

Scenario: 2 Year Delay in Startup of Hydro Production - (2014)

Water owns penstock with lease to Hydro, 1% annual coal power rate incr.

17.5% Permanent Reduction in Hydro production

Internal Rate of Return:

3.0%

Year	Total Annual Cost (MNPP)	Annual Cost Change	Revised Annual Cost	Total Annual Savings	Annual Hydro % Decrease	Net Annual Savings	Annual Surplus (Shortfall)
2008	49,501		49,501				(49,501)
2009	375,885		375,885				(375,885)
2010	377,204		377,204				(377,204)
2011	378,363	0	378,363				(378,363)
2012	443,718	0	443,718	419,820	-100%	0	(443,718)
2013	444,719	0	444,719	445,035	-100%	0	(444,719)
2014	445,194	157,524	602,718	471,934	-35%	306,757	(295,961)
2015	445,497	157,524	603,021	500,635	-35%	325,413	(277,608)
2016	450,455	157,524	607,979	526,202	-35%	342,031	(265,948)
2017	450,007	157,524	607,531	526,202	-18%	434,117	(173,414)
2018	448,953	157,524	606,477	526,202	-18%	434,117	(172,360)
2019	452,971	157,524	610,495	526,202	-18%	434,117	(176,378)
2020	451,140	157,524	608,664	526,202	-18%	434,117	(174,547)
2021	454,434	157,524	611,958	553,089	-18%	456,298	(155,660)
2022	456,785	157,524	614,309	553,089	-18%	456,298	(158,011)
2023	458,693	157,524	616,217	553,089	-18%	456,298	(159,919)
2024	454,671	157,524	612,195	553,089	-18%	456,298	(155,897)
2025	455,694	157,524	613,218	553,089	-18%	456,298	(156,920)
2026	462,066	157,524	619,590	581,363	-18%	479,624	(139,966)
2027	461,939	157,524	619,463	581,363	-18%	479,624	(139,839)
2028	461,096	157,524	618,620	581,363	-18%	479,624	(138,996)
2029	465,049		465,049	581,363	-18%	479,624	14,575
2030	462,322		462,322	581,363	-18%	479,624	17,302
2031	470,851		470,851	611,097	-18%	504,155	33,304
2032	466,871		466,871	611,097	-18%	504,155	37,284
2033	467,662		467,662	611,097	-18%	504,155	36,493
2034	467,701		467,701	611,097	-18%	504,155	36,454
2035	308,516		308,516	611,097	-18%	504,155	195,639
2036	99,954		99,954	642,368	-18%	529,954	430,000
2037	99,954		99,954	642,368	-18%	529,954	430,000
2038	99,954		99,954	642,368	-18%	529,954	430,000
2039	99,954		99,954	642,368	-18%	529,954	430,000
2040	99,954		99,954	642,368	-18%	529,954	430,000
2041	107,451		107,451	675,256	-18%	557,086	449,635
2042	107,451		107,451	675,256	-18%	557,086	449,635
2043	107,451		107,451	675,256	-18%	557,086	449,635
2044	107,451		107,451	675,256	-18%	557,086	449,635
2045	107,451		107,451	675,256	-18%	557,086	449,635
2046	115,510		115,510	709,847	-18%	585,624	470,114

2047	115,510	115,510	709,847	-18%	585,624	470,114
2048	115,510	115,510	709,847	-18%	585,624	470,114
2049	115,510	115,510	709,847	-18%	585,624	470,114
2050	115,510	115,510	709,847	-18%	585,624	470,114
2051	124,173	124,173	746,228	-18%	615,638	491,465
2052	124,173	124,173	746,228	-18%	615,638	491,465
2053	124,173	124,173	746,228	-18%	615,638	491,465
2054	124,173	124,173	746,228	-18%	615,638	491,465
2055	124,173	124,173	746,228	-18%	615,638	491,465
2056	133,486	133,486	784,496	-18%	647,209	513,723
2057	133,486	133,486	784,496	-18%	647,209	513,723
2058	133,486	133,486	784,496	-18%	647,209	513,723
2059	133,486	133,486	784,496	-18%	647,209	513,723
2060	133,486	133,486	784,496	(0)	647,209	513,723
2061	143,497	143,497	824,741	0	680,411	536,914
2062	143,497	143,497	824,741	0	680,411	536,914
2063	143,497	143,497	824,741	0	680,411	536,914
2064	143,497	143,497	824,741	0	680,411	536,914
2065	143,497	143,497	824,741	0	680,411	536,914
2066	154,260	154,260	867,050	0	715,316	561,056
2067	154,260	154,260	867,050	0	715,316	561,056
2068	154,260	154,260	867,050	0	715,316	561,056
2069	154,260	154,260	867,050	0	715,316	561,056
2070	154,260	154,260	867,050	0	715,316	561,056
2071	165,829	165,829	911,529	0	752,012	586,183
2072	165,829	165,829	911,529	0	752,012	586,183
2073	165,829	165,829	911,529	0	752,012	586,183
2074	165,829	165,829	911,529	0	752,012	586,183
2075	165,829	165,829	911,529	0	752,012	586,183
2076	178,266	178,266	958,291	0	790,590	612,324
2077	178,266	178,266	958,291	0	790,590	612,324
2078	178,266	178,266	958,291	0	790,590	612,324
2079	178,266	178,266	958,291	0	790,590	612,324
2080	178,266	178,266	958,291	0	790,590	612,324
2081	191,636	191,636	1,007,451	0	831,147	639,511
2082	191,636	191,636	1,007,451	0	831,147	639,511
2083	191,636	191,636	1,007,451	0	831,147	639,511
2084	191,636	191,636	1,007,451	0	831,147	639,511

21,375,349

Scenario: 2 Year Delay in Startup of Hydro Production - (2014)

Water owns penstock with lease to Hydro, 1% annual coal power rate incr.
35% Permanent Reduction in Hydro production

Internal Rate of Return:

1.0%

Year	Total Annual Cost (MNPP)	Annual Cost Change	Revised Annual Cost	Total Annual Savings	Annual Hydro % Decrease	Net Annual Savings	Annual Surplus (Shortfall)
2008	49,501		49,501				(49,501)
2009	375,885		375,885				(375,885)
2010	377,204		377,204				(377,204)
2011	378,363	0	378,363				(378,363)
2012	443,718	0	443,718	419,820	-100%	0	(443,718)
2013	444,719	0	444,719	445,035	-100%	0	(444,719)
2014	445,194	157,524	602,718	471,934	-35%	306,757	(295,961)
2015	445,497	157,524	603,021	500,635	-35%	325,413	(277,608)
2016	450,455	157,524	607,979	526,202	-35%	342,031	(265,948)
2017	450,007	157,524	607,531	526,202	-35%	342,031	(265,500)
2018	448,953	157,524	606,477	526,202	-35%	342,031	(264,446)
2019	452,971	157,524	610,495	526,202	-35%	342,031	(268,464)
2020	451,140	157,524	608,664	526,202	-35%	342,031	(266,633)
2021	454,434	157,524	611,958	553,089	-35%	359,508	(252,450)
2022	456,785	157,524	614,309	553,089	-35%	359,508	(254,801)
2023	458,693	157,524	616,217	553,089	-35%	359,508	(256,709)
2024	454,671	157,524	612,195	553,089	-35%	359,508	(252,687)
2025	455,694	157,524	613,218	553,089	-35%	359,508	(253,710)
2026	462,066	157,524	619,590	581,363	-35%	377,886	(241,704)
2027	461,939	157,524	619,463	581,363	-35%	377,886	(241,577)
2028	461,096	157,524	618,620	581,363	-35%	377,886	(240,734)
2029	465,049		465,049	581,363	-35%	377,886	(87,163)
2030	462,322		462,322	581,363	-35%	377,886	(84,436)
2031	470,851		470,851	611,097	-35%	397,213	(73,638)
2032	466,871		466,871	611,097	-35%	397,213	(69,658)
2033	467,662		467,662	611,097	-35%	397,213	(70,449)
2034	467,701		467,701	611,097	-35%	397,213	(70,488)
2035	308,516		308,516	611,097	-35%	397,213	88,697
2036	99,954		99,954	642,368	-35%	417,539	317,585
2037	99,954		99,954	642,368	-35%	417,539	317,585
2038	99,954		99,954	642,368	-35%	417,539	317,585
2039	99,954		99,954	642,368	-35%	417,539	317,585
2040	99,954		99,954	642,368	-35%	417,539	317,585
2041	107,451		107,451	675,256	-35%	438,916	331,465
2042	107,451		107,451	675,256	-35%	438,916	331,465
2043	107,451		107,451	675,256	-35%	438,916	331,465
2044	107,451		107,451	675,256	-35%	438,916	331,465
2045	107,451		107,451	675,256	-35%	438,916	331,465
2046	115,510		115,510	709,847	-35%	461,401	345,891

2047	115,510	115,510	709,847	-35%	461,401	345,891
2048	115,510	115,510	709,847	-35%	461,401	345,891
2049	115,510	115,510	709,847	-35%	461,401	345,891
2050	115,510	115,510	709,847	-35%	461,401	345,891
2051	124,173	124,173	746,228	-35%	485,048	360,875
2052	124,173	124,173	746,228	-35%	485,048	360,875
2053	124,173	124,173	746,228	-35%	485,048	360,875
2054	124,173	124,173	746,228	-35%	485,048	360,875
2055	124,173	124,173	746,228	-35%	485,048	360,875
2056	133,486	133,486	784,496	-35%	509,922	376,436
2057	133,486	133,486	784,496	-35%	509,922	376,436
2058	133,486	133,486	784,496	-35%	509,922	376,436
2059	133,486	133,486	784,496	-35%	509,922	376,436
2060	133,486	133,486	784,496	-35%	509,922	376,436
2061	143,497	143,497	824,741	-35%	536,081	392,584
2062	143,497	143,497	824,741	-35%	536,081	392,584
2063	143,497	143,497	824,741	-35%	536,081	392,584
2064	143,497	143,497	824,741	-35%	536,081	392,584
2065	143,497	143,497	824,741	-35%	536,081	392,584
2066	154,260	154,260	867,050	-35%	563,582	409,323
2067	154,260	154,260	867,050	-35%	563,582	409,323
2068	154,260	154,260	867,050	-35%	563,582	409,323
2069	154,260	154,260	867,050	-35%	563,582	409,323
2070	154,260	154,260	867,050	-35%	563,582	409,323
2071	165,829	165,829	911,529	-35%	592,494	426,665
2072	165,829	165,829	911,529	-35%	592,494	426,665
2073	165,829	165,829	911,529	-35%	592,494	426,665
2074	165,829	165,829	911,529	-35%	592,494	426,665
2075	165,829	165,829	911,529	-35%	592,494	426,665
2076	178,266	178,266	958,291	-35%	622,889	444,623
2077	178,266	178,266	958,291	-35%	622,889	444,623
2078	178,266	178,266	958,291	-35%	622,889	444,623
2079	178,266	178,266	958,291	-35%	622,889	444,623
2080	178,266	178,266	958,291	-35%	622,889	444,623
2081	191,636	191,636	1,007,451	-35%	654,843	463,207
2082	191,636	191,636	1,007,451	-35%	654,843	463,207
2083	191,636	191,636	1,007,451	-35%	654,843	463,207
2084	191,636	191,636	1,007,451	-35%	654,843	463,207

12,544,606

Internal Rate of Return:

4.5%

Year	Total Annual Cost (MNPP)	Annual Cost Change	Revised Annual Cost	Total Annual Savings	Annual Hydro % Decrease	Net Annual Savings	Annual Surplus (Shortfall)
2008	49,501		49,501				(49,501)
2009	375,885		375,885				(375,885)
2010	377,204		377,204				(377,204)
2011	378,363	0	378,363				(378,363)
2012	443,718	0	443,718	419,820	-100%	0	(443,718)
2013	444,719	0	444,719	445,035	-100%	0	(444,719)
2014	445,194	157,524	602,718	471,934	-35%	306,757	(295,961)
2015	445,497	157,524	603,021	500,635	-35%	325,413	(277,608)
2016	450,455	157,524	607,979	526,202	-35%	342,031	(265,948)
2017	450,007	157,524	607,531	526,202	-18%	434,117	(173,414)
2018	448,953	157,524	606,477	526,202	-18%	434,117	(172,360)
2019	452,971	157,524	610,495	526,202	-18%	434,117	(176,378)
2020	451,140	157,524	608,664	526,202		526,202	(82,462)
2021	454,434	157,524	611,958	553,089		553,089	(58,869)
2022	456,785	157,524	614,309	553,089		553,089	(61,220)
2023	458,693	157,524	616,217	553,089		553,089	(63,128)
2024	454,671	157,524	612,195	553,089		553,089	(59,106)
2025	455,694	157,524	613,218	553,089		553,089	(60,129)
2026	462,066	157,524	619,590	581,363		581,363	(38,227)
2027	461,939	157,524	619,463	581,363		581,363	(38,100)
2028	461,096	157,524	618,620	581,363		581,363	(37,257)
2029	465,049		465,049	581,363		581,363	116,314
2030	462,322		462,322	581,363		581,363	119,041
2031	470,851		470,851	611,097		611,097	140,246
2032	466,871		466,871	611,097		611,097	144,226
2033	467,662		467,662	611,097		611,097	143,435
2034	467,701		467,701	611,097		611,097	143,396
2035	308,516		308,516	611,097		611,097	302,581
2036	99,954		99,954	642,368		642,368	542,414
2037	99,954		99,954	642,368		642,368	542,414
2038	99,954		99,954	642,368		642,368	542,414
2039	99,954		99,954	642,368		642,368	542,414
2040	99,954		99,954	642,368		642,368	542,414
2041	107,451		107,451	675,256		675,256	567,805
2042	107,451		107,451	675,256		675,256	567,805
2043	107,451		107,451	675,256		675,256	567,805
2044	107,451		107,451	675,256		675,256	567,805
2045	107,451		107,451	675,256		675,256	567,805
2046	115,510		115,510	709,847		709,847	594,337

2047	115,510	115,510	709,847	709,847	594,337
2048	115,510	115,510	709,847	709,847	594,337
2049	115,510	115,510	709,847	709,847	594,337
2050	115,510	115,510	709,847	709,847	594,337
2051	124,173	124,173	746,228	746,228	622,055
2052	124,173	124,173	746,228	746,228	622,055
2053	124,173	124,173	746,228	746,228	622,055
2054	124,173	124,173	746,228	746,228	622,055
2055	124,173	124,173	746,228	746,228	622,055
2056	133,486	133,486	784,496	784,496	651,010
2057	133,486	133,486	784,496	784,496	651,010
2058	133,486	133,486	784,496	784,496	651,010
2059	133,486	133,486	784,496	784,496	651,010
2060	133,486	133,486	784,496	784,496	651,010
2061	143,497	143,497	824,741	824,741	681,243
2062	143,497	143,497	824,741	824,741	681,243
2063	143,497	143,497	824,741	824,741	681,243
2064	143,497	143,497	824,741	824,741	681,243
2065	143,497	143,497	824,741	824,741	681,243
2066	154,260	154,260	867,050	867,050	712,790
2067	154,260	154,260	867,050	867,050	712,790
2068	154,260	154,260	867,050	867,050	712,790
2069	154,260	154,260	867,050	867,050	712,790
2070	154,260	154,260	867,050	867,050	712,790
2071	165,829	165,829	911,529	911,529	745,700
2072	165,829	165,829	911,529	911,529	745,700
2073	165,829	165,829	911,529	911,529	745,700
2074	165,829	165,829	911,529	911,529	745,700
2075	165,829	165,829	911,529	911,529	745,700
2076	178,266	178,266	958,291	958,291	780,025
2077	178,266	178,266	958,291	958,291	780,025
2078	178,266	178,266	958,291	958,291	780,025
2079	178,266	178,266	958,291	958,291	780,025
2080	178,266	178,266	958,291	958,291	780,025
2081	191,636	191,636	1,007,451	1,007,451	815,815
2082	191,636	191,636	1,007,451	1,007,451	815,815
2083	191,636	191,636	1,007,451	1,007,451	815,815
2084	191,636	191,636	1,007,451	1,007,451	815,815

29,929,836

Scenario: 2 Year Delay in Startup of Hydro Production - (2014)

Water owns penstock with lease to Hydro, 2% annual coal power rate incr.

17.5% Permanent Reduction in Hydro Production

Internal Rate of Return:

4.5%

Year	Total Annual Cost (MNPP)	Annual Cost Change	Revised Annual Cost	Total Annual Savings	Annual Hydro % Decrease	Net Annual Savings	Annual Surplus (Shortfall)
2008	49,501		49,501				(49,501)
2009	375,885		375,885				(375,885)
2010	377,204		377,204				(377,204)
2011	378,363	0	378,363				(378,363)
2012	443,718	0	443,718	419,820	-100%	0	(443,718)
2013	444,719	0	444,719	445,035	-100%	0	(444,719)
2014	445,194	157,524	602,718	471,934	-35%	306,757	(295,961)
2015	445,497	157,524	603,021	500,635	-35%	325,413	(277,608)
2016	450,455	157,524	607,979	510,648	-35%	331,921	(276,058)
2017	450,007	157,524	607,531	520,861	-18%	429,710	(177,821)
2018	448,953	157,524	606,477	531,278	-18%	438,304	(168,173)
2019	452,971	157,524	610,495	541,903	-18%	447,070	(163,425)
2020	451,140	157,524	608,664	552,741	-18%	456,012	(152,652)
2021	454,434	157,524	611,958	563,796	-18%	465,132	(146,826)
2022	456,785	157,524	614,309	575,072	-18%	474,435	(139,874)
2023	458,693	157,524	616,217	586,574	-18%	483,923	(132,294)
2024	454,671	157,524	612,195	598,305	-18%	493,602	(118,593)
2025	455,694	157,524	613,218	610,271	-18%	503,474	(109,744)
2026	462,066	157,524	619,590	622,477	-18%	513,543	(106,047)
2027	461,939	157,524	619,463	634,926	-18%	523,814	(95,649)
2028	461,096	157,524	618,620	647,625	-18%	534,290	(84,330)
2029	465,049		465,049	660,577	-18%	544,976	79,927
2030	462,322		462,322	673,789	-18%	555,876	93,554
2031	470,851		470,851	687,265	-18%	566,993	96,142
2032	466,871		466,871	701,010	-18%	578,333	111,462
2033	467,662		467,662	715,030	-18%	589,900	122,238
2034	467,701		467,701	729,331	-18%	601,698	133,997
2035	308,516		308,516	743,917	-18%	613,732	305,216
2036	99,954		99,954	758,796	-18%	626,006	526,052
2037	99,954		99,954	773,972	-18%	638,527	538,573
2038	99,954		99,954	789,451	-18%	651,297	551,343
2039	99,954		99,954	805,240	-18%	664,323	564,369
2040	99,954		99,954	821,345	-18%	677,609	577,655
2041	107,451		107,451	837,772	-18%	691,162	583,711
2042	107,451		107,451	854,527	-18%	704,985	597,534
2043	107,451		107,451	871,618	-18%	719,085	611,634
2044	107,451		107,451	889,050	-18%	733,466	626,015
2045	107,451		107,451	906,831	-18%	748,136	640,685
2046	115,510		115,510	924,968	-18%	763,098	647,588

2047	115,510	115,510	943,467	-18%	778,360	662,850
2048	115,510	115,510	962,336	-18%	793,927	678,417
2049	115,510	115,510	981,583	-18%	809,806	694,296
2050	115,510	115,510	1,001,215	-18%	826,002	710,492
2051	124,173	124,173	1,021,239	-18%	842,522	718,349
2052	124,173	124,173	1,041,664	-18%	859,373	735,200
2053	124,173	124,173	1,062,497	-18%	876,560	752,387
2054	124,173	124,173	1,083,747	-18%	894,091	769,918
2055	124,173	124,173	1,105,422	-18%	911,973	787,800
2056	133,486	133,486	1,127,530	-18%	930,213	796,727
2057	133,486	133,486	1,150,081	-18%	948,817	815,331
2058	133,486	133,486	1,173,083	-18%	967,793	834,307
2059	133,486	133,486	1,196,544	-18%	987,149	853,663
2060	133,486	133,486	1,220,475	-18%	1,006,892	873,406
2061	143,497	143,497	1,244,885	-18%	1,027,030	883,532
2062	143,497	143,497	1,269,782	-18%	1,047,570	904,073
2063	143,497	143,497	1,295,178	-18%	1,068,522	925,024
2064	143,497	143,497	1,321,082	-18%	1,089,892	946,395
2065	143,497	143,497	1,347,503	-18%	1,111,690	968,193
2066	154,260	154,260	1,374,453	-18%	1,133,924	979,664
2067	154,260	154,260	1,401,942	-18%	1,156,602	1,002,343
2068	154,260	154,260	1,429,981	-18%	1,179,734	1,025,475
2069	154,260	154,260	1,458,581	-18%	1,203,329	1,049,069
2070	154,260	154,260	1,487,752	-18%	1,227,396	1,073,136
2071	165,829	165,829	1,517,507	-18%	1,251,944	1,086,114
2072	165,829	165,829	1,547,858	-18%	1,276,983	1,111,153
2073	165,829	165,829	1,578,815	-18%	1,302,522	1,136,693
2074	165,829	165,829	1,610,391	-18%	1,328,573	1,162,743
2075	165,829	165,829	1,642,599	-18%	1,355,144	1,189,315
2076	178,266	178,266	1,675,451	-18%	1,382,247	1,203,980
2077	178,266	178,266	1,708,960	-18%	1,409,892	1,231,625
2078	178,266	178,266	1,743,139	-18%	1,438,090	1,259,823
2079	178,266	178,266	1,778,002	-18%	1,466,852	1,288,585
2080	178,266	178,266	1,813,562	-18%	1,496,189	1,317,922
2081	191,636	191,636	1,849,833	-18%	1,526,112	1,334,476
2082	191,636	191,636	1,886,830	-18%	1,556,635	1,364,998
2083	191,636	191,636	1,924,566	-18%	1,587,767	1,396,131
2084	191,636	191,636	1,963,058	-18%	1,619,523	1,427,886

40,844,744

Year	Total Annual Cost (MNPP)	Annual Cost Change	Revised Annual Cost	Total Annual Savings	Annual Hydro % Decrease	Net Annual Savings	Annual Surplus (Shortfall)
2008	49,501		49,501				(49,501)
2009	375,885		375,885				(375,885)
2010	377,204		377,204				(377,204)
2011	378,363	0	378,363				(378,363)
2012	443,718	0	443,718	419,820	-100%	0	(443,718)
2013	444,719	0	444,719	445,035	-100%	0	(444,719)
2014	445,194	157,524	602,718	471,934	-35%	306,757	(295,961)
2015	445,497	157,524	603,021	500,635	-35%	325,413	(277,608)
2016	450,455	157,524	607,979	510,648	-35%	331,921	(276,058)
2017	450,007	157,524	607,531	520,861	-35%	338,559	(268,972)
2018	448,953	157,524	606,477	531,278	-35%	345,331	(261,146)
2019	452,971	157,524	610,495	541,903	-35%	352,237	(258,258)
2020	451,140	157,524	608,664	552,741	-35%	359,282	(249,382)
2021	454,434	157,524	611,958	563,796	-35%	366,468	(245,490)
2022	456,785	157,524	614,309	575,072	-35%	373,797	(240,512)
2023	458,693	157,524	616,217	586,574	-35%	381,273	(234,944)
2024	454,671	157,524	612,195	598,305	-35%	388,898	(223,297)
2025	455,694	157,524	613,218	610,271	-35%	396,676	(216,542)
2026	462,066	157,524	619,590	622,477	-35%	404,610	(214,980)
2027	461,939	157,524	619,463	634,926	-35%	412,702	(206,761)
2028	461,096	157,524	618,620	647,625	-35%	420,956	(197,664)
2029	465,049		465,049	660,577	-35%	429,375	(35,674)
2030	462,322		462,322	673,789	-35%	437,963	(24,359)
2031	470,851		470,851	687,265	-35%	446,722	(24,129)
2032	466,871		466,871	701,010	-35%	455,656	(11,215)
2033	467,662		467,662	715,030	-35%	464,770	(2,892)
2034	467,701		467,701	729,331	-35%	474,065	6,364
2035	308,516		308,516	743,917	-35%	483,546	175,030
2036	99,954		99,954	758,796	-35%	493,217	393,263
2037	99,954		99,954	773,972	-35%	503,081	403,127
2038	99,954		99,954	789,451	-35%	513,143	413,189
2039	99,954		99,954	805,240	-35%	523,406	423,452
2040	99,954		99,954	821,345	-35%	533,874	433,920
2041	107,451		107,451	837,772	-35%	544,552	437,101
2042	107,451		107,451	854,527	-35%	555,443	447,992
2043	107,451		107,451	871,618	-35%	566,551	459,100
2044	107,451		107,451	889,050	-35%	577,883	470,432
2045	107,451		107,451	906,831	-35%	589,440	481,989
2046	115,510		115,510	924,968	-35%	601,229	485,719

2047	115,510	115,510	943,467	-35%	613,254	497,744
2048	115,510	115,510	962,336	-35%	625,519	510,009
2049	115,510	115,510	981,583	-35%	638,029	522,519
2050	115,510	115,510	1,001,215	-35%	650,790	535,280
2051	124,173	124,173	1,021,239	-35%	663,805	539,632
2052	124,173	124,173	1,041,664	-35%	677,081	552,908
2053	124,173	124,173	1,062,497	-35%	690,623	566,450
2054	124,173	124,173	1,083,747	-35%	704,436	580,263
2055	124,173	124,173	1,105,422	-35%	718,524	594,351
2056	133,486	133,486	1,127,530	-35%	732,895	599,409
2057	133,486	133,486	1,150,081	-35%	747,553	614,067
2058	133,486	133,486	1,173,083	-35%	762,504	629,018
2059	133,486	133,486	1,196,544	-35%	777,754	644,268
2060	133,486	133,486	1,220,475	-35%	793,309	659,823
2061	143,497	143,497	1,244,885	-35%	809,175	665,678
2062	143,497	143,497	1,269,782	-35%	825,359	681,861
2063	143,497	143,497	1,295,178	-35%	841,866	698,368
2064	143,497	143,497	1,321,082	-35%	858,703	715,206
2065	143,497	143,497	1,347,503	-35%	875,877	732,380
2066	154,260	154,260	1,374,453	-35%	893,395	739,135
2067	154,260	154,260	1,401,942	-35%	911,262	757,003
2068	154,260	154,260	1,429,981	-35%	929,488	775,228
2069	154,260	154,260	1,458,581	-35%	948,078	793,818
2070	154,260	154,260	1,487,752	-35%	967,039	812,779
2071	165,829	165,829	1,517,507	-35%	986,380	820,551
2072	165,829	165,829	1,547,858	-35%	1,006,107	840,278
2073	165,829	165,829	1,578,815	-35%	1,026,230	860,400
2074	165,829	165,829	1,610,391	-35%	1,046,754	880,925
2075	165,829	165,829	1,642,599	-35%	1,067,689	901,860
2076	178,266	178,266	1,675,451	-35%	1,089,043	910,777
2077	178,266	178,266	1,708,960	-35%	1,110,824	932,557
2078	178,266	178,266	1,743,139	-35%	1,133,040	954,774
2079	178,266	178,266	1,778,002	-35%	1,155,701	977,435
2080	178,266	178,266	1,813,562	-35%	1,178,815	1,000,549
2081	191,636	191,636	1,849,833	-35%	1,202,392	1,010,755
2082	191,636	191,636	1,886,830	-35%	1,226,439	1,034,803
2083	191,636	191,636	1,924,566	-35%	1,250,968	1,059,332
2084	191,636	191,636	1,963,058	-35%	1,275,987	1,084,351

27,881,985

Internal Rate of Return:

5.9%

Year	Total Annual Cost (MNPP)	Annual Cost Change	Revised Annual Cost	Total Annual Savings	Annual Hydro % Decrease	Net Annual Savings	Annual Surplus (Shortfall)
2008	49,501		49,501				(49,501)
2009	375,885		375,885				(375,885)
2010	377,204		377,204				(377,204)
2011	378,363	0	378,363				(378,363)
2012	443,718	0	443,718	419,820	-100%	0	(443,718)
2013	444,719	0	444,719	445,035	-100%	0	(444,719)
2014	445,194	157,524	602,718	471,934	-35%	306,757	(295,961)
2015	445,497	157,524	603,021	500,635	-35%	325,413	(277,608)
2016	450,455	157,524	607,979	510,648	-35%	331,921	(276,058)
2017	450,007	157,524	607,531	520,861	-18%	429,710	(177,821)
2018	448,953	157,524	606,477	531,278	-18%	438,304	(168,173)
2019	452,971	157,524	610,495	541,903	-18%	447,070	(163,425)
2020	451,140	157,524	608,664	552,741		552,741	(55,923)
2021	454,434	157,524	611,958	563,796		563,796	(48,162)
2022	456,785	157,524	614,309	575,072		575,072	(39,237)
2023	458,693	157,524	616,217	586,574		586,574	(29,643)
2024	454,671	157,524	612,195	598,305		598,305	(13,890)
2025	455,694	157,524	613,218	610,271		610,271	(2,947)
2026	462,066	157,524	619,590	622,477		622,477	2,887
2027	461,939	157,524	619,463	634,926		634,926	15,463
2028	461,096	157,524	618,620	647,625		647,625	29,005
2029	465,049		465,049	660,577		660,577	195,528
2030	462,322		462,322	673,789		673,789	211,467
2031	470,851		470,851	687,265		687,265	216,414
2032	466,871		466,871	701,010		701,010	234,139
2033	467,662		467,662	715,030		715,030	247,368
2034	467,701		467,701	729,331		729,331	261,630
2035	308,516		308,516	743,917		743,917	435,401
2036	99,954		99,954	758,796		758,796	658,842
2037	99,954		99,954	773,972		773,972	674,018
2038	99,954		99,954	789,451		789,451	689,497
2039	99,954		99,954	805,240		805,240	705,286
2040	99,954		99,954	821,345		821,345	721,391
2041	107,451		107,451	837,772		837,772	730,321
2042	107,451		107,451	854,527		854,527	747,076
2043	107,451		107,451	871,618		871,618	764,167
2044	107,451		107,451	889,050		889,050	781,599
2045	107,451		107,451	906,831		906,831	799,380
2046	115,510		115,510	924,968		924,968	809,458

2047	115,510	115,510	943,467	943,467	827,957
2048	115,510	115,510	962,336	962,336	846,826
2049	115,510	115,510	981,583	981,583	866,073
2050	115,510	115,510	1,001,215	1,001,215	885,705
2051	124,173	124,173	1,021,239	1,021,239	897,066
2052	124,173	124,173	1,041,664	1,041,664	917,491
2053	124,173	124,173	1,062,497	1,062,497	938,324
2054	124,173	124,173	1,083,747	1,083,747	959,574
2055	124,173	124,173	1,105,422	1,105,422	981,249
2056	133,486	133,486	1,127,530	1,127,530	994,044
2057	133,486	133,486	1,150,081	1,150,081	1,016,595
2058	133,486	133,486	1,173,083	1,173,083	1,039,597
2059	133,486	133,486	1,196,544	1,196,544	1,063,058
2060	133,486	133,486	1,220,475	1,220,475	1,086,989
2061	143,497	143,497	1,244,885	1,244,885	1,101,387
2062	143,497	143,497	1,269,782	1,269,782	1,126,285
2063	143,497	143,497	1,295,178	1,295,178	1,151,681
2064	143,497	143,497	1,321,082	1,321,082	1,177,584
2065	143,497	143,497	1,347,503	1,347,503	1,204,006
2066	154,260	154,260	1,374,453	1,374,453	1,220,193
2067	154,260	154,260	1,401,942	1,401,942	1,247,683
2068	154,260	154,260	1,429,981	1,429,981	1,275,721
2069	154,260	154,260	1,458,581	1,458,581	1,304,321
2070	154,260	154,260	1,487,752	1,487,752	1,333,493
2071	165,829	165,829	1,517,507	1,517,507	1,351,678
2072	165,829	165,829	1,547,858	1,547,858	1,382,028
2073	165,829	165,829	1,578,815	1,578,815	1,412,985
2074	165,829	165,829	1,610,391	1,610,391	1,444,562
2075	165,829	165,829	1,642,599	1,642,599	1,476,770
2076	178,266	178,266	1,675,451	1,675,451	1,497,184
2077	178,266	178,266	1,708,960	1,708,960	1,530,693
2078	178,266	178,266	1,743,139	1,743,139	1,564,873
2079	178,266	178,266	1,778,002	1,778,002	1,599,735
2080	178,266	178,266	1,813,562	1,813,562	1,635,295
2081	191,636	191,636	1,849,833	1,849,833	1,658,197
2082	191,636	191,636	1,886,830	1,886,830	1,695,193
2083	191,636	191,636	1,924,566	1,924,566	1,732,930
2084	191,636	191,636	1,963,058	1,963,058	1,771,421

53,528,545

Scenario: 2 Year Delay in Startup of Hydro Production - (2014)

Water owns penstock with lease to Hydro, 3% annual coal power rate incr.

17.5% Permanent Reduction in Hydro Production

Internal Rate of Return:

6.0%

Year	Total Annual Cost (MNPP)	Annual Cost Change	Revised Annual Cost	Total Annual Savings	Annual Hydro % Decrease	Net Annual Savings	Annual Surplus (Shortfall)
2008	49,501		49,501				(49,501)
2009	375,885		375,885				(375,885)
2010	377,204		377,204				(377,204)
2011	378,363	0	378,363				(378,363)
2012	443,718	0	443,718	419,820	-100%	0	(443,718)
2013	444,719	0	444,719	445,035	-100%	0	(444,719)
2014	445,194	157,524	602,718	471,934	-35%	306,757	(295,961)
2015	445,497	157,524	603,021	500,635	-35%	325,413	(277,608)
2016	450,455	157,524	607,979	515,654	-35%	335,175	(272,804)
2017	450,007	157,524	607,531	531,124	-18%	438,177	(169,354)
2018	448,953	157,524	606,477	547,057	-18%	451,322	(155,155)
2019	452,971	157,524	610,495	563,469	-18%	464,862	(145,633)
2020	451,140	157,524	608,664	580,373	-18%	478,808	(129,856)
2021	454,434	157,524	611,958	597,784	-18%	493,172	(118,786)
2022	456,785	157,524	614,309	615,718	-18%	507,967	(106,342)
2023	458,693	157,524	616,217	634,189	-18%	523,206	(93,011)
2024	454,671	157,524	612,195	653,215	-18%	538,902	(73,293)
2025	455,694	157,524	613,218	672,812	-18%	555,070	(58,148)
2026	462,066	157,524	619,590	692,996	-18%	571,722	(47,868)
2027	461,939	157,524	619,463	713,786	-18%	588,873	(30,590)
2028	461,096	157,524	618,620	735,199	-18%	606,539	(12,081)
2029	465,049		465,049	757,255	-18%	624,736	159,687
2030	462,322		462,322	779,973	-18%	643,478	181,156
2031	470,851		470,851	803,372	-18%	662,782	191,931
2032	466,871		466,871	827,473	-18%	682,666	215,795
2033	467,662		467,662	852,298	-18%	703,145	235,483
2034	467,701		467,701	877,867	-18%	724,240	256,539
2035	308,516		308,516	904,202	-18%	745,967	437,451
2036	99,954		99,954	931,329	-18%	768,346	668,392
2037	99,954		99,954	959,268	-18%	791,396	691,442
2038	99,954		99,954	988,046	-18%	815,138	715,184
2039	99,954		99,954	1,017,688	-18%	839,592	739,638
2040	99,954		99,954	1,048,219	-18%	864,780	764,826
2041	107,451		107,451	1,079,665	-18%	890,724	783,273
2042	107,451		107,451	1,112,055	-18%	917,445	809,994
2043	107,451		107,451	1,145,417	-18%	944,969	837,518
2044	107,451		107,451	1,179,779	-18%	973,318	865,867
2045	107,451		107,451	1,215,173	-18%	1,002,517	895,066
2046	115,510		115,510	1,251,628	-18%	1,032,593	917,083

2047	115,510	115,510	1,289,177	-18%	1,063,571	948,061
2048	115,510	115,510	1,327,852	-18%	1,095,478	979,968
2049	115,510	115,510	1,367,687	-18%	1,128,342	1,012,832
2050	115,510	115,510	1,408,718	-18%	1,162,192	1,046,682
2051	124,173	124,173	1,450,980	-18%	1,197,058	1,072,885
2052	124,173	124,173	1,494,509	-18%	1,232,970	1,108,797
2053	124,173	124,173	1,539,344	-18%	1,269,959	1,145,786
2054	124,173	124,173	1,585,525	-18%	1,308,058	1,183,885
2055	124,173	124,173	1,633,090	-18%	1,347,299	1,223,126
2056	133,486	133,486	1,682,083	-18%	1,387,718	1,254,232
2057	133,486	133,486	1,732,545	-18%	1,429,350	1,295,864
2058	133,486	133,486	1,784,522	-18%	1,472,231	1,338,745
2059	133,486	133,486	1,838,058	-18%	1,516,397	1,382,911
2060	133,486	133,486	1,893,199	-18%	1,561,889	1,428,403
2061	143,497	143,497	1,949,995	-18%	1,608,746	1,465,249
2062	143,497	143,497	2,008,495	-18%	1,657,008	1,513,511
2063	143,497	143,497	2,068,750	-18%	1,706,719	1,563,221
2064	143,497	143,497	2,130,812	-18%	1,757,920	1,614,423
2065	143,497	143,497	2,194,737	-18%	1,810,658	1,667,160
2066	154,260	154,260	2,260,579	-18%	1,864,978	1,710,718
2067	154,260	154,260	2,328,396	-18%	1,920,927	1,766,667
2068	154,260	154,260	2,398,248	-18%	1,978,555	1,824,295
2069	154,260	154,260	2,470,196	-18%	2,037,911	1,883,652
2070	154,260	154,260	2,544,301	-18%	2,099,049	1,944,789
2071	165,829	165,829	2,620,631	-18%	2,162,020	1,996,191
2072	165,829	165,829	2,699,249	-18%	2,226,881	2,061,052
2073	165,829	165,829	2,780,227	-18%	2,293,687	2,127,858
2074	165,829	165,829	2,863,634	-18%	2,362,498	2,196,669
2075	165,829	165,829	2,949,543	-18%	2,433,373	2,267,544
2076	178,266	178,266	3,038,029	-18%	2,506,374	2,328,107
2077	178,266	178,266	3,129,170	-18%	2,581,565	2,403,299
2078	178,266	178,266	3,223,045	-18%	2,659,012	2,480,746
2079	178,266	178,266	3,319,736	-18%	2,738,782	2,560,516
2080	178,266	178,266	3,419,328	-18%	2,820,946	2,642,680
2081	191,636	191,636	3,521,908	-18%	2,905,574	2,713,938
2082	191,636	191,636	3,627,566	-18%	2,992,742	2,801,105
2083	191,636	191,636	3,736,392	-18%	3,082,524	2,890,887
2084	191,636	191,636	3,848,484	-18%	3,175,000	2,983,363

74,140,263

Year	Total Annual Cost (MNPP)	Annual Cost Change	Revised Annual Cost	Total Annual Savings	Annual Hydro % Decrease	Net Annual Savings	Annual Surplus (Shortfall)
2008	49,501		49,501				(49,501)
2009	375,885		375,885				(375,885)
2010	377,204		377,204				(377,204)
2011	378,363	0	378,363				(378,363)
2012	443,718	0	443,718	419,820	-100%	0	(443,718)
2013	444,719	0	444,719	445,035	-100%	0	(444,719)
2014	445,194	157,524	602,718	471,934	-35%	306,757	(295,961)
2015	445,497	157,524	603,021	500,635	-35%	325,413	(277,608)
2016	450,455	157,524	607,979	515,654	-35%	335,175	(272,804)
2017	450,007	157,524	607,531	531,124	-35%	345,230	(262,301)
2018	448,953	157,524	606,477	547,057	-35%	355,587	(250,890)
2019	452,971	157,524	610,495	563,469	-35%	366,255	(244,240)
2020	451,140	157,524	608,664	580,373	-35%	377,243	(231,421)
2021	454,434	157,524	611,958	597,784	-35%	388,560	(223,398)
2022	456,785	157,524	614,309	615,718	-35%	400,217	(214,092)
2023	458,693	157,524	616,217	634,189	-35%	412,223	(203,994)
2024	454,671	157,524	612,195	653,215	-35%	424,590	(187,605)
2025	455,694	157,524	613,218	672,812	-35%	437,328	(175,890)
2026	462,066	157,524	619,590	692,996	-35%	450,447	(169,143)
2027	461,939	157,524	619,463	713,786	-35%	463,961	(155,502)
2028	461,096	157,524	618,620	735,199	-35%	477,880	(140,740)
2029	465,049		465,049	757,255	-35%	492,216	27,167
2030	462,322		462,322	779,973	-35%	506,982	44,660
2031	470,851		470,851	803,372	-35%	522,192	51,341
2032	466,871		466,871	827,473	-35%	537,858	70,987
2033	467,662		467,662	852,298	-35%	553,993	86,331
2034	467,701		467,701	877,867	-35%	570,613	102,912
2035	308,516		308,516	904,202	-35%	587,732	279,216
2036	99,954		99,954	931,329	-35%	605,364	505,410
2037	99,954		99,954	959,268	-35%	623,524	523,570
2038	99,954		99,954	988,046	-35%	642,230	542,276
2039	99,954		99,954	1,017,688	-35%	661,497	561,543
2040	99,954		99,954	1,048,219	-35%	681,342	581,388
2041	107,451		107,451	1,079,665	-35%	701,782	594,331
2042	107,451		107,451	1,112,055	-35%	722,836	615,385
2043	107,451		107,451	1,145,417	-35%	744,521	637,070
2044	107,451		107,451	1,179,779	-35%	766,856	659,405
2045	107,451		107,451	1,215,173	-35%	789,862	682,411
2046	115,510		115,510	1,251,628	-35%	813,558	698,048

Internal Rate of Return:

7.3%

Year	Total Annual Cost (MNPP)	Annual Cost Change	Revised Annual Cost	Total Annual Savings	Annual Hydro % Decrease	Net Annual Savings	Annual Surplus (Shortfall)
2008	49,501		49,501				(49,501)
2009	375,885		375,885				(375,885)
2010	377,204		377,204				(377,204)
2011	378,363	0	378,363				(378,363)
2012	443,718	0	443,718	419,820	-100%	0	(443,718)
2013	444,719	0	444,719	445,035	-100%	0	(444,719)
2014	445,194	157,524	602,718	471,934	-35%	306,757	(295,961)
2015	445,497	157,524	603,021	500,635	-35%	325,413	(277,608)
2016	450,455	157,524	607,979	515,654	-35%	335,175	(272,804)
2017	450,007	157,524	607,531	531,124	-18%	438,177	(169,354)
2018	448,953	157,524	606,477	547,057	-18%	451,322	(155,155)
2019	452,971	157,524	610,495	563,469	-18%	464,862	(145,633)
2020	451,140	157,524	608,664	580,373		580,373	(28,291)
2021	454,434	157,524	611,958	597,784		597,784	(14,174)
2022	456,785	157,524	614,309	615,718		615,718	1,409
2023	458,693	157,524	616,217	634,189		634,189	17,972
2024	454,671	157,524	612,195	653,215		653,215	41,020
2025	455,694	157,524	613,218	672,812		672,812	59,594
2026	462,066	157,524	619,590	692,996		692,996	73,406
2027	461,939	157,524	619,463	713,786		713,786	94,323
2028	461,096	157,524	618,620	735,199		735,199	116,579
2029	465,049		465,049	757,255		757,255	292,206
2030	462,322		462,322	779,973		779,973	317,651
2031	470,851		470,851	803,372		803,372	332,521
2032	466,871		466,871	827,473		827,473	360,602
2033	467,662		467,662	852,298		852,298	384,636
2034	467,701		467,701	877,867		877,867	410,166
2035	308,516		308,516	904,202		904,202	595,686
2036	99,954		99,954	931,329		931,329	831,375
2037	99,954		99,954	959,268		959,268	859,314
2038	99,954		99,954	988,046		988,046	888,092
2039	99,954		99,954	1,017,688		1,017,688	917,734
2040	99,954		99,954	1,048,219		1,048,219	948,265
2041	107,451		107,451	1,079,665		1,079,665	972,214
2042	107,451		107,451	1,112,055		1,112,055	1,004,604
2043	107,451		107,451	1,145,417		1,145,417	1,037,966
2044	107,451		107,451	1,179,779		1,179,779	1,072,328
2045	107,451		107,451	1,215,173		1,215,173	1,107,722
2046	115,510		115,510	1,251,628		1,251,628	1,136,118

2047	115,510	115,510	1,289,177	1,289,177	1,173,667
2048	115,510	115,510	1,327,852	1,327,852	1,212,342
2049	115,510	115,510	1,367,687	1,367,687	1,252,177
2050	115,510	115,510	1,408,718	1,408,718	1,293,208
2051	124,173	124,173	1,450,980	1,450,980	1,326,807
2052	124,173	124,173	1,494,509	1,494,509	1,370,336
2053	124,173	124,173	1,539,344	1,539,344	1,415,171
2054	124,173	124,173	1,585,525	1,585,525	1,461,352
2055	124,173	124,173	1,633,090	1,633,090	1,508,917
2056	133,486	133,486	1,682,083	1,682,083	1,548,597
2057	133,486	133,486	1,732,545	1,732,545	1,599,059
2058	133,486	133,486	1,784,522	1,784,522	1,651,036
2059	133,486	133,486	1,838,058	1,838,058	1,704,572
2060	133,486	133,486	1,893,199	1,893,199	1,759,713
2061	143,497	143,497	1,949,995	1,949,995	1,806,498
2062	143,497	143,497	2,008,495	2,008,495	1,864,998
2063	143,497	143,497	2,068,750	2,068,750	1,925,252
2064	143,497	143,497	2,130,812	2,130,812	1,987,315
2065	143,497	143,497	2,194,737	2,194,737	2,051,239
2066	154,260	154,260	2,260,579	2,260,579	2,106,319
2067	154,260	154,260	2,328,396	2,328,396	2,174,137
2068	154,260	154,260	2,398,248	2,398,248	2,243,988
2069	154,260	154,260	2,470,196	2,470,196	2,315,936
2070	154,260	154,260	2,544,301	2,544,301	2,390,042
2071	165,829	165,829	2,620,631	2,620,631	2,454,801
2072	165,829	165,829	2,699,249	2,699,249	2,533,420
2073	165,829	165,829	2,780,227	2,780,227	2,614,398
2074	165,829	165,829	2,863,634	2,863,634	2,697,804
2075	165,829	165,829	2,949,543	2,949,543	2,783,713
2076	178,266	178,266	3,038,029	3,038,029	2,859,763
2077	178,266	178,266	3,129,170	3,129,170	2,950,903
2078	178,266	178,266	3,223,045	3,223,045	3,044,779
2079	178,266	178,266	3,319,736	3,319,736	3,141,470
2080	178,266	178,266	3,419,328	3,419,328	3,241,062
2081	191,636	191,636	3,521,908	3,521,908	3,330,272
2082	191,636	191,636	3,627,566	3,627,566	3,435,929
2083	191,636	191,636	3,736,392	3,736,392	3,544,756
2084	191,636	191,636	3,848,484	3,848,484	3,656,848

93,877,729