

**Lands Energy Consulting  
LONG TERM PROJECTION**

Carbon Intensity 7000 HR Combined Cycle  
Carbon Intensity Coal Plant

0.429 Tons/MWh  
1.000 Tons/MWh

Mth-Year	Estimate		ESTIMATE	NO CARBON		WITH CARBON	
	MHR	MHR	DEL	0	0	0	0
	HLH	LLH	NW NAT GAS	HLH PRICE	LLH PRICE	HLH PRICE	LLH PRICE
Jan-13	9.34	6.82	5.06	47.26	34.50	47.26	34.50
Feb-13	8.90	5.73	5.03	44.71	28.77	44.71	28.77
Mar-13	8.19	5.08	4.97	40.73	25.25	40.73	25.25
Apr-13	8.27	4.72	4.77	39.47	22.52	39.47	22.52
May-13	6.86	3.24	4.73	32.45	15.34	32.45	15.34
Jun-13	5.94	4.38	4.72	28.05	20.70	28.05	20.70
Jul-13	9.35	5.63	4.74	44.25	26.68	44.25	26.68
Aug-13	10.91	5.86	4.75	51.78	27.84	51.78	27.84
Sep-13	8.32	5.13	4.79	39.87	24.57	39.87	24.57
Oct-13	9.07	5.37	4.70	42.65	25.27	42.65	25.27
Nov-13	8.15	4.85	4.93	40.18	23.90	40.18	23.90
Dec-13	7.05	5.27	5.11	36.03	26.92	36.03	26.92
Jan-14	9.34	6.82	5.12	47.82	34.90	47.82	34.90
Feb-14	8.90	5.73	5.08	45.24	29.11	45.24	29.11
Mar-14	8.19	5.08	5.03	41.21	25.55	41.21	25.55
Apr-14	8.27	4.72	4.83	39.94	22.79	39.94	22.79
May-14	6.86	3.24	4.78	32.84	15.52	32.84	15.52
Jun-14	5.94	4.38	4.78	28.38	20.94	28.38	20.94
Jul-14	9.35	5.63	4.79	44.78	26.99	44.78	26.99
Aug-14	10.91	5.86	4.80	52.40	28.17	52.40	28.17
Sep-14	8.32	5.13	4.85	40.34	24.86	40.34	24.86
Oct-14	9.07	5.37	4.76	43.15	25.57	43.15	25.57
Nov-14	8.15	4.85	4.99	40.65	24.18	40.65	24.18
Dec-14	7.05	5.27	5.17	36.46	27.24	36.46	27.24
Jan-15	9.34	6.82	5.48	51.25	37.41	51.25	37.41
Feb-15	8.90	5.73	5.45	48.48	31.20	48.48	31.20
Mar-15	8.19	5.08	5.39	44.17	27.39	44.17	27.39
Apr-15	8.27	4.72	5.17	42.80	24.43	42.80	24.43
May-15	6.86	3.24	5.13	35.19	16.63	35.19	16.63
Jun-15	5.94	4.38	5.12	30.42	22.44	30.42	22.44
Jul-15	9.35	5.63	5.13	47.99	28.93	47.99	28.93
Aug-15	10.91	5.86	5.15	56.15	30.19	56.15	30.19
Sep-15	8.32	5.13	5.20	43.23	26.64	43.23	26.64

Oct-15	9.07	5.37	5.10	46.25	27.41	46.25	27.41
Nov-15	8.15	4.85	5.35	43.57	25.92	43.57	25.92
Dec-15	7.05	5.27	5.54	39.07	29.19	39.07	29.19
Jan-16	9.34	6.82	5.80	54.19	39.56	54.19	39.56
Feb-16	8.90	5.73	5.76	51.27	32.99	51.27	32.99
Mar-16	8.19	5.08	5.70	46.70	28.96	46.70	28.96
Apr-16	8.27	4.72	5.47	45.26	25.83	45.26	25.83
May-16	6.86	3.24	5.42	37.21	17.59	37.21	17.59
Jun-16	5.94	4.38	5.41	32.16	23.73	32.16	23.73
Jul-16	9.35	5.63	5.43	50.75	30.59	50.75	30.59
Aug-16	10.91	5.86	5.44	59.38	31.92	59.38	31.92
Sep-16	8.32	5.13	5.50	45.72	28.17	45.72	28.17
Oct-16	9.07	5.37	5.39	48.90	28.98	48.90	28.98
Nov-16	8.15	4.85	5.65	46.07	27.41	46.07	27.41
Dec-16	7.05	5.27	5.86	41.31	30.87	41.31	30.87
Jan-17	9.34	6.82	6.33	59.16	43.19	59.16	43.19
Feb-17	8.90	5.73	6.29	55.97	36.02	55.97	36.02
Mar-17	8.19	5.08	6.22	50.99	31.62	50.99	31.62
Apr-17	8.27	4.72	5.97	49.41	28.20	49.41	28.20
May-17	6.86	3.24	5.92	40.63	19.20	40.63	19.20
Jun-17	5.94	4.38	5.91	35.12	25.91	35.12	25.91
Jul-17	9.35	5.63	5.93	55.40	33.40	55.40	33.40
Aug-17	10.91	5.86	5.94	64.83	34.85	64.83	34.85
Sep-17	8.32	5.13	6.00	49.91	30.76	49.91	30.76
Oct-17	9.07	5.37	5.89	53.39	31.64	53.39	31.64
Nov-17	8.15	4.85	6.17	50.30	29.92	50.30	29.92
Dec-17	7.05	5.27	6.39	45.10	33.70	45.10	33.70
Jan-18	9.34	6.82	6.91	64.59	47.15	64.59	47.15
Feb-18	8.90	5.73	6.87	61.11	39.33	61.11	39.33
Mar-18	8.19	5.08	6.79	55.67	34.52	55.67	34.52
Apr-18	8.27	4.72	6.52	53.95	30.79	53.95	30.79
May-18	6.86	3.24	6.46	44.35	20.96	44.35	20.96
Jun-18	5.94	4.38	6.45	38.34	28.29	38.34	28.29
Jul-18	9.35	5.63	6.47	60.49	36.46	60.49	36.46
Aug-18	10.91	5.86	6.49	70.78	38.05	70.78	38.05
Sep-18	8.32	5.13	6.55	54.49	33.58	54.49	33.58
Oct-18	9.07	5.37	6.43	58.29	34.54	58.29	34.54
Nov-18	8.15	4.85	6.74	54.91	32.67	54.91	32.67
Dec-18	7.05	5.27	6.98	49.24	36.79	49.24	36.79
Jan-19	9.34	6.82	7.55	70.52	51.48	70.52	51.48
Feb-19	8.90	5.73	7.50	66.72	42.93	66.72	42.93
Mar-19	8.19	5.08	7.42	60.78	37.69	60.78	37.69
Apr-19	8.27	4.72	7.12	58.90	33.61	58.90	33.61
May-19	6.86	3.24	7.05	48.43	22.89	48.43	22.89

Jun-19	5.94	4.38	7.04	41.86	30.89	41.86	30.89
Jul-19	9.35	5.63	7.07	66.04	39.81	66.04	39.81
Aug-19	10.91	5.86	7.08	77.27	41.54	77.27	41.54
Sep-19	8.32	5.13	7.15	59.49	36.67	59.49	36.67
Oct-19	9.07	5.37	7.02	63.64	37.71	63.64	37.71
Nov-19	8.15	4.85	7.36	59.95	35.67	59.95	35.67
Dec-19	7.05	5.27	7.62	53.76	40.17	53.76	40.17
Jan-20	9.34	6.82	8.24	76.99	56.20	76.99	56.20
Feb-20	8.90	5.73	8.19	72.84	46.88	72.84	46.88
Mar-20	8.19	5.08	8.10	66.36	41.14	66.36	41.14
Apr-20	8.27	4.72	7.77	64.30	36.70	64.30	36.70
May-20	6.86	3.24	7.70	52.87	24.99	52.87	24.99
Jun-20	5.94	4.38	7.69	45.70	33.72	45.70	33.72
Jul-20	9.35	5.63	7.71	72.10	43.46	72.10	43.46
Aug-20	10.91	5.86	7.73	84.36	45.35	84.36	45.35
Sep-20	8.32	5.13	7.81	64.95	40.03	64.95	40.03
Oct-20	9.07	5.37	7.66	69.48	41.17	69.48	41.17
Nov-20	8.15	4.85	8.03	65.45	38.94	65.45	38.94
Dec-20	7.05	5.27	8.32	58.70	43.86	58.70	43.86
Jan-21	9.34	6.82	9.00	84.06	61.36	84.06	61.36
Feb-21	8.90	5.73	8.94	79.53	51.18	79.53	51.18
Mar-21	8.19	5.08	8.84	72.45	44.92	72.45	44.92
Apr-21	8.27	4.72	8.48	70.21	40.07	70.21	40.07
May-21	6.86	3.24	8.41	57.72	27.28	57.72	27.28
Jun-21	5.94	4.38	8.40	49.89	36.81	49.89	36.81
Jul-21	9.35	5.63	8.42	78.72	47.45	78.72	47.45
Aug-21	10.91	5.86	8.44	92.11	49.51	92.11	49.51
Sep-21	8.32	5.13	8.52	70.92	43.70	70.92	43.70
Oct-21	9.07	5.37	8.37	75.86	44.95	75.86	44.95
Nov-21	8.15	4.85	8.77	71.46	42.51	71.46	42.51
Dec-21	7.05	5.27	9.09	64.09	47.88	64.09	47.88
Jan-22	9.34	6.82	9.82	91.77	66.99	91.77	66.99
Feb-22	8.90	5.73	9.76	86.83	55.87	86.83	55.87
Mar-22	8.19	5.08	9.65	79.10	49.04	79.10	49.04
Apr-22	8.27	4.72	9.26	76.65	43.74	76.65	43.74
May-22	6.86	3.24	9.18	63.02	29.79	63.02	29.79
Jun-22	5.94	4.38	9.17	54.47	40.19	54.47	40.19
Jul-22	9.35	5.63	9.20	85.94	51.80	85.94	51.80
Aug-22	10.91	5.86	9.22	100.56	54.06	100.56	54.06
Sep-22	8.32	5.13	9.31	77.42	47.72	77.42	47.72
Oct-22	9.07	5.37	9.14	82.82	49.08	82.82	49.08
Nov-22	8.15	4.85	9.58	78.02	46.42	78.02	46.42
Dec-22	7.05	5.27	9.92	69.97	52.27	69.97	52.27
Jan-23	9.34	6.82	10.72	100.20	73.14	100.20	73.14

Feb-23	8.90	5.73	10.66	94.80	61.00	94.80	61.00
Mar-23	8.19	5.08	10.54	86.36	53.54	86.36	53.54
Apr-23	8.27	4.72	10.11	83.68	47.76	83.68	47.76
May-23	6.86	3.24	10.02	68.80	32.52	68.80	32.52
Jun-23	5.94	4.38	10.01	59.47	43.88	59.47	43.88
Jul-23	9.35	5.63	10.04	93.83	56.56	93.83	56.56
Aug-23	10.91	5.86	10.07	109.79	59.02	109.79	59.02
Sep-23	8.32	5.13	10.16	84.53	52.09	84.53	52.09
Oct-23	9.07	5.37	9.97	90.42	53.58	90.42	53.58
Nov-23	8.15	4.85	10.45	85.18	50.67	85.18	50.67
Dec-23	7.05	5.27	10.83	76.39	57.07	76.39	57.07
Jan-24	9.34	6.82	11.71	109.39	79.85	109.39	79.85
Feb-24	8.90	5.73	11.63	103.50	66.60	103.50	66.60
Mar-24	8.19	5.08	11.51	94.28	58.46	94.28	58.46
Apr-24	8.27	4.72	11.04	91.36	52.14	91.36	52.14
May-24	6.86	3.24	10.94	75.12	35.51	75.12	35.51
Jun-24	5.94	4.38	10.93	64.93	47.91	64.93	47.91
Jul-24	9.35	5.63	10.96	102.44	61.75	102.44	61.75
Aug-24	10.91	5.86	10.99	119.87	64.44	119.87	64.44
Sep-24	8.32	5.13	11.09	92.29	56.88	92.29	56.88
Oct-24	9.07	5.37	10.89	98.72	58.50	98.72	58.50
Nov-24	8.15	4.85	11.41	93.00	55.33	93.00	55.33
Dec-24	7.05	5.27	11.82	83.40	62.31	83.40	62.31
Jan-25	9.34	6.82	12.78	119.43	87.18	119.43	87.18
Feb-25	8.90	5.73	12.70	113.00	72.71	113.00	72.71
Mar-25	8.19	5.08	12.56	102.94	63.82	102.94	63.82
Apr-25	8.27	4.72	12.05	99.75	56.93	99.75	56.93
May-25	6.86	3.24	11.95	82.01	38.76	82.01	38.76
Jun-25	5.94	4.38	11.93	70.89	52.31	70.89	52.31
Jul-25	9.35	5.63	11.97	111.84	67.42	111.84	67.42
Aug-25	10.91	5.86	12.00	130.87	70.35	130.87	70.35
Sep-25	8.32	5.13	12.11	100.76	62.10	100.76	62.10
Oct-25	9.07	5.37	11.89	107.78	63.87	107.78	63.87
Nov-25	8.15	4.85	12.46	101.53	60.40	101.53	60.40
Dec-25	7.05	5.27	12.91	91.05	68.03	91.05	68.03
Jan-26	9.34	6.82	13.96	130.39	95.18	130.39	95.18
Feb-26	8.90	5.73	13.87	123.37	79.39	123.37	79.39
Mar-26	8.19	5.08	13.72	112.38	69.68	112.38	69.68
Apr-26	8.27	4.72	13.16	108.90	62.15	108.90	62.15
May-26	6.86	3.24	13.04	89.54	42.32	89.54	42.32
Jun-26	5.94	4.38	13.02	77.40	57.11	77.40	57.11
Jul-26	9.35	5.63	13.07	122.11	73.60	122.11	73.60
Aug-26	10.91	5.86	13.10	142.88	76.81	142.88	76.81
Sep-26	8.32	5.13	13.22	110.01	67.80	110.01	67.80

Oct-26	9.07	5.37	12.98	117.67	69.73	117.67	69.73
Nov-26	8.15	4.85	13.61	110.85	65.95	110.85	65.95
Dec-26	7.05	5.27	14.09	99.41	74.27	99.41	74.27
Jan-27	9.34	6.82	15.24	142.36	103.92	142.36	103.92
Feb-27	8.90	5.73	15.14	134.69	86.67	134.69	86.67
Mar-27	8.19	5.08	14.97	122.70	76.08	122.70	76.08
Apr-27	8.27	4.72	14.37	118.90	67.86	118.90	67.86
May-27	6.86	3.24	14.24	97.76	46.21	97.76	46.21
Jun-27	5.94	4.38	14.22	84.50	62.35	84.50	62.35
Jul-27	9.35	5.63	14.26	133.32	80.36	133.32	80.36
Aug-27	10.91	5.86	14.30	155.99	83.86	155.99	83.86
Sep-27	8.32	5.13	14.44	120.10	74.02	120.10	74.02
Oct-27	9.07	5.37	14.17	128.47	76.13	128.47	76.13
Nov-27	8.15	4.85	14.85	121.03	72.00	121.03	72.00
Dec-27	7.05	5.27	15.39	108.54	81.09	108.54	81.09
Jan-28	9.34	6.82	16.63	155.43	113.45	155.43	113.45
Feb-28	8.90	5.73	16.53	147.05	94.63	147.05	94.63
Mar-28	8.19	5.08	16.35	133.96	83.06	133.96	83.06
Apr-28	8.27	4.72	15.69	129.81	74.08	129.81	74.08
May-28	6.86	3.24	15.55	106.73	50.45	106.73	50.45
Jun-28	5.94	4.38	15.52	92.26	68.07	92.26	68.07
Jul-28	9.35	5.63	15.57	145.55	87.74	145.55	87.74
Aug-28	10.91	5.86	15.61	170.31	91.55	170.31	91.55
Sep-28	8.32	5.13	15.76	131.12	80.81	131.12	80.81
Oct-28	9.07	5.37	15.47	140.27	83.12	140.27	83.12
Nov-28	8.15	4.85	16.22	132.14	78.61	132.14	78.61
Dec-28	7.05	5.27	16.80	118.50	88.53	118.50	88.53
Jan-29	9.34	6.82	18.16	169.69	123.87	169.69	123.87
Feb-29	8.90	5.73	18.05	160.55	103.31	160.55	103.31
Mar-29	8.19	5.08	17.85	146.25	90.68	146.25	90.68
Apr-29	8.27	4.72	17.13	141.73	80.88	141.73	80.88
May-29	6.86	3.24	16.98	116.53	55.08	116.53	55.08
Jun-29	5.94	4.38	16.95	100.72	74.32	100.72	74.32
Jul-29	9.35	5.63	17.00	158.91	95.79	158.91	95.79
Aug-29	10.91	5.86	17.05	185.94	99.96	185.94	99.96
Sep-29	8.32	5.13	17.21	143.16	88.23	143.16	88.23
Oct-29	9.07	5.37	16.89	153.14	90.75	153.14	90.75
Nov-29	8.15	4.85	17.71	144.26	85.82	144.26	85.82
Dec-29	7.05	5.27	18.34	129.37	96.66	129.37	96.66
Jan-30	9.34	6.82	19.83	185.27	135.24	185.27	135.24
Feb-30	8.90	5.73	19.70	175.28	112.80	175.28	112.80
Mar-30	8.19	5.08	19.49	159.67	99.00	159.67	99.00
Apr-30	8.27	4.72	18.70	154.73	88.31	154.73	88.31
May-30	6.86	3.24	18.53	127.22	60.13	127.22	60.13

Jun-30	5.94	4.38	18.51	109.97	81.14	109.97	81.14
Jul-30	9.35	5.63	18.56	173.49	104.58	173.49	104.58
Aug-30	10.91	5.86	18.61	203.00	109.13	203.00	109.13
Sep-30	8.32	5.13	18.79	156.30	96.32	156.30	96.32
Oct-30	9.07	5.37	18.44	167.19	99.08	167.19	99.08
Nov-30	8.15	4.85	19.33	157.50	93.70	157.50	93.70
Dec-30	7.05	5.27	20.02	141.25	105.53	141.25	105.53
Jan-31	9.34	6.82	21.65	202.27	147.65	202.27	147.65
Feb-31	8.90	5.73	21.51	191.37	123.15	191.37	123.15
Mar-31	8.19	5.08	21.28	174.33	108.09	174.33	108.09
Apr-31	8.27	4.72	20.42	168.94	96.41	168.94	96.41
May-31	6.86	3.24	20.24	138.90	65.65	138.90	65.65
Jun-31	5.94	4.38	20.20	120.06	88.59	120.06	88.59
Jul-31	9.35	5.63	20.27	189.42	114.18	189.42	114.18
Aug-31	10.91	5.86	20.32	221.64	119.15	221.64	119.15
Sep-31	8.32	5.13	20.51	170.64	105.16	170.64	105.16
Oct-31	9.07	5.37	20.14	182.54	108.17	182.54	108.17
Nov-31	8.15	4.85	21.11	171.96	102.30	171.96	102.30
Dec-31	7.05	5.27	21.86	154.21	115.21	154.21	115.21
Jan-32	9.34	6.82	23.63	220.83	161.20	220.83	161.20
Feb-32	8.90	5.73	23.48	208.93	134.45	208.93	134.45
Mar-32	8.19	5.08	23.23	190.33	118.01	190.33	118.01
Apr-32	8.27	4.72	22.29	184.44	105.26	184.44	105.26
May-32	6.86	3.24	22.09	151.64	71.68	151.64	71.68
Jun-32	5.94	4.38	22.06	131.08	96.72	131.08	96.72
Jul-32	9.35	5.63	22.13	206.80	124.66	206.80	124.66
Aug-32	10.91	5.86	22.19	241.98	130.08	241.98	130.08
Sep-32	8.32	5.13	22.39	186.30	114.82	186.30	114.82
Oct-32	9.07	5.37	21.98	199.29	118.10	199.29	118.10
Nov-32	8.15	4.85	23.04	187.74	111.69	187.74	111.69
Dec-32	7.05	5.27	23.87	168.36	125.79	168.36	125.79