

Attachment SJH-2
Samuel J. Hancock
Hearing Exhibit 108
AMI Cost & Benefit Summary
Includes Escalation and Applicable Loaders
Cost/(Benefit)
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	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)	(t)	(u)	(v)	
	NPV	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035		
1																							
2	Meters Replaced	0	0	173,615	796,163	447,891	97,894	23,643	24,012	24,386	24,767	25,153	25,545	25,944	26,349	26,760	27,177	27,601	28,032	28,469	28,913		
3	Cumulative Meters Replaced	0	0	173,615	969,778	1,417,669	1,515,563	1,539,206	1,563,217	1,587,603	1,612,370	1,637,523	1,663,068	1,689,012	1,715,361	1,742,120	1,769,297	1,796,898	1,824,930	1,853,399	1,882,312		
4	Capital Items																						
5	Costs																						
6	Meters and Installation	176,545,760	0	210,000	24,126,434	103,305,910	59,219,451	14,645,303	3,354,060	3,474,511	3,599,288	3,728,546	3,862,445	4,001,153	4,144,843	4,293,692	4,447,887	4,607,620	4,773,089	4,944,500	5,122,067	5,306,010	
7	Meters and Installation - CON	15,085,370	0	21,000	2,144,622	8,719,829	5,062,354	1,359,828	277,979	287,961	298,303	309,015	320,113	331,609	343,517	355,854	368,633	381,872	395,585	409,792	424,508	439,753	
8	Field Area Network (AMI)	14,221,142	185,259	4,354,641	6,211,515	6,378,695	174,059	140,381	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	Field Area Network (AMI) - CON	5,688,457	74,104	1,741,856	2,484,606	2,551,478	69,624	56,152	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10	IT Systems and Integration	54,265,768	1,933,118	31,971,946	25,625,921	0	635,475	0	487,258	1,103,937	0	0	715,648	537,972	474,275	759,452	0	1,399,901	523,638	0	855,266		
11	IT Systems and Integration - CON	47,498,465	1,650,826	28,358,894	21,940,609	0	542,677	0	477,603	1,005,459	0	0	611,143	527,313	474,275	648,550	0	1,270,442	523,638	0	730,372		
12	AMI Program Management	6,555,723	100,270	1,544,359	1,919,505	2,255,835	2,181,563	332,119	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
13	AMI Change Management	4,790,194	61,833	955,747	1,741,885	1,928,148	1,173,848	199,554	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
14	AMI Program & Change Management - CON	1,134,592	16,210	250,011	366,139	418,398	335,541	53,167	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15	AMI Operations (Personnel)	6,081,126	283,705	607,644	2,038,980	2,190,894	2,100,195	607,220	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
16	Benefits																						
17	Capital Benefits																						
18	Distribution System Management	(12,223,341)	0	0	0	(1,257,342)	(1,371,048)	(1,420,285)	(1,471,290)	(1,524,127)	(1,578,861)	(1,635,561)	(1,694,298)	(1,755,143)	(1,818,174)	(1,883,468)	(1,951,107)	(2,021,176)	(2,093,760)	(2,168,951)	(2,246,842)		
19	Outage Management Efficiency	(1,006,129)	0	0	0	(73,810)	(108,366)	(116,351)	(118,678)	(121,052)	(123,473)	(125,942)	(128,461)	(131,031)	(133,651)	(136,324)	(139,051)	(141,832)	(144,668)	(147,562)	(150,513)	(153,523)	
20	Avoided AMR Meter Purchases	(35,695,326)	0	0	0	(1,881,423)	(3,527,571)	(3,985,441)	(3,875,169)	(4,031,146)	(4,192,988)	(4,360,908)	(4,535,129)	(4,715,881)	(4,903,403)	(5,097,943)	(5,299,757)	(5,509,111)	(5,726,280)	(5,951,550)	(6,185,216)	(6,427,584)	
21	Total Capital Costs		4,305,324	70,016,097	88,600,215	127,749,187	71,494,787	17,393,725	4,596,900	5,871,869	3,897,591	4,037,561	5,509,349	5,398,046	5,436,911	6,057,547	4,816,520	4,989,491	7,839,017	6,401,568	5,546,575	7,331,401	
22	Total Capital Benefits		0	0	0	(1,955,233)	(4,893,279)	(5,472,840)	(5,414,132)	(5,623,488)	(5,840,588)	(6,065,712)	(6,299,151)	(6,541,209)	(6,792,197)	(7,052,441)	(7,322,276)	(7,602,050)	(7,892,124)	(8,192,872)	(8,504,680)	(8,827,950)	
23	Net Capital Revenue Requirement Impact		337,027,874	0	0	7,686,810	54,428,536	65,751,759	66,777,674	63,718,720	54,530,861	34,298,041	32,332,151	30,900,694	29,228,944	27,296,745	25,951,829	24,286,532	22,240,041	20,854,968	18,935,970	15,545,582	14,233,687
24	O&M Items																						
25	Costs																						
26	Meters and Installation	1,894,682	376,073	369,600	198,615	821,163	472,891	122,894	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
27	Meters and Installation - CON	154,249	0	36,960	19,861	82,116	47,289	12,289	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
28	Field Area Network (AMI)	20,471,233	85,261	384,660	977,799	1,783,417	2,225,546	2,251,707	2,209,035	2,253,215	2,298,280	2,344,245	2,391,130	2,438,953	2,487,732	2,537,486	2,588,236	2,640,001	2,692,801	2,746,657	2,801,590	2,857,622	
29	Field Area Network (AMI) - CON	8,188,493	34,104	153,864	391,120	713,367	890,218	900,683	883,614	901,286	919,312	937,698	956,452	975,581	995,093	1,014,995	1,035,294	1,056,000	1,077,120	1,098,663	1,120,636	1,143,049	
30	IT Systems and Integration	35,454,594	53,983	2,586,141	3,874,930	3,222,522	3,286,972	3,352,712	3,419,766	3,488,161	3,557,925	3,629,083	3,701,665	3,775,698	3,851,212	3,928,236	4,006,801	4,086,937	4,168,676	4,252,449	4,337,900	4,423,832	
31	IT Systems and Integration - CON	33,791,980	46,100	2,355,061	3,639,229	3,087,075	3,148,817	3,211,793	3,276,029	3,341,550	3,408,381	3,476,548	3,546,079	3,617,001	3,689,341	3,763,128	3,838,390	3,915,158	3,993,461	4,073,330	4,154,797	4,237,893	
32	AMI Operations (Personnel)	3,774,614	0	137,354	753,611	976,374	459,708	107,066	281,541	287,171	292,915	298,773	304,749	310,844	317,060	323,402	329,870	336,467	343,196	350,060	357,062	364,203	
33	AMI O&M - CON	377,461	0	13,735	75,361	97,637	45,971	10,707	28,154	28,717	29,291	29,877	30,475	31,084	31,706	32,340	32,987	33,647	34,320	35,006	35,706	36,420	
34	AMI Program Management	722,148	10,000	173,400	208,080	254,690	238,135	33,122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
35	AMI Change Management	3,185,372	42,622	637,620	1,157,861	1,281,530	779,170	130,716	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
36	AMI Program & Change Management - CON	385,824	0	81,102	136,594	153,622	101,731	16,384	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
37	Saver's Switch Program Costs	6,210,954	0	0	0	983,719	1,003,393	1,023,461	1,043,930	1,064,809	1,086,105	1,107,827	1,129,983	1,152,583	1,175,635	0	0	0	0	0	0	0	
38	Benefits																						
39	O&M Benefits																						
40	Reduction in Meter Reading Costs	(34,074,586)	0	0	0	(2,499,723)	(3,670,048)	(3,940,472)	(4,019,282)	(4,099,667)	(4,181,661)	(4,265,294)	(4,350,600)	(4,437,612)	(4,526,364)	(4,616,891)	(4,709,229)	(4,803,414)	(4,899,482)	(4,997,471)	(5,097,421)	(5,199,369)	
41	Reduction in Field and Meter Services Costs	(32,354,359)	0	0	0	(2,373,526)	(3,484,768)	(3,741,541)	(3,816,372)	(3,892,699)	(3,970,553)	(4,049,964)	(4,130,963)	(4,213,583)	(4,297,854)	(4,383,811)	(4,471,488)	(4,560,917)	(4,652,136)	(4,745,178)	(4,840,082)	(4,936,884)	
42	Improvement in Customer Care	(2,574,836)	0	0	0	(188,891)	(277,326)	(297,761)	(303,716)	(309,790)	(315,986)	(322,306)	(328,752)	(335,327)	(342,033)	(348,874)	(355,852)	(362,969)	(370,228)	(377,633)	(385,185)	(392,889)	
43	Distribution System Management	(37,674)	0	0	0	(3,875)	(4,226)	(4,377)	(4,535)	(4,698)	(4,866)	(5,041)	(5,222)	(5,410)	(5,604)	(5,805)	(6,014)	(6,230)	(6,453)	(6,685)	(6,925)		
44	Outage Management Efficiency	(1,068,273)	0	0	0	(78,369)	(115,060)	(123,538)	(126,009)	(128,529)	(131,099)	(133,721)	(136,396)	(139,124)	(141,906)	(144,744)	(147,639)	(150,592)	(153,604)	(156,676)	(159,809)	(163,006)	
45	Energy & Capacity Benefits																						
46	Demand Response - Avoided Capacity/Trans	(9,811,268)	0	0	0	(157,836)	(321,990)	(492,669)	(669,972)	(854,286)	(1,045,644)	(1,244,253)	(1,450,378)	(1,664,387)	(1,886,197)	(1,924,062)	(1,962,531)	(2,001,816)	(2,041,813)	(2,082,629)	(2,124,266)	(2,166,725)	
47	Brattle Elasticity - Avoided Capacity/Trans	(231,530,101)	0	0	0	(9,816,305)	(20,667,360)	(25,790,189)	(27,145,676)	(27,892,964)	(28,468,531)	(29,467,146)	(30,389,427)	(31,292,765)	(32,093,961)	(33,322,464)	(34,513,152)	(35,603,609)	(36,462,522)	(37,798,884)	(39,008,868)	(40,263,536)	
48	Other AMI Benefits																						
49	Customer Benefits																						
50	Reduced Consumption Inactive Premise	(18,723,974)	0	0	0	(1,520,988)	(2,200,686)	(2,328,557)	(2,340,666)	(2,352,837)	(2,365,072)	(2,377,370)	(2,389,733)	(2,402,159)	(2,414,651)	(2,427,207)	(2,439,828)	(2,452,515)	(2,465,268)	(2,478,088)	(2,490,974)	(2,503,927)	
51	Reduced Uncollectible/Bad Debt	(5,232,600)	0	0	0	(425,055)	(615,003)	(650,738)	(654,122)	(657,524)	(660,943)	(664,380)	(667,835)	(671,307)	(674,798)	(678,307)	(681,834)	(685,380)	(688,944)	(692,526)	(696,127)	(699,747)	
52	Reduction in Energy Theft	(47,052,180)	0	0	0	(3,822,149)	(5,530,187)	(5,851,520)	(5,881,948)	(5,912,534)	(5,943,279)	(5,974,184)	(6,005,250)	(6,036,477)	(6,067,867)	(6,099,420)	(6,131,137)	(6,163,018)	(6,195,066)	(6,227,280)	(6,259,662)	(6,292,213)	
53	Customer Outage Reduction (CMO)	(18,066,119)	0	0	0	(1,183,507)	(1,764,710)	(1,993,405)	(2,064,992)	(2,139,150)	(2,215,971)	(2,295,551)	(2,377,989)	(2,463,387)	(2,551,852)	(2,643,494)	(2,738,428)	(2,836,770)	(2,938,644)	(3,044,177)	(3,153,499)		
54	Total O&M Costs	114,611,604	648,144	6,929,497	11,433,061	13,457,234	12,699,841	11,173,534	11,142,068	11,364,910	11,592,208	11,824,052	12,060,532	12,301,743									