revenue Less Gas or Fuel Cost Revenue (6)	Proposed Revenue Neutral Rate (7)	Proposed Revenue (8)	Difference from Current Revenue (9)
Schedule RS-ES Residential Energy Storage Tariff: 032								
<u>Distribution Charges</u>								
Customer Charge:		24		\$9.25	\$222	\$19.25	\$462	\$240
Energy Charge:								
On-Peak			7,314	\$0.0182747	\$134	\$0.0085745	\$63	-\$71
Off-Peak			9,550	\$0.0182747	\$175	\$0.0085745	\$82	-\$93
Total					\$308		\$145	-\$164
Total RS-ES Revenue Before Riders		24	16,864		\$530		\$607	\$76



## Current Rates with Billing Units from Case No. 11-351-EL-AIR Schedule E-4.1

## Revenue-neutral Rate Redesign

Rate Code (1)	Class/ Descript. (2)	Customer Bills (3)	Sales KW / KWH (4)	Current Rate (5)	Current Annualized Revenue Less Gas or Fuel Cost Revenue (6)	Proposed Revenue Neutral Rate (7)	Proposed Revenue (8)	Difference from Current Revenue (9)
Schedule RS-TOD Residential Time of Day Tariff: 030								
<u>Distribution Charges:</u>								
Customer Charge		76		\$9.25	\$703	\$19.25	\$1,463	\$760
Energy Charge:								
On-Peak			20,738	\$0.0182747	\$379	\$0.0085745	\$178	-\$201
Off-Peak			44,301	\$0.0182747	\$810	\$0.0085745	\$380	-\$430
Total					\$1,189		\$558	-\$631
Total RS-TOD Revenue Before Riders		76	65,039		\$1,892		\$2,021	\$129

## Current Rates with Billing Units from Case No. 11-351-EL-AIR Schedule E-4.1

## Revenue-neutral Rate Redesign

Rate Code (1)	Class/ Descript. (2)	Customer Bills (3)	Sales KW / KWH (4)	Current Rate (5)	Current Annualized Revenue (6)	Proposed Revenue Neutral Rate (7)	Proposed Revenue (8)	Difference from Current Revenue (9)
Schedule RS Residential Service Tariffs: 001, 003, 004, 005, 007, 008, 015, 017, 022, 038, 062								
<u>Distribution Charges</u>								
Customer Charge:								
Bills		7,207,281		\$8.40	\$60,541,160	\$18.40	\$132,613,970	\$72,072,810
Energy Charge:								
First 800 kWh			4,620,925,075	\$0.0182747	\$84,446,208	\$0.0085745	\$39,622,122	-\$44,824,086
All Excess kWh			2,980,891,915	\$0.0182747	\$54,475,027	\$0.0085745	\$25,559,658	-\$28,915,369
Total Energy Charge					\$138,921,234		\$65,181,780	-\$73,739,455
Storage Water Heater Energy Charge			139,400,516	\$0.0182747	\$2,547,508	\$0.0085745	\$1,195,290	-\$1,352,219
Total RS Revenue Before Riders		<u>7,207,281</u>	<u>7,741,217,506</u>		<u>\$202,009,903</u>		<u>\$198,991,040</u>	<u>-\$3,018,863</u>

Current Rates with Billing Units from Case No. 11-351-EL-AIR Schedule E-4.1

Revenue-neutral Rate Redesign

Rate Code (1)	Class/ Descript. (2)	Customer Bills (3)	Sales KW / KWH (4)	Current Rate (5)	Current Annualized Revenue (6)	Proposed Revenue Neutral Rate (7)	Proposed Revenue (8)	Difference from Current Revenue (9)
Schedule RS-TOD	Residential - Time of Day Service							
Schedule RS-ES	Residential - Energy Storage							
Tariffs: 030, 032, 034								
<u>Distribution Charges</u>								
Customer Charge:								
Bills		4,902		\$9.25	\$45,344	\$19.25	\$94,364	\$49,020
Energy Charge:								
On-Peak			2,696,466	\$0.0182747	\$49,277	\$0.0085745	\$23,121	-\$26,156
Off-Peak			6,657,564	\$0.0182747	\$121,665	\$0.0085745	\$57,085	-\$64,580
Total					\$170,942		\$80,206	-\$90,736
Total RS-TOD, ES Revenue Before Riders		4,902	9,354,030		\$216,286		\$174,570	-\$41,716

**This foregoing document was electronically filed with the Public Utilities**

**Commission of Ohio Docketing Information System on**

**11/23/2016 2:17:26 PM**

**in**

**Case No(s). 16-1852-EL-SSO, 16-1853-EL-AAM**

Summary: Text - Workpapers of David Gill of Ohio Power Company electronically filed by Mr. Steven T Nourse on behalf of Ohio Power Company