Duke Energy Carolinas, LLC
North Carolina Annual Fuel and Fuel Related Expense
Calculation of Fuel and Fuel Related Cost Factors Using:
Proposed Nuclear Capacity Factor of 93.52%
Test Period Ended December 31, 2022
Billing Period September 2023 - August 2024
Docket E-7, Sub 1282

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Line #	Unit	Reference	Generation (MWh)	Unit Cost (cents/kWh)	Fuel Cost (\$)
			D	E	D * E = F
1	Total Nuclear	Workpaper 1	58,819,128	0.5613	330,162,771
2	Coal	Workpaper 3 & 4	10,320,159	3.8575	398,104,637
3	Gas CT and CC	Workpaper 3 & 4	31,212,640	3.7804	1,179,963,909
4	Reagents and Byproducts	Workpaper 9		_	24,944,696
5	Total Fossil	Sum	41,532,800		1,603,013,242
6	Hydro	Workpaper 3	5,600,555		
7	Net Pumped Storage	Workpaper 3	(4,083,743)		
8	Total Hydro	Sum	1,516,812		-
9	Solar Distributed Generation	Workpaper 3	358,121		-
		Line 1 + Line 5 + Line 8 +			
10	Total Generation	Line 9	102,226,860		1,933,176,012
11	Less Lee CC Joint Owners	Workpaper 3 & 4	(878,400)		(25,697,152)
12	Less Catawba Joint Owners	Workpaper 3 & 4	(14,888,880)		(83,614,236)
13	Fuel expense recovered through reimbursement	Workpaper 4			(3,687,381)
14	Net Generation	Sum Lines 10-13	86,459,580		1,820,177,243
15	Purchased Power	Workpaper 3 & 4	11,789,258	3.5185	414,804,733
16	JDA Savings Shared	Workpaper 5		_	(69,598,371)
17	Total Purchased Power		11,789,258		345,206,362
18	Total Generation and Purchased Power	Line 14 + Line 17	98,248,839	2.2040	2,165,383,605
19	Fuel expense recovered through intersystem sales	Workpaper 3 & 4	(1,148,043)	5.0520	(57,998,825)
20	Line losses and Company use	Line 22-Line 18-Line 19	(6,269,005)		-
21	System Fuel Expense for Fuel Factor	Lines 18 + 19 + 20			2,107,384,780
22	Projected System MWh Sales for Fuel Factor	Workpaper 7	90,831,791		90,831,791
23	Fuel and Fuel Related Costs cents/kWh	Line 21 / Line 22 / 10			2.3201

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Line #	Description	Reference	Residential	GS/Lighting	Industrial	Total
1	NC Projected Billing Period MWh Sales	Workpaper 7	23,477,265	24,077,007	13,270,457	60,824,730
Calcula	tion of Renewable and Cogeneration Purchased Power Capacity Rate by Class					<u>Amount</u>
2	Purchased Power for REPS Compliance - Capacity	Workpaper 4				\$ 14,931,581
3	QF Purchased Power - Capacity	Workpaper 4			_	12,176,644
4	Total of Renewable and QF Purchased Power Capacity	Line 2 + Line 3				\$ 27,108,225
5	NC Portion - Jursidicational % based on 2021 Production Plant Allocator	Input			•	66.68%
6	NC Renewable and QF Purchased Power - Capacity	Line 4 * Line 5			•	\$ 18,076,112
7	2021 Production Plant Allocation Factors	Input	47.04%	37.14%	15.81%	100.00%
8	Renewable and QF Purchased Power - Capacity allocated on 2021 Production Plant Allocator	Line 6 * Line 7	\$ 8,503,847	\$ 6,713,696 \$	2,858,570	\$ 18,076,112
9	Renewable and QF Purchased Power - Capacity cents/kWh based on Projected Billing Period Sales	Line 8 / Line 1 / 10	0.0362	0.0279	0.0215	0.0297
Summa	ry of Total Rate by Class					
10	Fuel and Fuel Related Costs excluding Purchased Power for REPS Compliance and QF Purchased Capacity cents/kWh	Line 15 - Line 11 - Line 13 - Line 14	2.6764	2.2274	1.6912	2.2905
11	REPS Compliance and QF Purchased Power - Capacity cents/kWh	Line 9	0.0362	0.0279	0.0215	0.0297
12	Total adjusted Fuel and Fuel Related Costs cents/kWh	Line 10 + Line 11	2.7126	2.2553	1.7127	2.3202
13	EMF Increment (Decrement) cents/kWh	Exh 3 pg 2, 3, 4	1.6644	1.6649	1.7267	1.6774
14	EMF Interest Increment (Decrement) cents/kWh	Exh 3 pg 2, 3, 4		<u>-</u>	-	<u>-</u>
15	Net Fuel and Fuel Related Costs Factors cents/kWh	Exh 2 Sch 1 Page 3	4.3770	3.9202	3.4394	3.9976

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Line #	Rate Class	Projected Billing Period MWh Sales		ual Revenue at Jurrent rates	Allocate Fuel Costs Increase/(Decrease) to Customer Class	Increase/(Decrease) as % of Annual Revenue at Current Rates	Total Fuel Rate Increase/(Decrease)	Current Total Fuel Rate (including Capacity and EMF) E-7, Sub 1263	Proposed Total Fuel Rate (including Capacity and EMF)
		Α		В	С	D	Е	F	G
		Workpaper 7		Workpaper 8	Line 25 as a % of Column B	C/B	If D=0 then 0 if not then (C*100)/(A*1000)	Clark Exhibit 1	E + F = G
	Residential	23,477,265	ć	2 466 604 245	\$ 443,824,801	17.99%	1.8904	2.4866	4.3770
1 2	General Service/Lighting	24,077,007		2,466,691,215 1,971,226,718	354,677,270	17.99%	1.4731	2.4471	3.9202
3		13,270,457		757,602,036	136,313,200	17.99%	1.0272	2.4471	3.4394
4	Industrial NC Retail	60,824,730	\$	5,195,519,969		17.99%	1.0272	2.4122	3.4354
	Total Proposed Composite Fuel Rate:								
5	Total Fuel Costs for Allocation	Workpaper 7	\$	2,111,780,996					
6	Total of Renewable and QF Purchased Power Capacity	Exhibit 2 Sch 1, Page 2		27,108,225					
7	System Other Fuel Costs	Line 5 - Line 6	\$	2,084,672,770	•				
8	Adjusted Projected System MWh Sales for Fuel Factor	Workpaper 7		91,011,082					
9	NC Retail Projected Billing Period MWh Sales	Line 4		60,824,730					
10	Allocation %	Line 9 / Line 8		66.83%	•				
11	NC Retail Other Fuel Costs	Line 7 * Line 10	\$	1,393,186,813					
12	NC Renewable and QF Purchased Power - Capacity	Exhibit 2 Sch 1, Page 2		18,076,112	_				
13	NC Retail Total Fuel Costs	Line 11 + Line 12	\$	1,411,262,925					
14	NC Retail Projected Billing Period MWh Sales	Line 4		60,824,730					
15	Calculated Fuel Rate cents/kWh	Line 13 / Line 14 / 10		2.3202					
16	Proposed Composite EMF Rate cents/kWh	Exhibit 3 Page 1		1.6774					
17	Proposed Composite EMF Rate Interest cents/kWh	Exhibit 3 Page 1		0.0000	_				
18	Total Proposed Composite Fuel Rate	Sum		3.9976					
	Total Current Composite Fuel Rate - Docket E-7 Sub 1263:								
19	Current composite Fuel Rate cents/kWh	Clark Exhibit 1		1.9010					
20	Current composite EMF Rate cents/kWh	Clark Exhibit 1		0.5597					
21	Current composite EMF Interest Rate cents/kWh	Clark Exhibit 1		0.0000	_				
22	Total Current Composite Fuel Rate	Sum		2.4607					
23	Increase/(Decrease) in Composite Fuel rate cents/kWh	Line 18 - Line 22		1.5369					
24	NC Retail Projected Billing Period MWh Sales	Line 4		60,824,730					
25	Increase/(Decrease) in Fuel Costs	Line 23 * Line 24 * 10	\$	934,815,272					
	Note: Rounding differences may occur								

Duke Energy Carolinas, LLC
North Carolina Annual Fuel and Fuel Related Expense
Calculation of Fuel and Fuel Related Cost Factors Using:
Proposed Nuclear Capacity Factor of 93.52% and Normalized Test Period Sales
Test Period Ended December 31, 2022
Billing Period September 2023 - August 2024
Docket E-7, Sub 1282

Note: Rounding differences may occur

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Line #	Unit	Reference	Generation (MWh)	Unit Cost (cents/kWh)	Fuel Cost (\$)
			D	E	D * E = F
1	Total Nuclear	Workpaper 1	58,819,128	0.5613	330,162,771
2	Coal	Calculated	8,369,573	3.8575	322,859,932
3	Gas CT and CC	Workpaper 3 & 4	31,212,640	3.7804	1,179,963,909
4	Reagents and Byproducts	Workpaper 9		_	24,944,696
5	Total Fossil	Sum	39,582,214		1,527,768,538
6	Hydro	Workpaper 3	5,600,555		
7	Net Pumped Storage	Workpaper 3	(4,083,743)		
8	Total Hydro	Sum	1,516,812		
9	Solar Distributed Generation	Workpaper 3	358,121		
		Line 1 + Line 5 + Line 8 +			
10	Total Generation	Line 9	100,276,274		1,857,931,308
11	Less Lee CC Joint Owners	Workpaper 3 & 4	(878,400)		(25,697,152)
12	Less Catawba Joint Owners	Workpaper 3 & 4	(14,888,880)		(83,614,236)
13	Fuel expense recovered through reimbursement	Workpaper 4		_	(3,687,381)
14	Net Generation	Sum	84,508,994		1,744,932,539
15	Purchased Power	Workpaper 3 & 4	11,789,258		414,804,733
16	JDA Savings Shared	Workpaper 5	-		(69,598,371)
17	Total Purchased Power	Sum	11,789,258	_	345,206,362
18	Total Generation and Purchased Power	Line 14 + Line 17	96,298,253		2,090,138,901
19	Fuel expense recovered through intersystem sales	Workpaper 3 & 4	(1,148,043)		(57,998,825)
20	Line losses and Company use	Line 22 - Line 19 - Line 18	(6,269,005)		-
21	System Fuel Expense for Fuel Factor	Lines 18 + 19 + 20			2,032,140,076
22	Normalized Test Period MWh Sales	Exhibit 4	88,881,205		88,881,205
23	Fuel and Fuel Related Costs cents/kWh	Line 21 / Line 22 / 10			2.2864

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Line #	Description	Reference	Residential	GS/Lighting	Industrial	Total
1	NC Normalized Test Period MWh Sales	Exhibit 4	22,892,401	24,448,017	12,219,040	59,559,458
<u>Calcula</u>	tion of Renewable Purchased Power Capacity Rate by Class					<u>Amount</u>
2	Purchased Power for REPS Compliance - Capacity	Workpaper 4				\$ 14,931,581
3	QF Purchased Power - Capacity	Workpaper 4			_	12,176,644
4	Total of Renewable and QF Purchased Power Capacity	Line 2 + Line 3				\$ 27,108,225
5	NC Portion - Jursidicational % based on 2021 Production Plant Allocator	Input			-	66.68%
6	NC Renewable and QF Purchased Power - Capacity	Line 4 * Line 5			-	\$ 18,076,112
7	2021 Production Plant Allocation Factors	Input	47.04%	37.14%	15.81%	100.00%
8	Renewable and QF Purchased Power - Capacity allocated on 2021 Production Plant Allocator	Line 6 * Line 7	\$ 8,503,847	\$ 6,713,696 \$	2,858,570	\$ 18,076,112
9	Renewable and QF Purchased Power - Capacity cents/kWh based on Normalized Test Period Sales	Line 8 / Line 1 / 10	0.0371	0.0275	0.0234	0.0303
Summa	rry of Total Rate by Class					
10	Fuel and Fuel Related Costs excluding Purchased Power for REPS Compliance and QF Purchased Capacity cents/kWh	Line 15 - Line 11 - Line 13 - Line 14	2.6420	2.1442	1.7306	2.2563
11	REPS Compliance and QF Purchased Power - Capacity cents/kWh	Line 9	0.0371	0.0275	0.0234	0.0303
12	Total adjusted Fuel and Fuel Related Costs cents/kWh	Line 10 + Line 11	2.6791	2.1717	1.7540	2.2866
13	EMF Increment (Decrement) cents/kWh	Exh 3 pg 2, 3, 4	1.6644	1.6649	1.7267	1.6774
14	EMF Interest Increment (Decrement) cents/kWh	Exh 3 pg 2, 3, 4	-	-	-	-
15	Net Fuel and Fuel Related Costs Factors cents/kWh	Exh 2 Sch 2 Page 3	4.3435	3.8366	3.4807	3.964

Line #	Rate Class	Normalized Test Period MWh Sales		nual Revenue at Current rates	Incre	ocate Fuel Costs ease/(Decrease) Customer Class	Increase/(Decrease) as % of Annual Revenue at Current Rates	Total Fuel Rate Increase/(Decrease)	Current Total Fuel Rate (including Capacity and EMF) E-7, Sub 1263	Proposed Total Fuel Rate (including Capacity and EMF)
		Α		В		С	D	E	F	G
		Exhibit 4		Workpaper 8	Line 2	5 as a % of Column B	C/B	If D=0 then 0 if not then (C*100)/(A*1000)	Clark Exhibit 1	E + F = G
1	Residential	22,892,401	\$	2,466,691,215	\$	425,091,247	17.23%	1.8569	2.4866	4.3435
2	General Service/Lighting	24,448,017	\$	1,971,226,718		339,706,575	17.23%	1.3895	2.4471	3.8366
3	Industrial	12,219,040	\$	757,602,036		130,559,509	17.23%	1.0685	2.4122	3.4807
4	NC Retail	59,559,458	\$	5,195,519,969	\$	895,357,331	-			
	Total Proposed Composite Fuel Rate:									
5	Total Fuel Costs for Allocation	Workpaper 7a	\$	2,036,536,291						
6	Total of Renewable and QF Purchased Power Capacity	Exhibit 2 Sch 2, Page 2		27,108,225						
7	System Other Fuel Costs	Line 5 - Line 6	\$	2,009,428,066	_					
8	Normalized Test Period System MWh Sales for Fuel Factor	Workpaper 7a		89,060,496						
9	NC Retail Normalized Test Period MWh Sales	Exhibit 4		59,559,458						
10	Allocation %	Line 9 / Line 8		66.88%	5					
11	NC Retail Other Fuel Costs	Line 7 * Line 10	\$	1,343,810,646						
12	NC Renewable and QF Purchased Power - Capacity	Exhibit 2 Sch 2, Page 2		18,076,112	_					
13	NC Retail Total Fuel Costs	Line 11 + Line 12	\$	1,361,886,758						
14	NC Retail Normalized Test Period MWh Sales	Line 9		59,559,458						
15	Calculated Fuel Rate cents/kWh	Line 13 / Line 14 / 10		2.2866						
16	Proposed Composite EMF Rate cents/kWh	Exhibit 3 Page 1		1.6774						
17	Proposed Composite EMF Rate Interest cents/kWh	Exhibit 3 Page 1		0.0000	_					
18	Total Proposed Composite Fuel Rate	Sum		3.9640						
	Total Current Composite Fuel Rate - Docket E-7 Sub 1263:									
19	Current composite Fuel Rate cents/kWh	Clark Exhibit 1		1.9010						
20	Current composite EMF Rate cents/kWh	Clark Exhibit 1		0.5597						
21	Current composite EMF Interest Rate cents/kWh	Clark Exhibit 1	_	0.0000	_					
22	Total Current Composite Fuel Rate	Sum		2.4607						
23	Increase/(Decrease) in Composite Fuel rate cents/kWh	Line 18 - Line 22		1.5033						
24	NC Retail Normalized Test Period MWh Sales	Exhibit 4		59,559,458						
25	Increase/(Decrease) in Fuel Costs	Line 23 * Line 24 * 10	\$	895,357,332						
	Note: Rounding differences may occur									

Duke Energy Carolinas, LLC
North Carolina Annual Fuel and Fuel Related Expense
NERC 5 Year Average Nuclear Capacity Factor of 91.87% and Projected Period Sales
Test Period Ended December 31, 2022
Billing Period September 2023 - August 2024
Docket E-7, Sub 1282

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Line #	Unit	Reference	Generation (MWh)	Unit Cost (cents/kWh)	Fuel Cost (\$)
			D	E	D * E = F
1	Total Nuclear	Workpaper 2	57,782,460	0.5613	324,343,758
2	Coal	Calculated	11,094,415	3.8575	427,971,909
3	Gas CT and CC	Workpaper 3 & 4	31,212,640	3.7804	1,179,963,909
4	Reagents and Byproducts	Workpaper 9	-	_	24,944,696
5	Total Fossil	Sum	42,307,056	_	1,632,880,514
6	Hydro	Workpaper 3	5,600,555		
7	Net Pumped Storage	Workpaper 3	(4,083,743)		
8	Total Hydro	Sum	1,516,812		
9	Solar Distributed Generation	Workpaper 3	358,121		
		Line 1 + Line 5 + Line 8 +			
10	Total Generation	Line 9	101,964,448		1,957,224,272
11	Less Lee CC Joint Owners	Workpaper 3 & 4	(878,400)		(25,697,152)
12	Less Catawba Joint Owners	Calculated	(14,626,468)		(82,140,560)
13	Fuel expense recovered through reimbursement	Workpaper 4			(3,687,381)
14	Net Generation	Sum	86,459,580		1,845,699,178
15	Purchased Power	Workpaper 3 & 4	11,789,258		414,804,733
16	JDA Savings Shared	Workpaper 5	-	_	(69,598,371)
17	Total Purchased Power	Sum	11,789,258		345,206,362
18	Total Generation and Purchased Power	Line 14 + Line 17	98,248,839		2,190,905,541
19	Fuel expense recovered through intersystem sales	Workpaper 3 & 4	(1,148,043)		(57,998,825)
20	Line losses and Company use	Line 22 - Line 19 - Line 18	(6,269,005)		-
21	System Fuel Expense for Fuel Factor	Lines 18 + 19 + 20			2,132,906,715
22	Projected System MWh Sales for Fuel Factor	Workpaper 7b	90,831,791		90,831,791
23	Fuel and Fuel Related Costs cents/kWh	Line 21 / Line 22 / 10			2.3482

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Line #	Description	Reference	Residential	GS/Lighting	Industrial	Total
1	NC Projected Billing Period MWh Sales	Workpaper 7b	23,477,265	24,077,007	13,270,457	60,824,730
Calcula	tion of Renewable Purchased Power Capacity Rate by Class					<u>Amount</u>
2	Purchased Power for REPS Compliance - Capacity	Workpaper 4				\$ 14,931,581
3	QF Purchased Power - Capacity	Workpaper 4			<u>_</u>	12,176,644
4	Total of Renewable and QF Purchased Power Capacity	Line 2 + Line 3				\$ 27,108,225
5	NC Portion - Jursidicational % based on 2021 Production Plant Allocator	Input			_	66.68%
6	NC Renewable and QF Purchased Power - Capacity	Line 4 * Line 5			_	\$ 18,076,112
7	2021 Production Plant Allocation Factors	Input	47.04%	37.14%	15.81%	100.00%
8	Renewable and QF Purchased Power - Capacity allocated on 2021 Production Plant Allocator	Line 6 * Line 7	\$ 8,503,847	6,713,696 \$	2,858,570	\$ 18,076,112
9	Renewable and QF Purchased Power - Capacity cents/kWh based on Projected Billing Period Sales	Line 8 / Line 1 / 10	0.0362	0.0279	0.0215	0.0297
Summa	ry of Total Rate by Class					
10	Fuel and Fuel Related Costs excluding Purchased Power for REPS Compliance and QF Purchased Capacity cents/kWh	Line 15 - Line 11 - Line 13 - Line 14	2.7110	2.2543	1.7100	2.3186
11	REPS Compliance and QF Purchased Power - Capacity cents/kWh	Line 9	0.0362	0.0279	0.0215	0.0297
12	Total adjusted Fuel and Fuel Related Costs cents/kWh	Line 10 + Line 11	2.7472	2.2822	1.7315	2.3483
13	EMF Increment (Decrement) cents/kWh	Exh 3 pg 2, 3, 4	1.6644	1.6649	1.7267	1.6774
14	EMF Interest Increment (Decrement) cents/kWh	Exh 3 pg 2, 3, 4	-	-	-	-
15	Net Fuel and Fuel Related Costs Factors cents/kWh	Exh 2 Sch 3 Page 3	4.4116	3.9471	3.4582	4.0257

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Line #	Rate Class	Projected Billing Period MWh Sales		nual Revenue at Current rates	Incr	ocate Fuel Costs ease/(Decrease) Customer Class	Increase/Decrease as % of Annual Revenue at Current Rates	Total Fuel Rate Increase/(Decrease)	Current Total Fuel Rate (including Capacity and EMF) E-7, Sub 1263	Proposed Total Fuel Rate (including Capacity and EMF)
		Α		В		С	C / B = D	E	F	G
		Workpaper 7b		Workpaper 8	Line 2	5 as a % of Column B	C/B	If D=0 then 0 if not then (C*100)/(A*1000)	Clark Exhibit 1	E + F = G
1	Residential	23,477,265	Ś	2,466,691,215	Ś	451,939,498	18.32%	1.9250	2.4866	4.4116
2	General Service/Lighting	24,077,007		1,971,226,718		361,162,033	18.32%	1.5000	2.4471	3.9471
3	Industrial	13,270,457		757,602,036		138,805,490	18.32%	1.0460	2.4122	
4	NC Retail	60,824,730		5,195,519,969		951,907,021	<u> </u>			
	Total Proposed Composite Fuel Rate:									
5	Total Fuel Costs for Allocation	Workpaper 7b	\$	2,137,302,931						
6	Total of Renewable and QF Purchased Power Capacity	Exhibit 2 Sch 3, Page 2	•	27,108,225						
7	System Other Fuel Costs	Line 5 - Line 6	\$	2,110,194,706	-					
8	Adjusted Projected System MWh Sales for Fuel Factor	Workpaper 7b		91,011,082						
9	NC Retail Projected Billing Period MWh Sales	Line 4		60,824,730						
10	Allocation %	Line 9 / Line 8		66.83%	5					
11	NC Retail Other Fuel Costs	Line 7 * Line 10	\$	1,410,243,122						
12	NC Renewable and QF Purchased Power - Capacity	Exhibit 2 Sch 3, Page 2		18,076,112	_					
13	NC Retail Total Fuel Costs	Line 11 + Line 12	\$	1,428,319,234						
14	NC Retail Projected Billing Period MWh Sales	Line 4		60,824,730						
15	Calculated Fuel Rate cents/kWh	Line 13 / Line 14 / 10		2.3483						
16	Proposed Composite EMF Rate cents/kWh	Exhibit 3 Page 1		1.6774						
17	Proposed Composite EMF Rate Interest cents/kWh	Exhibit 3 Page 1		0.0000	_					
18	Total Proposed Composite Fuel Rate	Sum		4.0257	_					
	Total Current Composite Fuel Rate - Docket E-7 Sub 1263:									
19	Current composite Fuel Rate cents/kWh	Clark Exhibit 1		1.9010						
20	Current composite EMF Rate cents/kWh	Clark Exhibit 1		0.5597						
21	Current composite EMF Interest Rate cents/kWh	Clark Exhibit 1		0.0000	_					
22	Total Current Composite Fuel Rate	Sum	_	2.4607						
23	Increase/(Decrease) in Composite Fuel rate cents/kWh	Line 18 - Line 22		1.5650						
24	NC Retail Projected Billing Period MWh Sales	Line 4		60,824,730						
25	Increase/(Decrease) in Fuel Costs	Line 23 * Line 24 * 10	\$	951,907,021						
	Note: Rounding differences may occur									