

DRAFT

SOUTHEAST ALASKA INTEGRATED RESOURCE PLAN

Volume 3 - Appendices

B&V PROJECT NO. 172744



PREPARED FOR



Alaska Energy Authority

DECEMBER 2011



Appendix A. Additional Fuel Price Projections (\$/MMBtu)

Table A-1 Low Case Diesel Price Projections (\$/MMBtu)

Year	Angoon	Chilkat Valley	Coffman Cove	Craig	Edna Bay	Elfin Cove	Excursion Inlet	Gustavus	Haines	Hollis	Hoonah	Hydaburg	Hyder	Juneau	Kake	Ketchikan	Klawock	Klukwan	Metlakatla	Naukati	Pelican	Petersburg	Sitka	Skagway	Tenakee Springs	Thome Bay/Kasaan	Whale Pass	Wrangell	Yakutat
2012	18.47	18.78	19.76	17.83	19.12	23.80	22.24	22.24	18.33	17.83	19.35	18.12	17.83	17.35	18.46	15.16	17.83	18.46	16.67	18.71	23.80	16.67	18.33	17.86	22.89	18.49	19.12	16.67	20.12
2013	18.84	19.17	20.17	18.19	19.52	24.34	22.73	22.73	18.70	18.19	19.76	18.48	18.19	17.70	18.84	15.46	18.19	18.84	17.01	19.10	24.34	17.01	18.70	18.22	23.40	18.87	19.52	17.01	20.55
2014	19.32	19.65	20.69	18.64	20.01	24.98	23.32	23.32	19.17	18.64	20.26	18.94	18.64	18.14	19.31	15.85	18.64	19.31	17.43	19.58	24.98	17.43	19.17	18.67	24.01	19.34	20.01	17.43	21.07
2015	19.81	20.15	21.22	19.12	20.53	25.64	23.94	23.94	19.66	19.12	20.78	19.43	19.12	18.60	19.80	16.25	19.12	19.80	17.87	20.08	25.64	17.87	19.66	19.14	24.64	19.84	20.53	17.87	21.62
2016	20.33	20.68	21.78	19.61	21.07	26.33	24.58	24.58	20.17	19.61	21.33	19.93	19.61	19.09	20.32	16.67	19.61	20.32	18.34	20.61	26.33	18.34	20.17	19.64	25.30	20.36	21.07	18.34	22.19
2017	20.86	21.23	22.36	20.13	21.63	27.05	25.24	25.24	20.71	20.13	21.89	20.46	20.13	19.59	20.86	17.11	20.13	20.86	18.82	21.15	27.05	18.82	20.71	20.16	25.99	20.90	21.63	18.82	22.78
2018	21.43	21.81	22.97	20.67	22.21	27.80	25.94	25.94	21.27	20.67	22.49	21.01	20.67	20.12	21.42	17.57	20.67	21.42	19.32	21.72	27.80	19.32	21.27	20.70	26.71	21.46	22.21	19.32	23.40
2019	22.01	22.40	23.60	21.23	22.82	28.58	26.66	26.66	21.85	21.23	23.11	21.58	21.23	20.67	22.01	18.05	21.23	22.01	19.85	22.32	28.58	19.85	21.85	21.27	27.45	22.05	22.82	19.85	24.05
2020	22.63	23.03	24.27	21.83	23.46	29.39	27.42	27.42	22.46	21.83	23.76	22.19	21.83	21.24	22.63	18.55	21.83	22.63	20.41	22.94	29.39	20.41	22.46	21.86	28.23	22.67	23.46	20.41	24.73
2021	23.27	23.68	24.96	22.44	24.13	30.24	28.20	28.20	23.10	22.44	24.43	22.81	22.44	21.84	23.27	19.08	22.44	23.27	20.99	23.59	30.24	20.99	23.10	22.48	29.04	23.31	24.13	20.99	25.43
2022	23.95	24.37	25.68	23.09	24.83	31.12	29.02	29.02	23.77	23.09	25.14	23.48	23.09	22.48	23.94	19.63	23.09	23.94	21.59	24.28	31.12	21.59	23.77	23.13	29.89	23.98	24.83	21.59	26.17
2023	24.65	25.09	26.44	23.77	25.56	32.04	29.88	29.88	24.46	23.77	25.88	24.17	23.77	23.14	24.64	20.21	23.77	24.64	22.33	24.99	32.04	22.33	24.46	23.81	30.77	24.69	25.56	23.23	26.94
2024	25.39	25.84	27.23	24.49	26.33	33.00	30.77	30.77	25.20	24.49	26.66	24.89	24.49	23.83	25.38	20.81	24.49	25.38	22.89	25.74	33.00	22.89	25.20	24.52	31.70	25.43	26.33	22.89	27.75
2025	26.17	26.63	28.06	25.23	27.13	34.01	31.71	31.71	25.97	25.23	27.47	25.65	25.23	24.56	26.16	21.45	25.23	26.16	23.59	26.53	34.01	23.59	25.97	25.27	32.66	26.21	27.13	23.59	28.59
2026	26.98	27.45	28.93	26.02	27.97	35.05	32.69	32.69	26.77	26.02	28.32	26.45	26.02	25.32	26.97	22.11	26.02	26.97	24.33	27.35	35.05	24.33	26.77	25.26	33.67	27.02	27.97	24.33	29.48
2027	27.83	28.32	29.84	26.84	28.85	36.14	33.71	33.71	27.62	26.84	29.21	27.28	26.84	26.12	27.82	22.81	26.84	27.82	25.09	28.21	36.14	25.09	27.62	26.88	34.72	27.87	28.85	25.09	30.40
2028	28.72	29.23	30.80	27.71	29.78	37.29	34.79	34.79	28.51	27.71	30.15	28.16	27.71	26.97	28.72	23.55	27.71	28.72	25.91	29.12	37.29	25.91	28.51	27.75	35.82	28.77	29.78	25.91	31.38
2029	29.67	30.19	31.80	28.62	30.75	38.49	35.91	35.91	29.44	28.62	31.13	29.09	28.62	27.85	29.66	24.32	28.62	29.66	26.76	30.07	38.49	26.76	29.44	28.66	36.98	29.71	30.75	26.76	32.40
2030	30.65	31.19	32.85	29.57	31.77	39.74	37.08	37.08	30.42	29.57	32.16	30.06	29.57	28.78	30.64	25.14	29.57	30.64	27.65	31.07	39.74	27.65	30.42	29.62	38.18	30.70	31.77	27.65	33.47
2031	32.55	33.12	34.88	31.41	33.74	42.19	39.37	39.37	32.31	31.41	34.16	31.92	31.41	30.57	32.54	26.70	31.41	32.54	29.37	33.00	42.19	29.37	32.31	31.45	40.54	32.60	33.74	29.37	35.54
2032	34.57	35.18	37.04	33.36	35.83	44.80	41.81	41.81	34.31	33.36	36.27	33.90	33.36	32.46	34.56	28.35	33.36	34.56	31.19	35.05	44.80	31.19	34.31	33.40	43.05	34.62	35.83	31.19	37.74
2033	36.72	37.36	39.34	35.43	38.05	47.57	44.39	44.39	36.44	35.43	38.52	36.00	35.43	34.48	36.71	30.11	35.43	36.71	33.12	37.22	47.57	33.12	36.44	35.48	45.71	36.77	38.05	33.12	40.08
2034	38.99	39.67	41.78	37.62	40.41	50.50	47.14	47.14	38.70	37.62	40.91	38.24	37.62	36.62	38.98	31.98	37.62	38.98	35.18	39.53	50.50	35.18	38.70	37.68	48.53	39.05	40.41	35.18	42.56
2035	41.41	42.13	44.36	39.96	42.91	53.62	50.05	50.05	41.10	39.96	43.44	40.61	39.96	38.89	41.40	33.96	39.96	41.40	37.36	41.98	53.62	37.36	41.10	40.02	51.53	41.47	42.91	37.36	45.19
2036	43.98	44.74	47.11	42.44	45.57	56.93	53.14	53.14	43.65	42.44	46.13	43.13	42.44	41.30	43.97	36.07	42.44	43.97	39.68	44.58	56.93	39.68	43.65	42.50	54.71	44.04	45.57	39.68	47.99
2037	46.71	47.52	50.03	45.07	48.40	60.45	56.43	56.43	46.36	45.07	48.99	45.80	45.07	43.87	46.69	38.31	45.07	46.69	42.14	47.34	60.45	42.14	46.36	45.14	58.09	46.77	48.40	42.14	50.96
2038	49.60	50.46	53.13	47.87	51.40	64.18	59.92	59.92	49.23	47.87	52.03	48.64	47.87	46.59	49.59	40.69	47.87	49.59	44.76	50.28	64.18	44.76	49.23	47.94	61.68	49.68	51.40	44.76	54.12
2039	52.68	53.59	56.42	50.84	54.58	68.15	63.62	63.62	52.29	50.84	55.25	51.66	50.84	49.48	52.66	43.21	50.84	52.66	47.53	53.39	68.15	47.53	52.29	50.91	65.49	52.76	54.58	47.53	57.47
2040	55.94	56.91	59.91	53.99	57.96	72.36	67.56	67.56	55.53	53.99	58.67	54.87	53.99	52.55	55.93	45.89	53.99	55.93	50.48	56.70	72.36	50.48	55.53	54.07	69.54	56.03	57.96	50.48	61.03
2041	59.41	60.44	63.62	57.34	61.55	76.83	71.73	71.73	58.97	57.34	62.31	58.27	57.34	55.81	59.40	48.74	57.34	59.40	53.62	60.22	76.83	53.62	58.97	57.43	73.84	59.50	61.55	53.62	64.81
2042	63.10	64.19	67.56	60.90	65.37	81.57	76.17	76.17	62.63	60.90	66.17	61.88	60.90	59.27	63.08	51.77	60.90	63.08	56.94	63.95	81.57	56.94	62.63	60.99	78.40	63.19	65.37	56.94	68.82
2043	67.01	68.17	71.75	64.68	69.42	86.61	80.87	80.87	66.51	64.68	70.27	65.72	64.68	62.95	66.99	54.98	64.68	66.99	60.48	67.92	86.61	60.48	66.51	64.78	83.25	67.11	69.42	60.48	73.08
2044	71.17	72.39	76.19	68.69	73.72	91.96	85.87	85.87	70.64	68.69	74.62	69.80	68.69	66.86	71.15	58.39	68.69	71.15	64.23	72.13	91.96	64.23	70.64	68.79	88.39	71.27	73.72	64.23	77.61
2045	75.58	76.88	80.91	72.96	78.29	97.63	91.18	91.18	75.02	72.96	79.25	74.13	72.96	71.01	75.56	62.01	72.96	75.56	68.22	76.60	97.63	68.22	75.02	73.06	93.85	75.69	78.29	73.06	82.41
2046	80.27	81.65	85.92	77.48	83.14	103.66	96.82	96.82	79.67	77.48	84.16	78.73	77.48	75.41	80.25	65.86	77.48	80.25	72.45	81.35	103.66	72.45	79.67	77.60	99.65	80.38	83.14	72.45	87.51
2047	85.24	86.71	91.25	82.29	88.30	110.07	102.80	102.80	84.62	82.29	89.37	83.61	82.29	80.09	85.22	69.95	82.29	85.22	76.94	86.39	110.07	76.94	84.62	82.41	105.81	85.37	88.30	76.94	92.93
2048	90.53	92.08	96.90	87.40	93.77	116.86	109.16	109.16	89.86	87.40	94.91	88.80	87.40	85.06	90.51	74.29	87.40	90.51	81.72	91.75	116.86	81.72	89.86	87.53	112.35	90.66	93.77	81.72	98.69
2049	96.14	97.79	102.90	92.82	99.58	124.08	115.91	115.91	95.44	92.82	100.79	94.31	92.82	90.34	96.12	78.90	92.82	96.12	86.79	97.44	124.08	86.79	95.44	92.96	119.29	96.28	99.58	86.79	104.80
2050	102.10	103.85	109.27	98.58	105.75	131.74	123.07	123.07	101.36	98.58	107.03	100.16	98.58	95.94	102.08	83.80	98.58	102.08	92.17	103.48	131.74	92.17	101.36	98.72	126.66	102.25	105.75	92.17	111.29
2051	108.44	110.29	116.04	104.70	112.30	139.88																							

Table A-2 Medium Case Diesel Price Projections (\$/MMBtu)

Year	Angoon	Chilkat Valley	Coffman Cove	Craig	Edna Bay	Elfin Cove	Excursion Inlet	Gustavus	Haines	Hollis	Hoonah	Hydaburg	Hyder	Juneau	Kake	Ketchikan	Klawock	Klukwan	Metlakatla	Naukatu	Pelican	Petersburg	Sitka	Skagway	Tenakee Springs	Thorne Bay/Kasaan	Whale Pass	Wrangell	Yakutat
2012	25.70	26.02	26.99	25.07	26.36	31.04	29.48	29.48	25.57	25.07	26.59	25.35	25.07	23.65	25.70	21.31	25.07	25.70	23.44	25.95	31.04	23.44	25.57	25.09	30.12	25.73	26.36	23.44	27.36
2013	27.42	27.75	28.75	26.77	28.10	32.92	31.31	31.31	27.28	26.77	28.34	27.06	26.77	25.26	27.42	22.75	26.77	27.42	25.03	27.68	32.92	25.03	27.28	26.79	31.98	27.45	28.10	25.03	29.12
2014	29.18	29.52	30.55	28.51	29.88	34.84	33.19	33.19	29.04	28.51	30.12	28.81	28.51	26.90	29.18	24.23	28.51	29.18	26.66	29.44	34.84	26.66	29.04	28.54	33.87	29.21	29.88	26.66	30.94
2015	30.99	31.33	32.40	30.29	31.70	36.82	35.11	35.11	30.84	30.29	31.96	30.60	30.29	28.59	30.98	25.75	30.29	30.98	28.32	31.26	36.82	28.32	30.84	30.32	35.82	31.02	31.70	28.32	32.79
2016	32.83	33.19	34.28	32.12	33.57	38.84	37.08	37.08	32.68	32.12	33.83	32.44	32.12	30.31	32.83	27.30	32.12	32.83	30.03	33.11	38.84	30.03	32.68	32.15	37.81	32.86	33.57	30.03	34.69
2017	34.72	35.08	36.21	33.98	35.48	40.90	39.09	39.09	34.56	33.98	35.74	34.31	33.98	32.06	34.71	28.88	33.98	34.71	31.77	35.00	40.90	31.77	34.56	34.01	39.84	34.75	35.48	31.77	36.63
2018	36.65	37.02	38.19	35.89	37.43	43.02	41.16	41.16	36.49	35.89	37.71	36.23	35.89	33.07	36.64	30.51	35.89	36.64	33.56	36.94	43.02	33.56	36.49	35.92	41.93	36.68	37.43	33.56	38.62
2019	38.62	39.00	40.20	37.84	39.42	45.18	43.26	43.26	38.45	37.84	39.71	38.19	37.84	35.70	38.61	32.16	37.84	38.61	35.38	38.92	45.18	35.38	38.45	37.87	44.06	38.65	39.42	35.38	40.65
2020	40.63	41.03	42.27	39.83	41.46	47.39	45.41	45.41	40.46	39.83	41.75	40.19	39.83	37.58	40.62	33.85	39.83	40.62	37.24	40.94	47.39	37.24	40.46	39.86	46.23	40.66	41.46	37.24	42.73
2021	42.69	43.10	44.37	41.86	43.54	49.65	47.61	47.61	42.51	41.86	43.84	42.23	41.86	39.50	42.68	35.58	41.86	42.68	39.14	43.01	49.65	39.14	42.51	41.89	48.46	42.72	43.54	39.14	44.84
2022	44.78	45.21	46.52	43.93	45.66	51.96	49.86	49.86	44.60	43.93	45.98	44.31	43.93	41.45	44.78	37.34	43.93	44.78	41.07	45.11	51.96	41.07	44.60	43.96	50.73	44.82	45.66	41.07	47.00
2023	46.92	47.35	48.70	46.04	47.83	54.31	52.14	52.14	46.73	46.04	48.15	46.43	46.04	43.44	46.91	39.13	46.04	46.91	43.05	47.26	54.31	43.05	46.73	46.07	53.04	46.95	47.83	43.05	49.21
2024	49.09	49.54	50.93	48.19	50.03	56.70	54.48	54.48	48.90	48.19	50.36	48.59	48.19	45.47	49.09	40.96	48.19	49.09	45.05	49.44	56.70	45.05	48.90	48.22	55.40	49.13	50.03	45.05	51.45
2025	51.31	51.77	53.20	50.37	52.27	59.15	56.85	56.85	51.11	50.37	52.61	50.79	50.37	47.53	51.30	42.82	50.37	51.30	47.10	51.67	59.15	47.10	51.11	50.41	57.80	51.35	52.27	47.10	53.73
2026	53.56	54.04	55.51	52.60	54.55	61.63	59.27	59.27	53.36	52.60	54.90	53.03	52.60	49.63	53.55	44.71	52.60	53.55	49.18	53.93	61.63	49.18	53.36	52.64	60.25	53.60	54.55	49.18	56.06
2027	55.85	56.34	57.86	54.86	56.87	64.17	61.74	61.74	55.64	54.86	57.23	55.31	54.86	51.77	55.84	46.63	54.86	55.84	51.30	56.24	64.17	51.30	55.64	54.90	62.74	55.89	56.87	51.30	58.43
2028	58.18	58.69	60.25	57.16	59.24	66.75	64.24	64.24	57.97	57.16	59.61	57.62	57.16	53.94	58.17	48.59	57.16	58.17	53.45	58.58	66.75	53.45	57.97	57.20	65.28	58.22	59.24	53.45	60.84
2029	60.54	61.07	62.68	59.50	61.63	69.37	66.79	66.79	60.32	59.50	62.01	59.96	59.50	56.14	60.54	50.57	59.50	60.54	55.63	60.95	69.37	55.63	60.32	59.54	67.85	60.59	61.63	55.63	63.28
2030	62.95	63.48	65.15	61.87	64.07	72.04	69.38	69.38	62.72	61.87	64.46	62.35	61.87	58.38	62.94	52.59	61.87	62.94	57.85	63.37	72.04	57.85	62.72	61.91	70.48	62.99	64.07	57.85	65.76
2031	67.70	68.26	70.02	66.55	68.88	77.33	74.51	74.51	67.45	66.55	69.30	67.06	66.55	62.80	67.69	56.57	66.55	67.69	62.22	68.14	77.33	62.22	67.45	66.60	75.68	67.74	68.88	62.22	70.68
2032	72.80	73.40	75.27	71.59	74.06	83.01	80.02	80.02	72.54	71.59	74.50	72.13	71.59	67.55	72.79	60.85	71.59	72.79	66.94	73.27	83.01	66.94	72.54	71.64	81.26	72.85	74.06	66.94	75.96
2033	78.29	78.93	80.91	77.01	79.62	89.11	85.95	85.95	78.02	77.01	80.09	77.58	77.01	72.67	78.28	65.46	77.01	78.28	72.00	78.79	89.11	72.00	78.02	77.06	87.25	78.35	79.62	72.00	81.64
2034	84.20	84.87	86.97	82.84	85.61	95.66	92.30	92.30	83.91	82.84	86.10	83.45	82.84	78.17	84.19	70.41	82.84	84.19	77.45	84.73	95.66	77.45	83.91	82.89	93.69	84.26	85.61	77.45	87.75
2035	90.55	91.26	93.48	89.11	92.04	102.69	99.13	99.13	90.24	89.11	92.57	89.75	89.11	84.08	90.54	75.74	89.11	90.54	83.32	91.11	102.69	83.32	90.24	89.17	100.60	90.61	92.04	83.32	94.31
2036	97.38	98.14	100.48	95.85	98.96	110.23	106.47	106.47	97.05	95.85	99.51	96.54	95.85	90.45	97.37	81.48	95.85	97.37	89.62	97.97	110.23	89.62	97.05	95.91	108.03	97.44	98.96	89.62	101.36
2037	104.72	105.53	108.01	103.11	106.40	118.33	114.35	114.35	104.38	103.11	106.98	103.83	103.11	97.30	104.71	87.64	103.11	104.71	96.41	105.35	118.33	96.41	104.38	103.17	116.00	104.79	106.40	96.41	108.94
2038	112.62	113.47	116.10	110.91	114.39	127.03	122.81	122.81	112.26	110.91	115.01	111.68	110.91	104.66	112.61	94.28	110.91	112.61	103.70	113.29	127.03	103.70	112.26	110.98	124.55	112.70	114.39	103.70	117.08
2039	121.12	122.02	124.80	119.31	122.99	136.36	131.90	131.90	120.73	119.31	123.65	120.12	119.31	112.58	121.11	101.41	119.31	121.11	111.56	121.82	136.36	111.56	120.73	119.38	133.74	121.19	122.99	111.56	125.83
2040	130.25	131.20	134.15	128.34	132.23	146.38	141.66	141.66	129.85	128.34	132.93	129.20	128.34	121.11	130.24	109.09	128.34	130.24	120.00	131.00	146.38	120.00	129.85	128.42	143.61	130.33	132.23	120.00	135.24
2041	140.08	141.08	144.19	138.06	142.17	157.14	152.14	152.14	139.65	138.06	142.91	138.96	138.06	130.28	140.06	117.35	138.06	140.06	129.08	140.87	157.14	129.08	139.65	138.14	154.21	140.16	142.17	129.08	145.35
2042	150.64	151.70	154.99	148.51	152.86	168.69	163.40	163.40	150.19	148.51	153.63	149.46	148.51	140.14	150.63	126.23	148.51	150.63	138.86	151.48	168.69	138.86	150.19	148.59	165.58	150.73	152.86	138.86	156.22
2043	162.01	163.13	166.60	159.75	164.34	181.08	175.49	175.49	161.53	159.75	165.17	160.76	159.75	150.75	161.99	135.79	159.75	161.99	149.37	162.89	181.08	149.37	161.53	159.84	177.80	162.10	164.34	149.37	167.90
2044	174.23	175.41	179.08	171.84	176.70	194.39	188.47	188.47	173.72	171.84	177.56	172.91	171.84	162.16	174.21	146.07	171.84	174.21	160.67	175.16	194.39	160.67	173.72	171.94	190.92	174.33	176.70	160.67	180.45
2045	187.37	188.62	192.50	184.85	189.98	208.67	202.42	202.42	186.83	184.85	190.89	185.98	184.85	174.43	187.35	157.12	184.85	187.35	172.84	188.35	208.67	172.84	186.83	184.95	205.00	187.47	189.98	172.84	193.94
2046	201.50	202.82	206.92	198.85	204.25	224.01	217.40	217.40	200.94	198.85	205.22	200.03	198.85	187.64	201.48	169.02	198.85	201.48	185.92	202.54	224.01	185.92	200.94	198.95	220.13	201.61	204.25	185.92	208.44
2047	216.70	218.09	222.42	213.90	219.60	240.47	233.48	233.48	216.10	213.90	220.63	215.15	213.90	201.84	216.68	181.81	213.90	216.68	199.99	217.79	240.47	199.99	216.10	214.01	236.37	216.82	219.60	199.99	224.03
2048	233.04	234.51	239.08	230.09	236.11	258.14	250.76	250.76	232.42	230.09	237.19	231.41	230.09	217.12	233.02	195.58	230.09	233.02	215.13	234.20	258.14	215.13	232.42	230.21	253.81	233.17	236.11	215.13	240.78
2049	250.62	252.17	256.98	247.51	253.85	277.11	269.31	269.31	249.96	247.51	254.99	248.90	247.51	233.56	250.60	210.38	247.51	250.60	231.42	251.84	277.11	231.42	249.96	247.63	272.53	250.75	253.85	231.42	258.78
2050	269.53	271.16	276																										

Table A-3 High Case Diesel Price Projections (\$/MMBtu)

Year	Angoon	Chilkat Valley	Coffman Cove	Craig	Edna Bay	Elfin Cove	Excursion Inlet	Gustavus	Haines	Hollis	Hoonah	Hydaburg	Hyder	Juneau	Kake	Ketchikan	Klawock	Klukwan	Metlakatla	Naukati	Pelican	Petersburg	Sitka	Skagway	Tenakee Springs	Thorne Bay/Kasaan	Whale Pass	Wrangell	Yakutat
2012	36.70	37.01	37.99	36.06	37.35	42.04	40.47	40.47	36.56	36.06	37.59	36.35	36.06	33.23	36.69	30.65	36.06	36.69	33.72	36.95	42.04	33.72	36.56	36.09	41.12	36.72	37.35	33.72	38.35
2013	40.29	40.62	41.62	39.64	40.97	45.79	44.18	44.18	40.15	39.64	41.21	39.93	39.64	36.52	40.29	33.69	39.64	40.29	37.06	40.55	45.79	37.06	40.15	39.67	44.85	40.32	40.97	37.06	42.00
2014	43.09	43.42	44.46	42.42	43.78	48.75	47.09	47.09	42.95	42.42	44.03	42.72	42.42	39.08	43.08	36.05	42.42	43.08	39.66	43.35	48.75	39.66	42.95	42.44	47.78	43.12	43.78	39.66	44.84
2015	45.96	46.30	47.37	45.26	46.67	51.79	50.08	50.08	45.81	45.26	46.93	45.57	45.26	41.70	45.95	38.47	45.26	45.95	42.32	46.23	51.79	42.32	45.81	45.29	50.79	45.99	46.67	42.32	47.76
2016	48.89	49.25	50.34	48.18	49.63	54.90	53.14	53.14	48.74	48.18	49.89	48.50	48.18	44.39	48.89	40.95	48.18	48.89	45.05	49.17	54.90	45.05	48.74	48.21	53.87	48.92	49.63	45.05	50.75
2017	51.90	52.26	53.40	51.16	52.66	58.09	56.28	56.28	51.74	51.16	52.93	51.49	51.16	47.14	51.89	43.49	51.16	51.89	47.84	52.19	58.09	47.84	51.74	51.19	57.03	51.93	52.66	47.84	53.82
2018	54.97	55.35	56.52	54.22	55.76	61.35	59.48	59.48	54.81	54.22	56.03	54.55	54.22	49.95	54.97	46.08	54.22	54.97	50.69	55.27	61.35	50.69	54.81	54.25	60.25	55.01	55.76	50.69	56.95
2019	58.12	58.51	59.71	57.34	58.93	64.69	62.77	62.77	57.95	57.34	59.21	57.69	57.34	52.83	58.12	48.74	57.34	58.12	53.61	58.43	64.69	53.61	57.95	57.37	63.56	58.15	58.93	53.61	60.15
2020	61.34	61.74	62.97	60.53	62.17	68.10	66.12	66.12	61.17	60.53	62.46	60.89	60.53	55.77	61.33	51.45	60.53	61.33	56.60	61.65	68.10	56.60	61.17	60.57	66.94	61.37	62.17	56.60	63.43
2021	64.62	65.03	66.31	63.80	65.48	71.59	69.55	69.55	64.45	63.80	65.78	64.17	63.80	58.78	64.62	54.23	63.80	64.62	59.65	64.95	71.59	59.65	64.45	63.83	70.39	64.66	65.48	59.65	66.78
2022	67.98	68.40	69.71	67.13	68.86	75.15	73.05	73.05	67.80	67.13	69.17	67.51	67.13	61.85	67.97	57.06	67.13	67.97	62.76	68.31	75.15	62.76	67.80	67.16	73.92	68.01	68.86	62.76	70.20
2023	71.40	71.84	73.19	70.52	72.31	78.79	76.63	76.63	71.21	70.52	72.63	70.91	70.52	64.97	71.39	59.94	70.52	71.39	65.94	71.74	78.79	65.94	71.21	70.56	77.52	71.44	72.31	65.94	73.69
2024	74.89	75.34	76.73	73.99	75.83	82.50	80.28	80.28	74.70	73.99	76.16	74.39	73.99	68.17	74.88	62.89	73.99	74.88	69.18	75.24	82.50	69.18	74.70	74.02	81.20	74.93	75.83	69.18	77.25
2025	78.45	78.91	80.35	77.52	79.41	86.29	84.00	84.00	78.25	77.52	79.75	77.93	77.52	71.42	78.44	65.89	77.52	78.44	72.48	78.81	86.29	72.48	78.25	77.56	84.94	78.49	79.41	72.48	80.88
2026	82.08	82.55	84.03	81.12	83.07	90.15	87.79	87.79	81.87	81.12	83.42	81.54	81.12	74.73	82.07	68.95	81.12	82.07	75.84	82.45	90.15	75.84	81.87	81.15	88.77	82.12	83.07	75.84	84.58
2027	85.77	86.26	87.78	84.78	86.79	94.08	91.65	91.65	85.56	84.78	87.15	85.22	84.78	78.11	85.76	72.06	84.78	85.76	79.27	86.15	94.08	79.27	85.56	84.82	92.66	85.81	86.79	79.27	88.34
2028	89.52	90.03	91.59	88.50	90.57	98.09	95.58	95.58	89.30	88.50	90.94	88.96	88.50	81.54	89.51	75.23	88.50	89.51	82.75	89.92	98.09	82.75	89.30	88.54	96.62	89.56	90.57	82.75	92.17
2029	93.34	93.86	95.47	92.29	94.43	102.16	99.58	99.58	93.12	92.29	94.81	92.76	92.29	85.03	93.33	78.45	92.29	93.33	86.29	93.75	102.16	86.29	93.12	92.33	100.65	93.39	94.43	86.29	96.07
2030	97.22	97.76	99.42	96.14	98.34	106.31	103.65	103.65	97.00	96.14	98.74	96.63	96.14	88.58	97.22	81.72	96.14	97.22	89.90	97.65	106.31	89.90	97.00	96.19	104.75	97.27	98.34	89.90	100.04
2031	104.79	105.36	107.12	103.65	105.98	114.42	111.60	111.60	104.55	103.65	106.39	104.16	103.65	95.49	104.78	88.10	103.65	104.78	96.91	105.24	114.42	96.91	104.55	103.69	112.77	104.84	105.98	96.91	107.77
2032	112.95	113.55	115.41	111.73	114.20	123.15	120.16	120.16	112.69	111.73	114.64	112.28	111.73	102.94	112.94	94.97	111.73	112.94	104.47	113.42	123.15	104.47	112.69	111.78	121.40	113.00	114.20	104.47	116.11
2033	121.74	122.37	124.35	120.45	123.06	132.54	129.38	129.38	121.46	120.45	123.53	121.03	120.45	110.98	121.73	102.38	120.45	121.73	112.62	122.24	132.54	112.62	121.46	120.50	130.69	121.79	123.06	112.62	125.08
2034	131.21	131.88	133.97	129.85	132.62	142.65	139.30	139.30	130.92	129.85	133.11	130.46	129.85	119.64	131.20	110.37	129.85	131.20	121.41	131.74	142.65	121.41	130.92	129.91	140.68	131.27	132.62	121.41	134.75
2035	141.42	142.13	144.35	139.98	142.91	153.53	149.98	149.98	141.11	139.98	143.43	140.63	139.98	128.97	141.41	118.99	139.98	141.41	130.88	141.98	153.53	130.88	141.11	140.04	151.45	141.48	142.91	130.88	145.17
2036	152.43	153.18	155.52	150.91	154.00	165.24	161.49	161.49	152.10	150.91	154.55	151.59	150.91	139.03	152.41	128.27	150.91	152.41	141.10	153.02	165.24	141.10	152.10	150.97	163.04	152.49	154.00	141.10	156.39
2037	164.29	165.09	167.56	162.68	165.95	177.84	173.87	173.87	163.95	162.68	166.54	163.40	162.68	149.88	164.28	138.28	162.68	164.28	152.11	164.91	177.84	152.11	163.95	162.74	175.51	164.36	165.95	152.11	168.48
2038	177.07	177.92	180.53	175.37	178.83	191.40	187.20	187.20	176.71	175.37	179.45	176.13	175.37	161.58	177.06	149.07	175.37	177.06	163.97	177.74	191.40	163.97	176.71	175.44	188.94	177.14	178.83	163.97	181.51
2039	190.85	191.74	194.51	189.06	192.71	206.00	201.56	201.56	190.47	189.06	193.37	189.86	189.06	174.18	190.84	160.70	189.06	190.84	176.77	191.55	206.00	176.77	190.47	189.13	203.39	190.93	192.71	176.77	195.54
2040	205.70	206.65	209.57	203.81	207.67	221.71	217.02	217.02	205.30	203.81	208.36	204.66	203.81	187.77	205.69	173.24	203.81	205.69	190.56	206.44	221.71	190.56	205.30	203.89	218.96	205.79	207.67	190.56	210.65
2041	221.71	222.71	225.79	219.71	223.79	238.62	233.66	233.66	221.29	219.71	224.52	220.61	219.71	202.43	221.70	186.75	219.71	221.70	205.43	222.49	238.62	205.43	221.29	219.79	235.71	221.80	223.79	205.43	226.94
2042	238.97	240.02	243.27	236.86	241.16	256.81	251.58	251.58	238.52	236.86	241.93	237.80	236.86	218.22	238.95	201.33	236.86	238.95	221.46	239.79	256.81	221.46	238.52	236.94	253.74	239.06	241.16	221.46	244.48
2043	257.56	258.67	262.10	255.34	259.87	276.40	270.87	270.87	255.34	255.34	260.68	256.33	255.34	235.25	257.55	217.04	255.34	257.55	238.74	258.43	276.40	238.74	255.34	253.43	273.16	257.66	259.87	238.74	263.38
2044	277.61	278.78	282.40	275.26	280.04	297.48	291.65	291.65	277.11	275.26	280.90	276.31	275.26	253.60	277.59	233.97	275.26	277.59	257.37	278.52	297.48	257.37	277.11	275.35	294.06	277.71	280.04	257.37	283.74
2045	299.21	300.44	304.26	296.74	301.78	320.17	314.01	314.01	298.69	296.74	302.68	297.84	296.74	273.39	299.19	252.23	296.74	299.19	277.45	300.18	320.17	277.45	298.69	296.84	316.56	299.32	301.78	277.45	305.68
2046	322.50	323.79	327.81	319.89	325.20	344.59	338.10	338.10	321.94	319.89	326.15	321.06	319.89	294.72	322.48	271.91	319.89	322.48	299.10	323.51	344.59	299.10	321.94	320.00	340.78	322.61	325.20	299.10	329.31
2047	347.59	348.96	353.19	344.85	350.44	370.87	364.02	364.02	347.01	344.85	351.44	346.08	344.85	317.72	347.57	293.12	344.85	347.57	322.44	348.66	370.87	322.44	347.01	344.96	366.85	347.71	350.44	322.44	354.77
2048	374.64	376.08	380.53	371.76	377.64	399.15	391.94	391.94	374.03	371.76	378.69	373.05	371.76	342.51	374.62	316.00	371.76	374.62	347.59	375.77	399.15	347.59	374.03	371.88	394.92	374.77	377.64	347.59	382.19
2049	403.80	405.31	409.99	400.77	406.95	429.59	422.00	422.00	403.15	400.77	408.05	402.12	400.77	369.24	403.78	340.65	400.77												

Table A-4 Low Case Heating Oil Price Projections (\$/MMBtu)

Year	Angoon	Chilkat Valley	Coffman Cove	Craig	Edna Bay	Elfin Cove	Excursion Inlet	Gustavus	Haines	Hollis	Hoonah	Hydaburg	Hyder	Juneau	Kake	Ketchikan	Klawock	Klukwan	Metlakatla	Naukati	Pelican	Petersburg	Sitka	Skagway	Tenakee Springs	Thorne Bay/Kasaan	Whale Pass	Wrangell	Yakutat
2012	24.01	24.42	25.69	23.18	24.86	30.95	28.92	28.92	23.83	23.18	25.16	23.55	23.18	22.56	24.00	19.71	23.18	24.00	21.68	24.33	30.95	21.68	23.83	23.22	29.76	24.04	24.86	21.68	26.16
2013	24.49	24.91	26.22	23.64	25.37	31.64	29.55	29.55	24.31	23.64	25.68	24.02	23.64	23.08	24.48	20.09	23.64	24.48	22.10	24.82	31.64	22.10	24.31	23.67	30.41	24.53	25.37	22.10	26.70
2014	25.14	25.58	26.93	24.27	26.05	32.52	30.36	30.36	24.96	24.27	26.37	24.66	24.27	23.69	25.14	20.63	24.27	25.14	22.69	25.49	32.52	22.69	24.96	24.30	31.25	25.18	26.05	22.69	27.43
2015	25.81	26.26	27.65	24.91	26.75	33.42	31.19	31.19	25.62	24.91	27.08	25.31	24.91	24.32	25.81	21.17	24.91	25.81	23.29	26.17	33.42	23.29	25.62	24.95	32.11	25.85	26.75	23.29	28.17
2016	26.50	26.96	28.40	25.57	27.47	34.34	32.04	32.04	26.30	25.57	27.80	25.99	25.57	24.96	26.50	21.74	25.57	26.50	23.91	26.86	34.34	23.91	26.30	25.61	32.99	26.54	27.47	23.91	28.93
2017	27.21	27.68	29.16	26.25	28.20	35.28	32.92	32.92	27.00	26.25	28.55	26.68	26.25	25.62	27.20	22.31	26.25	27.20	24.54	27.58	35.28	24.54	27.00	26.29	33.89	27.25	28.20	24.54	29.71
2018	27.93	28.42	29.94	26.94	28.95	36.24	33.81	33.81	27.72	26.94	29.31	27.38	26.94	26.39	27.92	22.90	26.94	27.92	25.19	28.32	36.24	25.19	27.72	26.98	34.81	27.97	28.95	25.19	30.50
2019	28.67	29.18	30.74	27.66	29.72	37.22	34.72	34.72	28.46	27.66	30.09	28.11	27.66	27.08	28.66	23.51	27.66	28.66	25.86	29.07	37.22	25.86	28.46	27.70	35.76	28.72	29.72	25.86	31.32
2020	29.43	29.95	31.56	28.39	30.51	38.23	35.65	35.65	29.21	28.39	30.89	28.85	28.39	27.90	29.43	24.13	28.39	29.43	26.54	38.23	35.65	26.54	29.21	28.43	36.72	29.48	30.51	26.54	32.16
2021	30.32	30.85	32.51	29.24	31.43	39.39	36.74	36.74	30.09	29.24	31.83	29.72	29.24	28.63	30.31	24.85	29.24	30.31	27.34	30.74	39.39	27.34	30.09	29.28	37.83	30.36	31.43	27.34	33.13
2022	31.12	31.67	33.37	30.01	32.27	40.44	37.72	37.72	30.88	30.01	32.67	30.51	30.01	29.49	31.11	25.51	30.01	31.11	28.06	31.55	40.44	28.06	30.88	30.06	38.84	31.17	32.27	28.06	34.01
2023	32.05	32.62	34.38	30.91	33.24	41.66	38.85	38.85	31.81	30.91	33.65	31.42	30.91	30.38	32.05	26.28	30.91	32.05	28.90	32.50	41.66	28.90	31.81	30.96	40.01	32.10	33.24	28.90	35.03
2024	33.02	33.60	35.41	31.84	34.23	42.91	40.02	40.02	32.77	31.84	34.66	32.37	31.84	31.29	33.01	27.06	31.84	33.01	29.77	33.47	42.91	29.77	32.77	31.89	41.22	33.07	34.23	29.77	36.08
2025	34.01	34.61	36.47	32.79	35.26	44.19	41.21	41.21	33.75	32.79	35.70	33.34	32.79	32.23	34.00	27.88	32.79	34.00	30.66	34.48	44.19	30.66	33.75	32.84	42.45	34.06	35.26	30.66	37.16
2026	35.02	35.64	37.56	33.78	36.31	45.51	42.44	42.44	34.76	33.78	36.77	34.34	33.78	33.19	35.02	28.71	33.78	35.02	31.58	35.51	45.51	31.58	34.76	33.83	43.71	35.08	36.31	31.58	38.27
2027	36.07	36.71	38.68	34.79	37.40	46.85	43.70	43.70	35.80	34.79	37.87	35.36	34.79	34.31	36.06	29.57	34.79	36.06	32.53	36.57	46.85	32.53	35.80	34.84	45.01	36.13	37.40	32.53	39.41
2028	37.28	37.94	39.97	35.96	38.65	48.40	45.15	45.15	37.00	35.96	39.13	36.55	35.96	35.34	37.27	30.57	35.96	37.27	33.62	37.80	48.40	33.62	37.00	36.01	46.49	37.34	38.65	33.62	40.73
2029	38.40	39.07	41.16	37.04	39.80	49.82	46.48	46.48	38.11	37.04	40.29	37.65	37.04	36.53	38.39	31.48	37.04	38.39	34.63	38.93	49.82	34.63	38.11	37.09	47.86	38.45	39.80	34.63	41.93
2030	39.68	40.37	42.53	38.28	41.13	51.45	48.00	48.00	39.38	38.28	41.64	38.91	38.28	37.75	39.67	32.54	38.28	39.67	35.79	40.23	51.45	35.79	39.38	38.34	49.43	39.74	41.13	35.79	43.32
2031	42.11	42.85	45.13	40.63	43.65	54.58	50.94	50.94	41.80	40.63	44.18	41.29	40.63	40.10	42.10	34.53	40.63	42.10	37.99	42.69	54.58	37.99	41.80	40.69	52.44	42.17	43.65	37.99	45.98
2032	44.69	45.47	47.89	43.12	46.32	57.91	54.05	54.05	44.36	43.12	46.89	43.82	43.12	42.59	44.68	36.65	43.12	44.68	40.32	45.30	57.91	40.32	44.36	43.18	55.65	44.76	46.32	40.32	48.79
2033	47.43	48.26	50.82	45.76	49.15	61.45	57.35	57.35	47.08	45.76	49.76	46.51	45.76	45.24	47.42	38.90	45.76	47.42	42.79	48.08	61.45	42.79	47.08	45.83	59.04	47.50	49.15	42.79	51.77
2034	50.34	51.21	53.93	48.57	52.16	65.20	60.85	60.85	49.96	48.57	52.81	49.36	48.57	48.05	50.32	41.28	48.57	50.32	45.41	51.02	65.20	45.41	49.96	48.64	62.65	50.41	52.16	45.41	54.94
2035	53.42	54.35	57.23	51.55	55.36	69.17	64.57	64.57	53.02	51.55	56.04	52.38	51.55	51.04	53.41	43.81	51.55	53.41	48.20	54.15	69.17	48.20	53.02	51.62	66.47	53.50	55.36	48.20	58.30
2036	56.69	57.68	60.73	54.71	58.75	73.39	68.51	68.51	56.27	54.71	59.47	55.59	54.71	54.21	56.68	46.50	54.71	56.68	51.15	57.47	73.39	51.15	56.27	54.79	70.53	56.78	58.75	51.15	61.87
2037	60.17	61.21	64.45	58.06	62.34	77.87	72.69	72.69	59.72	58.06	63.11	59.00	58.06	57.58	60.15	49.35	58.06	60.15	54.29	60.99	77.87	54.29	59.72	58.15	74.84	60.25	62.34	54.29	65.65
2038	63.85	64.96	68.39	61.62	66.16	82.62	77.13	77.13	63.38	61.62	66.97	62.62	61.62	61.15	63.84	52.38	61.62	63.84	57.61	64.72	82.62	57.61	63.38	61.71	79.40	63.95	66.16	57.61	69.67
2039	67.76	68.94	72.58	65.40	70.21	87.66	81.84	81.84	67.26	65.40	71.07	66.46	65.40	64.95	67.75	55.59	65.40	67.75	61.15	68.69	87.66	61.15	67.26	65.49	84.25	67.86	70.21	61.15	73.93
2040	71.91	73.16	77.02	69.41	74.51	93.01	86.84	86.84	71.38	69.41	75.42	68.99	68.99	68.41	71.90	59.00	68.99	71.90	64.90	72.89	93.01	64.90	71.38	69.51	89.39	72.02	74.51	64.90	78.45
2041	76.32	77.64	81.73	73.66	79.07	98.69	92.14	92.14	75.76	73.66	80.04	74.85	73.66	73.28	76.30	62.61	73.66	76.30	68.87	77.36	98.69	68.87	75.76	73.77	94.85	76.43	79.07	68.87	83.25
2042	81.00	82.40	86.73	78.18	83.91	104.71	97.77	97.77	80.40	78.18	84.94	79.44	78.18	77.83	80.98	66.45	78.18	80.98	73.10	82.10	104.71	73.10	80.40	78.29	100.64	81.12	83.91	73.10	88.34
2043	85.96	87.44	92.04	82.97	89.05	111.10	103.74	103.74	85.32	82.97	90.14	84.31	82.97	82.67	85.94	70.53	82.97	85.94	77.58	87.12	111.10	77.58	85.32	83.09	106.79	86.09	89.05	77.58	93.75
2044	91.23	92.80	97.67	88.06	94.50	117.88	110.08	110.08	90.55	88.06	96.66	89.47	88.06	87.81	91.20	74.85	88.06	91.20	82.33	92.46	117.88	82.33	90.55	88.19	113.30	91.36	94.50	82.33	99.48
2045	96.81	98.48	103.65	93.46	100.29	125.07	116.80	116.80	96.10	93.46	101.51	94.96	93.46	93.26	96.79	79.44	93.46	96.79	87.38	98.12	125.07	87.38	96.10	93.59	120.22	96.96	100.29	87.38	105.57
2046	102.75	104.51	109.99	99.19	106.43	132.70	123.94	123.94	101.99	99.19	107.73	100.78	99.19	99.06	102.72	84.31	99.19	102.72	92.74	104.13	132.70	92.74	101.99	99.33	127.56	102.90	106.43	92.74	112.02
2047	109.04	110.91	116.72	105.27	112.95	140.79	131.50	131.50	108.24	105.27	114.32	106.95	105.27	105.21	109.01	89.48	105.27	109.01	98.42	110.51	140.79	98.42	108.24	105.42	135.35	109.20	112.95	98.42	118.88
2048	115.72	117.71	123.86	111.72	119.86	149.38	139.54	139.54	114.87	111.72	121.32	113.51	111.72	111.75	115.69	94.96	111.72	115.69	104.46	117.28	149.38	104.46	114.87	111.88	143.61	115.89	119.86	104.46	126.15
2049	122.81	124.92	131.44	118.57	127.20	158.50	148.06	148.06	121.91	118.57	128.74	120.47	118.57	118.70	122.78	100.78	118.57	122.78	110.86	124.47	158.50	110.86	121.91	118.74	152.38	122.99	127.20	110.86	133.87
2050	130.34	132.57	139.48	125.84	134.99	168.17	157.10	157.10	129.38	125.84	136.63	127.85	125.84	126.07	130.30	106.96	125.84	130.30	117.66	132.09	168.17	117.66	129.38	126.02	161.68	13			

Table A-5 Medium Case Heating Oil Price Projections (\$/MMBtu)

Year	Angoon	Chilkat Valley	Coffman Cove	Craig	Edna Bay	Elfin Cove	Excursion Inlet	Gustavus	Haines	Hollis	Hoonah	Hydaburg	Hyder	Juneau	Kake	Ketchikan	Klawock	Klukwan	Metliakatla	Naukati	Pelican	Petersburg	Sitka	Skagway	Tenakee Springs	Thome Bay/Kasaan	Whale Pass	Wrangell	Yakutat
2012	32.44	32.83	34.07	31.64	33.27	39.17	37.20	32.27	31.64	33.56	31.99	31.64	29.85	32.43	26.89	31.64	32.43	29.58	32.75	39.17	29.58	32.27	31.67	38.02	32.47	33.27	29.58	34.52	
2013	34.44	34.85	36.11	33.62	35.29	41.35	39.33	39.33	34.27	33.62	35.59	33.62	31.71	34.44	28.58	33.62	34.44	31.44	34.76	41.35	31.44	34.27	33.66	40.17	34.48	35.29	31.44	36.58	
2014	36.63	37.05	38.35	35.78	37.50	43.74	41.66	41.66	36.45	35.78	37.81	36.16	35.78	33.56	36.62	30.42	35.78	36.62	33.46	36.96	43.74	33.46	36.45	35.82	42.52	36.66	37.50	33.46	38.83
2015	38.74	39.17	40.50	37.87	39.64	46.03	43.90	43.90	38.56	37.87	39.95	38.26	37.87	35.50	38.74	32.19	37.87	38.74	35.41	39.08	46.03	35.41	38.56	37.91	44.78	38.78	39.64	35.41	41.00
2016	40.95	41.39	42.76	40.06	41.87	48.44	46.25	46.25	40.76	40.06	42.19	40.46	40.06	37.53	40.94	34.05	40.06	40.94	37.45	41.30	48.44	37.45	40.76	40.09	47.16	40.99	41.87	37.45	43.27
2017	43.25	43.71	45.12	42.34	44.20	50.97	48.71	48.71	43.06	42.34	44.54	42.75	42.34	39.55	43.25	35.99	42.34	43.25	39.59	43.61	50.97	39.59	43.06	42.38	49.64	43.29	44.20	39.59	45.64
2018	45.57	46.04	47.49	44.63	46.54	53.49	51.18	51.18	45.37	44.63	46.89	45.05	44.63	41.57	45.56	37.93	44.63	45.56	41.73	45.94	53.49	41.73	45.37	44.66	52.14	45.61	46.54	41.73	48.02
2019	47.98	48.47	49.96	47.01	48.99	56.14	53.76	53.76	47.78	47.01	49.34	47.45	47.01	43.77	47.98	39.96	47.01	47.98	43.96	48.36	56.14	43.96	47.78	47.05	54.74	48.03	48.99	43.96	50.51
2020	50.40	50.90	52.43	49.41	51.44	58.79	56.34	56.34	50.19	49.41	51.80	49.85	49.41	45.87	50.40	42.00	49.41	50.40	46.20	50.79	58.79	46.20	50.19	49.45	57.35	50.45	51.44	46.20	53.00
2021	52.82	53.33	54.91	51.80	53.88	61.44	58.92	58.92	52.61	51.80	54.26	52.26	51.80	48.16	52.82	44.03	51.80	52.82	48.43	53.22	61.44	48.43	52.61	51.84	59.97	52.87	53.88	48.43	55.49
2022	55.35	55.87	57.49	54.29	56.44	64.21	61.62	61.62	55.12	54.29	56.82	54.76	54.29	50.33	55.34	46.15	54.29	55.34	50.76	55.76	64.21	50.76	55.12	54.33	62.69	55.39	56.44	50.76	58.09
2023	57.97	58.51	60.18	56.89	59.09	67.10	64.43	64.43	57.74	56.89	59.49	57.37	56.89	52.70	57.96	48.35	56.89	57.96	53.19	58.40	67.10	53.19	57.74	56.93	65.54	58.02	59.09	53.19	60.80
2024	60.48	61.04	62.75	59.37	61.64	69.86	67.12	67.12	60.24	59.37	62.04	59.87	59.37	55.06	60.47	50.46	59.37	60.47	55.51	60.92	69.86	55.51	60.24	59.41	68.25	60.53	61.64	55.51	63.39
2025	63.21	63.78	65.54	62.06	64.39	72.86	70.04	70.04	62.96	62.06	64.81	62.57	62.06	57.39	63.20	52.75	62.06	63.20	58.03	63.65	72.86	58.03	62.96	62.11	71.21	63.26	64.39	58.03	66.20
2026	65.92	66.51	68.33	64.74	67.15	75.86	72.95	72.95	65.67	64.74	67.58	65.27	64.74	59.82	65.91	55.03	64.74	65.91	60.53	66.38	75.86	60.53	65.67	64.79	74.16	65.97	67.15	60.53	69.00
2027	68.62	69.23	71.09	67.41	69.88	78.84	75.85	75.85	68.37	67.41	70.32	67.95	67.41	62.34	68.61	57.30	67.41	68.61	63.03	69.10	78.84	63.03	68.37	67.46	77.09	68.68	69.88	63.03	71.79
2028	71.43	72.05	73.97	70.18	72.72	81.94	78.87	78.87	71.16	70.18	73.18	70.74	70.18	64.83	71.42	59.65	70.18	71.42	65.62	71.92	81.94	65.62	71.16	70.23	80.14	71.48	72.72	65.62	74.69
2029	74.21	74.85	76.82	72.92	75.54	85.02	81.86	81.86	73.94	72.92	76.01	73.50	72.92	67.41	74.20	61.99	72.92	74.20	68.18	74.71	85.02	68.18	73.94	72.98	83.17	74.26	75.54	68.18	77.56
2030	77.09	77.75	79.79	75.77	78.46	88.23	84.97	84.97	76.81	75.77	78.95	76.36	75.77	70.17	77.09	64.41	75.77	77.09	70.85	77.61	88.23	70.85	76.81	75.83	86.32	77.15	78.46	70.85	80.54
2031	82.81	83.51	85.66	81.41	84.26	94.60	91.15	91.15	82.52	81.41	84.77	82.04	81.41	75.27	82.80	69.20	81.41	82.80	76.12	83.36	94.60	76.12	82.52	81.47	92.58	82.87	84.26	76.12	86.46
2032	88.96	89.69	91.97	87.48	90.49	101.43	97.78	97.78	88.64	87.48	91.03	88.14	87.48	80.83	88.95	74.35	87.48	88.95	81.79	89.54	101.43	81.79	88.64	87.54	99.29	89.02	90.49	81.79	92.82
2033	95.56	96.34	98.75	93.99	97.18	108.76	104.90	104.90	95.22	93.99	97.75	94.69	93.99	86.80	95.55	79.89	93.99	95.55	87.88	96.17	108.76	87.88	95.22	94.05	106.50	95.62	97.18	87.88	99.65
2034	102.65	103.47	106.02	100.99	104.36	116.62	112.53	112.53	102.29	100.99	104.97	101.73	100.99	93.22	102.64	85.84	100.99	102.64	94.42	103.29	116.62	94.42	102.29	101.05	114.22	102.72	104.36	94.42	106.97
2035	110.26	111.13	113.83	108.51	112.08	125.04	120.72	120.72	109.89	108.51	112.72	109.29	108.51	100.10	110.25	92.23	108.51	110.25	101.45	110.95	125.04	101.45	109.89	108.58	122.51	110.34	112.08	101.45	114.84
2036	118.44	119.36	122.22	116.59	120.36	134.08	129.50	129.50	118.05	116.59	121.04	117.42	116.59	107.50	118.43	99.10	116.59	118.43	109.01	119.17	134.08	109.01	118.05	116.66	131.39	118.52	120.36	109.01	123.28
2037	127.23	128.20	131.22	125.27	129.26	143.76	138.92	138.92	126.81	125.27	129.97	126.14	125.27	115.44	127.22	106.48	125.27	127.22	117.13	127.99	143.76	117.13	126.81	125.35	140.92	127.31	129.26	117.13	132.35
2038	136.67	137.70	140.89	134.59	138.81	154.15	149.03	149.03	136.23	134.59	139.57	135.52	134.59	123.96	136.65	114.41	134.59	136.65	125.85	137.48	154.15	125.85	136.23	134.68	151.15	136.76	138.81	125.85	142.08
2039	146.81	147.90	151.27	144.62	149.08	165.29	159.87	159.87	146.34	144.62	149.87	145.60	144.62	133.12	146.79	122.92	144.62	146.79	135.22	147.66	165.29	135.22	146.34	144.71	162.11	146.90	149.08	135.22	152.52
2040	157.70	158.85	162.41	155.38	160.09	177.23	171.51	171.51	157.21	155.38	160.94	156.42	155.38	142.95	157.68	132.08	155.38	157.68	145.28	158.60	177.23	145.28	157.21	155.48	173.87	157.80	160.09	145.28	163.74
2041	169.40	170.61	174.38	166.95	171.93	190.03	183.98	183.98	168.88	166.95	172.82	168.05	166.95	153.51	169.38	141.91	166.95	169.38	156.10	170.35	190.03	156.10	168.88	167.05	186.48	169.50	171.93	156.10	175.78
2042	181.97	183.25	187.22	179.39	184.64	203.76	197.37	197.37	181.42	179.39	185.58	180.54	179.39	164.85	181.95	152.48	179.39	181.95	167.73	182.97	203.76	167.73	181.42	179.49	200.01	182.07	184.64	167.73	188.70
2043	195.46	196.82	201.01	192.74	198.29	218.48	211.73	211.73	194.89	192.74	199.28	193.96	192.74	177.03	195.45	163.83	192.74	195.45	180.22	196.53	218.48	180.22	194.89	192.85	214.52	195.58	198.29	180.22	202.57
2044	209.97	211.39	215.82	207.10	212.94	234.27	227.13	227.13	209.36	207.10	213.99	208.38	207.10	190.11	209.95	176.03	207.10	209.95	193.63	211.09	234.27	193.63	209.36	207.21	230.08	210.09	212.94	193.63	217.47
2045	225.54	227.05	231.72	222.52	228.68	251.19	243.66	243.66	224.90	222.52	229.79	223.87	222.52	204.15	225.52	189.14	222.52	225.52	208.05	226.73	251.19	208.05	224.90	222.64	246.77	225.67	228.68	208.05	233.46
2046	242.28	243.86	248.79	239.08	245.59	269.34	261.39	261.39	241.60	239.08	246.75	240.51	239.08	219.23	242.25	203.22	239.08	242.25	223.54	243.52	269.34	223.54	241.60	239.21	264.67	242.41	245.59	223.54	250.62
2047	260.25	261.92	267.12	256.89	263.74	288.80	280.41	280.41	259.53	256.89	264.97	258.39	256.89	235.43	260.23	218.35	256.89	260.23	240.19	261.56	288.80	240.19	259.53	257.02	283.87	260.39	263.74	240.19	269.05
2048	279.56	281.32	286.79	276.01	283.23	309.66	300.81	300.81	278.80	276.01	284.53	277.60	276.01	252.82	279.53	234.61	276.01	279.53	258.07	280.94	309.66	258.07	278.80	276.16	304.47	279.71	283.23	258.07	288.83
2049	300.30	302.15	307.92	296.57	304.17	332.03	322.69	322.69	299.50	296.57	305.53	298.23	296.57	271.49	300.27	252.08	296.57	300.27	277.29	301.76	332.03	277.29	299.50	296.72	326.55	300.46	304.		

Table A-6 High Case Heating Oil Price Projections (\$/MMBtu)

Year	Angoon	Chilkat Valley	Coffman Cove	Craig	Edna Bay	Elfin Cove	Excursion Inlet	Gustavus	Haines	Hollis	Hoonah	Hydaburg	Hyder	Juneau	Kake	Ketchikan	Klawock	Klukwan	Metlakatla	Naukatu	Pelican	Petersburg	Sitka	Skagway	Tenakee Springs	Thorne Bay/Kasaan	Whale Pass	Wrangell	Yakutat
2012	45.13	45.52	46.72	44.35	45.94	51.70	49.78	49.78	44.97	44.35	46.22	44.70	44.35	40.86	45.13	37.70	44.35	45.13	41.47	45.44	51.70	41.47	44.97	44.38	50.57	45.17	45.94	41.47	47.17
2013	49.36	49.76	50.99	48.56	50.19	56.09	54.12	54.12	49.19	48.56	50.48	48.92	48.56	44.57	49.35	41.27	48.56	49.35	45.40	49.67	56.09	45.40	49.19	48.59	54.94	49.39	50.19	45.40	51.45
2014	52.73	53.14	54.41	51.91	53.58	59.66	57.63	57.63	52.56	51.91	53.88	52.28	51.91	47.55	52.73	44.12	51.91	52.73	48.53	53.05	59.66	48.53	52.56	51.94	58.47	52.77	53.58	48.53	54.88
2015	56.09	56.51	57.81	55.24	56.97	63.21	61.13	61.13	55.91	55.24	57.27	55.62	55.24	50.50	56.08	46.96	55.24	56.08	51.65	56.42	63.21	51.65	55.91	55.28	61.99	56.13	56.97	51.65	58.30
2016	59.60	60.04	61.38	58.73	60.51	66.93	64.79	64.79	59.42	58.73	60.82	59.12	58.73	53.58	59.60	49.92	58.73	59.60	54.92	59.94	66.93	54.92	59.42	58.77	65.67	59.64	60.51	54.92	61.87
2017	63.19	63.63	65.01	62.29	64.12	70.72	68.52	68.52	63.00	62.29	64.44	62.69	62.29	56.72	63.18	52.95	62.29	63.18	58.24	63.54	70.72	58.24	63.00	62.33	69.43	63.23	64.12	58.24	65.52
2018	66.84	67.30	68.72	65.92	67.80	74.59	72.33	72.33	66.65	65.92	68.13	66.33	65.92	60.00	66.84	56.03	65.92	66.84	61.64	67.20	74.59	61.64	66.65	65.96	73.26	66.88	67.80	61.64	69.24
2019	70.56	71.03	72.49	69.62	71.54	78.53	76.20	76.20	70.36	69.62	71.89	70.04	69.62	63.32	70.56	59.17	69.62	70.56	65.09	70.93	78.53	65.09	70.36	69.65	77.17	70.60	71.54	65.09	73.03
2020	74.35	74.83	76.33	73.37	75.36	82.55	80.15	80.15	74.14	73.37	75.71	73.81	73.37	66.69	74.34	62.37	73.37	74.34	68.60	74.73	82.55	68.60	74.14	73.41	81.14	74.39	75.36	68.60	76.89
2021	78.20	78.69	80.23	77.19	79.23	86.62	84.16	84.16	77.98	77.19	79.60	77.64	77.19	70.11	78.19	65.62	77.19	78.19	72.18	78.59	86.62	72.18	77.98	77.23	85.18	78.24	79.23	72.18	80.81
2022	82.21	82.72	84.31	81.18	83.28	90.88	88.35	88.35	81.99	81.18	83.65	81.64	81.18	73.67	82.20	69.00	81.18	82.20	75.90	82.61	90.88	75.90	81.99	81.22	89.40	82.25	83.28	75.90	84.90
2023	86.28	86.81	88.44	85.22	87.38	95.21	92.60	92.60	86.06	85.22	87.77	85.70	85.22	77.17	86.28	72.44	85.22	86.28	79.68	86.70	95.21	79.68	86.06	85.27	93.68	86.33	87.38	79.68	89.05
2024	90.42	90.96	92.64	89.33	91.55	99.61	96.92	96.92	90.19	89.33	91.95	89.82	89.33	80.92	90.41	75.93	89.33	90.41	83.52	90.85	99.61	83.52	90.19	89.37	98.03	90.47	91.55	83.52	93.27
2025	94.61	95.17	96.90	93.49	95.77	104.07	101.30	101.30	94.37	93.49	96.18	93.99	93.49	84.61	94.60	79.46	93.49	94.60	87.41	95.05	104.07	87.41	94.37	93.53	102.44	94.66	95.77	87.41	97.54
2026	98.86	99.43	101.21	97.70	100.05	108.58	105.74	105.74	98.61	97.70	100.47	98.22	97.70	88.43	98.85	83.04	97.70	98.85	91.35	99.31	108.58	91.35	98.61	97.75	106.91	98.90	100.05	91.35	101.87
2027	103.27	103.86	105.69	102.08	104.50	113.28	110.35	110.35	103.02	102.08	104.94	102.61	102.08	92.29	103.26	86.77	102.08	103.26	95.44	103.73	113.28	95.44	103.02	102.13	111.57	103.32	104.50	95.44	106.37
2028	107.61	108.22	110.10	106.39	108.88	117.91	114.90	114.90	107.35	106.39	109.32	106.93	106.39	96.31	107.60	90.43	106.39	107.60	99.47	108.09	117.91	99.47	107.35	106.44	116.14	107.66	108.88	99.47	110.80
2029	112.12	112.75	114.68	110.86	113.42	122.72	119.62	119.62	111.85	110.86	113.88	111.42	110.86	100.35	112.11	94.23	110.86	112.11	103.65	112.61	122.72	103.65	111.85	110.91	120.90	112.17	113.42	103.65	115.40
2030	116.67	117.31	119.31	115.37	118.01	127.58	124.39	124.39	116.39	115.37	118.48	115.95	115.37	104.42	116.66	98.07	115.37	116.66	107.87	117.18	127.58	107.87	116.39	115.43	125.70	116.72	118.01	107.87	120.05
2031	121.33	122.01	123.94	119.88	122.62	131.58	128.30	128.30	120.30	119.88	122.88	120.42	120.30	109.11	121.31	101.11	120.30	121.31	114.18	123.01	131.58	114.18	122.62	121.33	129.00	122.01	123.94	119.88	122.05
2032	126.08	126.81	128.78	124.62	127.30	136.28	132.90	132.90	124.90	124.62	127.98	125.52	125.52	114.22	126.06	103.12	125.52	126.06	120.62	122.18	136.28	120.62	127.30	126.08	134.20	126.81	128.78	124.62	127.05
2033	130.93	131.70	133.70	129.43	128.01	137.06	133.58	133.58	125.58	125.52	129.06	126.60	126.60	119.33	130.91	105.11	129.06	130.91	124.18	125.71	137.06	124.18	128.01	126.90	135.20	127.05	129.43	125.52	128.05
2034	135.88	136.70	138.73	134.36	132.84	141.91	138.33	138.33	130.33	130.06	133.54	131.08	131.08	122.44	133.91	107.06	131.08	133.91	126.15	127.01	141.91	126.15	132.84	127.10	136.30	128.05	134.36	130.06	132.10
2035	140.93	141.80	143.86	139.36	137.74	146.81	143.12	143.12	135.12	135.06	138.54	136.08	136.08	127.55	140.01	109.01	136.08	138.54	130.18	131.06	146.81	130.18	137.74	127.20	138.40	129.10	139.36	135.06	136.25
2036	146.08	147.00	149.09	144.43	142.71	151.66	147.87	147.87	139.87	139.81	143.29	140.83	140.83	131.94	143.71	111.06	140.83	143.71	134.18	135.06	151.66	134.18	142.71	126.90	139.30	130.05	141.43	137.74	142.10
2037	151.33	152.30	154.41	149.56	147.74	156.69	152.80	152.80	144.80	144.74	148.22	145.76	145.76	136.85	149.21	113.06	145.76	148.22	140.18	141.06	156.69	140.18	147.74	126.70	140.00	130.75	142.71	147.87	147.05
2038	156.68	157.70	159.83	154.86	152.94	161.89	157.90	157.90	149.90	149.84	153.32	150.86	150.86	141.95	154.31	115.06	150.86	153.32	144.18	145.06	161.89	144.18	152.94	126.50	140.90	131.75	152.71	152.80	151.05
2039	162.13	163.20	165.33	160.26	158.24	167.19	163.10	163.10	155.10	155.04	158.52	156.06	156.06	147.05	159.41	117.06	156.06	158.52	150.18	151.06	167.19	150.18	158.24	126.30	140.80	132.60	157.70	157.90	156.25
2040	167.63	168.75	170.89	165.62	163.50	172.45	168.36	168.36	160.36	160.30	163.78	161.32	161.32	152.24	164.51	119.06	161.32	163.78	154.18	155.06	172.45	154.18	163.50	126.10	140.70	133.50	162.71	163.10	161.50
2041	173.18	174.35	176.51	171.14	168.92	177.87	173.68	173.68	165.68	165.62	169.10	166.64	166.64	157.55	169.81	121.06	166.64	169.10	158.18	159.06	177.87	158.18	168.36	125.90	140.60	134.40	170.71	171.10	170.00
2042	178.77	179.99	182.23	176.66	174.34	183.29	179.00	179.00	171.00	170.94	174.42	171.96	171.96	162.85	175.11	123.06	171.96	174.42	160.18	161.06	183.29	160.18	174.34	125.70	140.50	136.30	175.71	176.10	175.00
2043	184.40	185.67	187.95	182.28	179.86	188.81	184.52	184.52	176.52	176.46	180.04	177.58	177.58	168.75	181.01	125.06	177.58	180.04	162.18	163.06	188.81	162.18	179.86	125.50	140.40	138.20	178.71	179.10	178.00
2044	190.05	191.37	193.71	187.94	185.42	194.37	190.08	190.08	182.08	182.02	185.50	183.04	183.04	174.15	186.41	127.06	183.04	185.50	164.18	165.06	194.37	164.18	185.42	125.30	140.30	140.10	180.71	181.10	180.00
2045	195.74	197.11	199.49	193.62	190.90	200.85	196.56	196.56	188.56	188.50	192.02	189.56	189.56	180.65	192.91	129.06	189.56	192.02	166.18	167.06	200.85	166.18	190.90	125.10	140.20	141.90	181.71	182.10	181.00
2046	201.47	202.89	205.31	199.34	196.52	206.47	202.18	202.18	194.18	194.12	197.64	195.18	195.18	186.27	198.53	131.06	195.18	197.64	168.18	169.06	206.47	168.18	196.52	124.90	140.10	143.70	182.71	183.10	182.00
2047	207.24	208.71	211.17	205.10	202.18	212.13	207.84	207.84	199.84	199.78	203.30	200.84	200.84	191.93	204.19	133.06	200.84	203.30	170.18	171.06	212.13	170.18	202.18	124.70	140.00	145.50	183.71	184.10	183.00
2048	213.05	214.57	217.09	210.92	207.80	217.75	213.46	213.46	205.46	205.40	208.92	206.46	206.46	197.55	209.81	135.06	206.46	208.92	172.18	173.06	217.75	172.18	207.80	124.50	140.00	147.10	184.71	185.10	184.00
2049	218.90	220.47	223.01	216.74	213.52	223.47																							

Appendix B. Financial Models

Case 1. Conventional Financing

1. Input Sheet 1
2. Input Sheet 2
3. Cash Flow Sheet 1
4. Cash Flow Sheet 2
5. NPV and Capacity Rate Summary

Inputs Column 1			
Project Description			
Case:	Case 1		
Description of Project	Utility Financing 100%		
Number of Units	1		
Operating Period (max 50 years)	50		
Construction Information			
			Unit 1
Construction Period (max 60 months)			48
Construction Start Date (calculated from COD & const. period)			Jan-2014
Start of Commercial Operation (month/year)			Jan-2018
Interest Rate on Construction Loan (%)			5.50%
Debt/Equity Information			
Unit 1			
Overall Percent Debt			100.0%
Overall Percent Equity			0.0%
			(\$)
Percent Debt:	% of Unit Debt	% of Unit Cost	
% Tranche A	100.0%	100.0%	306,890,758
% Tranche B	0.0%	0.0%	0
% Tranche C	0.0%	0.0%	0
Unit 1 Long Term Debt (should equal overall debt percentage)	100.0%	100.0%	306,890,758
Percent Equity:	% of Unit Equity		
% Investor 1	100.0%	0.0%	0
Total Equity Contribution (should equal overall equity percentage)	100.0%	0.0%	0
Total Sources of Funds (Unit 1)			306,890,758
Target Debt Service Coverage Ratio (DSCR)			
			1.2
Totals			
Total Debt Percentage (w eighted average, based on capital cost)			100%
Total Equity Percentage (w eighted average, based on capital cost)			0%
Total Long Term Debt			306,890,758
Total Equity Contribution			0
Total Sources of Funds (All Units)			306,890,758
Cost of Funds			
			Unit 1
			Overall
Equity Discount Rate (required rate of return on equity) (%)			0%
(Overall input affects only PV of cash flows on Combined Cash Flow tab)			
UNIT 1			
	Tranche A	Tranche B	Tranche C
	(Senior)	(Senior)	(Subordinate)
Term (year)	30	30	30
Payments per Year (1,2,4)	2	2	2
Interest Rate (%)	5.50%	5.50%	5.50%
First Payment (month/year)*	Jun-2018	Jun-2018	Jun-2018
Last Payment (month/year)*	Jun-2048	Jun-2048	Jun-2048
Payment (\$000s)			
* Debt payments occur at end of each payment period and last day of displayed month			
Project Use of Funds			
(all units are US Dollars, \$)			
			Unit 1
			Total
			(\$)
EPC + Owner's Costs	Depr. %		
	100%		250,000,000
EPC Cost			250,000,000
Amount of State Grant			0
Owner's Costs:			
Site/Permits	100%		0
Infrastructure	100%		0
Start Up (not incl. fuel)	100%		0
Spare Parts/Inventory	100%		0
Construction Mgmt/Mobilization Expenses	100%		0
Staff (pre-operation)	100%		0
Consultants/Studies/Legal	100%		0
Contingency (Owner's Reserve)	100%		0
Other Owner's Costs	100%		0
Total	100%		0
Financing Fees:			
Up Front	100%		4,603,361
Commitment	100%		0
Subtotal Financing Fees	100%		4,603,361
Initial Contribution to Funds:			
Debt Service	0%		21,003,614
Working Capital	0%		206,760
Major Maintenance	0%		0
Subtotal Initial Contributions to Funds	0%		21,210,374
Interest During Construction	100%		31,077,023
Total Capital Cost			306,890,758
Total Depreciable Amount			285,680,385
Reserve Fund Information			
			Unit 1
No. Months of P&I for Debt Service Fund			12
No. Days of Oper. Exp. For Working Capital Fund			45
Financing Fees:			
Up Front (%)			1.50%
Commitment (%)			0.00%
Interest Rate (Before-Tax) on Reserve Funds (%)			3.0%
Depreciation & Tax Parameters			
			Unit 1
Taxes (%):			
State			0.0%
Federal			0.0%
Effective			Use Effective Tax Rate
			0.0%
Tax Loss Treatment:			Credit Current Year
Overall Depreciable Amount			285,680,385
Depreciation Asset Life (Years)			20
Depreciation Method:			
Straight-Line (SLN), Normal			Unit 1

Inputs Column 2				
Electric/Cogeneration (E/C) Performance				
		Unit 1		
Electrical Output:				
Initial Net Plant Output (MW)		25.0		
Annual Average Capacity Factor (% , calculated as average from 'Annual Generation' tab)		65.0%		
Plant Output Degradation (% / year Cumulative, Recoverable after Major Maintenance)		0.0%		
Major Maintenance Interval (years, fully recovers Plant Output)		8		
Heat Rate (metric, kJ/kWh)		0		
Heat Rate (Standard, Btu/kWh)		0		
Heat Rate Degradation (%/year Cumulative, Recoverable after Major Maintenance)		0.0%		
Secondary Major Maintenance Interval (years, fully recovers Heat Rate)		0		
Revenues				
		Unit 1		
Item	Units	Price		
		Unit 1		
Energy Rate (First Year, not used if dropdown cell is "Yes")	\$/MWh	75.00		
Energy Rate = Fuel + Variable O & M Pass-Through?	Yes	3.00		
Pass-Through Energy Rate Only (First Year)	\$/MWh	3.00		
Energy Escalation		3.0%		
Capacity Rate (First Year)	\$/kW-yr	814.94		
Capacity Charge = Fixed O&M Pass Through?	Combined	50.00		
Capacity Charge, Less FOM	\$/kW-yr	764.94		
Capacity Escalation		0.0%		
Other Revenues:				
Item 1	\$			
Item 2	\$			
Item 3	\$			
Item 4	\$			
Non-Fuel Operating Expenses				
		Unit 1		
Item	Units	Escalation		
Variable Expenses:				
Variable O&M	\$/MWh	3.00		3.0%
Water	\$/MWh			
Wastewater	\$/MWh			
Chemicals	\$/MWh			
Ash Disposal	\$/MWh			
Start Costs	\$/MWh			
Other Variable Expenses:				
Item 1	\$/MWh			
Item 2	\$/MWh			
Item 3	\$/MWh			
Fixed Expenses:				
Fixed O&M (Annual, not including major maintenance / new capital costs)	\$/kW-yr	50.00		3.0%
Property Taxes	\$			
Insurance	\$			
General & Administrative	\$			
		Unit 1		
Major Maintenance Interval		Escalation		
Major Maintenance Service Interval (as reported above)		8		
Recurring Major Maintenance Cost (stated in \$ at COD)	\$	0		3.0%
Secondary Major Maintenance Interval		0		
Recurring Secondary Major Maintenance Cost	\$	0		3.0%
		Unit 1		
One-Time Capital Investment		Escalation		
Year of Operation that Investment Occurs		0		
Amount of Investment	\$	0		3.0%
Other Fixed Expenses:				
Item 1	\$			
Item 2	\$			
Item 3	\$			
Fuel Operating Expenses				
		Unit 1		
		Unit 1		
Item	Units	Escalation		
Fuel Price	\$/MBtu	0.0		
	\$/GJ	0.00		2.5%
	\$/ton	0.00		
	\$/tonne	0.00		
Heat Content of Fuel	Btu/lb	0		
Heat Content of Fuel (metric)	kCal/kg	0		

Calendar Year	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	
Operation Year (Unit 1)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
Months in Operation Year (Unit 1)	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	
Year Fraction	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Months in Operation Check: 600 / 600																										
Revenue																										
FOM Portion of Capacity Revenue	1,250,000	1,287,500	1,326,125	1,365,909	1,406,886	1,449,093	1,492,565	1,537,342	1,583,463	1,630,966	1,679,895	1,730,292	1,782,201	1,835,667	1,890,737	1,947,459	2,005,883	2,066,060	2,128,041	2,191,883	2,257,639	2,325,368	2,395,129	2,466,983	2,540,993	
Capacity Charge Portion of Capacity Revenue	20,373,506	20,373,506	20,373,506	20,373,506	20,373,506	20,373,506	20,373,506	20,373,506	20,373,506	20,373,506	20,373,506	20,373,506	20,373,506	20,373,506	20,373,506	20,373,506	20,373,506	20,373,506	20,373,506	20,373,506	20,373,506	20,373,506	20,373,506	20,373,506	20,373,506	20,373,506
Total Capacity Revenues (Unit 1)	21,623,506	21,661,006	21,699,631	21,739,414	21,780,392	21,822,598	21,866,071	21,910,848	21,956,968	22,004,472	22,053,401	22,103,798	22,155,707	22,209,173	22,264,243	22,320,965	22,379,389	22,439,565	22,501,547	22,565,388	22,631,145	22,698,874	22,768,635	22,840,489	22,914,498	
Total Capacity Revenues	21,623,506	21,661,006	21,699,631	21,739,414	21,780,392	21,822,598	21,866,071	21,910,848	21,956,968	22,004,472	22,053,401	22,103,798	22,155,707	22,209,173	22,264,243	22,320,965	22,379,389	22,439,565	22,501,547	22,565,388	22,631,145	22,698,874	22,768,635	22,840,489	22,914,498	
VOM Portion of Energy Revenue	427,050	439,862	453,057	466,649	480,649	495,068	509,920	525,218	540,974	557,203	573,919	591,137	608,871	627,137	645,951	665,330	685,290	705,849	727,024	748,835	771,300	794,439	818,272	842,820	868,105	
Energy Charge Portion of Energy Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Energy Revenues (Unit 1)	427,050	439,862	453,057	466,649	480,649	495,068	509,920	525,218	540,974	557,203	573,919	591,137	608,871	627,137	645,951	665,330	685,290	705,849	727,024	748,835	771,300	794,439	818,272	842,820	868,105	
Total Energy Revenues	427,050	439,862	453,057	466,649	480,649	495,068	509,920	525,218	540,974	557,203	573,919	591,137	608,871	627,137	645,951	665,330	685,290	705,849	727,024	748,835	771,300	794,439	818,272	842,820	868,105	
Debt Service Coverage Fund Buildup Revenue	4,200,723	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Operating Revenues	26,251,279	22,100,867	22,152,688	22,206,064	22,261,040	22,317,666	22,375,991	22,436,066	22,497,942	22,561,676	22,627,321	22,694,935	22,764,578	22,836,310	22,910,194	22,986,295	23,064,679	23,145,414	23,228,571	23,314,223	23,402,445	23,493,313	23,586,907	23,683,309	23,782,603	
Interest Income																										
Debt Reserve Fund	630,108	630,108	630,108	630,108	630,108	630,108	630,108	630,108	630,108	630,108	630,108	630,108	630,108	630,108	630,108	630,108	630,108	630,108	630,108	630,108	630,108	630,108	630,108	630,108	630,108	
Working Capital Fund	0	6,203	6,389	6,581	6,778	6,981	7,191	7,406	7,629	7,858	8,093	8,336	8,586	8,844	9,109	9,382	9,664	9,954	10,252	10,560	10,877	11,203	11,539	11,885	12,242	
Major Maintenance / Additional Capital Investment Reserve Fund	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Interest Income	630,108	636,311	636,497	636,689	636,886	637,090	637,299	637,515	637,737	637,966	638,202	638,444	638,695	638,952	639,217	639,491	639,772	640,062	640,361	640,668	640,985	641,311	641,647	641,994	642,350	
Total Revenue	26,881,387	22,737,178	22,789,185	22,842,752	22,897,927	22,954,756	23,013,290	23,073,581	23,135,680	23,199,641	23,265,522	23,333,380	23,403,273	23,475,262	23,549,412	23,625,786	23,704,451	23,785,476	23,868,932	23,954,891	24,043,430	24,134,624	24,228,554	24,325,303	24,424,953	
Operating Expenditures																										
Operating Expenditures (Unit 1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fuel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
VOM	427,050	439,862	453,057	466,649	480,649	495,068	509,920	525,218	540,974	557,203	573,919	591,137	608,871	627,137	645,951	665,330	685,290	705,849	727,024	748,835	771,300	794,439	818,272	842,820	868,105	
Water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Wastewater	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Chemicals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Ash Disposal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Start Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOM	427,050	439,862	453,057	466,649	480,649	495,068	509,920	525,218	540,974	557,203	573,919	591,137	608,871	627,137	645,951	665,330	685,290	705,849	727,024	748,835	771,300	794,439	818,272	842,820	868,105	
FOM	1,250,000	1,287,500	1,326,125	1,365,909	1,406,886	1,449,093	1,492,565	1,537,342	1,583,463	1,630,966	1,679,895	1,730,292	1,782,201	1,835,667	1,890,737	1,947,459	2,005,883	2,066,060	2,128,041	2,191,883	2,257,639	2,325,368	2,395,129	2,466,983	2,540,993	
Property Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Insurance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
General & Administrative	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
One-Time Capital Investment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL FOM	1,250,000	1,287,500	1,326,125	1,365,909	1,406,886	1,449,093	1,492,565	1,537,342	1,583,463	1,630,966	1,679,895	1,730,292	1,782,201	1,835,667	1,890,737	1,947,459	2,005,883	2,066,060	2,128,041	2,191,883	2,257,639	2,325,368	2,395,129	2,466,983	2,540,993	
Total Operating Expenses	1,677,050	1,727,362	1,779,182	1,832,558	1,887,535	1,944,161	2,002,485	2,062,560	2,124,437	2,188,170	2,253,815	2,321,429	2,391,072	2,462,804	2,536,689	2,612,789	2,691,173	2,771,908	2,855,065	2,940,717	3,028,939	3,119,807	3,213,401	3,309,803	3,409,097	
Major Maintenance Costs																										
Major Maintenance Unit 1 (Not included in O&M expenses)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Recurring Major Maintenance Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Secondary Major Maintenance Cost																										

Calendar Year	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	
Operation Year (Unit 1)	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	
Months in Operation Year (Unit 1)	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	
Year Fraction	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Months in Operation Check: 600 / 600																										
Revenue																										
FOM Portion of Capacity Revenue	2,617,222	2,695,739	2,776,611	2,859,910	2,945,707	3,034,078	3,125,100	3,218,853	3,315,419	3,414,882	3,517,328	3,622,848	3,731,533	3,843,479	3,958,784	4,077,547	4,199,874	4,325,870	4,455,646	4,589,315	4,726,995	4,868,805	5,014,869	5,165,315	5,320,274	
Capacity Charge Portion of Capacity Revenue	20,373,506	20,373,506	20,373,506	20,373,506	20,373,506	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Capacity Revenues (Unit 1)	22,990,728	23,069,245	23,150,117	23,233,415	23,319,213	3,034,078	3,125,100	3,218,853	3,315,419	3,414,882	3,517,328	3,622,848	3,731,533	3,843,479	3,958,784	4,077,547	4,199,874	4,325,870	4,455,646	4,589,315	4,726,995	4,868,805	5,014,869	5,165,315	5,320,274	
Total Capacity Revenues	22,990,728	23,069,245	23,150,117	23,233,415	23,319,213	3,034,078	3,125,100	3,218,853	3,315,419	3,414,882	3,517,328	3,622,848	3,731,533	3,843,479	3,958,784	4,077,547	4,199,874	4,325,870	4,455,646	4,589,315	4,726,995	4,868,805	5,014,869	5,165,315	5,320,274	
VOM Portion of Energy Revenue	894,148	920,972	948,601	977,060	1,006,371	1,036,562	1,067,659	1,099,689	1,132,680	1,166,660	1,201,660	1,237,710	1,274,841	1,313,086	1,352,479	1,393,053	1,434,845	1,477,890	1,522,227	1,567,894	1,614,931	1,663,378	1,713,280	1,764,678	1,817,619	
Energy Charge Portion of Energy Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Energy Revenues (Unit 1)	894,148	920,972	948,601	977,060	1,006,371	1,036,562	1,067,659	1,099,689	1,132,680	1,166,660	1,201,660	1,237,710	1,274,841	1,313,086	1,352,479	1,393,053	1,434,845	1,477,890	1,522,227	1,567,894	1,614,931	1,663,378	1,713,280	1,764,678	1,817,619	
Total Energy Revenues	894,148	920,972	948,601	977,060	1,006,371	1,036,562	1,067,659	1,099,689	1,132,680	1,166,660	1,201,660	1,237,710	1,274,841	1,313,086	1,352,479	1,393,053	1,434,845	1,477,890	1,522,227	1,567,894	1,614,931	1,663,378	1,713,280	1,764,678	1,817,619	
Debt Service Coverage Fund Buildup Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Operating Revenues	23,884,876	23,990,217	24,098,718	24,210,475	24,325,584	4,070,641	4,192,760	4,318,543	4,448,099	4,581,542	4,718,988	4,860,558	5,006,374	5,156,566	5,311,263	5,470,600	5,634,718	5,803,760	5,977,873	6,157,209	6,341,925	6,532,183	6,728,149	6,929,993	7,137,893	
Interest Income																										
Debt Reserve Fund	630,108	630,108	630,108	630,108	630,108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Working Capital Fund	12,609	12,987	13,377	13,778	14,192	14,617	15,056	15,507	15,973	16,452	16,945	17,454	17,977	18,517	19,072	19,644	20,234	20,841	21,466	22,110	22,773	23,456	24,160	24,885	25,631	
Major Maintenance / Additional Capital Investment Reserve Fund	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Interest Income	642,717	643,095	643,485	643,887	644,300	14,617	15,056	15,507	15,973	16,452	16,945	17,454	17,977	18,517	19,072	19,644	20,234	20,841	21,466	22,110	22,773	23,456	24,160	24,885	25,631	
Total Revenue	24,527,593	24,633,313	24,742,204	24,854,361	24,969,884	4,085,258	4,207,816	4,334,050	4,464,072	4,597,994	4,735,933	4,878,011	5,024,352	5,175,082	5,330,335	5,490,245	5,654,952	5,824,001	5,999,339	6,179,319	6,364,699	6,555,640	6,752,309	6,954,878	7,163,524	
Operating Expenditures																										
Operating Expenditures (Unit 1)																										
Fuel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
VOM	894,148	920,972	948,601	977,060	1,006,371	1,036,562	1,067,659	1,099,689	1,132,680	1,166,660	1,201,660	1,237,710	1,274,841	1,313,086	1,352,479	1,393,053	1,434,845	1,477,890	1,522,227	1,567,894	1,614,931	1,663,378	1,713,280	1,764,678	1,817,619	
Water																										
Wastewater																										
Chemicals																										
Ash Disposal																										
Start Costs																										
Other																										
TOTAL VOM	894,148	920,972	948,601	977,060	1,006,371	1,036,562	1,067,659	1,099,689	1,132,680	1,166,660	1,201,660	1,237,710	1,274,841	1,313,086	1,352,479	1,393,053	1,434,845	1,477,890	1,522,227	1,567,894	1,614,931	1,663,378	1,713,280	1,764,678	1,817,619	
FOM	2,617,222	2,695,739	2,776,611	2,859,910	2,945,707	3,034,078	3,125,100	3,218,853	3,315,419	3,414,882	3,517,328	3,622,848	3,731,533	3,843,479	3,958,784	4,077,547	4,199,874	4,325,870	4,455,646	4,589,315	4,726,995	4,868,805	5,014,869	5,165,315	5,320,274	
Property Taxes																										
Insurance																										
General & Administrative																										
Other																										
One-Time Capital Investment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL FOM	2,617,222	2,695,739	2,776,611	2,859,910	2,945,707	3,034,078	3,125,100	3,218,853	3,315,419	3,414,882	3,517,328	3,622,848	3,731,533	3,843,479	3,958,784	4,077,547	4,199,874	4,325,870	4,455,646	4,589,315	4,726,995	4,868,805	5,014,869	5,165,315	5,320,274	
Total Operating Expenses	3,511,370	3,616,711	3,725,213	3,836,969	3,952,078	4,070,641	4,192,760	4,318,543	4,448,099	4,581,542	4,718,988	4,860,558	5,006,374	5,156,566	5,311,263	5,470,600	5,634,718	5,803,760	5,977,873	6,157,209	6,341,925	6,532,183	6,728,149	6,929,993	7,137,893	
Major Maintenance Costs																										
Major Maintenance Unit 1 (Not Included in O&M expenses)																										
Recurring Major Maintenance Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Secondary Major Maintenance Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Major Maintenance Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cash Available for Debt Service	21,016,223	21,016,601	21,016,991	21,017,392	21,017,806	14,617	15,056	15,507	15,973	16,452	16,945	17,454	17,977	18,517	19,072	19,644	20,234	20,841	21,466	22,110	22,773	23,456	24,160	24,885	25,631	
Debt Service Coverage Fund Balance	8,667,293	8,927,311	9,195,131	9,470,985	9,755,114	10,047,768	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cash Available for Debt Service with Debt Service Coverage Fund	29,683,516	29,943,913	30,212,122																							

Current Project NPV		
	Unit 1	Total
PV of A-T Cash Flow s at Discount Rate	0	0
FV of Equity Contributions at Discount Rate	0	0
Project NPV at Discount Rate	0	0
Discount Rate = 0%		

Case 1 Solves for Capacity payment based on P&I Obligation

Case 2. Grant Financing

1. Input Sheet 1
2. Input Sheet 2
3. Cash Flow Sheet 1
4. Cash Flow Sheet 2
5. NPV and Capacity Rate Summary

Inputs Column 1			
Project Description			
Case:	Case 2		
Description of Project	Grant 50%, Util 50%		
Number of Units	1		
Operating Period (max 50 years)	50		
Construction Information			
Construction Period (max 60 months)	Unit 1 48		
Construction Start Date (calculated from COD & const. period)	Jan-2014		
Start of Commercial Operation (month/year)	Jan-2018		
Interest Rate on Construction Loan (%)	5.50%		
Debt/Equity Information			
Unit 1			
Overall Percent Debt	100.0%		
Overall Percent Equity	0.0%		
Percent Debt:			
	% of Unit Debt	% of Unit Cost	(\$)
% Tranche A	100.0%	100.0%	153,559,173
% Tranche B	0.0%	0.0%	0
% Tranche C	0.0%	0.0%	0
Unit 1 Long Term Debt (should equal overall debt percentage)	100.0%	100.0%	153,559,173
Percent Equity:			
	% of Unit Equity		
% Investor 1	100.0%	0.0%	0
Total Equity Contribution (should equal overall equity percentage)	100.0%	0.0%	0
Total Sources of Funds (Unit 1)	153,559,173		
Target Debt Service Coverage Ratio (DSCR)	1.2		
Totals			
Total Debt Percentage (w eighted average, based on capital cost)	100%		
Total Equity Percentage (w eighted average, based on capital cost)	0%		
Total Long Term Debt	153,559,173		
Total Equity Contribution	0		
Total Sources of Funds (All Units)	153,559,173		
Cost of Funds			
Equity Discount Rate (required rate of return on equity) (%)	Unit 1	Overall	
	0%	0%	
(Overall input affects only PV of cash flows on Combined Cash Flow tab)			
UNIT 1	Tranche A	Tranche B	Tranche C
	(Senior)	(Senior)	(Subordinate)
Term (year)	30	30	30
Payments per Year (1,2,4)	2	2	2
Interest Rate (%)	5.50%	5.50%	5.50%
First Payment (month/year)*	Jun-2018	Jun-2018	Jun-2018
Last Payment (month/year)*	Jun-2048	Jun-2048	Jun-2048
Payment (\$000s)			
* Debt payments occur at end of each payment period and last day of displayed month			
Project Use of Funds			
(all units are US Dollars, \$)			
	Depr. %	Unit 1	Total
		(\$)	(\$)
EPC + Owner's Costs	100%	125,000,000	125,000,000
EPC Cost		250,000,000	
Amount of State Grant		125,000,000	
Owner's Costs:			
Site/Permits	100%		0
Infrastructure	100%	0	0
Start Up (not incl. fuel)	100%		0
Spare Parts/Inventory	100%		0
Construction Mgmt/Mobilization Expenses	100%		0
Staff (pre-operation)	100%		0
Consultants/Studies/Legal	100%		0
Contingency (Owner's Reserve)	100%		0
Other Owner's Costs	100%		0
Total	100%	0	0
Financing Fees:			
Up Front	100%	2,303,388	2,303,388
Commitment	100%	0	0
Subtotal Financing Fees	100%	2,303,388	2,303,388
Initial Contribution to Funds:			
Debt Service	0%	10,509,595	10,509,595
Working Capital	0%	206,760	206,760
Major Maintenance	0%	0	0
Subtotal Initial Contributions to Funds	0%	10,716,355	10,716,355
Interest During Construction	100%	15,539,430	15,539,430
Total Capital Cost		153,559,173	153,559,173
Total Depreciable Amount		142,842,818	142,842,818
Reserve Fund Information			
No. Months of P&I for Debt Service Fund	Unit 1 12		
No. Days of Oper. Exp. For Working Capital Fund	45		
Financing Fees:			
Up Front (%)	1.50%		
Commitment (%)	0.00%		
Interest Rate (Before-Tax) on Reserve Funds (%)	3.0%		
Depreciation & Tax Parameters			
Taxes (%):	Unit 1		
State	0.0%		
Federal	0.0%		
Effective	Use Effective Tax Rate 0.0%		
Tax Loss Treatment:	Credit Current Year		
Overall Depreciable Amount	142,842,818		
Depreciation Asset Life (Years)	20		
Depreciation Method:	Straight-Line (SLN), Normal Unit 1		

Inputs Column 2				
Electric/Cogeneration (EC) Performance				
				Unit 1
Electrical Output:				
Initial Net Plant Output (MW)				25.0
Annual Average Capacity Factor (% , calculated as average from 'Annual Generation' tab)				65.0%
Plant Output Degradation (% / year Cumulative, Recoverable after Major Maintenance)				0.0%
Major Maintenance Interval (years, fully recovers Plant Output)				8
Heat Rate (metric, kJ/kWh)				0
Heat Rate (Standard, Btu/kWh)				0
Heat Rate Degradation (%/year Cumulative, Recoverable after Major Maintenance)				0.0%
Secondary Major Maintenance Interval (years, fully recovers Heat Rate)				0
Revenues				
Item		Units	Price	
			Unit 1	
Energy Rate (First Year, not used if dropdown cell is "Yes")		\$/MWh	75.00	
Energy Rate = Fuel + Variable O & M Pass-Through?		Yes	3.00	
Pass-Through Energy Rate Only (First Year)		\$/MWh	3.00	
Energy Escalation			3.0%	
Capacity Rate (First Year)		\$/kW-yr	407.77	
Capacity Charge = Fixed O&M Pass Through?		Combined	50.00	
Capacity Charge, Less FOM		\$/kW-yr	357.77	
Capacity Escalation			0.0%	
Other Revenues:				
Item 1		\$		
Item 2		\$		
Item 3		\$		
Item 4		\$		
Non-Fuel Operating Expenses				
Item		Units	Unit 1	Escalation
Variable Expenses:				
Variable O&M		\$/MWh	3.00	3.0%
Water		\$/MWh		
Wastewater		\$/MWh		
Chemicals		\$/MWh		
Ash Disposal		\$/MWh		
Start Costs		\$/MWh		
Other Variable Expenses:				
Item 1		\$/MWh		
Item 2		\$/MWh		
Item 3		\$/MWh		
Fixed Expenses:				
Fixed O&M (Annual, not including major maintenance / new capital costs)		\$/kW-yr	50.00	3.0%
Property Taxes		\$		
Insurance		\$		
General & Administrative		\$		
Major Maintenance Interval			Unit 1	Escalation
Major Maintenance Service Interval (as reported above)			8	
Recurring Major Maintenance Cost (stated in \$ at COD)		\$	0	3.0%
Secondary Major Maintenance Interval			0	
Recurring Secondary Major Maintenance Cost		\$	0	3.0%
One-Time Capital Investment				
Year of Operation that Investment Occurs			0	
Amount of Investment		\$	0	3.0%
Other Fixed Expenses:				
Item 1		\$		
Item 2		\$		
Item 3		\$		
Fuel Operating Expenses				
		Units	Unit 1	Escalation
Fuel Price		\$/MBtu	0.0	
		\$/GJ	0.00	3.0%
		\$/ton	0.00	
		\$/tonne	0.00	
Heat Content of Fuel		Btu/lb	0	
Heat Content of Fuel (metric)		kCal/kg	0	

Calendar Year	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Operation Year (Unit 1)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Months in Operation Year (Unit 1)	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Year Fraction	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Months in Operation Check: 600 / 600																									
Revenue																									
FOM Portion of Capacity Revenue	1,250,000	1,287,500	1,326,125	1,365,909	1,406,886	1,449,093	1,492,565	1,537,342	1,583,463	1,630,966	1,679,895	1,730,292	1,782,201	1,835,667	1,890,737	1,947,459	2,005,883	2,066,060	2,128,041	2,191,883	2,257,639	2,325,368	2,395,129	2,466,983	2,540,993
Capacity Charge Portion of Capacity Revenue	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307
Total Capacity Revenues (Unit 1)	11,444,307	11,481,807	11,520,432	11,560,216	11,601,193	11,643,400	11,686,873	11,731,650	11,777,770	11,825,274	11,874,203	11,924,600	11,976,508	12,029,974	12,085,044	12,141,767	12,200,190	12,260,367	12,322,349	12,386,190	12,451,946	12,519,675	12,589,437	12,661,290	12,735,300
Total Capacity Revenues	11,444,307	11,481,807	11,520,432	11,560,216	11,601,193	11,643,400	11,686,873	11,731,650	11,777,770	11,825,274	11,874,203	11,924,600	11,976,508	12,029,974	12,085,044	12,141,767	12,200,190	12,260,367	12,322,349	12,386,190	12,451,946	12,519,675	12,589,437	12,661,290	12,735,300
VOM Portion of Energy Revenue	427,050	439,862	453,057	466,649	480,649	495,068	509,920	525,218	540,974	557,203	573,919	591,137	608,871	627,137	645,951	665,330	685,290	705,849	727,024	748,835	771,300	794,439	818,272	842,820	868,105
Energy Charge Portion of Energy Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Energy Revenues (Unit 1)	427,050	439,862	453,057	466,649	480,649	495,068	509,920	525,218	540,974	557,203	573,919	591,137	608,871	627,137	645,951	665,330	685,290	705,849	727,024	748,835	771,300	794,439	818,272	842,820	868,105
Total Energy Revenues	427,050	439,862	453,057	466,649	480,649	495,068	509,920	525,218	540,974	557,203	573,919	591,137	608,871	627,137	645,951	665,330	685,290	705,849	727,024	748,835	771,300	794,439	818,272	842,820	868,105
Debt Service Coverage Fund Buildup Revenue	2,101,919	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Operating Revenues	13,973,276	11,921,669	11,973,490	12,026,865	12,081,842	12,138,468	12,196,793	12,256,867	12,318,744	12,382,477	12,448,122	12,515,737	12,585,380	12,657,112	12,730,996	12,807,096	12,885,480	12,966,215	13,049,373	13,135,025	13,223,246	13,314,114	13,407,708	13,504,110	13,603,405
Interest Income																									
Debt Reserve Fund	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288
Working Capital Fund	0	6,203	6,389	6,581	6,778	6,981	7,191	7,406	7,629	7,858	8,093	8,336	8,586	8,844	9,109	9,382	9,664	9,954	10,252	10,560	10,877	11,203	11,539	11,885	12,242
Major Maintenance / Additional Capital Investment Reserve Fund	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Interest Income	315,288	321,491	321,677	321,868	322,066	322,289	322,479	322,694	322,916	323,145	323,381	323,624	323,874	324,132	324,397	324,670	324,952	325,242	325,540	325,848	326,164	326,491	326,827	327,173	327,530
Total Revenue	14,288,564	12,243,159	12,295,166	12,348,733	12,403,908	12,460,737	12,519,271	12,579,562	12,641,661	12,705,622	12,771,503	12,839,361	12,909,253	12,981,243	13,055,393	13,131,767	13,210,432	13,291,457	13,374,913	13,460,872	13,549,411	13,640,605	13,734,535	13,831,284	13,930,934
Operating Expenditures																									
Operating Expenditures (Unit 1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fuel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VOM	427,050	439,862	453,057	466,649	480,649	495,068	509,920	525,218	540,974	557,203	573,919	591,137	608,871	627,137	645,951	665,330	685,290	705,849	727,024	748,835	771,300	794,439	818,272	842,820	868,105
Water																									
Wastewater																									
Chemicals																									
Ash Disposal																									
Start Costs																									
Other																									
TOTAL VOM	427,050	439,862	453,057	466,649	480,649	495,068	509,920	525,218	540,974	557,203	573,919	591,137	608,871	627,137	645,951	665,330	685,290	705,849	727,024	748,835	771,300	794,439	818,272	842,820	868,105
FOM	1,250,000	1,287,500	1,326,125	1,365,909	1,406,886	1,449,093	1,492,565	1,537,342	1,583,463	1,630,966	1,679,895	1,730,292	1,782,201	1,835,667	1,890,737	1,947,459	2,005,883	2,066,060	2,128,041	2,191,883	2,257,639	2,325,368	2,395,129	2,466,983	2,540,993
Property Taxes																									
Insurance																									
General & Administrative																									
Other																									
One-Time Capital Investment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL FOM	1,250,000	1,287,500	1,326,125	1,365,909	1,406,886	1,449,093	1,492,565	1,537,342	1,583,463	1,630,966	1,679,895	1,730,292	1,782,201	1,835,667	1,890,737	1,947,459	2,005,883	2,066,060	2,128,041	2,191,883	2,257,639	2,325,368	2,395,129	2,466,983	2,540,993
Total Operating Expenses	1,677,050	1,727,362	1,779,182	1,832,558	1,887,535	1,944,161	2,002,485	2,062,560	2,124,437	2,188,170	2,253,815	2,321,429	2,391,072	2,462,804	2,536,689	2,612,789	2,691,173	2,771,908	2,855,065	2,940,717	3,028,939	3,119,807	3,213,401	3,309,803	3,409,097
Major Maintenance Costs																									
Major Maintenance Unit 1 (Not included in O&M expenses)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Recurring Major Maintenance Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Secondary Major Maintenance Cost	0	0	0	0	0																				

Current Project NPV		
	Unit 1	Total
PV of A-T Cash Flow s at Discount Rate	(0)	(0)
FV of Equity Contributions at Discount Rate	125,000,000	125,000,000
Project NPV at Discount Rate	(125,000,000)	(125,000,000)
Discount Rate = 0%		

Case 2 Solves for Capacity payment based on P&I Obligation

Case 3. Bradley Lake Financing Model

1. Input Sheet 1
2. Input Sheet 2
3. Cash Flow Sheet 1
4. Cash Flow Sheet 2
5. NPV and Capacity Rate Summary

Inputs Column 1			
Project Description			
Case:	Case 3		
Description of Project	Util 50%, St. Eq. 50%		
Number of Units	1		
Operating Period (max 50 years)	50		
Construction Information			
Construction Period (max 60 months)	Unit 1 48		
Construction Start Date (calculated from COD & const. period)	Jan-2014		
Start of Commercial Operation (month/year)	Jan-2018		
Interest Rate on Construction Loan (%)	5.50%		
Debt/Equity Information			
Unit 1			
Overall Percent Debt	100.0%		
Overall Percent Equity	0.0%		
(\$)			
Percent Debt:	% of Unit Debt	% of Unit Cost	
% Tranche A	100.0%	100.0%	153,559,173
% Tranche B	0.0%	0.0%	0
% Tranche C	0.0%	0.0%	0
Unit 1 Long Term Debt (should equal overall debt percentage)	100.0%	100.0%	153,559,173
Percent Equity:	% of Unit Equity		
% Investor 1	100.0%	0.0%	0
Total Equity Contribution (should equal overall equity percentage)	100.0%	0.0%	0
Total Sources of Funds (Unit 1)			153,559,173
Target Debt Service Coverage Ratio (DSCR)	1.2		
Totals			
Total Debt Percentage (w eighted average, based on capital cost)	100%		
Total Equity Percentage (w eighted average, based on capital cost)	0%		
Total Long Term Debt	153,559,173		
Total Equity Contribution	0		
Total Sources of Funds (All Units)	153,559,173		
Cost of Funds			
Equity Discount Rate (required rate of return on equity) (%)	Unit 1	Overall	
	0%	0%	
(Overall input affects only PV of cash flows on Combined Cash Flow tab)			
Unit 1	Tranche A	Tranche B	Tranche C
	(Senior)	(Senior)	(Subordinate)
Term (year)	30	30	30
Payments per Year (1,2,4)	2	2	2
Interest Rate (%)	5.50%	5.50%	5.50%
First Payment (month/year)*	Jun-2018	Jun-2018	Jun-2018
Last Payment (month/year)*	Jun-2048	Jun-2048	Jun-2048
Payment (\$000s)			
* Debt payments occur at end of each payment period and last day of displayed month			
Project Use of Funds			
(all units are US Dollars, \$)			
	Depr. %	Unit 1	Total
		(\$)	(\$)
EPC + Owner's Costs	100%	125,000,000	125,000,000
EPC Cost		250,000,000	
Amount of State Grant		125,000,000	
Owner's Costs:			
Site/Permits	100%		0
Infrastructure	100%	0	0
Start Up (not incl. fuel)	100%		0
Spare Parts/Inventory	100%		0
Construction Mgmt/Mobilization Expenses	100%		0
Staff (pre-operation)	100%		0
Consultants/Studies/Legal	100%		0
Contingency (Owner's Reserve)	100%		0
Other Owner's Costs	100%		0
Total	100%	0	0
Financing Fees:			
Up Front	100%	2,303,388	2,303,388
Commitment	100%	0	0
Subtotal Financing Fees	100%	2,303,388	2,303,388
Initial Contribution to Funds:			
Debt Service	0%	10,509,595	10,509,595
Working Capital	0%	206,760	206,760
Major Maintenance	0%	0	0
Subtotal Initial Contributions to Funds	0%	10,716,355	10,716,355
Interest During Construction	100%	15,539,430	15,539,430
Total Capital Cost		153,559,173	153,559,173
Total Depreciable Amount		142,842,818	142,842,818
Reserve Fund Information			
No. Months of P&I for Debt Service Fund	Unit 1 12		
No. Days of Oper. Exp. For Working Capital Fund	45		
Financing Fees:			
Up Front (%)	1.50%		
Commitment (%)	0.00%		
Interest Rate (Before-Tax) on Reserve Funds (%)	3.0%		
Depreciation & Tax Parameters			
Taxes (%):	Unit 1		
State	0.0%		
Federal	0.0%		
Effective	Use Effective Tax Rate 0.0%		
Tax Loss Treatment:	Credit Current Year		
Overall Depreciable Amount	142,842,818		
Depreciation Asset Life (Years)	20		
Depreciation Method:	Unit 1		
Straight-Line (SLN), Normal			

Inputs Column 2			
Electric/Cogeneration (EC) Performance			
		Unit 1	
Electrical Output:			
Initial Net Plant Output (MW)		25.0	
Annual Average Capacity Factor (% , calculated as average from 'Annual Generation' tab)		65.0%	
Plant Output Degradation (% / year Cumulative, Recoverable after Major Maintenance)		0.0%	
Major Maintenance Interval (years, fully recovers Plant Output)		8	
Heat Rate (metric, kJ/kWh)			
Heat Rate (Standard, Btu/kWh)		0	
Heat Rate Degradation (%/year Cumulative, Recoverable after Major Maintenance)		0.0%	
Secondary Major Maintenance Interval (years, fully recovers Heat Rate)		0	
Revenues			
	Item	Units	Price
			Unit 1
	Energy Rate (First Year, not used if dropdown cell is "Yes")	\$/MWh	75.00
	Energy Rate = Fuel + Variable O & M Pass-Through?	Yes	3.00
	Pass-Through Energy Rate Only (First Year)	\$/MWh	3.00
	Energy Escalation		3.0%
	Capacity Rate (During Debt Term)	\$/kW-yr	407.77
	Capacity Charge = Fixed O&M Pass Through?	Combined	50.00
	Capacity Charge, Less FOM	\$/kW-yr	357.77
	Capacity Escalation		0.0%
	Capacity Rate (Post Debt)	\$/kW-yr	217.17
Other Revenues:			
	Item 1	\$	
	Item 2	\$	
	Item 3	\$	
	Item 4	\$	
Non-Fuel Operating Expenses			
	Item	Units	Unit 1 Escalation
Variable Expenses:			
	Variable O&M	\$/MWh	3.00 3.0%
	Water	\$/MWh	
	Wastewater	\$/MWh	
	Chemicals	\$/MWh	
	Ash Disposal	\$/MWh	
	Start Costs	\$/MWh	
Other Variable Expenses:			
	Item 1	\$/MWh	
	Item 2	\$/MWh	
	Item 3	\$/MWh	
Fixed Expenses:			
	Fixed O&M (Annual, not including major maintenance / new capital costs)	\$/kW-yr	50.00 3.0%
	Property Taxes	\$	
	Insurance	\$	
	General & Administrative	\$	
Major Maintenance Interval			
	Major Maintenance Service Interval (as reported above)		8
	Recurring Major Maintenance Cost (stated in \$ at COD)	\$	0 3.0%
	Secondary Major Maintenance Interval		0
	Recurring Secondary Major Maintenance Cost	\$	0 3.0%
One-Time Capital Investment			
	Year of Operation that Investment Occurs		0
	Amount of Investment	\$	0 3.0%
Other Fixed Expenses:			
	Item 1	\$	
	Item 2	\$	
	Item 3	\$	
Fuel Operating Expenses			
		Units	Unit 1 Escalation
	Fuel Price	\$/MBtu	0.0
		\$/GJ	0.00 3.0%
		\$/ton	0.00
		\$/tonne	0.00
	Heat Content of Fuel	Btu/lb	0
	Heat Content of Fuel (metric)	kCal/kg	0

Calendar Year	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	
Operation Year (Unit 1)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
Months in Operation Year (Unit 1)	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	
Year Fraction	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Months in Operation Check: 600 / 600																										
Revenue																										
FOM Portion of Capacity Revenue	1,250,000	1,287,500	1,326,125	1,365,909	1,406,886	1,449,093	1,492,565	1,537,342	1,583,463	1,630,966	1,679,895	1,730,292	1,782,201	1,835,667	1,890,737	1,947,459	2,005,883	2,066,060	2,128,041	2,191,883	2,257,639	2,325,368	2,395,129	2,466,983	2,540,993	
Capacity Charge Portion of Capacity Revenue	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	
Total Capacity Revenues (Unit 1)	11,444,307	11,481,807	11,520,432	11,560,216	11,601,193	11,643,400	11,686,873	11,731,650	11,777,770	11,825,274	11,874,203	11,924,600	11,976,508	12,029,974	12,085,044	12,141,767	12,200,190	12,260,367	12,322,349	12,386,190	12,451,946	12,519,675	12,589,437	12,661,290	12,735,300	
Total Capacity Revenues	11,444,307	11,481,807	11,520,432	11,560,216	11,601,193	11,643,400	11,686,873	11,731,650	11,777,770	11,825,274	11,874,203	11,924,600	11,976,508	12,029,974	12,085,044	12,141,767	12,200,190	12,260,367	12,322,349	12,386,190	12,451,946	12,519,675	12,589,437	12,661,290	12,735,300	
VOM Portion of Energy Revenue	427,050	439,862	453,057	466,649	480,649	495,068	509,920	525,218	540,974	557,203	573,919	591,137	608,871	627,137	645,951	665,330	685,290	705,849	727,024	748,835	771,300	794,439	818,272	842,820	868,105	
Energy Charge Portion of Energy Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Energy Revenues (Unit 1)	427,050	439,862	453,057	466,649	480,649	495,068	509,920	525,218	540,974	557,203	573,919	591,137	608,871	627,137	645,951	665,330	685,290	705,849	727,024	748,835	771,300	794,439	818,272	842,820	868,105	
Total Energy Revenues	427,050	439,862	453,057	466,649	480,649	495,068	509,920	525,218	540,974	557,203	573,919	591,137	608,871	627,137	645,951	665,330	685,290	705,849	727,024	748,835	771,300	794,439	818,272	842,820	868,105	
Debt Service Coverage Fund Buildup Revenue	2,101,919	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Operating Revenues	13,973,276	11,921,669	11,973,490	12,026,865	12,081,842	12,138,468	12,196,793	12,256,867	12,318,744	12,382,477	12,448,122	12,515,737	12,585,380	12,657,112	12,730,996	12,807,096	12,885,480	12,966,215	13,049,373	13,135,025	13,223,246	13,314,114	13,407,708	13,504,110	13,603,405	
Interest Income																										
Debt Reserve Fund	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288	315,288
Working Capital Fund	0	6,203	6,389	6,581	6,778	6,981	7,191	7,406	7,629	7,858	8,093	8,336	8,586	8,844	9,109	9,382	9,664	9,954	10,252	10,560	10,877	11,203	11,539	11,885	12,242	
Major Maintenance / Additional Capital Investment Reserve Fund	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Interest Income	315,288	321,491	321,677	321,868	322,066	322,269	322,479	322,694	322,916	323,145	323,381	323,624	323,874	324,132	324,397	324,670	324,952	325,242	325,540	325,848	326,164	326,491	326,827	327,173	327,530	
Total Revenue	14,288,564	12,243,159	12,295,166	12,348,733	12,403,908	12,460,737	12,519,271	12,579,562	12,641,661	12,705,622	12,771,503	12,839,361	12,909,253	12,981,243	13,055,393	13,131,767	13,210,432	13,291,457	13,374,913	13,460,872	13,549,411	13,640,605	13,734,535	13,831,284	13,930,934	
Operating Expenditures																										
Operating Expenditures (Unit 1)																										
Fuel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
VOM	427,050	439,862	453,057	466,649	480,649	495,068	509,920	525,218	540,974	557,203	573,919	591,137	608,871	627,137	645,951	665,330	685,290	705,849	727,024	748,835	771,300	794,439	818,272	842,820	868,105	
Water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Wastewater	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Chemicals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Ash Disposal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Start Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOM	427,050	439,862	453,057	466,649	480,649	495,068	509,920	525,218	540,974	557,203	573,919	591,137	608,871	627,137	645,951	665,330	685,290	705,849	727,024	748,835	771,300	794,439	818,272	842,820	868,105	
FOM	1,250,000	1,287,500	1,326,125	1,365,909	1,406,886	1,449,093	1,492,565	1,537,342	1,583,463	1,630,966	1,679,895	1,730,292	1,782,201	1,835,667	1,890,737	1,947,459	2,005,883	2,066,060	2,128,041	2,191,883	2,257,639	2,325,368	2,395,129	2,466,983	2,540,993	
Property Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Insurance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
General & Administrative	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
One-Time Capital Investment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL FOM	1,250,000	1,287,500	1,326,125	1,365,909	1,406,886	1,449,093	1,492,565	1,537,342	1,583,463	1,630,966	1,679,895	1,730,292	1,782,201	1,835,667	1,890,737	1,947,459	2,005,883	2,066,060	2,128,041	2,191,883	2,257,639	2,325,368	2,395,129	2,466,983	2,540,993	
Total Operating Expenses	1,677,050	1,727,362	1,779,182	1,832,558	1,887,535	1,944,161	2,002,485	2,062,560	2,124,437	2,188,170	2,253,815	2,321,429	2,391,072	2,462,804	2,536,689	2,612,789	2,691,173	2,771,908	2,855,065	2,940,717	3,028,939	3,119,807	3,213,401	3,309,803	3,409,097	
Major Maintenance Costs																										
Major Maintenance Unit 1 (Not Included in O&M expenses)																										
Recurring Major Maintenance Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Secondary Major Maintenance Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Major Maintenance Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cash Available for Debt Service	12,611,514	10,515,798	10,515,9																							

Calendar Year	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	
Operation Year (Unit 1)	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	
Months in Operation Year (Unit 1)	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	
Year Fraction	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Months in Operation Check: 600 / 600																										
Revenue																										
FOM Portion of Capacity Revenue	2,617,222	2,695,739	2,776,611	2,859,910	2,945,707	3,034,078	3,125,100	3,218,853	3,315,419	3,414,882	3,517,328	3,622,848	3,731,533	3,843,479	3,958,794	4,077,547	4,199,874	4,325,870	4,455,646	4,589,315	4,726,995	4,868,805	5,014,869	5,165,315	5,320,274	
Capacity Charge Portion of Capacity Revenue	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	10,194,307	
Total Capacity Revenues (Unit 1)	12,811,530	12,890,046	12,970,918	13,054,217	13,140,014	13,228,385	13,319,157	13,413,160	13,510,726	13,611,189	13,714,635	13,821,155	13,931,840	14,046,786	14,166,101	14,289,854	14,418,181	14,550,177	14,686,653	14,827,632	14,973,307	15,123,814	15,279,363	15,439,156	15,603,411	
Total Capacity Revenues	12,811,530	12,890,046	12,970,918	13,054,217	13,140,014	13,228,385	13,319,157	13,413,160	13,510,726	13,611,189	13,714,635	13,821,155	13,931,840	14,046,786	14,166,101	14,289,854	14,418,181	14,550,177	14,686,653	14,827,632	14,973,307	15,123,814	15,279,363	15,439,156	15,603,411	
VOM Portion of Energy Revenue	894,148	920,972	948,601	977,060	1,006,371	1,036,562	1,067,659	1,099,689	1,132,680	1,166,660	1,201,660	1,237,710	1,274,841	1,313,086	1,352,479	1,393,053	1,434,845	1,477,890	1,522,227	1,567,894	1,614,931	1,663,378	1,713,280	1,764,678	1,817,619	
Energy Charge Portion of Energy Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Energy Revenues (Unit 1)	894,148	920,972	948,601	977,060	1,006,371	1,036,562	1,067,659	1,099,689	1,132,680	1,166,660	1,201,660	1,237,710	1,274,841	1,313,086	1,352,479	1,393,053	1,434,845	1,477,890	1,522,227	1,567,894	1,614,931	1,663,378	1,713,280	1,764,678	1,817,619	
Total Energy Revenues	894,148	920,972	948,601	977,060	1,006,371	1,036,562	1,067,659	1,099,689	1,132,680	1,166,660	1,201,660	1,237,710	1,274,841	1,313,086	1,352,479	1,393,053	1,434,845	1,477,890	1,522,227	1,567,894	1,614,931	1,663,378	1,713,280	1,764,678	1,817,619	
Debt Service Coverage Fund Buildup Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Operating Revenues	13,705,678	13,811,019	13,919,520	14,031,276	14,146,385	14,264,947	14,387,816	14,514,845	14,646,406	14,782,845	14,924,385	15,071,865	15,225,296	15,384,681	15,549,105	15,719,758	15,896,747	16,080,322	16,270,799	16,468,526	16,673,815	16,887,086	17,108,866	17,338,745	17,577,324	
Interest Income																										
Debt Reserve Fund	315,288	315,288	315,288	315,288	315,288	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Working Capital Fund	12,609	12,987	13,377	13,778	14,192	14,617	15,056	15,507	15,973	16,452	16,945	17,454	17,977	18,517	19,072	19,644	20,234	20,841	21,466	22,110	22,773	23,456	24,160	24,885	25,631	
Major Maintenance / Additional Capital Investment Reserve Fund	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Interest Income	327,897	328,275	328,665	329,066	329,479	14,617	15,056	15,507	15,973	16,452	16,945	17,454	17,977	18,517	19,072	19,644	20,234	20,841	21,466	22,110	22,773	23,456	24,160	24,885	25,631	
Total Revenue	14,033,574	14,139,294	14,248,185	14,360,342	14,475,865	14,594,464	14,717,321	14,844,818	14,977,379	15,115,300	15,258,810	15,407,915	15,562,813	15,723,698	15,890,827	16,064,491	16,244,817	16,431,941	16,626,086	16,827,681	17,036,315	17,252,911	17,477,991	17,711,876	17,954,955	
Operating Expenditures																										
Operating Expenditures (Unit 1)																										
Fuel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
VOM	894,148	920,972	948,601	977,060	1,006,371	1,036,562	1,067,659	1,099,689	1,132,680	1,166,660	1,201,660	1,237,710	1,274,841	1,313,086	1,352,479	1,393,053	1,434,845	1,477,890	1,522,227	1,567,894	1,614,931	1,663,378	1,713,280	1,764,678	1,817,619	
Water																										
Wastewater																										
Chemicals																										
Ash Disposal																										
Start Costs																										
Other																										
TOTAL VOM	894,148	920,972	948,601	977,060	1,006,371	1,036,562	1,067,659	1,099,689	1,132,680	1,166,660	1,201,660	1,237,710	1,274,841	1,313,086	1,352,479	1,393,053	1,434,845	1,477,890	1,522,227	1,567,894	1,614,931	1,663,378	1,713,280	1,764,678	1,817,619	
FOM	2,617,222	2,695,739	2,776,611	2,859,910	2,945,707	3,034,078	3,125,100	3,218,853	3,315,419	3,414,882	3,517,328	3,622,848	3,731,533	3,843,479	3,958,794	4,077,547	4,199,874	4,325,870	4,455,646	4,589,315	4,726,995	4,868,805	5,014,869	5,165,315	5,320,274	
Property Taxes																										
Insurance																										
General & Administrative																										
Other																										
One-Time Capital Investment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL FOM	2,617,222	2,695,739	2,776,611	2,859,910	2,945,707	3,034,078	3,125,100	3,218,853	3,315,419	3,414,882	3,517,328	3,622,848	3,731,533	3,843,479	3,958,794	4,077,547	4,199,874	4,325,870	4,455,646	4,589,315	4,726,995	4,868,805	5,014,869	5,165,315	5,320,274	
Total Operating Expenses	3,511,370	3,616,711	3,725,213	3,836,969	3,952,078	4,070,641	4,192,760	4,318,543	4,448,099	4,581,542	4,718,988	4,860,558	5,006,374	5,156,566	5,311,263	5,470,600	5,634,718	5,803,760	5,977,873	6,157,209	6,341,925	6,532,183	6,728,149	6,929,993	7,137,893	
Major Maintenance Costs																										
Major Maintenance Unit 1 (Not included in O&M expenses)																										
Recurring Major Maintenance Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Secondary Major Maintenance Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Major Maintenance Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cash Available for Debt Service	10,522,204	10,522,582	10,522,972	10,523,373	10,523,787	5,443,756	5,444,195	5,444,647	5,445,112	5,445,591	5,446,084	5,446,593	5,447,116	5,447,656	5,448,211	5,448,783	5,449,373	5,449,980	5,450,605	5,451,249	5,451,912	5,452,595	5,453,299	5,454,024	5,454,7	

Case 4. Inflation Indexed Bradley Lake Model

1. Input Sheet 1
2. Input Sheet 2
3. Cash Flow Sheet 1
4. Cash Flow Sheet 2
5. NPV and Capacity Rate Summary

Inputs Column 1			
Project Description			
Case:	Case 3		
Description of Project	St. Eq. 50%, Indexed		
Number of Units	1		
Operating Period (max 50 years)	50		
Construction Information			
			Unit 1
Construction Period (max 60 months)			48
Construction Start Date (calculated from COD & const. period)			Jan-2014
Start of Commercial Operation (month/year)			Jan-2018
Interest Rate on Construction Loan (%)			5.50%
Debt/Equity Information			
Unit 1			
Overall Percent Debt			100.0%
Overall Percent Equity			0.0%
			(\$)
Percent Debt:	% of Unit Debt	% of Unit Cost	
% Tranche A	100.0%	100.0%	65,240,179
% Tranche B	0.0%	0.0%	0
% Tranche C	0.0%	0.0%	0
Unit 1 Long Term Debt (should equal overall debt percentage)	100.0%	100.0%	65,240,179
Percent Equity:	% of Unit Equity		
% Investor 1	100.0%	0.0%	0
Total Equity Contribution (should equal overall equity percentage)	100.0%	0.0%	0
Total Sources of Funds (Unit 1)			65,240,179
Target Debt Service Coverage Ratio (DSCR)			1.2
Totals			
Total Debt Percentage (w eighted average, based on capital cost)			100%
Total Equity Percentage (w eighted average, based on capital cost)			0%
Total Long Term Debt			65,240,179
Total Equity Contribution			0
Total Sources of Funds (All Units)			65,240,179
Cost of Funds			
			Unit 1
			Overall
Equity Discount Rate (required rate of return on equity) (%)			0%
(Overall input affects only PV of cash flows on Combined Cash Flow tab)			
UNIT 1	Tranche A	Tranche B	Tranche C
	(Senior)	(Senior)	(Subordinate)
Term (year)	30	30	30
Payments per Year (1,2,4)	2	2	2
Interest Rate (%)	5.50%	5.50%	5.50%
First Payment (month/year)*	Jun-2018	Jun-2018	Jun-2018
Last Payment (month/year)*	Jun-2048	Jun-2048	Jun-2048
Payment (\$000s)			
* Debt payments occur at end of each payment period and last day of displayed month			
Project Use of Funds			
(all units are US Dollars, \$)			
			Unit 1
			Total
			(\$)
EPC + Owner's Costs	Depr. %		
	100%		53,000,000
EPC Cost			250,000,000
Amount of State Grant			197,000,000
Owner's Costs:			
Site/Permits	100%		0
Infrastructure	100%	0	0
Start Up (not incl. fuel)	100%		0
Spare Parts/Inventory	100%		0
Construction Mgmt/Mobilization Expenses	100%		0
Staff (pre-operation)	100%		0
Consultants/Studies/Legal	100%		0
Contingency (Owner's Reserve)	100%		0
Other Owner's Costs	100%		0
Total	100%	0	0
Financing Fees:			
Up Front	100%	978,603	978,603
Commitment	100%	0	0
Subtotal Financing Fees	100%	978,603	978,603
Initial Contribution to Funds:			
Debt Service	0%	4,465,040	4,465,040
Working Capital	0%	206,760	206,760
Major Maintenance	0%	0	0
Subtotal Initial Contributions to Funds	0%	4,671,800	4,671,800
Interest During Construction	100%	6,589,777	6,589,777
Total Capital Cost		65,240,179	65,240,179
Total Depreciable Amount		60,568,380	60,568,380
Reserve Fund Information			
			Unit 1
No. Months of P&I for Debt Service Fund			12
No. Days of Oper. Exp. For Working Capital Fund			45
Financing Fees:			
Up Front (%)			1.50%
Commitment (%)			0.00%
Interest Rate (Before-Tax) on Reserve Funds (%)			3.0%
Depreciation & Tax Parameters			
			Unit 1
Taxes (%):			
State			0.0%
Federal			0.0%
Effective			Use Effective Tax Rate
			0.0%
Tax Loss Treatment:			Credit Current Year
Overall Depreciable Amount			60,568,380
Depreciation Asset Life (Years)			20
Depreciation Method:			Unit 1
Straight-Line (SLN), Normal			

Inputs Column 2				
Electric/Cogeneration (E/C) Performance				
		Unit 1		
Electrical Output:				
Initial Net Plant Output (MW)		25.0		
Annual Average Capacity Factor (% , calculated as average from 'Annual Generation' tab)		65.0%		
Plant Output Degradation (% / year Cumulative, Recoverable after Major Maintenance)		0.0%		
Major Maintenance Interval (years, fully recovers Plant Output)		8		
Heat Rate (metric, kJ/kWh)		0		
Heat Rate (Standard, Btu/kWh)		0		
Heat Rate Degradation (%/year Cumulative, Recoverable after Major Maintenance)		0.0%		
Secondary Major Maintenance Interval (years, fully recovers Heat Rate)		0		
Revenues				
		Unit 1		
Item	Units	Price		
Energy Rate (First Year, not used if dropdown cell is "Yes")	\$/MWh	75.00		
Energy Rate = Fuel + Variable O & M Pass-Through?	Yes	3.00		
Pass-Through Energy Rate Only (First Year)	\$/MWh	3.00		
Energy Escalation		3.0%		
Capacity Rate (During Debt Term)	\$/kW-yr	173.42		
Capacity Charge = Fixed O&M Pass Through?	Combined	50.00		
Capacity Charge, Less FOM	\$/kW-yr	123.42		
Capacity Escalation		1.5%		
Capacity Rate (Post Debt)	\$/kW-yr	173.42		
Other Revenues:				
Item 1	\$			
Item 2	\$			
Item 3	\$			
Item 4	\$			
Non-Fuel Operating Expenses				
		Unit 1		Escalation
Variable Expenses:				
Variable O&M	\$/MWh	3.00		3.0%
Water	\$/MWh			
Wastewater	\$/MWh			
Chemicals	\$/MWh			
Ash Disposal	\$/MWh			
Start Costs	\$/MWh			
Other Variable Expenses:				
Item 1	\$/MWh			
Item 2	\$/MWh			
Item 3	\$/MWh			
Fixed Expenses:				
Fixed O&M (Annual, not including major maintenance / new capital costs)	\$/kW-yr	50.00		3.0%
Property Taxes	\$			
Insurance	\$			
General & Administrative	\$			
Major Maintenance Interval				
Major Maintenance Service Interval (as reported above)		8		
Recurring Major Maintenance Cost (stated in \$ at COD)	\$	0		3.0%
Secondary Major Maintenance Interval		0		
Recurring Secondary Major Maintenance Cost	\$	0		3.0%
One-Time Capital Investment				
Year of Operation that Investment Occurs		0		
Amount of Investment	\$	0		3.0%
Other Fixed Expenses:				
Item 1	\$			
Item 2	\$			
Item 3	\$			
Fuel Operating Expenses				
		Unit 1		Escalation
Fuel Price				
	\$/MBtu	0.0		
	\$/GJ	0.00		3.0%
	\$/ton	0.00		
	\$/tonne	0.00		
Heat Content of Fuel	Btu/lb	0		
Heat Content of Fuel (metric)	kCal/kg	0		

Calendar Year	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	
Operation Year (Unit 1)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
Months in Operation Year (Unit 1)	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	
Year Fraction	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Months in Operation Check: 600 / 600																										
Revenue																										
FOM Portion of Capacity Revenue	1,250,000	1,287,500	1,326,125	1,365,909	1,406,886	1,449,093	1,492,565	1,537,342	1,583,463	1,630,966	1,679,895	1,730,292	1,782,201	1,835,667	1,890,737	1,947,459	2,005,883	2,066,060	2,128,041	2,191,883	2,257,639	2,325,368	2,395,129	2,466,983	2,540,993	
Capacity Charge Portion of Capacity Revenue	4,335,496	4,400,529	4,466,536	4,533,535	4,601,538	4,670,561	4,740,619	4,811,728	4,883,904	4,957,163	5,031,520	5,106,993	5,183,598	5,261,352	5,340,272	5,420,376	5,501,682	5,584,207	5,667,970	5,752,990	5,839,285	5,926,874	6,015,777	6,106,014	6,197,604	
Total Capacity Revenues (Unit 1)	5,585,496	5,688,029	5,792,661	5,899,443	6,008,424	6,119,653	6,233,184	6,349,071	6,467,367	6,588,129	6,711,416	6,837,285	6,965,799	7,097,019	7,231,009	7,367,836	7,507,565	7,650,267	7,796,012	7,944,872	8,096,924	8,252,242	8,410,906	8,572,997	8,738,597	
Total Capacity Revenues	5,585,496	5,688,029	5,792,661	5,899,443	6,008,424	6,119,653	6,233,184	6,349,071	6,467,367	6,588,129	6,711,416	6,837,285	6,965,799	7,097,019	7,231,009	7,367,836	7,507,565	7,650,267	7,796,012	7,944,872	8,096,924	8,252,242	8,410,906	8,572,997	8,738,597	
VOM Portion of Energy Revenue	427,050	439,862	453,057	466,649	480,649	495,068	509,920	525,218	540,974	557,203	573,919	591,137	608,871	627,137	645,951	665,330	685,290	705,849	727,024	748,835	771,300	794,439	818,272	842,820	868,105	
Energy Charge Portion of Energy Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Energy Revenues (Unit 1)	427,050	439,862	453,057	466,649	480,649	495,068	509,920	525,218	540,974	557,203	573,919	591,137	608,871	627,137	645,951	665,330	685,290	705,849	727,024	748,835	771,300	794,439	818,272	842,820	868,105	
Total Energy Revenues	427,050	439,862	453,057	466,649	480,649	495,068	509,920	525,218	540,974	557,203	573,919	591,137	608,871	627,137	645,951	665,330	685,290	705,849	727,024	748,835	771,300	794,439	818,272	842,820	868,105	
Debt Service Coverage Fund Buildup Revenue	893,008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Operating Revenues	6,905,554	6,127,890	6,245,719	6,366,092	6,489,072	6,614,721	6,743,104	6,874,288	7,008,341	7,145,333	7,285,335	7,428,422	7,574,670	7,724,156	7,876,961	8,033,166	8,192,855	8,356,115	8,523,036	8,693,707	8,868,224	9,046,681	9,229,178	9,415,817	9,606,701	
Interest Income																										
Debt Reserve Fund	133,951	133,951	133,951	133,951	133,951	133,951	133,951	133,951	133,951	133,951	133,951	133,951	133,951	133,951	133,951	133,951	133,951	133,951	133,951	133,951	133,951	133,951	133,951	133,951	133,951	
Working Capital Fund	0	6,203	6,389	6,581	6,778	6,981	7,191	7,406	7,629	7,858	8,093	8,336	8,586	8,844	9,109	9,382	9,664	9,954	10,252	10,560	10,877	11,203	11,539	11,885	12,242	
Major Maintenance / Additional Capital Investment Reserve Fund	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Interest Income	133,951	140,154	140,340	140,532	140,729	140,932	141,142	141,358	141,580	141,809	142,044	142,287	142,537	142,795	143,060	143,333	143,615	143,905	144,203	144,511	144,828	145,154	145,490	145,836	146,193	
Total Revenue	7,039,505	6,268,044	6,386,059	6,506,624	6,629,801	6,755,654	6,884,246	7,015,646	7,149,921	7,287,141	7,427,380	7,570,710	7,717,208	7,866,951	8,020,021	8,176,499	8,336,470	8,500,020	8,667,239	8,838,218	9,013,051	9,191,835	9,374,668	9,561,653	9,752,894	
Operating Expenditures																										
Operating Expenditures (Unit 1)																										
Fuel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
VOM	427,050	439,862	453,057	466,649	480,649	495,068	509,920	525,218	540,974	557,203	573,919	591,137	608,871	627,137	645,951	665,330	685,290	705,849	727,024	748,835	771,300	794,439	818,272	842,820	868,105	
Water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Wastewater	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Chemicals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Ash Disposal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Start Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOM	427,050	439,862	453,057	466,649	480,649	495,068	509,920	525,218	540,974	557,203	573,919	591,137	608,871	627,137	645,951	665,330	685,290	705,849	727,024	748,835	771,300	794,439	818,272	842,820	868,105	
FOM	1,250,000	1,287,500	1,326,125	1,365,909	1,406,886	1,449,093	1,492,565	1,537,342	1,583,463	1,630,966	1,679,895	1,730,292	1,782,201	1,835,667	1,890,737	1,947,459	2,005,883	2,066,060	2,128,041	2,191,883	2,257,639	2,325,368	2,395,129	2,466,983	2,540,993	
Property Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Insurance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
General & Administrative	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
One-Time Capital Investment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL FOM	1,250,000	1,287,500	1,326,125	1,365,909	1,406,886	1,449,093	1,492,565	1,537,342	1,583,463	1,630,966	1,679,895	1,730,292	1,782,201	1,835,667	1,890,737	1,947,459	2,005,883	2,066,060	2,128,041	2,191,883	2,257,639	2,325,368	2,395,129	2,466,983	2,540,993	
Total Operating Expenses	1,677,050	1,727,362	1,779,182	1,832,558	1,887,535	1,944,161	2,002,485	2,062,560	2,124,437	2,188,170	2,253,815	2,321,429	2,391,072	2,462,804	2,536,689	2,612,789	2,691,173	2,771,908	2,855,065	2,940,717	3,028,939	3,119,807	3,213,401	3,309,803	3,409,097	
Major Maintenance Costs																										
Major Maintenance Unit 1 (Not included in O&M expenses)																										
Recurring Major Maintenance Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Secondary Major Maintenance Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Major Maintenance Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cash Available for Debt Service	5,362,455	4,540,683	4,606,877	4,674,066	4,742,267	4,811,493	4,881,761	4,953,086	5,025,484	5,098,972	<															

Calendar Year	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	
Operation Year (Unit 1)	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	
Months in Operation Year (Unit 1)	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	
Year Fraction	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Months in Operation Check: 600 / 600																										
Revenue																										
FOM Portion of Capacity Revenue	2,617,222	2,695,739	2,776,611	2,859,910	2,945,707	3,034,078	3,125,100	3,218,853	3,315,419	3,414,882	3,517,328	3,622,848	3,731,533	3,843,479	3,958,784	4,077,547	4,199,874	4,325,870	4,455,646	4,589,315	4,726,995	4,868,805	5,014,869	5,165,315	5,320,274	
Capacity Charge Portion of Capacity Revenue	6,290,568	6,384,926	6,480,700	6,577,911	6,676,580	6,776,728	6,878,379	6,981,555	7,086,278	7,192,572	7,300,461	7,409,968	7,521,117	7,633,934	7,748,443	7,864,670	7,982,640	8,102,379	8,223,915	8,347,274	8,472,483	8,599,570	8,728,564	8,859,492	8,992,385	
Total Capacity Revenues (Unit 1)	8,907,790	9,080,666	9,257,312	9,437,820	9,622,286	9,810,806	10,003,480	10,200,408	10,401,697	10,607,454	10,817,789	11,032,816	11,252,651	11,477,413	11,707,227	11,942,217	12,182,513	12,428,249	12,679,561	12,936,589	13,199,478	13,468,375	13,743,433	14,024,807	14,312,659	
Total Capacity Revenues	8,907,790	9,080,666	9,257,312	9,437,820	9,622,286	9,810,806	10,003,480	10,200,408	10,401,697	10,607,454	10,817,789	11,032,816	11,252,651	11,477,413	11,707,227	11,942,217	12,182,513	12,428,249	12,679,561	12,936,589	13,199,478	13,468,375	13,743,433	14,024,807	14,312,659	
VOM Portion of Energy Revenue	894,148	920,972	948,601	977,060	1,006,371	1,036,562	1,067,659	1,099,689	1,132,680	1,166,660	1,201,660	1,237,710	1,274,841	1,313,086	1,352,479	1,393,053	1,434,845	1,477,890	1,522,227	1,567,894	1,614,931	1,663,378	1,713,280	1,764,678	1,817,619	
Energy Charge Portion of Energy Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Energy Revenues (Unit 1)	894,148	920,972	948,601	977,060	1,006,371	1,036,562	1,067,659	1,099,689	1,132,680	1,166,660	1,201,660	1,237,710	1,274,841	1,313,086	1,352,479	1,393,053	1,434,845	1,477,890	1,522,227	1,567,894	1,614,931	1,663,378	1,713,280	1,764,678	1,817,619	
Total Energy Revenues	894,148	920,972	948,601	977,060	1,006,371	1,036,562	1,067,659	1,099,689	1,132,680	1,166,660	1,201,660	1,237,710	1,274,841	1,313,086	1,352,479	1,393,053	1,434,845	1,477,890	1,522,227	1,567,894	1,614,931	1,663,378	1,713,280	1,764,678	1,817,619	
Debt Service Coverage Fund Buildup Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Operating Revenues	9,801,938	10,001,638	10,205,913	10,414,880	10,628,658	10,847,389	11,071,139	11,300,097	11,534,377	11,774,114	12,019,449	12,270,526	12,527,492	12,790,500	13,059,706	13,335,270	13,617,358	13,906,139	14,201,788	14,504,483	14,814,408	15,131,753	15,456,712	15,789,485	16,130,277	
Interest Income																										
Debt Reserve Fund	133,951	133,951	133,951	133,951	133,951	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Working Capital Fund	12,609	12,987	13,377	13,778	14,192	14,617	15,056	15,507	15,973	16,452	16,945	17,454	17,977	18,517	19,072	19,644	20,234	20,841	21,466	22,110	22,773	23,456	24,160	24,885	25,631	
Major Maintenance / Additional Capital Investment Reserve Fund	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Interest Income	146,560	146,938	147,328	147,729	148,143	14,617	15,056	15,507	15,973	16,452	16,945	17,454	17,977	18,517	19,072	19,644	20,234	20,841	21,466	22,110	22,773	23,456	24,160	24,885	25,631	
Total Revenue	9,948,498	10,148,576	10,353,241	10,562,609	10,776,800	10,861,986	11,086,195	11,315,605	11,550,350	11,790,566	12,036,394	12,287,979	12,545,469	12,809,016	13,078,778	13,354,915	13,637,592	13,926,980	14,223,254	14,526,593	14,837,181	15,152,210	15,480,872	15,814,370	16,155,909	
Operating Expenditures																										
Operating Expenditures (Unit 1)																										
Fuel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
VOM	894,148	920,972	948,601	977,060	1,006,371	1,036,562	1,067,659	1,099,689	1,132,680	1,166,660	1,201,660	1,237,710	1,274,841	1,313,086	1,352,479	1,393,053	1,434,845	1,477,890	1,522,227	1,567,894	1,614,931	1,663,378	1,713,280	1,764,678	1,817,619	
Water																										
Wastewater																										
Chemicals																										
Ash Disposal																										
Start Costs																										
Other																										
TOTAL VOM	894,148	920,972	948,601	977,060	1,006,371	1,036,562	1,067,659	1,099,689	1,132,680	1,166,660	1,201,660	1,237,710	1,274,841	1,313,086	1,352,479	1,393,053	1,434,845	1,477,890	1,522,227	1,567,894	1,614,931	1,663,378	1,713,280	1,764,678	1,817,619	
FOM	2,617,222	2,695,739	2,776,611	2,859,910	2,945,707	3,034,078	3,125,100	3,218,853	3,315,419	3,414,882	3,517,328	3,622,848	3,731,533	3,843,479	3,958,784	4,077,547	4,199,874	4,325,870	4,455,646	4,589,315	4,726,995	4,868,805	5,014,869	5,165,315	5,320,274	
Property Taxes																										
Insurance																										
General & Administrative																										
Other																										
One-Time Capital Investment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL FOM	2,617,222	2,695,739	2,776,611	2,859,910	2,945,707	3,034,078	3,125,100	3,218,853	3,315,419	3,414,882	3,517,328	3,622,848	3,731,533	3,843,479	3,958,784	4,077,547	4,199,874	4,325,870	4,455,646	4,589,315	4,726,995	4,868,805	5,014,869	5,165,315	5,320,274	
Total Operating Expenses	3,511,370	3,616,711	3,725,213	3,836,969	3,952,078	4,070,641	4,192,760	4,318,543	4,448,099	4,581,542	4,718,988	4,860,558	5,006,374	5,156,566	5,311,263	5,470,600	5,634,718	5,803,760	5,977,873	6,157,209	6,341,925	6,532,183	6,728,149	6,929,993	7,137,893	
Major Maintenance Costs																										
Major Maintenance Unit 1 (Not included in O&M expenses)																										
Recurring Major Maintenance Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Secondary Major Maintenance Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Major Maintenance Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cash Available for Debt Service	6,437,128	6,531,865	6,628,028	6,725,640	6,824,722	6,924,346	7,024,543	7,125,315	7,226,664	7,328,582	7,431,069	7,534,116	7,637,723	7,741,890	7,846,617	7,951,904	8,057,751	8,164,158	8,271,125	8,378,652	8,486,739	8,595,386	8,704,593	8,814,360	8,924,687	
Debt Service Coverage Fund Balance	1,842,531																									

Appendix C. Comprehensive Potential Hydro Project List

NUMBER	SOURCE INDICATOR	UNIQUE NUMBER	SOURCE	NAME	LOCATION LENGTH (MI)	LOCATION	NOMINAL FLOW (CU FT/SEC)	AVERAGE STREAM FLOW (CU FT/SEC)	DAM HEIGHT (FT)	PERMIT #	REMARKS	CAPACITY KW	ANNUAL GENERATION (MWH)	CAPITAL COST (\$/KW)	RECENT DEVELOPMENT ACTIVITY?	DISTANCE (GREATER/LESS THAN X MILES FROM LOAD CENTER/ TRANSMISSION)	STORAGE/RUN-OF-RIVER	LICENSED/ PERMITTED
1	a	1a	1947 Document	Salmon River near Hyder	5	North of Hyder			50	FPC-668	Rejected by Federal Power Commission 10-9-1926: doubtful feasibility, owing to the glacial character of the bed of Salmon River and to silt and boulder carrying capacity of the River, ability to store water in appreciable amount, economic feasibility of dam height for amount of storage.	1,119	3,593				Storage	
2	a	2a	1947 Document	Granite Creek near Hyder	3	North of Hyder	2	55		954; 1043	Project generation began 1-15-1929, but the transmission line failed before end of year. License was surrendered in 1933 because the corporation no longer wanted the development and power needs were being supplied elsewhere.	93	457				Run-of-River	
3	a	3a	1947 Document	Fish Creek near Hyder	5	North of Hyder	3	66	340	504; 580	Application No. 504 was received for project, then withdrawn in 1924. Application No. 580 was received for only the lowest of the 3 dams, but anticipated mine requirements didn't materialize and the permit expired.	447					Run-of-River	
4	a	4a	1947 Document	Thumb Creek near Hyder	7	North of Hyder		1,000 (estimated)		363; 511	Preliminary permit issued in 1923, but cancelled by permittee. App No. 511 rejected when applicant failed to obtain required stream flow data, Seasonal.	1,491					Run-of-River	
5	a	5a	1947 Document	Bonanza and Canyon Creeks near Hyder	17	By Road From Hyder				513	Permit canceled due to being less than 100 hp to allow for application for a license. No further app was pursued.	75					N/A	
6	a	6a	1947 Document	Soule Glacier River near Hyder	2	Northwest of Hyder	150	1,000 (estimated)		689; 383	Application No. 689 rejected pending amendment for inclusion of more detail.	7,457	13,065				Storage	
6	c	6c	Forest Service	Soule River							2 nd FERC prelim permit 09/22/2009. Draft license application and draft EA filed; comments, prelim 4(e)s must be to FERC by May 2, 2011. Roadless 530.	--	--					Yes
6	d	6d	HDR	Soule River		Hyder				P13528		78,400	281,300				Storage	Yes
6	w	6w	Application for License	Soule River								77,400	288,000		Yes			
7	a	7a	1947 Document	Davis River near Hyder	12	From Hyder	37.7	918	190	917	Surveys and plans prepared. License issued for initial development only. Company was sold and license was surrendered due to licensee inability to pursue construction with due diligence.	17,897	35,275				Storage	
8	a	8a	1947 Document	Halibut Bay Lakes near Portland Canal	50	East of Metlakatla					Estimated from air photographs.						N/A	
9	a	9a	1947 Document	Harrison Lakes near Portland Canal	50	East of Metlakatla					Estimated from air photographs.						N/A	
10	a	10a	1947 Document	Reef Point Lake near Portland Canal	50	East of Metlakatla					Estimated from air photographs.						N/A	
11	a	11a	1947 Document	Hidden Inlet Lake near Pearse Canal	50	East of Metlakatla		155	50	Forest Service 27; 509	Permit priority issued to Hidden Inlet Packing Company. Development included a diversion dam, penstock, and wood-stave pipe, 110 kVa 3-phase, 2,200 volt generator. Energy was transmitted 2 miles to a cannery. License surrendered for non-use in 1934.	2,535	16,331				Storage	
12	a	12a	1947 Document	Humback Lake at Mink Bay	30	East of Metlakatla		285	25		Lake and dam can be reached over an improved trail, partly submerged at high tide.	4,250	35,275				Storage	

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13	a	13a	1947 Document	Marten Arm Lake near Marten Arm	50	East of Metlakatla					Estimated from air photographs.		6,532					
14	a	14a	1947 Document	Quadra Lakes near Boca De Quadra	50	East of Metlakatla					Estimated from air photographs.							
15	a	15a	1947 Document	Badger Bay Lake near Badger Bay	41	By Water From Ketchikan		85	56			1,790	14,371				Storage	
16	a	16a	1947 Document	Bakewell Arm near Smeaton Bay	42	By Water From Ketchikan		220	35			2,163	14,371				Storage	
17	a	17a	1947 Document	Wilson Lake near Wilson Arm	45	By Water From Ketchikan		820	100			11,185	55,525				Storage	
18	a	18a	1947 Document	Winstanley Creek at Behm Canal	37	From Ketchikan		142	50			2,983	23,516				Storage	
19	a	19a	1947 Document	Checats Upper Lake near Behm Canal	43	From Ketchikan		95			15-acre bond near conduit location, might be used for forebay with some economy if a low load factor is anticipated, otherwise, loss of head can be avoided only by the construction of a dam at the outlet of the pond.	1,864	16,331				Storage	
20	a	20a	1947 Document	Punchbowl Lakes at Rudyerd Bay	49	By Water From Ketchikan	35.8	153	21 and 36	547, 758, 769	Transmission line 3 miles long needed to connect both powerhouses. Preliminary Permit lapsed in 1930. Report from Forest Service in 1927 says that applicant submitted data from J.G. White Engineering showing max capacity of 10,400 horsepower.	9,321	81,654				Storage	
21	a	21a	1947 Document	Nooya Lake at Rudyerd Bay	52	By Water From Ketchikan	15	85	25		Blazed, but unimproved trail along right bank of the creek to a point on the short of the lake.	1,491	11,758				Storage	
22	a	22a	1947 Document	Granite Lakes near Behm Canal	55	By Water From Ketchikan		75	60	769	Two powerhouses. Application received and rejected in 1927.	7,159	55,525				Storage	
23	a	23a	1947 Document	Leduc Lake near Leduc River	50	From Ketchikan					Estimated from air photographs.							
24	a	24a	1947 Document	Short Creek at Short Bay	60	By Water From Ketchikan		218	45		Two developments.	5,518	34,621					
25	a	25a	1947 Document	Shelokum Lake at Bailey Bay	52	By Water From Ketchikan	23.5	218	40	Forest Service 19	Permit withheld pending negotiations for a timber sale. Negotiations not arranged and permit expired in 1920.	5,220	31,355				Storage	
26	a	26a	1947 Document	Anan Lake near Bradfield Canal	30	By Water From Wrangell		250	60	157	App in 1921 proposed 60 foot dam. Executive Secretary of Commission in a letter Feb 6, 1923 received a letter objecting to the power development at Anan creek because salmon spawning grounds would be adversely affected. A letter from the Forest Service indicated that Anan Creek is one of the important salmon spawning streams in SE AK.	5,220	30,049				Storage	
27	a	27a	1947 Document	Tyee Lake near Bradfield Canal	40	By Water From Wrangell		178	100	157	App in 1921 proposed 100 foot damn. Expired March 1925.	16,778	146,977				Storage	
27	x	27x	existing	Tyee Lake		Wrangell				3015		20,000	120,000				Storage	
28	a	28a	1947 Document	White River near Bradfield Canal	40	From Wrangell	60	530	100	157	App 157 for Anan and Tyee amended to include White River. Expired March 1925.	11,931	16,984				Storage	

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29	a	29a	1947 Document	Harding River near Bradfield Canal	42	From Wrangell		1100	190	61	App received Jul 18, 1921 for preliminary permit. Expired in 1925. Permittee installed a stream gage, but did not record discharge measurements. Plan of development assumed 9 to 10 k horsepower.	17,524	128,034				Storage	
30	a	30a	1947 Document	Tom Creek near Bradfield Canal	30	From Wrangell		209	50	61	App received in 1921 amended for Tom Creek. AKA Big-Headed Tom's Creek, Grant Creek. Expired 1925.	5,220	20,903				Storage	
31	a	31a	1947 Document	Marten Creek near Bradfield Canal	29	From Wrangell		24	5		Surveyed by topographers of US Geo Survey in 1922.	3,057	20,250				Run-of-River	
32	a	32a	1947 Document	Aaron Creek near Blake Channel	23	By Water From Wrangell		1100	50	257	Preliminary permit issued in 1922. Proposed to construct 100 ft dam. Applicant failed to establish required stream gaging and permit was canceled in 1923. Surveys have not revealed any lakes in the watershed. Valley should be carefully investigated for storage, since the present plan would principally develop seasonal power. AKA Oern's Creek.	5,593	7,839				Storage	
33	a	33a	1947 Document	Mill Creek near Wrangell	8	By Water From Wrangell		441	50	Forest Service 15, 153, 269, 611, 61, 1905	App 153 proposed 40 ft dam, commission denied. App 269 filed by city of Wrangell, was issued and expired 2 years later in 1922. App 611 filed and withdrawn in 1921. Withdrawal reason: "...the said streams will not furnish sufficient power to warrant the necessary expenditures for development."	3,430	18,291				Storage	
34	a	34a	1947 Document	Crittenden Creek near Wrangell	8	By Water From Wrangell	11	66		61	App filed in 1921, site was withdrawn in 1921. AKA 33 Mill Creek near Wrangell.	671	1,306				Run-of-River	
35	a	35a	1947 Document	Delta Creek near Thomas Bay	23	By Water From Petersburg		80	40		Milky appearance from glacial silt, but believe would be satisfactory for water supply for pulp mill.	6,711	22,863				Storage	
36	a	36a	1947 Document	Cascade Creek near Thomas Bay	22	By Water From Petersburg	21.1	256	100	275	Two options for building. One for Falls Lake and one for Swan Lake. License issued in 1926 conditional upon the applicant's securing a timber award. Timber award lapsed and license voided in 1926. Dort estimated the cost @ \$54 per prime mechanical hp at 70 percent efficiency. Using 1922-23 data.	21,252	186,171				Storage	
36	d	36d	HDR	Cascade Creek		Petersburg				P12495		70,000	204,600				Storage	Yes
36	k	36k	Proposed Judgment on Roadless	Cascade Creek								--	--		Yes			
36	Y	36y	FERC 12485	Cascade Creek								70,000	204,000		Yes			
37	a	37a	1947 Document	Scenery Creek near Thomas Bay	24	by Water From Petersburg		215	45			18,270	160,042				Storage	
37	d	37d	HDR	Scenery Creek		Petersburg				P13365		30,000	130,000				Storage	Yes
37	Z	37z	FERC Preliminary Permit	Scenery Creek						12621		60,000	60,000					
38	a	38a	1947 Document	Glory Creek near Farragut Bay	36	north of Petersburg	2	30		1035	Preliminary permit issued, but applicant mining venture was suspended and permit expired.	820	2,286				Storage	
39	a	39a	1947 Document	Drake Lake near Farragut Bay	25	by Water From Petersburg	10	100				373	457				Storage	

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40	a	40a	1947 Document	Spruce Creek near Windham	40	east of Angoon	8	28	15	Forest Service 23, 840	Application priority 23 made to Forest Service in 1917 and permit issued. Project was constructed and power used intermittently for mine and sawmill work. Permit was canceled in 1924 when the property changed ownership. App 840 was filed in 1927 and rejected in 1929.	1,342	915				Run-of-River	
41	a	41a	1947 Document	Anmer Cascade near Stephens Passage	40	Northeast of Angoon & Southeast of Juneau	3	50				1,491	3,919				Storage	
42	a	42a	1947 Document	Sweetheart Falls Creek near Port Snettisham	42	By water From Juneau	31	328	90	246, 586, 698, 753, 797	Applications received and withdrawn. Other applications dependent upon timber awards, but applications were rejected when bids weren't presented.	12,975	113,663				Storage	
43	a	43a	1947 Document	Tease Lake near Port Snettisham	41	By water From Juneau		150	80		Permits issued by the Forest Service in 1914. Construction authorized in 1920, first stage was completed in 1921. Project was no longer in used after 1923. License was revoked for non-payment. Construction as it appeared in 1922 indicated that a buttress-type timber dam was built in 1922 and failed in 1925. Construction also included a timber flume, penstock, and turbines.	10,291	60,097				Storage	
44	a	44a	1947 Document	Speel River near Port Snettisham	42	By water From Juneau		2740	157		Preliminary application was rejected in 1924. A report was submitted in 1921 that would change the diversion dam height to 35 feet as an alternative development.	38,031	235,164				Storage	
45	a	45a	1947 Document	Long Lake near Port Snettisham	42	By water From Juneau	37.8	445	50	755	App 755 made by George Cameron received 1926. Contingent upon timber award and preliminary permit issued June 1927. Cameron planned to transmit power to thane via 43.6 miles of overhead and 3.9 miles across the Taku Inlet. License authorized 1930, but rescinded in 1933 when applicant failed to execute the plan.	23,490	205,768				Storage	
46	a	46a	1947 Document	Crater Lake near Port Snettisham	42	By water From Juneau	14.9	193	65	4, 246, 586, 698, 753, 755, 797	Various applications list varying levels of capacity and plans.	12,826	107,783				Storage	
47	a	47a	1947 Document	Bear Creek near Taku Harbor	24	By water From Juneau		25	10		A log and timber dam was constructed at 10 ft in 1902. Water was conveyed to a cannery and cold storage plant. The property was sold to Libby, Mcneil & Libby, who obtained license priority No. 30 from the Forest Service in 1920.	1,417	9,798				Storage	
48	a	48a	1947 Document	Dorothy Lake near Taku Inlet	16	By water From Juneau		146			Application 1,038 filed in 1929. Preliminary permit was authorized and then terminated.	17,002	148,937				Storage	
49	a	49a	1947 Document	Turner Lake near Taku Inlet	22	By water From Juneau		440	70		Survey of Turner Lake site done by engineers of Alaska Treadwell Gold Mining Company. An incomplete application was filed in 1914, but no further action was taken.	3,952	34,621				Storage	
50	a	50a	1947 Document	Davidson Creek near Taku Inlet	23	By water From Juneau	20	300	60		In app for Turner Lake, it was proposed to divert the water from Davidson Creek. Mr. R.R. Rowe believes that the development of Davidson is remote.	1,790	1,110				Run-of-River	
51	a	51a	1947 Document	Yehring Lake near Taku Inlet	40	By water From Juneau		160				10,813	39,194				Storage	

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52	a	52a	1947 Document	Boundary Creek near Taku River	47	By water From Juneau		250	45		Informal application proposing to develop site for mining purposes received in 1926. Reconnaissance was obtained by the Forest Service.	6,711	13,065				Storage	
53	a	53a	1947 Document	Annex Creek near Taku Inlet	21	By water From Juneau		63.2			Framed, timber-buttress dam was re-constructed in 1936. Transmission line carries energy 15 miles via Thane to interconnect with a 23 kV station owned by Gold Mining Company. Total installed cap is 5,075 hp. Estimated that 5 percent is sold to AELP from Juneau. Remaining load used by the mining company.	3,378	28,350				Storage	
53	x	53x	existing	Annex Creek		Juneau						3,600	26,000				Run-of-River	
54	a	54a	1947 Document	Carlson Creek near Taku Inlet	20	By water From Juneau		319			Application was received and preliminary permit issued in 1914, but development was not carried out and the permit expired. It's estimated that 2 miles of transmission line from the Annex powerhouse would have to be relocated if this project is developed.	9,321	56,178				Storage	
55	a	55a	1947 Document	Rhine Creek near Juneau	10.3	By water From Juneau	5.7	45			Preliminary permit issued in 1915. Development was never undertaken.	1,193	2,090				Run-of-River	
56	a	56a	1947 Document	Grindstong Creek near Juneau	10	By water From Juneau	4.64	36.3			Application received in 1915	746	1,306				Run-of-River	
57	a	57a	1947 Document	Sheep Creek near Thane	4.1	From Juneau	5.5	48	180		Several surveys have been done with varying results. There is an existing development that consists of a low diversion dam and an installed capacity of 4,100 hp, average 2,090 hp, and primary 425 hp.	2,386	20,903				Storage	
58	a	58a	1947 Document	Gold Creek at Juneau	0	From Juneau		105			A penstock carries water to a powerhouse located in Juneau where there are 2,600 hp hydro units.	3,728	2,744				Run-of-River	
58	x	58x	existing	Gold Creek		Juneau						1,600	4,500				Run-of-River	
59	a	59a	1947 Document	Salmon Creek near Juneau	0	From Juneau		55	170		There are 3 developments at the site. The dam was constructed in 1915 by Alaks Gastineau Mining Company. Permit was jointly issued with Annex Creek. Ownership was passed to Juneau Gold Mining Company in 1934.	5,369	36,124				Storage	
59	x	59x	existing	Salmon Creek		Juneau				10300		10,300	29,500				Storage	
60	a	60a	1947 Document	Lemon Creek near Juneau	6	From Juneau		300	200		There would be 2 developments. An application with the forest service was authorized in 1913. The company developed some power via small diversion dam, but the project was abandoned shortly thereafter.	9,321	23,516				Storage	
61	a	61a	1947 Document	Nugget Creek near Juneau	14.5	From Juneau		163	120		A permit was issued by the forest service in 1916. Two units were constructed, but only a 23 foot timber dam was constructed.	5,593	23,516				Storage	
62	a	62a	1947 Document	Peterson Lake near Juneau	10	From Juneau		65	30		Lake may be reached by a 3.5 mile trail from the Glacier Hwy.	2,834	15,678				Storage	
63	a	63a	1947 Document	Cowee Creek near Berners Bay	50	From Juneau	7	80			Application was received, but not completed.	2,237	1,960				Run-of-River	
64	a	64a	1947 Document	Davies Creek near Berners Bay	50	From Juneau	15	180			Application received in 1915. Preliminary permit issued and canceled in 1917.	3,356	22,210				Storage	
65	a	65a	1947 Document	Sawmill Creek near Berners Bay	50	From Juneau		65			Notice of appropriation was posted at the waterfall, but application was never filed. Possible to take initial development near the falls for furnishing power during construction.	1,417	6,532				Storage	

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66	a	66a	1947 Document	Antler Lake near Berners Bay	50	From Juneau		46				6,189	54,218				Storage	
67	a	67a	1947 Document	Sherman Creek near Comet	25	South of Haines	5.5	31			Application was filed with the forest service in 1916. Preliminary permit was issued in 1917 and expired 1918.	820	1,306				Run-of-River	
68	a	68a	1947 Document	Dewey Creek near Skagway	5	Northwest of Skagway		29			2 hydroelectric units existed before 1940. License number 1,051 was issued in 1930 for Skagway Public Service Company.	447	1,045				Storage	
68	x	68x	Existing	Dewey Lakes		Skagway				1051		940	3,400				Run-of-River	
69	a	69a	1947 Document	Skagway River near Skagway	6	Northwest of Skagway	9	200	50	353	Application received in 1922. Preliminary permit was issued in 1923. License was surrendered in 1944.	1,715	9,341				Storage	
70	a	70a	1947 Document	Endicott River near Lynn Canal	20	South of Haines		60			investigating company concluded that the 3 projects were feasible, but required a 63 mile transmission line to reach the mines. Application was never filed, but survey was made publicly available.	17,151	84,920				Storage	
71	a	71a	1947 Document	Beardslee Creek near Lynn Canal	30	Northeast of Gustavus		37	35	63	AKA Beardslee River. License was issued in 1922 and site was developed for sending power to a mining company. The mines were abandoned, corporation dissolved, and license terminated in 1929.	1,268	8,165				Storage	
72	a	72a	1947 Document	Waterfall Lake near Waterfall Bay	20	Southwest of Hydaburg		40				1,342	11,758				Storage	
73	a	73a	1947 Document	Sukkwan Lake near Kasook Inlet	2	Southeast of Hydaburg		80	40			2,013	10,452				Storage	
74	a	74a	1947 Document	Karheen Lake near Karheen Passage	20	Southeast of Edna Bay		56	20			209	719				Storage	
75	a	75a	1947 Document	Shipley Lake near Shipley Bay	15	Between Whale Pass and Edna Bay		68	45			1,044	9,145				Storage	
76	a	76a	1947 Document	Klakas Lake near Klakas Inlet	25	Southeast of Hydaburg		130	50			3,579	31,355				Storage	
77	a	77a	1947 Document	Hetta Lake near Hetta Inlet	15	East of Hydaburg		90	70			522	3,919				Storage	
78	a	78a	1947 Document	Reynolds Creek at Copper Harbor	15	East of Hydaburg		382	39	132, 186, 664	App 664 was to be used for mining, but operations were suspended and the permit expired in 1928. Alaskan Copper company used power from Reynolds Creek without a permit from 1905 to 1908 by diverting a part of the stream into a 22-inch pipe.	6,189	54,218				Storage	
78	c	78c	Forest Service	Reynolds Creek		Prince of Wales Island					Project is on private land and is not expected to affect NFS resources.	--	--					Not Required
78	d	78d	HDR	Reynolds Creek		Prince of Wales Island				11480		5,000	15,100				Storage	Yes
78	f	78f	Preliminary Appraisal Report Hydroelectric Potential, Retherford, 1977	Reynolds Creek					20			--	2,100					

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78	aa	78aa	Order Issuing Original License	Reynolds Creek						11480		5,000	6,380		Yes			Yes
78	q	78q	Comprehensive Renewable Energy for Sealaska Corporation, Dec 2005	Reynolds Creek		Hydaburg					2003 estimate of 9.4 million.	5000		1,880				
79	a	79a	1947 Document	Jumbo Creek near Copper Harbor	15	East of Hydaburg					Some development was constructed. Incomplete application was received in 1928. Reported that the generator was burned out in 1929 and property was inactive.	373	653				Storage	
80	a	80a	1947 Document	Beaver Creek at Sulzer Passage	15	Northeast of Hydaburg	12	100			Application was received in 1905. Plant was active until 1921, and permit was canceled in 1926 for non-use.	746	1,306				Run-of-River	
81	a	81a	1947 Document	Klawak Lake at Klawak	2	East of Klawock	30	170	9			261	1,960				Storage	
82	a	82a	1947 Document	Neck Island Lake near Whale Passage	1	Southeast of Whale Pass		170	55			2,013	17,637				Storage	
83	a	83a	1947 Document	Linkum Creek at Kasaan	0	Kasaan	1	9	7	1082	App was received and issued in 1930. Two wheels were installed. Power was used for cannery.	75	131				Run-of-River	
84	a	84a	1947 Document	Goodro Lake near Kasaan	10	Northwest of Kasaan		5.4	9		App issued by forest service in 1917. Power used for mining and permit was termination in 1925 when the owner sold the mining property.	60	327				Storage	
85	a	85a	1947 Document	Karta River near Kasaan	8	West of Kasaan	117	444	43	243,896	Application received and withdrawn in 1922. Another app filed in 1928, but was rejected. Applicant had opportunity to appeal objections, but didn't. Assumed 9 months of seasonal operation due to salmon spawning.	2,088	10,452				Storage	
86	a	86a	1947 Document	Harris River near Kasaan	3	Southeast of Hollis	40	260	7	812	Application filed in 1927 for minor part license. Issued in 1927. Mining operations suspended in 1929, and license surrendered in 1936. There is some existing development.	298	392				Storage	
87	a	87a	1947 Document	Marys Lake near Polk Inlet	10	Southeast of Hollis and South of Kasaan	35	240	30			1,864	11,758				Storage	
88	a	88a	1947 Document	Clover Creek at Clover Bay	25	West of Ketchikan and South of Kasaan		115				5,966	33,968				Storage	
89	a	89a	1947 Document	Chomly Creek at Cholmondeley Sound	30	Between Ketchikan, Kasaan, Hydaburg, Hollis	2	15		783	License issued in 1927. License surrendered in 1941 because "buildings have been torn down and power plant disposed of."	45	196				Storage	
90	a	90a	1947 Document	Tunnel Creek near Dolomi Harbor	20	West of Metlakatla		40		1,286	Operation of project intermittent. Entire plant was replaced in 1935 and includes 500 hp, 74-inch pelton wheel and drives 350 kW generator.	522	1,372				Storage	
91	a	91a	1947 Document	Aiken Lake near Moira Sound	25	West of Metlakatla		9	20			597	5,226				Storage	

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92	a	92a	1947 Document	Collinson Creek near Moira Sound	25	West of Metlakatla	0.8	5	8	876	Licensed issued in 1928. Fire destroyed the cannery in 1929, and license was surrendered in 1932.	75	131				Storage	
93	a	93a	1947 Document	Myrtle Creek near Niblack Anchorage	25	West of Metlakatla		76	21		Multi-phase project w/2 damns and 3 stations. Permit issues in 1917. Gaging station installed, but permit expired in 1918.	2,364	20,707				Storage	
94	a	94a	1947 Document	Kegan Creek at Moira Sound	25	West of Metlakatla			40			2,983	19,597				Storage	
95	a	95a	1947 Document	Kugel Lake near Dickman Bay	35	West of Metlakatla		95	40			3,430	24,823				Storage	
96	a	96a	1947 Document	Waterfall Creek near Metlakatla	1	Southeast of Metlakatla		21	50		Small dam was constructed at outlet of Chester Lake. Installed cap was 230 hp turbine to a 187 kVa generator.	1,193	10,452				Storage	
97	a	97a	1947 Document	Melanson Lake near Metlakatla	2	Southeast of Metlakatla		18	30			298	2,613				Storage	
98	a	98a	1947 Document	Trout Lake near Metlakatla	2.3	Northeast of Metlakatla		100	20			485	3,266				Storage	
99	a	99a	1947 Document	Nadzaheen Lake near Revillagigedo Channel	10	Between Ketchikan and Metlakatla		60	40			746	5,552				Storage	
100	a	100a	1947 Document	Hassler Lake near Revillagigedo Channel	9	Northeast of Metlakatla		50	30			1,491	13,065				Storage	
101	a	101a	1947 Document	Purple Lake near Tamgas Harbor	5	East of Metlakatla		70	Not required			1,491	13,065				Storage	
101	x	101x	existing	Purple Lake		Metlakatla						3,600	14,639				Storage	
102	a	102a	1947 Document	Tamgas Lake near Felice Strait	7	South of Metlakatla		75	20			373	2,613				Storage	
103	a	103a	1947 Document	Cascade Creek near Wacker	6	Northwest of Ketchikan		10	10	821	Application filed in 1927, to generate 30 kW. Licensed in 1928 and terminated in 1932 due to failure to begin construction.	149	196				Storage	
104	a	104a	1947 Document	Mahoney Creek near George Inlet	10	Northeast of Ketchikan and Saxman		123	9	420, 758, 769, 1245	2 dam system. Various applications issued and expired from 1927 through 1933 due to failure to perform action or acquire necessary timber contracts required by forest service.	5,444	42,460				Storage	
104	c	104c	Forest Service	Mahoney Lake	8	Northeast of Ketchikan and Saxman					Licensed, unconstructed. Stay of license since 2004. Project is on private land but planned access road might be on NF.	--	--					Yes
104	d	104d	HDR	Mahoney Lake		Ketchikan				11393		9,600	41,700				Storage	Yes
104	bb	104bb	Order Issuing Original License	Mahoney Lake						11393		9,600	46,000		Yes			Yes

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104	Q	104q	Comprehensive Renewable Energy for Sealaska Corporation, Dec 2005	Mahoney Lake		Ketchikan												
105	a	105a	1947 Document	Beaver Falls Creek near George Inlet	10	Northeast of Ketchikan and Saxman		85		136, 206, 758, 769, 1,245, 1,922	Initial development consisted of a tunnel, 3 ft diversion dam, transmission line to existing power plant.	5,667	48,339				Storage	
105	x	105x	existing	Beaver Falls		Ketchikan				1922		5,400	42,200				Storage	
106	a	106a	1947 Document	Lake Whitman near Ketchikan	3	Northeast of Saxman	18	26	90	1,138	License issued in 1932. original plant had timber crib dam 20 ft. Replaced w/reinforced concrete dam 35 ft high. Two units of 1,100 hp each. Interconn w/City of Ketchikan Electric System.	2,312	18,617				Storage	
106	c	106c	Forest Service	Whitman Lake	2	Northeast of Saxman					Project was licensed in May 2009. Construction funding still pending. Roadless 524.	--	--					Yes
106	d	106d	HDR	Whitman Lake		Ketchikan				11841		4,600	16,000				Storage	Yes
106	k	106k	Proposed Judgment on Roadless	Whitman Lake								--	--		Yes			
106	cc	106cc	Order Issuing Original License	Whitman Lake						11841		4,600	--		Yes		Storage	Yes
106	o	106o	AEA Renewable Energy Fund Applications/Rankings	Whitman Lake	3	North of Ketchikan					AEA recommends partial funding in the amount of \$700,000 for final design and notes that final decision of funding will be based on the SE IRP.	4,600			Yes		Storage	
106	q	106q	Comprehensive Renewable Energy for Sealaska Corporation, Dec 2005	Whitman Lake		Ketchikan												
107	a	107a	1947 Document	Ketchikan Creek near Ketchikan	0	North of Ketchikan		153	22	420	There have been eight stages of development for the 3 dams and 4 units. Application 420 was filed in 1923, amended several times and was purchased by the city of Ketchikan in 1935.	2,349	13,065				Storage	
108	a	108a	1947 Document	Walsh Creek near Wacker	6	Northwest of Ketchikan		4	19	1,222	There's an existing rock dam. Application 1,222 proposed to replace the dam. License issued in 1933 and transferred in 1942 to a packing company.	30	65				Storage	
109	a	109a	1947 Document	Lake Perseverance near Wacker	10	North of Ketchikan		37.4	35	724, 420, 1135	Four possible plans for the project. Permit issued in 1931 to develop the area based on obtaining the combined energy from Perseverance and Ketchikan Lakes. Application was withdrawn.	1,342	11,758				Storage	
110	a	110a	1947 Document	Naha River near Naha Bay	30	North of Ketchikan		255	40			3,505	26,129				Storage	
111	a	111a	1947 Document	Orchard Lake Near Shrimp Bay	35	East of Meyers Chuck		573	60	60, 93, 94, 758, 769	Early permits were withdrawn/rejected/denied for various reasons including failure to obtain timber awards, failure to begin construction in time.	6,711	52,912				Storage	

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112	a	112a	1947 Document	Claude Lake near Behm Canal	50	East of Meyers Chuck		70	40			2,535	20,903				Storage	
113	a	113a	1947 Document	Lake Grace near Behm Canal	50	Northeast of Ketchikan and Saxman		398	70	758, 769	Application 769 was rejected. Application 758 resulted in preliminary permit, but expired in 1926.	11,484	99,945				Storage	
114	a	114a	1947 Document	Manzanita and Ella Creeks near Manzanta Bay	50	Northeast of Ketchikan and Saxman		953		547, 758, 769	Applications were rejected/denied.	19,783	167,162				Storage	
115	a	115a	1947 Document	Gokchan River near Thorne Arm	25	East of Ketchikan		130	31		A mining company developed some of the area to provide power to a mill. The developments are unlicensed since they were located on valid mining claims.	2,908	23,516				Storage	
116	a	116a	1947 Document	Fish Creek near Thorne Arm	25	East of Ketchikan		116	60	140, 758, 759	Applications were denied, canceled, and rejected for various reasons.	2,312	18,944				Storage	
117	a	117a	1947 Document	Swan Lake near Carroll Inlet	35	North of Ketchikan		440	83	50, 60, 140, 547, 758, 769, 1246	Applications were denied, canceled, and rejected for various reasons.	8,650	71,856				Storage	
117	q	117q	Comprehensive Renewable Energy for Sealaska Corporation, Dec 2005	Swan Lake		Petersburg												
117	x	117x	existing	Swan Lake		Ketchikan				2911		22,000	75,700				Storage	
118	a	118a	1947 Document	McHenry Lake near McHenry Inlet	30	East of Coffman Cove		160	50	61	Application filed in 1921, but was withdrawn.	3,207	19,597				Storage	
119	a	119a	1947 Document	Navy Lake near Burnett Inlet	30	East of Coffman Cove		85				1,193	7,839				Storage	
120	a	120a	1947 Document	Burnett Lake near Burnett Inlet	30	East of Coffman Cove		80				1,193	7,839				Storage	
121	a	121a	1947 Document	Kunk Lake near Zimovia Strait	20	South of Wrangell		86			Two phase project.	3,579	31,355				Storage	
122	a	122a	1947 Document	Olive Lake near Zimovia Strait	20	South of Wrangell		65	30			2,461	13,718				Storage	
123	a	123a	1947 Document	Menefee Lake near Menefee Inlet	35	Between Wrangell, Coffman Cove, Meyers Chuck		42				2,088	18,291				Storage	
124	a	124a	1947 Document	Thoms Lake near Zimovia Strait	15	South of Wrangell		160	20			2,685	16,331				Storage	
125	a	125a	1947 Document	Crystal Lake near Petersburg	20	South of Petersburg		14	8.5	201	License issued in 1924. Went into operation in 1925 for Town of Petersburg. Amendment proposed in 1945 to make several changes.	1,044	7,055				Storage	

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126	a	126a	1947 Document	Point Sullivan Lake near Bay of Pillars	50	North of Juneau		10				1,119	9,798				Storage	
127	a	127a	1947 Document	Goemere Creek at Washington Bay	40	Southwest of Kake	1.5	11	6	1357	License issued 1937. There was some development at the site for a packing company.	75	196				Storage	
128	a	128a	1947 Document	Ledge Lake near Saginaw Bay	12	West of Kake		35	20			410	3,266				Storage	
129	a	129a	1947 Document	Gunnock Creek at Kake	2	South of Kake	10	90	10		Sanborn Cutting Company applied for a permit in 1920. Canceled in 1926 when the property was sold. License has been transferred 3 times since. Last was effective in 1940. There is a development at the site with a diversion dam.	298	451				Storage	
130	a	130a	1947 Document	Andean Lake near Little Branch Bay	7	North of Port Alexander		24				1,790	15,678				Storage	
131	a	131a	1947 Document	Baturin Lake near Big Branch Bay	12	North of Port Alexander		50				2,237	19,597				Storage	
132	a	132a	1947 Document	Tumakof Lake near Redfish Bay	10	North of Port Alexander		45	60			410	3,593				Storage	
133	a	133a	1947 Document	Snipe Lake near Snipe Bay	10	North of Port Alexander		23	30			522	3,593				Storage	
134	a	134a	1947 Document	Kekur Lake near Sandy Bay	20	North of Port Alexander		25				559	4,899				Storage	
135	a	135a	1947 Document	Maksoutof River near Sandy Bay	20	North of Port Alexander		400	70		It's a 2 part project. There is an unpublished report describing the proposed system based on a recon study and photographs.	18,642	163,308				Storage	
136	a	136a	1947 Document	Banks Lake near Port Banks	20	North of Port Alexander		55	15			373	2,286				Storage	
137	a	137a	1947 Document	Lake Plotnikf near Port Banks	20	North of Port Alexander		250				4,474	32,662				Storage	
138	a	138a	1947 Document	Lake Avoss near Great Arm	25	Between Sitka and Port Alexander		50				2,237	19,597				Storage	
139	a	139a	1947 Document	Benzeman Lake at Necker Bay	15	South of Sitka		400	30		High and low developments. Any developments must consider the habits of fish that use the lake for spawning.	2,237	19,597				Storage	
140	a	140a	1947 Document	Lake Ekaterina near Shamrock Bay	15	South of Sitka		160	30		Air photographs indicate the terrain would make transmission line construction difficult.	895	7,839				Storage	
141	a	141a	1947 Document	Redoubt Lake near Goddard	10	South of Sitka		400	12		Turbine designed to operate on this range of head would have low efficiencies at the extremes of head. Would probably be necessary to install auxiliary power to meet the peak demand at high tide.	447	3,266				Storage	
142	a	142a	1947 Document	Green Lake near Silver Bay	10	Southeast of Sitka		293	160	244	Application received in 1921. Proposed development of 3 sites.	4,474	19,597				Storage	
142	x	142x	existing	Green Lake		Sitka				2818		18,600	60,000				Storage	

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143	a	143a	1947 Document	Medvejia Lake near Silver Bay	10	Southeast of Sitka		60	30		In low water years the storage capacity of the lake might not be completed filled.	820	6,206				Storage	
143	q	143q	Comprehensive Renewable Energy for Sealaska Corporation, Dec 2005	Medvejie Lake		Sitka												
144	a	144a	1947 Document	Medvetcha River near Sitka	5	East of Sitka		486	160	408	App received in 1923 and issued in 1924. First development constructed in 1913, but destroyed the diversion dam in 1936. 2 Units installed at the power house. Second was installed in 1937.	10,067	68,589				Storage	
145	a	145a	1947 Document	Indian River at Sitka	20	West of Angoon	15	150			There is a unit installed consisting of a 120 hp turbine.	224	196				Run-of-River	
145	d	145d	HDR	Indian River at Sitka		Sitka						100	--				Run-of-River	Yes
146	a	146a	1947 Document	Lake Eva near Hanus Bay	20	West of Angoon	20	150				298	457				Storage	
147	a	147a	1947 Document	Hidden Falls Falkes near Kasnyku Bay	25	Northeast of Sitka		80		833, 1502	Two part project. Application issued in 1940. Application mentions that no electricity is currently generated, but the water wheels are connected directly to sawmill machinery by belts.	2,759	24,170				Storage	
148	a	148a	1947 Document	Kasnyku Lake near Waterfall Cove	25	Northeast of Sitka		65	20			2,237	19,597				Storage	
149	a	149a	1947 Document	Takatz Lake near Takatz Bay	25	Northeast of Sitka		165	75			11,185	97,985				Storage	
149	C	149c	Forest Service	Takatz Lake		Sitka					FERC prelim permit on 09/19/2008. Semi-remote recreation, roadless 330, 331.	--	--					Yes
149	d	149d	HDR	Takatz Lake		Sitka				P13234		27,700	106,900				Storage	Yes
149	k	149k	Proposed Judgment on Roadless	Takatz Lake								--	--		Yes			
149	Dd	149dd	AEA Application for Renewable Energy Grant	Takatz Lake	20	East of Sitka		166				27,600	106,900		Yes			
149	o	149o	AEA Renewable Energy Fund Applications/Rankings	Takatz Lake		Sitka			200		AEA does not recommend any funding for the feasibility study of this project. The project was awarded approximately \$1.2 million in funds during round 1, and the round 4 document is requesting an additional \$2 million. AEA notes that this project would follow other, less expensive alternatives for power. AEA noted the existing grant would be amended to be increased to \$2 million since there were funds remaining from Round 1.	13,800	106900		Yes		Storage	
149	q	149q	Comprehensive Renewable Energy for Sealaska Corporation, Dec 2005	Takatz Lake		Sitka												
150	a	150a	1947 Document	Waxman Lakes near Baranof	20	East of Sitka		35			Information application made in 1926, but not followed by a formal app.	895	5,226				Storage	

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151	a	151a	1947 Document	Baranof Lake at Baranof	20	East of Sitka		430	60	244, 1189, 1165	Application made and withdrawn in 1921. App 1189 issued in 1932 to Martin Olsen, but dismissed due to death. App 1165 renewed in 1845. Water was diverted from River and power wheel used to drive a 3 kW generator to light a residence and mink pens.	4,474	24,823				Storage	
152	a	152a	1947 Document	Carbon Lake near Cascade Bay	15	East of Sitka		463		244	Four dam system. Application received for 3 dams. Application was withdrawn.	6,711	36,581				Storage	
153	a	153a	1947 Document	Four Falls Lake near Cascade Bay	20	East of Sitka		23				1,864	16,331				Storage	
154	a	154a	1947 Document	Milk Lake near Nelson Bay				140	50			3,728	21,557				Storage	
155	a	155a	1947 Document	Nelson Lakes at Nelson Bay	20	East of Sitka		85				2,237	17,637				Storage	
156	a	156a	1947 Document	Deep Lake at Red Bluff Bay	30	Southeast of Sitka		50	40	793	Application received in 1927. AKA red bluff creek. Issued in 1927. The plant was destroyed by fire in 1937.	820	4,573				Storage	
157	a	157a	1947 Document	Waterfall Lake at Red Bluff Bay	30	Southeast of Sitka		33	40			1,342	9,145				Storage	
158	a	158a	1947 Document	Barry Lake near Patterson Bay	25	North of Port Alexander		125				2,983	14,371				Storage	
159	a	159a	1947 Document	Brentwood Lakes near Patterson Bay	25	North of Port Alexander		135	30			5,444	45,726				Storage	
160	a	160a	1947 Document	Blanchard Lake near Patterson Bay	25	North of Port Alexander		65				1,566	7,839				Storage	
161	a	161a	1947 Document	Finger Lake near Patterson Bay	25	North of Port Alexander		28				1,342	11,758				Storage	
162	a	162a	1947 Document	Fiddle Lake near Patterson Bay	25	North of Port Alexander		22	25			671	3,266				Storage	
163	a	163a	1947 Document	Banner Lakes near Patterson Bay	25	North of Port Alexander		70	20			895	5,879				Storage	
164	a	164a	1947 Document	Cliff Lake near Deep Cove	20	North of Port Alexander		110	20	1023	App issued in 1929 and surrendered in 1943. There is a temporary dam with machinery and water wheels at the plant.	895	4,899				Storage	
165	a	165a	1947 Document	Deer Lake near Mist Cove	20	North of Port Alexander		150	40			3,803	33,315				Storage	
166	a	166a	1947 Document	Maga Lake near Mist Cove	20	North of Port Alexander		35	10			350	1,437				Storage	
167	a	167a	1947 Document	Rositlaf Lakes near Chatham Strait	15	North of Port Alexander		80	20		A rock slide at the outlet of the lake would present some difficulties during construction.	2,983	26,129				Storage	
168	a	168a	1947 Document	Nakvassin Lakes near Port Herbert	10	North of Port Alexander		70	66			820	6,859				Storage	
169	a	169a	1947 Document	Lake Osprey near Port Walter	10	North of Port Alexander		54		1232	License issued in 1933 and surrendered in 1943. Log dam built in 1919 was 7.5 feet high and 45 feet long.	895	6,990				Storage	

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170	a	170a	1947 Document	Lake Borodino near Big Port Walter	10	North of Port Alexander		72	5	377	License issues in 1923 and transferred to Port Walter Herring and Packing Co. Project diverts water from the largest branch of the cascade into a flume 76 ft long.	1,969	17,245				Storage	
171	a	171a	1947 Document	Sashin Lake near Little Port Walter	10	North of Port Alexander		18	15			1,641	5,879				Storage	
172	a	172a	1947 Document	Lucy Lake near Port Lucy	7	North of Port Alexander		36	20			1,119	7,839				Storage	
173	a	173a	1947 Document	Scheckley Lakes near Port Armstrong	5	North of Port Alexander		26	15	576, 1526	License issued in 1938. An original dam and diversion dam were constructed. Two wheels drive 2 generators of 14 and 11 kW.	1,790	14,371				Storage	
174	a	174a	1947 Document	Conclusion Creek near Port Conclusion	2	West of Port Alexander	5	25		1162	License issued for a cannery in 1931. Machinery has been removed and the plant not operated since 1938.	298	653				Storage	
175	a	175a	1947 Document	Lake Surprise near Kalinin Bay	10	Southwest of Angoon		17	20			447	3,266				Storage	
176	a	176a	1947 Document	Rust Lake near Chichagof	20	South of Pelican		85	3	951	Permit was issued in 1915. Power was used mostly for mining. Chichagof Power Company received a license in 1930 to take over the existing development. Description says there is a dam 3 ft high and two powerhouses.	2,983	25,476				Storage	
177	a	177a	1947 Document	Didrickson Lakes near Didrickson Bay	12	South of Pelican		180	36	212	Permit was issued in 1922 and expired in 1925 without any development.	1,193	8,492				Storage	
178	a	178a	1947 Document	Goulding Lakes near Goulding Harbor	12	South of Pelican		340	26		3 dam project.	4,176	33,315				Storage	
179	a	179a	1947 Document	Falls Creek near Davison Bay	10	South of Pelican		32	35		Prelim permit issued in 1918 and expired in 1919.	634	5,226				Storage	
180	a	180a	1947 Document	Porcupine Creek near Porcupine Harbor	10	Southwest of Pelican		128	30		2 dam project. Refer to Falls Creek project for application information.	3,878	33,968				Storage	
181	a	181a	1947 Document	Cann Creek near Lisianski Inlet	1	West of Pelican		30	25	129, 213	3 phase project. License issued in 1922. Report indicates a small diversion dam and two powerhouses were constructed.	1,491	6,532				Storage	
182	a	182a	1947 Document	Margret Creek near Port Althrop	5	South of Elfin Cove	5	45		794	License issued in 1927. Transferred in 1934 and surrendered in 1942. There is a concrete dam to divert the primary flow to a flume and ending at the cannery.	373	523				Storage	
182	s	182s	Crooked Creek and Jim's Creek Feasibility Study 2011	Margret Creek across Port Althrop	6.4	South of Elfin Cove					Regional reconnaissance study completed for U.S. Army Corps of Engineers by CH2M Hill in October 1979.	310					Run-of-River	
183	a	183a	1947 Document	Gart-hee-ne Creek near Hoonah	2	East of Hoonah	12	90			No record of application. But It is believed the town of Hoonah applied in 1947. The plan has 100 hp turbine 60 kW generator. Dam was construction and machinery purchased, but installation not completed. Transmission line has not been construction.	298	392				Storage	
184	a	184a	1947 Document	Steve Kane Creek at Hoonah	1	North of Hoonah	1	6		1382	License issued in 1937. License transferred in 1938. A fire in 1944 destroyed the village of Hoonah and the residence and the building housing the generator at the plant.	30	65				Storage	

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185	a	185a	1947 Document	Shotter Creek at Hoonah	10	East of Hoonah	1	6			The project is located on privately owned land.	30	65				Run-of-River	
186	a	186a	1947 Document	Pavlof Lake at Freshwater Bay	10	Northeast of Tenakee Springs	23	170	8	241	Project constructed in 1915 and license was canceled in 1923.	261	327				Storage	
187	a	187a	1947 Document	Harley Creek near Tenakee	5	East of Tenakee Springs	4	30		831	License issued in 1927. Dam acts as a forebay. Power drives plant machinery and a 10 kW generator.	224	327				Storage	
188	a	188a	1947 Document	Kook Lake near Basket Bay	15	Southeast of Tenakee Springs		130	20		Development must consider migratory fish for spawning purposes.	746	4,573				Storage	
189	a	189a	1947 Document	Shitok Lake near Chatham	20	West of Angoon		85			Development must consider migratory fish for spawning purposes.	1,044	8,492				Storage	
190	a	190a	1947 Document	Suloia Lake near Suloia Bay	30	North of Sitka		100	10		Prelim permit issued and terminated in 1916.	1,417	11,758				Storage	
191	a	191a	1947 Document	North Arm Creek near Hood Bay	15	Southeast of Angoon		22			In 1934 a small dam was constructed along with a wheel developing 5 hp to drive a 2.5 kW generator.	336	1,960				Storage	
192	a	192a	1947 Document	Dahl Creek near Hood Bay	10	Southeast of Angoon	0.7	5		1315	Development constructed in 1920, license issued in 1935. Project not used in 1936.	15	--				Storage	
193	a	193a	1947 Document	Hasselborg River near Mitchell Bay	15	Northeast of Angoon		700	63		There are 3 separate possible plans.	12,528	104,517				Storage	
194	a	194a	1947 Document	Crescent Lake near Mitchell Bay	10	Northeast of Angoon		170				2,461	16,331				Run-of-River	
195	a	195a	1947 Document	Thayer Lake near Chatham Strait	15	North of Angoon		420				8,948	73,815				Storage	
196	a	196a	1947 Document	Lake Florence near Chatham Strait	25	East of Tenakee Springs		310	30			2,237	14,698				Storage	
197	a	197a	1947 Document	Lake Kathleen near Chatham Strait	25	East of Tenakee Springs		235	20			6,488	52,259				Storage	
198	a	198a	1947 Document	Eliza Lake near Eliza Harbor	35	South of Angoon		55	20			1,044	7,186				Storage	
199	a	199a	1947 Document	Treadwell Ditch near Douglas	4	West of Juneau		80			License for project was not required. There are 2 powerhouses.	4,474	4,573				Run-of-River	
200	a	200a	1947 Document	Pelican Cove Creek	25	South of Juneau		150	22	1521	Permit issued in 1939. There is a 700 hp turbine wheel connected to a 300v generator.	447	3,919					
201	b	201b	Bradfield AK-BC	Craig River Complex	30	East of Wrangell		300			3 phase project.	18,000	--				Storage	
202	b	202b	Bradfield AK-BC	North Fork Bradfield Complex	30	East of Wrangell		400			4 phase project.	24,000	--				Run-of-River	
203	b	203b	Bradfield AK-BC	East Fork Bradfield Complex	45	East of Wrangell		525			4 phase project.	23,000	--				Run-of-River	
204	b	204b	Bradfield AK-BC	Jekill River (British Columbia)	100	East of Wrangell		800			Located in BC, likely closer to the BC grid than the Alaska grid.	20,000	--				Run-of-River	
205	b	205b	Bradfield AK-BC	Etolin-Zimovia Complex	30	South of Wrangell		180			10 phase project. Mostly lake tap storage (7 phases), but some tidal hydrokinetic (3 phases).	26,000	--				Storage	

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206	b	206b	Bradfield AK-BC	Eastern Passage Complex	25	Southeast of Wrangell		960			3 phase project. 2 phases lake-tap storage, 1 phase tidal hydrokinetic.	16,000	--				Storage	
207	b	207b	Bradfield AK-BC	Fools Inlet Complex	30	Southeast of Wrangell		50			3 phase project. All lake-tap storage.	9,000	--				Storage	
208	b	208b	Bradfield AK-BC	Blake-Marten Complex	30	Southeast of Wrangell		82			6 phase project. 4 lake-tap storage, 1 run of River, 1 tidal hydrokinetic.	20,000	--				Storage	
209	b	209b	Bradfield AK-BC	Anan-Hoya Complex	35	Southeast of Wrangell		200			Lake-tap storage.	19,000	--				Storage	
210	c	210c	Forest Service	Schubee Lake		Upper Lynn Canal					FERC issued prelim permit 11/30/2010. AP&T seeking funding from AEA. Roadless #302.	-	--					Yes
210	d	210d	HDR	Schubee Lake		Haines						-	--				Storage	
210	k	210k	Proposed Judgment on Roadless	Schubee Lake								-	--		Yes			
210	l	210l	Bob Grimm AP&T	Schubee Lake							Funded in Round IV of AEA Renewable Energy Fund.							
210	o	210o	AEA Renewable Energy Fund Applications/Rankings	Schubee Lake		Upper Lynn Canal					This project is presented as an alternative to Connelly Lake. AEA has given partial funding in the amount of \$80,000 for conceptual design and feasibility work.	6,000			Yes		Storage	
210	t	210t	FERC Preliminary Permit List	Schnubee Lake						P13645		4,900			Yes			
211	c	211c	Forest Service	Lace River	50	South of Skagway					FERC issued prelim permit 09/15/2010, roadless 301.	--	--					Yes
211	d	211d	HDR	Lace - Lake 3160	25	Southeast of Haines					Would serve Kensington Mine. FERC has not issued a preliminary permit.	4,990	40,100				Storage	
212	c	212c	Forest Service	Gastineau Channel Tidal		Juneau-SE Intertie					FERC prelim permit 04/30/2010. Will probably not affect NFS lands/resources.	--	--					Yes
213	c	213c	Forest Service	Sweetheart Lake		Juneau-SE Intertie					Applicant is developing study plans and Scoping Doc 1, roadless 302.	--	--					
213	d	213d	HDR	Sweetheart Lake		Juneau				P13563		30,000	136,000				Storage	Yes
214	c	214c	Forest Service	Angoon Hydro/Thayer		Angoon					NEPA completed., non-FERC project, wilderness.	--	--					Not Required
215	c	215c	Forest Service	Killisnoo/Angoon Tidal		Angoon					FERC prelim permit app 08/2010. Will probably not affect NFS lands/resources.	--	--					
216	c	216c	Forest Service	Icy Passage Tidal		Hoonah					FERC prelim permit 04/30/2010. Will probably not affect NFS lands/resources.	--	--					Yes
217	c	217c	Forest Service	Gartina Creek	5	South of Hoonah					FERC ruled that licensing is required. Project improvements on Sealaska land. Upper reaches of watershed on NFS lands.	--	--					

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217	q	217q	Comprehensive Renewable Energy for Sealaska Corporation, Dec 2005	Gartina Creek		Hoonah					2003 estimate of 3.75 million.	600		6,250				
218	c	218c	Forest Service	Port Frederick Tidal		Hoonah					Is a hydroelectric project, rather than hydrokinetic. FERC prelim permit 11/18/2009. Old-growth habitat, roadless 343.	--	--					Yes
219	c	219c	Forest Service	Neka Geothermal							Site nomination rec'd 8/30/2010. FS working with BLM. TNF minerals group has the lead, non-FERC.	--	--					
220	c	220c	Forest Service	Upper Tenakee Geothermal							No recent activity. TNF minerals group has the lead, non-FERC, roadless 311.	--	--					
221	c	221c	Forest Service	Tenakee Springs/Indian River		Tenakee Springs					Project is on State/City but will impact FS fishpass. Upper reaches of watershed on NFS lands. FERC determined licensing not needed 5/26/2010, non-FERC.	--	--					Not Required
221	d	221d	HDR	Indian River		Tenakee Springs						120	916				Run-of-River	
221	o	221o	AEA Renewable Energy Fund Applications/Rankings	Indian River/Tenakee Springs		Tenakee Springs					AEA recommends full funding in the amount of \$203,000 for the design phase.	120			Yes		Run-of-River	
221	p	221p	Joel Groves - Polar Consult	Indian River		Tenakee Springs	41				Feasibility Study provided by Joel Groves.	120	839		Yes		Storage	
222	c	222c	Forest Service	Blue Lake Modification		Sitka					Sitka applied to FERC to amend existing license and increase capacity. Would raise dam by 83 feet and inundate additional 362 ac of NFS lands. FERC expected to request 4(e)s very soon. Municipal watershed, roadless 331.	--	--					Yes
222	d	222d	HDR	Blue Lake Expansion		Sitka			2230			8,000	34,000				Storage	Yes
222	ee	222ee	Order Issuing New License	Blue Lake Modification								--	--		Yes			
222	r	222r	Chris Brewton, Sitka, 7-14-2011	Blue Lake Expansion		Sitka			425		Raise existing dam 83 ft. Increase Fish Valve from 670 kW to 1 MW.	18300	34500	5410	Yes			
224	c	224c	Forest Service	Baranof Chinook							ADF&G and NSRAA not involved in salmon facility; appears to be private project. FERC determined licensing is required 6/2010.	--	--					
225	c	225c	Forest Service	Little Port Walter/Osprey	15	Northwest of Port Alexander					Federally-owned project. Non-FERC.	--	--					Not Required
225	k	225k	Proposed Judgment on Roadless	Little Port Walter								--	--		Yes			
226	c	226c	Forest Service	Cascade Creek							2 nd FERC prelim permit expired 1/31/2011. Applicant applied for new prelim permit on 2/1/2011. No decision yet by FERC. Draft license application and draft EA filed and comments, prelim 4(e)s must be to FERC by May 19, 2011.	--	--					
227	c	227c	Forest Service	Ruth Lake		Angoon					FERC prelim permit on 11/05/2009.	--	--					Yes

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227	d	227d	HDR	Ruth Lake		Petersburg				P13366		20,000	70,000				Storage	Yes
227	Ff	227ff	Order Issuing Preliminary Permit	Ruth Lake						12619		20,000	60,000					Yes
228	c	228c	Forest Service	Scenery Lake		Angoon					FERC prelim permit on 10/01/2009.	--	--					Yes
228	d	228d	HDR	Scenery Lake	17	17 miles northeast of Petersburg				P13365								Yes
228	q	228q	Comprehensive Renewable Energy for Sealaska Corporation, Dec 2005	Scenery Lake		Petersburg												
229	c	229c	Forest Service	Sunrise Lake		Wrangell					Project is inactive. No FERC correspondence since 2008. City wishes to keep FS inv permit in effect.	--	--					
230	c	230c	Forest Service	Neck Lake		Whale Pass					Project is on State land with FS road reservation. FERC determined licensing is required 11/04/2010.	--	--					
230	o	230o	AEA Renewable Energy Fund Applications/Rankings	Neck Lake		Whale Pass					Alaska Power and Telephone has decided to no longer pursue the activity at Neck Lake. Therefore funding is not recommended by AEA.	124			Yes			
232	c	232c	Forest Service	Lake Shelokum	30	Southeast of Wrangell					FERC prelim permit 05/01/2009.	--	--					Yes
232	d	232d	HDR	Shelokum Lake		Wrangell				P13281		10,000	40,000				Storage	Yes
232	j	232j	Barbara Stanley - Forest Service	Lake Shelokum		Wrangell					E-Mail from Barbara Stanley date 5-23-11 indicated that Alaska Power & Telephone surrendered the preliminary permit in 4-28-11.	---	--		Yes			No
232	k	232k	Proposed Judgment on Roadless	Lake Shelokum								--	--		Yes			
233	c	233c	Forest Service	Bell Island Geothermal							NEPA in progress. TNF minerals group has lead (non-FERC), roadless 529.	--	--					Not Required
237	d	237d	HDR	Thayer Creek		Angoon				Not Required		1,000	8,500				Run-of-River	Not Required
237	f	237f	Preliminary Appraisal Report Hydroelectric Potential, Retherford, 1977	Thayer Creek	2	East of Angoon		465				575	--					

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237	o	237o	AEA Renewable Energy Fund Applications/Rankings	Thayer Lake Gen and Transmission	5	North of Angoon	25	370			AEA has setup partial funding of the \$30 million combined generation and transmission project in the amount of \$1 million for design/permitting/ construction. AEA notes that the IPP also received \$1.1 million from the USDOE for preconstruction activities. AEA also notes that the scope must be consistent with the recommendations of the Southeast Alaska IRP. Ranked 3 among REF projects in the southeast for Round 4.	1,000			Yes		Storage	
237	q	237q	Comprehensive Renewable Energy for Sealaska Corporation, Dec 2005	Thayer Creek		Angoon					2003 estimate of 8.7 million.	1000		8,700				
238	d	238d	HDR	Connelly Lake		Haines						13,700	48,100				Storage	
238	o	238o	AEA Renewable Energy Fund Applications/Rankings	Connelly Lake	10	Southwest of Skagway					AEA recommends partial funding in the amount of \$468,000 for design/feasibility activities. Notes that it is dependent upon the scope being consistent with the findings of the Southeast Alaska IRP.	12,000			Yes		Storage	
238	q	238q	Comprehensive Renewable Energy for Sealaska Corporation, Dec 2005	Connelly Lake		Haines												
239	d	239d	HDR	Gartina Falls		Hoonah				P14066		440	1,770				Run-of-River	Yes
239	gg	239gg	Exhibit A - Project Description	Gartina Falls	3.5	Southeast of Hoonah		76				445	1,810	13,033.71	Yes		Run-of-River	
240	d	240d	HDR	Water Supply Creek		Hoonah						400	1,480				Run-of-River	
240	hh	240hh	Hoonah Hydroelectric Conceptual Design Report	Water Supply Creek	3.5	Southeast of Hoonah		11				400	1,480	16,250	Yes		Run-of-River	
240	q	240q	Comprehensive Renewable Energy for Sealaska Corporation, Dec 2005	Water Supply Creek		Hoonah					2003 estimate of 3.32 million.	600		5,550				
241	d	241d	HDR	Lace Lake		Juneau				P13599		4,990	40,100				Storage	Yes
242	d	242d	HDR	Triangle Lake		Metlakatla						4,000	17,324				Storage	
242	o	242o	AEA Renewable Energy Fund Applications/Rankings	Triangle Lake		Metlakatla					AEA recommends full funding in the about of \$500,000 for a feasibility study. The project would be located near the proposed Ketchikan - Metlakatla Intertie.	4,000			Yes		Storage	
243	x	243x	Existing	Falls Creek		Gustavus				11659		800	2,160				Run-of-River	
244	x	244x	Existing	Lutak		Haines						250	780				Run-of-River	

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245	x	245x	Existing	10 mile		Haines						550	1,050				Run-of-River	
246	x	246x	Existing	Snettisham		Juneau						78,200	325,000				Storage	
247	q	247q	Comprehensive Renewable Energy for Sealaska Corporation, Dec 2005	Lake Dorothy		Juneau												
247	x	247x	Existing	Lake Dorothy		Juneau				14300		14,300	74,500				Storage	
248	x	248x	Existing	Ketchikan Lakes		Ketchikan				420		4,200	22,200				Run-of-River	
249	x	249x	Existing	Silvis Lake		Ketchikan				1922		2,100	12,400				Storage	
250	x	250x	Existing	Chester Lake		Metlakatla						1,000	7,170				Storage	
251	o	251o	AEA Renewable Energy Fund Applications/ Rankings	Pelican Upgrade	0	Pelican					AEA recommends full funding in the amount of \$1,896,836 for the project. The project is aimed at rebuilding an obsolete hydro project from the 1940s. Ranked 5th among projects in the Southeast.	650			Yes		Run-of-River	
251	x	251x	Existing	Pelican		Pelican				10198		700	--				Run-of-River	
252	x	252x	Existing	Blind Slough		Petersburg				201		2,000	1,000				Run-of-River	
253	f	253f	Preliminary Appraisal Report Hydroelectric Potential, Retherford, 1977	Black Bear Lake	25	South of Petersburg						--	--					
253	x	253x	Existing	Black Bear Lake		Prince of Wales				10440		4,500	22,300				Storage	
254	q	254q	Comprehensive Renewable Energy for Sealaska Corporation, Dec 2005	South Fork		Craig												
254	x	254x	Existing	South Fork		Prince of Wales						2,000	6,000				Run-of-River	
255	x	255x	Existing	Pulp Mill Feed Unit		Sitka				2230		870	--				Run-of-River	
256	x	256x	Existing	Fish Valve Unit		Sitka				2230		670	--				Run-of-River	
257	k	257k	Proposed Judgment on Roadless	Blue Lake								--	--		Yes			
257	x	257x	Existing	Blue Lake		Sitka				2230		6,000	62,500				Storage	
258	x	258x	Existing	Goat Lake		Skagway				11077		4,000	20,600				Storage	
259	x	259x	Existing	Kasidaya Creek		Skagway				11588		3,000	10,200				Run-of-River	

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260	f	260f	Preliminary Appraisal Report Hydroelectric Potential, Retherford, 1977	Kootznahoo	0	Angoon						30,000	--					
260	l	260l	Bob Grimm AP&T	West Creek	7	Northwest of Skagway					The West Creek Hydroelectric Project would be located about 7 miles northwest of Skagway near the community of Dyea. The Community of Skagway is considering development of the West Creek Project to provide shore power to cruise ships during the summer tourist season, in order to lessen the air pollution caused by the ship's self-generation. Project facilities would include a dam, tunnel, surface powerhouse, and transmission line. Additional study is necessary to define capacities and dimensions of the various features. The generating capacity is likely to be in the 10-25 MW range.	20,000	--	Yes		Storage		
261	f	261f	Preliminary Appraisal Report Hydroelectric Potential, Retherford, 1977	Game Creek				310				1,100	--					
261	f	261f	Preliminary Appraisal Report Hydroelectric Potential, Retherford, 1977	Gunnuk Creek	1	Southeast of Kake		86				875	--					
262	f	262f	Preliminary Appraisal Report Hydroelectric Potential, Retherford, 1977	Cathedral Falls Creek	10	Southeast of Kake	25	195	70			350	--					
262	q	262q	Comprehensive Renewable Energy for Sealaska Corporation, Dec 2005	Cathedral Falls Creek		Kake					2003 estimate of 5.3 million.	800		6,625				
263	f	263f	Preliminary Appraisal Report Hydroelectric Potential, Retherford, 1977	Chilkoot River Tributary	10	East of Klukwan		34.5	40			3,150	--					
264	f	264f	Preliminary Appraisal Report Hydroelectric Potential, Retherford, 1977	Pelican Creek								3,560	--					
265	n	265n	Annette Island - Rural Southeast, Oct 2010	Chester/Edgecumbe Lake	2	Southeast of Metlakatla		19.68333333				17,500	11,518				Run-of-River	

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266	n	266n	Annette Island - Rural Southeast, Oct 2010	Helen Todd Lakes	10	North of Metlakatla		87.34166667				12,800	8,404				Run-of-River	
267	n	267n	Annette Island - Rural Southeast, Oct 2010	Cascade Lakes	6	Northeast of Metlakatla		22.75				6,000	3,970				Run-of-River	
268	n	268n	Annette Island - Rural Southeast, Oct 2010	Un-Named - Lower Lake Tap	8	East of Metlakatla		30.60833333				13,700	9,053				Run-of-River	
269	n	269n	Annette Island - Rural Southeast, Oct 2010	Un-Named - Upper Lake Tap	8	East of Metlakatla		22.15				10,300	6,791				Run-of-River	
270	n	270n	Annette Island - Rural Southeast, Oct 2010	Kwain Lake	10	Southeast of Metlakatla		10.8				9,500	6,280				Run-of-River	
271	n	271n	Annette Island - Rural Southeast, Oct 2010	Crater Lake	11	Southeast of Metlakatla		11.575				6,500	4,261				Run-of-River	
272	o	272o	AEA Renewable Energy Fund Applications/Rankings	Elfin Cove		Elfin Cove					AEA recommends full funding in the amount of \$347,000 for the design phase. Run of River at 50 kW for the upper and storage at 150 kW for the lower project. FERC License will be required since it's on USFS land.	200			Yes		Storage	
272	p	272p	Joel Groves - Polar Consult	Elfin Cove	1	South of Elfin Cove						160	672.2	11,563	Yes			
272	s	272s	Crooked Creek and Jim's Lake Feasibility Study 2011	Crooked Creek and Jim's Lake		Elfin Cove					APA Supplement to Hatch's reconnaissance study.	80						
272	s	272s	Crooked Creek and Jim's Lake Feasibility Study 2011	Crooked Creek and Jim's Lake		Elfin Cove					Alaska Energy and Engineering, Inc.	100		15,000				
272	s	272s	Crooked Creek and Jim's Lake Feasibility Study 2011	Crooked Creek and Jim's Lake	1 mile south of Elfin Cove	Elfin Cove	0.2	2.9	1			160	597.7	11,562	Yes		Storage/Run-of-River	
273	o	273o	AEA Renewable Energy Fund Applications/ Rankings	Excursion Inlet	3	Excursion Inlet					AEA recommends partial funding in the amount of \$93,000 for reconnaissance. AEA notes that there are barriers to development that include anadromous fish concerns. Study will include consideration of fish habitat.	3,000			Yes		Storage	

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274	o	274o	AEA Renewable Energy Fund Applications/Rankings	Port St. Nick Fish Enhancement		Coffman Cove					AEA does not recommend any funding for this project. It notes that AEA has already recommended funding for two projects that should provide all electrical needs for the island for the foreseeable future and that one of the projects is expected to spill water for the next decade. It also notes that the application doesn't provide much information about recon, feasibility, design, or business arrangements.	55			Yes		Storage	
275	p	275p	Joel Groves - Polar Consult	Burro Creek		Skagway						1,500			Yes		Run-of-River	
276	q	276q	Comprehensive Renewable Energy for Sealaska Corporation, Dec 2005	Lake Diana		Sitka												
276	q	276q	Comprehensive Renewable Energy for Sealaska Corporation, Dec 2005	Walker Lake		Klukwan					2003 estimate of 9.4 million.	1900	5430	5,684				
277	q	277q	Comprehensive Renewable Energy for Sealaska Corporation, Dec 2005	Chicago Harbor		Yakutat					2003 Estimate of 9.3 million.	1400	7500	6,643				
278	d	278d	HDR	Lake Connell		Ketchikan						1900	11640				Storage	
279	d	279d	HDR	Tyee New Dam Construction		Wrangell						1400	9100				Storage	
280	d	280d	HDR	Tyee New Third Turbine		Wrangell						10000					Storage	
281	d	281d	HDR	Virginia Lake		Wrangell						12000					Storage	
282	s	282s	Crooked Creek and Jim's Lake Feasibility Study 2011	Roy's Creek		Elfin Cove					Hatch America Inc. for the Alaska Power Authority 1984.	20 to 60					Run-of-River	
283	s	283s	Crooked Creek and Jim's Lake Feasibility Study 2011	Ernie's Creek		Elfin Cove												
284	u	284u	Lake Redfield Hydroelectric Preliminary Permit Application	Lake Redfield	12.2	Yakutat			NA	01685-000		2000	10,000					
285	v	285v	AEL&P	Yaldagalga Creek	16	Kensington				P-14115		8000						

a	1947 Document
b	Bradfield AK-BC
c	Forest Service
d	HDR
e	Public Comments
f	Preliminary Appraisal Report Hydroelectric Potential, Retherford, 1977
g	AK-BC Intertie Feasibility Study Draft Final, Supplemental Information Regional Planning Model and Avoided GHG Emissions
h	SE AK Energy Export Study, D Hittle & Assoc, May 1, 2006
i	B&V Presentation SE IRP Advisory Workgroup - May 20, 2011
j	Barbara Stanley - Forest Service
k	Proposed Judgment on Roadless
l	Bob Grimm AP&T
m	Documentum
n	Annette Island - Rural Southeast, Oct 2010
o	AEA Renewable Energy Fund Applications/Rankings
p	Joel Groves - Polar Consult
q	Comprehensive Renewable Energy for Sealaska Corporation, Dec 2005
r	Chris Brewton, Sitka, 7-14-2011
s	Crooked Creek and Jim's Lake Hydroelectric Feasibility Study Final Report, Polarconsult Alaska, Inc., June 2011
t	www.ferc.gov/industries/hydropower/gen-info/licensing/issued-pre-permits.xls
u	Lake Redfield Hydroelectric Project Preliminary Permit Application - November 2, 1988
v	AEL&P
w	Application for License Soule River Hydroelectric Project FERC No. P-13528-000 and P-12615-001
x	Existing
y	Cascade Creek Hydroelectric Project, FERC No. 12495 License Application for Major Unconstructed Project - Exhibit B
z	FERC Order Issuing Preliminary Permit, P-12621-000
aa	FERC Order Issuing Original License - October 24, 2000, P-11480-001
bb	FERC Order Issuing Original License - January 22, 1998, P-11393-001
cc	FERC Order Issuing Original License - March 17, 2009, P-11841-002
dd	AEA Application for Renewable Energy Grant, Takatz Lake Project - Alaska
ee	FERC Order Issuing New License - July 10, 2007, P-2230-034
ff	FERC Order Issuing Preliminary Permit, P-12619-000
gg	Exhibit A - Project Description, Pre-Application Document
hh	Hoonah Hydroelectric Conceptual Design Report, February 2011

Appendix D. Advisory Work Group Resolution

Resolution No. 2011-01

Advisory Work Group for the Southeast Alaska Integrated Resource Plan

Whereas: The Alaska Energy Authority is conducting a Southeast Integrated Resource Plan as directed by the 26th Alaska State Legislature.

Whereas: The Southeast Integrated Resource Plan will not be completed until January 2012.

Whereas: Many citizens and businesses in the Southeast are suffering severe economic impact from the high cost of oil contributing to very high electricity and space heating costs.

Whereas: The following list of projects will help alleviate the impacts of the high cost of oil on citizens and businesses in the Southeast.

Whereas: The following list of projects have been under development for many years, have completed or nearly completed exhaustive FERC licensing or similar process, and have broad public support.

NOW THEREFORE BE IT RESOLVED THAT The Advisory Work Group for the Southeast Alaska Integrated Resource Plan unanimously requests that AEA accelerate consideration of the below listed projects and that they not be delayed as AEA conducts the SE Integrated Resource Plan project.

NOW THEREFORE BE IT FURTHER RESOLVED THAT The Advisory Work Group for the Southeast Alaska Integrated Resource Plan unanimously requests that the 27th Alaska State Legislature provide funding for the continued development of the following projects in alphabetical order to provide relief to the citizens and businesses in Southeast Alaska from the high cost of electricity and space heating.

- Blue Lake Hydro
- Kake to Petersburg Intertie
- Metlakatla to Ketchikan Intertie
 - Reynolds Creek Hydro
 - Thayer Creek Hydro
 - Whitman Lake Hydro

By: 

Date: March 21, 2011

Rick Harris, Executive Vice President, Sealaska Corporation
Chairman, Southeast Alaska Integrated Resource Plan Advisory Work Group

At the August 16, 2011 Advisory Work Group (AWG) meeting, the AWG approved adding the Gartina Falls Hydro Project to the Committed Resources List.

Appendix E. Description of Strategist®

Black & Veatch used Ventyx's Strategist® optimal generation expansion model to evaluate the various alternatives and scenarios. The Strategist® model is capable of evaluating a large number of plans with generating, transmission, and DSM/EE alternatives by using probabilistic dispatch, dynamic programming, and elimination of factors that typically are not taken into account when comparing thousands (or millions) of plans, such as ramp-up and ramp-down rates and start-up energy and start-up fuel costs.

The model utilizes a typical week methodology and evaluates the relative economics between all possible plans within a given set of criteria and minimizes utility costs through optimization. The model checks all feasible combinations in every year of the study period using dynamic programming. At the end of the study period, the model traces back through the matrix of feasible states to find the plans with the best financial or other operational criteria (cumulative present worth cost in this case) and ranks these plans according to this criteria.