

**PUBLIC UTILITIES REGULATORY COMMISSION  
PROPOSAL FOR REVIEW OF VRA's ELECTRICAL ENERGY GENERATION  
REVENUE REQUIREMENT AND TARIFF  
APRIL 2022**

## **INTRODUCTION**

This Tariff Proposal is in accordance with the PURC Act, 1997 (Act 538), as amended, (Sections 16, 17 and 18) and PURC Electricity Rate Setting Guidelines. This proposal seeks to request the PURC to approve power tariffs for Electricity Distribution Companies (DISCOs) and prices for reactive power compensation

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Summary of Forecast Demand by Bulk Customer

Bulk Customer	Unit	Period/Year					
		2022	2023	2024	2025	2026	2027
<b>Distribution Customers and Others:</b>							
ECG	GWh	4,861	5,194	5,514	5,250	4,443	4,647
NEDCo	GWh	1,927	2,048	2,180	2,316	2,485	2,701
Enclave Power Company (Including EPZ) - Regulated	GWh	239	239	239	239	239	239
<b>Total Demand</b>		<b>7,028</b>	<b>7,481</b>	<b>7,933</b>	<b>7,804</b>	<b>7,167</b>	<b>7,586</b>

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 Summary of Forecast Electrical Energy Supply By Power Plant and Bulk Customer

Power Plant	Forecast Supply (GWh)		Period/Year				
	2022	2023	2024	2025	2026	2027	
<b>Projected Supply:</b>							
<b>Akosombo Hydroelectric GS:</b>	<b>3,525</b>	<b>3,308</b>	<b>3,145</b>	<b>2,874</b>	<b>2,874</b>	<b>2,874</b>	
Full/Portion of Plant Allocated to DisCo:							
ECG	3,072	2,883	2,741	2,505	2,505	2,505	
NEDCo	369	346	329	301	301	301	
EPC	84	79	75	69	69	69	
Others	0	0	0	0	0	0	
<b>Kpong Hydroelectric GS:</b>	<b>645</b>	<b>605</b>	<b>575</b>	<b>526</b>	<b>526</b>	<b>526</b>	
Full/Portion of Plant Allocated to DisCo:							
ECG	562	528	502	459	459	459	
NEDCo	67	63	60	55	55	55	
EPC	15	14	14	12	12	12	
Others	0	0	0	0	0	0	
<b>Total VRA Hydroelectric Generation</b>	<b>4,169</b>	<b>3,913</b>	<b>3,720</b>	<b>3,400</b>	<b>3,400</b>	<b>3,400</b>	
<b>Existing VRA Thermal Generation:</b>							
<b>T1 - Combined Cycle:</b>	<b>2,003</b>	<b>1,999</b>	<b>1,999</b>	<b>1,999</b>	<b>1,999</b>	<b>1,999</b>	
Full/Portion of Plant Allocated to DisCo:							
ECG	873	722	709	574	743	896	
NEDCo	1,129	1,277	1,289	1,424	1,255	1,102	
EPC	0	0	0	0	0	0	
Others	0	0	0	0	0	0	
<b>TT1PS:</b>	<b>348</b>	<b>348</b>	<b>487</b>	<b>521</b>	<b>860</b>	<b>1,229</b>	
Full/Portion of Plant Allocated to DisCo:							
ECG	0	0	0	0	0	0	
NEDCo	348	348	487	521	860	1229	
EPC	0	0	0	0	0	0	
Others	0	0	0	0	0	0	

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Summary of Forecast Electrical Energy Supply By Power Plant and Bulk Customer

Power Plant	Forecast Supply (GWh)		Period/Year			
	2022	2023	2024	2025	2026	2027
<b>Kpone Thermal (KTPS):</b>	<b>139</b>	<b>146</b>	<b>150</b>	<b>158</b>	<b>158</b>	<b>158</b>
Full/Portion of Plant Allocated to DisCo:						
ECG	0	0	0	0	0	0
NEDCo	0	0	0	0	0	0
EPC	139	146	150	158	158	158
Others						
<b>AMERI:</b>	<b>354</b>	<b>1,062</b>	<b>1,563</b>	<b>1,713</b>	<b>737</b>	<b>787</b>
Full/Portion of Plant Allocated to DisCo:						
ECG	354	1,062	1,563	1,713	737	787
NEDCo	0	0	0	0	0	0
EPC	0	0	0	0	0	0
Others	0	0	0	0	0	0
<b>Total Existing Thermal Generation</b>	<b>2,844</b>	<b>3,554</b>	<b>4,198</b>	<b>4,390</b>	<b>3,753</b>	<b>4,172</b>
<b>VRA Renewable Plants:</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>
Navrongo Solar Plant	3	3	3	3	3	3
Lawra	12	12	12	12	12	12
<b>Total VRA Renewable Generation</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>
<b>Total VRA Hydro Generation</b>	<b>4,169</b>	<b>3,913</b>	<b>3,720</b>	<b>3,400</b>	<b>3,400</b>	<b>3,400</b>
<b>Total VRA Non-Hydro Generation</b>	<b>2,859</b>	<b>3,569</b>	<b>4,213</b>	<b>4,405</b>	<b>3,768</b>	<b>4,187</b>
<b>Total VRA Supply</b>	<b>7,028</b>	<b>7,481</b>	<b>7,933</b>	<b>7,804</b>	<b>7,167</b>	<b>7,586</b>



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Summary of Proposed Tariffs By Power Plant and Bulk Customer

Power Plant	Unit	2022	2023	2024	2025	2026	2027
		<b>VRA Hydroelectric Generation:</b>					
Read Comment							
<b>Akosombo Hydroelectric GS:</b>							
Capital Recovery Charge (CRC)	USCents/kWh	1.4800	1.4682	1.4667	1.5089	1.5221	1.5383
Fixed Operation and Maintenance Charge (FOMC)	USCents/kWh	1.0571	1.2065	1.3253	1.6100	1.5500	1.8344
Fuel Recovery Charge (FRC):	USCents/kWh	n/a	n/a	n/a	n/a	n/a	n/a
Water (Abstraction Fee Payable to Water Resources Commission)	USCents/kWh						
Non-Fuel Variable Operation and Maintenance Charge (NFVOM)	USCents/kWh	0.0146	0.0157	0.0170	0.0186	0.0197	0.0216
<b>Kpong Hydroelectric GS:</b>							
Capital Recovery Charge (CRC)	USCents/kWh	3.9126	3.8539	3.8377	3.7955	3.7957	3.7958
Fixed Operation and Maintenance Charge (FOMC)	USCents/kWh	1.0079	1.1390	1.2479	1.4893	1.4653	1.7131
Fuel Recovery Charge (FRC):	USCents/kWh	n/a	n/a	n/a	n/a	n/a	n/a
Water (Abstraction Fee Payable to Water Resources Commission)	USCents/kWh						
Non-Fuel Variable Operation and Maintenance Charge (NFVOM)	USCents/kWh	0.0170	0.0183	0.0198	0.0217	0.0232	0.0255
<b>Existing VRA Thermal Generation:</b>							
<b>T1 - Combined Cycle:</b>							
Capital Recovery Charge (CRC)	USCents/kWh	2.1622	2.3563	1.9925	1.9428	1.9149	1.8865
Fixed Operation and Maintenance Charge (FOMC)	USCents/kWh	0.9769	1.1081	1.0199	1.1844	1.3299	1.5645
Fuel Recovery Charge (FRC):	USCents/kWh						
Natural Gas (WACOG)	USCents/kWh	5.0268	5.0394	5.0520	5.0646	5.0773	5.0900
LCO	USCents/kWh	11.5294	10.2745	11.3119	11.7878	12.3441	12.9606
Non-Fuel Variable Operation and Maintenance Charge (NFVOM)	USCents/kWh	0.0264	0.0285	0.0259	0.0282	0.0310	0.0341

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Summary of Proposed Tariffs By Power Plant and Bulk Customer

Power Plant	Unit	2022	2023	2024	2025	2026	2027
		<b>TT1PP:</b>					
Capital Recovery Charge (CRC)	USCents/kWh	3.0356	2.7345	2.4780	2.2599	2.0666	1.8706
Fixed Operation and Maintenance Charge (FOMC)	USCents/kWh	0.7918	0.8981	0.9850	1.1438	1.2843	1.5109
Fuel Recovery Charge (FRC):	USCents/kWh						
Natural Gas (WACOG)	USCents/kWh	7.3198	7.3381	7.3564	7.3748	7.3933	7.4117
LCO	USCents/kWh	n/a	n/a	n/a	n/a	n/a	n/a
Non-Fuel Variable Operation and Maintenance Charge (NFVOM)	USCents/kWh	0.0214	0.0231	0.0250	0.0272	0.0299	0.0329
<b>Takoradi 3 (T3):</b>							
Capital Recovery Charge (CRC)	USCents/kWh	n/a	1.1200	1.0920	1.0799	1.0799	1.0799
Fixed Operation and Maintenance Charge (FOMC)	USCents/kWh	n/a	1.6982	1.8624	2.1628	2.4283	2.8568
Fuel Recovery Charge (FRC):	USCents/kWh						
Natural Gas (WACOG)	USCents/kWh	n/a	5.1149	5.1277	5.1405	5.1534	5.1663
LCO	USCents/kWh	n/a	n/a	n/a	n/a	n/a	n/a
Non-Fuel Variable Operation and Maintenance Charge (NFVOM)	USCents/kWh	n/a	0.0437	0.0473	0.0514	0.0566	0.0622
<b>Kpone Thermal (KTPS):</b>							
Capital Recovery Charge (CRC)	USCents/kWh	1.3774	2.0475	3.0361	2.6928	3.4534	4.1754
Fixed Operation and Maintenance Charge (FOMC)	USCents/kWh	0.8386	0.9512	1.0432	0.8070	0.9061	1.0660
Fuel Recovery Charge (FRC):	USCents/kWh						
Natural Gas (WACOG)	USCents/kWh	7.2322	7.2503	5.0752	5.0879	5.1006	5.1134
Diesel	USCents/kWh	27.9875	26.6459	19.4071	19.4014	19.4242	19.5546
Non-Fuel Variable Operation and Maintenance Charge (NFVOM)	USCents/kWh	0.0227	0.0245	0.0265	0.0192	0.0211	0.0232



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**Summary of Proposed Tariffs By Power Plant and Bulk Customer**

<b>Power Plant</b>	<b>Unit</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>
<b>AMERI:</b>							
Capital Recovery Charge (CRC)	USCents/kWh	0.8736	0.8736	0.8736	0.8736	0.8736	0.8736
Fixed Operation and Maintenance Charge (FOMC)	USCents/kWh	0.7263	0.7353	0.7443	0.7535	0.7627	0.7721
Fuel Recovery Charge (FRC):	USCents/kWh						
Natural Gas (WACOG)	USCents/kWh	6.9482	6.9656	6.9830	7.0004	7.0179	7.0355
Non-Fuel Variable Operation and Maintenance Charge (NFVOM)	USCents/kWh	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
<b>VRA Renewable Plants:</b>							
Navrongo Solar Plant	USCents/kWh	13.0459	12.5615	12.2479	12.1118	12.1118	12.1118
Lawra Solar Plant	USCents/kWh	9.0000	9.0000	9.0000	9.0000	9.0000	9.0000

**Notes:**

The Plant Costs in UScents per kwh have been derived based on the firm outputs of plants in most cases and not the planned generation

A gas price of 6.08 was used for the Plant fuel costs to prevent any ambiguity.