

Division 9-1

Request:

Referring to MAL-3, page 1, columns (a), (b), and (c), please provide historical O&M expense data for the five years prior to the Test Year in excel format. Please provide this information in the same 12-month periods as the Test Year.

Response:

The data on Schedule MAL-3, Page 1, columns (a), (b), and (c) was accumulated from the Company's books and records to accommodate the preparation of the revenue requirement for this general rate case proceeding. The Company's books and records are not organized in the format of Schedule MAL-3, Page 1 for the five years prior to the Test Year and is not readily available; however, the Company is providing O&M expense detail by FERC account for the 12-month period ended June 30 for the five years prior to the Test Year on Attachment DIV 9-1.

Despite the differences in presentation, five years of prior year information is being provided in the Company's response to Division 9-10 for the following labor and employee benefits cost categories on Page 1 of Schedule MAL-3:

Line 1	Labor
Line 2	Health Care
Line 3	Group Life Insurance
Line 4	Thrift Plan
Line 5	FAS 112/ASC 712
Line 16	PBOP
Line 17	Pension

Total Operations & Maintenance Expense
(in \$000's)

		For 12 months ending:				
		June 30, 2016	June 30, 2015	June 30, 2014	June 30, 2013	June 30, 2012
		(a)	(b)	(c)	(d)	(e)
1	Maintenance Expense - Common					
2	95000000 Operation Supervision and Engineering	\$0	\$0	(\$0)	\$24	\$0
3	95010000 Fuel	\$0	\$0	\$0	\$0	\$0
4	95020000 Steam Expenses	\$0	\$0	\$0	\$0	\$0
5	95030000 Steam from Other Sources	\$0	\$0	\$0	\$0	\$0
6	95040000 Steam Transferred-Cr	\$0	\$0	\$0	\$0	\$0
7	95050000 Electric Expenses	\$0	\$0	\$0	\$0	\$0
8	95060000 Misc Steam Power Expenses	\$0	\$0	\$0	\$0	\$0
9	95070000 Rents	\$0	\$0	\$0	\$0	\$0
10	95080000 Blocked	\$0	\$0	\$0	\$0	\$0
11	95090000 Allowances	\$0	\$0	\$0	\$0	\$0
12	Operate Steam Power Generation (Sum of Lines 2 through 11)	\$0	\$0	(\$0)	\$24	\$0
13	95100000 Maint Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
14	95110000 Maintenance of Structures	\$0	\$0	\$0	\$0	\$0
15	95120000 Maintenance of Boiler Plant	\$0	(\$0)	\$0	(\$0)	\$0
16	95130000 Maintenance of Electric Plant	\$0	\$0	\$0	\$0	\$0
17	95140000 Maint of Misc Steam Plant	\$0	\$0	\$0	\$0	\$0
18	95150000 Blocked	\$0	\$0	\$0	\$0	\$0
19	Maint Steam Power Generation (Sum of Lines 13 through 18)	\$0	(\$0)	\$0	(\$0)	\$0
20	95170000 Operation Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
21	95180000 Nuclear fuel expense	\$0	\$0	\$0	\$0	\$0
22	95190000 Coolants and Water	\$0	\$0	\$0	\$0	\$0
23	95200000 Steam Expenses	\$0	\$0	\$0	\$0	\$0
24	95210000 Steam from Other Sources	\$0	\$0	\$0	\$0	\$0
25	95220000 Steam Transferred-Cr	\$0	\$0	\$0	\$0	\$0
26	95230000 Electric Expenses	\$0	\$0	\$0	\$0	\$0
27	95240000 Misc Nuclear Power Expenses	\$0	\$0	\$0	\$0	\$0
28	95250000 Rents	\$0	\$0	\$0	\$0	\$0
29	Nuclear Power Generation - Operation (Sum of Lines 20 through 28)	\$0	\$0	\$0	\$0	\$0
30	95280000 Maint Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
31	95290000 Maintenance of Structures	\$0	\$0	\$0	\$0	\$0
32	95300000 Maint of Reactor Plant Equipment	\$0	\$0	\$0	\$0	\$0
33	95310000 Maintenance of Electric Plant	\$0	\$0	\$0	\$0	\$0
34	95320000 Maint of Misc Nuclear Plant	\$0	\$0	\$0	\$0	\$0
35	Nuclear Power Generation - Maintenance (Sum of Lines 30 through 34)	\$0	\$0	\$0	\$0	\$0
36	95350000 Operation Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
37	95360000 Water for power	\$0	\$0	\$0	\$0	\$0
38	95370000 Hydraulic Expenses	\$0	\$0	\$0	\$0	\$0
39	95380000 Electric Expenses	\$0	\$0	\$0	\$0	\$0
40	95390000 Misc Hydraulic Power Generation Exp	\$0	\$0	\$0	\$0	\$0
41	95400000 Rents	\$0	\$0	\$0	\$0	\$0
42	95401000 Operation Supplies and Expenses	\$0	\$0	\$0	\$0	\$0
43	Hydraulic Power Generation - Operation (Sum of Lines 36 through 42)	\$0	\$0	\$0	\$0	\$0
44	95410000 Maint Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
45	95420000 Maintenance of Structures	\$0	\$0	\$0	\$0	\$0
46	95430000 Maint of Reservoirs, Dams and Waterways	\$0	\$0	\$0	\$0	\$0
47	95440000 Maintenance of Electric Plant	\$0	\$0	\$0	\$0	\$0
48	95450000 Maint of Misc Hydraulic Plant	\$0	\$0	\$0	\$0	\$0
49	95451000 Blocked	\$0	\$0	\$0	\$0	\$0
50	Hydraulic Power Generation - Maintenance (Sum of Lines 44 through 49)	\$0	\$0	\$0	\$0	\$0
51	95460000 Operation Superv. & Eng.	\$0	\$0	\$0	\$0	\$0
52	95470000 Fuel	\$0	\$0	\$0	\$0	\$0
53	95480000 Generation Expenses	\$0	\$0	\$0	\$0	\$0
54	95490000 Miscellaneous Other Power Generation Expenses	\$0	\$0	\$0	\$0	\$0
55	95500000 Rents	\$0	\$0	\$0	\$0	\$0
56	95501000 Blocked	\$0	\$0	\$0	\$0	\$0
57	Other Power Generation - Operation (Sum of Lines 51 through 56)	\$0	\$0	\$0	\$0	\$0
58	Total Power Production Expenses - Other Power (Sum of Lines 12,19,29,35,43,50,57)	\$0	\$0	(\$0)	\$24	\$0
59	95510000 Maint Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
60	95520000 Maintenance of struc	\$0	\$0	\$0	\$0	\$0
61	95530000 Maintenance of gener	\$0	\$0	\$0	\$0	\$0
62	95540000 Maint of Misc Other Power Gen Plant	\$0	\$0	\$0	\$0	\$0
63	95541000 Blocked	\$0	\$0	\$0	\$0	\$0
64	Maint Other Power Generation (Sum of Lines 59 through 63)	\$0	\$0	\$0	\$0	\$0

Total Operations & Maintenance Expense
(in \$000's)

		For 12 months ending:				
		June 30, 2016	June 30, 2015	June 30, 2014	June 30, 2013	June 30, 2012
		(a)	(b)	(c)	(d)	(e)
1	95550000 Purchased power	\$360,948	\$489,052	\$442,634	\$353,690	\$364,974
2	95560000 System Control and Load Dispatching	\$0	\$0	\$0	\$0	\$0
3	95570000 Other expenses	\$0	\$0	\$0	\$0	\$0
4	Total Power Production Expenses (Sum of Lines 1 through 3)	<u>\$360,948</u>	<u>\$489,052</u>	<u>\$442,634</u>	<u>\$353,690</u>	<u>\$364,974</u>
5	95600000 Trans Operation Supervision and Engineer	\$1,234	\$2,372	\$370	\$88	\$50
6	95610000 Blocked	\$0	\$0	\$0	\$445	\$536
7	95611000 Load Dispatch-Reliability	\$2	\$19	\$436	\$53	\$455
8	95612000 Load Dispatch-Monitor and Operate Transmission System	\$1,042	\$1,120	\$983	\$342	\$0
9	95613000 Load Dispatch-Trans Serv & Scheduling	\$0	\$0	\$0	\$0	\$0
10	95614000 Scheduling, System Control & Dispatch S	\$4,598	\$4,310	\$3,533	\$1,929	\$2,376
11	95615000 Reliability, Planning and Standards Dev	\$205	\$851	\$385	\$145	\$83
12	95616000 Transmission Service Stuides	\$0	\$0	\$0	\$0	(\$0)
13	95617000 Generation interconn	\$0	\$0	\$0	\$0	\$0
14	95618000 Reliability, Planning and Standards Dev	\$66	\$16	\$71	\$2	(\$0)
15	95620000 Station Expenses	\$301	\$386	\$700	\$160	\$422
16	95630000 Overhead Line Expenses	(\$261)	\$293	\$453	\$344	\$111
17	95640000 Underground Line Expenses	(\$266)	(\$132)	\$398	\$5	\$1
18	95650000 Transmission of Electricity by Others	\$31,147	\$14,531	\$49,506	\$45,027	\$47,412
19	95660000 Misc Transmission Expenses	\$2,732	\$1,825	\$915	\$1,332	\$1,706
20	95670000 Rents	\$40	\$11	\$118	\$68	(\$0)
21	95671000 Blocked	\$0	\$0	\$0	\$0	\$0
22	Oper Transmission Facilities (Sum of Lines 5 through 21)	<u>\$40,841</u>	<u>\$25,601</u>	<u>\$57,867</u>	<u>\$49,940</u>	<u>\$53,152</u>
23	95680000 Maint Supervision and Engineering	\$59	\$77	\$28	\$127	\$125
24	95690000 Maintenance of struc	\$0	\$0	\$0	\$0	\$1
25	95691000 Maintenance of compu	\$0	\$0	\$0	\$22	(\$8)
26	95692000 Maintenance of compu	\$0	\$0	\$10	\$97	\$410
27	95693000 Maintenance of communication equipment	\$1	\$0	\$0	\$13	\$11
28	95694000 Maintenance of Misc Regional Trans Plant	\$58	\$170	\$85	\$0	\$0
29	95700000 Maintenance of Station Equipment	\$570	\$852	\$688	\$1,487	\$862
30	95701000 Maintenance of Energy Storage Equipment	\$0	\$0	\$0	\$0	\$0
31	95710000 Maintenance of Overhead Lines	\$2,086	\$3,916	\$1,375	\$3,636	\$3,380
32	95720000 Maintenance of under	\$21	\$400	\$3	\$3	\$2
33	95730000 Maint of Misc Transmission Plant	\$27	\$219	\$120	\$41	\$67
34	95740000 Maintenance of transmission plant (Nonmajor only)	\$0	\$0	\$0	\$0	\$0
35	Maint Transmission Facilities (Sum of Lines 23 through 34)	<u>\$2,821</u>	<u>\$5,633</u>	<u>\$2,308</u>	<u>\$5,426</u>	<u>\$4,850</u>
36	Transmission Expenses-O&M (Sum of Lines 22,35)	<u>\$43,662</u>	<u>\$31,234</u>	<u>\$60,175</u>	<u>\$55,366</u>	<u>\$58,002</u>
37	95750000 Operation Supervision	\$0	\$0	\$0	\$0	\$0
38	95751000 Operation Supervision	\$0	\$0	\$0	\$0	\$0
39	95752000 Day-ahead and Real-time Market Admin	\$0	\$0	\$0	\$0	\$0
40	95753000 Transmission Rights Market Admin	\$0	\$0	\$0	\$0	\$0
41	95754000 Capacity Market Admin	\$0	\$0	\$0	\$0	\$0
42	95755000 Ancillary Services Market Admin	\$0	\$0	\$0	\$0	\$0
43	95756000 Market Monitoring and Compliance	\$0	\$0	\$0	\$0	\$0
44	95757000 Market Facilitation, Monitoring & Compl	\$259	\$123	\$108	\$0	\$0
45	95758000 Rents	\$0	\$0	\$0	\$0	\$0
46	Regional Market Operating Expense (Sum of Lines 37 through 45)	<u>\$259</u>	<u>\$123</u>	<u>\$108</u>	<u>\$0</u>	<u>\$0</u>
47	95761000 Maint of Structures and Improvements	\$0	\$0	\$0	\$0	\$0
48	95762000 Maintenance of Computer Hardware	\$0	\$0	\$0	\$0	\$0
49	95763000 Maintenance of Computer Software	\$0	\$0	\$0	\$0	\$0
50	95764000 Maint of Communication Equipment	\$0	\$0	\$0	\$0	\$0
51	95765000 Maint of Misc Market Oper Plant	\$0	\$0	\$0	\$0	\$0
52	Regional Market Maintenance Expense (Sum of Lines 47 through 51)	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
53	95800000 Operation Supervision and Engineering	\$1,446	\$2,606	\$907	\$1,296	\$2,120
54	95810000 Load Dispatching	\$1,946	\$1,265	\$1,352	\$1,632	\$1,664
55	95811000 Blocked	\$0	\$0	\$0	\$0	\$0
56	95820000 Station Expenses	\$1,186	\$1,570	\$1,650	(\$67)	\$2,201
57	95830000 Overhead Line Expenses	\$1,944	\$2,002	\$1,828	\$1,840	\$2,136
58	95840000 Underground Line Expenses	\$190	\$579	\$927	\$1,397	\$1,005
59	95850000 Street Lighting and Signal System Exp	\$218	\$769	\$931	\$496	\$358
60	95860000 Meter expenses	\$3,896	\$3,805	\$3,392	\$2,569	\$2,259
61	95870000 Customer Installation Exp	\$141	\$665	\$1,117	\$1,227	\$1,209
62	95880000 Misc Distribution Exp	\$7,735	\$11,138	\$9,584	\$8,179	\$12,952
63	95890000 Rents	\$216	\$307	\$481	\$209	\$105
64	Operate Dist Facilities (Sum of Lines 53 through 63)	<u>\$18,918</u>	<u>\$24,707</u>	<u>\$22,169</u>	<u>\$18,779</u>	<u>\$26,009</u>

Total Operations & Maintenance Expense
(in \$000's)

		For 12 months ending:				
		June 30, 2016	June 30, 2015	June 30, 2014	June 30, 2013	June 30, 2012
		(a)	(b)	(c)	(d)	(e)
1	95900000 Maint Supervision and Engineering	\$451	\$357	\$178	\$70	\$66
2	95910000 Maintenance of Structures	\$72	\$89	\$18	\$21	\$17
3	95920000 Maintenance of Station Equipment	\$1,334	\$1,260	\$1,512	\$2,136	\$1,937
4	95921000 Maintenance of structures and equipment (Nonmajor only)	\$0	\$0	\$0	\$0	\$0
5	95930000 Maintenance of Overhead Lines	\$24,787	\$15,345	\$24,295	\$18,863	\$8,171
6	95932000 Maintenance of structures and equipment (Nonmajor only)	\$0	\$0	\$0	\$3,563	\$0
7	95940000 Maintenance of Underground Lines	\$1,952	\$691	\$1,014	\$585	\$723
8	95941000 Blocked	\$0	\$0	\$0	\$0	\$0
9	95950000 Maintenance of Line Transformers	\$402	\$171	\$186	\$571	(\$1,260)
10	95960000 Maint of Street Lighting & Signal Syste	\$1,241	\$1,149	\$1,749	\$1,617	\$1,484
11	95970000 Maintenance of Meters	\$66	\$38	\$135	\$313	\$265
12	95980000 Maint of Misc Distribution Plant	\$933	\$472	\$401	\$163	\$1
13	Maint Distribution Facilities (Sum of Lines 1 through 12)	\$31,238	\$19,572	\$29,487	\$27,902	\$11,404
14	97170000 Liquefied Petroleum Gas Exp	\$0	\$0	\$0	\$0	\$0
15	97180000 Load Dispatching	\$0	\$0	\$0	\$332	\$80
16	Production Labor and Expenses - GAS (Sum of Lines 14 through 15)	\$0	\$0	\$0	\$332	\$80
17	97280000 Liquefied Petroleum Gas	\$0	\$0	\$0	\$0	\$0
18	97360000 Production Expense-Rents	\$0	\$0	\$0	\$0	\$0
19	Gas Raw Materials (Sum of Lines 145 through 146)	\$0	\$0	\$0	\$0	\$0
20	97500000 Operation Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
21	97510000 Production Maps and Records	\$0	\$0	\$0	\$0	\$0
22	97520000 Gas Well Expenses	\$0	\$0	\$0	\$0	\$0
23	97530000 Field Lines Expenses	\$0	\$0	\$0	\$0	\$0
24	97540000 Fuel Compressor Station Expenses	\$0	\$0	\$0	\$0	\$0
25	97550000 Field Compressor Station Fuel and Power	\$0	\$0	\$0	\$0	\$0
26	97560000 Field Measuring and Regulating Station Exp	\$0	\$0	\$0	\$0	\$0
27	97570000 Purification Expense	\$0	\$0	\$0	\$0	\$0
28	97580000 Gas Well Royalties	\$0	\$0	\$0	\$0	\$0
29	97590000 Other Expenses	\$0	\$0	\$0	\$0	\$0
30	97600000 Rents	\$0	\$0	\$0	(\$1)	\$0
31	Gas Operations - Natural Gas Production and Gathering (Sum of Lines 20 through 30)	\$0	\$0	\$0	(\$1)	\$0
32	97610000 Maint Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
33	97620000 Maint of Structures and Improvements	\$0	\$0	\$0	\$0	\$0
34	97630000 Maint of Producing Gas Wells	\$0	\$0	\$0	\$0	\$0
35	97640000 Maint of Field Lines	\$0	\$0	\$0	\$0	\$0
36	97650000 Maint of Field Compressor Station Equip	\$0	\$0	\$0	\$0	\$0
37	97660000 Maint of Field Meas/Reg Station Equip	\$0	\$0	\$0	\$0	\$0
38	97670000 Maint of Purification Equipment	\$0	\$0	\$0	\$0	\$0
39	97680000 Maint of Drilling and Cleaning Equipment	\$0	\$0	\$0	\$0	\$0
40	97690000 Maint of Other Equipment	\$0	\$0	\$0	\$0	\$0
41	Gas Maintenance - Natural Gas Production and Gathering (Sum of Lines 160 through 168)	\$0	\$0	\$0	\$0	\$0
42	Distribution Expenses-O&M (Sum of Page 2; Lines 46,52,64, Page 3; Lines 13,16,19,31,41)	\$50,415	\$44,403	\$51,764	\$47,012	\$37,493
43	97350000 Load dispatching (Ma	\$0	\$0	\$8	\$19	\$6
44	97410000 Maint of Structures and Improvements	\$0	\$0	(\$36)	\$84	(\$16)
45	97420000 Maint of Production Equipment	\$0	(\$0)	\$41	\$0	\$0
46	Production Expenses-Gas (Sum of Lines 43 through 45)	\$0	(\$0)	\$13	\$103	(\$10)
47	97700000 Operation Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
48	97710000 Operation Labor	\$0	\$0	\$0	\$0	\$0
49	97720000 Gas Shrinkage	\$0	\$0	\$0	\$0	\$0
50	97730000 Fuel	\$0	\$0	\$0	\$0	\$0
51	97740000 Power	\$0	\$0	\$0	\$0	\$0
52	97750000 Materials	\$0	\$0	\$0	\$0	\$0
53	97760000 Operation Supplies and Expenses	\$0	\$0	\$0	\$0	\$0
54	97770000 Gas Processed by Others	\$0	\$0	\$0	\$0	\$0
55	97780000 Royalties on Products Extracted	\$0	\$0	\$0	\$0	\$0
56	97790000 Marketing Expenses	\$0	\$0	\$0	\$0	\$0
57	97800000 Products Purchased for Resale	\$0	\$0	\$0	\$0	\$0
58	97810000 Variation in Products Inventory	\$0	\$0	\$0	\$0	\$0
59	97820000 Extracted Products Used by Utility-Cr	\$0	\$0	\$0	\$0	\$0
60	97830000 Rents	\$0	\$0	\$0	\$0	\$0
61	Gas Operations - Products Extraction (Sum of Lines 47 through 60)	\$0	\$0	\$0	\$0	\$0

Total Operations & Maintenance Expense
(in \$000's)

		For 12 months ending:				
		June 30, 2016	June 30, 2015	June 30, 2014	June 30, 2013	June 30, 2012
		(a)	(b)	(c)	(d)	(e)
1	97840000 Maint Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
2	97850000 Maint of Structures and Improvements	\$0	\$0	\$0	\$0	\$0
3	97860000 Maint of Extraction and Refining Equip	\$0	\$0	\$0	\$0	\$0
4	97870000 Maintenance of Pipe Lines	\$0	\$0	\$0	\$0	\$0
5	97880000 Maint-Ext Prod Stor	\$0	\$0	\$0	\$0	\$0
6	97890000 Maint of Compressor Equipment	\$0	\$0	\$0	\$0	\$0
7	97900000 Maint of Gas Measuring/Regulating Equip	\$0	\$0	\$0	\$0	\$0
8	97910000 Maint of Other Equipment	\$0	\$0	\$0	\$0	\$0
9	Gas Maintenance - Products Extraction (Sum of Lines 1 through 8)	\$0	\$0	\$0	\$0	\$0
10	97950000 Delay Rentals	\$0	\$0	\$0	\$0	\$0
11	97960000 Non-Productive Well Drilling	\$0	\$0	\$0	\$0	\$0
12	97970000 Abandoned Leases	\$0	\$0	\$0	\$0	\$0
13	97980000 Other Exploration	\$0	\$0	\$0	\$0	\$0
14	Gas Operations - exploration and development expenses (Sum of Lines 10 through 13)	\$0	\$0	\$0	\$0	\$0
15	98000000 Natural Gas Well Head Purchases	\$0	\$0	\$0	\$0	\$0
16	98001000 Natural Gas Well Head Purch-IC Transfer	\$0	\$0	\$0	\$0	\$0
17	98010000 Natural Gas Field Line Purchases	\$0	\$0	\$0	\$0	\$0
18	98020000 Natural Gas Gasoline Plant Outlet Purchases	\$0	\$0	\$0	\$0	\$0
19	98030000 Natural Gas Transmission Line Purchases	\$0	\$0	\$0	\$0	\$0
20	98040000 Natural Gas City Gate Purchases	\$135,270	\$197,124	\$239,490	\$192,535	\$196,525
21	98041000 Liquefied Natural Gas Purchases	\$0	\$0	\$0	\$0	\$0
22	98050000 Other Gas Purchases	\$0	\$0	\$4,843	\$6,794	(\$102)
23	98051000 Purchased Gas Cost Adjustments	\$0	\$0	\$0	\$0	\$0
24	98060000 Exchange Gas	\$0	\$0	\$0	\$0	\$0
25	98070000 Purchased Gas Expenses	\$0	\$0	\$0	\$0	\$0
26	98081000 Gas Withdrawn from Storage-Debt	\$6,140	\$13,148	\$9,103	(\$6,253)	\$0
27	98082000 Gas Delivered to Storage-Cr	(\$5,573)	(\$9,699)	(\$8,789)	\$3,907	\$13,394
28	98091000 Withdrawal of Liq Nat Gas Held for Proc	\$3,430	\$5,865	\$3,471	(\$2,012)	\$2,969
29	98092000 Gas Used for Product Extraction-Cr	(\$4,032)	(\$3,279)	(\$4,601)	(\$152)	\$6
30	98100000 Gas Used for Compressor Station Fuel-Cr	\$0	\$0	\$0	\$0	\$0
31	98110000 Gas Used for Product Extraction-Cr	\$0	\$0	\$0	\$0	\$0
32	98120000 Gas Used for Other Utility Oper-Cr	(\$174)	(\$326)	(\$985)	(\$1,579)	\$1,830
33	98130000 Other Gas Supply Exp	(\$1,727)	(\$2,106)	(\$3,329)	(\$390)	(\$562)
34	Gas Operations - other gas supply expenses (Sum of Lines 15 through 33)	\$133,334	\$200,727	\$239,204	\$192,849	\$214,060
35	98140000 Operation Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
36	98150000 Maps and Records	\$0	\$0	\$0	\$0	\$0
37	98160000 Wells Expenses	\$0	\$0	\$0	\$0	\$0
38	98170000 Lines Expenses	\$0	\$0	\$0	\$0	\$0
39	98180000 Compressor Station Expenses	\$0	\$0	\$0	\$0	\$0
40	98190000 Compressor Station Fuel and Power	\$0	\$0	\$0	\$0	\$0
41	98200000 Measuring and Regulating Station Expenses	\$0	\$0	\$0	\$0	\$0
42	98210000 Purification Expenses	\$0	\$0	\$0	\$0	\$0
43	98220000 Exploration and Development	\$0	\$0	\$0	\$0	\$0
44	98230000 Gas Losses	\$0	\$0	\$0	\$0	\$0
45	98240000 Other Expenses	\$0	\$0	\$0	\$0	\$0
46	98250000 Storage Well Royalties	\$0	\$0	\$0	\$0	\$0
47	98260000 Rents	\$0	\$0	\$0	\$0	\$0
48	Gas Operations - underground storage expenses (Sum of Lines 35 through 47)	\$0	\$0	\$0	\$0	\$0
49	98300000 Maint Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
50	98310000 Maint of Structures and Improvements	\$0	\$0	\$0	\$0	\$0
51	98320000 Maint of Reservoirs and Wells	\$0	\$0	\$0	\$0	\$0
52	98330000 Maintenance of Lines	\$0	\$0	\$0	\$0	\$0
53	98340000 Maint of Compressor Station Equipment	\$0	\$0	\$0	\$0	\$0
54	98350000 Maint of Measuring/Reg Station Equip	\$0	\$0	\$0	\$0	\$0
55	98360000 Maint of Purification Equipment	\$0	\$0	\$0	\$0	\$0
56	98370000 Maint of Other Equipment	\$0	\$0	\$0	\$0	\$0
57	Gas Maintenance - underground storage expenses (Sum of Lines 49 through 56)	\$0	\$0	\$0	\$0	\$0
58	98400000 Operation Supervision and Engineering	\$0	\$230	\$212	\$127	(\$6)
59	98410000 Operation Labor and Expenses	\$1,803	\$917	\$892	\$99	\$0
60	98420000 Rents	\$2	\$2	\$1	(\$0)	\$0
61	98421000 Fuel	\$0	\$0	\$0	\$0	\$0
62	98422000 Power	\$0	\$0	\$0	\$0	\$0
63	98423000 Gas Losses	\$0	\$0	\$0	\$0	\$0
64	Gas Operations - other storage expenses (Sum of Lines 58 through 63)	\$1,804	\$1,149	\$1,105	\$226	(\$6)

Total Operations & Maintenance Expense
(in \$000's)

		For 12 months ending:				
		June 30, 2016	June 30, 2015	June 30, 2014	June 30, 2013	June 30, 2012
		(a)	(b)	(c)	(d)	(e)
1	98432000 Maint of Structures and Improvements	\$0	\$0	\$0	\$0	\$0
2	98433000 Maint of Gas Holders	\$0	\$0	\$0	\$0	\$0
3	98434000 Maint of Purification Equipment	\$0	\$0	\$0	\$0	\$0
4	98435000 Maint of Liquefaction Equipment	\$0	\$0	\$0	\$0	\$0
5	98436000 Maint of Vaporizing Equipment	\$14	\$33	\$3	\$13	\$0
6	98437000 Maint of Compressor Equipment	\$0	\$0	\$0	\$0	\$0
7	98438000 Maint of Measuring/Reg Equipment	\$2	(\$1)	\$6	(\$2)	\$0
8	98439000 Maint of Other Equipment	\$0	\$0	\$0	\$0	\$0
9	98480000 Maintenance of Vaporizing Equipment	\$0	\$0	\$0	\$0	\$0
10	Gas Maintenance - other storage expenses (Sum of Lines 1 through 9)	\$16	\$33	\$9	\$11	\$0
11	98440000 Blocked	\$0	\$0	(\$162)	\$162	\$0
12	98450000 Blocked	\$10	\$0	\$0	\$0	\$0
13	98460000 Blocked	\$0	\$0	\$81	\$40	\$0
14	Gas Common- liquefied natural gas terminaling and processing expenses (Sum of Lines 11 through 13)	\$10	\$0	(\$81)	\$202	\$0
15	98441000 Operation Supervision and Engineering	\$209	\$218	(\$16)	\$78	\$0
16	98442000 LNG Processing Terminal Labor and Exp	\$26	\$193	\$294	\$330	\$624
17	98443000 Liquefaction Processing Labor and Exp	\$0	\$0	\$0	\$0	\$0
18	98444000 LNG Transportation Labor and Expenses	\$0	\$0	\$0	\$0	\$0
19	98445000 Measuring and Regulating Labor and Exp	\$0	\$0	\$0	\$0	\$0
20	98446000 Compressor Station Labor and Exp	\$0	\$0	\$0	\$0	\$0
21	98447000 Communication System Expenses	\$0	\$0	\$0	\$0	\$0
22	98448000 System Control and Load Dispatching	\$0	(\$6)	\$6	\$0	\$0
23	98451000 Fuel	\$7	\$24	\$34	(\$32)	(\$8)
24	98452000 Power	\$12	\$14	\$4	\$7	\$5
25	98453000 Rents	\$0	(\$0)	\$3	\$3	\$6
26	98454000 Demurrage Charges	\$0	\$0	\$0	\$0	\$0
27	98455000 Wharfage Receipts-Cr	\$0	\$0	\$0	\$0	\$0
28	98456000 Processing Liquefied or Vaporized Gas by Others	\$0	\$0	\$0	\$0	\$0
29	98461000 Gas Losses	\$0	\$0	\$0	\$0	\$0
30	98462000 Other Expenses	\$133	\$127	\$29	\$1	\$0
31	Gas Operations - liquefied natural gas terminaling and processing expenses (Sum of Lines 15 through 30)	\$386	\$570	\$354	\$387	\$627
32	98470000 Blocked	\$0	\$0	\$1	\$1	\$0
33	Common Maintenance- liquefied natural gas terminaling and processing expenses (Sum of Lines 32 through 32)	\$0	\$0	\$1	\$1	\$0
34	98471000 Maint Supervision and Engineering	\$1	\$0	\$0	\$0	\$0
35	98472000 Maint of Structures and Improvements	\$38	\$104	\$91	\$66	\$71
36	98473000 Maint of LNG Processing Terminal Equip	\$45	\$6	\$13	\$106	\$149
37	98474000 Maint of LNG Transportation Equip	\$0	\$0	\$0	\$0	\$0
38	98475000 Maint of Measuring/Reg Equipment	\$82	\$80	\$92	\$28	\$0
39	98476000 Maint of Compressor Station Equipment	\$0	\$0	\$0	\$0	\$0
40	98477000 Maint of Communication Equipment	\$0	\$0	\$0	\$0	\$0
41	98478000 Maint of Vaporizing Equipment	\$548	\$659	\$555	\$599	\$178
42	Gas Maintenance- liquefied natural gas terminaling and processing expenses (Sum of Lines 34 through 41)	\$715	\$849	\$751	\$798	\$397
43	98500000 Operation Supervision and Engineering	\$2	\$9	(\$0)	\$1	\$1
44	98510000 System Control and Load Dispatching	\$0	\$0	\$0	\$0	\$0
45	98520000 Communication System Expenses	\$0	\$0	\$0	\$0	\$0
46	98530000 Compressor Station Labor and Exp	\$0	\$0	\$0	\$0	\$0
47	98540000 Gas for Compressor Station Fuel	\$0	\$0	\$0	\$0	\$0
48	98550000 Other Fuel and Power-Compressor Stations	\$0	\$0	\$0	\$0	\$0
49	98560000 Mains Expenses	\$0	\$0	\$0	\$0	\$0
50	98570000 Measuring and Regulating Station Expens	\$0	\$0	\$1	\$1	\$0
51	98580000 Trans and Compression of Gas by Others	\$0	\$0	\$0	\$0	\$0
52	98590000 Other Expenses	\$1	\$0	\$0	\$1	\$0
53	98600000 Other Expenses - Gas transmission rent	\$3	\$1	\$0	\$0	\$0
54	Gas Operations - Transmission Expenses (Sum of Lines 43 through 53)	\$6	\$10	\$1	\$3	\$1
55	98610000 Maint Supervision and Engineering	\$47	\$1	\$1	\$0	\$0
56	98620000 Maint of Structures and Improvements	\$0	\$0	\$0	\$0	\$0
57	98630000 Maint of Mains	\$8	\$0	\$224	(\$17)	\$19
58	98640000 Maint of Compressor Station Equipment	\$0	\$0	\$0	\$0	\$0
59	98650000 Maint of Measuring/Reg Station Equip	\$0	\$0	\$0	\$2	\$0
60	98660000 Maint of Communication Equipment	\$0	\$0	\$0	\$0	\$0
61	98670000 Maint of Other Equipment	\$0	\$0	\$0	\$0	\$0
62	98700000 Operation Supervision and Engineering	(\$1,499)	\$1,693	\$1,459	\$2,775	\$1,135
63	Gas Maintenance- Transmission Expenses (Sum of Lines 55 through 62)	(\$1,444)	\$1,694	\$1,684	\$2,759	\$1,154

Total Operations & Maintenance Expense
(in \$000's)

		For 12 months ending:				
		June 30, 2016	June 30, 2015	June 30, 2014	June 30, 2013	June 30, 2012
		(a)	(b)	(c)	(d)	(e)
1	98710000 Distribution Load Dispatching	\$699	\$749	\$51	\$388	(\$107)
2	98720000 Compressor Station Labor and Exp	\$0	\$0	\$18	\$75	\$0
3	98730000 Compressor Station Fuel and Power	\$28	\$58	\$41	\$11	\$66
4	98740000 Mains and Services Expenses	\$2,740	\$5,850	\$3,256	\$2,241	\$2,163
5	98750000 Measuring/Reg Station Exp-General	\$844	\$655	\$597	\$630	\$744
6	98760000 Measuring/Reg Station Exp-Industrial	\$48	\$59	\$39	\$155	\$237
7	98770000 Measuring/Reg Station Exp-City Gate	\$0	\$0	\$0	\$0	\$3,724
8	98780000 Meter and House Regulator Exp	\$5,787	\$6,217	\$3,145	\$3,527	\$0
9	98790000 Customer Installation Exp	\$483	\$487	\$268	\$6	\$2
10	98800000 Other Expenses	\$3,283	\$5,306	\$2,472	\$6,171	\$3,696
11	98810000 Gas Oper - Dist Rentals	\$0	\$2	\$11	\$2	\$0
12	Operate Gas Facilities (Sum of Lines 1 through 11)	<u>\$13,912</u>	<u>\$19,383</u>	<u>\$9,898</u>	<u>\$13,205</u>	<u>\$10,525</u>
13	98430000 Blocked	\$0	\$0	\$2	\$1	\$0
14	98431000 Maintenance supervision and engineering	\$0	\$0	\$0	\$0	\$0
15	98850000 Maint Supervision and Engineering	\$468	\$474	\$616	\$1,922	\$1,041
16	98860000 Maintenance -Gas distribution	\$0	\$0	\$0	\$0	\$0
17	98870000 Maint of Mains	\$2,931	\$1,917	\$2,925	\$5,418	\$6,344
18	98879000 Maint of Mains	\$0	\$0	\$0	\$0	\$0
19	98880000 Maint of Compressor Station Equipment	\$36	(\$43)	(\$14)	\$57	\$0
20	98890000 Maint of Meas/Reg Station Equip-General	\$491	\$381	\$274	\$429	\$149
21	98900000 Maint of Meas/Reg Station Equip-Industr	\$471	\$639	\$1,111	\$731	\$8
22	98910000 Maint of Meas/Reg Station Equip-City Ga	\$2	\$10	\$66	\$136	\$118
23	98920000 Maintenance of Services	\$4,189	\$4,400	\$5,124	\$6,123	\$6,584
24	98930000 Maint of Meters and House Regulators	\$1,510	\$690	\$880	\$1,371	\$1,604
25	98940000 Maint of Other Equipment	\$6	\$26	\$63	\$133	\$52
26	Maintain Gas Facilities (Sum of Lines 13 through 25)	<u>\$10,102</u>	<u>\$8,491</u>	<u>\$11,047</u>	<u>\$16,323</u>	<u>\$15,901</u>
27	Gas Expenses-O&M (Sum of Page 3; Lines 46,61, Page 4; Lines 9,14, 34,47,57,64, Page 5; Lines 10,14,31,33,42,54,63, Page 6; Lines 12,26)	<u>\$158,843</u>	<u>\$232,905</u>	<u>\$263,987</u>	<u>\$226,868</u>	<u>\$242,650</u>
28	99010000 Supervision-Customer Accounts Exp	\$690	\$896	\$727	\$451	\$533
29	99020000 Meter Reading Expenses	\$786	\$1,409	\$3,789	\$6,108	\$1,833
30	99030000 Customer Records and Collection Expense	\$16,835	\$15,316	\$11,624	\$15,873	\$16,477
31	99040000 Uncollectible Accounts	\$12,179	\$22,828	\$19,928	\$21,749	\$13,794
32	99050000 Misc Customer Accounts Exp	\$1,062	\$1,001	\$1,607	\$1,663	\$2,094
33	99060000 Customer service and informational expenses (Nonmajor only)	\$0	\$0	\$0	\$0	\$0
34	Customer Accts Oper Exp-Elec (Sum of Lines 28 through 33)	<u>\$31,552</u>	<u>\$41,450</u>	<u>\$37,674</u>	<u>\$45,844</u>	<u>\$34,732</u>
35	99070000 Cust Service - Supervision	\$0	\$0	\$0	\$1	\$14
36	99080000 Customer Assistance Expenses	\$98,854	\$116,540	\$86,015	\$61,021	\$41,015
37	99090000 Info and Instructional Advertising Exp	\$3,530	\$2,810	\$1,289	\$1,742	\$3,257
38	99100000 Misc Customer Serv and Info Exp	\$102	\$23	\$44	\$120	\$502
39	99110000 Supervision (Major o	\$5	\$4	\$24	\$45	\$3
40	99120000 Demonstrating and Selling Expenses	\$999	\$1,595	\$1,207	\$2,409	\$3,102
41	99130000 Advertising Expenses	\$579	\$861	\$511	\$325	\$16
42	99160000 Miscellaneous Sales Expenses	(\$19)	\$27	\$95	(\$67)	(\$1,258)
43	99170000 Sales expenses (Nonm	\$0	\$0	\$0	\$1	\$0
44	Cust Service & Info Expenses (Sum of Lines 35 through 43)	<u>\$104,050</u>	<u>\$121,859</u>	<u>\$89,184</u>	<u>\$65,598</u>	<u>\$46,651</u>
45	Customer Expenses-O&M (Sum of Lines 34,44)	<u>\$135,602</u>	<u>\$163,308</u>	<u>\$126,858</u>	<u>\$111,442</u>	<u>\$81,382</u>
46	99200000 Administrative and General Salaries	\$23,143	\$23,399	\$20,109	\$18,540	\$14,686
47	99210000 Office Supplies and Expenses	\$22,675	\$17,702	\$10,940	\$16,874	\$22,473
48	99220000 Administrative expen	\$0	\$0	\$0	\$0	\$0
49	99230000 Outside Services Employed	\$10,602	\$14,338	\$22,071	\$14,387	\$8,299
50	99240000 Property insurance	\$8,508	\$9,894	\$7,246	\$2,360	\$215
51	99250000 Injuries and damages	\$4,424	(\$381)	\$5,933	\$7,474	\$8,237
52	99260000 Employee Pensions and Benefits	\$37,191	\$34,611	\$41,545	\$47,350	\$47,950
53	99270000 Franchise Requirements	\$0	\$0	\$0	\$0	\$1
54	99280000 Regulatory Commission Expenses	\$7,066	\$6,631	\$6,686	\$11,559	\$9,283
55	99290000 Duplicate charges-CR	\$0	\$0	\$0	\$0	\$0
56	99300000 General advertising expenses	\$0	\$0	\$0	\$0	\$0
57	99301000 General Advertising Expenses	\$0	\$5	\$67	\$814	\$418
58	99302000 Misc General Expenses	\$4,895	\$4,396	\$3,282	(\$409)	\$3,226
59	99310000 Rents	\$20,278	\$16,644	\$15,134	\$8,161	\$2,880
60	99330000 Transportation Expenses	\$0	\$0	\$0	\$0	\$0
61	Administrative Oper Exp-Elec (Sum of Lines 47 through 60)	<u>\$138,783</u>	<u>\$127,239</u>	<u>\$133,013</u>	<u>\$127,110</u>	<u>\$117,667</u>
62	99320000 Maintenance of General Plant	\$3	\$5	\$0	\$1	\$0
63	99350000 Maintenance of General Plant	\$212	\$208	\$253	\$382	\$218
64	Administrative Maint Expenses (Sum of Lines 62 through 63)	<u>\$215</u>	<u>\$213</u>	<u>\$253</u>	<u>\$384</u>	<u>\$218</u>
65	Administration Expenses-O&M (Sum of Lines 61,64)	<u>\$138,997</u>	<u>\$127,452</u>	<u>\$133,266</u>	<u>\$127,494</u>	<u>\$117,885</u>
66	O&M Expenses (Sum of Page 1; Line 58, Page 2; Line 4, Page 3; Line 42, Page 6; Lines 27,45,65)	<u>\$888,468</u>	<u>\$1,088,354</u>	<u>\$1,078,684</u>	<u>\$921,895</u>	<u>\$902,387</u>

Electric Operations & Maintenance Expense
(in \$000's)

		For 12 months ending:				
		June 30, 2016	June 30, 2015	June 30, 2014	June 30, 2013	June 30, 2012
		(a)	(b)	(c)	(d)	(e)
1	Maintenance Expense - Common					
2	95000000 Operation Supervision and Engineering	\$0	\$0	(\$0)	(\$0)	\$0
3	95010000 Fuel	\$0	\$0	\$0	\$0	\$0
4	95020000 Steam Expenses	\$0	\$0	\$0	\$0	\$0
5	95030000 Steam from Other Sources	\$0	\$0	\$0	\$0	\$0
6	95040000 Steam Transferred-Cr	\$0	\$0	\$0	\$0	\$0
7	95050000 Electric Expenses	\$0	\$0	\$0	\$0	\$0
8	95060000 Misc Steam Power Expenses	\$0	\$0	\$0	\$0	\$0
9	95070000 Rents	\$0	\$0	\$0	\$0	\$0
10	95080000 Blocked	\$0	\$0	\$0	\$0	\$0
11	95090000 Allowances	\$0	\$0	\$0	\$0	\$0
12	Operate Steam Power Generation (Sum of Lines 2 through 11)	\$0	\$0	(\$0)	(\$0)	\$0
13	95100000 Maint Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
14	95110000 Maintenance of Structures	\$0	\$0	\$0	\$0	\$0
15	95120000 Maintenance of Boiler Plant	\$0	(\$0)	\$0	\$0	\$0
16	95130000 Maintenance of Electric Plant	\$0	\$0	\$0	\$0	\$0
17	95140000 Maint of Misc Steam Plant	\$0	\$0	\$0	\$0	\$0
18	95150000 Blocked	\$0	\$0	\$0	\$0	\$0
19	Maint Steam Power Generation (Sum of Lines 13 through 18)	\$0	(\$0)	\$0	\$0	\$0
20	95170000 Operation Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
21	95180000 Nuclear fuel expense	\$0	\$0	\$0	\$0	\$0
22	95190000 Coolants and Water	\$0	\$0	\$0	\$0	\$0
23	95200000 Steam Expenses	\$0	\$0	\$0	\$0	\$0
24	95210000 Steam from Other Sources	\$0	\$0	\$0	\$0	\$0
25	95220000 Steam Transferred-Cr	\$0	\$0	\$0	\$0	\$0
26	95230000 Electric Expenses	\$0	\$0	\$0	\$0	\$0
27	95240000 Misc Nuclear Power Expenses	\$0	\$0	\$0	\$0	\$0
28	95250000 Rents	\$0	\$0	\$0	\$0	\$0
29	Nuclear Power Generation - Operation (Sum of Lines 20 through 28)	\$0	\$0	\$0	\$0	\$0
30	95280000 Maint Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
31	95290000 Maintenance of Structures	\$0	\$0	\$0	\$0	\$0
32	95300000 Maint of Reactor Plant Equipment	\$0	\$0	\$0	\$0	\$0
33	95310000 Maintenance of Electric Plant	\$0	\$0	\$0	\$0	\$0
34	95320000 Maint of Misc Nuclear Plant	\$0	\$0	\$0	\$0	\$0
35	Nuclear Power Generation - Maintenance (Sum of Lines 30 through 34)	\$0	\$0	\$0	\$0	\$0
36	95350000 Operation Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
37	95360000 Water for power	\$0	\$0	\$0	\$0	\$0
38	95370000 Hydraulic Expenses	\$0	\$0	\$0	\$0	\$0
39	95380000 Electric Expenses	\$0	\$0	\$0	\$0	\$0
40	95390000 Misc Hydraulic Power Generation Exp	\$0	\$0	\$0	\$0	\$0
41	95400000 Rents	\$0	\$0	\$0	\$0	\$0
42	95401000 Operation Supplies and Expenses	\$0	\$0	\$0	\$0	\$0
43	Hydraulic Power Generation - Operation (Sum of Lines 36 through 42)	\$0	\$0	\$0	\$0	\$0
44	95410000 Maint Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
45	95420000 Maintenance of Structures	\$0	\$0	\$0	\$0	\$0
46	95430000 Maint of Reservoirs, Dams and Waterways	\$0	\$0	\$0	\$0	\$0
47	95440000 Maintenance of Electric Plant	\$0	\$0	\$0	\$0	\$0
48	95450000 Maint of Misc Hydraulic Plant	\$0	\$0	\$0	\$0	\$0
49	95451000 Blocked	\$0	\$0	\$0	\$0	\$0
50	Hydraulic Power Generation - Maintenance (Sum of Lines 44 through 49)	\$0	\$0	\$0	\$0	\$0
51	95460000 Operation Superv. & Eng.	\$0	\$0	\$0	\$0	\$0
52	95470000 Fuel	\$0	\$0	\$0	\$0	\$0
53	95480000 Generation Expenses	\$0	\$0	\$0	\$0	\$0
54	95490000 Miscellaneous Other Power Generation Expenses	\$0	\$0	\$0	\$0	\$0
55	95500000 Rents	\$0	\$0	\$0	\$0	\$0
56	95501000 Blocked	\$0	\$0	\$0	\$0	\$0
57	Other Power Generation - Operation (Sum of Lines 51 through 56)	\$0	\$0	\$0	\$0	\$0
58	Total Power Production Expenses - Other Power (Sum of Lines 12,19,29,35,43,50,57)	\$0	\$0	(\$0)	(\$0)	\$0
59	95510000 Maint Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
60	95520000 Maintenance of struc	\$0	\$0	\$0	\$0	\$0
61	95530000 Maintenance of gener	\$0	\$0	\$0	\$0	\$0
62	95540000 Maint of Misc Other Power Gen Plant	\$0	\$0	\$0	\$0	\$0
63	95541000 Blocked	\$0	\$0	\$0	\$0	\$0
64	Maint Other Power Generation (Sum of Lines 59 through 63)	\$0	\$0	\$0	\$0	\$0

Electric Operations & Maintenance Expense
(in \$000's)

		For 12 months ending:				
		June 30, 2016	June 30, 2015	June 30, 2014	June 30, 2013	June 30, 2012
		(a)	(b)	(c)	(d)	(e)
1	95550000 Purchased power	\$360,948	\$489,052	\$442,634	\$353,690	\$364,974
2	95560000 System Control and Load Dispatching	\$0	\$0	\$0	\$0	\$0
3	95570000 Other expenses	\$0	(\$0)	\$0	\$0	\$0
4	Total Power Production Expenses (Sum of Lines 1 through 3)	<u>\$360,948</u>	<u>\$489,052</u>	<u>\$442,634</u>	<u>\$353,690</u>	<u>\$364,974</u>
5	95600000 Trans Operation Supervision and Engineer	\$1,234	\$2,372	\$370	\$88	\$50
6	95610000 Blocked	\$0	\$0	\$0	\$445	\$536
7	95611000 Load Dispatch-Reliability	\$2	\$19	\$436	\$53	\$455
8	95612000 Load Dispatch-Monitor and Operate Transmission System	\$1,042	\$1,120	\$983	\$342	\$0
9	95613000 Load Dispatch-Trans Serv & Scheduling	\$0	\$0	\$0	\$0	\$0
10	95614000 Scheduling, System Control & Dispatch S	\$4,598	\$4,310	\$3,533	\$1,929	\$2,376
11	95615000 Reliability, Planning and Standards Dev	\$205	\$851	\$385	\$145	\$83
12	95616000 Transmission Service Stuides	\$0	\$0	\$0	\$0	(\$0)
13	95617000 Generation interconn	\$0	\$0	\$0	\$0	\$0
14	95618000 Reliability, Planning and Standards Dev	\$66	\$16	\$71	\$2	(\$0)
15	95620000 Station Expenses	\$301	\$386	\$700	\$160	\$422
16	95630000 Overhead Line Expenses	(\$261)	\$293	\$453	\$344	\$111
17	95640000 Underground Line Expenses	(\$266)	(\$132)	\$398	\$5	\$1
18	95650000 Transmission of Electricity by Others	\$31,147	\$14,531	\$49,506	\$45,027	\$47,412
19	95660000 Misc Transmission Expenses	\$2,732	\$1,825	\$915	\$1,332	\$1,706
20	95670000 Rents	\$40	\$11	\$118	\$68	(\$0)
21	95671000 Blocked	\$0	\$0	\$0	\$0	\$0
22	Oper Transmission Facilities (Sum of Lines 5 through 21)	<u>\$40,841</u>	<u>\$25,601</u>	<u>\$57,867</u>	<u>\$49,940</u>	<u>\$53,152</u>
23	95680000 Maint Supervision and Engineering	\$59	\$77	\$28	\$127	\$125
24	95690000 Maintenance of struc	\$0	\$0	\$0	\$0	\$1
25	95691000 Maintenance of compu	\$0	\$0	\$0	\$22	(\$8)
26	95692000 Maintenance of compu	\$0	\$0	\$10	\$97	\$410
27	95693000 Maintenance of communication equipment	\$1	\$0	\$0	\$13	\$11
28	95694000 Maintenance of Misc Regional Trans Plant	\$58	\$170	\$85	\$0	\$0
29	95700000 Maintenance of Station Equipment	\$570	\$852	\$688	\$1,487	\$862
30	95701000 Maintenance of Energy Storage Equipment	\$0	\$0	\$0	\$0	\$0
31	95710000 Maintenance of Overhead Lines	\$2,086	\$3,916	\$1,375	\$3,636	\$3,380
32	95720000 Maintenance of under	\$21	\$400	\$3	\$3	\$2
33	95730000 Maint of Misc Transmission Plant	\$27	\$219	\$120	\$41	\$67
34	95740000 Maintenance of transmission plant (Nonmajor only)	\$0	\$0	\$0	\$0	\$0
35	Maint Transmission Facilities (Sum of Lines 23 through 34)	<u>\$2,821</u>	<u>\$5,633</u>	<u>\$2,308</u>	<u>\$5,426</u>	<u>\$4,850</u>
36	Transmission Expenses-O&M (Sum of Lines 22,35)	<u>\$43,662</u>	<u>\$31,234</u>	<u>\$60,175</u>	<u>\$55,366</u>	<u>\$58,002</u>
37	95750000 Operation Supervision	\$0	\$0	\$0	\$0	\$0
38	95751000 Operation Supervision	\$0	\$0	\$0	\$0	\$0
39	95752000 Day-ahead and Real-time Market Admin	\$0	\$0	\$0	\$0	\$0
40	95753000 Transmission Rights Market Admin	\$0	\$0	\$0	\$0	\$0
41	95754000 Capacity Market Admin	\$0	\$0	\$0	\$0	\$0
42	95755000 Ancillary Services Market Admin	\$0	\$0	\$0	\$0	\$0
43	95756000 Market Monitoring and Compliance	\$0	\$0	\$0	\$0	\$0
44	95757000 Market Facilitation, Monitoring & Compl	\$259	\$123	\$108	\$0	\$0
45	95758000 Rents	\$0	\$0	\$0	\$0	\$0
46	Regional Market Operating Expense (Sum of Lines 37 through 45)	<u>\$259</u>	<u>\$123</u>	<u>\$108</u>	<u>\$0</u>	<u>\$0</u>
47	95761000 Maint of Structures and Improvements	\$0	\$0	\$0	\$0	\$0
48	95762000 Maintenance of Computer Hardware	\$0	\$0	\$0	\$0	\$0
49	95763000 Maintenance of Computer Software	\$0	\$0	\$0	\$0	\$0
50	95764000 Maint of Communication Equipment	\$0	\$0	\$0	\$0	\$0
51	95765000 Maint of Misc Market Oper Plant	\$0	\$0	\$0	\$0	\$0
52	Regional Market Maintenance Expense (Sum of Lines 47 through 51)	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
53	95800000 Operation Supervision and Engineering	\$1,446	\$2,606	\$907	\$1,296	\$2,120
54	95810000 Load Dispatching	\$1,946	\$1,265	\$1,352	\$1,632	\$1,664
55	95811000 Blocked	\$0	\$0	\$0	\$0	\$0
56	95820000 Station Expenses	\$1,186	\$1,570	\$1,640	(\$70)	\$2,201
57	95830000 Overhead Line Expenses	\$1,944	\$2,002	\$1,828	\$1,843	\$2,136
58	95840000 Underground Line Expenses	\$190	\$579	\$927	\$1,398	\$1,005
59	95850000 Street Lighting and Signal System Exp	\$218	\$769	\$931	\$496	\$358
60	95860000 Meter expenses	\$3,896	\$3,805	\$3,392	\$2,569	\$2,259
61	95870000 Customer Installation Exp	\$141	\$665	\$1,113	\$1,226	\$1,209
62	95880000 Misc Distribution Exp	\$7,735	\$11,138	\$9,585	\$8,177	\$12,952
63	95890000 Rents	\$216	\$307	\$481	\$209	\$105
64	Operate Dist Facilities (Sum of Lines 53 through 63)	<u>\$18,918</u>	<u>\$24,707</u>	<u>\$22,157</u>	<u>\$18,776</u>	<u>\$26,009</u>

Electric Operations & Maintenance Expense
(in \$000's)

		For 12 months ending:				
		June 30, 2016	June 30, 2015	June 30, 2014	June 30, 2013	June 30, 2012
		(a)	(b)	(c)	(d)	(e)
1	95900000 Maint Supervision and Engineering	\$451	\$357	\$178	\$70	\$66
2	95910000 Maintenance of Structures	\$72	\$89	\$18	\$21	\$17
3	95920000 Maintenance of Station Equipment	\$1,334	\$1,260	\$1,512	\$2,136	\$1,937
4	95921000 Maintenance of structures and equipment (Nonmajor only)	\$0	\$0	\$0	\$0	\$0
5	95930000 Maintenance of Overhead Lines	\$24,787	\$15,345	\$24,425	\$18,734	\$8,171
6	95932000 Maintenance of structures and equipment (Nonmajor only)	\$0	\$0	\$0	\$3,563	\$0
7	95940000 Maintenance of Underground Lines	\$1,952	\$691	\$1,014	\$585	\$723
8	95941000 Blocked	\$0	\$0	\$0	\$0	\$0
9	95950000 Maintenance of Line Transformers	\$402	\$171	\$186	\$161	(\$1,260)
10	95960000 Maint of Street Lighting & Signal Syste	\$1,241	\$1,149	\$1,749	\$1,617	\$1,484
11	95970000 Maintenance of Meters	\$66	\$38	\$135	\$313	\$265
12	95980000 Maint of Misc Distribution Plant	\$933	\$472	\$401	\$163	\$1
13	Maint Distribution Facilities (Sum of Lines 1 through 12)	\$31,238	\$19,572	\$29,617	\$27,362	\$11,404
14	97170000 Liquefied Petroleum Gas Exp	\$0	\$0	\$0	\$0	\$0
15	97180000 Load Dispatching	\$0	\$0	\$0	\$0	\$0
16	Production Labor and Expenses - GAS (Sum of Lines 14 through 15)	\$0	\$0	\$0	\$0	\$0
17	97280000 Liquefied Petroleum Gas	\$0	\$0	\$0	\$0	\$0
18	97360000 Production Expense-Rents	\$0	\$0	\$0	\$0	\$0
19	Gas Raw Materials (Sum of Lines 145 through 146)	\$0	\$0	\$0	\$0	\$0
20	97500000 Operation Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
21	97510000 Production Maps and Records	\$0	\$0	\$0	\$0	\$0
22	97520000 Gas Well Expenses	\$0	\$0	\$0	\$0	\$0
23	97530000 Field Lines Expenses	\$0	\$0	\$0	\$0	\$0
24	97540000 Fuel Compressor Station Expenses	\$0	\$0	\$0	\$0	\$0
25	97550000 Field Compressor Station Fuel and Power	\$0	\$0	\$0	\$0	\$0
26	97560000 Field Measuring and Regulating Station Exp	\$0	\$0	\$0	\$0	\$0
27	97570000 Purification Expense	\$0	\$0	\$0	\$0	\$0
28	97580000 Gas Well Royalties	\$0	\$0	\$0	\$0	\$0
29	97590000 Other Expenses	\$0	\$0	\$0	\$0	\$0
30	97600000 Rents	\$0	\$0	\$0	\$0	\$0
31	Gas Operations - Natural Gas Production and Gathering (Sum of Lines 20 through 30)	\$0	\$0	\$0	\$0	\$0
32	97610000 Maint Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
33	97620000 Maint of Structures and Improvements	\$0	\$0	\$0	\$0	\$0
34	97630000 Maint of Producing Gas Wells	\$0	\$0	\$0	\$0	\$0
35	97640000 Maint of Field Lines	\$0	\$0	\$0	\$0	\$0
36	97650000 Maint of Field Compressor Station Equip	\$0	\$0	\$0	\$0	\$0
37	97660000 Maint of Field Meas/Reg Station Equip	\$0	\$0	\$0	\$0	\$0
38	97670000 Maint of Purification Equipment	\$0	\$0	\$0	\$0	\$0
39	97680000 Maint of Drilling and Cleaning Equipment	\$0	\$0	\$0	\$0	\$0
40	97690000 Maint of Other Equipment	\$0	\$0	\$0	\$0	\$0
41	Gas Maintenance - Natural Gas Production and Gathering (Sum of Lines 160 through 168)	\$0	\$0	\$0	\$0	\$0
42	Distribution Expenses-O&M (Sum of Page 8; Lines 46,52,64, Page 9; Lines 13,16,19,31,41)	\$50,415	\$44,403	\$51,882	\$46,138	\$37,413
43	97350000 Load dispatching (Ma	\$0	\$0	\$0	\$0	\$0
44	97410000 Maint of Structures and Improvements	\$0	\$0	\$0	\$0	\$0
45	97420000 Maint of Production Equipment	\$0	\$0	\$0	\$0	\$0
46	Production Expenses-Gas (Sum of Lines 43 through 45)	\$0	\$0	\$0	\$0	\$0
47	97700000 Operation Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
48	97710000 Operation Labor	\$0	\$0	\$0	\$0	\$0
49	97720000 Gas Shrinkage	\$0	\$0	\$0	\$0	\$0
50	97730000 Fuel	\$0	\$0	\$0	\$0	\$0
51	97740000 Power	\$0	\$0	\$0	\$0	\$0
52	97750000 Materials	\$0	\$0	\$0	\$0	\$0
53	97760000 Operation Supplies and Expenses	\$0	\$0	\$0	\$0	\$0
54	97770000 Gas Processed by Others	\$0	\$0	\$0	\$0	\$0
55	97780000 Royalties on Products Extracted	\$0	\$0	\$0	\$0	\$0
56	97790000 Marketing Expenses	\$0	\$0	\$0	\$0	\$0
57	97800000 Products Purchased for Resale	\$0	\$0	\$0	\$0	\$0
58	97810000 Variation in Products Inventory	\$0	\$0	\$0	\$0	\$0
59	97820000 Extracted Products Used by Utility-Cr	\$0	\$0	\$0	\$0	\$0
60	97830000 Rents	\$0	\$0	\$0	\$0	\$0
61	Gas Operations - Products Extraction (Sum of Lines 47 through 60)	\$0	\$0	\$0	\$0	\$0

Electric Operations & Maintenance Expense
(in \$000's)

		For 12 months ending:				
		June 30, 2016	June 30, 2015	June 30, 2014	June 30, 2013	June 30, 2012
		(a)	(b)	(c)	(d)	(e)
1	97840000 Maint Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
2	97850000 Maint of Structures and Improvements	\$0	\$0	\$0	\$0	\$0
3	97860000 Maint of Extraction and Refining Equip	\$0	\$0	\$0	\$0	\$0
4	97870000 Maintenance of Pipe Lines	\$0	\$0	\$0	\$0	\$0
5	97880000 Maint-Ext Prod Stor	\$0	\$0	\$0	\$0	\$0
6	97890000 Maint of Compressor Equipment	\$0	\$0	\$0	\$0	\$0
7	97900000 Maint of Gas Measuring/Regulating Equip	\$0	\$0	\$0	\$0	\$0
8	97910000 Maint of Other Equipment	\$0	\$0	\$0	\$0	\$0
9	Gas Maintenance - Products Extraction (Sum of Lines 1 through 8)	\$0	\$0	\$0	\$0	\$0
10	97950000 Delay Rentals	\$0	\$0	\$0	\$0	\$0
11	97960000 Non-Productive Well Drilling	\$0	\$0	\$0	\$0	\$0
12	97970000 Abandoned Leases	\$0	\$0	\$0	\$0	\$0
13	97980000 Other Exploration	\$0	\$0	\$0	\$0	\$0
14	Gas Operations - exploration and development expenses (Sum of Lines 10 through 13)	\$0	\$0	\$0	\$0	\$0
15	98000000 Natural Gas Well Head Purchases	\$0	\$0	\$0	\$0	\$0
16	98001000 Natural Gas Well Head Purch-IC Transfer	\$0	\$0	\$0	\$0	\$0
17	98010000 Natural Gas Field Line Purchases	\$0	\$0	\$0	\$0	\$0
18	98020000 Natural Gas Gasoline Plant Outlet Purchases	\$0	\$0	\$0	\$0	\$0
19	98030000 Natural Gas Transmission Line Purchases	\$0	\$0	\$0	\$0	\$0
20	98040000 Natural Gas City Gate Purchases	\$0	\$0	\$0	\$0	\$0
21	98041000 Liquefied Natural Gas Purchases	\$0	\$0	\$0	\$0	\$0
22	98050000 Other Gas Purchases	\$0	\$0	\$0	\$0	\$0
23	98051000 Purchased Gas Cost Adjustments	\$0	\$0	\$0	\$0	\$0
24	98060000 Exchange Gas	\$0	\$0	\$0	\$0	\$0
25	98070000 Purchased Gas Expenses	\$0	\$0	\$0	\$0	\$0
26	98081000 Gas Withdrawn from Storage-Debt	\$0	\$0	\$0	\$0	\$0
27	98082000 Gas Delivered to Storage-Cr	\$0	\$0	\$0	\$0	\$0
28	98091000 Withdrawal of Liq Nat Gas Held for Proc	\$0	\$0	\$0	\$0	\$0
29	98092000 Gas Used for Product Extraction-Cr	\$0	\$0	\$0	\$0	\$0
30	98100000 Gas Used for Compressor Station Fuel-Cr	\$0	\$0	\$0	\$0	\$0
31	98110000 Gas Used for Product Extraction-Cr	\$0	\$0	\$0	\$0	\$0
32	98120000 Gas Used for Other Utility Oper-Cr	\$0	\$0	\$0	\$0	\$0
33	98130000 Other Gas Supply Exp	\$0	\$0	\$0	\$0	\$0
34	Gas Operations - other gas supply expenses (Sum of Lines 15 through 33)	\$0	\$0	\$0	\$0	\$0
35	98140000 Operation Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
36	98150000 Maps and Records	\$0	\$0	\$0	\$0	\$0
37	98160000 Wells Expenses	\$0	\$0	\$0	\$0	\$0
38	98170000 Lines Expenses	\$0	\$0	\$0	\$0	\$0
39	98180000 Compressor Station Expenses	\$0	\$0	\$0	\$0	\$0
40	98190000 Compressor Station Fuel and Power	\$0	\$0	\$0	\$0	\$0
41	98200000 Measuring and Regulating Station Expenses	\$0	\$0	\$0	\$0	\$0
42	98210000 Purification Expenses	\$0	\$0	\$0	\$0	\$0
43	98220000 Exploration and Development	\$0	\$0	\$0	\$0	\$0
44	98230000 Gas Losses	\$0	\$0	\$0	\$0	\$0
45	98240000 Other Expenses	\$0	\$0	\$0	\$0	\$0
46	98250000 Storage Well Royalties	\$0	\$0	\$0	\$0	\$0
47	98260000 Rents	\$0	\$0	\$0	\$0	\$0
48	Gas Operations - underground storage expenses (Sum of Lines 35 through 47)	\$0	\$0	\$0	\$0	\$0
49	98300000 Maint Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
50	98310000 Maint of Structures and Improvements	\$0	\$0	\$0	\$0	\$0
51	98320000 Maint of Reservoirs and Wells	\$0	\$0	\$0	\$0	\$0
52	98330000 Maintenance of Lines	\$0	\$0	\$0	\$0	\$0
53	98340000 Maint of Compressor Station Equipment	\$0	\$0	\$0	\$0	\$0
54	98350000 Maint of Measuring/Reg Station Equip	\$0	\$0	\$0	\$0	\$0
55	98360000 Maint of Purification Equipment	\$0	\$0	\$0	\$0	\$0
56	98370000 Maint of Other Equipment	\$0	\$0	\$0	\$0	\$0
57	Gas Maintenance - underground storage expenses (Sum of Lines 49 through 56)	\$0	\$0	\$0	\$0	\$0
58	98400000 Operation Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
59	98410000 Operation Labor and Expenses	\$0	\$0	\$0	\$0	\$0
60	98420000 Rents	\$0	\$0	\$0	\$0	\$0
61	98421000 Fuel	\$0	\$0	\$0	\$0	\$0
62	98422000 Power	\$0	\$0	\$0	\$0	\$0
63	98423000 Gas Losses	\$0	\$0	\$0	\$0	\$0
64	Gas Operations - other storage expenses (Sum of Lines 58 through 63)	\$0	\$0	\$0	\$0	\$0

Electric Operations & Maintenance Expense
(in \$000's)

		For 12 months ending:				
		June 30, 2016	June 30, 2015	June 30, 2014	June 30, 2013	June 30, 2012
		(a)	(b)	(c)	(d)	(e)
1	98432000 Maint of Structures and Improvements	\$0	\$0	\$0	\$0	\$0
2	98433000 Maint of Gas Holders	\$0	\$0	\$0	\$0	\$0
3	98434000 Maint of Purification Equipment	\$0	\$0	\$0	\$0	\$0
4	98435000 Maint of Liquefaction Equipment	\$0	\$0	\$0	\$0	\$0
5	98436000 Maint of Vaporizing Equipment	\$0	\$0	\$0	\$0	\$0
6	98437000 Maint of Compressor Equipment	\$0	\$0	\$0	\$0	\$0
7	98438000 Maint of Measuring/Reg Equipment	\$0	\$0	\$0	\$0	\$0
8	98439000 Maint of Other Equipment	\$0	\$0	\$0	\$0	\$0
9	98480000 Maintanance of Vaporizing Equipment	\$0	\$0	\$0	\$0	\$0
	Gas Maintenance - other storage expenses	\$0	\$0	\$0	\$0	\$0
10	(Sum of Lines 1 through 9)	\$0	\$0	\$0	\$0	\$0
11	98440000 Blocked	\$0	\$0	\$0	\$0	\$0
12	98450000 Blocked	\$0	\$0	\$0	\$0	\$0
13	98460000 Blocked	\$0	\$0	\$0	\$0	\$0
	Gas Common- liquefied natural gas terminaling and processing expenses	\$0	\$0	\$0	\$0	\$0
14	(Sum of Lines 11 through 13)	\$0	\$0	\$0	\$0	\$0
15	98441000 Operation Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
16	98442000 LNG Processing Terminal Labor and Exp	\$0	\$0	\$0	\$0	\$0
17	98443000 Liquefaction Processing Labor and Exp	\$0	\$0	\$0	\$0	\$0
18	98444000 LNG Transportation Labor and Expenses	\$0	\$0	\$0	\$0	\$0
19	98445000 Measuring and Regulating Labor and Exp	\$0	\$0	\$0	\$0	\$0
20	98446000 Compressor Station Labor and Exp	\$0	\$0	\$0	\$0	\$0
21	98447000 Communication System Expenses	\$0	\$0	\$0	\$0	\$0
22	98448000 System Control and Load Dispatching	\$0	\$0	\$0	\$0	\$0
23	98451000 Fuel	\$0	\$0	\$0	\$0	\$0
24	98452000 Power	\$0	\$0	\$0	\$0	\$0
25	98453000 Rents	\$0	\$0	\$0	\$0	\$0
26	98454000 Demurrage Charges	\$0	\$0	\$0	\$0	\$0
27	98455000 Wharfage Receipts-Cr	\$0	\$0	\$0	\$0	\$0
28	98456000 Processing Liquefied or Vaporized Gas by Others	\$0	\$0	\$0	\$0	\$0
29	98461000 Gas Losses	\$0	\$0	\$0	\$0	\$0
30	98462000 Other Expenses	\$0	\$0	\$0	\$0	\$0
	Gas Operations - liquefied natural gas terminaling and processing expenses	\$0	\$0	\$0	\$0	\$0
31	(Sum of Lines 15 through 30)	\$0	\$0	\$0	\$0	\$0
32	98470000 Blocked	\$0	\$0	\$0	\$0	\$0
	Common Maintenance- liquefied natural gas terminaling and processing expenses (Sum of Lines 32 through 32)	\$0	\$0	\$0	\$0	\$0
34	98471000 Maint Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
35	98472000 Maint of Structures and Improvements	\$0	\$0	\$0	\$0	\$0
36	98473000 Maint of LNG Processing Terminal Equip	\$0	\$0	\$0	\$0	\$0
37	98474000 Maint of LNG Transportation Equip	\$0	\$0	\$0	\$0	\$0
38	98475000 Maint of Measuring/Reg Equipment	\$0	\$0	\$0	\$0	\$0
39	98476000 Maint of Compressor Station Equipment	\$0	\$0	\$0	\$0	\$0
40	98477000 Maint of Communication Equipment	\$0	\$0	\$0	\$0	\$0
41	98478000 Maint of Vaporizing Equipment	\$0	\$0	\$0	\$0	\$0
	Gas Maintenance- liquefied natural gas terminaling and processing expenses (Sum of Lines 34 through 41)	\$0	\$0	\$0	\$0	\$0
43	98500000 Operation Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
44	98510000 System Control and Load Dispatching	\$0	\$0	\$0	\$0	\$0
45	98520000 Communication System Expenses	\$0	\$0	\$0	\$0	\$0
46	98530000 Compressor Station Labor and Exp	\$0	\$0	\$0	\$0	\$0
47	98540000 Gas for Compressor Station Fuel	\$0	\$0	\$0	\$0	\$0
48	98550000 Other Fuel and Power-Compressor Stations	\$0	\$0	\$0	\$0	\$0
49	98560000 Mains Expenses	\$0	\$0	\$0	\$0	\$0
50	98570000 Measuring and Regulating Station Expens	\$0	\$0	\$0	\$0	\$0
51	98580000 Trans and Compression of Gas by Others	\$0	\$0	\$0	\$0	\$0
52	98590000 Other Expenses	\$0	\$0	\$0	\$0	\$0
53	98600000 Other Expenses - Gas transmission rent	\$0	\$0	\$0	\$0	\$0
	Gas Operations - Transmission Expenses (Sum of Lines 43 through 53)	\$0	\$0	\$0	\$0	\$0
55	98610000 Maint Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
56	98620000 Maint of Structures and Improvements	\$0	\$0	\$0	\$0	\$0
57	98630000 Maint of Mains	\$0	(\$0)	\$0	\$0	\$0
58	98640000 Maint of Compressor Station Equipment	\$0	\$0	\$0	\$0	\$0
59	98650000 Maint of Measuring/Reg Station Equip	\$0	\$0	\$0	\$0	\$0
60	98660000 Maint of Communication Equipment	\$0	\$0	\$0	\$0	\$0
61	98670000 Maint of Other Equipment	\$0	\$0	\$0	\$0	\$0
62	98700000 Operation Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
63	Gas Maintenance- Transmission Expenses (Sum of Lines 55 through 62)	\$0	(\$0)	\$0	\$0	\$0

Electric Operations & Maintenance Expense
(in \$000's)

		For 12 months ending:				
		June 30, 2016	June 30, 2015	June 30, 2014	June 30, 2013	June 30, 2012
		(a)	(b)	(c)	(d)	(e)
1	98710000 Distribution Load Dispatching	\$0	\$0	\$0	\$0	\$0
2	98720000 Compressor Station Labor and Exp	\$0	\$0	\$0	\$0	\$0
3	98730000 Compressor Station Fuel and Power	\$0	\$0	\$0	\$0	\$0
4	98740000 Mains and Services Expenses	\$0	\$0	(\$0)	\$0	\$0
5	98750000 Measuring/Reg Station Exp-General	\$0	\$0	\$0	\$0	\$0
6	98760000 Measuring/Reg Station Exp-Industrial	\$0	\$0	\$0	\$0	\$0
7	98770000 Measuring/Reg Station Exp-City Gate	\$0	\$0	\$0	\$0	\$0
8	98780000 Meter and House Regulator Exp	\$0	\$0	\$54	\$0	\$0
9	98790000 Customer Installation Exp	\$0	\$0	\$0	\$0	\$0
10	98800000 Other Expenses	\$0	\$0	\$0	\$0	\$0
11	98810000 Gas Oper - Dist Rentals	\$0	\$0	\$0	\$0	\$0
12	Operate Gas Facilities (Sum of Lines 1 through 11)	\$0	\$0	\$54	\$0	\$0
13	98430000 Blocked	\$0	\$0	\$0	\$0	\$0
14	98431000 Maintenance supervision and engineering	\$0	\$0	\$0	\$0	\$0
15	98850000 Maint Supervision and Engineering	\$0	(\$0)	\$8	(\$0)	\$0
16	98860000 Maintenance -Gas distribution	\$0	\$0	\$0	\$0	\$0
17	98870000 Maint of Mains	\$0	\$0	\$0	\$0	\$0
18	98879000 Maint of Mains	\$0	\$0	\$0	\$0	\$0
19	98880000 Maint of Compressor Station Equipment	\$0	\$0	\$0	\$0	\$0
20	98890000 Maint of Meas/Reg Station Equip-General	\$0	\$0	\$0	\$0	\$0
21	98900000 Maint of Meas/Reg Station Equip-Industr	\$0	\$0	\$0	\$0	\$0
22	98910000 Maint of Meas/Reg Station Equip-City Ga	\$0	\$0	\$0	\$0	\$0
23	98920000 Maintenance of Services	\$0	\$0	\$0	\$0	\$0
24	98930000 Maint of Meters and House Regulators	\$0	\$0	\$0	\$0	\$0
25	98940000 Maint of Other Equipment	\$0	\$0	\$0	\$0	\$0
26	Maintain Gas Facilities (Sum of Lines 13 through 25)	\$0	(\$0)	\$8	(\$0)	\$0
27	Gas Expenses-O&M (Sum of Page 9; Lines 46,61, Page 10; Lines 9,14, 34,48,57,64, Page 11; Lines 10,14,31,33,42,54,63, Page 12; Lines 12,26)	\$0	(\$0)	\$62	(\$0)	\$0
28	99010000 Supervision-Customer Accounts Exp	\$454	\$627	\$482	\$317	\$239
29	99020000 Meter Reading Expenses	\$391	\$781	\$536	\$5,703	\$1,256
30	99030000 Customer Records and Collection Expense	\$10,971	\$9,178	\$7,310	\$9,622	\$9,524
31	99040000 Uncollectible Accounts	\$8,302	\$13,874	\$16,470	\$13,877	\$4,870
32	99050000 Misc Customer Accounts Exp	\$686	\$613	\$695	\$673	\$2,467
33	99060000 Customer service and informational expenses (Nonmajor only)	\$0	\$0	\$0	\$0	\$0
34	Customer Accts Oper Exp-Elec (Sum of Lines 28 through 33)	\$20,805	\$25,073	\$25,493	\$30,191	\$18,355
35	99070000 Cust Service - Supervision	\$0	\$0	\$0	\$0	\$7
36	99080000 Customer Assistance Expenses	\$77,130	\$99,595	\$64,271	\$48,604	\$33,700
37	99090000 Info and Instructional Advertising Exp	\$2,965	\$1,697	\$1,206	\$941	\$2,851
38	99100000 Misc Customer Serv and Info Exp	\$27	(\$1)	\$6	\$119	(\$105)
39	99110000 Supervision (Major o	\$3	\$2	\$16	\$31	\$2
40	99120000 Demonstrating and Selling Expenses	\$329	\$706	\$300	\$566	\$405
41	99130000 Advertising Expenses	\$161	\$192	\$113	\$150	\$0
42	99160000 Miscellaneous Sales Expenses	\$7	\$15	\$44	\$100	\$32
43	99170000 Sales expenses (Nonm	\$0	\$0	\$0	\$1	\$0
44	Cust Service & Info Expenses (Sum of Lines 35 through 43)	\$80,623	\$102,207	\$65,956	\$50,512	\$36,893
45	Customer Expenses-O&M (Sum of Lines 34,44)	\$101,427	\$127,280	\$91,449	\$80,704	\$55,247
46	99200000 Administrative and General Salaries	\$16,207	\$14,073	\$14,045	\$8,668	\$8,898
47	99210000 Office Supplies and Expenses	\$14,867	\$11,465	\$7,738	\$10,543	\$15,473
48	99220000 Administrative expen	\$0	\$0	\$0	\$0	(\$0)
49	99230000 Outside Services Employed	\$7,853	\$10,264	\$15,127	\$8,434	\$4,372
50	99240000 Property insurance	\$8,283	\$9,675	\$7,175	\$2,345	\$208
51	99250000 Injuries and damages	\$3,845	\$645	\$2,636	\$6,481	\$6,090
52	99260000 Employee Pensions and Benefits	\$19,607	\$20,305	\$28,837	\$24,226	\$29,518
53	99270000 Franchise Requirements	\$0	\$0	\$0	\$0	\$1
54	99280000 Regulatory Commission Expenses	\$4,886	\$4,610	\$4,572	\$8,393	\$6,396
55	99290000 Duplicate charges-CR	\$0	\$0	\$0	\$0	\$0
56	99300000 General advertising expenses	\$0	\$0	\$0	\$0	\$0
57	99301000 General Advertising Expenses	\$0	\$4	\$45	\$492	\$244
58	99302000 Misc General Expenses	\$3,357	\$1,991	\$6,167	\$363	\$1,058
59	99310000 Rents	\$16,270	\$12,726	\$11,397	\$5,827	\$1,566
60	99330000 Transportation Expenses	\$0	\$0	\$0	\$0	\$0
61	Administrative Oper Exp-Elec (Sum of Lines 47 through 60)	\$95,176	\$85,759	\$97,739	\$75,773	\$73,824
62	99320000 Maintenance of General Plant	\$0	\$0	\$0	\$0	\$0
63	99350000 Maintenance of General Plant	\$212	\$208	\$250	\$256	\$143
64	Administrative Maint Expenses (Sum of Lines 62 through 63)	\$212	\$208	\$251	\$256	\$143
65	Administration Expenses-O&M (Sum of Lines 61,64)	\$95,388	\$85,967	\$97,990	\$76,029	\$73,967
66	O&M Expenses (Sum of Page 7; Line 58, Page 8; Line 4, Page 9; Line 42, Page 12; Lines 27,45,65)	\$651,841	\$777,936	\$744,191	\$611,928	\$589,603

Gas Operations & Maintenance Expense
(in \$000's)

		For 12 months ending:				
		June 30, 2016	June 30, 2015	June 30, 2014	June 30, 2013	June 30, 2012
		(a)	(b)	(c)	(d)	(e)
1	Maintenance Expense - Common					
2	95000000 Operation Supervision and Engineering	\$0	\$0	\$0	\$24	\$0
3	95010000 Fuel	\$0	\$0	\$0	\$0	\$0
4	95020000 Steam Expenses	\$0	\$0	\$0	\$0	\$0
5	95030000 Steam from Other Sources	\$0	\$0	\$0	\$0	\$0
6	95040000 Steam Transferred-Cr	\$0	\$0	\$0	\$0	\$0
7	95050000 Electric Expenses	\$0	\$0	\$0	\$0	\$0
8	95060000 Misc Steam Power Expenses	\$0	\$0	\$0	\$0	\$0
9	95070000 Rents	\$0	\$0	\$0	\$0	\$0
10	95080000 Blocked	\$0	\$0	\$0	\$0	\$0
11	95090000 Allowances	\$0	\$0	\$0	\$0	\$0
12	Operate Steam Power Generation (Sum of Lines 2 through 11)	\$0	\$0	\$0	\$24	\$0
13	95100000 Maint Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
14	95110000 Maintenance of Structures	\$0	\$0	\$0	\$0	\$0
15	95120000 Maintenance of Boiler Plant	\$0	(\$0)	\$0	(\$0)	\$0
16	95130000 Maintenance of Electric Plant	\$0	\$0	\$0	\$0	\$0
17	95140000 Maint of Misc Steam Plant	\$0	\$0	\$0	\$0	\$0
18	95150000 Blocked	\$0	\$0	\$0	\$0	\$0
19	Maint Steam Power Generation (Sum of Lines 13 through 18)	\$0	(\$0)	\$0	(\$0)	\$0
20	95170000 Operation Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
21	95180000 Nuclear fuel expense	\$0	\$0	\$0	\$0	\$0
22	95190000 Coolants and Water	\$0	\$0	\$0	\$0	\$0
23	95200000 Steam Expenses	\$0	\$0	\$0	\$0	\$0
24	95210000 Steam from Other Sources	\$0	\$0	\$0	\$0	\$0
25	95220000 Steam Transferred-Cr	\$0	\$0	\$0	\$0	\$0
26	95230000 Electric Expenses	\$0	\$0	\$0	\$0	\$0
27	95240000 Misc Nuclear Power Expenses	\$0	\$0	\$0	\$0	\$0
28	95250000 Rents	\$0	\$0	\$0	\$0	\$0
29	Nuclear Power Generation - Operation (Sum of Lines 20 through 28)	\$0	\$0	\$0	\$0	\$0
30	95280000 Maint Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
31	95290000 Maintenance of Structures	\$0	\$0	\$0	\$0	\$0
32	95300000 Maint of Reactor Plant Equipment	\$0	\$0	\$0	\$0	\$0
33	95310000 Maintenance of Electric Plant	\$0	\$0	\$0	\$0	\$0
34	95320000 Maint of Misc Nuclear Plant	\$0	\$0	\$0	\$0	\$0
35	Nuclear Power Generation - Maintenance (Sum of Lines 30 through 34)	\$0	\$0	\$0	\$0	\$0
36	95350000 Operation Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
37	95360000 Water for power	\$0	\$0	\$0	\$0	\$0
38	95370000 Hydraulic Expenses	\$0	\$0	\$0	\$0	\$0
39	95380000 Electric Expenses	\$0	\$0	\$0	\$0	\$0
40	95390000 Misc Hydraulic Power Generation Exp	\$0	\$0	\$0	\$0	\$0
41	95400000 Rents	\$0	\$0	\$0	\$0	\$0
42	95401000 Operation Supplies and Expenses	\$0	\$0	\$0	\$0	\$0
43	Hydraulic Power Generation - Operation (Sum of Lines 36 through 42)	\$0	\$0	\$0	\$0	\$0
44	95410000 Maint Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
45	95420000 Maintenance of Structures	\$0	\$0	\$0	\$0	\$0
46	95430000 Maint of Reservoirs, Dams and Waterways	\$0	\$0	\$0	\$0	\$0
47	95440000 Maintenance of Electric Plant	\$0	\$0	\$0	\$0	\$0
48	95450000 Maint of Misc Hydraulic Plant	\$0	\$0	\$0	\$0	\$0
49	95451000 Blocked	\$0	\$0	\$0	\$0	\$0
50	Hydraulic Power Generation - Maintenance (Sum of Lines 44 through 49)	\$0	\$0	\$0	\$0	\$0
51	95460000 Operation Superv. & Eng.	\$0	\$0	\$0	\$0	\$0
52	95470000 Fuel	\$0	\$0	\$0	\$0	\$0
53	95480000 Generation Expenses	\$0	\$0	\$0	\$0	\$0
54	95490000 Miscellaneous Other Power Generation Expenses	\$0	\$0	\$0	\$0	\$0
55	95500000 Rents	\$0	\$0	\$0	\$0	\$0
56	95501000 Blocked	\$0	\$0	\$0	\$0	\$0
57	Other Power Generation - Operation (Sum of Lines 51 through 56)	\$0	\$0	\$0	\$0	\$0
58	Total Power Production Expenses - Other Power (Sum of Lines 12,19,29,35,43,50,57)	\$0	\$0	\$0	\$24	\$0
59	95510000 Maint Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
60	95520000 Maintenance of struc	\$0	\$0	\$0	\$0	\$0
61	95530000 Maintenance of gener	\$0	\$0	\$0	\$0	\$0
62	95540000 Maint of Misc Other Power Gen Plant	\$0	\$0	\$0	\$0	\$0
63	95541000 Blocked	\$0	\$0	\$0	\$0	\$0
64	Maint Other Power Generation (Sum of Lines 59 through 63)	\$0	\$0	\$0	\$0	\$0

Gas Operations & Maintenance Expense
(in \$000's)

		For 12 months ending:				
		June 30, 2016	June 30, 2015	June 30, 2014	June 30, 2013	June 30, 2012
		(a)	(b)	(c)	(d)	(e)
1	95550000 Purchased power	\$0	\$0	\$0	\$0	\$0
2	95560000 System Control and Load Dispatching	\$0	\$0	\$0	\$0	\$0
3	95570000 Other expenses	\$0	\$0	\$0	\$0	\$0
4	Total Power Production Expenses (Sum of Lines 1 through 3)	\$0	\$0	\$0	\$0	\$0
5	95600000 Trans Operation Supervision and Engineer	\$0	\$0	\$0	\$0	\$0
6	95610000 Blocked	\$0	\$0	\$0	\$0	\$0
7	95611000 Load Dispatch-Reliability	\$0	\$0	\$0	\$0	\$0
8	95612000 Load Dispatch-Monitor and Operate Transmission System	\$0	\$0	\$0	\$0	\$0
9	95613000 Load Dispatch-Trans Serv & Scheduling	\$0	\$0	\$0	\$0	\$0
10	95614000 Scheduling, System Control & Dispatch S	\$0	\$0	\$0	\$0	\$0
11	95615000 Reliability, Planning and Standards Dev	\$0	\$0	\$0	(\$0)	\$0
12	95616000 Transmission Service Stuides	\$0	\$0	\$0	\$0	\$0
13	95617000 Generation interconn	\$0	\$0	\$0	\$0	\$0
14	95618000 Reliability, Planning and Standards Dev	\$0	\$0	\$0	\$0	\$0
15	95620000 Station Expenses	\$0	\$0	\$0	\$0	\$0
16	95630000 Overhead Line Expenses	\$0	\$0	\$0	(\$0)	\$0
17	95640000 Underground Line Expenses	\$0	\$0	\$0	\$0	\$0
18	95650000 Transmission of Electricity by Others	\$0	\$0	\$0	\$0	\$0
19	95660000 Misc Transmission Expenses	\$0	\$0	\$0	\$0	\$0
20	95670000 Rents	\$0	\$0	\$0	\$0	\$0
21	95671000 Blocked	\$0	\$0	\$0	\$0	\$0
22	Oper Transmission Facilities (Sum of Lines 5 through 21)	\$0	\$0	\$0	(\$0)	\$0
23	95680000 Maint Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
24	95690000 Maintenance of struc	\$0	\$0	\$0	\$0	\$0
25	95691000 Maintenance of compu	\$0	\$0	\$0	\$0	\$0
26	95692000 Maintenance of compu	\$0	\$0	\$0	\$0	\$0
27	95693000 Maintenance of communication equipment	\$0	\$0	\$0	\$0	\$0
28	95694000 Maintenance of Misc Regional Trans Plant	\$0	\$0	\$0	\$0	\$0
29	95700000 Maintenance of Station Equipment	\$0	\$0	\$0	(\$0)	\$0
30	95701000 Maintenance of Energy Storage Equipment	\$0	\$0	\$0	\$0	\$0
31	95710000 Maintenance of Overhead Lines	\$0	\$0	\$0	\$0	\$0
32	95720000 Maintenance of under	\$0	\$0	\$0	\$0	\$0
33	95730000 Maint of Misc Transmission Plant	\$0	\$0	\$0	\$0	\$0
34	95740000 Maintenance of transmission plant (Nonmajor only)	\$0	\$0	\$0	\$0	\$0
35	Maint Transmission Facilities (Sum of Lines 23 through 34)	\$0	\$0	\$0	(\$0)	\$0
36	Transmission Expenses-O&M (Sum of Lines 22,35)	\$0	\$0	\$0	(\$0)	\$0
37	95750000 Operation Supervision	\$0	\$0	\$0	\$0	\$0
38	95751000 Operation Supervision	\$0	\$0	\$0	\$0	\$0
39	95752000 Day-ahead and Real-time Market Admin	\$0	\$0	\$0	\$0	\$0
40	95753000 Transmission Rights Market Admin	\$0	\$0	\$0	\$0	\$0
41	95754000 Capacity Market Admin	\$0	\$0	\$0	\$0	\$0
42	95755000 Ancillary Services Market Admin	\$0	\$0	\$0	\$0	\$0
43	95756000 Market Monitoring and Compliance	\$0	\$0	\$0	\$0	\$0
44	95757000 Market Facilitation, Monitoring & Compl	\$0	\$0	\$0	\$0	\$0
45	95758000 Rents	\$0	\$0	\$0	\$0	\$0
46	Regional Market Operating Expense (Sum of Lines 37 through 45)	\$0	\$0	\$0	\$0	\$0
47	95761000 Maint of Structures and Improvements	\$0	\$0	\$0	\$0	\$0
48	95762000 Maintenance of Computer Hardware	\$0	\$0	\$0	\$0	\$0
49	95763000 Maintenance of Computer Software	\$0	\$0	\$0	\$0	\$0
50	95764000 Maint of Communication Equipment	\$0	\$0	\$0	\$0	\$0
51	95765000 Maint of Misc Market Oper Plant	\$0	\$0	\$0	\$0	\$0
52	Regional Market Maintenance Expense (Sum of Lines 47 through 51)	\$0	\$0	\$0	\$0	\$0
53	95800000 Operation Supervision and Engineering	\$0	\$0	\$0	(\$0)	\$0
54	95810000 Load Dispatching	\$0	\$0	\$0	(\$0)	\$0
55	95811000 Blocked	\$0	\$0	\$0	\$0	\$0
56	95820000 Station Expenses	\$0	\$0	\$10	\$3	\$0
57	95830000 Overhead Line Expenses	\$0	(\$0)	\$0	(\$3)	\$0
58	95840000 Underground Line Expenses	\$0	\$0	\$0	(\$0)	\$0
59	95850000 Street Lighting and Signal System Exp	\$0	\$0	\$0	\$0	\$0
60	95860000 Meter expenses	\$0	\$0	\$0	(\$1)	\$0
61	95870000 Customer Installation Exp	\$0	\$0	\$3	\$1	\$0
62	95880000 Misc Distribution Exp	\$0	(\$0)	(\$1)	\$2	\$0
63	95890000 Rents	\$0	\$0	\$0	\$0	\$0
64	Operate Dist Facilities (Sum of Lines 53 through 63)	\$0	(\$0)	\$12	\$3	\$0

Gas Operations & Maintenance Expense
(in \$000's)

		For 12 months ending:				
		June 30, 2016	June 30, 2015	June 30, 2014	June 30, 2013	June 30, 2012
		(a)	(b)	(c)	(d)	(e)
1	95900000 Maint Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
2	95910000 Maintenance of Structures	\$0	\$0	\$0	\$0	\$0
3	95920000 Maintenance of Station Equipment	\$0	\$0	\$0	\$0	\$0
4	95921000 Maintenance of structures and equipment (Nonmajor only)	\$0	\$0	\$0	\$0	\$0
5	95930000 Maintenance of Overhead Lines	\$0	(\$0)	(\$130)	\$129	\$0
6	95932000 Maintenance of structures and equipment (Nonmajor only)	\$0	\$0	\$0	\$0	\$0
7	95940000 Maintenance of Underground Lines	\$0	\$0	\$0	\$0	\$0
8	95941000 Blocked	\$0	\$0	\$0	\$0	\$0
9	95950000 Maintenance of Line Transformers	\$0	\$0	(\$0)	\$410	\$0
10	95960000 Maint of Street Lighting & Signal Syste	\$0	\$0	\$0	\$0	\$0
11	95970000 Maintenance of Meters	\$0	\$0	\$0	\$0	\$0
12	95980000 Maint of Misc Distribution Plant	\$0	(\$0)	\$0	\$0	\$0
13	Maint Distribution Facilities (Sum of Lines 1 through 12)	\$0	\$0	(\$130)	\$539	\$0
14	97170000 Liquefied Petroleum Gas Exp	\$0	\$0	\$0	\$0	\$0
15	97180000 Load Dispatching	\$0	\$0	\$0	\$332	\$80
16	Production Labor and Expenses - GAS (Sum of Lines 14 through 15)	\$0	\$0	\$0	\$332	\$80
17	97280000 Liquefied Petroleum Gas	\$0	\$0	\$0	\$0	\$0
18	97360000 Production Expense-Rents	\$0	\$0	\$0	\$0	\$0
19	Gas Raw Materials (Sum of Lines 145 through 146)	\$0	\$0	\$0	\$0	\$0
20	97500000 Operation Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
21	97510000 Production Maps and Records	\$0	\$0	\$0	\$0	\$0
22	97520000 Gas Well Expenses	\$0	\$0	\$0	\$0	\$0
23	97530000 Field Lines Expenses	\$0	\$0	\$0	\$0	\$0
24	97540000 Fuel Compressor Station Expenses	\$0	\$0	\$0	\$0	\$0
25	97550000 Field Compressor Station Fuel and Power	\$0	\$0	\$0	\$0	\$0
26	97560000 Field Measuring and Regulating Station Exp	\$0	\$0	\$0	\$0	\$0
27	97570000 Purification Expense	\$0	\$0	\$0	\$0	\$0
28	97580000 Gas Well Royalties	\$0	\$0	\$0	\$0	\$0
29	97590000 Other Expenses	\$0	\$0	\$0	\$0	\$0
30	97600000 Rents	\$0	\$0	\$0	(\$1)	\$0
31	Gas Operations - Natural Gas Production and Gathering (Sum of Lines 20 through 30)	\$0	\$0	\$0	(\$1)	\$0
32	97610000 Maint Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
33	97620000 Maint of Structures and Improvements	\$0	\$0	\$0	\$0	\$0
34	97630000 Maint of Producing Gas Wells	\$0	\$0	\$0	\$0	\$0
35	97640000 Maint of Field Lines	\$0	\$0	\$0	\$0	\$0
36	97650000 Maint of Field Compressor Station Equip	\$0	\$0	\$0	\$0	\$0
37	97660000 Maint of Field Meas/Reg Station Equip	\$0	\$0	\$0	\$0	\$0
38	97670000 Maint of Purification Equipment	\$0	\$0	\$0	\$0	\$0
39	97680000 Maint of Drilling and Cleaning Equipment	\$0	\$0	\$0	\$0	\$0
40	97690000 Maint of Other Equipment	\$0	\$0	\$0	\$0	\$0
41	Gas Maintenance - Natural Gas Production and Gathering (Sum of Lines 160 through 168)	\$0	\$0	\$0	\$0	\$0
42	Distribution Expenses-O&M (Sum of Page 14; Lines 46,52,64, Page 15; Lines 13,16,19,31,41)	\$0	(\$0)	(\$118)	\$874	\$80
43	97350000 Load dispatching (Ma	\$0	\$0	\$8	\$19	\$6
44	97410000 Maint of Structures and Improvements	\$0	\$0	(\$36)	\$84	(\$16)
45	97420000 Maint of Production Equipment	\$0	(\$0)	\$41	\$0	\$0
46	Production Expenses-Gas (Sum of Lines 43 through 45)	\$0	(\$0)	\$13	\$103	(\$10)
47	97700000 Operation Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
48	97710000 Operation Labor	\$0	\$0	\$0	\$0	\$0
49	97720000 Gas Shrinkage	\$0	\$0	\$0	\$0	\$0
50	97730000 Fuel	\$0	\$0	\$0	\$0	\$0
51	97740000 Power	\$0	\$0	\$0	\$0	\$0
52	97750000 Materials	\$0	\$0	\$0	\$0	\$0
53	97760000 Operation Supplies and Expenses	\$0	\$0	\$0	\$0	\$0
54	97770000 Gas Processed by Others	\$0	\$0	\$0	\$0	\$0
55	97780000 Royalties on Products Extracted	\$0	\$0	\$0	\$0	\$0
56	97790000 Marketing Expenses	\$0	\$0	\$0	\$0	\$0
57	97800000 Products Purchased for Resale	\$0	\$0	\$0	\$0	\$0
58	97810000 Variation in Products Inventory	\$0	\$0	\$0	\$0	\$0
59	97820000 Extracted Products Used by Utility-Cr	\$0	\$0	\$0	\$0	\$0
60	97830000 Rents	\$0	\$0	\$0	\$0	\$0
61	Gas Operations - Products Extraction (Sum of Lines 47 through 60)	\$0	\$0	\$0	\$0	\$0

Gas Operations & Maintenance Expense
(in \$000's)

		For 12 months ending:				
		June 30, 2016	June 30, 2015	June 30, 2014	June 30, 2013	June 30, 2012
		(a)	(b)	(c)	(d)	(e)
1	97840000 Maint Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
2	97850000 Maint of Structures and Improvements	\$0	\$0	\$0	\$0	\$0
3	97860000 Maint of Extraction and Refining Equip	\$0	\$0	\$0	\$0	\$0
4	97870000 Maintenance of Pipe Lines	\$0	\$0	\$0	\$0	\$0
5	97880000 Maint-Ext Prod Stor	\$0	\$0	\$0	\$0	\$0
6	97890000 Maint of Compressor Equipment	\$0	\$0	\$0	\$0	\$0
7	97900000 Maint of Gas Measuring/Regulating Equip	\$0	\$0	\$0	\$0	\$0
8	97910000 Maint of Other Equipment	\$0	\$0	\$0	\$0	\$0
9	Gas Maintenance - Products Extraction (Sum of Lines 1 through 8)	\$0	\$0	\$0	\$0	\$0
10	97950000 Delay Rentals	\$0	\$0	\$0	\$0	\$0
11	97960000 Non-Productive Well Drilling	\$0	\$0	\$0	\$0	\$0
12	97970000 Abandoned Leases	\$0	\$0	\$0	\$0	\$0
13	97980000 Other Exploration	\$0	\$0	\$0	\$0	\$0
14	Gas Operations - exploration and development expenses (Sum of Lines 10 through 13)	\$0	\$0	\$0	\$0	\$0
15	98000000 Natural Gas Well Head Purchases	\$0	\$0	\$0	\$0	\$0
16	98001000 Natural Gas Well Head Purch-IC Transfer	\$0	\$0	\$0	\$0	\$0
17	98010000 Natural Gas Field Line Purchases	\$0	\$0	\$0	\$0	\$0
18	98020000 Natural Gas Gasoline Plant Outlet Purchases	\$0	\$0	\$0	\$0	\$0
19	98030000 Natural Gas Transmission Line Purchases	\$0	\$0	\$0	\$0	\$0
20	98040000 Natural Gas City Gate Purchases	\$135,270	\$197,124	\$239,490	\$192,535	\$196,525
21	98041000 Liquefied Natural Gas Purchases	\$0	\$0	\$0	\$0	\$0
22	98050000 Other Gas Purchases	\$0	\$0	\$4,843	\$6,794	(\$102)
23	98051000 Purchased Gas Cost Adjustments	\$0	\$0	\$0	\$0	\$0
24	98060000 Exchange Gas	\$0	\$0	\$0	\$0	\$0
25	98070000 Purchased Gas Expenses	\$0	\$0	\$0	\$0	\$0
26	98081000 Gas Withdrawn from Storage-Debt	\$6,140	\$13,148	\$9,103	(\$6,253)	\$0
27	98082000 Gas Delivered to Storage-Cr	(\$5,573)	(\$9,699)	(\$8,789)	\$3,907	\$13,394
28	98091000 Withdrawal of Liq Nat Gas Held for Proc	\$3,430	\$5,865	\$3,471	(\$2,012)	\$2,969
29	98092000 Gas Used for Product Extraction-Cr	(\$4,032)	(\$3,279)	(\$4,601)	(\$152)	\$6
30	98100000 Gas Used for Compressor Station Fuel-Cr	\$0	\$0	\$0	\$0	\$0
31	98110000 Gas Used for Product Extraction-Cr	\$0	\$0	\$0	\$0	\$0
32	98120000 Gas Used for Other Utility Oper-Cr	(\$174)	(\$326)	(\$985)	(\$1,579)	\$1,830
33	98130000 Other Gas Supply Exp	(\$1,727)	(\$2,106)	(\$3,329)	(\$390)	(\$562)
34	Gas Operations - other gas supply expenses (Sum of Lines 15 through 33)	\$133,334	\$200,727	\$239,204	\$192,849	\$214,060
35	98140000 Operation Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
36	98150000 Maps and Records	\$0	\$0	\$0	\$0	\$0
37	98160000 Wells Expenses	\$0	\$0	\$0	\$0	\$0
38	98170000 Lines Expenses	\$0	\$0	\$0	\$0	\$0
39	98180000 Compressor Station Expenses	\$0	\$0	\$0	\$0	\$0
40	98190000 Compressor Station Fuel and Power	\$0	\$0	\$0	\$0	\$0
41	98200000 Measuring and Regulating Station Expenses	\$0	\$0	\$0	\$0	\$0
42	98210000 Purification Expenses	\$0	\$0	\$0	\$0	\$0
43	98220000 Exploration and Development	\$0	\$0	\$0	\$0	\$0
44	98230000 Gas Losses	\$0	\$0	\$0	\$0	\$0
45	98240000 Other Expenses	\$0	\$0	\$0	\$0	\$0
46	98250000 Storage Well Royalties	\$0	\$0	\$0	\$0	\$0
47	98260000 Rents	\$0	\$0	\$0	\$0	\$0
48	Gas Operations - underground storage expenses (Sum of Lines 35 through 47)	\$0	\$0	\$0	\$0	\$0
49	98300000 Maint Supervision and Engineering	\$0	\$0	\$0	\$0	\$0
50	98310000 Maint of Structures and Improvements	\$0	\$0	\$0	\$0	\$0
51	98320000 Maint of Reservoirs and Wells	\$0	\$0	\$0	\$0	\$0
52	98330000 Maintenance of Lines	\$0	\$0	\$0	\$0	\$0
53	98340000 Maint of Compressor Station Equipment	\$0	\$0	\$0	\$0	\$0
54	98350000 Maint of Measuring/Reg Station Equip	\$0	\$0	\$0	\$0	\$0
55	98360000 Maint of Purification Equipment	\$0	\$0	\$0	\$0	\$0
56	98370000 Maint of Other Equipment	\$0	\$0	\$0	\$0	\$0
57	Gas Maintenance - underground storage expenses (Sum of Lines 49 through 56)	\$0	\$0	\$0	\$0	\$0
58	98400000 Operation Supervision and Engineering	\$0	\$230	\$212	\$127	(\$6)
59	98410000 Operation Labor and Expenses	\$1,803	\$917	\$892	\$99	\$0
60	98420000 Rents	\$2	\$2	\$1	(\$0)	\$0
61	98421000 Fuel	\$0	\$0	\$0	\$0	\$0
62	98422000 Power	\$0	\$0	\$0	\$0	\$0
63	98423000 Gas Losses	\$0	\$0	\$0	\$0	\$0
64	Gas Operations - other storage expenses (Sum of Lines 58 through 63)	\$1,804	\$1,149	\$1,105	\$226	(\$6)

Gas Operations & Maintenance Expense
(in \$000's)

		For 12 months ending:				
		June 30, 2016	June 30, 2015	June 30, 2014	June 30, 2013	June 30, 2012
		(a)	(b)	(c)	(d)	(e)
1	98432000 Maint of Structures and Improvements	\$0	\$0	\$0	\$0	\$0
2	98433000 Maint of Gas Holders	\$0	\$0	\$0	\$0	\$0
3	98434000 Maint of Purification Equipment	\$0	\$0	\$0	\$0	\$0
4	98435000 Maint of Liquefaction Equipment	\$0	\$0	\$0	\$0	\$0
5	98436000 Maint of Vaporizing Equipment	\$14	\$33	\$3	\$13	\$0
6	98437000 Maint of Compressor Equipment	\$0	\$0	\$0	\$0	\$0
7	98438000 Maint of Measuring/Reg Equipment	\$2	(\$1)	\$6	(\$2)	\$0
8	98439000 Maint of Other Equipment	\$0	\$0	\$0	\$0	\$0
9	98480000 Maintenance of Vaporizing Equipment	\$0	\$0	\$0	\$0	\$0
10	Gas Maintenance - other storage expenses (Sum of Lines 1 through 9)	\$16	\$33	\$9	\$11	\$0
11	98440000 Blocked	\$0	\$0	(\$162)	\$162	\$0
12	98450000 Blocked	\$10	\$0	\$0	\$0	\$0
13	98460000 Blocked	\$0	\$0	\$81	\$40	\$0
14	Gas Common- liquefied natural gas terminaling and processing expenses (Sum of Lines 11 through 13)	\$10	\$0	(\$81)	\$202	\$0
15	98441000 Operation Supervision and Engineering	\$209	\$218	(\$16)	\$78	\$0
16	98442000 LNG Processing Terminal Labor and Exp	\$26	\$193	\$294	\$330	\$624
17	98443000 Liquefaction Processing Labor and Exp	\$0	\$0	\$0	\$0	\$0
18	98444000 LNG Transportation Labor and Expenses	\$0	\$0	\$0	\$0	\$0
19	98445000 Measuring and Regulating Labor and Exp	\$0	\$0	\$0	\$0	\$0
20	98446000 Compressor Station Labor and Exp	\$0	\$0	\$0	\$0	\$0
21	98447000 Communication System Expenses	\$0	\$0	\$0	\$0	\$0
22	98448000 System Control and Load Dispatching	\$0	(\$6)	\$6	\$0	\$0
23	98451000 Fuel	\$7	\$24	\$34	(\$32)	(\$8)
24	98452000 Power	\$12	\$14	\$4	\$7	\$5
25	98453000 Rents	\$0	(\$0)	\$3	\$3	\$6
26	98454000 Demurrage Charges	\$0	\$0	\$0	\$0	\$0
27	98455000 Wharfage Receipts-Cr	\$0	\$0	\$0	\$0	\$0
28	98456000 Processing Liquefied or Vaporized Gas by Others	\$0	\$0	\$0	\$0	\$0
29	98461000 Gas Losses	\$0	\$0	\$0	\$0	\$0
30	98462000 Other Expenses	\$133	\$127	\$29	\$1	\$0
31	Gas Operations - liquefied natural gas terminaling and processing expenses (Sum of Lines 15 through 30)	\$386	\$570	\$354	\$387	\$627
32	98470000 Blocked	\$0	\$0	\$1	\$1	\$0
33	Common Maintenance- liquefied natural gas terminaling and processing expenses (Sum of Lines 32 through 32)	\$0	\$0	\$1	\$1	\$0
34	98471000 Maint Supervision and Engineering	\$1	\$0	\$0	\$0	\$0
35	98472000 Maint of Structures and Improvements	\$38	\$104	\$91	\$66	\$71
36	98473000 Maint of LNG Processing Terminal Equip	\$45	\$6	\$13	\$106	\$149
37	98474000 Maint of LNG Transportation Equip	\$0	\$0	\$0	\$0	\$0
38	98475000 Maint of Measuring/Reg Equipment	\$82	\$80	\$92	\$28	\$0
39	98476000 Maint of Compressor Station Equipment	\$0	\$0	\$0	\$0	\$0
40	98477000 Maint of Communication Equipment	\$0	\$0	\$0	\$0	\$0
41	98478000 Maint of Vaporizing Equipment	\$548	\$659	\$555	\$599	\$178
42	Gas Maintenance- liquefied natural gas terminaling and processing expenses (Sum of Lines 34 through 41)	\$715	\$849	\$751	\$798	\$397
43	98500000 Operation Supervision and Engineering	\$2	\$9	(\$0)	\$1	\$1
44	98510000 System Control and Load Dispatching	\$0	\$0	\$0	\$0	\$0
45	98520000 Communication System Expenses	\$0	\$0	\$0	\$0	\$0
46	98530000 Compressor Station Labor and Exp	\$0	\$0	\$0	\$0	\$0
47	98540000 Gas for Compressor Station Fuel	\$0	\$0	\$0	\$0	\$0
48	98550000 Other Fuel and Power-Compressor Stations	\$0	\$0	\$0	\$0	\$0
49	98560000 Mains Expenses	\$0	\$0	\$0	\$0	\$0
50	98570000 Measuring and Regulating Station Expens	\$0	\$0	\$1	\$1	\$0
51	98580000 Trans and Compression of Gas by Others	\$0	\$0	\$0	\$0	\$0
52	98590000 Other Expenses	\$1	\$0	\$0	\$1	\$0
53	98600000 Other Expenses - Gas transmission rent	\$3	\$1	\$0	\$0	\$0
54	Gas Operations - Transmission Expenses (Sum of Lines 43 through 53)	\$6	\$10	\$1	\$3	\$1
55	98610000 Maint Supervision and Engineering	\$47	\$1	\$1	\$0	\$0
56	98620000 Maint of Structures and Improvements	\$0	\$0	\$0	\$0	\$0
57	98630000 Maint of Mains	\$8	\$0	\$224	(\$17)	\$19
58	98640000 Maint of Compressor Station Equipment	\$0	\$0	\$0	\$0	\$0
59	98650000 Maint of Measuring/Reg Station Equip	\$0	\$0	\$0	\$2	\$0
60	98660000 Maint of Communication Equipment	\$0	\$0	\$0	\$0	\$0
61	98670000 Maint of Other Equipment	\$0	\$0	\$0	\$0	\$0
62	98700000 Operation Supervision and Engineering	(\$1,499)	\$1,693	\$1,459	\$2,775	\$1,135
63	Gas Maintenance- Transmission Expenses (Sum of Lines 55 through 62)	(\$1,444)	\$1,694	\$1,684	\$2,759	\$1,154

Gas Operations & Maintenance Expense
(in \$000's)

		For 12 months ending:				
		June 30, 2016	June 30, 2015	June 30, 2014	June 30, 2013	June 30, 2012
		(a)	(b)	(c)	(d)	(e)
1	98710000 Distribution Load Dispatching	\$699	\$749	\$51	\$388	(\$107)
2	98720000 Compressor Station Labor and Exp	\$0	\$0	\$18	\$75	\$0
3	98730000 Compressor Station Fuel and Power	\$28	\$58	\$41	\$11	\$66
4	98740000 Mains and Services Expenses	\$2,740	\$5,850	\$3,256	\$2,241	\$2,163
5	98750000 Measuring/Reg Station Exp-General	\$844	\$655	\$597	\$630	\$744
6	98760000 Measuring/Reg Station Exp-Industrial	\$48	\$59	\$39	\$155	\$237
7	98770000 Measuring/Reg Station Exp-City Gate	\$0	\$0	\$0	\$0	\$3,724
8	98780000 Meter and House Regulator Exp	\$5,787	\$6,217	\$3,091	\$3,527	\$0
9	98790000 Customer Installation Exp	\$483	\$487	\$268	\$6	\$2
10	98800000 Other Expenses	\$3,283	\$5,306	\$2,472	\$6,171	\$3,696
11	98810000 Gas Oper - Dist Rentals	\$0	\$2	\$11	\$2	\$0
12	Operate Gas Facilities (Sum of Lines 1 through 11)	<u>\$13,912</u>	<u>\$19,383</u>	<u>\$9,844</u>	<u>\$13,205</u>	<u>\$10,525</u>
13	98430000 Blocked	\$0	\$0	\$2	\$1	\$0
14	98431000 Maintenance supervision and engineering	\$0	\$0	\$0	\$0	\$0
15	98850000 Maint Supervision and Engineering	\$468	\$474	\$609	\$1,922	\$1,041
16	98860000 Maintenance -Gas distribution	\$0	\$0	\$0	\$0	\$0
17	98870000 Maint of Mains	\$2,931	\$1,917	\$2,925	\$5,418	\$6,344
18	98879000 Maint of Mains	\$0	\$0	\$0	\$0	\$0
19	98880000 Maint of Compressor Station Equipment	\$36	(\$43)	(\$14)	\$57	\$0
20	98890000 Maint of Meas/Reg Station Equip-General	\$491	\$381	\$274	\$429	\$149
21	98900000 Maint of Meas/Reg Station Equip-Industr	\$471	\$639	\$1,111	\$731	\$8
22	98910000 Maint of Meas/Reg Station Equip-City Ga	\$2	\$10	\$66	\$136	\$118
23	98920000 Maintenance of Services	\$4,189	\$4,400	\$5,124	\$6,123	\$6,584
24	98930000 Maint of Meters and House Regulators	\$1,510	\$690	\$880	\$1,371	\$1,604
25	98940000 Maint of Other Equipment	\$6	\$26	\$63	\$133	\$52
26	Maintain Gas Facilities (Sum of Lines 13 through 25)	<u>\$10,102</u>	<u>\$8,491</u>	<u>\$11,039</u>	<u>\$16,323</u>	<u>\$15,901</u>
27	Gas Expenses-O&M (Sum of Page 15; Lines 46,61, Page 16; Lines 9,14, 34,48,57,64, Page 17; Lines 10,14,31,33,42,54,63, Page 18; Lines 12,26)	<u>\$158,843</u>	<u>\$232,905</u>	<u>\$263,924</u>	<u>\$226,868</u>	<u>\$242,650</u>
28	99010000 Supervision-Customer Accounts Exp	\$235	\$269	\$244	\$135	\$294
29	99020000 Meter Reading Expenses	\$395	\$628	\$3,253	\$406	\$578
30	99030000 Customer Records and Collection Expense	\$5,865	\$6,138	\$4,314	\$6,251	\$6,954
31	99040000 Uncollectible Accounts	\$3,877	\$8,954	\$3,458	\$7,871	\$8,924
32	99050000 Misc Customer Accounts Exp	\$376	\$388	\$913	\$990	(\$373)
33	99060000 Customer service and informational expenses (Nonmajor only)	\$0	\$0	\$0	\$0	\$0
34	Customer Accts Oper Exp-Elec (Sum of Lines 28 through 33)	<u>\$10,748</u>	<u>\$16,377</u>	<u>\$12,182</u>	<u>\$15,652</u>	<u>\$16,377</u>
35	99070000 Cust Service - Supervision	\$0	\$0	\$0	\$0	\$6
36	99080000 Customer Assistance Expenses	\$21,723	\$16,945	\$21,744	\$12,417	\$7,315
37	99090000 Info and Instructional Advertising Exp	\$565	\$1,113	\$83	\$801	\$406
38	99100000 Misc Customer Serv and Info Exp	\$75	\$24	\$37	\$1	\$607
39	99110000 Supervision (Major o	\$2	\$1	\$8	\$15	\$1
40	99120000 Demonstrating and Selling Expenses	\$670	\$888	\$906	\$1,843	\$2,697
41	99130000 Advertising Expenses	\$418	\$669	\$399	\$175	\$16
42	99160000 Miscellaneous Sales Expenses	(\$26)	\$11	\$51	(\$167)	(\$1,290)
43	99170000 Sales expenses (Nonm	\$0	\$0	\$0	\$0	\$0
44	Cust Service & Info Expenses (Sum of Lines 35 through 43)	<u>\$23,427</u>	<u>\$19,651</u>	<u>\$23,228</u>	<u>\$15,086</u>	<u>\$9,758</u>
45	Customer Expenses-O&M (Sum of Lines 34,44)	<u>\$34,175</u>	<u>\$36,028</u>	<u>\$35,410</u>	<u>\$30,738</u>	<u>\$26,135</u>
46	99200000 Administrative and General Salaries	\$6,936	\$9,325	\$6,065	\$9,872	\$5,787
47	99210000 Office Supplies and Expenses	\$7,808	\$6,237	\$3,201	\$6,331	\$7,000
48	99220000 Administrative expen	\$0	\$0	\$0	\$0	\$0
49	99230000 Outside Services Employed	\$2,749	\$4,074	\$6,944	\$5,953	\$3,927
50	99240000 Property insurance	\$226	\$219	\$72	\$15	\$7
51	99250000 Injuries and damages	\$579	(\$1,026)	\$3,297	\$992	\$2,147
52	99260000 Employee Pensions and Benefits	\$17,584	\$14,306	\$12,708	\$23,124	\$18,432
53	99270000 Franchise Requirements	\$0	\$0	\$0	\$0	\$0
54	99280000 Regulatory Commission Expenses	\$2,179	\$2,020	\$2,114	\$3,166	\$2,887
55	99290000 Duplicate charges-CR	\$0	\$0	\$0	\$0	\$0
56	99300000 General advertising expenses	\$0	\$0	\$0	\$0	\$0
57	99301000 General Advertising Expenses	\$0	\$0	\$22	\$323	\$174
58	99302000 Misc General Expenses	\$1,538	\$2,405	(\$2,884)	(\$772)	\$2,168
59	99310000 Rents	\$4,008	\$3,918	\$3,736	\$2,334	\$1,314
60	99330000 Transportation Expenses	\$0	\$0	\$0	\$0	\$0
61	Administrative Oper Exp-Elec (Sum of Lines 47 through 60)	<u>\$43,607</u>	<u>\$41,480</u>	<u>\$35,274</u>	<u>\$51,337</u>	<u>\$43,843</u>
62	99320000 Maintenance of General Plant	\$3	\$5	\$0	\$1	\$0
63	99350000 Maintenance of General Plant	\$0	(\$0)	\$2	\$126	\$75
64	Administrative Maint Expenses (Sum of Lines 62 through 63)	<u>\$3</u>	<u>\$5</u>	<u>\$2</u>	<u>\$127</u>	<u>\$75</u>
65	Administration Expenses-O&M (Sum of Lines 61,64)	<u>\$43,609</u>	<u>\$41,485</u>	<u>\$35,276</u>	<u>\$51,465</u>	<u>\$43,918</u>
66	O&M Expenses (Sum of Page 13; Line 58, Page 14; Line 4, Page 15; Line 42,	<u>\$236,627</u>	<u>\$310,418</u>	<u>\$334,493</u>	<u>\$309,968</u>	<u>\$312,784</u>

Division 9-2

Request:

Referring to Workpaper 6a-6c Service Company Rents, tab IS Existing Projects RY1, please provide detailed documentation for each project, including project authorization forms or work orders, for projects greater than \$5M, as shown in column J.

Response:

Please see Attachment DIV 9-2-1, Attachment DIV 9-2-2, and Attachment DIV 9-2-3 for the requested information. The Company has provided the table below as a cross-reference for each project investment to the supporting documentation provided in the attachments. Please note that the items identified for US Foundation Program (USFP) were not separate projects but, instead, were individual work streams within the overall program. National Grid created separate work orders to capture the costs for each work stream so the costs shown are for that particular work stream. The USFP work orders are identified in the Company's response to Division 9-4. National Grid has provided the full set of USFP sanction papers because the work streams shown below cut across the entire program. Please see Attachment DIV 9-2-2 for the full set of USFP sanction papers. Additionally, the projects labeled with "EHR1" were part of the Enhancement Release One (EHR1) program, which was a separate follow-on program of work to enhance the SAP functionality. This program was run independent of the Information Services (IS) function and, therefore, the typical IS sanction paper was not prepared for this program. Instead, the program was governed by the USFP Business Improvement Steering Group, which provided oversight of the program costs and deliverables. A Steering Group presentation detailing the projects included in the program is included as Attachment DIV 9-2-3.

Line	Investment Name	Total Spend	Documentation
228	DMS/OMS Replacement	\$65,661,114.73	See Attachment DIV 9-2-1, Pages 1-8
104	USFP-Testing -R1	\$61,366,884.58	See Attachment DIV 9-2-2
248	USFP Test SS	\$46,113,703.33	See Attachment DIV 9-2-2
32	CIS Consolidation	\$28,900,770.79	Note 1
66	IN 1043 NE EMS Replacement	\$28,897,287.25	See Attachment DIV 9-2-1, Pages 9-16
70	USFP-Build & Unit Test -R1	\$26,765,794.37	See Attachment DIV 9-2-2
249	USFP-Hardware & Software-R1	\$23,426,143.44	See Attachment DIV 9-2-2
251	EHR1 - Supply Chain	\$18,657,153.79	See Attachment DIV 9-2-3
110	USFP - Process & Design-DD	\$17,463,816.58	See Attachment DIV 9-2-2
13	EHR1 – BPS	\$14,956,768.17	See Attachment DIV 9-2-3
211	INVP 3564 Cust Choice ESCO Gas	\$14,372,475.08	Note 2
236	INVP 4172 - Cross Company	\$13,893,671.09	See Attachment DIV 9-2-1, Pages 17-31

Prepared by or under the supervision of: John Gilbert, Daniel DeMauro, and Mukund Ravipaty

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4770
Responses to Division's Ninth Set of Data Requests
Issued January 11, 2018

	Customer		
140	USFP-PMO - R1	\$13,294,039.51	See Attachment DIV 9-2-2
Line	Investment Name	Total Spend	Documentation
247	IN1656-CUST.Systems Agent desktop	\$10,436,678.49	Note 2
151	EHR1 - Finance	\$10,024,520.65	See Attachment DIV 9-2-3
187	USFP Release 3 - IT Delivery	\$9,575,834.87	See Attachment DIV 9-2-2
80	USFP R3 Supply Chain	\$9,434,359.26	See Attachment DIV 9-2-2
79	USFP R3 Finance	\$8,782,503.85	See Attachment DIV 9-2-2
113	EHR1 - PMO	\$8,346,171.80	See Attachment DIV 9-2-3
145	USFP-Controls & Roles -R1	\$7,773,543.69	See Attachment DIV 9-2-2
72	USFP-Data Strategy - R1	\$7,738,324.13	See Attachment DIV 9-2-2
107	USFP-Process & Design -R1	\$7,564,718.49	See Attachment DIV 9-2-2
105	FFA (NIMO)	\$7,548,509.16	Note 2
54	WO for Capital Chgs-FFA	\$7,411,737.15	Note 1
221	USFP R3 Payroll	\$7,395,815.62	See Attachment DIV 9-2-2
245	INVP 2927 US Desktop Refresh	\$6,778,436.89	See Attachment DIV 9-2-1, Pages 32-48
231	INVP 1356A US Retail Web Customer &	\$6,726,634.38	See Attachment DIV 9-2-1, Pages 49-62
263	INVP2495H US CNI Frame Relay Replac	\$6,532,965.83	See Attachment DIV 9-2-1, Pages 63-78
116	US Pre-BLUEPRINT STRATEGY PLAN	\$6,530,002.86	See Attachment DIV 9-2-2
112	EHR1 - Payroll	\$6,240,542.77	See Attachment DIV 9-2-3
78	USFP-Reporting & Info - R1	\$6,197,727.55	See Attachment DIV 9-2-2
57	INVP 1172 - AMAG Upgrades	\$6,129,118.45	See Attachment DIV 9-2-1, Pages 79-84
163	IN 2330 ETRM Repl Nucleus-Gas Benef	\$6,005,255.51	See Attachment DIV 9-2-1, Pages 85-101
218	PMO TEAM - DESIGN CAPEX	\$5,995,337.73	See Attachment DIV 9-2-2
102	TXFER00099	\$5,405,641.90	Note 2

Note 1: This project is fully amortized - there are no allocations in the Rate Year

Note 2: This project does not allocate costs to Rhode Island



Resanction Request

Title:	OMS/DMS Platform Standardization & Enhancement Project	Sanction Paper #:	USSC-12-249 v3
Project #:	INVP 1185 / S00544 / XG380008082	Sanction Type:	Resanction
Operating Company:	National Grid USA Svc. Co.	Date of Request:	May 13, 2015
Author / NG Representative:	Diane Beard / Mike Gerolamo	Sponsor:	John Spink, Vice President Control Center Operations
Utility Service:	IT	Project Manager:	Jane Becker

1 Executive Summary

This paper requests the resanction of INVP 1185 in the amount \$79.738M with a tolerance of +/- 10% for the purposes of Development & Implementation.

This sanction amount is \$79.738M broken down into:

\$67.157M	Capex
\$12.561M	Opex
\$ 0.020M	Removal

Note the previously requested sanction amount of \$65.181M.

2 Resanction Details

2.1 Project Summary

This resanction is in regard to the planned replacement of the two regional existing Outage Management Systems (OMS), in New England (NE) and Upstate New York (NY).

In March 2014 National Grid commissioned a review of the Energy Management System (EMS) / OMS program, to better understand potential risks of the solution design with respect to the utility industry's maturing understanding of cyber security. Significant cyber security risks were identified, primarily due to the linkage between the EMS and the OMS.. Specifically, there was a potential cyber security threat of a larger user population, associated with OMS, gaining access to a critical EMS application. While the probability of these risks being realized is low, the impact is high. EMS is a mission critical system and the efficient operation of the system is dependent on its secure performance. To mitigate the security risks, a decision was reached to decouple the two systems.

As a result of decoupling EMS and OMS, the project go live dates will move to October 15, 2015 for NY-OMS, and December 15, 2015 for NE-OMS. Additional time is needed

Page 1 of 8



Resanction Request

to update requirements and design documentation, procure required hardware and build a new private network for OMS that is separate from EMS, test the new network, perform security audits, conduct testing and remediate any outstanding issues, and complete training.

The EMS and OMS projects will replace the Company's outdated systems and ensure these systems can be fully supported by vendors in the future. The Company anticipates the upgrade and replacement of these systems will provide certain benefits vital to successful operation of the electric system, including, but not limited to: improved informational security; increased functionality and situational awareness; more accurate and reliable data and reporting; and improved storm management. The projects will bring the systems in line with current industry standards, provide a platform to support future smart grid initiatives and facilitate compliance with NERC Critical Infrastructure Protection ("CIP") Security Standards.

After re-sanction in September 2013, the Company projected an in-service date for EMS in March 2014 and OMS in June 2014. However, the Company discovered several issues during project development and integration not originally anticipated during the planning process. Concerns developed regarding potential cybersecurity risks associated with EMS and the Company was concerned these risks would affect data integrity. Additionally, during project development, the Company participated in industry cybersecurity groups and was subject to NERC audits, which alerted the Company to upcoming changes in NERC CIP standards and compliance requirements. These changes created uncertainties and risk in implementation and compliance that the Company would be required to remediate prior to go-live. Software defects were also discovered and, while the vendor, ABB, made progress in correcting these defects, the defects created additional risk and schedule uncertainty. Based on these concerns, the Company determined it could not proceed with EMS/OMS integration without further analysis.

The Company performed an options assessment of the projects in April 2014 to analyze the issues discovered during development. After vetting its options, the Company decided, as indicated earlier, to decouple and separately implement the EMS and OMS systems. The Company determined that decoupling the systems was the best course of action to mitigate potential cybersecurity penetration risks and ensure that OMS operated in a secure perimeter, as required by NERC standards and rules. Decoupling was also the least cost solution to mitigate the issues discovered during project development.



Resanction Request

2.2 Summary of Projects

Project Number	Project Title	Estimate Amount (\$M)
INVP 1185	OMS/DMS Platform Standardization & Enhancement Project	79.738
Total		79.738

2.3 Prior Sanctioning History

Previously approved sanctions are attached and listed below (Newest to Oldest)

Date	Governance Body	Sanctioned Amount	Potential Project Investment	Paper Title	Sanction Type	Paper Reference Number	Tolerance
Sep 25, 2013	USSC	\$65.181M	\$65.181M	OMS/DMS Platform Standardization & Enhancement Project	Resanction	USSC-12-249	10%
May 23, 2012	USSC	\$49.200M	\$49.200M	OMS/DMS Platform Standardization & Enhancement Project	Development and Implementation	USSC-12-249	10%
Jun 25, 2009	ED&G IS Sanctioning	\$29.970M	\$29.970M	OMS DMS Standardization and Enhancement Project 23-May-2012 D-I Resanction	Design, Development and Implementation	USSC-12-249	10%

Over / Under Expenditure Analysis

Summary Analysis (\$M)	Capex	Opex	Removal	Total
Resanction Amount	67.157	12.561	0.020	79.738
Latest Approval	55.897	9.264	0.020	65.181
Change*	11.260	3.297	0.000	14.557

*Change = (Re-sanction – Amount Latest Approval)



Resanction Request

2.4 Cost Summary Table

					Current Planning Horizon						
Project Number	Project Title	Project Estimate Level (%)	Spend (\$M)	Prior Yrs	Yr. 1	Yr. 2	Yr. 3	Yr. 4	Yr. 5	Yr. 6 +	Total
					2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	
INVP 1185	OMS/DMS Platform Standardization & Enhancement Project	+/- 10%	CapEx	44.715	7.800	14.642	0.000				67.157
			OpEx	4.192	2.184	6.172	0.013			12.561	
			Removal	0.000	0.000	0.020	0.000			0.020	
			Total	48.907	9.984	20.834	0.013			79.738	
Total Project Sanction			CapEx	44.715	7.800	14.642	0.000				67.157
			OpEx	4.192	2.184	6.172	0.013				12.561
			Removal	0.000	0.000	0.020	0.000				0.020
			Total	48.907	9.984	20.834	0.013				79.738

2.5 Business Plan

Business Plan Name & Period	Project included in approved Business Plan?	Over / Under Business Plan	Project Cost relative to approved Business Plan (\$)
IS Investment Plan FY2014-15 CapEx	<input checked="" type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Over <input checked="" type="radio"/> Under <input type="radio"/> NA	2.936
IS Investment Plan FY2014-15 OpEx	<input checked="" type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Over <input checked="" type="radio"/> Under <input type="radio"/> NA	1.200
IS Investment Plan FY2015-16 CapEx	<input checked="" type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Over <input checked="" type="radio"/> Under <input type="radio"/> NA	0.258
IS Investment Plan FY2015-16 OpEx	<input checked="" type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Over <input checked="" type="radio"/> Under <input type="radio"/> NA	0.008
IS Investment Plan FY2016-17 OpEx	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input checked="" type="radio"/> Over <input type="radio"/> Under <input type="radio"/> N/A	0.013

2.6 Drivers

2.6.1 Detailed Analysis Table

The following table indicates the major key variations that account for the difference between the last sanction amount and the requested resanction amount.



Resanction Request

Detail Analysis (M's)	Over/Under Expenditure?	Amount
1. Labor	<input checked="" type="checkbox"/> Over <input type="checkbox"/> Under	\$16.10M
2. Hardware/Software	<input checked="" type="checkbox"/> Over <input type="checkbox"/> Under	\$1.170M
3. AFUDC (Allowance for Funds Used During Construction) Allocation	<input type="checkbox"/> Over <input checked="" type="checkbox"/> Under	\$1.010M
4. Risk	<input type="checkbox"/> Over <input checked="" type="checkbox"/> Under	\$1.930M
5. Others	<input checked="" type="checkbox"/> Over <input type="checkbox"/> Under	\$0.410M

2.6.2 Explanation of Key Variations

As a result of the decision to decouple the EMS and OMS, additional work is needed to update requirements and design documentation, segregate OMS from the EMS hardware, reconfigure network firewalls that had been associated with the OMS and perform regression testing.

1. Extended Labor and Timeline (\$16.100M)
 - Requirements and design documentation will be updated to reflect a decoupled OMS system. This includes a significant number of updates to the business requirements, technical requirements, detailed application design documents, and test plans.
 - Labor for the design and implementation of the new private networks to support the New York and New England OMS applications.
 - Labor costs associated with data center construction and reconfiguration to support additional network and server infrastructure.
 - Testing of the application and network will be required once the new OMS network is complete to ensure proper operation of the standalone OMS.
 - Labor by ABB to support the decoupling of EMS and OMS and set up the OMS application on the new OMS network.
 - Increase in labor due to expanded training program; Field feedback resulted in increased number of trainees, full cost of training now being borne by the project.
 - Total labor costs are somewhat offset by the transfer of labor costs associated with dedicating the network to EMS. The original planned network was shared between the OMS and EMS applications. Since the original network will be dedicated to EMS going forward, the portion of the labor costs charged to OMS to date for establishing that network will be transferred to the EMS project.
2. Increased Hardware/Software costs are associated with the physical creation of new private networks to support both the New York and New England OMS applications as well as the extension of the schedule. Costs include purchase of over 70 switches and firewalls, 40 servers, and 140 workstations as well as increased support and maintenance costs due to schedule extension. Total



Resanction Request

increased costs are somewhat offset by the transfer of Hardware/Software costs related to dedication of the original network to EMS. (\$1.170M)

3. Decrease in AFUDC due to decrease in rates from 2013 resanction forecast (\$-1.010M)
4. Reduced project risk margin from 3 months to 1 month (-\$1.930M)
5. Other costs include overheads and travel (\$0.410M)

2.7 If cost > approved Business Plan how will this be funded?

Re-allocation of funds within the portfolio will be managed by the IS Relationship Manager with the Planning Analyst assistance to meet jurisdictional budgetary, statutory and regulatory requirements.

2.8 Key Milestones

Milestone	Target Date: (Month/Year)
Start Up	Oct 2009
Begin Requirements and Design	Dec 2009
Begin Development and Implementation	May 2010
Move to Production - NY	Oct 2015
Move to Production - NE	Dec 2015
Project Complete	Dec 2015
Project Closure	May 2016

2.9 Next Planned Sanction Review

Date (Month/Year)	Purpose of Sanction Review
May 2016	Closure

3 Statements of Support

3.1 Supporters

The supporters listed have aligned their part of the business to support the project.

Department	Individual	Responsibilities	Title
IS Business Relationship Mgmt	Aman Aneja	1. Review & Endorse IS Investment Proposals 2. Ensure IS Stakeholders approvals are obtained	IS Portfolio Relationship Manager
IS Finance	Chip Benson	Finance Director	Finance Director
IS Regulatory	Wayne Watkins	Regulatory Director	Regulatory Director
US Business Sponsor	John Spink	VP of the business area	Vice President Control Center Operations



Resanction Request

3.2 Reviewers

The reviewers have provided feedback on the content/language of the paper

Function	Individual	Area
Finance	Chip Benson	All
Regulatory	Peter Zschokke	All
Jurisdictional Delegate(s)	Jim Patterson	New England – Electric
	Mark Harbaugh	New York- Electric
	Carol A. Sedewitz	FERC
Procurement	Art Curran	All

Resanction Request



4 Decisions

The US Sanctioning Committee (USSC) at a meeting held on May 13, 2015.

- (a) APPROVED this paper and the investment of \$79.738M and a tolerance of +/- 10%.
- (b) APPROVED the RTB Impact of \$34.917M total for 5 years for combined NY and NE.
- (c) NOTED that Jane Becker is the Project Manager and has the approved financial delegation.

Signature

A handwritten signature in black ink, appearing to read "Margaret Smyth".

Date

6/15/15

Margaret Smyth

US Chief Financial Officer

Chair, US Sanctioning Committee



Resanction Request

Title:	Design & Implement Two Energy Management Systems in New England and Upstate New York T&D	Sanction Paper #:	USSC-12-248 v3
Project #:	INVP 1043: EMS NE S00281 INVP 1041: EMS NY C28802	Sanction Type:	Resanction
Operating Company:	National Grid USA Svc. Co.	Date of Request:	December 10, 2014
Author / NG Representative:	Diane Beard / Mike Gerolamo	Sponsor:	John Spink, Vice President Control Center Operations
Utility Service:	IT	Project Manager:	Joseph Farella

1 Executive Summary

This paper requests the resanction of INVP 1041 & 1043 in the amount \$90.280M with a tolerance of +/- 10% for the purposes of Development & Implementation.

This sanction amount is \$90.280M broken down into:

\$83.306M Capex
\$ 6.773M Opex
\$ 0.201M Removal

Note the previously requested sanction amount of \$70.785M.

2 Resanction Details

2.1 Project Summary

This resanction is in regard to the planned replacement of the two regional existing Energy Management Systems (EMS), in New England (NE) and Upstate New York (NY).

In March 2014 National Grid commissioned a review of the EMS / Outage Management System (OMS) program, to better understand potential risks of the solution design with respect to the industries maturing understanding of cyber security. Significant risks associated with cyber security were identified. Specifically, there is a potential cyber security threat of a larger user population, associated with OMS, gaining access to a critical EMS application. While the probability of these risks being realized is low, the impact is very high. EMS is a mission critical system and the efficient operation of the system is highly dependent on its performance.



Resanction Request

As a result of decoupling EMS and OMS and remediating Northeast Power Coordinating Council (NPCC) security recommendations, the project go live dates will move to April 1, 2015 for NY-EMS, and September 15, 2015 for NE-EMS. Additional time is required to update requirements and design documentation, remove OMS configurations from the EMS hardware, reconfigure network firewalls that had been associated with the OMS, continue to perform regression testing and remediate any outstanding issues. The additional delay in the NE EMS cutover may be subject to delay due to the inability to commission during peak summer months.

2.2 Summary of Projects

Project Number	Project Type (Elect only)	Project Title	Estimate Amount (\$M)
INVP 1041	Project type	NY EMS Replacement	50.171
INVP 1043	Project type	NE EMS Replacement	40.109
Total			90.280

2.3 Prior Sanctioning History

Previously approved sanctions are attached and listed below (Newest to Oldest)

Date	Governance Body	Sanctioned Amount	Potential Project Investment	Paper Title	Sanction Type	Tolerance
Sep 2013	USSC	\$70.785	\$70.785	INVP 1041_1043 Design & Implement Two Energy Management Systems in New England and Upstate New York T&D	Re-sanction	10%
May 2012	USSC	\$51.6M	\$51.6M	Same	Re-sanction	10%
Mar 2009	TIC, ED&G Executive Committee, IS PRM	\$34.7M	\$34.7M	Same	Sanction	10%



Resanction Request

Over / Under Expenditure Analysis

Summary Analysis (\$M)	Capex	Opex	Removal	Total
Resanction Amount	83.306	6.773	0.201	90.280
Latest Approval	66.111	4.524	0.150	70.785
Change*	17.195	2.249	0.051	19.495

2.4 Cost Summary Table

					Current Planning Horizon						
Project Number	Project Title	Project Estimate Level (%)	Spend (\$M)	Prior Yrs	Yr. 1 2014/15	Yr. 2 2015/16	Yr. 3 2016/17	Yr. 4 2017/18	Yr. 5 2018/19	Yr. 6 + 2019/20	Total
INVP 1041	NY EMS Replacement	+/- 10%	CapEx	35.711	9.869	1.232					46.812
			OpEx	1.671	0.875	0.687				3.233	
			Removal			0.126				0.126	
			Total	37.382	10.744	2.045				50.171	
INVP 1043	NE EMS Replacement	+/- 10%	CapEx	21.852	9.469	5.173					36.494
			OpEx	1.426	1.067	1.047				3.540	
			Removal			0.075				0.075	
			Total	23.278	10.536	6.295				40.109	
Total Project Sanction			CapEx	57.563	19.338	6.405					83.306
			OpEx	3.097	1.942	1.734					6.773
			Removal			0.201					0.201
			Total	60.660	21.280	8.340					90.280

2.5 Business Plan

IS Investment Plan FY2014-15

Business Plan Name & Period	Project included in approved Business Plan?	Over / Under Business Plan	Project Cost relative to approved Business Plan (\$)
IS Investment Plan FY2014-15 CapEx	<input checked="" type="radio"/> Yes <input type="radio"/> No	<input checked="" type="radio"/> Over <input type="radio"/> Under <input type="radio"/> NA	11.760
IS Investment Plan FY2014-15 OpEx	<input checked="" type="radio"/> Yes <input type="radio"/> No	<input checked="" type="radio"/> Over <input type="radio"/> Under <input type="radio"/> NA	0.442
IS Investment Plan FY2015-16 CapEx	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input checked="" type="radio"/> Over <input type="radio"/> Under <input type="radio"/> NA	6.405
IS Investment Plan FY2015-16 OpEx	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input checked="" type="radio"/> Over <input type="radio"/> Under <input type="radio"/> NA	1.935



Resanction Request

2.6 Drivers

2.6.1 Detailed Analysis Table

The following table indicates the major key variations that account for the difference between the last sanction amount and the requested resanction amount.

Detail Analysis (M's)	Over/Under Expenditure?	Amount
1. Labor	<input checked="" type="checkbox"/> Over <input type="checkbox"/> Under	\$13.223M
2. Hardware/Software	<input checked="" type="checkbox"/> Over <input type="checkbox"/> Under	\$6.407M
3. AFUDC (Allowance for Funds Used During Construction) Allocation	<input checked="" type="checkbox"/> Over <input type="checkbox"/> Under	\$2.128M
4. Risk	<input type="checkbox"/> Over <input checked="" type="checkbox"/> Under	\$2.881M
5. Others	<input checked="" type="checkbox"/> Over <input type="checkbox"/> Under	\$0.618M

For a NY/NE breakdown reference Appendix 5.2 Detailed Analysis Table by Region.

2.6.2 Explanation of Key Variations

As a result of the decision to decouple the EMS and OMS, additional work is required to update requirements and design documentation, segregate OMS from the EMS hardware, reconfigure network firewalls that had been associated with the OMS and perform regression testing.

1. Extended Labor and Timeline (\$13.223M)
 - Requirements and design documentation will be updated to reflect a decoupled system. This includes a significant number of updates to the business requirements, technical requirements, detailed application design documents, and test plans.
 - Physical decoupling of OMS from EMS will include installing the Native Tagging function within the EMS as well as application security changes.
 - Network reconfiguration will include updates to the firewall rules, switches and routers to eliminate access to the EMS from the OMS application.
 - Regression testing of the application and network will be required once the physical decoupling and network reconfiguration is complete to ensure proper operation of the standalone EMS.
 - Transfer of labor costs associated with EMS taking ownership of the network. The original network was to shared between the OMS and EMS applications. Since the the network will be owned solely by EMS going forward, the portion of the labor costs that have charged to OMS to date for establishing the network will be transferred to the EMS project.
 - Additional network configuration work was required to apply industry experience to firewall rules. This added work extended the project scope, and

Page 4 of 8



Resanction Request

was a result of the NPCC recommendations provided to National Grid NY & NE on July 23, 2014 and August 6, 2014. The NPCC recommendations were to:

- i. Breakdown complex rules
 - ii. Eliminate use of VLAN and subnet and replace with IP based rules
 - iii. Eliminate unused rules and constrain existing rules as appropriate.
2. Transfer of Hardware/Software costs related to EMS taking ownership of the network, scope changes required additional equipment, EMS taking ownership of Network support and maintenance, ABB operating upgrade (\$6.407M)
3. Increase in AFDUC from higher overall costs and a longer time to implement. (\$2.128M)
4. Reduced risk from 3 months to 1 month -(\$2.881M)
5. Others includes overheads and travel (\$0.618M)

2.7 If cost > approved Business Plan how will this be funded?

Re-allocation of funds within the portfolio will be managed by the IS Relationship Manager with the Planning Analyst assistance to meet jurisdictional budgetary, statutory and regulatory requirements.

2.8 Key Milestones

Milestone	Target Date: (Month/Year)
Start Up	Oct 2009
Begin Requirements and Design	Dec 2009
Begin Development and Implementation	May 2010
Move to Production - NY	Apr 2015
Move to Production - NE	Sep 2015
Project Complete	Sep 2015
Project Closure	Dec 2015

2.9 Next Planned Sanction Review

Date (Month/Year)	Purpose of Sanction Review
Dec 2015	Closure



Resanction Request

3 Statements of Support

3.1 Supporters

The supporters listed have aligned their part of the business to support the project.

Department	Individual	Responsibilities	Title
IS Business Relationship Mgmt	Aman Aneja	1. Review & Endorse IS Investment Proposals 2. Ensure IS Stakeholders approvals are obtained	IS Portfolio Relationship Manager
IS Finance	Chip Benson	Finance Director	Finance Director
IS Regulatory	Wayne Watkins	Regulatory Director	Regulatory Director
US Business Sponsor	John Spink	VP of the business area	Vice President Control Center Operations

3.2 Reviewers

The reviewers have provided feedback on the content/language of the paper

Function	Individual	Area
Finance	Chip Benson	All
Regulatory	Peter Zschokke	All
Jurisdictional Delegate(s)	Jim Patterson	New England – Electric
	Mark Harbaugh	New York- Electric
	Carol A. Sedewitz	FERC
Procurement	Art Curran	All

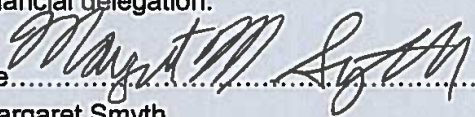
Resanction Request



4 Decisions

The US Sanctioning Committee (USSC) at a meeting held on December 10, 2014.

- (a) APPROVED this paper and the investment of \$90.256M and a tolerance of +/- 10%.
- (b) APPROVED the RTB Impact of \$30.673M total for 5 years for combined NY and NE.
- (c) NOTED that Joseph Farella is the Project Manager and has the approved financial delegation.

Signature  Date 1/5/15
Margaret Smyth
US Chief Financial Officer
Chairman, US Sanctioning Committee



Resanction Request

5 Appendices

5.1 Project Funding Breakdown

N/A

5.2 Detailed Analysis Table by Region

Below is a detailed breakdown by region of the combined Detailed Analysis Table shown in Section 2.6.1 above.

Detail Analysis by Region	NE	NY	TOTAL (\$M)
Labor	(8.973)	(4.250)	(13.223)
Hardware/Software	(2.565)	(3.842)	(6.407)
AFUDC	0.279	(2.407)	(2.128)
Risk	1.331	1.550	2.881
Other	(0.158)	(0.460)	(0.618)



US Sanction Paper

Title:	Cross Company Enhancements	Sanction Paper #:	USSC-15-197+
Project #:	INVP 4172	Sanction Type:	Sanction
Operating Company:	National Grid USA Svc. Co.	Date of Request:	October 14, 2015
Author / NG Representative:	Diane Beard / Kevin Kolakowski	Sponsor:	Doneen Hobbs, VP Services Delivery Center
Utility Service:	IT	Project Manager:	Michael Pawlowski

1 Executive Summary

1.1 Sanctioning Summary

This paper requests sanction of INVP 4172 in the amount \$13.510M with a tolerance of +/- 10% (for remaining spend) for the purposes of Full Implementation.

This sanction amount is \$13.510M broken down into:

\$ 12.855M Capex
\$ 0.655M Opex
\$ 0.000M Removal

A portion of the above sanction request includes \$6.159M (\$5.809M-Capex; \$0.350M-Opex) that was previously funded and spent under project INVP2583 CRIS Migration. This previously-sanctioned amount will be transferred to this project as explained in Section 3.1 of the paper.

This sanction amount being transferred from INVP 2583 is \$6.159M broken down into:

\$ 5.809M Capex
\$ 0.350M Opex
\$ 0.000M Removal

1.2 Brief Description

This project will harden the IT infrastructure landscape, and deliver regulatory required features as well as tactical initiatives for National Grid's Gas and Electric customers in New York and New England. The key elements of the project include: Process enhancements to optimize operations; delivery of enhanced features and services to a wider customer base; and retirement of aged infrastructure to reduce risk and enhance interface points for key processes (Field Operations, Finance/Revenue reporting, Retail choice, etc.). Update for Windows 7 compliance for all CSS end users, as Windows XP is no longer supported by Microsoft. The interface will be updated from the old PeopleSoft interface translation to the new SAP accounting structure. CSS System Enhancements and mandates previously



US Sanction Paper

approved by the "INVP 2583 CRIS Migration Project" steering board. Scope also includes Energy Service Companies Purchase of Receivable report enhancements.

1.3 Summary of Projects

Project Number	Project Title	Estimate Amount (\$M)
INVP 4172	Cross Company Enhancements	13.510
Total		13.510

1.4 Associated Projects

Project Number	Project Title	Estimate Amount (\$M)
INVP 2583	CRIS Migration	6.159
Total		6.159

1.5 Prior Sanctioning History

N/A

1.6 Next Planned Sanction Review

Date (Month/Year)	Purpose of Sanction Review
June 2016	Project Closure

1.7 Category

Category	Reference to Mandate, Policy, or NPV Assumptions
<input type="radio"/> Mandatory	<ul style="list-style-type: none"> Support US Customer Systems road map and application upgrade strategy required to replace this aging system.
<input checked="" type="radio"/> Policy- Driven	<ul style="list-style-type: none"> 16 NY Codes, Rules and Regulations (NYCRR) Part 261 –Home Energy Fair Practices Act (HEFPA)
<input type="radio"/> Justified NPV	<ul style="list-style-type: none"> KeySpan Energy Delivery LI (KEDLI) Tariff; PSC #1 Gas-Leaf 50.1, Case C.06-G1186

1.8 Asset Management Risk Score

Asset Management Risk Score: 37

US Sanction Paper



Primary Risk Score Driver: (Policy Driven Projects Only)

☒ Reliability ☐ Environment ☐ Health & Safety ☐ Not Policy Driven

1.9 Complexity Level

☐ High Complexity ☒ Medium Complexity ☐ Low Complexity ☐ N/A

Complexity Score: 19

1.10 Process Hazard Assessment

A Process Hazard Assessment (PHA) is required for this project:

☐ Yes ☒ No

1.11 Business Plan

Business Plan Name & Period	Project included in approved Business Plan?	Over / Under Business Plan	Project Cost relative to approved Business Plan (\$)
IS Investment Plan 16/17	<input checked="" type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Over <input checked="" type="radio"/> Under <input type="radio"/> N/A	\$0.510M

1.12 If cost > approved Business Plan how will this be funded?

Re-allocation of funds within the portfolio will be managed by the IS Relationship Manager with the Planning Analyst assistance to meet jurisdictional budgetary, statutory and regulatory requirements. Additionally, IS has approval from senior company leadership to overspend its budget by \$0.601M in order to complete the Energy Service Companies/Purchase of Receivable remediation sponsored by Chris McConnachie.

US Sanction Paper



1.13 Current Planning Horizon

\$M	Prior Yrs	Current Planning Horizon						Total
		Yr. 1 2014/15	Yr. 2 2015/16	Yr. 3 2016/17	Yr. 4 2017/18	Yr. 5 2018/19	Yr. 6+ 2019/20	
CapEx	0.000	3.715	8.723	0.417	0.000	0.000	0.000	12.855
OpEx	0.000	0.334	0.228	0.093	0.000	0.000	0.000	0.655
Removal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CIAC/Reimbursement	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	0.000	4.049	8.951	0.510	0.000	0.000	0.000	13.510

1.14 Key Milestones

Milestone	Target Date: (Month/Year)
Start Up	Apr 2014
Requirements and Design	Jun 2014
Begin Development and Implementation	Feb 2015
Project Sanction	Oct 2015
Begin User Acceptance Testing	Dec 2015
Move to Production	Apr 2016
Project Complete	May 2016
Project Closure	Jun 2016

1.15 Resources, Operations and Procurement

Resource Sourcing			
Engineering & Design Resources to be provided	<input checked="" type="checkbox"/> Internal	<input checked="" type="checkbox"/> Contractor	
Construction/Implementation Resources to be provided	<input checked="" type="checkbox"/> Internal	<input checked="" type="checkbox"/> Contractor	
Resource Delivery			
Availability of internal resources to deliver project:	<input type="radio"/> Red	<input checked="" type="radio"/> Amber	<input type="radio"/> Green
Availability of external resources to deliver project:	<input type="radio"/> Red	<input type="radio"/> Amber	<input checked="" type="radio"/> Green
Operational Impact			
Outage impact on network system:	<input type="radio"/> Red	<input type="radio"/> Amber	<input checked="" type="radio"/> Green
Procurement Impact			



US Sanction Paper

Procurement impact on network system:	<input type="radio"/> Red	<input type="radio"/> Amber	<input checked="" type="radio"/> Green
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1.16 Key Issues (include mitigation of Red or Amber Resources)

1	Availability of National Grid resources with the right skill set to deliver within timeframe. Working with business departments to secure National Grid internal resources for testing.
---	---

1.17 Climate Change

Contribution to National Grid's 2050 80% emissions reduction target:	<input checked="" type="radio"/> Neutral	<input type="radio"/> Positive	<input type="radio"/> Negative
Impact on adaptability of network for future climate change:	<input checked="" type="radio"/> Neutral	<input type="radio"/> Positive	<input type="radio"/> Negative

1.18 List References

1	INVP 4172-Total Cost of Ownership Log v6.xls
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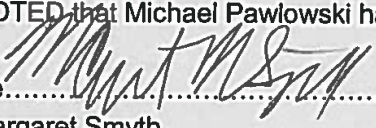
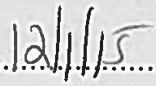
US Sanction Paper



2 Decisions

The US Sanctioning Committee (USSC) at a meeting held on October 14, 2015:

- (a) APPROVED this paper and the investment of \$13.510M and a tolerance of +/- 10%.
- (b) APPROVED the RTB Impact of \$0.197M for 5-years.
- (c) NOTED that Michael Pawlowski has the approved financial delegation.

Signature..........Date..........

Margaret Smyth
US Chief Financial Officer
Chair, US Sanctioning Committee

US Sanction Paper



3 Sanction Paper Detail

Title:	Cross Company Enhancements	Sanction Paper #:	USSC-15-197+
Project #:	INVP 4172	Sanction Type:	Sanction
Operating Company:	National Grid USA Svc. Co.	Date of Request:	October 14, 2015
Author / NG Representative:	Diane Beard / Kevin Kolakowski	Sponsor:	Doneen Hobbs, VP Services Delivery Center
Utility Service:	IT	Project Manager:	Michael Pawlowski

3.1 **Background**

This project provides for IT infrastructure investments needed to satisfy certain regulatory requirements and implement tactical initiatives for the benefit of National Grid customers in New York and New England. The project carries forward some of the elements of the CRIS Migration project (INVP 2583), which was placed on hold in May 2015.¹ The Company, however, determined that the following three workstreams from project INVP 2583 would provide value at this time and are in scope for this project:

- Update the CSS Customer system base architecture to Windows 7 compliant so all CSS end users can migrate to Windows 7 (Windows XP is no longer supported by Microsoft).
- Update the current interface between CSS and SAP for revenue transactions (that uses the old PeopleSoft accounting) to use the SAP accounting information. This will address a financial material weakness identified by the auditors.
- Deliver the CSS System Enhancements and mandates previously approved by the "INVP 2583 CRIS Migration Project" steering board that will still benefit operating companies in CSS:
 - Process enhancements to bolster/tighten business controls across Retail Choice and Customer Meter Services functional areas
 - Enhance Customer systems & associated interfaces to support expansion of remote metering ID (ERT) from 9 to 10 digits per industry standards
 - Verify Batch Refresh for all CSS companies
 - Improve ESCO POR reporting to ensure stricter business controls on Marketer Billing, EDI, and Financial transactions
- Energy Service Companies Purchase of Receivable report enhancements.

¹ Project INVP 2583 was placed on hold after extensive review by IS Leadership, with agreement by the Jurisdictional Presidents. The project was suspended in a manner that would enable a restart in the future with minimal effort if determined necessary. Additionally, a comprehensive review was conducted to determine if any requirements within the CRIS Migration project could provide immediate benefits for the existing companies.

US Sanction Paper



3.2 Drivers

The project provides the following benefits for gas and electric customers in both our Massachusetts and New York territories:

- **Regulatory Compliance and Reputation:**
 - Enhance financial reporting by eliminating processes requiring manual data integrity measures.((16 NY Codes, Rules and Regulations (NYCRR) Part 261 –Home Energy Fair Practices Act (HEFPA))
- Enhance Retail Choice to ensure ESCO customers are billed accurately and consistently without manual data processing.(KeySpan Energy Delivery LI (KEDLI) Tariff; PSC #1 Gas-Leaf 50.1, Case C.06-G1186)
- **Safety:**
 - Improve CSS to retain mandated collection policy auto-generated work orders like posting and dormant reviews for field worker safety
- **Customer Satisfaction:**
 - Improve communications between Contact Center and Customer Meter Service organization (CMS groups) to assure proper staff is assigned to work order types.
- Reduce occurrence of ESCO no Bills and billing errors.
- More efficient implementation of regulatory and business requirements.
- All enhancements for New York and Massachusetts customers are being done concurrently in one project, which improves the cost efficiencies for each regulatory area.

3.3 Project Description

National Grid IS will work with the Solution Delivery Partners (IBM and Wipro) to perform the following:

- Streamline select business processes and regulatory requirements supporting Accounts Processing, Contact Center, and Customer Meter Service (CMS) organizations across the CSS & CRIS Systems.
- Identify and enhance interfaces from CSS / CRIS to applications to ensure
 - Further automate & optimize select collections & billing processes in line with the newly issued regulatory mandates
 - Enhanced Field order/ service order processing
 - Strict business controls of Marketer Billing, EDI, and Financial transactions



US Sanction Paper

The scope of this project will be limited to the items listed in the “In Scope Items” section below.

In Scope Items:

Item	MCR ID	Management Change Request (MCR*) Title
1	35+ MCRs	CSS and CRIS System Enhancements
2	3 MCRs	ERT ID 10 Digit Upgrade
3	3 MCRs	Verify Batch Refresh for all CSS companies
4	6 MCRs	Upgrade Foundation Controls Processing Gateway and associated infrastructure components
5	26 MCRs	PeopleSoft code block changeout to SAP code block
6	14 MCRs	ESCO POR reporting to ensure strict business controls on Marketer Billing, EDI, and Financial transactions

* A Management Change Request (MCR) is a request to make a system change to a National Grid Customer System.

3.4 Benefits Summary

The project provides the following benefits:

- Business process improvements for the customer care function, account management, customer operations, billing, collections, and payment processing for both New York and Massachusetts gas customers.
- Customers to benefit from enhanced web capabilities, bill presentment, and self service IVR.
- Ability to integrate call centers for back-up and emergencies.
- More efficient implementation of regulatory and business requirements.

3.5 Business and Customer Issues

There are no significant business issues beyond what has been described elsewhere.

3.6 Alternatives

Alternative 1: Perform Tasks Manually Using Spreadsheets, etc.

The manual use of spreadsheets not linked directly to the CSS system is inefficient and error prone. This manual process is not sustainable and increases chances of not being able to meet customer and regulatory obligations, which will put National Grid at a significantly higher risk of non-compliance.

Alternative 2: Defer Project

Solution was rejected: Deferring the project would continue the risk associated with the age of the foundation control processing gateway, and would delay the benefits that would be realized through this project.



US Sanction Paper

3.7 Safety, Environmental and Project Planning Issues

There are no significant issues beyond what has been described elsewhere.

3.8 Execution Risk Appraisal

Number	Detailed Description of Risk / Opportunity	Probability	Impact		Score		Strategy	Pre-Trigger Mitigation Plan	Residual Risk	Post Trigger Mitigation Plan
			Cost	Schedule	Cost	Schedule				
1	Non-availability of business resources to support in sync with the IS project plan	2	3	3	6	6	Accept	PM actively coordinates with the business and include key personnel in the TCO Log	Project timeline extends	Re-adjust the schedule to compensate
2	Conflicts between code for this project and other ongoing projects on the same system (ie FCP Upgrade, NE Gas Leaks, NYS pipeline, etc)	4	3	4	12	16	Mitigate	PM to coordinate with other project PM to ensure that there is a synchronization of tasks, such that neither project is adversely impacted	Project timeline extends	Manage within the constraints of the schedules of both projects.
3	Non-availability of Ventyx (MDSI) resources to support in sync with the IS project plan	2	3	3	6	6	Accept	PM actively coordinates with the business and include key personnel in the TCO Log	Project timeline extends	Re-adjust the schedule to compensate

3.9 Permitting

3.10 Investment Recovery

3.10.1 Investment Recovery and Regulatory Implications

Recovery will occur at the time of the next rate case for any operating company receiving allocations of these costs.

3.10.2 Customer Impact

3.10.3 CIAC / Reimbursement



US Sanction Paper

3.11 Financial Impact to National Grid

3.11.1 Cost Summary Table

Project Number	Project Title	Project Estimate Level (%)	Spend (\$M)	Prior Yrs	Current Planning Horizon						Total
					Yr. 1	Yr. 2	Yr. 3	Yr. 4	Yr. 5	Yr. 6 +	
					2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	
INVP 4172	Cross Company Enhancements	+/- 10%	CapEx	0.000	3.715	8.723	0.417	0.000	0.000	0.000	12.855
			OpEx	0.000	0.334	0.228	0.093	0.000	0.000	0.000	0.655
			Removal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			Total	0.000	4.049	8.951	0.510	0.000	0.000	0.000	13.510
Total Project Sanction			CapEx	0.000	3.715	8.723	0.417	0.000	0.000	0.000	12.855
			OpEx	0.000	0.334	0.228	0.093	0.000	0.000	0.000	0.655
			Removal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			Total	0.000	4.049	8.951	0.510	0.000	0.000	0.000	13.510

3.11.2 Project Budget Summary Table

Project Costs per Business Plan

\$M	Prior Yrs	Current Planning Horizon						Total
		Yr. 1	Yr. 2	Yr. 3	Yr. 4	Yr. 5	Yr. 6 +	
		2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	
CapEx	0.000	3.889	5.900	0.000	0.000	0.000	0.000	9.789
OpEx	0.000	0.350	0.000	0.000	0.000	0.000	0.000	0.350
Removal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Cost in Bus. Plan	0.000	4.239	5.900	0.000	0.000	0.000	0.000	10.139

Variance (Business Plan-Project Estimate)

\$M	Prior Yrs	Current Planning Horizon						Total
		Yr. 1	Yr. 2	Yr. 3	Yr. 4	Yr. 5	Yr. 6 +	
		2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	
CapEx	0.000	0.174	(2.823)	(0.417)	0.000	0.000	0.000	(3.066)
OpEx	0.000	0.016	(0.228)	(0.093)	0.000	0.000	0.000	(0.305)
Removal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Cost in Bus. Plan	0.000	0.190	(3.051)	(0.510)	0.000	0.000	0.000	(3.371)

3.11.3 Cost Assumptions

This estimate was developed in 2015 using the standard IS estimating methodology. The accuracy level of estimate for each project is identified in table 3.11.1

3.11.4 Net Present Value / Cost Benefit Analysis

This is not an NPV project.



US Sanction Paper

3.11.5 Additional Impacts

None

3.12 Statements of Support

3.12.1 Supporters

The supporters listed have aligned their part of the business to support the project.

Department	Individual	Responsibilities	Title
IS Business Relationship Mgmt	Jeff Dailey	1. Review & Endorse IS Investment Proposals 2. Ensure IS Stakeholders approvals are obtained	IS Portfolio Relationship Manager
IS Finance	Chip Benson	Finance Director	Finance Director
IS Regulatory	Wayne Watkins	Regulatory Director	Regulatory Director
US IS Program Delivery	Deborah Rollins	Review & Endorse IS Investment Proposals	US IS Portfolio Delivery Manager
US Business Sponsor	Doneen Hobbs	VP of the business area	VP Services Delivery Center



US Sanction Paper

3.12.2 Reviewers

The reviewers have provided feedback on the content/language of the paper. Please see the IS Stakeholder Checklist summary contained in the TCO Log file.

Function	Individual	Area
Finance	Chip Benson	All
Regulatory	Peter Zschokke	All
Jurisdictional Delegate(s)	Carol Sedewitz	FERC
	Mark Harbaugh	Electric - NY
	James Patterson	Electric - NE
	Laurie Brown	Gas – NY
	David G. Iseler	Gas – NE
Procurement	Art Curran	All



US Sanction Paper

4 Appendices

4.1 Sanction Request Breakdown by Project

N/A

4.2 Other Appendices

4.2.1 Project Cost Breakdown

Project Cost Breakdown			
Cost Category	sub-category	\$ (millions)	Name of Firm(s) providing
Personnel	NG Resources	0.109	
	SDC Time & Materials	9.474	IBM, Wipro
	SDC Fixed-Price	-	
	All other personnel	2.085	
	TOTAL Personnel Costs	11.667	
Hardware	Purchase	-	
	Lease	0.062	
Software		0.313	
Risk Margin		0.460	
Other		1.007	
TOTAL Costs		13.510	

4.2.2 Benefiting Operating Companies

The following companies will benefit from this project as defined in section 3.3. The allocation of these benefits will be based upon the number of customers and the changes needed for each customer system.

Benefiting Operating Companies Table:

Operating Company Name	Business Area	State
Niagara Mohawk Power Corp.	Electric Distribution	NY
Massachusetts Electric	Electric Distribution	MA
Narragansett Electric Company	Electric Distribution	RI
KeySpan Energy Delivery Long Island	Gas Distribution	NY
Niagara Mohawk Power Corp. - Gas	Gas Distribution	NY
Narragansett Gas Company	Gas Distribution	RI
KeySpan Energy Delivery New York	Gas Distribution	NY
Boston Gas Company	Gas Distribution	MA
Colonial Gas Company	Gas Distribution	MA



US Sanction Paper

4.2.3 IS Ongoing Operational Costs (RTB):

This project will increase IS ongoing operations support costs as per the following table. These are also known as Run the Business (RTB) costs.

Summary Analysis of RTB Costs							
All figures in \$ millions	Yr. 1 14/15	Yr. 2 15/16	Yr. 3 16/17	Yr. 4 17/18	Yr. 5 18/19	Yr. 6+	Total
Forecast of RTB Impact							
RTB if Status Quo Continues	-	-	-	-	-	-	-
RTB if Project is Implemented	-	0.007	0.085	0.050	0.017	0.038	0.197
Net change in RTB	-	0.007	0.085	0.050	0.017	0.038	0.197
RTB Variance Analysis (if Project is Implemented)							
Net Δ RTB funded by Plan(s)	-	-	-	-	-	-	-
Variance to Plan	-	0.007	0.085	0.050	0.017	0.038	0.197
Total RTB Costs - by Cost Type (if Project is Implemented)							
App.Sup. - SDC 1	-	-	0.036	0.036	0.012	0.027	0.111
App.Sup. - SDC 2	-	-	0.003	-	-	-	0.003
App.Sup. - other	-	-	-	-	-	-	-
SW maintenance	-	0.003	0.022	0.014	0.005	0.011	0.055
SaaS	-	-	-	-	-	-	-
HW support	-	0.005	0.024	-	-	-	0.029
Other: IS	-	-	0.000	0.000	0.000	0.000	0.000
All IS-related RTB (sub-Total)	-	0.007	0.085	0.050	0.017	0.038	0.197
Business Support (sub-Total)	-	-	-	-	-	-	-
Total RTB Costs	-	0.007	0.085	0.050	0.017	0.038	0.197



US Sanction Paper

Title:	US Desktop Refresh	Sanction Paper #:	USSC-14-273
Project #:	INVP 2927 \$1.546M (OpEx) \$8.413M (CapEx)	Sanction Type:	Sanction
Operating Company:	National Grid USA Svc. Co.	Date of Request:	December 10, 2014
Author/ NG Representative:	Mayumi Okada / Ella Weisbord	Sponsor:	Max Currie, Global Head of IS Service Delivery
Utility Service:	IT	Project Manager:	Andy Bacon

1 Executive Summary

1.1 Sanctioning Summary

This paper requests sanction of INVP 2927 in the amount \$9.959M with a tolerance of +/-10% for the purposes of a Full Project.

This sanction amount is \$9.959M broken down into:

\$8.413M	CapEx
\$1.546M	OpEx
\$0.000M	Removal

1.2 Project Summary

This policy-driven project will replace or upgrade more than 6,000 computers in the United States. These computers were out of scope for the original IS Transformation project, because at the time of contract negotiations these were less than 3 years old. The benefits to upgrading the older units are: (a) reduction of support issues related to aging and (b) the migration of many of the remaining computers, identified in the original IS Transformation, that are still not using Microsoft (MS) Windows 7 Operating System (OS). MS Windows 7 OS is the current standard MS Windows platform across National Grid.

1.3 Summary of Projects

Project Number	Project Title	Estimate Amount (\$M)
INVP 2927	US Desktop Refresh	9.959
Total		9.959

US Sanction Paper



1.4 Associated Projects

Project Number	Project Title	Estimate Amount (\$M)
		0.000
Total		0.000

1.5 Prior Sanctioning History

Date	Governance Body	Sanctioned Amount	Potential Project Investment	Paper Title	Sanction Type	Tolerance

1.6 Next Planned Sanction Review

Date (Month/Year)	Purpose of Sanction Review
Feb 2016	Closure

1.7 Category

Category	Reference to Mandate, Policy, or NPV Assumptions
<input type="radio"/> Mandatory <input checked="" type="radio"/> Policy- Driven <input type="radio"/> Justified NPV	This project is aligned with National Grid's corporate efforts to transition its user base to the currently supported Microsoft operating system of Window 7, unless key applications being used only function in the older, unsupported by Microsoft XP environment.

1.8 Asset Management Risk Score

Asset Management Risk Score: 37

Primary Risk Score Driver: (Policy Driven Projects Only)

☒ Reliability
 ☐ Environment
 ☐ Health & Safety
 ☐ Not Policy Driven



US Sanction Paper

1.9 Complexity Level

☐ High Complexity ☒ Medium Complexity ☐ Low Complexity ☐ N/A

Complexity Score: 22

1.10 Process Hazard Assessment

A Process Hazard Assessment (PHA) is required for this project:

☐ Yes ☒ No

1.11 Business Plan

Business Plan Name & Period	Project included in approved Business Plan?	Over / Under Business Plan	Project Cost relative to approved Business Plan (\$)
IS Investment Plan, FY14/15	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input checked="" type="radio"/> Over <input type="radio"/> Under <input type="radio"/> NA	\$2.702M

1.12 If cost > approved Business Plan how will this be funded?

Re-allocation of funds within the portfolio will be managed by the Business Support Manager to meet jurisdictional budgetary, statutory and regulatory requirements.

1.13 Current Planning Horizon

\$M	Prior Yrs	Current Planning Horizon						Total
		Yr. 1 2014/15	Yr. 2 2015/16	Yr. 3 2016/17	Yr. 4 2017/18	Yr. 5 2018/19	Yr. 6 + 2019/20	
CapEx	0.000	6.836	1.577	0.000	0.000	0.000	0.000	8.413
OpEx	0.000	1.306	0.240	0.000	0.000	0.000	0.000	1.546
Removal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CIAC/Reimbursement	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	0.000	8.142	1.817	0.000	0.000	0.000	0.000	9.959



US Sanction Paper

1.14 Key Milestones

Milestone	Target Date: (Month/Year)
Start Up	Jun 2014
Begin Requirements and Design	Dec 2014
Begin Development and Implementation	Feb 2015
Project Complete	Nov 2015
Project Closure	Feb 2016

1.15 Resources, Operations and Procurement

Resource Sourcing			
Engineering & Design Resources to be provided	<input checked="" type="checkbox"/> Internal	<input checked="" type="checkbox"/> Contractor	
Construction/Implementation Resources to be provided	<input checked="" type="checkbox"/> Internal	<input checked="" type="checkbox"/> Contractor	
Resource Delivery			
Availability of internal resources to deliver project:	<input type="radio"/> Red	<input type="radio"/> Amber	<input checked="" type="radio"/> Green
Availability of external resources to deliver project:	<input type="radio"/> Red	<input type="radio"/> Amber	<input checked="" type="radio"/> Green
Operational Impact			
Outage impact on network system:	<input type="radio"/> Red	<input type="radio"/> Amber	<input checked="" type="radio"/> Green
Procurement impact on network system:	<input type="radio"/> Red	<input type="radio"/> Amber	<input checked="" type="radio"/> Green

1.16 Key Issues (include mitigation of Red or Amber Resources)

1	Delay in delivery of hardware may result in the project schedule slippage and consequential increase of project costs.
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US Sanction Paper

1.17 Climate Change

Contribution to National Grid's 2050 80% emissions reduction target:	<input checked="" type="radio"/> Neutral	<input type="radio"/> Positive	<input type="radio"/> Negative
Impact on adaptability of network for future climate change:	<input checked="" type="radio"/> Neutral	<input type="radio"/> Positive	<input type="radio"/> Negative

1.18 List References

Please contact Project Manager for copies of these documents as needed.

1	Cost Info => INVP 2927- Desktop Refresh (US) 24-Sep-2014 Full v17b.xls
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US Sanction Paper



2 Decisions

The US Sanctioning Committee (USSC) at a meeting held on December 10, 2014:

- (a) APPROVED this paper and the investment of \$9.959M and a tolerance of +/- 10%.
- (b) APPROVED the RTB Impact of \$0.000M (per annum) for 5 years.
- (c) NOTED that Andy Bacon has the approved financial delegation.

Signature.....Date.....

Margaret Smyth
US Chief Financial Officer
Chairman, US Sanctioning Committee



US Sanction Paper

3 Sanction Paper Detail

Title:	US Desktop Refresh	Sanction Paper #:	USSC - _____
Project #:	INVP 2927 \$1.546 (OpEx) \$8.413 (CapEx)	Sanction Type:	Sanction
Operating Company:	National Grid USA Svc. Co.	Date of Request:	December 10, 2014
Author / NG Representative:	Mayumi Okada / Ella Weisbord	Sponsor:	Max Currie, Global Head of IS Service Delivery
Utility Service:	IT	Project Manager:	Andy Bacon

3.1 **Background**

Prior to 2012, the investment into the personal computing equipment in the US was deferred to allow the completion of the market tender exercise for Enterprise Services. With the IS Transformation Project (INVP 2934), 8,000 desktop and laptop computers were replaced and 4,500 units were tagged as less than 3 years old, and placed out of that project scope. These 4,500 units are now older with operational issues due to their age.

Additionally, since 2012, there are additional needs that have arisen with units not included in the 4,500 units. It is estimated that up to 6,000 units overall may potentially need to be deployed.

There is a need to provide a standard End User Computing (EUC) device to users to ensure we have a minimum specification, which can be included with Windows 7 operating system or have the ability to be upgraded from XP operating system to Windows 7 operating system later.

3.2 **Drivers**

The main drivers are:

- Reliability to mitigate the risks associated with running on aged devices.
- Cost efficiencies gained by eliminating older units, since the practice by service providers is to charge higher support costs to cover older products.
- Financial gains by purchasing these units in bulk volume at this time and managing their service and support centrally.



US Sanction Paper

3.3 Project Description

This project will replace standard EUC devices on the Business LAN (non-Lenovo devices) or upgrade Win7 operating system to existing Lenovo devices:

- Complete Workbooks with each Business Unit to determine the required device and Operating system upgrade required and therefore the device and Operating system upgrade numbers required.
- Procure Lenovo Laptops devices (there is no requirement for a procurement event due to existing open purchase order arrangements for laptops and desktops; however the optimum unit prices will be negotiated by making best use of volume price breaks and discount windows).
- Install the new assets using National Grid's standard MS Windows 7 image and refresh tools.
- Additional resources to install MS Windows 7 to Lenovo devices which were refreshed during Transformation or Refresh Extension and where XP Apps remediation is being completed during the EUC refresh extension Project timeframe.
- De-commission and dispose of old assets, re-cycling where possible.

The scope of the Extension Refresh Project is based on information gathered as part of previous phase of the project where user information was gathered into Business Unit workbooks. Consequently, up to 3,000 Lenovo standard devices will need to be procured for this Refresh project, while CSC will actually be handling about 6,000 deployments.

To manage this, workbooks were created, with the Business Area Champions involvement, to provide a clear process in order to understand what each Business Unit (BU) and user, within that BU, had in terms of EUC devices and applications. The information in these workbooks have been used by this project and CSC to understand the deployment of the devices and Windows 7 refreshes, such as:

- The project team was able to extract the exact requirements of each BU.
- Lenovo devices that are recovered will be taken to the CSC build center and reused and deployed again later.
- At a minimum a user will be provided with a Lenovo device as specified in the workbooks.
- If the user is to remain on an XP operating system, due to key applications they require, their device will not be remediated into Window 7 device.
- Most users, however, will receive a Lenovo device and the Windows 7 operating system as part of the refresh deployment.

Project deployment costs will be for an estimated 3,000 newly procured devices and an estimated additional 3,000 Lenovo devices recovered from the National Grid estate, including desktop devices from stock and a number of recovered/reissued devices from XP users. The exact number of devices will be determined during the execution and deployment of this project. For now, the estimates are based on the workbooks data

US Sanction Paper



gathered that are about 95% complete and considered a good "bottom up" basis for each Business Unit.

Note, there are a number of i7 high performance devices that specific business units have determined are critical to their business operations. These have been procured and deployed; and there costs will be included in project estimate and shown in the table below.

The table below provides the devices and CSC services for deployment and project management that will be required to complete this refresh project :

Project Item	Est. Qty.
Standard I5 Lenovo Devices procurement	3,000
Deployment of devices (These included Lenovo devices recovered as part of this project and Remediation Operating system Upgrades to existing Lenovo devices connected to the Business LAN)	6,000
CSC Project Management to support the total deployments above (Including Early Life Support, Floor walking Healthchecks, etc)	
Below are Business Specific devices included in the project:	
Lenovo I7 high performance device procurement Desktop,	14
Lenovo I7 high performance device procurement Laptop	244
Lenovo Ultra dock/port replicators for I7 laptop devices	211

3.4 Benefits Summary

The benefits gained by implementing this project are:

- The cost avoidance of having to maintain an inventory across all regions of additional spare stock for aged equipment in order to immediately service downed equipment
- No change in the RTB costs, based on the current CSC maintenance cost structure.
- The project is a prerequisite for migration from XP to Windows 7 with associated offset RTB costs and reduced security and support risks

3.5 Business and Customer Issues

There are no significant business issues beyond what has been described elsewhere.



US Sanction Paper

3.6 Alternatives

Alternative 1: Do Nothing

This solution was not selected due to the negative business impact of:

- Further loss of productivity as the environment continues to age.
- Inability to upgrade applications on the devices, including some security-related software
- Inability to meet future requirements/capabilities needed by user/employee
- Increased costs to support the discontinued XP operating system.

Alternative 2: Defer project

In addition to all the reasons listed above, this solution was not selected due to the deferred spending and adding complexity impact to the later stages of Transformation.

Alternative 3: Partial replacement

This solution of partial replacement on an ah-hoc basis not selected due to:

- Partial replacement by region or device model/manufacturer will still leave a significant number of aged assets that will be unable to run the future desktop or current security and browser software
- Increased costs to support multiple OS environments, including the currently discontinued XP operating system.
- Functionality capability would vary depending on the unit the user had.

3.7 Safety, Environmental and Project Planning Issues

There are no significant issues beyond what has been described elsewhere.



US Sanction Paper

3.8 Execution Risk Appraisal

Number	Detailed Description of Risk / Opportunity	Probability	Impact		Score		Strategy	Pre-Trigger Mitigation Plan	Residual Risk	Post Trigger Mitigation Plan
			Cost	Schedule	Cost	Schedule				
1	Delay in placing the purchase order to the vendor because of delayed approvals	4	3	2	12	8	Accept	PM will follow up with the Stakeholders/ Sponsors to obtain timely approvals	Delay in the rollout which will impact the project schedule	PM will update the project schedule to compensate for the rollout delays.
2	National Grid business community and support partners cannot accommodate the amount of change in the environment	3	3	3	9	9	Mitigate	Communicate with the community of users what the plan is and how facilitate it. Plus monitor the progress throughout the life of the project.	Project schedule may be impacted and the overall services and end user experience may be negatively impacted	Process change orders as appropriate.
3	Desktop/ Laptop users fail to meet appointment times	4	3	3	12	12	Mitigate	Communicate to the end users their responsibilities in advance. Agree early a reasonable period for changes to the schedule (by either parties).	IMAC charges may be incurred by National Grid, if users fail to notify the deployment team that they will not meet	The responsibility will be clearly communicated to the end users by National Grid in advance. A reasonable period for changes to the schedule (by either party) must be pre-agreed. NOTE: Costs incurred due to missed appts will be charged back to the relevant Business Unit.

3.9 Permitting

Permit Name	Probability Required (Certain/ Likely/ Unlikely)	Duration To Acquire Permit	Status (Complete/ In Progress Not Applied For)	Estimated Completion Date

3.10 Investment Recovery

3.10.1 Investment Recovery and Regulatory Implications

Recovery will occur at the time of the next rate case for any operating company receiving allocations of these costs.

3.10.2 Customer Impact



US Sanction Paper

3.10.3 CIAC / Reimbursement

\$M	Prior Yrs	Yr. 1	Yr. 2	Yr. 3	Yr. 4	Yr. 5	Yr. 6 +	Total
		2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	
CIAC/Reimbursement	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

3.11 Financial Impact to National Grid

3.11.1 Cost Summary Table

Project Number	Project Title	Project Estimate Level (%)	Spend (\$M)	Prior Yrs	Current Planning Horizon						Total
					Yr. 1	Yr. 2	Yr. 3	Yr. 4	Yr. 5	Yr. 6 +	
					2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	
INVP 2927	US Desktop Refresh	+/- 10%	CapEx	0.000	6.836	1.577	0.000	0.000	0.000	0.000	8.413
			OpEx	0.000	1.306	0.240	0.000	0.000	0.000	0.000	1.546
			Removal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			Total	0.000	8.142	1.817	0.000	0.000	0.000	0.000	9.959

The project is part of a shared, global US/UK program. This project and its costs are US specific and separate from the UK.

3.11.2 Project Budget Summary Table

Project Costs per Business Plan

\$M	Prior Yrs	Current Planning Horizon						Total
		Yr. 1	Yr. 2	Yr. 3	Yr. 4	Yr. 5	Yr. 6 +	
	(Actual)	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	
CapEx	0.000	5.440	1.600	0.000	0.000	0.000	0.000	7.040
OpEx	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Removal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Cost in Bus. Plan	0.000	5.440	1.600	0.000	0.000	0.000	0.000	7.040

Variance (Business Plan-Project Estimate)

\$M	Prior Yrs	Current Planning Horizon						Total
		Yr. 1	Yr. 2	Yr. 3	Yr. 4	Yr. 5	Yr. 6 +	
	(Actual)	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	
CapEx	0.000	(1.396)	0.023	0.000	0.000	0.000	0.000	(1.373)
OpEx	0.000	(1.306)	(0.240)	0.000	0.000	0.000	0.000	(1.546)
Removal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Cost in Bus. Plan	0.000	(2.702)	(0.217)	0.000	0.000	0.000	0.000	(2.919)

3.11.3 Cost Assumptions

This estimate was developed in 2014 using the standard IS estimating methodology. The accuracy level of estimate for each project is identified in table 3.11.1.



US Sanction Paper

3.11.4 Net Present Value / Cost Benefit Analysis

This is not an NPV project.

3.11.4.1 NPV Summary Table

Economic measures		5yr	10yr	20yr	Comment
NPV	@ Discount rate				
IRR					
MIRR					
Simple Payback in Years					
Total O&M					
Total Capital Investment					
Total Savings					

3.11.4.2 NPV Assumptions and Calculations

3.11.5 Additional Impacts

None.

3.12 Statements of Support

3.12.1 Supporters

Role	Name	Responsibilities
IS Finance	Chip Benson	Endorses the project aligns with jurisdictional objectives
IS Programme Delivery US Head	Andy Bacon	Endorses the project aligns with jurisdictional objectives
IS Business Relationship Management	Graham Pool	Endorses the project aligns with jurisdictional objectives
US Business Supporter	Max Currie	Endorses the project aligns with jurisdictional objectives

3.12.2 Reviewers

Please see the IS Stakeholder Checklist summary contained in the TCO Log file.

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Function	Area	Individual
Finance	All	Chip Benson
Regulatory	All	Peter Zschokke
Jurisdictional Delegate(s)	New England- Electric	James Patterson
	New York- Electric	Mark Harbaugh
	FERC	Carol Sedewitz
	Gas - NY	Laurie Brown
	Gas - NE	David Isleler
Procurement	All	Art Curran



US Sanction Paper

4 Appendices

4.1 Other Appendices

4.1.1 Project Cost Breakdown

Project Cost Breakdown			
Cost Category	sub-category	\$ (millions)	Name of Firm(s) providing
Personnel	NG Resources	1.572	
	SDC Time & Materials	0.022	IBM
	SDC Fixed-Price	-	
	All other personnel	3.934	CSC
	TOTAL Personnel Costs	5.528	
Hardware	Purchase	3.272	CSC
	Lease	-	
Software		-	
Risk Margin		0.658	
Other		0.501	Shared/AFDUC
TOTAL Costs		9.959	



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4.1.2 Benefiting Operating Companies

The following companies will benefit from this project cost allocation:

Operating Company Name	Business Area	State
National Grid USA Parent	Parent	N/A
KeySpan Energy Corp.	Service Company	N/A
Niagara Mohawk Power Corp.- Electric Distr.	Electric Distribution	NY
Niagara Mohawk Power Corp. - Gas	Gas Distribution	NY
Niagara Mohawk Power Corp. - Transmission	Transmission	NY
KeySpan Energy Delivery New York	Gas Distribution	NY
KeySpan Energy Delivery Long Island	Gas Distribution	NY
Massachusetts Electric Company	Electric Distribution	MA
Massachusetts Electric Company - Transmission	Transmission	MA
Nantucket Electric Company	Electric Distribution	MA
Boston Gas Company	Gas Distribution	MA
Colonial Gas Company	Gas Distribution	MA
Narragansett Electric Company	Electric Distribution	RI
Narragansett Gas Company	Gas Distribution	RI
Narragansett Electric Company - Transmission	Transmission	RI
New England Power Company - Transmission	Transmission	MA
NE Hydro - Trans Electric Co.	FERC Interconnect	N/A
New England Hydro - Trans Electric Co.	FERC Interconnect	N/A
New England Electric Trans Electric Co.	FERC Interconnect	N/A
NG LNG LP Regulated Entity	FERC Gas Ops	N/A
KeySpan Generation LLC (PSA)	Generation	NY
KeySpan Glenwood Energy Center	Generation	NY
KeySpan Port Jefferson Energy Center	Generation	NY
KeySpan Energy Trading Services	Parents	N/A
Transgas, Inc.	Other Non-Regulated	MA
KeySpan Energy Development Corporation	Non-Regulated	NY
KeySpan Services Inc.	Other Non-Regulated	NY



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4.1.3 IS Ongoing Operational Costs (RTB):

This project will not change the IS ongoing operations support costs as per the following table. These are also known as Run the Business (RTB) costs.

Summary Analysis of RTB Costs							
All figures in \$ millions	Yr. 1 14/15	Yr. 2 15/16	Yr. 3 16/17	Yr. 4 17/18	Yr. 5 18/19	Yr. 6+	Total
Forecast of RTB Impact							
RTB if Status Quo Continues	-	-	-	-	-	-	-
RTB if Project is Implemented	-	-	-	-	-	-	-
Net change in RTB	-	-	-	-	-	-	-
RTB Variance Analysis (if Project is Implemented)							
Net Δ RTB funded by Plan(s)	-	-	-	-	-	-	-
Variance to Plan	-	-	-	-	-	-	-
Total RTB Costs - by Cost Type (if Project is Implemented)							
App.Sup. - SDC 1	-	-	-	-	-	-	-
App.Sup. - SDC 2	-	-	-	-	-	-	-
App.Sup. - other	-	-	-	-	-	-	-
SW maintenance	-	-	-	-	-	-	-
SaaS	-	-	-	-	-	-	-
HW support	-	-	-	-	-	-	-
Other: IS	-	-	-	-	-	-	-
All IS-related RTB (sub-Total)	-	-	-	-	-	-	-
Business Support (sub-Total)	-	-	-	-	-	-	-
Total RTB Costs	-	-	-	-	-	-	-

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CAPEX IS Investment Proposal – Summary
US Retail Web Development and Implementation
Customer Energy Solutions/Customer Service Operations, ED&G, Project No. INVP 1356a
(A project sanction paper by Mary Ellen McQuaid for Rudy Wynter – 13 September 2010)
(Updated with feedback from USSC - 22 September 2010)

Summary:

The US Retail Web project charter is to maximize the value for the business and our US customers by aligning to the US IS roadmap and increasing the self service customer experience on the Customer Systems strategic platform of CSS.

This paper represents the Development and Implementation Phase sanction for US Retail Web and is seeking \$12,077k which includes all costs to date.

With the completion of the Design Phase, the Development and Implementation Phase increased from an indicative estimate of \$2.98 million to a projected \$4.85 million. The increased cost of \$2.6 million (\$1.87m + \$727k risk factor) is attributable to four key factors; 1) National Grid to WIPRO consultant Knowledge Transfer; 2) value-added scope increases (IP Detection; Simple Search; comprehensive Email delivery through Western Union/Striata and XML billing components for future billing delivery channels); 3) advanced delivery timeframe of PowerofAction with a 500k cost avoidance, and 4) estimate refinement by CSS domain experts. Implementation timeline is projected for fourth quarter fiscal 2011.

The US Retail Web proposal will provide an immediate and long-lasting positive impact on National Grid's retail customer base. The business will receive substantial benefits associated with the strategic roadmap "Drive to Self-Service," meeting a number of critical needs: increase customer satisfaction as identified in the JD Powers survey; simplification of site navigation; alignment of web self-service to customer channel expectations, and alignment with the IS roadmap platform of customer service system CSS.

The business has identified savings of \$9.3m over 5 years, with a continued onward savings of \$4.1m per annum, most of which are committed to in the Customer Energy Solutions/Customer Service Operations business plan associated with E-Billing and E-Payments. While the baseline NPV for this project is currently showing negative, other enhancements to the various areas of the website will provide major strategic benefits for customers, which are difficult to quantify and attribute for the purposes of NPV calculations. In addition, the features and capabilities delivered by this project are fundamental baselines for enabling future enhancements to National Grid's online self-service platform.

Category: NPV (Project is NPC)

Risk score: 41, (Primary Driver – Reliability)

Project Classification: Medium Region: US

Finance

Project included in approved Business Plan? INVP1356a

Project cost relative to approved Business Plan? 15%

If cost > approved B Plan how will this be funded?

Plan overspend/substitution known INVP available funds for Opex = \$709k, Capex = \$3,753k

Projects for substitution (2200, 2201, 1659, and 1660) represent web related initiatives. Impacts will be managed thru re-evaluation/potential movement into future fiscal year plans. INVP1659 (Agent Desktop) will cover remaining overage based on timing/scope re-evaluation of that project.

1) **INVP2200** Customer Self Service via Web - Customer Experience - (Available Opex \$0k, Capex \$800k), Project will extract for substitution (Opex \$0k, Capex \$800k)

2) **INVP2201** Customer Self Service via Web - Operational Improvements – (Available Opex \$0k, Capex \$200k), Project will extract for substitution (Opex \$0k, Capex \$200k)

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- 3) **INVP1659** Legacy KeySpan Web Self Service SW Upgrade – (Available Opex \$460k, Capex \$180k), Project will extract for substitution (Opex \$460k, Capex \$180k)
- 4) **INVP1660** Legacy National Grid Web Self Service SW Upgrade – (Available Opex \$249k, Capex \$150k), Project will extract for substitution (Opex \$249k, Capex \$150k)
- 5) **INVP1656** Agent Desktop – (Available Capex \$8,515k) Project will extract for substitution – (Capex \$2,423k)

Percentage variance to Investment plan: 15%

\$'000s	Current planning horizon					Yr 6+	Total	Lower Range P20	Upper Range P80
	Yr 1 09/10	Yr 2 10/11	Yr 3 11/12	Yr 4 12/13	Yr 5 13/14				
Proposed Investment	5,390	6,687					12,077		

Resources

Availability of internal resources to deliver project: Green

Availability of external resources to deliver project: Green

Operational impact on network system: N/A

Key issues

- The business issues which will be addressed by this project are: improved JD Powers customer satisfaction scores, improved self-service capabilities, simplified site architecture, alignment of self-service tools to our customers' channel expectations and utilizing technologies which fully align with the US systems strategy, and delivery of baseline features-set to enable future online self-service needs.
- This investment is also an enabler to a number of strategic initiatives including brand alignment, retail customer migration, call deflection and customer system consolidation.

Key milestones

- September 2009 – CSS identified as a strategy customer platform
- November 2009 – Global Web Implementation Project re-scoped to deliver on the CSS platform.
- February 2010 – IS Web Strategy was endorsed by the Global Web Steering Committee
- April 2010 – Detail Design of US Retail for CSS sanctioned.
- 26 August 2010 - PRM for Development and Implementation
- 14 September 2010 – USSC – approved with caveats
- March 2011 – Implementation
- May 2011 - Project closure

Climate change

Contribution to National Grid's 2050 80% emissions reduction target: Neutral

Impact on adaptability of network for future climate change: Neutral

Are financial incentives (e.g. carbon credits) available? No

Incorporated the cost of carbon into Investment Planning Decision? N/A

Prior sanctioning history:

- 28th April 2010 – Project re-sanctioned for detail design phase of US Retail at USSC

Recommendations

The Sanctioning Authority is invited to:

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- (a) SANCTION the investment of \$12,077k including a risk margin of \$727k (for D&I) by 31 March, 2011.
- (b) NOTE that Rudy Wynter is the Project Sponsor.
- (c) NOTE that Mary Ellen McQuaid is the Project Manager and has the approved financial delegation to deliver the project
- Signature..... Date.....
Rudy Wynter, SVP Customer Service Operations

IS Finance

I hereby confirm that the financial data supports the business case outlined in this paper.

Signature..... Date.....
Duncan Brown, Head of IS Finance, Global IS

ED&G Finance

I hereby support the recommendations made in this paper.

Signature..... Date.....
Linda Ryan, CFO of ED&G Finance

Information Services

I hereby support the recommendations made in this paper.

Signature..... Date.....
Madalyn Hanley, VP IS FSSC&C

Information Services

I hereby support the recommendations made in this paper.

Signature..... Date.....
Andy Pearman, VP Information Services Solution Delivery

Decision of the Sanctioning Authority

I hereby approve the recommendations made in this paper.

Signature..... Date.....
David Lister, CIO, Chair USSC

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CAPEX IS Investment Proposal – Summary
US Retail Web Development and Implementation
Customer Energy Solutions/Customer Service Operations, ED&G, Project No. INVP 1356a
(A project sanction paper by Mary Ellen McQuaid for Rudy Wynter – 11 August 2010)

1. Background

National Grid's websites are a key aspect of the company's profile and corporate reputation, and the first point of call for anyone seeking company information or accessing customer services online. The US Retail Web project charter is to maximize the value for the business and our US customers by aligning to the US IS roadmap and increasing the self service customer experience on the Customer Systems strategic platform of CSS.

2. Driver

The primary driver for this project is reliability with a reliability risk rating of 41.

The US Retail Web proposal will provide an immediate and long-lasting positive impact on National Grid's retail customer base, meeting a number of critical needs: increased customer satisfaction as identified in the JD Powers survey; simplification of site navigation; alignment of web self-service to customer channel expectations; delivery of baseline self-service features to enable future self-service growth; and alignment with the IS roadmap platform of customer service system CSS.

- JD Power was quoted in the 2009 survey release as stating that *"higher overall Customer Satisfaction Index scores are reported when customers (residential and business) visit their utility Web site as opposed to calling their utility (across all studies)....overall CSI scores were higher for customers who had an online account set up with their utility, for those who had chosen their own payment due date and for customers who paid their bills by automatic deduction or via their utility Web site."* National Grid maintains a target of moving to first-tier rankings within JD Power. By improving self-service, this effort will serve as a measurable deliverable towards that target, establishing the foundations and creating momentum towards meeting our customer satisfaction goals by turning the digital self-service channel into a preferred method of engagement for our customers.
- We will restructure and simplify the site architecture, providing a more intuitive and accessible navigational experience to meet customer goals for online service. Customers will be able to quickly locate the information they're looking for, reducing frustration and facilitating more efficient online transactions.
- In improving our web self-service capabilities, we also enable the tools and features that align with our customers' evolving channel expectations. We will create a platform that not only sets the stage for fulfilling basic customer self-service goals, but also positions ourselves for driving future innovation and setting an example of leadership with sector-leading online services.
- The baseline self-service functionality delivered by this release will also provide a scalable platform for meeting future business needs, including the ability to deliver segmented marketing and customer outreach/education efforts, as well as the ability to support the delivery of all other 'core stakeholder pillars' associated to the previously defined 'Global Web' project (energy, community, and trade stakeholders) – features meeting the needs of these stakeholders can leverage from the build of this underlying web platform and customer experience.
- This revised scope will increase the retail self-service functionality of National Grid's upstate (CSS customer system) US external websites. In focusing on this customer segment, we not only meet the critical and immediate requirements of this key Customer Energy Solutions/Customer Service Operations audience group, but also align to the IS roadmap – guaranteeing both longevity to the work and year-on-year benefits.
- The project will utilize existing technologies to deliver the web experience and will align fully with the US systems strategy.

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3. Project Description

As described in the approved Requirements and Design Phase, this paper is requesting the approval for the Development and Implementation Phase.

As detailed in Section 2 (Driver), the finalization of the requirements and design phase further enabled the business to identify substantial benefits associated with the strategic roadmap "Drive to Self-Service". In addition, Key Performance Indicator reporting will benefit from expanded analytics tracking associated with project delivery.

Incremental costs have been attributable to four key factors;

1. National Grid to WIPRO consultant Knowledge Transfer – Indicative estimates assumed 10% National Grid resource time to support vendor. Vendor did not provide resources meeting requirements of WP005144 resulting in the need for additional resources. This also encompasses standard support for migration control and over site/approval for deliverables as suggested by WIPRO.
2. Value added scope increases - Innovative approaches were identified for previously de-scoped functionality due to indicative estimates (i.e. IP Detection; Simple Search, XML billing components). The project is also building on the in-flight initiatives currently underway, eliminating the need for future integration of the following projects: Western Union/Striata project to include non-transactional email, and Pitney Bowes XML bill-storage and delivery to include residential customers.
3. Advanced delivery timeframe of PowerofAction with a \$500k cost savings attributed to the elimination of monthly micro-site update fees for Garden Nelson in 2011. Additionally, there are intangible benefits in providing a greater visibility (across the entire CSS customer base) to the programs associated with Energy Efficiency Awareness and Gas Growth.
4. Estimate refinement by CSS domain experts to include detail design impact analysis on the customer application components (Web services, AGS and CSS Transactions).

4. Business Issues

This investment is an enabler to a number of strategic initiatives including retail customer migration & call deflection, Information System consolidation, and 'One National Grid' customer experience alignment,

The business issues which will be resolved by this project are:

- Multiple websites
 - Multiple platforms result in challenges for resourcing/skill-sets, create redundancy in development & maintenance, and inhibit the creation of best-practices geared towards fulfilling customer goals.
- Inconsistency
 - Inconsistent content and navigation – lack of alignment across websites, negative impact on reputation and self-service, as content can be out of date and difficult to view/find and self-serve easily.
 - Inconsistent look + feel – use of templates, page formatting and copywriting vary across regional websites, creating a disjointed and confusing web experience – the current National Grid web looks very different and interacts very differently

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depending on where you are. Currently not reflecting National Grid values and 'One Firm' approach.

- Inconsistent implementation – Usability and interface architecture vary, creating both accessibility and customer experience difficulties
- Inconsistent metrics - unable to measure the success of the websites against each other through a common analytics framework

5. Options Analysis

Option	Recommendation	Rationale
Sanction for Development and Implementation	Recommend	Will deliver on Customer & Markets strategy roadmap "Drive to Self-Service" and builds on the platform that aligns with the Customer Systems strategy.
Do Nothing:	Rejected	Will eliminate ability for Customer Energy Solutions/Customer Service Operations to deliver on specified business plan savings or meet regulatory, brand and customer satisfaction/JD Power expectation. In addition, it would not enable the business to realize the benefits which are specified in the business plan. In addition, it would eliminate or delay the ability to deliver in-flight consolidations (Western Union/Striata e-mail, XML bill delivery)
Defer project:	Rejected	Will delay Customer Energy Solutions/Customer Service Operations ability to deliver on specified business plan savings or meet regulatory, brand and customer satisfaction/JD Power expectation. In addition, it would not enable the business to realize the benefits which are specified in the business plan. In addition, it would eliminate or delay the ability to deliver in-flight consolidations (Western Union/Striata e-mail, XML bill delivery)

6. Milestones

Key Milestones	Date	Responsible person...
Development Partner identified	15 Mar 2010	Project team
Implementation Plan	15 May 2010	ODC, CSS team, Web Solutions
Development Begins	1 Sept 2010	ODC, CSS team, Web Solutions
Development Completes	31 Jan 2011	ODC, CSS team, Web Solutions
System & User Testing Completes	28 Feb 2011	ODC, IS, Business
Implementation	31 Mar 2011	ODC, CSS Team, Web Solutions
Project Closure	31 May 2011	ODC, CSS Team, Web Solutions

7. Safety, Environmental and Planning Issues

There are no consents required.

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Investment Recovery

8. Investment Classification

NPV (NPC)

9. Regulatory Implications

This project aligns to all regulatory requirements and supports compliance.

10. Customer Impact

US Retail Web will provide an immediate and long-lasting positive impact on our retail customer base, meeting a number of critical needs. As noted in previous sections, JD Power strongly ties increases in online self-service to increases in customer satisfaction. Following from that logic, in order to increase online self-service, we must provide our customers with a simple, clear, and market-reference web experience, making the digital channel their preferred channel. The redesign of our website will accomplish this by:

- Restructuring and simplifying the site architecture, providing a more intuitive and accessible navigational experience. Customers will be able to quickly locate the information they are looking for, reducing frustration and generating more efficient online transactions.
- Through the enhancement and release of self-service features, we will provide our customers with more relevant and actionable access to important information regarding their accounts, facilitating regular self-service transactions on a monthly basis, and creating a comfort-level for use of the website as a preferred customer method of both transacting and communicating with National Grid.

Financial Impact

11. Cost Summary

This investment proposal seeks funds for the Development and Implementation Phase. This includes funds already sanctioned for the Requirements and Design stages. A further breakdown of these costs is provided in Appendix B.

\$'000s		Yr 1 09/10	Yr 2 10/11	Yr 3 11/12	Yr 4 12/13	Yr 5 13/14	Yr 6 +	Total	Lower Range P20	Upper Range P20
Project Cost	Opex		709					709		
	Capex	5,390	5,978					11,368		
IS Investment Plan	Opex									
	Capex	8,301	2,225					10,526		
Variance to plan	Opex		(709)					(709)		
	Capex	2,911	(3,753)					(842)		

Project Cost: Requirements, Design, Development & Implementation

- Prior Years Spend \$5.39m (FY 08/09, 09/10 sanctioned as a part of the Global Web Solutions Project)
- Sanctioned - Requirements & Detailed Phase: \$1.2m (Sanctioned April 2010)
- Current Year Spend - Total Requirements & Design Costs: \$1.1m (FY 10/11 Spend to Date+ forecast)

Requested Funds for next phase:

- Development & Implementation: \$5.6m (Includes risk margin of \$727k)

Total Projected costs for US Retail: \$12.077m

This project will increase RTB \$1,137k over 3 years. Note, the RTB yearly costs will decrease and move to a stable support level in year 3 and forward. The RTB increase is

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attributed to new hardware, additional functionality from Web trends, Western Union/Striata email vendor, Questline a "Power of Action" solution and CSS/ Web UI enhancements.

RTB costs \$'000s	Yr 1 09/10	Yr 2 10/11	Yr 3 11/12	Yr 4 12/13	Yr 5 13/14	Total
Current Annual RTB costs			352	352	352	1,056
New Annual RTB costs			778	836	579	2,193
Impact on RTB costs (new minus existing)			426	484	227	1,137
Variance to Plan			426	484	227	1,137

The allocation costs for this project are as follows for Bill Pool 229:

Bill Pool	Company					
00229	00004	Nantucket Electric Company	DIST	0.232	Electric & Gas Distribution Companies - NE & NY	DIST 84.42 GAS 15.58
00229	00005	Massachusetts Electric	DIST	29.223		
00229	00036	Niagara Mohawk Power Corp	DIST	44.152		
00229	00036	Niagara Mohawk Power Corp	GAS	9.043		
00229	00041	Granite State Electric Company	DIST	0.833		
00229	00048	Narragansett Gas Company	GAS	6.541		
00229	00049	Narragansett Electric Company	DIST	9.976		

The US Retail Project accounting currently represents benefits directed to the Legacy US customers in the Customer Service System (CSS). Allocations will be evaluated regularly to determine if during the Development and Implementation detail deliverables (i.e. User Interface Components) provide additional benefit to an expanded customer base. Their costs will be tracked and charged appropriately.

This project is providing a base for future conversions into the CSS application. All other Customer Systems are planned to be converted to CSS over a 5 year period as specified in the US Systems Strategic Roadmap. As systems are converted, additional customers will gain the benefits of the new retail web experience. Future conversion project costs will be aligned to reflect the spread of benefits and the usage of the expanded customer base.

12. Cost Assumptions

Costs are based on estimates received from third party suppliers. It assumes the vendor applies competent CSS functional knowledge necessary to integrate the UI (User Interface) and the vendor demonstrates quality deliverables without continued burden of knowledge transfer for core customer billing concepts through development and testing.

Delivery on 2003 Web Servers does not require conversion of remaining applications on the 2000 platform.

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13. Benefits Summary

INVESTMENT BENEFITS									
Investment Plan No:		Invp1356a		Investment Name: 1356a US Retail Web					
Investment Start Year:		09/10							
Summary by category:									
	Timescales for realisation								
	09/10	10/11	11/12	12/13	13/14	14/15	15/16	Total	
	\$'000s	\$'000s	\$'000s	\$'000s	\$'000s	\$'000s	\$'000s	\$'000s	
Cost Saving	-	-	814	788	1,436	2,130	4,108	9,276	
Income generating	-	-	-	-	-	-	-	-	
Cost Avoidance	-	-	-	-	-	-	-	-	
Risk Avoidance	-	-	-	-	-	-	-	-	
Health & Safety	-	-	-	-	-	-	-	-	
Climate Change	-	-	-	-	-	-	-	-	
Regulatory	-	-	-	-	-	-	-	-	
	-	-	814	788	1,436	2,130	4,108	9,276	
Benefit Details									
Benefit Details - Add New Row Below Selection									
Benefits must have a NAMED owner									
Ref No	Benefit name:	Additional Details				Benefit owner	Assumption Ref Nos		
B1	Increase in e-payments (USA retail)	B1				Cust & Markets			
B2	Increase in e-billing (USA retail)	B2				Cust & Markets			
B3	PowerofAction Vendor consolidation	B3				Cust & Markets			
Financial Benefits:									
Financial Benefits - Add New Row Below Selection									
Ref No	Benefit Category	09/10	10/11	11/12	12/13	13/14	14/15	15/16	Total
		\$'000s	\$'000s	\$'000s	\$'000s	\$'000s	\$'000s	\$'000s	\$'000s
B1	Cost Saving			57	120	202	294	563	1,236
B2	Cost Saving			257	668	1,234	1,836	3,545	7,540
B3	Cost Saving			500					500
		-	-	814	788	1,436	2,130	4,108	9,276

Benefits for B1 and B2 provided by Sean Mongan. B3 provided by Sharon Geib. Validated by Feisal Ahmad of Customer Energy Solutions. Previous Design Phase paper assumed implementation of Quick Wins through out 2010 with a project implementation of January 2011. Three month delay is attributed to estimate refinement required for CSS, value added scope increases and on boarding WIPRO. Benefits were moved from 10/11 to 11/12 to align with the implementation date of 31 March 2011.

The growths in benefits are impacted by Customer System Conversion as follows:
CSS Customers only in Year 1; RI in Year 2; LI Gas in Year 3; CRIS in Year 5"

B1) Offline to Online conversions for E payments

- Year 1: ~715K transactions with \$0.08 saving per transaction
- Year 2: ~1.5m transactions with \$.08 savings per transaction
- Year 3: ~2.5m transactions with \$0.08 saving per transaction
- Year 4: ~3.6m transactions with \$.08 savings per transaction
- Year 5 and onwards: ~7m transactions with \$.08 savings per transaction

B2) Offline to Online Conversions for E Billing

- Year 1: ~715K transactions with \$.36 savings per transaction
- Year 2: ~1.8m transactions with \$.36 savings per transaction
- Year 3: ~3.7m transactions with \$.36 savings per transaction
- Year 4: ~5.1m transactions with \$.36 savings per transaction
- Year 5 and onwards: ~9.9m transactions with \$.36 savings per transaction

B3) Consolidation of "PowerofAction" vendor services.

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14. NPV

- The NPV for this project is **(-\$7396k)**.
- Prior to Requirements and Design Sanction, the Executive Steering Committee requested an alignment of the project go-forward costs with the project benefits, as those costs are tied directly to the delivery of the benefits (upfront costs-to-date result in limited benefit without an execution on the discovery and foundation effort).
- The revised TCO log is attached in Appendix B and includes assumptions.

15. Additional Impacts

Substitution Impacts:

Substitution impacts are minimal and do not affect the Gas or Operations organizations. INVP2200 Customer Self Service via the web – Customer Experience delivering iFactor Phase 2 enhancements has been moved to the Fiscal 11/12 Investment Plan. INVP2201 Customer Self Service via the web–Operational Improvements has been absorbed as part of US Retail Web. INVP1659 and 1660 Legacy National Grid/Keyspan Software Upgrades are not required in this current year and have been moved out to future fiscal investment planning. INVP1659 Agent Desktop Project offered underutilized funding which was available without project impact. INVP1593 ED&G Customer System Minor Works is still funded to “Run the Business” as work items are pending available resources.

Gas Benefits:

As the US retail redesign project includes a standard 17% allocation associated with the Gas Business Unit (standard percentage rate charged to gas based on the CSS platform), the items directly benefiting gas are as follows:

- Gas Conversion lead into Onyx via web. (zip code based)
- Gas Availability search (zip code based)
- Separate commercial and residential portals that will provide content/functions specific to customer type.
- IP Detection –this will route visitors to their state in our service area rather than region self selector with clear paths to gas sections of website (NE/NY/NH –legacy Keyspan)
- Single domain-nationalgrid.com
- Separate Trade Partner entry point, with notifications about programs available and resources including events, equipment efficiency, gas conversion information to share with their customers. Informational pages about what is needed to get new service or upgrade a service
- Repositioned content that reflects positive company image and promote community efforts
- Contextual modules that will assist in cross selling programs for gas conversion and using energy efficiency equipment
- Enhanced Safety awareness and Gas Outage information
- Prominently displayed gas emergency contact numbers throughout site in footer for ease of use for customer
- Modules on state hub pages to message customers during Gas emergencies
- Enhanced self service features as defined for gas customer in NY included profile preferences and easier login, rate information, on line bill explanation, quick pay modules, lower my usage, etc.

16. Execution Risk Appraisal

Looking forward there is smaller risk given the analysis and design work completed to date:

No	There is a risk that	Countermeasure or Action	Risk Range	Monitored by
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No	There is a risk that	Countermeasure or Action	Risk Range	Monitored by
1	Project estimates for implementation are too low level and may increase	Estimates were refined during design. Higher risk margin identified to accommodate for risk range. Reduce scope items with low ROI impact.	\$727K (15% risk)	Project Teams/Board
2	Business lines look to develop "internet based" opportunities outside of this project	Strong governance process embedded in the IS governance process to identify projects which are not in line with the Global Web Project.	N/A	Project Board
3	Business will not have sufficient resources to conduct end to end user testing	As part of Design, estimated by major function business resources required. Contract with external resources to supplement testing to ensure project timelines. Project risk margin will be needed to fund contractor costs	N/A	Project Board, WebStrategy will leverage Stakeholders from the various internal business departments to assist.

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Appendices

A. Resources

Step 1:

Role	National Grid Resources (FTEs)		External Resources (FTEs)			
	IS	Business	Contractor	Systems Integrator	ODC	Other
Program Managers (PgM)	.25					
Project Managers (PM)	1	1			1	
Business Analysts (BA)	3				1	
Application Developer (AD)	8				10	
Solution Architects (SA)	1				1	
Planner (Plan)						
Database Administrator (DBA)						
Data Architects (DA)	.25					
Infrastructure Support	.50					
IS Security	.05					
Business PM			1			
PMO Support			.50			

The following resources are NOT included in the project costs:

- Business representatives from LoBs – required to participate in workshops & system. Web Strategy will be leveraging Stakeholders from the various participating business units.

Step 2:

External Resource Engagement:

- ODC – engaged to work alongside CSS team.
- Business Project Manager – Web Strategy resource engaged in this role.

Step 3:

Name of Resource	Project Role*	Source for Resource**	Start	End	Average Monthly Allocation	Availability Confirmed?***
Maureen McInerney	WebSolutions PM	IS	Mar 10	Mar 11	10%	Confirmed
Mary Ellen McQuaid	Solution Delivery PM	IS	Mar 10	Mar 11	100%	Confirmed
Carla Coglitore	BA	IS	Mar 10	Mar 11	100%	Confirmed
Business Analyst	BA	Ext	Sept 10	Mar 11	100%	TBC
CSS Functional Lead/Developer	AD	Ext	Aug 10	Mar 11	100%	TBC
Sue Smith	AD	IS	Mar 10	May 10	100%	Confirmed
Chris Beers	AD	Ext	Mar 10	May 10	100%	Confirmed
Marcus Alexander	AD	Ext	May 10	Mar 11	100%	Confirmed
Robert Howard	AD	IS	Mar 10	May 10	10%	Confirmed
Marc Ramos	AD	Ext	Mar 10	May 10	100%	Confirmed
Basu Urs	Solution Architect	Ext	Mar 10	May 10	<25%	Confirmed
Security Resource	Security	IS	Mar 10	May 10	<5%	Confirmed

Confidential

INVP 1356a

Linda Tse	AD	IS	Mar 10	May 10	100%	Confirmed
ODC Wipro & CSS SME	PM,BA,AD	Ext	Mar 10	May 10	100%	Confirmed
QA – Vendor over site	AD	Ext	Aug 10	Mar 11	100%	TBC
Web services Developer	AD	Ext	Sept 10	Mar 11	100%	TBC
PMO – Michael McNeill	PMO	Ext	Mar 10	Mar 11	50%	TBC
Web Strategy	Client Lead	Bus	Mar 10	Mar 11	100%	Confirmed

Step 4:**Resource Phasing related comments:**

No phasing of resources. Resources required for length of project. Staffing start dates reflect “on boarding” date and will remain for the length of the project.

B. TCO Log

Confidential

INVP 1356a

TOTAL COST LOG OF IS INVESTMENT - FINANCIAL SUMMARY

Investment Name:	1356a US Retail Web		
Project Name:	1356a US Retail Web		
Investment Plan No:	Invp1356a	Investment Start (Financial Year):	09/10
		Currency used:	US \$

INVESTMENT PLAN DETAILS:

OPEX
CAPEX
Net RTB Impact

09/10 \$'000s	10/11 \$'000s	11/12 \$'000s	12/13 \$'000s	13/14 \$'000s	14/15 \$'000s	15/16 \$'000s	Total \$'000s
8,301	2,225						10,526

INVESTMENT COST SUMMARY

Start-Up - Opex
Start-Up - Capex
Start-Up - Risk Margin
Start-Up - Subtotal

Requirements and Design - Opex
Requirements and Design - Capex
Requirements and Design - Risk Margin
Requirements and Design - Subtotal

	676						676
5,390	433						5,823
5,390	1,109						6,499

Development and Implementation - Opex
People
Software
Hardware
Telecommunications
Service Contracts
Other
Risk Margin

	29						29
	4						4

Development and Implementation - Capex
People
Software
Hardware
Telecommunications
Service Contracts
Other
Risk Margin

	4,286						4,286
	431						431
	105						105
	723						723
	5,578						5,578

Development and Implementation - Subtotal

Total Investment Costs - Opex
Total Investment Costs - Capex

	709						709
5,390	5,978						11,368
5,390	6,687						12,077

Total Investment Costs

Non-Regulated Project - Uplift

Non-Regulated Project - Total

5,390	6,687						12,077

Future Investments

--	--	--	--	--	--	--	--

VARIANCES TO INVESTMENT PLAN:

OPEX
CAPEX

	(709)						(709)
2,911	(3,753)						(842)

RTB

Current Annual RTB Expenditure
New Annual RTB Expenditure

		352	352	352	352	352	1,760
		778	836	579	579	579	3,351

Net RTB Impact
Variance to Investment Plan

		426	484	227	227	227	1,591
		426	484	227	227	227	1,591

BENEFITS ANALYSIS:

Investment Benefits

		814	788	1,436	2,130	4,108	9,276
--	--	-----	-----	-------	-------	-------	-------

NPV/NPC SUMMARY INFORMATION

Discount Rate:	15%	NPV:	(7396)	IRR:		VCR:	0.52
Payback Period:	5	Years		Months			

C.

US Sanction Paper

Title:	US CNI GMS End-of-Life Frame Relay Replacements	Sanction Paper #:	USSC-12-443
Project #:	INVP 2495H	Sanction Type:	Sanction
Operating Company:	National Grid USA Svc. Co.	Date of Request:	July 24, 2013
Author/NG Representative:	Yelena Belousova/ Dan Hasenwinkel	Sponsor:	John Spink, Vice President Control Center Operations
Utility Service:	IT	Project Manager:	Gary Sidoti

1 Executive Summary

1.1 Sanctioning Summary:

This paper requests sanction of INVP 2495H in the amount \$10.393M with a tolerance of +/- 10% for the purposes of Development and Implementation.

The sanction amount is \$10.393M broken down into:

CapEx \$10.247M
OpEx \$ 0.146M
Removal \$0.000M

NOTE: The project went through the RFP selection process and down-selected to two telecommunication vendors. As per National Grid's Global procurement requirements, the full sanctioning and approval by the US Sanctioning Committee of this project's scope and costs are needed in order to start financial contract negotiations and award a contract to a single telecommunication provider.

1.2 Brief Description:

This mandatory project is a United States Gas Management System (GMS) Critical National Infrastructure (CNI) Support project to replace the existing AT&T Frame Relay communication circuits before the discontinuation of the existing system with circuits using a common, robust design and a higher, more appropriate level of service. AT&T has notified National Grid that they expect to shut down the existing frame relay system by 2016. It is essential that National Grid has migrated off of the system prior to it being shut down. The AT&T Frame Relay system is used by GMS to communicate with critical Remote Terminal Units (RTU's) that monitor and control the gas distribution system in the US.

As a US CNI field system project, the project is critical to National Grid in maintaining the Safety and Reliability of the US Gas distribution system.

US Sanction Paper

1.3 Summary of Projects:

Project	Project Type	Project Title	Estimate
INVP2495H		US CNI GMS End-of-Life Frame Relay Replacements	\$ 10.393
Total			\$ 10.393

1.4 Associated Projects:

Project Number	Project Title	Estimate Amount
Total		\$ -

1.5 Prior Sanctioning History (including relevant approved Strategies):

Date	Governance Body	Sanctioned Amount	Paper Title	Sanction Type
Oct 2012	USSC	\$0.402M	INVP2495H US CNI GMS End of Life Frame Relay Replacements	R&D

1.6 Next Planned Sanction Review:

Date (Month/Year)	Purpose of Sanction Review
Dec 2015	Project Closure

1.7 Category:

Category	Reference to Mandate, Policy, or NPV Assumptions
<input checked="" type="radio"/> Mandatory <input type="radio"/> Policy- Driven <input type="radio"/> Justified NPV	Federal Communications Commission Public Notice issued on April 30, 2012: 'AT&T Corp to discontinue domestic telecommunications services that include domestic and international Frame Relay and ATM services'.

US Sanction Paper

1.8 Asset Management Risk Score

Asset Management Risk Score: 49

Primary Risk Score Driver: (Policy Driven Projects Only)

☐ Reliability ☐ Environment ☐ Health & Safety ☒ Not Policy Driven

1.9 Complexity Level: (if applicable)

☐ High Complexity ☒ Medium Complexity ☐ Low Complexity ☐ N/A

Complexity Score: 14

1.10 Process Hazard Assessment

A Process Hazard Assessment (PHA) is required for this project:

☐ Yes ☒ No

1.11 Business Plan:

Business Plan Name & Period	Project included in approved Business Plan?	Over / Under Business Plan	Project Cost relative to approved Business Plan (\$)
FY 14 IS Investment	<input checked="" type="radio"/> Yes <input type="radio"/> No	<input checked="" type="radio"/> Over <input type="radio"/> Under <input type="radio"/> NA	\$1.830M

1.12 If cost > approved Business Plan how will this be funded?

Re-allocation of funds within the portfolio will be managed by Resource Planning to meet jurisdictional budgetary, statutory and regulatory requirements.

US Sanction Paper

1.13 Current Planning Horizon:

	Prior Yrs	Current Planning Horizon (\$M)						
		Yr. 1 2012/13	Yr. 2 2013/14	Yr. 3 2014/15	Yr. 4 2015/16	Yr. 5 2016/17	Yr. 6 + 2017/18	Total
CapEx	\$ -	\$ 0.233	\$ 2.708	\$ 5.802	\$ 1.504	\$ -	\$ -	\$ 10.247
OpEx	\$ -	\$ 0.146	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.146
Removal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CIAC/Reimbursement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ -	\$ 0.379	\$ 2.708	\$ 5.802	\$ 1.504	\$ -	\$ -	\$ 10.393

1.14 Key Milestones:

Milestone	Target Date: (Month/Year)
Start Up	Jun 2012
Begin Requirements and Design	Nov 2012
Begin Development and Implementation	Aug 2013
Begin User Acceptance Testing	Dec 2013
Move to Production	Sep 2015
Project Complete	Sep 2015
Project Closure	Dec 2015

1.15 Resources, Operations and Procurement:

Resource Sourcing			
Engineering & Design Resources to be provided	<input checked="" type="checkbox"/> Internal		<input checked="" type="checkbox"/> Contractor
Construction/Implementation Resources to be provided	<input checked="" type="checkbox"/> Internal		<input checked="" type="checkbox"/> Contractor
Resource Delivery			
Availability of internal resources to deliver project:	<input type="radio"/> Red	<input type="radio"/> Amber	<input checked="" type="radio"/> Green
Availability of external resources to deliver project:	<input type="radio"/> Red	<input type="radio"/> Amber	<input checked="" type="radio"/> Green

US Sanction Paper

Operational Impact			
Outage impact on network system:	<input type="radio"/> Red	<input type="radio"/> Amber	<input checked="" type="radio"/> Green
Procurement Impact			
Procurement impact on network system:	<input type="radio"/> Red	<input type="radio"/> Amber	<input checked="" type="radio"/> Green

1.16 Key Issues (include mitigation of Red or Amber Resources):

1	Process for Equipment Procurement
2	Telecommunication Provider Contract

1.17 Climate Change:

Contribution to National Grid's 2050 80% emissions reduction target:	<input checked="" type="radio"/> Neutral	<input type="radio"/> Positive	<input type="radio"/> Negative
Impact on adaptability of network for future climate change:	<input checked="" type="radio"/> Neutral	<input type="radio"/> Positive	<input type="radio"/> Negative

1.18 List References:

Please contact NG Representative for copies of these documents as needed.

1	INVP-2495H US CNI GMS End of Life Frame Relay Replacement TCO Log v2 9_Final Draft 6272013.xls
2	INVP2495H US CNI GMS End of life Frame Relay Replacements 24 October 2012 R-D.doc

US Sanction Paper

2 Decisions

The US Sanctioning Committee (USSC) at a meeting held on July 24, 2013:

- (a) APPROVED the investment of \$10.393M and a tolerance of +/- 10% for Development and Implementation.
- (b) Noted the potential RTB Impact of \$4.821M (total) for 5 years.
- (c) NOTED that Gary Sidoti has the approved financial delegation to undertake the activities stated in (a).

Signature.....Date.....

Lee S. Eckert
US Chief Financial Officer
Chairman, US Sanctioning Committee

US Sanction Paper

3 Sanction Paper Detail

Title:	US CNI GMS End-of-Life Frame Relay Replacements	Sanction Paper #:	USSC-12-443
Project #:	INVP 2495H	Sanction Type:	Sanction
Operating Company:	National Grid USA Svc. Co.	Date of Request:	July 24, 2013
Author/NG Representative:	Yelena Belousova/ Dan Hasenwinkel	Sponsor:	John Spink, Vice President Control Center Operations
Utility Service:	IT	Project Manager:	Gary Sidoti

3.1 Background

On April 17, 2012, AT&T Services Inc. filed an application with the Federal Communications Commission to discontinue certain domestic telecommunications services throughout the continental United States, Alaska, Hawaii, the District of Columbia, Puerto Rico and the U.S. Virgin Islands. AT&T notified National Grid in an email dated April 24, 2012 of its intent to shut down the frame relay system utilized by the Downstate New York (NY) / New England (NE) Gas Supervisory Control And Data Acquisition (SCADA) system by summer 2016.

The existing frame relay system is used by the gas SCADA systems to communicate with remote terminal units (RTU's) throughout the legacy KeySpan gas territory. These RTU's are critical devices used by Gas Control to monitor and control the Gas Distribution systems in the United States. Currently, there are approximately 460 frame relay circuits in the Downstate New York and New England areas. If this system is shut down without replacement by another system, Gas Control will lose the ability to control the Gas Distribution system in Downstate NY and the NE regions. At this time, backup communication systems are limited to critical Downstate sites, which is not sufficient in maintaining control of the gas distribution systems.

In addition, Upstate New York has approximately 100 RTU's that communicate via analog phone circuits. These circuits terminate at National Grid facilities. The circuits are consolidated and carried on the National Grid infrastructure to the two Upstate NY CNI Data Centers. In order to eliminate the RTU collection sites, which are common mode failure points for RTU data, and to provide the flexibility to poll the RTU's from one or two SCADA systems regardless of which US CNI Data Center is used, these circuits will also be replaced with circuits using the same Multi Protocol Label Switching (MPLS) architecture and with diverse (alternative) routes into the data centers.

US Sanction Paper

Implementing communication path diversity will improve the availability of SCADA data to the Gas Control Centers. Without this diversity, the failure of critical SCADA data circuits would require switching to the back up system and an outage of the entire SCADA system.

The Gas Control Center consolidation project, which is a separate initiative, will merge the Upstate NY GMS system into the Downstate NY and NE GMS's, and requires the ability to communicate with all of the RTU's from the Downstate NY and NE data centers. Those data centers are not connected to the legacy Upstate NY infrastructure.

3.2 Drivers

The major driver for the project is the need to replace the existing AT&T Frame Relay system used by the Downstate NY and NE SCADA systems by Summer 2016 to avoid losing the ability to control the Gas Distribution system in the Downstate NY and the NE regions.

The secondary driver is to convert the obsolete Upstate NY analog circuits to the new technology to support the consolidation of the US GMS into a single system utilizing modern communication architecture.

This Mandatory investment carries a driver to maintain the Safety and Reliability of the US Gas distribution system. It will support the National Grid US business strategy Elevate 2015 in the area of Safety and Reliability by standardizing and maintaining the reliability of the US CNI Gas telemetry communication circuits

3.3 Project Description

The project scope is to replace the frame relay communication system used by the GMS in the US.

The project went through the RFP selection process and down-selected to two telecommunication vendors. As per National Grid's Global procurement requirements, the full sanctioning and approval by the US Sanctioning Committee of this project's scope and costs are needed in order to start financial contract negotiations and award a contract to a single telecommunication provider.

In order to accomplish the replacement of the frame relay communication system, the project will:

- Contract with telecommunication provider for replacement technology
- Develop the architecture for deployment that will provide the same functionality as the frame relay system currently deployed
- Allow GMS systems in US to communicate with the RTU's in any region.

The telecommunication provider will install the new circuits, however the National Grid Field Operations must be at the site to allow access to the telecommunication provider and install telecommunication hardware to connect new circuit to telemetry devices.

US Sanction Paper

Many of the locations require work at facilities that require compliance with company safety procedures. Personnel working on the project will be required to train and/or qualify to these procedures.

Although there are no hazardous devices, equipment or material being handled during this project, all removed equipment will be disposed of in an appropriate manner. Any required site restoration will be performed in accordance with the appropriate codes and regulations.

New and old circuits will run in parallel for a period of time to ensure the new communication paths are reliable, since it is essential that there be limited interruption to RTU communications during the replacement project especially at critical facilities monitored by Gas Control. This will ensure the ability to monitor and control the gas distribution system in the most reliable and safe method possible.

The project will additionally engage the services of:

- IBM for project manager support per the IS Operating Model
- Chosen telecommunications Vendor to provide and install the new circuits
- Field Operations to install telecommunication hardware and connect the new circuits to the telemetry devices
- Network Support Engineers will modify rule sets on the existing firewalls

Implementation is forecasted to take two years due to the complexity and criticality of the communications and the federal regulations under which the work must be done. The project will require two years to install, startup, and test the new circuits at the various RTU locations. This is based on National Grid field operations availability to support site meetings, install communication devices, and test RTU communications.

3.4 Benefits Summary

The non-financial benefits of this project include the following:

- Replacement of obsolete systems
- Ensure the ability to monitor and control the gas distribution system
- Standardization of equipment and alignment with National Grid Operations Telecommunication strategy
- Utilization of a single, common, modern communications architecture
- Provide a flexible communications infrastructure

3.5 Business and Customer Issues

There are no significant business issues beyond what has been described elsewhere.

US Sanction Paper

3.6 Alternatives

Alternative 1: Replace circuits with a 'Like-for-Like' solution

This option has been rejected due to the following:

- This solution will not satisfy the business need to not force an outage of the primary SCADA system and the switching to its backup in case of failure of critical telemetry circuits.

Alternative 2: Defer Project

This option has been rejected due to the following:

- If the Frame Relay is not replaced prior to shut down and discontinuance of services, National Grid will be put at risk of losing the ability to monitor and control Gas Distribution system in Downstate New York and New England.

Alternative 3: Do Nothing

This option has been rejected due to the following:

- The shut down and discontinuation of the frame relay system will put National Grid at risk of being out of regulatory compliance.
- Gas Control will lose the ability to monitor and control the Gas Distribution system in Downstate New York and New England.

3.7 Safety, Environmental and Project Planning Issues

There are no significant issues beyond what has been described elsewhere.

US Sanction Paper

3.8 Execution Risk Appraisal

Number	Detailed Description of Risk / Opportunity	Probability	Impact		Score		Strategy	Pre-Trigger Mitigation Plan	Residual Risk	Post Trigger Mitigation Plan
			Cost	Schedule	Cost	Schedule				
1	Sole Source will need to be identified in time for equipment purchased to be secured on schedule.	3	3	3	9	9	Mitigate	Pgm Manager will make sure that the equipment required will be evaluated against the equipment being used by electric ensuring the equipment meets the RFP specifications from the vendors.		
2	Project time frame and costs may be increased due exceptions needed for solution security policy compliance.	3	2	3	6	9	Mitigate	PM will work with DR&S to obtain any exceptions needed for access after the Telecom vendor is selected.		
3	Forecasted time may be overly optimistic for procurement to finalize the selection for material and Telecom service provider.	4	2	5	8	20	Mitigate	PM will be closely monitoring the Procurement activities and will make sure the project time line is adjusted accordingly.		
4	Project time frame and costs may be increased due to the unavailability of Field or CNI Resources for the duration of the project due to other higher priority projects or system maintenance.	3	3	4	9	12	Mitigate	PM will monitor the situation and estimates will be built in to the project schedule to accommodate after hours work. Project Plan must provide for time delays due to unforeseen issues and coordination with other work loads.		
5	The Maintenance and Support contract with the Telecom Vendor will exceed the forecasted RTB budget approved during D&I sanctioning.	3	3	1	9	3	Mitigate	PM will closely review the ongoing incremental costs during the D&I phase commercial discussions in order to estimate most accurate RTB costs finalized after the Telecom Vendor selection.		

US Sanction Paper

3.9 Permitting

Permit Name	Probability Required (Certain/ Likely/ Unlikely)	Duration To Acquire Permit	Status (Complete/ In Progress Not Applied For)	Estimated Completion Date

3.10 Investment Recovery

3.10.1 Investment Recovery and Regulatory Implications

Recovery will occur at the time of the next rate case for any operating company receiving allocations of these costs.

3.10.2 Customer Impact

3.10.3 CIAC / Reimbursement

		Yr. 1	Yr. 2	Yr. 3	Yr. 4	Yr. 5	Yr. 6 +	
\$M	Prior Yrs	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	Total
CIAC/Reimbursement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

3.11 Financial Impact to National Grid

3.11.1 Cost Summary Table

Project Number	Project Title	Project Estimate	Spend (\$M)	Prior Yrs	Current Planning Horizon						
					Yr. 1	Yr. 2	Yr. 3	Yr. 4	Yr. 5	Yr. 6 +	Total
INVP2495H	US CNI GMS End-of-Life Frame Relay Replacements	+/- 10%	CapEx	-	0.233	2.708	5.802	1.504	-	-	10.247
			OpEx	-	0.146	-	-	-	-	-	0.146
			Removal	-	-	-	-	-	-	-	-
			Total	-	0.379	2.708	5.802	1.504	-	-	10.393

US Sanction Paper

3.11.2 Project Budget Summary Table

Project Costs per Business Plan

	Prior Yrs	Current Planning Horizon						Total
		Yr. 1 2012/13	Yr. 2 2013/14	Yr. 3 2014/15	Yr. 4 2015/16	Yr. 5 2016/17	Yr. 6 + 2017/18	
\$M								
CapEx	\$ -	\$ 1.200	\$ 1.901	\$ 2.030	\$ 2.090	\$ 1.067	\$ -	\$ 8.288
OpEx	\$ -	\$ 0.055	\$ 0.055	\$ 0.055	\$ 0.055	\$ 0.055	\$ -	\$ 0.275
Removal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Cost in Bus. Plan	\$ -	\$ 1.255	\$ 1.956	\$ 2.085	\$ 2.145	\$ 1.122	\$ -	\$ 8.563

Variance (Business Plan-Project Estimate)

	Prior Yrs	Current Planning Horizon						Total
		Yr. 1 2012/13	Yr. 2 2013/14	Yr. 3 2014/15	Yr. 4 2015/16	Yr. 5 2016/17	Yr. 6 + 2017/18	
CapEx	\$ -	\$ 0.967	\$ (0.807)	\$ (3.772)	\$ 0.586	\$ 1.067	\$ -	\$ (1.959)
OpEx	\$ -	\$ (0.091)	\$ 0.055	\$ 0.055	\$ 0.055	\$ 0.055	\$ -	\$ 0.129
Removal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Cost in Bus. Plan	\$ -	\$ 0.876	\$ (0.752)	\$ (3.717)	\$ 0.641	\$ 1.122	\$ -	\$ (1.830)

3.11.3 Cost Assumptions

This estimate was developed in 2013 using the standard IS estimating methodology. The accuracy level of estimate for each project is identified in table 3.11.1.

3.11.4 Net Present Value / Cost Benefit Analysis

3.11.4.1 NPV Summary Table

This is not an NPV project.

3.11.4.2 NPV Assumptions and Calculations

3.11.5 Additional Impacts

None

US Sanction Paper

3.12 Statements of Support

3.12.1 Supporters

Role	Name	Responsibilities
IS Finance	Chip Benson	Endorses the project aligns with jurisdictional objectives
IS Business Relationship Mgmt	Wayne Watkins	Endorses the project aligns with jurisdictional objectives
US Business Supporter	John Spink	Endorses the project aligns with jurisdictional objectives

3.12.2 Reviewers

Function	Area	Individual
Finance	All	Chip Benson
Regulatory	All	Gideon Katsh
	Gas - NY	Laurie Brown
	Gas - NE	Walter Fromm
Procurement	All	Arthur Curran

4 Appendices

4.1 Project Funding Breakdown

US Sanction Paper

4.2 Other Appendices

4.2.1 Project Cost Breakdown

Project Cost Breakdown			
Cost Category	sub-category	\$ (millions)	Name of Firm(s) providing
Personnel	NG Resources	4.472	
	SDC Time & Materials	0.619	IBM
	SDC Fixed-Price	-	
	All other personnel	0.139	
	TOTAL Personnel Costs	5.230	
Hardware	Purchase	2.316	
	Lease	-	
Software		-	
Risk Margin		0.690	
Other		2.157	
TOTAL Costs		10.393	

4.2.2 Benefiting Operating Companies

This investment will benefit all Gas Distribution companies in Massachusetts, New York and RI by providing capabilities to continue successfully monitoring and control the Gas Distribution systems in these areas.

Benefiting Operating Companies Table:

Operating Company Name	Business Area	State
Boston Gas Company	Gas Distribution	MA
Niagara Mohawk Power	Gas Distribution	NY
Keyspan Energy Delivery LI	Gas Distribution	NY
Keyspan Energy Delivery NY	Gas Distribution	NY
Colonial Lowell Division	Gas Distribution	MA
Narragansett Gas	Gas Distribution	RI
Essex County Gas Company	Gas Distribution	MA

US Sanction Paper

4.2.3 IS Ongoing Operational Costs (RTB):

This project will increase IS ongoing operations support costs as per the following table. These are also known as Run the Business (RTB) costs.

Summary Analysis of RTB Costs							
All figures in \$ millions	Yr. 1 12/13	Yr. 2 13/14	Yr. 3 14/15	Yr. 4 15/16	Yr. 5 16/17	Yr. 6+	Total
<u>Forecast of RTB Impact</u>							
RTB if Status Quo Continues	2.105	2.410	2.410	2.410	2.410	8.856	20.601
RTB if Project is Implemented	2.105	2.428	3.655	4.865	3.513	12.910	29.475
Net change in RTB	-	0.018	1.245	2.455	1.103	4.053	8.874
<u>RTB Variance Analysis</u> (if Project is Implemented)							
Net Δ RTB funded by Plan(s)	-	-	-	-	-	-	-
Variance to Plan	-	0.018	1.245	2.455	1.103	4.053	8.874
<u>Total RTB Costs - by Cost Type</u> (if Project is Implemented)							
App.Sup. - SDC 1	-	-	-	-	-	-	-
App.Sup. - SDC 2	-	-	-	-	-	-	-
App.Sup. - other	-	-	-	-	-	-	-
SW maintenance	-	-	-	-	-	-	-
SaaS	-	-	-	-	-	-	-
HW support	2.105	2.428	3.655	4.808	3.513	12.910	29.418
Other: IS	-	-	-	0.057	-	-	0.057
All IS-related RTB (sub-Total)	2.105	2.428	3.655	4.865	3.513	12.910	29.475
Business Support (sub-Total)	-	-	-	-	-	-	-
Total RTB Costs	2.105	2.428	3.655	4.865	3.513	12.910	29.475

RTB increases during the project are the result of operating the new circuits in parallel with the existing circuits, in order to validate reliable communications with the GMS before production cutover.

The post-project RTB increase is due to the addition of Upstate NY SCADA circuits to the new MPLS architecture, the additional diverse communication paths into the CNI Data Centers to avoid common points of failure, and a new field device maintenance agreement with security patch support.



Title:	AMAG Upgrade	Sanction Paper #:	USSC- 14-251v2
Project #:	INVP 1172 XG020004604 (OpEx) 90000112731 (CapEx)	Sanction Type:	Resanction
Operating Company:	National Grid USA Svc. Co.	Date of Request:	November 19, 2015
Author / NG Representative:	Susan Stallard / Fran Mangano	Sponsor:	Warren Bamford, VP, Global Security
Utility Service:	IT	Project Manager:	Donald Stahlin

1 Executive Summary

This paper requests the resanction of INVP 1172 in the amount \$6.041M with a tolerance of +/- 10% for the purposes of Development and Implementation.

This sanction amount is \$6.041M broken down into:

- \$5.806M Capex
- \$0.235M Opex
- \$0.000M Removal

Note the originally requested sanction amount of \$4.630M for Development and Implementation in Oct 2014.

2 Resanction Details

2.1 Project Summary

This policy-driven project will replace our current version of AMAG physical access control system (Enterprise Edition 6.01) with the more current release (Enterprise Edition 8.01 SP1). The upgrade will include new infrastructure installed with the current production system in preparation for a phased migration to the new system. The upgraded system will remain on National Grid property in CNI managed data centers.

This upgrade is to resolve performance issues with the current system due to aging infrastructure and vendor support issues caused by being several versions behind the current release. The upgrade is required for National Grid to complete its rollout of Windows 7 workstations as the currently installed version will not run on Windows XP. The upgrade will enhance National Grid's compliance with NERC/CIP (North American Electric Reliability Corp. / Critical Infrastructure Protection) regulations.



2.2 Summary of Projects

Project Number	Project Title	Estimate Amount (\$M)
INVP 1172	AMAG Upgrade	6.041
Total		6.041

2.3 Prior Sanctioning History

Previously approved sanctions are listed below (Latest to Oldest).

Date	Governance Body	Sanctioned Amount	Potential Project Investment	Paper Title	Sanction Type	Paper Reference Number	Tolerance
Oct 2014	USSC	\$4.630M	\$4.630M	AMAG Upgrade	Full Sanction	USCC-14-251	10%
Apr 2011	US BRM	\$0.156M	\$0.966M	AMAG Upgrade Requirements and Design	Partial Sanction	INVP 1172	25%

Over / Under Expenditure Analysis

Summary Analysis (\$M)	Capex	Opex	Removal	Total
Resanction Amount	\$5.806M	\$0.235M	\$0.000M	\$6.041M
Latest Approval	\$4.478M	\$0.152M	\$0.000M	\$4.630M
Change*	\$1.328M	\$0.083M	\$0.000M	\$1.411M

*Change = (Re-sanction – Amount Latest Approval)

2.4 Cost Summary Table

Project Number	Project Title	Project Estimate Level (%)	Spend (\$M)	Prior Yrs	Yr. 1	Yr. 2	Yr. 3	Yr. 4	Yr. 5	Yr. 6 +	Total
					2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	
INVP 1172	AMAG Upgrade	Est Lvl (e.g. +/- 10%)	CapEx	2.161	3.051	0.594	0.000	0.000	0.000	0.000	5.806
			OpEx	0.093	0.042	0.100	0.000	0.000	0.000	0.000	0.235
			Removal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			Total	2.254	3.093	0.694	0.000	0.000	0.000	0.000	6.041



2.5 Business Plan

Business Plan Name & Period	Project included in approved Business Plan?	Over / Under Business Plan	Project Cost relative to approved Business Plan (\$)
Investment Plan FY15/16	<input checked="" type="radio"/> Yes <input type="radio"/> No	<input checked="" type="radio"/> Over <input type="radio"/> Under <input type="radio"/> N/A	\$0.950M
Investment Plan FY16/17	<input checked="" type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Over <input checked="" type="radio"/> Under <input type="radio"/> N/A	\$0.167M

2.6 Drivers

2.6.1 Detailed Analysis Table

The following table indicates the major key variations that account for the difference between the original sanction amount and the requested resanction amount.

Detail Analysis	Over/Under Expenditure?	Amount
Elongated timeframe	<input checked="" type="checkbox"/> Over <input type="checkbox"/> Under	\$0.435M
Detailed Design Discoveries	<input checked="" type="checkbox"/> Over <input type="checkbox"/> Under	\$1.057M
Necessary Scope Changes	<input checked="" type="checkbox"/> Over <input type="checkbox"/> Under	\$0.243M
Detailed Design Efficiencies	<input type="checkbox"/> Over <input checked="" type="checkbox"/> Under	\$0.324M

2.6.2 Explanation of Key Variations

The key driver for the resanction is to provide funding that was not included in the original budget with respect to:

1. Additional Hardware, Software and associated installation costs in areas where the original design was deficient.
 - Telecommunications equipment for the required connectivity
 - Increased storage capacity for long term data retention requirements
 - Effort to deploy 'mini' data center within the CNI data centers was more extensive than originally envisioned
 - Inadequate versions of software quoted in original project costs
2. Additional scope was uncovered.
 - Compliance with a NERC-CIP requirement not previously identified



- Telecommunications equipment for appropriate level of redundancy
 - Additional user licenses for AMAG SW
 - Compliance with NG's cyber security requirements not previously identified
 - AFUDC increased due to additional scope as well as AFUDC rate increase
3. Elongated timeframe for delivery.
- Project duration extended 5 months due to above points 1 and 2
 - Additional staff to supplement skills not originally anticipated
4. Detailed Design Efficiencies.
- Eliminated some redundancies which were not critical to day to day operations and reasonable alternatives existed.

2.7 If cost > approved Business Plan how will this be funded?

Re-allocation of funds within the portfolio will be managed by the Business Support Manager to meet jurisdictional budgetary, statutory and regulatory requirements.

2.8 Key Milestones

Milestone	Target Date: (Month/Year)
Start up	Feb 2011
Begin Requirements and Design	Apr 2011
D-I Sanction	Oct 2014
Begin Development and Implementation	Nov 2014
D-I Resanction	Nov 2015
Begin User Acceptance Testing	Apr 2016
Move to Production	Jun 2016
Project Complete	Sep 2016
Project Closure	Jan 2017

2.9 Next Planned Sanction Review

Date (Month/Year)	Purpose of Sanction Review
Jan 2017	Project Closure



3 Statements of Support

3.1 Supporters

The supporters listed have aligned their part of the business to support the project.

Role	Individual's Name
Business Executive Sponsor	Warren Bamford
Head of BRM/Strategy	Jon Poor
Relationship Manager	Jeff Dailey
Head of PDM	Richard Wood obo Trish Torizzo
Program Delivery Manager	Don Stahlin
IS Finance Management	Chip Benson
IS Regulatory	Wayne Watkins
Digital Risk & Security	Diana Simkin
Service Transition	Brian Detota
Enterprise Architecture	Joe Clinchot

3.2 Reviewers

The reviewers have provided feedback on the content/language of the paper

Function	Area	Individual
Finance	All	Chip Benson
Regulatory	All	Peter Zschokke
Procurement	All	Art Curran
Jurisdictional Delegate(s)	Electric - NE	James Patterson
	Electric - NY	Mark Harbaugh
	FERC	Carol Sedewitz
	Gas - NY	Laurie Brown
	Gas - NE	David Iseler



4 **Decisions**

The US Sanctioning Committee (USSC) at a meeting held on November 19, 2015:

- (a) APPROVED this paper and the investment of \$6.041M and a tolerance of +/- 10%.
- (b) Approved the RTB impact of \$0.891M per annum for 5 years.
- (c) NOTED that Donald Stahlin is the Project Manager and has the approved financial delegation.

Signature  Date 

Margaret Smyth
US Chief Financial Officer
Chair, US Sanctioning Committee

US Sanction Paper

Title:	Nucleus ETRM Replacement	Sanction Paper #:	INVP 2330
Project #:		Sanction Type:	Re-sanction
Operating Company:	Allocated	Date of Request:	25 JUL 2012
Author:	Mayumi Okada / Joseph Kruczynicki	Sponsor:	Lorraine Lynch, VP of Treasury
Utility Service:	IS - FSS&C		

1 Executive Summary

1.1 Sanctioning Summary:

This paper requests the re-sanction of INVP-2330 in the amount \$8.008M, including a tolerance of +/- 10% for the purposes of D&I Re-sanction of the replacement of the Energy Trading, Transaction and Risk Management (ETRM) platform called Nucleus.

This sanction amount is \$8.008M broken down into:

\$0.388M OPEX
\$7.620M CAPEX

Note the originally requested sanction amount of \$6.086M. Additional funds of \$1.922M are requested to complete the work. Reference Section 4.2, Drivers, for a breakdown of the additional funds requested.

1.2 Brief Description:

This policy-driven, reliability-based project will replace National Grid's retired & unsupported Nucleus system with the Allegro Transaction and Risk Management System. Nucleus is the current US ETRM (Energy Trading, Transaction and Risk Management) platform. ETRM solutions help to manage the front, middle, and back office aspects of an energy trading entity. Functionality includes capturing and managing energy market transactions from execution to settlement and invoicing, and the managing and reporting of market risk and credit exposures. National Grid US purchases \$8B per year in Energy for the jurisdictions it serves.

This sanction proposal is a D&I Re-sanction to:

- Acquire the funding necessary to complete the project goals.

1.3 Summary of Projects:

Project Number	Project Title	Estimate Amount (\$)
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US Sanction Paper

INVP-2330	ETRM Replacement	\$8.008M
Total		\$8.008M

1.4 Associated Projects:

Project Number	Project Title	Company	Estimate Amount (\$)
Total			\$

1.5 Prior Sanctioning History (including relevant approved Strategies):

Date	Governance Body	Sanctioned Amount	Paper Title	Sanction Type
AUG 2010	USSC	\$3.538M	ETRM Replacement	R&D Sanction
MAY 2011	USCCS	\$3.572M	ETRM Replacement	R&D Re-sanction
JUL 2011	USSC	\$6.086M	ETRM Replacement	D&I Sanction

Over / Under Expenditure Analysis

Summary Analysis (M's)	Capex	Opex	Removal	Total
Latest approval	\$5.723	\$0.363	\$	\$6.086
Re-Sanction Amount	\$7.620	\$0.388	\$	\$8.008
Change*	\$1.897	\$0.025	\$	\$1.922

*Change = (Latest Approval – Re-Sanction Amount)

1.6 Next Planned Sanction Review:

Date (Month/Year)	Purpose of Sanction Review
APR / 2013	Project Closure

1.7 Category:

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Category	Reference to Mandate, Policy, or NPV Assumptions
<input type="checkbox"/> Mandatory	<p>In response to the findings of the Management Audit of [VI-12] that stated: “NG’s current risk management framework will not be adequate to handle procuring energy capacity and hedging instruments in future energy markets.”</p> <p>The related recommendation [VI-3] included: “Define and restructure the risk management policies, procedures and functions to assure appropriate monitoring of risk factors as the transition and long-term supply procurement plans are implemented. The risk management tools should incorporate appropriate market monitoring to know when contingencies are needed.”</p>
<input checked="" type="checkbox"/> Policy-Driven	
<input type="checkbox"/> Justified NPV	

1.8 Asset Management Risk Score

Asset Management Risk Score: 45

Primary Risk Score Driver: (Policy Driven Projects Only)

☒ Reliability ☐ Environment ☐ Health & Safety

1.9 Complexity Level: (if applicable)

☐ High Complexity ☐ Medium Complexity ☐ Low Complexity

Complexity Score: _____

1.10 Business Plan:

Business Plan Name & Period	Project included in approved Business Plan?	Over / Under Business Plan	Project Cost relative to approved Business Plan (\$)
INVP-2330, FY 09/10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Over <input type="checkbox"/> Under	\$0.160M
INVP-2330, FY 10/11	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Over <input checked="" type="checkbox"/> Under	\$0.141M
INVP-2330, FY 11/12	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Over <input type="checkbox"/> Under	\$1.582M
INVP-2330, FY 12/13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Over <input type="checkbox"/> Under	\$3.118M

1.11 If cost > approved Business Plan how will this be funded?

The following is how this re-sanctioning will be funded.

US Sanction Paper

- The \$2.896M CAPEX shortage will be funded via a substitution from \$0.774M CAPEX from INVP2861 and a substitution of \$2.152M CAPEX from INVP2864

1.12 Current Planning Horizon:

\$'000s	Current planning horizon					Yr 6+	Total
	Yr 1 09/10	Yr 2 10/11	Yr 3 11/12	Yr 4 12/13	Yr 5 13/14		
Proposed Investment	160	2,891	1,839	3,118			8,008

1.13 Resources:

Resource Sourcing			
Engineering & Design Resources to be provided	<input type="checkbox"/> Internal	<input checked="" type="checkbox"/> Contractor	
Construction/Implementation Resources to be provided	<input checked="" type="checkbox"/> Internal	<input checked="" type="checkbox"/> Contractor	
Resource Delivery			
Availability of internal resources to deliver project:	<input type="checkbox"/> Red	<input type="checkbox"/> Amber	<input checked="" type="checkbox"/> Green
Availability of external resources to deliver project:	<input type="checkbox"/> Red	<input type="checkbox"/> Amber	<input checked="" type="checkbox"/> Green
Operational Impact			
Outage impact on network system:	<input type="checkbox"/> Red	<input type="checkbox"/> Amber	<input checked="" type="checkbox"/> Green
Procurement impact on network system:	<input type="checkbox"/> Red	<input type="checkbox"/> Amber	<input checked="" type="checkbox"/> Green

1.14 Key Issues (include mitigation of Red or Amber Resources):

1	If we don't complete the interface with USFP & Allegro then manual entry of Receivables and Payables will be required.
2	Difficulties in acquiring needed internal business resources. Mitigation recommendation will be to get essential internal business resources reassigned to the project 100% by the business, backfill as needed and commitment of additional hours by team during testing period.



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1.15 Key Milestones:

Milestone	Target Date: (Month/Year)
R&D Sanction	AUG / 2010
Start R&D	SEP / 2010
Complete R&D	JUN / 2011
D&I Sanction	JUL / 2011
D&I Re-sanction	JUL / 2012
Implementation Release 1	AUG / 2012
Implementation Release 2	NOV / 2013
Implementation Release 3	DEC / 2012
Project Complete	FEB / 2013
Project Closure	APR / 2013

1.16 Climate Change:

Are financial incentives (e.g. carbon credits) available?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Contribution to National Grid's 2050 80% emissions reduction target:	<input checked="" type="checkbox"/> Neutral	<input type="checkbox"/> Positive <input type="checkbox"/> Negative
Impact on adaptability of network for future climate change:	<input checked="" type="checkbox"/> Neutral	<input type="checkbox"/> Positive <input type="checkbox"/> Negative

1.17 List References:

1	Last sanctioning Investment Proposal, from July 2011.
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US Sanction Paper

2 Recommendations:

The **Sanctioning Authority**, USSC / NGUSA Board, etc is invited to:

- (a) APPROVE the investment of \$8.008M, including a risk margin of +/- 10%.
- (b) APPROVE the RTB Impact of -\$236K (per annum) for 4 years.
- (c) NOTE that Lorraine Lynch is the Project Sponsor.
- (d) NOTE that Anantha Mantrala is the Project Manager and has the approved financial delegation to deliver the project.

Signature..... Date.....

Lorraine Lynch
VP, Treasury US

3 Decisions

The US Sanctioning Committee (USSC) approved this paper at a USSC meeting held on 25 JUL 2012

Signature..... Date.....

Lee S. Eckert
US Chief Financial Officer
Chairman, US Sanctioning Committee

US Sanction Paper

4 Sanction Paper Detail

Title:	Nucleus ETRM Replacement	Sanction Paper #:	INVP 2330
Project #:		Sanction Type:	Re-sanction
Operating Company:	Allocated	Date of Request:	25 JUL 2012
Author:	Mayumi Okada / Joseph Kruczynicki	Sponsor:	Lorraine Lynch, VP of Treasury
Utility Service:	IS - FSS&C		

4.1 Background

In December 2009, the Niagara Mohawk audit by the New York Public Service Commission indicated that National Grid's current risk management framework will not be adequate to handle procuring energy capacity and hedging instruments in future energy markets.

While not specifically mentioning the current US ETRM system, we believe that the Allegro system will enable National Grid to capture and monitor risks for a wide range of traditional and new energy products including, but not limited to, natural gas, power, capacity, renewable credits, emissions and others. Due to the flexibility and capabilities of the system, National Grid will have the ability to adapt to future market and regulatory changes quickly and monitor risk appropriately. With Allegro, National Grid will enter all transactions into one system which will provide a single source for confirmation, invoice verification, invoice generation, valuation and risk reporting. Because National Grid provides commodity procurement services across many state jurisdictions, it is important to keep each group of customer transactions separate and apart from one another. This system allows the company to prevent commingling of customer commodity costs across jurisdictions, while allowing for a common practice enterprise wide. The Allegro system also has the necessary security features that provide the ability to separate access by job functionality.

The Allegro transaction and risk management system will replace Nucleus (National Grid's existing transaction management system). National Grid was informed a few years ago that Sungard the company that owns Nucleus would no longer provide technical support of the product and at that time it embarked on finding its replacement. Both systems are databases that allow for a very efficient management of energy transactions from its execution to the invoicing. This system provides the necessary controls and industry best practices as recommended by the Committee of Chief Risk Officers (CCRO) and required by Sarbanes-Oxley regulations. In addition, the replacement of this system is currently identified in the Energy Procurement and Treasury Risk Registers (This item is classified as ID#3318).

In addition to the jurisdictional entity requirements, the ETRM system is utilized for the recording and accounting of energy transactions. Weakness in accounting for derivatives is one of the most frequent areas reported under Sarbanes-Oxley. Hence, the implementation of a rigorous

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process and controls to ensure the accuracy of the data further supports the ability to mitigate risk around recording of energy transactions and valuation of energy derivative transactions. A failure in controls could result in the incorrect disbursement of funds and incorrect accounting for transactions leading to the restatement of financial statements. Such failure could also lead to a material weakness being identified resulting in a significant financial burden to rectify.

To address the risks associated with the Nucleus system, a phased implementation approach has been adapted. The phased approach will reduce the risk associated with current system by transitioning all transactions currently performed in Nucleus to the new system in the early phases of implementation.

During the Business Process Confirmation activity, where the product is demonstrated process by process on an early delivery of converted data, a number of additional extensions to the core product have surfaced. Additionally, a number of enhancements to the core product which were thought to be needed have now been deemed as unnecessary as the core product delivers this as a standard core function.

Application Decommissioning

- Application will be in read only state for limited users In order to be able to accommodate future data requests from state regulators and/or FERC.
- Application will be online for 1 year after which an underlying database will be retained for minimum of 6 years.
- Nucleus will be in read-only state for 1 year.

4.2 Drivers

Below are the drivers for this project:

- Nucleus was implemented in 2003. We are still on the original version, R13. SunGard, the Nucleus vendor, is no longer providing updates or enhancements to R13. National Grid currently pays a support contract of \$300k, which entitles National Grid to Sev 1 incidents only due to limited staff that can support Sev 2 and beyond incidents.
- Vendor uncertainty posed risk to the jurisdictional entities for which we procure commodity.
- Current system risks could result in our inability to: separate customer commodity costs across jurisdictions; adequately segregate job functions; accurately account for and record energy transactions; and accurately value energy derivative transactions. Such deficiencies could result in a material weakness being identified and therefore requiring a significant level of effort and cost to address.
- Recent level 1 failure (namely business critical) demonstrated that SunGard is very thin in being able to support this product line with technical experts to restore Nucleus to operating condition
 - National Grid US purchases \$8 billion/yr in Energy, so has a vested interest in managing this process efficiently, with a robust toolset in support of Rate Case filings.



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The following table indicates the key variations that account for the difference between the original Sanction Amount \$6.086M and the requested Re-Sanction amount \$8.008M:

DETAIL ANALYSIS (M's)	OVER / UNDER EXPENDITURES?	AMOUNT
Latest Approval	>>>	\$6.086M
Addition of 3rd party resources w/ETRM implementation experience	<input checked="" type="checkbox"/> OVER <input type="checkbox"/> UNDER	\$0.866M
Out of Scope Extensions	<input checked="" type="checkbox"/> OVER <input type="checkbox"/> UNDER	\$0.615M
Additional Business Labor	<input checked="" type="checkbox"/> OVER <input type="checkbox"/> UNDER	\$0.068M
Additional IS Labor	<input checked="" type="checkbox"/> OVER <input type="checkbox"/> UNDER	\$0.123M
Risk Margin (re-stated)	<input checked="" type="checkbox"/> OVER <input type="checkbox"/> UNDER	\$0.250M
SUBTOTAL		\$1.922M

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4.3 Project Description

PLAN

- **Work plan**
 - Identify resources and availability
 - Identify detail tasks with accountable resource
 - Balance resources to create work plan
- **Resource plan**
 - Set expectations of time commitments of all participants
- **Communication plan**
 - Establish status reporting and change management policies and decision makers
- **Customer and Allegro verify that project plans match the Scope of Services**

TRANSLATE

- **Project Infrastructure.** Establish the project infrastructure
- **Data Source Definition.** Identify the source of data
- **Data Conversion.** Convert data from source to development environment.
- **Data Verification.** Verify the accuracy of converted data
- **Business Process Confirm.** Confirm processes with customer
- **Extension Definition.** Identify and define extensions:
 - **Data model.** New tables/columns, database views, triggers, stored procedures
 - **Visual model.** New views, panes, sets, icons
 - **Messaging.** Event-based alerts, notifications, and actions
 - **Connect.** Transformation of data between systems
 - **Reports.** External reports, generally developed with Crystal
 - **Web Services.** Existing WS invocation, new WS invocation, external assemblies
- **Translate Phase Approval.** Obtain phase approval
- **Confirmed required level of funding for implementation project, including resources, HW, and SW.**

4.4 Benefits Summary

Below is an overview of the benefits for this project:

- This project has no direct savings, aside from RTB savings noted above, at this time. However, the potential to utilize this solution for the UK will be explored at a later

US Sanction Paper

date and that could result in the retirement of two (2) bespoke systems which may translate into additional savings.

- A robust toolset in support of Rate Case filings, opposed to manual spreadsheets subject to error
- Robust credit module that will replace a regime that is currently completely spreadsheet based with significant manual input to run and maintain.
- Robust system that will improve our ability to estimate market and credit risk exposures thereby enabling more informed risk mitigation decisions related to exposures.
- Flexibility to adapt to changing regulatory requirements and increasing products (REC's, Carbon Credits, Metals, etc)
- Provide ability to capture and report on LNG transactions, allowing full transparency of LNG purchases from execution to invoicing.
- The Allegro system provides flexibility to provide enhancements over the current process and will automate wherever possible.
- Add new scope and increase efficiency in ability to monitor, manage and report risk, in support of the front, middle and back offices, auditors, creditors and regulators.

4.5 Business Issues

This project will mitigate the risks associated with staying on Nucleus R13:

- Impact to National Grid's reputation (investor and bondholder loss of confidence).
- Loss of trust and confidence by our jurisdiction regulators and LIPA in the event of an outside audit that highlights a mission critical system with limited support.
- Auditors: weakness in accounting for derivatives is one of the most frequent areas reported under Sarbanes-Oxley. Hence, the level of rigor around processes and controls to ensure data integrity further supports the ability to mitigate risk and possibility of receiving a qualified opinion regarding a marginally supported system.
- Inability to accurately segregate and separate commodity costs and procurement transactions by jurisdiction, resulting in regulatory scrutiny and uncertainty around regulatory cost recovery.
- Inability to keep up with changing business and regulatory requirements (REC's Carbon, Metals, Green tags, etc). While not specifically mentioning the Nucleus system, the Niagara Mohawk PSC audit has already indicated that our current risk management framework will not be adequate to handle procuring energy capacity and hedging instruments in future energy markets.
- Current system is incapable of responding to support any new or expanded SOX reporting requirements or reporting requirements that could assist our UK financial closing
- Based on recent events, SunGard's long term plans may not include remaining in the Energy Sector. A new owner may find supporting Nucleus unprofitable, potentially leaving us with an unsupported Risk Management system

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- New system implementation can take up to 18 months – we are likely not to have that much notice in the event that SunGard cannot provide adequate levels of support
- Potential FERC liabilities and fines from a system failure (Legal advisor opinion)

A noteworthy issue is the:

- Impact to National Grid's reputation (investor and bondholder loss of confidence).

4.6 Options Analysis

Recommended Option: Complete Allegro implementation.

Rationale:

- In addition to risk mitigation, new system will add new scope and increase efficiency in ability to monitor, manage and report risk, in support of the front and back offices, auditors, creditors and regulators.
- Allow for utilization of a single system to manage transactions and valuations in order to mitigate the risks of manual

Alternative 1: Continue paying SunGard \$300k annually for level 1 support and hire a third party to maintain level 2 and 3 issues.

Rejected Rationale:

Not an option. Would violate the SunGard Contract. .

Alternative 2: Stay on Nucleus R13, purchase the source code and get a 3rd party vendor to support it.

Rejected Rationale:

Approximate Cost of \$1.1m one time and \$150k annual. (Additional analysis would be needed to confirm costs).

- \$1.1m includes \$600k to purchase SW and \$500k to engage 3rd party (Adapt2) to modify SW to address functional gaps
- \$150k RTB for annual maintenance. Current Nucleus maintenance cost is \$300k, will be reduced to approximately \$250k based on retired modules
- Option undesirable as the platform is built on outdated technologies, is complex and inflexible to changing business needs
- Would be an interim short term solution – only 3-5 years.
- Adapt2 is a small group of former SunGard programmers that have started a consulting firm. There is a risk that Adapt2 may not be able to deliver a long term project due to financial and resource constraints.

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- Will not address items in the Treasury Risk Register (ID#3318), due to uncertainty of Adapt2s future

Alternative 3: Do Nothing

Rejected Rationale:

- Current Nucleus R13 version is at risk of a system failure resulting in a significant financial impact
- Will not address items in the Treasury Risk Register This item is classified as ID#3318

4.7 Safety, Environmental and Project Planning Issues

Not applicable.

4.8 Execution Risk Appraisal

Number	Status (Active, Dormant, Retired)	Cat	Detailed Description of Risk / Opportunity	Cause/Trigger	Probability	Impact		Score		Strategy	Risk Owner
						Cost	Schedule	Cost	Schedule		
1	Active		USFP Interfaces	I/F not complete in time	4	1	1	4	4	Mitigate	Business
2	Active		Availability of internal business resources	Internal business resources are still performing day to day functions	2	2	2	4	4	Accept	Business

4.9 Permitting

Permit Name	Probability Required (Certain/ Likely/ Unlikely)	Duration	Status (Complete/ In Progress Not Applied For)	Estimated Completion Date

4.10 Investment Recovery



US Sanction Paper

4.10.1 Investment Recovery and Regulatory Implications

This solution enables fulfilment of our regulatory obligation to procure and deliver energy to our customers. The Nucleus system will enable us to continue to manage energy procurement costs in a cost effective and reliable manner.

4.10.2 Customer Impact

Because National Grid provides commodity procurement services across many state jurisdictions, it is important to keep each group of customer transactions separate and apart from one another. This system allows the company to prevent commingling of customer commodity costs across jurisdictions, while allowing for a common practice enterprise wide. The Allegro system also has the necessary security features that provide the ability to separate access by job functionality.

4.10.3 CIAC / Reimbursement

\$M	CIAC/Reimbursement							
	Prior YR'S	Yr 1 12/13	Yr 2 13/14	Yr 3 14/15	Yr 4 15/16	Yr 5 16/17	Yr 6 17/18	Total
CIAC / Reimbursement								

4.11 Financial Impact to National Grid

4.11.1 Cost Summary Table



US Sanction Paper

Current Planning Horizon												
Project #	Project Description	Proj Est level	\$M	Prior YR Spending	YR 1 09/10	YR 2 10/11	YR 3 11/12	YR 4 12/13	YR 5 13/14	YR 6 14/15	YR7+	Total
Project #	Description		Capex			2.891	1.832	2.667				7.390
INVP 2330	Project		Opex		0.160	0.000	0.007	0.201				0.368
			Removal									0.000
			Total	0.000	0.160	2.891	1.839	2.868	0.000	0.000	0.000	7.758
Project #	Description											
INVP 2330	Risk Margin		Capex					0.230				0.230
			Opex					0.020				0.020
			Removal									0.000
			Total	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250
Total Proposed Sanction												
			Capex	0.000	0.000	2.891	1.832	2.897	0.000	0.000	0.000	7.620
			Opex	0.000	0.160	0.000	0.007	0.221	0.000	0.000	0.000	0.388
			Removal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			Total	0.000	0.160	2.891	1.839	3.118	0.000	0.000	0.000	8.008
				\$0.000	\$0.160	\$2.891	\$1.839	\$3.118	\$0.000	\$0.000	\$0.000	\$8.008

4.11.2 Project Budget Summary Table

\$'000s		Yr 1 09/10	Yr 2 10/11	Yr 3 11/12	Yr 4 12/13	Yr 5 13/14	Yr 6 +	Total
Project Cost	Opex	160		7	221			388
	Capex		2,891	1,832	2,897			7,620
IS Investment Plan	Opex	160	168	35	391			754
	Capex		2,891	2,832				5,723
Variance to plan	Opex		168	28	170			366
	Capex			1,000	(2,897)			(1,897)

4.11.3 Cost Assumptions

4.11.4 Net Present Value / Cost Benefit Analysis

4.11.5 Additional Impacts

4.12 Statements of Support

4.12.1 Supporters

US Sanction Paper

Role	Name	Responsibilities
IS Business Relationship Management	Matthew Guarini	Endorses the project aligns with jurisdictional objectives
IS Finance	Duncan Brown	Endorses the project aligns with jurisdictional objectives

4.12.2 Reviewers

Reviewer List	Name
Finance	Duncan Brown <i>(or IS Finance designee)</i>
Regulatory	Katsh, Gideon
Jurisdictional Delegates	Grimsley, Jennifer L. (New England – Electric)
Jurisdictional Delegates	Chieco, Allen C. (New York – Electric)

5 Appendices

5.1 Project Cost

5.1.1 Project Cost Breakdown -

The entire TCO Log is available upon request.

Project Cost Breakdown		
Cost Category	Company Name (\$ Amount)	Description of Cost Category
Labor	(\$1.364M)	Labor, including Internal Overhead
Materials	(\$6.644M)	Software Licenses, H/W, Service Contracts
Risk Margin	(\$0.250M)	OPEX/CAPEX Risk Margin
Total:	\$8.008M	

BILL POOL PERCENT ALLOCATION: The costs for this project will be allocated in the following manner:

- 65% Gas G5200 – all gas allocation code
- 28% Electric G1060 – all electric distribution code
- 7% LIPA

US Sanction Paper

The costs for this project will be allocated to US Gas, US Electric and LIPA. The method for the allocated charge will be based on actual transaction history therefore resulting in an allocation to jurisdictional entities based on usage. This method, reviewed by LIPA Finance, Regulation and Pricing and Accounting Services, is consistent with the recent Liberty audit recommendation to charge costs to jurisdictional entities when able. This methodology will be modified if necessary because of the audit finding.

RTB COSTS: The project will decrease the RTB costs over time as shown in detail below:

RTB costs \$'000s	Yr 1 09/10	Yr 2 10/11	Yr 3 11/12	Yr 4 12/13	Yr 5 13/14	Total
Current Annual RTB costs	780	780	780	780	780	3,900
New Annual RTB costs	780	780	780	544	544	3,428
Impact on RTB costs (new minus existing)				(236)	(236)	(472)
Variance to Plan				(236)	(236)	(472)

5.2 Project Resources

5.3 NPV Summary (if applicable)

5.4 Customer Outreach Plan (if applicable)

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Item No. 4.2(1)**

**National Grid plc
Executive Committee**

**Foundation Program
US-only sanction paper**

A re-sanction paper by Tom King and David Lister

Line of Business: Shared Services

US Regulated Companies Impacted: All US Companies

Executive Summary

1. In June 2011, the Group Executive approved a sanction paper requesting aggregate expenditure to a total of \$291.0m for the development of the US Systems Roadmap and the mobilization, design build and deployment phases of the US Foundation Program. This targeted go-live of the program on 1 July 2012 and contained a contingency of \$30m principally to acknowledge the risk that the go-live could be deferred to 1 October 2012.
2. Since June 2011 the program, overseen by the USFP Executive Sponsor Group¹, has made good progress and is currently in the advanced stages of testing the integrated solution and delivering business readiness activities. However, a number of key developments lead to the need for the program to be re-sanctioned:
 - a. In January 2012 the USFP Executive Sponsor Group agreed that the 1 July 2012 go-live date had an unacceptable risk profile and therefore we would need to target a 1 October 2012 and utilize our \$30m contingency.
 - b. The scale of *incremental* business resources needed to design, develop and implement the required business processes in the SAP environment, and support key activities such as testing, data cleansing and training has significantly exceeded the assumptions made for the June 2011 sanction. The previous sanction anticipated that just 26% of the necessary resource required to deliver these activities would be incremental. We now anticipate 57% of these resources to be incremental increasing total sanctioned costs by \$40.1m.
 - c. The complexity of building the designed requirements has also exceeded expectations. This increased complexity has driven increased technical support costs by \$20.4m to ensure that the solution is fully integrated and meets the original business requirements.
 - d. The increased scale of the program, attracting a higher proportion of shared costs and capitalized interest, and other changes (such as relocating the project team to Reservoir Woods) lead to a further increase of \$6.3m.
3. The magnitude of the challenge implementing the program is significant. The program will impact around 17,000 employees and will involve implementing 89 new business processes. The US business is fully engaged to implement the system on 1 October and manage the post-go-live stabilization period effectively.
4. This paper seeks sanction for:

¹ The USFP Executive Sponsor Group consists of Tom King, Andrew Bonfield, David Lister, Lee Eckert, Ellen Smith, Matt Guarini and Alan Foster.

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- a. An additional \$42.3m of CAPEX and \$24.5m of OPEX to complete the implementation phases of the Program which is scheduled for delivery on 1 October, 2012.
 - b. A new contingency of \$26m to be established, representing 20% of remaining expenditures, to cover risks of further cost increases, only to be utilized with the prior approval of the USFP Executive Sponsor Group.
5. In order to ensure lessons are learned from this complex program a post-investment review will be undertaken during 2013.

Background Information

6. The primary objective of the US Foundation Program is to transform and integrate the Finance, HR, and Supply Chain processes that continue to operate across a fragile “patchwork” of disparate applications since the acquisition of KeySpan in August 2007. The transformation will be completed through a redesign of business processes and the consolidation, onto a single SAP platform, of the functionality currently being delivered by the Oracle and PeopleSoft Enterprise Resource Planning Suites, Hyperion Planning and associated legacy planning, budgeting and allocation systems and the legacy fixed asset system PowerPlant (2 instances).
7. Following the KeySpan acquisition, investments in the Oracle and PeopleSoft Enterprise Resource Planning infrastructure were put on hold pending decisions on the strategy and timing of the consolidation of those systems and their underlying Finance, Supply Chain and HR processes. As a result, the US Business has been challenged in supporting multiple and complex business processes that span multiple and complex technology platforms
8. This program is of critical importance in:
- a. Addressing the cost transparency, reporting (financial and regulatory) and business efficiency challenges inherent in the fragmented processes and systems that currently exist across the US landscape.
 - b. Reducing the financial and regulatory reporting risks and the technical risk associated with operating business critical systems that have long exceeded the end of their supportable life.
 - c. Enabling the realization of synergies in the US back office operations.
9. The US Systems Strategy Roadmap clearly defines the need to deliver back office, customer, front office, mobile and dispatch capabilities to the National Grid businesses and the US Foundation Program (USFP) is identified as a critical enabler of this strategy. The Liberty Consulting Group’s (“Liberty”) report corroborated the numerous systems-based process complications which the USFP was already on track to address, further underscoring the business criticality of the project.
10. The US Foundation Program is the first critical stage of a continuum which will eventually include both front and back office systems and processes to enable US transformation. The core scope of the program must include elements of ‘Front Office’ to meet US regulatory requirements of cost transparency of work, such as material cost and labour. This requires work order functionality in SAP Plant Maintenance to be enabled, and open work order information will be an important aspect of the program’s data conversion and cutover strategy.

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11. The current scope of USFP will generate indirect benefit to the National Grid customer base through increased efficiencies of business processes and facilitating shared service transformation. The inclusion of front office processes, aligned with the US System Strategy Roadmap, will ultimately facilitate more proactive customer communications achieved through the improved capture of customer information including their needs, leading to improved job scheduling and work allocation, reduction in customer handoffs and increased first call resolution as a result of improved and timely access to information.

12. Previous Sanction History

June 2009	\$ 10.0m	to cover mobilisation/requirements phases
December 2009	29.0m	to cover High Level Design
September 2010	7.5m	to cover design through October 2010
October 2010	33.0m	to cover Detailed Design through March 2011
February 2011	35.0m	to complete Detailed Design and preliminary build activities through May 2011
May 2010	6.0m	to cover build activity through June 2011
June 2011	140.5m	to complete the implementation of USFP
	30.0m	to provide a contingency for a 3 month delay
Sanctioned to date	<u>\$291.0m</u>	

Updated Request for Sanction

\$m	Current Planning Horizon				Total
	Yr 1 09/10 Actual	Yr 2 10/11 Actual	Yr 3 11/12 Actual	Yr 4 12/13	
Direct Project Capex	12.8	69.0	105.7	93.2	280.7
Direct Project Opex	0.7	0.3	3.7	18.0	22.7
Internal Interest		1.8	4.1	8.0	13.9
Business resources (opex)			13.5	27.0	40.5
Total Forecast costs	13.5	71.1	127.0	146.2	357.8
Contingency				26.0	26.0
Total sanction request	13.5	71.1	127.0	170.7	382.8

13. Rate Recovery will be sought for regulatory capex² in the ordinary course, as rate cases are filed in the future.
14. The opex related costs will be recorded and reported in the NGUSA parent company to allow a clear delineation between "shareholder" costs and those which will be recovered from customers.

Incremental Business Resources

15. Previous sanctions identified a significant requirement for business resources to support the US Foundation Program and deliver business readiness through activities such as testing, data preparation, procedure documentation and training.
16. Through collaboration between the US Foundation Program Business Engagement team and each business function, a model was developed to estimate the total activity that

² Appendix 1 reconciles total sanctioned capex to regulatory capex

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would be required to deliver all the functions readiness activities. Then it was estimated how much of these activities would require incremental funding by developing assumptions around how much of this effort could effectively be absorbed by the functions through displacing 'business as usual' activity.

17. The June 2011 sanction paper used assumptions that were consistent with experience, at that time, from other National Grid projects and our partners' experience with projects of similar size and complexity. However, our actual experience has been that these assumptions significantly under-estimated the incremental resource requirements.
18. The increased need for incremental resources has been mainly driven by business functions also needing to support the US restructuring program, the Overland audit, rate case filings and implement the Financial Enablement Program during this period.
19. The need for this increased level of incremental business resources to support the program, together with some increases to the scale of testing and readiness activities, has led to an aggregate increase in capitalized testing costs of \$15.6m and a \$24.5m increase in opex business readiness costs.

Solution Complexity

20. Since June 2011 we have identified a number of aspects of the project that have proven to be more complex and technically challenging than was understood at the time of the previous sanction.
21. Increased technical infrastructure requirements have led to \$10m of increased partner support costs from T Systems, SAP, Wipro and IBM.
22. In addition certain business requirements identified in the high-level design phase have proved to drive significantly more activity and hence third-party support costs than planned. In total \$10.4m of additional costs have been incurred to deliver these requirements, which includes supplemental project management to more effectively execute delivery. Three examples are:
 - a. Activity Based Costing - Since we incorporated Operational Account Assignment (OAA) into work management processes to capture costs at the operation / activity / task level for internal management and regulatory reporting we found that the additional configuration and data related activities required to support the integration and translation between SAP, the legacy work management systems and PowerPlant was much more significant than anticipated.
 - b. Business Planning & Consolidation (BPC) - The SAP BPC solution is a less mature product than the core SAP solution and one that we have not implemented previously within National Grid. We have felt it necessary to supplement the project team with increased Wipro and E&Y resource to ensure that we have the necessary expertise to implement this capability effectively.
 - c. Controls - Significant additional work has been necessary to ensure that user access and business roles have been appropriately mapped to ensure that responsibility for control operation remains aligned with procedures.

Conclusion

23. This project will greatly simplify the way our US businesses will work through streamlining and consolidating processes and allowing for greater consistency of data and reporting.

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In addition it will provide a stable platform to enable improvements in controls, cost transparency and accuracy in financial and regulatory reporting to be delivered

24. The National Grid Executive Committee is invited to:

- (a) Sanction a further \$42.3m of Capex and \$24.5m of Opexto cover the US Foundation Program through to implementation in October 2012 which would bring the total approved sanction to \$357.8m exclusive of the below contingency.
- (b) Sanction a \$26m contingency which can only be used with the prior approval of the Executive Sponsor Group.
- (c) Note that \$5.7m of this sanction relates to archiving and decommissioning costs which will be managed going forward in a separate project.

Signature..... Date.....
Alan Foster

Decision of the sanctioning authority

I hereby approve the recommendations made in this paper.

Signature..... Date.....
Steven Holliday

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Appendix

Reconciliation of Sanctioned Capex to Regulatory Capex

	\$m
Sanction Paper June 2012	
Direct Project Capex	280.7
Internal Interest	13.9
Total Sanctioned Capex	294.6
Capex reclassification to Opex	(29.4)
SAP Licenses	9.3
Total Regulatory Capex	274.5
<i>Niagara Mohawk Rate Case Forecast</i>	<i>282.5</i>

Group Executive Committee

Enterprise Blueprint to enable US Back Office Systems Delivery and future IS Investment Planning

A paper by David Lister, Chief Information Officer

1. Executive Summary

Addressing the financial reporting and business efficiency challenges inherent in the fragmented processes and systems that exist across our US businesses is fundamental to reducing risk and cost and is key to creating a foundation upon which to build our Common Operating Model vision.

This project will deliver the design of common processes and systems for our Core ERP activities (Finance, Supply Chain and HR) across all business within the US with the aim of implementing a new integrated system to support those processes in April 2011. In addition, the project will deliver a complete process blueprint covering asset, work and customer management to ensure that future systems investments deliver maximum value, infrastructure investment is optimised and to avoid wherever possible costly rework and interfacing associated with future systems integration.

The Blueprint will be used to identify future US systems investments covering asset, work management and customer processes and systems determined by business needs and value and regulatory support. Wherever possible, the project will share and leverage relevant work product and solutions between the US and UK related projects.

The project will focus on how business processes can be best enabled by standard group applications (e.g., SAP, Click, Syclo, etc) and will identify other applications as necessary to meet those needs where standard applications have yet to be defined and selected.

- 1.1 The total investment required to develop an Enterprise Blueprint to enable our US Back Office processes and support future IS Investment planning is currently estimated to be \$43 million. The precise value will be confirmed in October when the initial phase is complete. This paper seeks funding approval of \$10m to complete phase one of the project. In addition, \$14 million will be allocated to the programme covering the SAP licences purchased in June, 2008 to support the deployment of the Back office systems.

2. Background

- 2.1 Many of our current systems were designed to support stand-alone, non-integrated business processes which have become barriers to driving business performance. Most planned system enhancements tend to be focused on short-term tactical improvements and are not designed to support an integrated operating model.

- 2.2 Existing information systems (legacy and best of breed) are difficult to modify and increasingly expensive to maintain. In particular, our back office (ERP) applications need to be addressed. For example:
- a) Significant complexity across accounting closes, group reporting, financial analysis and controls.
 - b) Legacy KeySpan Back Office System, Oracle, has been out of support for many years. Not only do we have an inherent risk but it is also difficult and costly to introduce essential changes onto this unsupported platform e.g. IFRS
 - c) Difficulty of delivering group, local & management reporting for Procurement and Inventory Management
 - d) Multiple core HR systems causing difficulties with performance and compensation programs, talent management, employee self service, time reporting and information security.
- 2.3 The design will also support the new Common Operating Model through the streamlining of selected business processes. Wherever possible, the Blueprint effort will share and leverage relevant designs, methods and solutions that have been developed in other large transformation projects including the UK Back Office and UK Gas Front Office programme.

3. **Blueprint Summary**

- 3.1 The Blueprint phase is intended to determine what solution best addresses critical and strategic needs and to determine how best to undertake the implementation. It will be conducted in two primary steps:
- 1) Strategy, Architecture, Planning and Mobilisation July - Oct 09
 - 2) Blueprint Design Oct 09 - Apr 10
- 3.2 The first step of Blueprint will be to identify and confirm the strategic Imperatives that will drive the design, initial planning and resource mobilisation. The strategic imperatives activities will focus on identifying considerations that may influence the priorities and/or sequence of US system replacements and/or enhancements and will include tactical implementation options and quick wins.
- 3.3 High level architectural principles will also be established to ensure that any future systems deployment retains sufficient flexibility to cater for any changes in the structure of our business portfolio. Business imperatives and associated information system priorities will be further identified, defined and prioritised to help confirm the scope and depth of Blueprint design. The scope of Blueprint will be refined in support of these broader priorities.
- 3.4 The scope, direction and business case will be confirmed with the Executive in October when a request for further funding to complete the Blueprint design will be

submitted. Business cases will be developed to support individual investments that will arise from the completion of the Blueprint in April 2010

- 3.5 The current planning assumption is for detailed design to begin in October 2009, and transition to the deployment phase in April 2010, resulting in operational go-live for US Back Office in April, 2011.
- 3.6 A key delivery from the blueprint will be a plan to ensure complete decommissioning of the legacy applications being replaced by the new Back Office applications.

4. Group Executive is invited to:

- a) APPROVE the initial investment of \$10 million for Blueprint strategy, planning and mobilisation.
- b) DETERMINE the Programme Sponsor, and confirm that they have the approved financial delegation to deliver the Programme.
- c) NOTE that Blueprint will recommend a solution to our high priority US Back Office system needs including deployment approach, cost estimates/resource requirements, benefits and any key management decisions needed to support implementation. These and other recommendations that may be identified will be brought forward for consideration and funding of Blueprint for consideration
- d) NOTE the investment for the remainder of the Blueprint
- e) DELEGATE authority to the Sponsor and Steering Group to oversee the Blueprint project team.

Capital/Revenue Investment Proposal – Summary

Phase 1- Foundation Project

US Shared Services, Project No. INVP 2506

A sanction paper by David Lister– May 2009

(Provided in response to the April Group Exec request that the April submission be redrafted to more fully describe efficiency and condition of existing assets)

Description

The primary objective of the Phase 1- Foundation Project is to consolidate, onto a single SAP platform, the Back Office functionality now being delivered in the US, by the Oracle and PeopleSoft Enterprise Resource Planning Suites.

The Oracle and PeopleSoft Enterprise Resource Planning Suites, deliver critical Finance, Human Resources and Supply Chain back office functionality for the US business. All US back office processes including, financial, regulatory reporting, hire to retire, and purchase to pay are dependent upon these core systems as are all work and asset management processes that are linked to the back office via other systems.

Following the KeySpan acquisition, investments in the Oracle and PeopleSoft Enterprise Resource Planning infrastructure were put on hold pending decisions on the strategy and timing of the consolidation of those systems and their underlying Finance, Supply Chain and HR processes. As a result, the US Business has been challenged in supporting multiple and complex business processes that span multiple and complex technology platforms.

Across the board, “cottage industries” of data analysts have been spawned, using spreadsheets for data consolidation and reporting. This manual intervention comes at significant cost and risk of financial and regulatory reporting errors

The current US Back Office Systems require replacement or major upgrades because they have exceeded or are nearing the end of their supportable life spans. One of the key exposures is the Legacy KeySpan’s Oracle Financial System, which has not been supported by Oracle Corporation since June 2006. Not only is there an inherent risk in keeping the system up and running, it is very costly to introduce essential changes onto this unsupported platform. Other examples include the US Time Entry systems (SmartTime and TES) and KeySpan’s Expense system, all are no longer supported by vendors.

This Project is therefore of critical importance in addressing the financial reporting and business efficiency challenges inherent in the fragmented processes and systems that currently exist across the US landscape. Furthermore, it is fundamental to reducing financial and regulatory reporting risks and the technical risk associated with operating business critical systems that have long exceeded end of supportable life

While a “do nothing” option was assessed, this option was rejected on the basis that it would not address the significant business risk and inefficiencies that exist across the US Systems landscape and would not mitigate for the technical risk inherent in the current aged infrastructure

Key Objectives include:

- (a) Improve employee productivity by eliminating the need for most paper-based processes and requests
- (b) Move to a system where data is entered once into the system at the point of data origination and is immediately available to all authorized users throughout the system
- (c) Standardize data to support effective and efficient reporting and eliminate costly manual reconciliation work
- (d) Improve financial processing and management capabilities
- (e) provide greater clarity around cross company charging to provide increased visibility of regulatory cost base and improve regulatory rate case accuracy.
- (f) Improve supply chain controls and capabilities, including seamless integration among purchasing, inventory management, warehousing and accounts payable
- (g) Reduce IT infrastructure costs by creating common processes and systems
- (h) Establish the common platform/foundation for additional consolidation of legacy applications that will generate economies of scale
- (i) Improve the periodic planning and budgeting systems to reduce total cycle times

This project will be executed within the context of the US Systems Strategic Roadmap, which when implemented will provide a common systems platform that exploits economies of scale, and provides standardization that will eliminate rework and duplication. Solutions for work delivery, asset and customer systems will be delivered via future Projects, according to this Strategic Roadmap. The Phase 1 - Foundation Project is a prerequisite first step along the Roadmap that will serve as an enabler for delivering the benefits of all other US Systems consolidations.

SAP was selected as the Back Office Project solution because SAP is known for its ability to provide functionality to an organization the size of National Grid and has a long history of providing reliable service to large enterprises. It has been implemented by many of the world's leading utilities. SAP is under constant research and development to maintain its position as a leader in the industry. The ERP solution is comprised of software that will enable National Grid to manage the entire value chain of its operation. A variety of scenarios and processes that are critical to utilities are delivered within SAP.

Furthermore, during the Strategy, Planning and Mobilization Phase, the project team verified that the US can significantly leverage the UK mySAP and Gas Distribution Front Office Programmes, in terms of lessons learned, standards, templates and methodologies and technical component reuse. The finance, supply chain and human resources processes that are currently implemented in UK mySAP will serve as the baseline processes for the US. In cases where the UK process does not translate well to the US region, the requirement to deviate from the baseline will be substantiated.

This is a risk based investment driven by: (a) the requirement to replace/upgrade IS assets that are approaching or have exceeded end of life (b) the challenge in sustaining the very complex business processes that have been constructed to run the US business on the current set of multiple ERP platforms

During the Design Phase, the benefits case will be revalidated. Benefits will be calibrated to reflect the value of Back Office as a means to address sustainability and as an enabler for savings that will be delivered via future projects that will be built upon the Phase 1- Foundation platform. And Business units will be challenged with stretch thinking to identify the next layer of benefits.

Phase 1 - Foundation Total Project Costs - Revised April 2010

Labor		\$m	
Projected Strategy, Planning and Mobilization	6		\$10M Sanctioned in July 09
Design	28		
Delivery and Implementation	63		
Total Labor	97		
Infrastructure (excluding SAP Licensing)	13		
Grand Total (including confirmed labor reductions)	\$110		Includes Risk Margin of \$7.2M
Opportunity Range for Other Reductions (to be confirmed during design)	\$5 - \$16		
Total Indicative Cost Range (excluding SAP Licensing)	\$94 - \$105		
SAP Licensing	\$10M		Previously Purchased (sunk cost)

The revised bottom up estimate of \$110M, reflects confirmed reductions based upon negotiated Systems Integrator pricing and adjustments to internal labor rates and resource mix as of March 31st 2010.

\$5M - \$16M of additional opportunities for further reduction have been identified and will be confirmed during the Design Phase. These additional opportunities include expected reductions due to: functional scope management, integration simplification and UK reusability.

Further savings expected to be delivered as a result of leveraging the new IS Operating model have not yet been applied to this estimate.

SAP licensing costs of \$10M have been noted but have not been included the final indicative costs range since these licenses were previously purchased.

The total indicative range for the project, excluding SAP licensing, is therefore estimated to be **\$94M - \$105M** (inclusive of \$7.2M of risk margin)

There is a balance of \$4M of the original \$10M sanctioned for the Strategy, Planning and Mobilization Phase of the Phase 1 – Foundation Project

Approval is requested to invest a further \$29M of Capex to cover the \$33M required for the Design Phase for the Phase 1- Foundation Project.

Included in the \$33M is a risk margin of \$2.7M)

An updated business case that will include a refined estimate and project timeline will be developed during the Design Phase and will be submitted prior to requesting approval for the next phase of investment.

Category: Policy (Risk Based)

Risk Score: 46 (Based on Reliability)

Finance

Previous Sanction for Strategy, Planning and Mobilization - August 2009 - **\$10M Capex**

Sanction Cost, January 2010 to June 2010 - **\$29M Capex**

Cumulative Forecast cost from April 2009 to June 2010 (Includes Strategy, Planning and Mobilization) **\$39M Capex , \$600K Opex**

Probability that project cost will exceed 10% tolerance: 15%

Project included in approved Business Plan? No

Project cost relative to approved Business Plan? 100%

If cost > approved B Plan how will this be funded?

Other financial issues: LoB costs will be allocated as follows according to bill pool allocations previously set up for the US portion of Global Transformation:

Elec D = %51.924 ,Trans = %6.687, Gas D = %33.008, Gen =%7.888, N Reg = %0.492

Breakdowns by Company are detailed in Appendix A

	Current planning horizon					Yr 6+	Total
	Yr 1 09/10	Yr 2 10/11	Yr 3 11/12	Yr 4 12/13	Yr 5 13/14		
\$m							
Proposed Investment	22	72 - 83					94 - 105

Resources

Availability of internal resources to deliver project: **Amber**

Business resources at the workstream level are on track for on boarding

IS resourcing activities are on going for both lead and team member positions.

Availability of external resources to deliver project: **Green**

Operational impact on network system: **Green**

Key issues

- Complex business processes that span multiple systems, increase risk, limit the delivery of efficiencies and are unsustainable in the long term.
- The current set of US Back Office systems are reaching the end of their supportable life spans and require replacement or upgrade.

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Key Milestones

- Planning and Mobilisation – August 2009 – January 2010
- Design – January 2010 – June 2010
- Sanction Build, Test and Deployment – June 2010
- Build, Test and Deployment - June 2010 – 2nd half of calendar year 2011
(Delivery dependent upon the regulatory schedule, financial closings and other business windows of availability).

Climate change

Contribution to National Grid's 2050 80% emissions reduction target: **Neutral**
Impact on adaptability of network for future climate change: **Neutral**
Are financial incentives (e.g. carbon credits) available? **No**

Prior sanctioning history including relevant approved Strategies

- 28th July 2009 – Group Exec Approval for Planning and Mobilization \$10M

Recommendations

Group Exec is invited to:

- (a) APPROVE an investment of \$29m Capex to be added to the \$4M balance from the previous phase to cover the \$33M required for the Design of the Phase 1- Foundation Project. (The \$33M includes \$2.7M of risk margin).
- (b) NOTE that further sanction will be required prior to Development and Implementation

Signature..... Date.....
[Name and title of sponsor]

Decision of the [sanctioning authority]

I hereby approve the recommendations made in this paper.

Signature..... Date.....
[Name and title of sanctioning authority]

Capital/Revenue Investment Proposal – Summary

Phase 1- Foundation Project

US Shared Services, Project No. INVP 2506

A sanction paper by Andrew Sloey – May 2009

1. Background

- 1.1. The KeySpan merger strategy effectively created a single US group with Lines of Business operations spread across 22 major operating companies that span both the legacy systems footprints. Sitting at the core of the US group is a service company structure that employs over [7,500] employees and processes over [\$3bn] of the US cost base annually. Supporting this integrated group across multiple US Back Office suites has introduced significant complexity and risk and is not sustainable as US business units (both LoBs and global/regional functions) are challenged with sustaining complex business processes that span multiple systems and technology platforms.
 - 1.1.1. Significant complexity and risk exists across accounting closes, Group reporting, local US financial and regulatory reporting, financial planning & budgeting and Group financial analysis and controls
 - 1.1.2. Multiple HR hierarchies require significant workarounds since most often there is a misalignment between the organizational structure and the way in which employees are organized in their respective HR systems. This is especially true for the Employee Survey, Compensation, Talent Management, Performance Management, Employee Self Service, Time Entry and for provisioning access to other IS systems.
 - 1.1.3. Significant complexity exists for US Inventory Mgmt and Accounts Payable which need to report across two back office systems and Global Procurement and Global IS which need to report across three back office systems.
 - 1.1.4. Across the board, “cottage industries” of data analysts have been spawned, using spreadsheets for data consolidation and reporting in an attempt to both overcome the basic inconsistencies in data definitions and to simulate an integrated Line of Business or Global/Regional functions. In fact the simulation of these integrated Lines Of Business or Global/Regional functions have to be manually constructed at significant cost and risk for error.
- 1.2. This Project is of critical importance in addressing the financial reporting and business efficiency challenges inherent in the fragmented processes and systems that currently exist across the US landscape. Furthermore, it is fundamental to reducing risk and cost, and it is a required foundation upon which to build National Grid’s Common Operating Model vision.
- 1.3. This Project will deliver the design of common processes and systems for finance, supply chain and human resources. It will utilize an integrated SAP solution for the aforementioned processes and it will integrate via interfaces with work delivery, asset and customer systems.
- 1.4. This Project will be executed within the context of the US Target Architecture and Systems Roadmap. Solutions for work delivery, asset and customer systems will be delivered via future Projects, according to this strategic roadmap.
- 1.5. The current suites of US Back Office systems require replacement or major upgrades because they have exceeded or are nearing the end of their supportable life spans.

- 1.5.1. One of the key exposures is the Legacy KeySpan's Oracle Financial System, which has not been supported since June 2006. Not only is there an inherent risk in keeping the system up and running, it is very costly to introduce essential changes onto this unsupported platform, e.g. IFRS.
- 1.5.2. Other examples include the US Time Entry systems (SmartTime and TES) and KeySpan's Expense system, all of which have exceeded end of life and are no longer supported by vendors.
- 1.5.3. Other systems within the Back Office suite, while still under vendor support, have reached configuration and/or capacity/functionality limits. Systems that fall in this category include the legacy National Grid planning application (Hyperion Planning) that has been built out to support the expanded business post merger and the legacy KeySpan planning & budgeting applications (Pillar, Data Mart & ESSBase) that were "acquired" as part of KeySpan's Massachusetts Gas utilities acquisitions.
- 1.6. In July 2009, the Group Exec approved \$10 million for a Phase 1- Foundation Blueprint Strategy, Planning and Mobilization phase.
- 1.7. During the Strategy, Planning and Mobilization Phase the project team has verified that the US can significantly leverage the UK mySAP and Gas Distribution Front Office Programmes, in terms of process design, lessons learned, standards, templates and methodologies. The US Team members will continue to work with their UK counterparts to ensure a consistency in systems delivery and a quality implementation.
- 1.8. Work is about to start on the Design phase, and will build upon progress made to date, with an aspiration that the Phase 1- Foundation Systems and associated business processes are deployed in the latter part of 2011. The purpose of this paper is to obtain approval for the next stage of investment in this Project.
- 1.9. Project oversight will be undertaken by the Phase 1- Foundation Programme Board, chaired by Andrew Sloey and will be accountable to the Executive Steering Group, chaired by Mark Fairbairn.
- 2. Driver**
 - 2.1. Key objectives of the Phase 1- Foundation Project are:
 - 2.1.1. Improve employee productivity by eliminating the need for most paper-based processes and requests
 - 2.1.2. Move to a system where data is entered once into the system at the point of data origination and is immediately available to all authorized users throughout the system
 - 2.1.3. Standardize data to support effective and efficient reporting and eliminate costly manual reconciliation work
 - 2.1.4. Improve financial processing and management capabilities
 - 2.1.5. provide greater clarity around cross company charging to provide increased visibility of regulatory cost base and improve regulatory rate case accuracy.
 - 2.1.6. Improve supply chain controls and capabilities, including seamless integration among purchasing, inventory management, warehousing and accounts payable
 - 2.1.7. Reduce IT infrastructure costs by creating common processes and systems

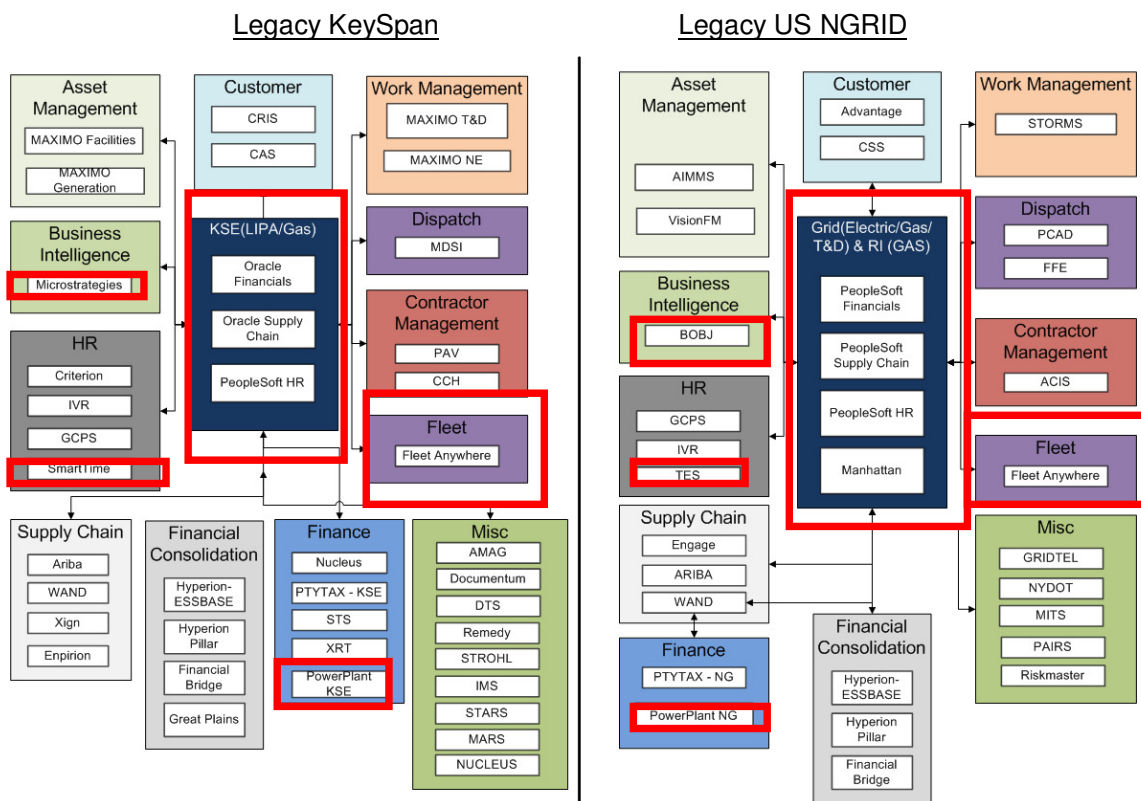
- 2.1.8. Establish the common platform/foundation for additional consolidation of legacy applications that will generate economies of scale
- 2.1.9. Improve the periodic planning and budgeting systems to reduce total cycle time

3. Project Description

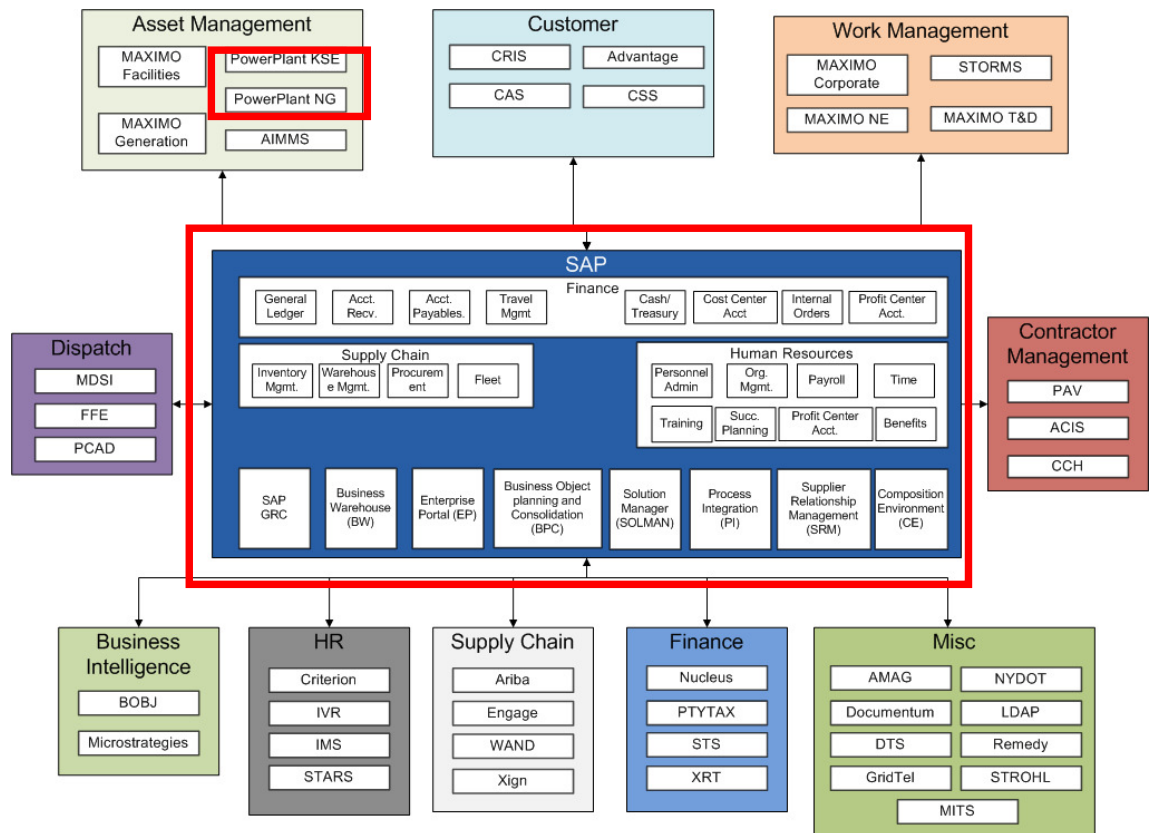
3.1. From a systems perspective, the scope of the Phase 1- Foundation Project, is largely the consolidation of the current US ERPs, (Oracle Financials, People Soft Financials and two instances of PeopleSoft HR), onto a single SAP platform. In addition:

- 3.1.1. The project will consolidate former “best in breed” Time Entry applications onto SAP, as well, resulting in the retirement of both of the current Time Entry systems, which are out of support.
- 3.1.2. Fleet Management Systems will be consolidated onto SAP, resulting in the retirement of two Fleet Anywhere instances.
- 3.1.3. Powerplant as a Fixed Assets solution will be carried forward due to its industry specific focus and recognition as a “best in breed” application. Further analysis during blueprinting will determine the feasibility of consolidating onto a single Powerplant instance.
- 3.1.4. The Manhattan Warehouse Management system will be consolidated into SAP.

3.2. The scope of the IS systems to be replaced under the Phase 1- Foundation Project is illustrated below (encircled in red):



- 3.3. This Project will deliver the design of common processes and systems for finance, supply chain and human resources via an integrated SAP solution and it will deliver integration with work delivery, asset and customer systems via interfaces.
- 3.4. It is proposed that a single integrated SAP platform with the inclusion of PowerPlant as an industry specific best of breed Fixed Assets solution be built with interfaces to work delivery, asset and customer systems
- 3.5. The use of a single instance integrated SAP solution will deliver lower IS Capex in future years. Upgrading an integrated system at the end of its supportable life is cheaper, when compared with upgrading multiple separate systems over a similar period because of economies of scale and the avoidance of bespoke integration between systems.
- 3.6. The diagram below illustrates the proposed US Back Office Platform with consolidated systems encircled in red.



- 3.7. Project delivery is targeted for the latter half of 2011. A detailed plan and timeline for delivery will be developed during Design.
- 3.8. The Project will be delivered according to a decentralized project delivery model with core locations at Waltham, Syracuse and Metrotech as a means to: (a) Provide

project visibility/accessibility to the broader enterprise (b)To minimize quality of life issues that might otherwise deter project participation

4. Business Issues

- 4.1. The Design Phase of the Project will include an evaluation of business issues and risks, and the incorporation of appropriate mitigation and updates to the business case. This will feed into future sanction papers providing increased confidence in the value achievable from this investment.
- 4.2. Even though work delivery, asset and customer processes are out of scope for delivery in this Project, they represent significant integration points with the Back Office. Business resources from ED&G and US GasD and Transmission will be needed on the project team to ensure the proper engineering of end to end processes that traverse the boundary between Front Office and Back Office.
- 4.3. In consolidating from two platforms to one, this project will simplify the way we work; for example, Transaction Delivery Centre staff will only need to operate one set of systems instead of two, thereby facilitating more efficient training and knowledge transfer. This dynamic will be pervasive across the US business landscape and will significantly contribute to both productivity and better service.
- 4.4. This project will drive significant change throughout the US business and therefore a robust Change and Learning Management approach has been included in the project plan and accounted for in the estimate.

5. Options Analysis

Option	Recommendation	Rationale
Do Nothing	Rejected	This approach does not address the significant business risk and inefficiencies that exist across the US Systems landscape and does not mitigate for the technical risk inherent in the current aged infrastructure
Defer project:	Rejected	This approach delays the delivery of risk mitigation and business efficiencies. Since Phase 1- Foundation is a prerequisite for any other major systems consolidation in the US, this will delay any other major systems changes in the US
Back Office only	Recommended	Will reduce business risk by (a) providing a consistent and robust financial/regulatory reporting and business planning capability and (b) replacing IS assets, which due to age, present an increased risk of failure and significant costs when business/process modifications are required Required as a prerequisite first step on the US Systems Strategic Roadmap.

Option	Recommendation	Rationale
		<p>Will lay the groundwork for delivering savings via future Projects focused on work delivery, asset and customer systems/processes</p> <p>Less risky to deliver than combined Front /Back Office but will deliver less up front benefits than an integrated Front/Back Office solution</p>
Back Office and Front Office	Rejected	<p>This option while delivery more up front benefits has been rejected on the basis that the larger scale of a combined scope of Front and Back office is too risky to deliver in terms of:</p> <p>Business change Resource availability Capital availability</p>

6. Milestones

6.1. The Phase 1- Foundation Project will run from August 2009 to Summer 2011.

A detailed workplan and timeline for delivery will be produced during Design, but the go live date will be dependent upon the regulatory schedule, financial closings and other business availability windows.

6.2. Approval for expenditure will be sought in two stages:

6.2.1. Prior to Design in December 2009

6.2.2. Prior to Development and Implementation in June 2010

6.3. High Level Timeline

	FY09				FY10				FY11			
Phase	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
	A	S	O	N	D	J	F	M	A	M	J	J
Planning and Mobilization												
Design												
Realization – Build												
Realization – Test												
Final Prep												
Go-Live and Support												

7. Safety, Environmental and Planning Issues

7.1. There are not considered to be any material safety, environmental or planning issues associated with this project.

7.2. Improved MI and potential reductions in travel time and are all likely to have a positive impact on safety performance.

8. Investment Classification

8.1. This is a risk based investment driven by:

8.1.1. the requirement to replace/upgrade IS assets that are approaching or have exceeded end of life

8.1.2. the difficulty in sustaining the very complex business processes that have been constructed to run the US business on the current set of multiple ERP platforms

8.2. This is an internally driven investment risk scored on the basis that some business critical systems have reached end of life and others will reach the end of their supportable lives in the next 2-4 years. On this basis, the following score has been attributed:

- Impact – IS reliability is 7 because systems impacted are business critical and would materially impact National Grid's ability to operate as a commercial business.

- Time to failure is 1-3 years (Likelihood = 6) given that several major business critical systems have already exceeded end of life, including Oracle Financials, SmartTime and EXP.
- Impact score of 7 and Likelihood score of 6 yield a Risk Score = 46

9. Regulatory Implications

9.1. The Project Team has and will continue to liaise with the US Regulatory Team. The Project Team acknowledges the importance of synchronizing the planning and delivery of this project with the US Regulatory Strategy.

10. Customer Impact

10.1. None

11. Cost Summary

Total project costs are currently estimated in the \$94M - \$105M range and will be revalidated during the Design Phase. A revised estimate and cost summary will be included in the request for sanctioning of the Development and Implementation Phase.

\$'000s		Yr 1 09/10	Yr 2 10/11	Yr 3 11/12	Total
Project Cost	Opex	700		4,000	4,700
	Capex	12,800	55,000-60,000	22,000 – 27,000	89,800 – 99,800
IS Investment Plan	Opex				
	Capex				
Variance to plan	Opex	(700)		(4,000)	(4,700)
	Capex	(12,800)	(55,000-60,000)	(26,000 – 31,000)	(89,800– 99,800)

- 11.1. An updated capital forecast will be available for the next planning cycle based on the latest cost estimates arising from the Design stage of the Project
- 11.2. RTB costs are expected to decrease based on the new operating model that is being developed via the IS Transformation Programme. The level of savings to be delivered by a model that includes a single SAP Delivery Center will be confirmed during the Design Phase.

12. Cost Assumptions

12.1. The cost forecast has been built up from the following major components:

12.1.1. The Scope of work includes:

12.1.1.1. Consolidation of the current US ERPs, (Oracle Financials, People Soft Financials and two instances of PeopleSoft HR), onto a single SAP platform.

12.1.1.2. In addition, Time Entry, Fleet and Manhattan Warehouse Mgmt will be consolidated onto the SAP platform.

12.1.1.3. PowerPlant will be retained as a “best in breed” Fixed Assets system. The cost estimate provides for the assessment of the potential to consolidate the two PowerPlant instances into one instance but the estimate does not include the level of effort to deliver that consolidation of PowerPlant

12.1.1.4. Cost estimates include some US specific and global scope items that would be considered above and beyond the UK ERP Equivalent core. This additional scope, which amounts to ~\$12M has been classified as Additional US Scope and will be assessed for inclusion or exclusion during Design. A complete list of Additional US Scope items can be found in Appendix B.

12.1.2. Project resources will be split amongst National Grid, the selected Systems Integrator and Off Shore Development Companies (ODCs) following established project sourcing strategies.

12.1.3. Infrastructure costs assumed National Grid hosted development environments.

12.2. The cost estimates for this project were developed with Deloitte based on its estimating model and experience in delivering IS solutions of this scale. The cost estimate for the project will be refined and validated during the Design Phase.

13. Benefits Summary

13.1. The benefits are summarised below with the majority of the Opex benefits related to a reduction in employee and contractor FTE’s.

13.2. Avoided costs for IS Opex and Capex Projects have been noted. These costs include upgrade costs for the current US Back Office applications that have reached or exceeded end of life and include upgrade costs for: Hyperion, Oracle Financials/Supply Chain, PeopleSoft Financials/Supply Chain, both KSE and Legacy Grid PeopleSoft HR systems, both KSE and Legacy Grid Time Entry Systems, both KSE and Legacy Grid Fleet systems and the Manhattan Warehouse Management System.

	\$'000s 09/10	\$'000s 10/11	\$'000s 11/12	\$'000s 12/13	\$'000s 13/14	\$'000s 14/15	\$'000s 15/16	\$'000s 16/17	\$'000s Total
<u>Opex Savings</u>									
Financial Services			49	2,874	3,429	3,429	3,429	3,429	16,639
Employee Services				310	310	310	310	310	1,550
Treasury			41	83	83	83	83	83	456
EDO Transformation			1500	3,000	3,000	3,000	3,000	3,000	16,500
<u>Subtotal Opex Savings</u>			1,590	6,267	6,822	6,822	6,822	6,822	35,145
<u>Avoided IS Opex Projects</u>		1,400	1,941	1,256	2,326	1,826	552	552	9,853
<u>Total Opex Savings and Avoided IS Projects</u>		1,400	3,531	7,523	9,148	8,648	7,374	7,374	44,998

Avoided IS Capex Projects	800	2,300	3,000	2,400	800	800	800	10,900
Grand Total	2,200	5,831	10,523	11,548	9,448	8,174	8,174	55,898

- 13.3. Systems consolidation savings projected at the time of the KeySpan acquisition have in many cases been eroded over time, as business units strived to meet their financial targets in advance of US systems consolidation.
- 13.4. Some unaccounted for benefits for the Phase 1- Foundation Project may have been aligned with other Transformation Programmes. More work needs to be done to thoroughly understand the degree to which those benefits should be realigned with this Project.
- 13.5. While the savings generated by this first step along the Strategic Roadmap, in and of themselves, are not enough to fund the investment, the implementation of the Phase 1- Foundation system is of critical importance in reducing the business risk and inefficiencies that currently exist in the US systems landscape.
- 13.6. Furthermore, this project is a prerequisite for and an enabler of any other major US Systems consolidation. This Project will set the stage for further US Systems consolidation work that is expected to drive significant savings from work delivery, asset and customer systems consolidation.

14. NPV

- 14.1. This is a risk based investment driven by: (a) the requirement to replace/upgrade IS assets that are approaching or have exceeded end of life (b) the challenge in sustaining the very complex business processes that have been constructed to run the US business on the current set of multiple ERP platforms. During the Design Phase, the benefits case will be revalidated. Benefits will be calibrated to reflect the value of Back Office as a means to address sustainability and as an enabler for savings that will be delivered via future projects that will be built upon the Phase 1- Foundation platform. And Business units will be challenged with stretch thinking to identify the next layer of benefits.

15. Additional Impacts

- 15.1. All impacts summarised elsewhere in the paper.

16. Execution Risk Appraisal

- 16.1. Each of the subsequent sanction papers will include a full business case and an update of the costs and execution risks associated with this Project.
- 16.2. The cost estimates for this project were developed with Deloitte based on its estimating model and experience in delivering IS solutions of this scale. The Analysis and Detailed Design Phase of this project will refine and validate this estimate.
- 16.3. The functionality assumptions driving these benefits have been based on the high level design work undertaken in 2009. The Design work will dictate the extent to which this functionality will actually be delivered and consequently the benefits realised.

17. Statements of Support

- 17.1. The following individuals have reviewed and/or provided input to the development of this paper.
- David Lister – Chief Information Officer
 - Andrew Sloey – Senior Vice President – Financial Services
 - William Bollbach – Senior Vice President, Human Resources
 - Andy Pearman – IS Head of Solution Delivery
 - Duncan Brown – IS Finance
 - Madalyn Hanley – IS Head of Relationship Management
 - Jane Cavlin – Vice President Fleet, Materials Services and Systems
 - Matt Powers – Director, Employee Services
 - Bill Fibkins – Director, US Transaction Delivery Hub
 - Ruth Sullivan – Acting IS Lead - Phase 1- Foundation
 - Christine Yordt – Acting Business Lead – Phase 1- Foundation

Appendix A

Allocated Cost Breakdowns

NG US Legacy Bill Pool 00382- All Companies KeySpan & National Grid - O&M Based

00004	Nantucket Electric Company	Elec. D	0.089%
00005	Massachusetts Electric	Elec. D	15.263%
00006	NE Hydro - Trans Electric Co	Trans	0.001%
00008	New England Hydro - Trans Corp	Trans	0.001%
00010	New England Power Company	Trans	2.055%
00020	New England Electric Trans Co	Trans	0.001%
00036	Niagara Mohawk Power Corp	Elec. D	22.726%
00036	Niagara Mohawk Power Corp	Trans	4.629%
00036	Niagara Mohawk Power Corp	Gas D	3.074%
00041	Granite State Electric Company	Elec. D	0.494%
00048	Narragansett Gas Company	Gas D	2.996%
00049	Narragansett Electric Company	Elec. D	5.047%
00071	Valley Appliances & Merchandise	Oth	0.001%
01401	Boston Gas Company	Gas D	7.787%
01403	Colonial Lowell Division	Gas D	1.420%
01406	En	Gas D	0.936%
01434	Ke	Elec. D	8.305%
01435	Ke	Gen	5.094%
01436	Ke	N Reg	0.071%
01437	Ke	Gas D	5.643%
01438	Keyspan	Gas D	11.152%
01442	Keyspa	Gen	2.540%
01446	Keyspan Glenwood Energy Center LLC	Gen	0.144%
01448	Keyspan Port Jefferson Energy Center LLC	Gen	0.110%
01471	Seneca Upshur Petroleum	N Reg	0.382%
01563	Keyspan E&P JV	N Reg	0.039%
			100.000%
			Elec. D 51.924%
			Trans 6.687%
			Gas D 33.008%
			Gen 7.888%
			N Reg 0.492%
			Oth 0.001%
			100.000%

Appendix B

Additional US Scope

Human Resources	Performance Management	Delivery of efficient and comprehensive Global employee Performance Management enabling communication between employees, managers, and HR
	Compensation	Effective Compensation and Rewards Program to support Global Talent Management initiatives including linkage to Performance Management
	E-Recruiting	Integrated recruitment processes across lines of business to speed time to hire and support regulatory reporting. Provide Talent to organization in more timely, efficient manner.
	Knowledge Management	Provide knowledge base specifically for TDC to query to questions by employees.
	HR Global Processes/Hierarchy	UK implementation focused on UK requirements. US implementation will include process, organization hierarchy re-engineering to include global requirements
Finance	Business Planning and Consolidation	Planning only currently in SAP in the UK. Robust planning, forecasting and budgeting requirement in US. Consolidation in Hyperion in the UK. Current consolidation in US done in PeopleSoft. BPC will be used in the US for consolidation after PeopleSoft retirement.
	Financial Supply Chain Management	In-house cash management and Treasury module (out of scope for UK)
	FERC Accounting	US-specific module (FERC) for regulatory compliance, transparency and visibility of derived regulatory information
Supply Chain	Fleet Management	Not in scope in the UK. In scope in the US as required for fleet only Equipment and Technical Objects Preventive Maintenance Maintenance Order Management Mobile Scenarios Information System Workflow Scenarios
	Handling Unit Management / Shipping / Task and Resource Management	Not in scope in the UK. In scope as required for meter tracking in the US, enablement of handheld devices.
	Inventory Management / Logistics / Planning	UK outsources transport and logistics including last mile. US logistics is managed and controlled internally
	Warehouse Management Complexity (WM)	Design and implementation of handheld devices and barcoding Migration of Manhattan to SAP Implementation of WM into Keyspan warehouse
Security and Controls	GRC (Access Control)	Super user Privilege Management Risk analysis and remediation
	Additional users	7000 additional users to map
	Additional security work related to broader functional scopes	Additional role design, configuration and testing of areas such as e-Recruitment
	Resolution of role based conflict	Proactive segregation of duties for future solution

Capital/Revenue Investment Proposal – Resanction
Phase 1- Foundation Project
US Shared Services, Project No. INVP 2506
A resanction paper by David Lister - September 2010

Description

To date the Group Exec has sanctioned a total of \$39m for the development of the US Systems Strategic Roadmap and the Mobilisation and Design Phase of the US Foundation Project. (\$10m was sanctioned in July 2009 and the remaining \$29m was sanctioned in December 2009.)

Between July 2009 and mid September 2010, the previously sanctioned \$39m supported the delivery of the following key program activities:

- Development of a multi-year US Systems Strategic Roadmap addressing Front Office, Back Office and Customer Systems
- Mobilization of the Foundation Project as a fundamental first step to deliver the US Systems Roadmap
- High level scoping for Back Office functionality to be included in the Foundation Project
- Establishment of a complete program governance model that addresses both vertical and lateral governance from a regional and global perspective
- Definition of high level designs for all core Back Office processes (Finance, Human Resources and Supply Chain)
- A fully aligned US/UK Business Process Master List
- A Requirements Traceability Matrix, providing visibility, traceability and cost transparency of business requirements
- Establishment of a "Collaboration Hub" and approach to facilitate efficient business process decision making that will be critical to the detailed design phase
- Development of a Business Engagement strategy that will be used throughout the program to keep the business informed and engaged
- Development of a Business Intelligence strategy that will be used to deliver management information and reporting
- Development of a Data Conversion and Data Cleansing Approach
- Development of a Conceptual Technical Model for the program
- Development of an initial set of RICEFW objects to drive the delivery of functional and technical specs in Detailed Design, i.e. reports, interfaces, conversions, enhancements, forms and workflows
- Development of an RFP for evaluation and selection of a Service Provider for the SAP Platform

This paper seeks sanction for an additional \$7.5 of Capex to fund the project from mid September through the end of October 2010.

A full investment proposal for the remainder of the project will then be brought forward to the October Group Exec. This full investment proposal will include a revised business case that is reflective of updated scope and associated costs and benefits.

The total indicative costs of the project are currently being assessed with the intention to provide updated cost and benefit estimates to the October Exec. The target is to be within the previously sanctioned target range of \$94m to \$105m but this will be dependent on the outcome of scope and deployment decisions.

Category: Policy (Risk Based)
Risk Score: 46 (Based on Reliability)

Finance

Resanction Cost - **\$7.5m of capex**

How will additional overspend be funded? **Total costs are accounted for within the targeted project budget range of \$94m - \$105m.**

Capex overspend of \$3.4m in FY11 will be funded via substitution.

LoB costs will be allocated as follows according to bill pool allocations previously set up for the US portion of Global Transformation:

Elec D = %51.924 ,Trans = %6.687, Gas D = %33.008, Gen = %7.888, N Reg = %0.492

Breakdowns by Company are detailed in Appendix A

** The Latest indicative cost of the Foundation Project is within the previously sanctioned target range of \$94m to \$105m, but this will be dependent on the outcome of scope and deployment decisions. A revised business case that is reflective of updated scope and associated costs and benefits will be brought forward to the October Group Exec*

	Current planning horizon					Yr 6+	Total
	Yr 1 09/10	Yr 2 10/11	Yr 3 11/12	Yr 4 12/13	Yr 5 13/14		
\$m							
Proposed Investment	13.5	53.4	33.1				100.0

Prior sanctioning history including relevant approved Strategies

- July 2009 – Group Exec Approval for Planning and Mobilization \$10M (of which \$4m was carried forward to the Design phase)
- December 2009 – Group Exec Approval of additional \$29m for the Design Phase (with the addition of a \$4m balance from the Planning and Mobilization stage, the Design Phase was sanctioned for a total of \$33m)

Recommendations

Group Exec is invited to:

- Sanction \$7.5m of Capex to fund the project for the period from mid September through the end of October
- NOTE that further sanction will be required with a full investment proposal for the remainder of the project to be presented at the October Group Exec

Signature..... Date.....
Andrew Sloey

Decision of the [sanctioning authority]	
I hereby approve the recommendations made in this paper.	
Signature.....	Date.....
Steven Holliday	

Appendix A

Allocated Cost Breakdowns

NG US Legacy Bill Pool 00382- All Companies KeySpan & National Grid - O&M Based

00004	Nantucket Electric Company	Elec. D	0.089%
00005	Massachusetts Electric	Elec. D	15.263%
00006	NE Hydro - Trans Electric Co	Trans	0.001%
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00020	New England Electric Trans Co	Trans	0.001%
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00048	Narragansett Gas Company	Gas D	2.996%
00049	Narragansett Electric Company	Elec. D	5.047%
00071	Valley Appliances & Merchandise	Oth	0.001%
01401	Boston Gas Company	Gas D	7.787%
01403	Colonial Lowell Division	Gas D	1.420%
01406	Energy North Company	Gas D	0.936%
01434	Keyspan Electric Services LLC	Elec. D	8.305%
01435	Keyspan Generation Services LLC	Gen	5.094%
01436	Keyspan Energy Development Corp.	N Reg	0.071%
01437	Keyspan Energy Delivery LI	Gas D	5.643%
01438	Keyspan Energy Delivery NY	Gas D	11.152%
01442	Keyspan Ravenswood Services LLC	Gen	2.540%
01446	Keyspan Glenwood Energy Center LLC	Gen	0.144%
01448	Keyspan Port Jefferson Energy Center LLC	Gen	0.110%
01471	Seneca Upshur Petroleum	N Reg	0.382%
01563	Keyspan E&P JV	N Reg	0.039%
			100.000%
			Elec. D 51.924%
			Trans 6.687%
			Gas D 33.008%
			Gen 7.888%
			N Reg 0.492%
			Oth 0.001%
			100.000%

**National Grid plc
Executive Committee**

**Foundation Program
US-only sanction paper**

A sanction paper by David Lister

Line of Business: Shared Services

U.S. Regulated Companies Impacted: All US Companies

Executive Summary

1. Pursuant to previous Executive Committee sanction for the Requirements and Design Phase of the Foundation Program, this paper seeks Executive Committee approval to proceed with the Detailed Design phase of the program, through to March 2011, with agreement in principal for the remaining phases of the program to be sanctioned on a stage gate basis.
2. The primary objective of the Foundation Program is to transform and integrate the HR, Supply Chain and Finance processes that continue to operate across a fragile “patchwork” of disparate applications since the acquisition of KeySpan in August 2007. This transformation will be completed through a redesign of business processes (aligned with the UK where appropriate) and the consolidation, onto a single SAP platform, of the functionality now being delivered in the US, by the Oracle and PeopleSoft Enterprise Resource Planning Suites, Hyperion Planning and associated legacy planning, budgeting and allocation systems and the legacy fixed asset system PowerPlant (2 instances).
3. Unlike the UK mySAP implementation, the current US system landscape contains a much greater level of integration between the core back office systems and the legacy asset, work management and billing platforms (the “front office”). This complexity (outlined in Appendix 1) drives a substantial increase in the volume of technical objects that must be developed – including 357 separate interfaces (compared to 74 in UK mySAP). The US Systems Strategy Roadmap always recognised a “grey” boundary between the back office and front office and that would be clarified through the design phase of the US Foundation Program. The implications of this high level of integration between front and back office are:
 - a. The scope and complexity of the USFP is substantially larger than both the UK mySAP implementation and the planning assumptions that were used to draft the scope of what was essentially a US back office implementation. As shown in Appendix 2, delivering the US Foundation scope (complete with integration to legacy front office applications) effectively pulls forward investment planned as part of later phases of the Roadmap investment. The US Roadmap was estimated to cost \$388m of which \$100m was identified as the back office element.
 - b. The US Foundation Program therefore has to be seen as being the first phase of the overall Systems Roadmap strategy rather than the basis on which it was originally sanctioned – as a back office implementation.
 - c. The US Foundation scope and release strategy must be executed in a way that maintains this front office integrated functionality which is critical to both the continued operation of the legacy front office platforms and our regulatory compliance/reporting.
4. This program is of critical importance in:

- a. addressing the reporting (financial and regulatory) and business efficiency challenges inherent in the fragmented processes and systems that currently exist across the US landscape
 - b. enabling the realization of synergies in the US back office operations
 - c. reducing the financial and regulatory reporting risks and the technical risk associated with operating business critical systems that have long exceeded end of supportable life.
5. At the time of the December 2009 sanctioning the likelihood of incremental scope to support the US transformation was flagged as an issue to be addressed during the Design phase of the Foundation Program. Recognising a US system landscape that is more integrated and subject to greater regulatory requirements than in the UK, High Level Design (HLD) has now confirmed a larger and more complex scope that does include elements of front office functionality. Importantly though, this design scope enables us to progress further through the overall IS Roadmap than originally envisaged as we will be enabling elements of front office functionality not envisaged in the original delivery model that was based on back office scope/complexity assumptions only.
6. A scope (now confirmed by High level Design) that is larger than the originally defined “back office” assumptions will have an impact on the project costs, timeline for delivery and the overall release and deployment strategy. These implications (including release strategy and cost options) can only be fully assessed for both technical viability and business readiness during Detailed Design. This paper therefore requests sanction of the additional funding needed to complete the design phase.
7. While it will only be possible to determine the US Foundation phase costs and implementation cycle time until the end of Detailed Design, the preliminary analysis produced during High Level Design indicates:
 - a. A total indicative program cost in the range of \$140m to \$162m for a defined scope that includes both (a) the originally assumed back office functionality and those elements of front office functionality that are effectively “pulled forward” to either preserve the existing front office integration and/or support mandatory regulatory requirements and (b) a substantially greater number of development objects or RICEFWs as outlined in Appendix 3. Final program costs will be dependent upon the scope that is confirmed during Detailed Design and the release and deployment strategy. This range is significantly higher than the original “system integrator model” projected costs which were targeted at a mid range of \$100m based on back office only scope/complexity assumptions. The key drivers of the costs based on the scope that has now been defined by High Level Design, compared to the more narrowly defined back office scope originally planned, are outlined in Appendix 4. A refined cost estimate will be developed during the Detailed Design Phase and will be submitted as part of the sanction request for approval of the next phase of investment.
 - b. An implementation cycle time that is likely to extend until early 2012. As noted above, release options are still being evaluated that may allow a late 2011 implementation of some elements of the scope (Finance and Supply Chain) however, this is unlikely to be resolved until the end of October 2010.
8. The Planning, Mobilization and High Level Design Phases of the Program have been previously sanctioned for \$46.5m. This paper seeks sanction for an additional \$33m to complete the Detailed Design Phase at which time the full impacts of this neared scope can be assessed in terms of technical viability, release strategy and business readiness.

9. The back office elements of the Program will deliver circa \$75m in savings over the 5 years.

Background Information

10. Following the KeySpan acquisition, investments in the Oracle and PeopleSoft Enterprise Resource Planning infrastructure were put on hold pending decisions on the strategy and timing of the consolidation of those systems and their underlying Finance, Supply Chain and HR processes. As a result, the US Business has been challenged in supporting multiple and complex business processes that span multiple and complex technology platforms.
11. The US Systems Strategy Roadmap clearly defines the need to deliver back office, customer, front office, mobile and dispatch capabilities to the National Grid businesses and the US Foundation Program (USFP) is identified as a critical enabler of this strategy.
12. Key messages from the strategy outline:
 - a. Back office needs to be urgently addressed
 - b. Front office has limited IT tools for Asset and Work management in certain service areas
 - c. The Gas business has a highly fragmented set of IT solutions that is inhibiting business performance
 - d. Front office is looking for efficiencies from system changes
 - e. Customer and markets are impacted by having multiple customer platforms, particularly with gas customers
 - f. Across the board, "cottage industries" of data analysts have been spawned, using spreadsheets for data consolidation and reporting. This manual intervention comes at significant cost and fragility for financial and regulatory reporting processes.
13. The USFP has made considerable progress since the June 2010 transition to the strategic IS delivery model, including:
 - a. A complete restructure of the delivery model to ensure the maximum reuse of intellectual property already developed within national Grid, and maximise value of strategic relationships with IS framework partners
 - b. Completion of the High Level Design, and re-alignment of the partially completed design to a standard consistent with the existing deployment of SAP in National Grid UK, thus providing the platform for the long term implementation of the US IS roadmap
 - c. Over 2000 business requirements have been cleansed and prioritised according to business value, compliance requirements and technical dependency, allowing the separation and categorisation of genuine 'Must Have' requirements from 'Should' and 'Could' have' requirements
 - d. National Grid leaders have been appointed to key positions to lead the transformation (Programme Director, Business Readiness, Controls)
 - e. Key National Grid IS and business governance mechanisms have been implemented to ensure alignment of the design to a future common systems roadmap
 - f. Commencement of detailed design activities in a collaborative working environment to accelerate the complex detailed design process that will harmonise the complex legacy business processes
 - g. A number of gaps in the programme delivery have been closed, principally through the reuse of previously developed IP from GDFO (change control, deliverables tracking, governance processes etc).
 - h. A number of critical design decisions have been resolved and globally ratified by a broad stakeholder group.

- i. A complete re-baseline of resources, scope deployment options and costs has been drafted.
- j. During the transition from High Level Design to Detail Design, the more detailed analysis of program scope has yielded greater understanding of the scope and design complexity, allowing National Grid to have a greater understanding of the technical constraints and dependencies for deployment for the first time.

14. Previous Sanction History

June 2009	\$10.0M to cover mobilisation/requirements phases
December 2009	\$29.0M to cover High Level Design
September 2010	<u>\$ 7.5M</u> to cover design through October 2011
Sanctioned to date:	\$46.5M

Current Requested Sanction \$33.0M to complete Detailed Design

Total Sanction Requested to Date \$79.5M

\$m	Current planning horizon					Yr 6+	Total
	Yr 1 09/10	Yr 2 10/11	Yr 3 11/12	Yr 4 12/13	Yr 5 13/14		
Proposed Investment	22	118 - 140					140-162

At this preliminary stage the allocation methodology has not yet been finalised but the methodology is likely to be along similar lines to the bill pool allocations used for other IS programs in the US. Any methodology will be subject to refinement as the design phases are completed.

15. Rate Recovery would be sought in the ordinary course, as rate cases are filed in the future.

Issues

16. The US Foundation Program is the first critical stage of a continuum which will eventually include all of the front and back office systems and processes to enable US transformation. The core scope of the program must include elements of 'Front Office' to meet US regulatory requirements of cost transparency of work, such as material cost and labour. This requires work order functionality in SAP Plant Maintenance to be enabled, and open work order information will be an important aspect of the program's data conversion and cutover strategy.
17. The detailed analysis completed in the weeks following High Level Design closure has shown a number of the original delivery assumptions need revision. Fundamentally, USFP cannot be described as a purely 'back office' initiative which contrasts with the UK mySAP program which was a 'back office focused' endeavour. This program is more akin to the first release of the US Systems Roadmap which incorporates elements of back office *and* front office.
18. The addition of delivering partial front office functionality has resulted in a substantial increase in scope and results in an October 2011 "go live" date technically, and from a business readiness perspective, impossible to deliver for the full scope.

Risks and Concerns

19. The release strategy is currently being reviewed for this wider scope but the successful delivery of this program will be heavily dependent on the business's ability to support key program activities and ensure that they are ready for the level of change which the transformation aspects of this program will deliver.
20. Additionally there is a heavy dependence on partner and business resources and the program has an aggressive ramp up plan which will need to be delivered on time if key milestones are to be met.
21. Detailed Design will provide greater insight into some of the technical and process issues which will need to be addressed and will also allow for further rationalisation of costs and more clearly define the level of systems complexity which we will need to address.
22. There are not considered to be any material operational safety or environmental issues associated with this project.

Opportunities

23. In moving from two platforms to one, this project will simplify the way we work through streamlining and consolidating processes and allowing for greater consistency of data and reporting. An example is Transaction Delivery Centre staff will only need to operate one set of systems instead of two, thereby facilitating more efficient training and knowledge transfer. This dynamic will be pervasive across the US business landscape and will significantly contribute to both productivity and better service.

Customer Benefits

24. The current scope of USFP will generate indirect benefit to the National Grid customer base through increased efficiencies of business processes and enabling shared service transformation. The inclusion of front office processes, aligned with the US System Strategy Roadmap, will enable more proactive customer communications achieved through the improved capture of customer information including their needs, leading to improved job scheduling and work allocation, marked reduction in customer handoffs and increased first call resolution as a result of improved and timely access to information.
25. Customers will be kept more informed as to the progress of their enquiry owing to the introduction of automated process steps and providing multiple customer communication channels that can be tailored to their preferences, such as enhanced web capability to support customer enquiries and complaints.
26. Improvements in and automation of the handoffs between teams and communications from field to customer service and support, coupled with increased efficiency in the scheduling and dispatch of work, will help to minimise disruption to customers for whom work is undertaken by multiple teams. Similarly, the solution will facilitate proactive feedback, capturing inputs from customers which will be held centrally and processed in a system driven and standardised way. Systems will support close coupling of complaint and feedback information with intelligence drawn from MI to help drive process improvements. The solution will track and help manage proactive communications with customers to ensure they understand the actions being taken and allow response to their feedback.

Wider Implications

27. Even though work delivery, asset and customer processes (excluding non utility billing) are out of scope for delivery in this Project, they represent significant integration points with the Back Office. Business resources from ED&G and US GasD and Transmission will be needed on the project team to ensure the proper engineering of end to end processes that traverse the boundary between Front Office and Back Office.

28. Recommendations

The National Grid Executive Committee is invited to:

- Approve the USFP to proceed with Detailed Design and sanction the additional spend of \$33m to cover the completion of this phase through to the end of March 2011. This will cover:-
 - Completion of the detailed design for Release 1 of the US Strategy Routemap
 - Finalisation of the scope and deployment schedule
 - A more thorough challenge of the program costs, linked to scope of development objects
 - Development of a wider transformation plan for the US to align dependent initiatives such as organisational change with the US Foundation Program.
- Note the strategy to complete one phase of Detailed Design, allowing options for the future deployment that can be built upon for a multi-generational release strategy in the US.
- Note that the remaining investment post Detailed Design for the program is in the range of \$60.5m to \$82.5m, dependent upon the release strategy and deployment options developed and agreed to upon completion of Detailed Design.
- Approve the approach to stage gate reviews at the completion of Detailed Design and Build & Test phases to control program capex and opex spend.
- Recommend that the Board delegate authority to the Committee for the program including changes to scope and the release strategy and expenditure that would require the use of the 20% risk margin; and
 - note that Mark Fairbairn, Executive Director is the Program Sponsor, and that Helen Turner has the approved financial delegation to deliver the Program.

**National Grid plc
Executive Committee**

**Foundation Program
US-only sanction paper**
A re-sanction paper by David Lister

Line of Business: Shared Services

U.S. Regulated Companies Impacted: All US Companies

Executive Summary

1. To date the Group Exec has sanctioned a total of \$79.5m, through the end of March 2011, for the development of the US Systems Roadmap and the Mobilization, High Level Design and Detailed Level Design Phases of the US Foundation Program.
2. This paper seeks sanction for an additional \$35m of Capex to accelerate the Build of the Release 1 solution and overall programme timescales and extend certain Detailed Design activities where additional effort is required, particularly in order to meet key regulatory requirements. The aggressive release strategy we are adopting relies on certain key build activities commencing during Detailed Design and provides overall efficiencies to the program.
3. A full investment proposal for the remainder of the Program will then be brought forward to the April Group Exec. This full investment proposal will include a revised business case that is reflective of updated scope and associated costs and benefits.
4. While the final total indicative cost for the US Foundation Program will not be finalized until the end of March 2011 when the Detailed Design phase is expected to be substantially completed, the preliminary analysis indicates that total indicative costs for the Program are estimated in the range of \$160m to \$200m for a defined scope that includes:
 - (a) the originally assumed back office functionality and those elements of front office functionality that are effectively "pulled forward" to either preserve the existing front office integration and/or support mandatory regulatory requirements;
 - (b) a substantially greater number of development objects or RICEFWs (Reports, Interfaces, Conversions, Extensions, Forms and Workflows) resulting from the higher degree of integration within the US systems landscape and the need to maintain the existing work order lifecycle links; and
 - (c) a two release strategy that mitigates both technical and business risk.
5. In addition, under a separate sanction which was approved at the January 2011 US ISSG, the benefits validation third party assessment review will be undertaken over the next 3 months with preliminary conclusions expected in April prior to the final Program sanctioning. The review has been sanctioned for up to \$800k which will be treated as opex and will be charged to the US Foundation Program. These costs are not included in the sanction request submitted here.

Background Information

6. The primary objective of the Foundation Program is to transform and integrate the HR, Supply Chain and Finance processes that continue to operate across a fragile "patchwork" of disparate

applications since the acquisition of KeySpan in August 2007. This transformation will be completed through a redesign of business processes (aligned with the UK where appropriate) and the consolidation, onto a single SAP platform, of the functionality now being delivered in the US, by the Oracle and PeopleSoft Enterprise Resource Planning Suites, Hyperion Planning and associated legacy planning, budgeting and allocation systems and the legacy fixed asset system PowerPlant (2 instances).

7. Following the KeySpan acquisition, investments in the Oracle and PeopleSoft Enterprise Resource Planning infrastructure were put on hold pending decisions on the strategy and timing of the consolidation of those systems and their underlying Finance, Supply Chain and HR processes. As a result, the US Business has been challenged in supporting multiple and complex business processes that span multiple and complex technology platforms.
8. This program is of critical importance in:
 - a. addressing the cost transparency, reporting (financial and regulatory) and business efficiency challenges inherent in the fragmented processes and systems that currently exist across the US landscape
 - b. enabling the realization of synergies in the US back office operations
 - c. reducing the financial and regulatory reporting risks and the technical risk associated with operating business critical systems that have long exceeded the end of their supportable life.
9. The US Systems Strategy Roadmap clearly defines the need to deliver back office, customer, front office, mobile and dispatch capabilities to the National Grid businesses and the US Foundation Program (USFP) is identified as a critical enabler of this strategy.

10. Previous Sanction History

June 2009	\$10.0m to cover mobilisation/requirements phases
December 2009	\$29.0m to cover High Level Design
September 2010	\$ 7.5m to cover design through October 2011
October 2010	<u>\$33.0m</u> to cover Detailed Design* through March 2011
Sanctioned to date:	\$79.5m

Current Requested Sanction **\$35.0m** to complete Detailed Design and cover Build work through May 2011

Sanction Requested to date: **\$114.5m**

* Excludes Build elements

\$m	Current planning horizon					Yr 6+	Total
	Yr 1 09/10	Yr 2 10/11	Yr 3 11/12	Yr 4 12/13	Yr 5 13/14		
Proposed Investment	7	153-197					160-200

11. The additional sanction request reflects primarily the start of the Build and Unit Test phase of the Program which will generate significant activity during April and May, and the procurement of hardware components required for the end solution. There is also the need to extend Detailed Design out through April for the completion of HR elements of the design (eg functional

specifications), extend the collaboration hub sessions to close out design issues, and deliver on increased scope for Front Office integration, Finance (including controls), Treasury management and non utility billing.

12. Rate Recovery will be sought in the ordinary course, as rate cases are filed in the future. While the SAP platform has been thoroughly evaluated from a global enterprise perspective and it is expected this will in turn lead to substantial benefits over the longer term for our US customers, there is a need to validate the benefits assumptions and confirm that SAP is the best choice amongst other potential alternatives for customers in the US as well as the best choice for the National Grid global enterprise. The benefits validation will be conducted by an independent third party with a final report scheduled for May 2011.

Issues

13. The US Foundation Program is the first critical stage of a continuum which will eventually include all of the front and back office systems and processes to enable US transformation. The core scope of the program must include elements of 'Front Office' to meet US regulatory requirements of cost transparency of work, such as material cost and labour. This requires work order functionality in SAP Plant Maintenance to be enabled, and open work order information will be an important aspect of the program's data conversion and cutover strategy.
14. The analysis completed during Detailed Design has identified the need to revise a number of the original design assumptions including the requirement to deliver partial front office functionality. This has resulted in a substantial increase in scope and the conclusion that an October 2011 "go live" date is no longer possible to deliver both technically and from a business readiness perspective. A two release Strategy is therefore being pursued to mitigate both technical and business risk.

Risks and Concerns

15. The successful delivery of this program will be heavily dependent on the business's ability to support key program activities and ensure that they are ready for the level of change which the transformation aspects of this program will deliver. Lack of business resources for business readiness is therefore a concern. Detailed planning is underway in these areas to confirm the viability of the release schedule.
16. Competing priorities impact resources from the business and IT for Release 1. Executive support to ensure the program is a top priority for the businesses and advanced planning, coordination and alignment of competing priorities for Release 1 are imperative to mitigate this risk.
17. Additionally there is a heavy dependence on partner resources to backfill current US IS capability gaps and the program has an aggressive ramp up plan which will need to be delivered on time if key milestones are to be met.
18. The current release strategy which allows for Finance and Supply Chain to go live in December 2011 (Release 1) and HR in 2012 (Release 2) is still considered very aggressive. The team will continue to re-evaluate the status of the project on key dates, develop a contingency plan early in the process and consider new approaches for design, build and test to minimize risk.
19. Finance (fiscal) year end and regulatory calendar year end rely on a seamless transition to the new systems to allow reporting accuracy. Critical action plans will need to be in place to ensure that controls and reporting accuracy are delivered. Contingency planning for post go live recovery and clean up will be required.
20. There are not considered to be any material operational safety or environmental issues associated with this project.

Opportunities

21. In moving from two platforms to one, this project will simplify the way we work through streamlining and consolidating processes and allowing for greater consistency of data and reporting. In addition it will provide a stable platform to enable improvements in controls, cost transparency and accuracy in financial and regulatory reporting to be delivered.

Customer Benefits

22. The current scope of USFP will generate indirect benefit to the National Grid customer base through increased efficiencies of business processes and enabling shared service transformation. The inclusion of front office processes, aligned with the US System Strategy Roadmap, will enable more proactive customer communications achieved through the improved capture of customer information including their needs, leading to improved job scheduling and work allocation, marked reduction in customer handoffs and increased first call resolution as a result of improved and timely access to information.
23. Customers will be kept more informed as to the progress of their enquiry owing to the introduction of automated process steps and providing multiple customer communication channels that can be tailored to their preferences, such as enhanced web capability to support customer enquiries and complaints.
24. Improvements in and automation of the handoffs between teams and communications from field to customer service and support, coupled with increased efficiency in the scheduling and dispatch of work, will help to minimise disruption to customers for whom work is undertaken by multiple teams. Similarly, the solution will facilitate proactive feedback, capturing inputs from customers which will be held centrally and processed in a system driven and standardised way. Systems will support close coupling of complaint and feedback information with intelligence drawn from MI to help drive process improvements. The solution will track and help manage proactive communications with customers to ensure they understand the actions being taken and allow response to their feedback.

Wider Implications

25. Even though work delivery, asset and customer processes (excluding non utility billing) are out of scope for delivery in this Project, they represent significant integration points with the Back Office. Business resources from ED&G and US GasD and Transmission will be needed on the project team to ensure the proper engineering of end to end processes that traverse the boundary between Front Office and Back Office.
26. The range of \$160m to \$200m for final total project costs reflects a number of areas of uncertainty:
 - the Program system design will need to accommodate those critical recommendations arising from the independent audit of our existing back office systems and processes (eg Liberty). At this stage in Detailed Design such recommendations have still to be clearly articulated which may result in further design changes which could drive program delays and cost increases;
 - vendor negotiations for the remainder of the program are still ongoing;
 - Project Marlborough implications have still to be fully understood and embedded through the system, process and reporting designs for the Program.
27. The Program will continue to address these uncertainties as we close out Detailed Design with the expectation that the April sanction request will be in a tighter cost range than currently indicated.

28. Recommendations

The National Grid Executive Committee is invited to:

(a) Sanction \$35m of Capex to fund the project through to end May 2011

(b) NOTE that further sanction will be required with a full investment proposal for the remainder of the project to be presented at the April Group Exec.

Signature..... Date.....

Alan Foster

Decision of the [sanctioning authority]

I hereby approve the recommendations made in this paper.

Signature..... Date.....

Steven Holliday

**National Grid plc
Executive Committee**

**Foundation Program
US-only sanction paper**

A re-sanction paper by Tom King and David Lister

Line of Business: Shared Services

U.S. Regulated Companies Impacted: All US Companies

Executive Summary

- 1 To date, the Group Exec has sanctioned a total of \$114.5m through the end of May 2011, for the development of the US Systems Roadmap and the Mobilization, High Level Design, and Detailed Design Phases and preliminary build activities of the US Foundation Program.
- 2 Pending further validation of the total project costs and the associated business support resource costs it has been decided to defer the full sanction paper to the June Group Exec.
- 3 This paper seeks sanction for an additional \$6m of capex funding to allow the USFP to continue to deliver build activity at existing levels through to the end of June 2011.
- 4 Previous Sanction History

June 2009	\$10.0m to cover mobilisation/requirements phases
December 2009	\$29.0m to cover High Level Design
September 2010	\$ 7.5m to cover design through October 2011
October 2010	\$33.0m to cover Detailed Design* through March 2011
February 2011	<u>\$35.0m</u> to complete Detailed Design and preliminary build activities through May 2011
Sanctioned to date:	\$114.5m

Current Requested Sanction \$6.0m to maintain build activity through June 2011

Sanction Requested to date: **\$120.5m****

* Excludes Build elements

Recommendation

- 5 The National Grid Executive Committee is invited to:
 - (a) Sanction \$6m of capex to directly fund the US Foundation Program through to the end of June 2011

Signature..... Date.....

Alan Foster

Decision of the [sanctioning authority]

I hereby approve the recommendations made in this paper.

Signature..... Date.....

Steven Holliday

**National Grid plc
Executive Committee**

**Foundation Program
US-only sanction paper**

A re-sanction paper by Tom King and David Lister

Line of Business: Shared Services

U.S. Regulated Companies Impacted: All US Companies

Executive Summary

1. To date, the Group Exec has sanctioned a total of \$120.5m through the end of June 2011, for the development of the US Systems Roadmap and the Mobilization, High Level Design, and Detailed Design Phases and preliminary build activities of the US Foundation Program.
2. At this time it is also recognized that a considerable resource effort will be required by the business to ready themselves for the new system and to support the US Foundation Program in some key activities such as testing, data cleansing and training. This effort will result in existing business resources being required to support the program on short to medium term assignments as well as the need to potentially bring in additional resources to help support existing teams. To date these resource costs have not been reflected in the sanction value of the program as these resources are not considered full time program members. The business's ability to deliver the required resource levels at the same time as managing the restructuring under Project Marlborough present a significant challenge.
3. This paper seeks sanction for:
 - a. an additional \$123.8m of capex and \$17.9m of opex to complete the development and implementation phases of the Program which are scheduled for delivery on 1 July 2012. This includes \$30m of contingency (of which \$21m would only be released with the prior approval of the USFP Steering Committee). Including contingency this would result in total indicative program costs of \$262.2m (\$242.8m of capex and \$19.4m of opex). This compares to the October 2010 project cost estimate of \$162m (all capex). The main drivers of the increase primarily relate to the deferral of the release date, changes in estimates and scope following the near completion of detailed design, contingency and higher non resource related costs such as capitalised software licence fees;
 - b. an additional \$9.5m of capex related to internal interest charged to the program. This is essentially the financing cost associated with the funding of the program and is a standard charge attributed to all US IS projects; and
 - c. \$19.3m of business resource funding to support the business readiness activities required to ensure the successful implementation of the US Foundation Program. It is anticipated that these costs will be treated as opex and separately identified as opposed to being capitalised on the Program.
4. The scope of the Program includes:
 - (a) the originally assumed Finance, Supply Chain and Human Resources back office functionality and those elements of front office functionality that are effectively "pulled forward" to either preserve the existing front office integration and/or support mandatory regulatory requirements;

- (b) a substantially greater number of development objects or RICEFWs (Reports, Interfaces, Conversions, Extensions, Forms and Workflows) resulting from the higher degree of integration within the US systems landscape and the need to maintain the existing work order lifecycle links;
 - (c) a single release strategy scheduled for delivery on 1 July 2012; and
 - (d) a revalidation of the benefits to be delivered from the perspective of the US Customer.
5. This paper also overviews the business case validation work undertaken by Cap Gemini. We retained Cap Gemini to undertake principally two overarching tasks: (i) a comparison of USFP conceptual alternatives which have the potential to deliver broadly similar functionality as the currently planned USFP (i.e., the version of SAP as currently in process) and subsequent front office development and (ii) a directional assessment of the types of benefits a utility organization like National Grid might expect to realize from an ERP consolidation along the lines targeted by the company. As you will see, that work broadly confirms the continued direction of the USFP as a critical enabler of enterprise benefits, especially those associated with the ongoing US restructuring.

Background Information

6. The primary objective of the Foundation Program is to transform and integrate the HR, Supply Chain and Finance processes that continue to operate across a fragile “patchwork” of disparate applications since the acquisition of KeySpan in August 2007. This transformation will be completed through a redesign of business processes and the consolidation, onto a single SAP platform, of the functionality now being delivered in the US, by the Oracle and PeopleSoft Enterprise Resource Planning Suites, Hyperion Planning and associated legacy planning, budgeting and allocation systems and the legacy fixed asset system PowerPlant (2 instances).
7. Following the KeySpan acquisition, investments in the Oracle and PeopleSoft Enterprise Resource Planning infrastructure were put on hold pending decisions on the strategy and timing of the consolidation of those systems and their underlying Finance, Supply Chain and HR processes. As a result, the US Business has been challenged in supporting multiple and complex business processes that span multiple and complex technology platforms
8. This program is of critical importance in:
- a. addressing the cost transparency, reporting (financial and regulatory) and business efficiency challenges inherent in the fragmented processes and systems that currently exist across the US landscape
 - b. enabling the realization of synergies in the US back office operations
 - c. reducing the financial and regulatory reporting risks and the technical risk associated with operating business critical systems that have long exceeded the end of their supportable life.
9. The US Systems Strategy Roadmap clearly defines the need to deliver back office, customer, front office, mobile and dispatch capabilities to the National Grid businesses and the US Foundation Program (USFP) is identified as a critical enabler of this strategy. The Liberty Consulting Group’s (“Liberty”) recently released report corroborates the numerous systems-based process complications which the USFP was already on track to address, further underscoring the business criticality of the project.

10. Previous Sanction History

June 2009

\$10.0m to cover mobilisation/requirements phases

December 2009 \$29.0m to cover High Level Design
September 2010 \$ 7.5m to cover design through October 2010
October 2010 \$33.0m to cover Detailed Design* through March 2011
February 2011 \$35.0m to complete Detailed Design and preliminary build activities through May 2011
May 2011 \$ 6.0m to cover build activity through June 2011
Sanctioned to date: \$120.5m

Current Requested Sanction **\$111.7m** to complete the development and implementation of USFP
\$ 30.0m contingency
\$ 19.3m to cover the business support resources required
\$ 9.5m to cover internal interest financing costs
\$170.5m

Sanction Requested to date: **\$291.0m****

* Excludes Build elements

** Includes \$0.8m of Cap Gemini opex costs which have already been sanctioned separately

\$m	Current Planning Horizon				Total
	Yr 1 09/10 Actual	Yr 2 10/11 Actual	Yr 3 11/12	Yr 4 12/13	
Total Proposed Investment - USFP	13.5	69.3	137.3	42.1	262.2
Capex split	12.8	68.7	128.6	32.7	242.8
Opex split	0.7	0.6	8.7	9.4	19.4
Internal Interest	Nil	1.8	4.8	2.9	9.5
Business resources (opex)	Nil	Nil	13.0	6.3	19.3
Total overall costs	13.5	71.1	155.1	51.3	291.0

11. Rate Recovery will be sought in the ordinary course, as rate cases are filed in the future.

Business Readiness Implications

12. A significant investment in resources to help support the US Foundation Program and deliver business readiness is required. Resources will be required to support testing, data migration and cleansing and deliver training and procedure documentation. At the same time it is acknowledged that the key requirements of the US restructuring must also be delivered which will result in a significant number of skilled resources exiting the company. The US Executive Team has worked with Cap Gemini to develop a strategy for aligning the need to support the US Foundation Program and deliver on the US restructuring.

13. The various Appendices attached to this paper outline the resources required to be funded by the business. Each business area has identified its own resource requirements working closely with the US Foundation Program Business Engagement team. The cost of these resourcing plans has also been identified by business area. Accordingly, this paper is requesting in total \$19.3m of additional funding, over and above that for the US Foundation Program to fund the additional resourcing effort

required to ensure the successful delivery of the US Foundation Program in July 2012. This funding has been developed as follows:

Business Area	Funding required (\$m)
Operations	4.024
Network Strategy	1.218
Procurement	6.356
Shared Services (inc AP, NUB, payroll)	1.966
HR	0.413
Finance	5.287
Total funding	19.264

17. These costs will be recorded and reported in the individual business area but separately identified to allow a clear delineation between “business as usual” costs which will be reducing as a result of the US restructuring and these “exceptional” costs which will result in an increase in departmental costs.
18. In addition there will be resources employed within Operations and Network Strategy who are currently assigned to capital related activity which will potentially need to be reassigned to support of the program. This would potentially result in a shift in costs being recognized from capital to opex. This has been estimated at \$33m with a potential impact to opex of \$21m in 2011/12 and \$12m in 2012/13.

Investment Assessment

19. The US Foundation Program is the first critical stage of a continuum which will eventually include all of the front and back office systems and processes to enable US transformation. The core scope of the program must include elements of ‘Front Office’ to meet US regulatory requirements of cost transparency of work, such as material cost and labour. This requires work order functionality in SAP Plant Maintenance to be enabled, and open work order information will be an important aspect of the program’s data conversion and cutover strategy.
20. The analysis completed during Detailed Design has identified the need to revise a number of the original design assumptions including the requirement to deliver partial front office functionality. This has resulted in a substantial increase in scope and the conclusion that a December 2011 “go live” date is no longer possible to deliver both technically and from a business readiness perspective. A single release is therefore now scheduled for July 2012.
21. The current scope of USFP will generate indirect benefit to the National Grid customer base through increased efficiencies of business processes and enabling shared service transformation. The inclusion of front office processes, aligned with the US System Strategy Roadmap, will enable more proactive customer communications achieved through the improved capture of customer information including their needs, leading to improved job scheduling and work allocation, marked reduction in customer handoffs and increased first call resolution as a result of improved and timely access to information.
22. Customers will be kept more informed as to the progress of their enquiry owing to the introduction of automated process steps and providing multiple customer communication channels that can be tailored to their preferences, such as enhanced web capability to support customer enquiries and complaints.
23. Improvements in and automation of the handoffs between teams and communications from field to customer service and support, coupled with increased efficiency in the scheduling and dispatch of work, will help to minimise disruption to customers for whom work is undertaken by multiple teams. Similarly, the solution will facilitate proactive feedback, capturing inputs from customers which will be held centrally and processed in a system driven and standardised way. Systems will

support close coupling of complaint and feedback information with intelligence drawn from MI to help drive process improvements. The solution will track and help manage proactive communications with customers to ensure they understand the actions being taken and allow response to their feedback.

24. Even though work delivery, asset and customer processes (excluding non utility billing and activity based costing for capital projects) are out of scope for delivery in this Project, they represent significant integration points with the Back Office. Business resources from Operations are required on the project team to ensure the proper engineering of end to end processes that traverse the boundary between Front Office and Back Office and to support testing and training activities.
25. In order to gain an objective assessment of the direction of USFP and subsequent IS strategic investment and expected benefits, we engaged Cap Gemini to undertake some work to (i) assess potential USFP alternatives, doing as much as possible to align expected functionality equivalence with comparable investment scale, and (ii) identify in a generic way what order of benefits might be expected from a utility like ours making a mandatory investment in a consolidated ERP platform comparable to the scale of the current USFP. Cap Gemini identified three viable systems options, including the National Grid SAP direction, and broadly concluded that the USFP and subsequent IS strategic investment expectations, when adjusted for appropriate planning and implementation risk, were generally consistent for each of the three options. The Cap Gemini work also concluded that the types of enterprise and customer benefits which any of those options could ultimately be expected to deliver were optimized through continuing with the USFP SAP option.
26. A few points in the Cap Gemini work deserve emphasis. First, because of the maturity of the USFP project and the greater industry acceptance of the SAP platform, our USFP investment profile carried a lower risk than the two alternative options, neither of which has undergone detailed design or been implemented elsewhere. Second, although Cap Gemini did undertake an effort to try to quantify the expected benefits from a USFP implementation, that work was necessarily limited by the broad assumptions they needed to draw to complete their work in the required timescale. Significantly, Cap Gemini's work explicitly noted that it had not taken into consideration any other company initiatives under way, such as the US restructuring, which had already incorporated the type of savings opportunities which the USFP implementation will enable. In other words, Cap Gemini's overall savings should not be considered incremental to other planned initiatives, nor do they constitute the type of specific ROI projections that one could expect specifically to track as USFP is implemented. Instead, the Cap Gemini exercise should properly be taken in context as broad confirmation that implementation of an ERP consolidation like USFP should be expected to enable the type of enterprise and customer benefits of the sort which National Grid has already planned to deliver through the US restructuring. Overall, therefore, Cap Gemini's work importantly underscores that the successful implementation of SAP, including all the business readiness work outlined in the attached Appendices, will be a critical enabler of achieving the full benefits of the US restructuring effort.

Conclusion

27. In moving from two platforms to one, this project will simplify the way we work through streamlining and consolidating processes and allowing for greater consistency of data and reporting. In addition it will provide a stable platform to enable improvements in controls, cost transparency and accuracy in financial and regulatory reporting to be delivered
27. The National Grid Executive Committee is invited to:
 - (a) Sanction \$123.8m of Capex and \$17.9m of Opex (\$8.5m in 2011/12 and \$9.4m in 2012/13) to cover the US Foundation Program through to the end of implementation in July 2012 which includes a \$30m contingency (of which \$21m can only be used with the prior approval of the USFP Steering Committee);

- (b) Sanction \$9.5m of Capex to cover the financing costs associated with the program;
- (c) Sanction \$19.3m of opex (\$13.0m in 2011/12 and \$6.3m in 2012/13) to allow the business to ready themselves for implementation and support some critical activities to allow the successful delivery of the US Foundation Program;
- (d) Note the potential shift of capital related business resource activity to opex as resources move to work on program related activity of \$33m (\$21m in 2011/12 and \$12m in 2012/13);
- (e) Note the conclusions of Cap Gemini's review.

Signature..... Date.....

Alan Foster

Decision of the [sanctioning authority]

I hereby approve the recommendations made in this paper.

Signature..... Date.....

Steven Holliday

EHR1-Fall Capex / Opex Discussion



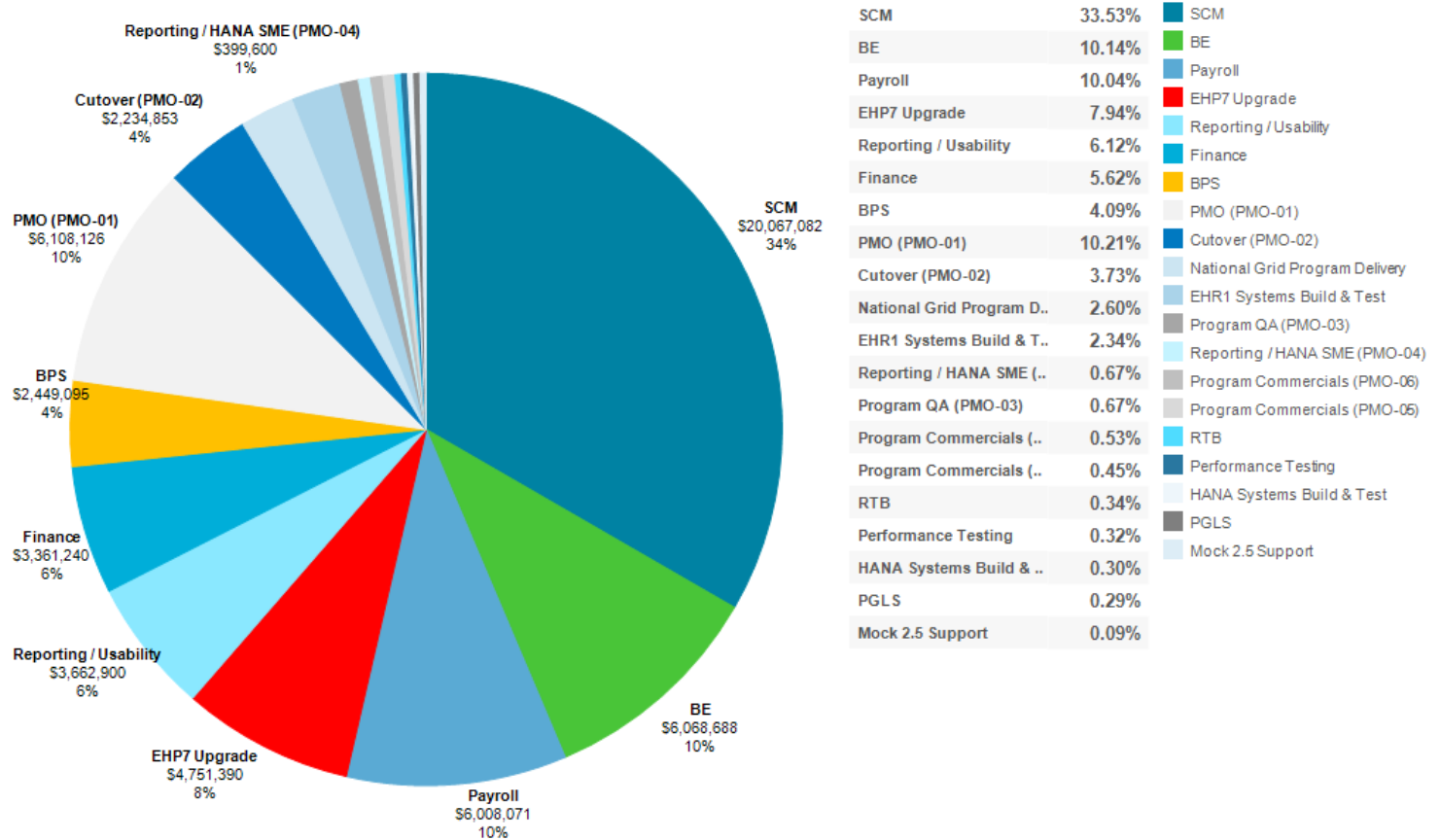
October 2015

Agenda

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Summary of Program Costs

The below charts summarize the overall percent of the total cost by process area or supporting project.



Capex Percentage – RICEFW Objects

For each of the below projects, we have identified the RICEFW objects and classified them to calculate the appropriate Capex percentage for the project. The objects were classified as follows:

- **Change – Existing:** Existing RICEFW objects that must be modified in support of the new system functionality, but are not required in order to deploy the project
- **Change – Add New:** Existing RICEFW objects that must be enhanced in order to accommodate the new system functionality, and would not need to be changed if project was not being deployed
- **New:** New RICEFW objects that must be added for successful project deployment

Project ID *	Total RICEFW Objects	Change – Existing	Change – New	New	Capex % **
EHP7-01	74	63		11	15%
Payroll-03	8	2	1	5	75%
Payroll-05	7	1	3	3	86%
RPT-01	7			7	100%
RTR-17	4	1	1	2	75%
SC-04j	18		13	5	100%
SC-04k	27		6	21	100%
SC-06a	27	1	17	9	96%
SC-07	17		13	4	100%
RTR-17-HANA	2			2	100%
SC-07-HANA	3			3	100%
UI-01	24			24	100%
Total	218	68	54	96	69%

* **Note:** 7 projects do not have RICEFW objects: RTR-12, Payroll-07, Payroll-10, BPS-07, BPS-08a, BPS-08b, BPS-08c

** Capex % is calculated as [Change New + New] / Total

Weighted Average Capex % for Program-managed Projects

The following table lists all projects managed by the program with their associated Capex percentages and calculates the weighted average Capex percentage of these projects:


Project ID	Total Cost	Capex %	Capex Cost
Payroll-03	\$2,654,174	75%	\$1,990,631
Payroll-05	\$2,565,590	86%	\$2,206,407
Payroll-07	\$579,289	100%	\$579,289
Payroll-10	\$209,018	55%	\$114,960
RTR-12	\$656,977	80%	\$525,582
RTR-17	\$2,704,263	80%	\$2,163,410
SC-04j	\$3,509,153	100%	\$3,509,153
SC-04k	\$9,745,902	100%	\$9,745,902
SC-06a	\$4,657,646	96%	\$4,471,340
SC-07	\$2,154,381	100%	\$2,154,381
BPS-07	\$2,140,395	68%	\$1,455,469
BPS-08a	\$98,000	60%	\$58,800
BPS-08b	\$98,000	60%	\$58,800
BPS-08c	\$112,700	60%	\$67,620
RPT-01	\$1,456,097	100%	\$1,456,097
UI-01	\$1,262,550	100%	\$1,262,550
RTR-17-HANA	\$615,859	100%	\$615,859
SC-07-HANA	\$328,395	100%	\$328,395
BE	\$6,068,688	0%	—
Total	\$41,617,077	78.7% *	\$32,764,645

* Total Capex % is calculated as a weighted average of all projects PMO is supporting

Payroll



Payroll-03: Business Case and Project Scope

Project ID	Payroll-03	Total Cost FY16	\$2,654,174	Business Case  Payroll
Project Name	HR Automation	Capex %	75%	
Start Date	7/28/2014	Opex %	25%	

Problem Statement

Step Progression: Increasing number of New England union employees are becoming eligible for step progression increases due to recently negotiated contracts. Time consuming manual work in Labor Relations, Operations, and TDC is required to provide step increases for these employees. Potential for inaccurate pay and resulting labor disputes.

Benefits Eligibility Assignment: Manual effort is required to enroll employees in pension, 401K, and supplemental insurance. This results in delayed enrollment and several hundred retro-adjustments annually, which adversely impact National Grid employee experience and execution of pension related labor strategy.

Project Scope

- Assess and build long term solution for automated Step Progression to include 16 additional unions.
- Automate the HR benefit eligibility enrollment process.

Objectives and Benefits

- Alignment of Step Progression process across National Grid to streamline processing; provide clear and consistent accountability; and support long term Labor Relations strategy.
- Improved employee experience.
- Improved accuracy, efficiency, and employee satisfaction from automation of HR benefits eligibility enrollment process.

Success Criteria and Key Metrics

- Reduction of retroactive benefits adjustments by 30% and elimination of manual effort for eligibility enrollment.
- Percentage of step progressions processed through automation by 95%, dependent upon future remaining negotiations.

Items Out of Scope

N/A

Note: The Total Cost and Capex % have been updated since the initial business case according to the RICEFW files and additional, agreed-upon scope

Payroll-05: Business Case and Project Scope

Project ID	Payroll-05
Project Name	Payroll Mistake Proofing
Start Date	7/28/2014

Total Cost FY16	\$2,565,590
Capex %	86%
Opex %	14%

Business Case



Payroll

Problem Statement

- *Payroll and Time jobs are not automated and core reporting is not optimized leading to longer payroll execution run time and errors.*
- *Sub-optimized configuration, retro transactions, and incorrect master data setup result in employee frustration, confusion and significant calls to the Response Team.*

Project Scope

- Automate the end to end payroll process:
 - Evaluate and deploy payroll processing jobs to run automatically by schedule.
 - Enhance the splitter program to optimize distribution of employees during the execution of Auto populate, Auto approve and Time evaluation.
 - Enable concurrent time transfer job processing.
 - Evaluate, configure, and deploy process models to automate subsequent payroll processing steps.
 - Develop report to consolidate error messages from multiple error log files.
- Assess and implement the system and process to enforce 90-day lock for retroactive payroll master data changes, restrict default master data entry options, and document the exception retroactive approval process.

Objectives and Benefits

- Achieve end-state payroll execution and automation, allowing extension of time-entry deadline by at least an additional hour.
- Allow operations more time to enter and review timekeeping data entry, reducing time entry labor cost and associated rework costs.
- Reduce unintentional retros, which cause employee dissatisfaction.

Success Criteria and Key Metrics

- Reduce payroll processing time by approximately an hour per payroll run in order to push back time entry deadline.
- Reduction of retros execution by 10%

Items Out of Scope

N/A

Note: The Total Cost and Capex % have been updated since the initial business case according to the RICEFW files and additional, agreed-upon scope

SCM



SC-04j: Business Case and Project Scope

Project ID	SC-04j
Project Name	Optimization of SRM system
Start Date	9/8/2014

Total Cost FY16	\$3,509,153
Capex %	100%
Opex %	0%

Business Case



SCM

Problem Statement

The current SRM system does not have enough proactive error handling mechanism to prevent creation of incorrect documents requiring manual intervention. The procurement process creates GR non-valuated PO even for orders with one company code. These POs does not create any commitment in the system and requires month end accrual. The Limit PO process does not update Contract amount based on Limit confirmation and PO closure. The current system is not configured to support standard functionalities like pricing scales and service master. Overall the Service procurement process involves lot of follow-ups and manual workarounds.

Project Scope

- Update Contract release value (line item) with confirmation value
- Update Contract header release value based on PO closure
- Enable valuated GR for POs with multiple account assignment and single company code
- Update POR and ERS indicators in Material contracts created from SRM
- Hide Delete and Complete buttons from Requestors View
- Automatic routing of high value shopping carts to the strategic Buyers.
- Streamline process to minimize impact when any buyer is transferred or leaves the company
- System validation and workflow modification to reduce number of saved POs created with error
- Fix 2 way shopping carts process to route the carts to the buyer for review and creation of 2-way match PO
- Sending notification email to Requestor once PO is created.
- Using Service Master for standardized services
- Using Pricing scales and conditions for handling Rebates

Objectives and Benefits

- Improve usability of the SRM system
- Automate update of Contract release value based on Confirmation and PO closure
- Reduce number of non valuated POs to minimize the month end accrual
- Optimize buyer determination process in shopping carts to reduce sourcing cycle time
- Reduce creation of incorrect POs to improve overall PO processing time
- Implement a 2-way match PO process for Energy Efficiency group
- Improve SRM-ECC integration for Material contract
- Minimize impact of buyer role changes
- Optimizing user authorization to reduce unwanted errors

Success Criteria and Key Metrics

- More accuracy in core procurement process
- Reduce number of purchase orders created with error state
- Reduce number of POs with non valuated flag
- Reduce SRM-ECC integration issues
- Improved SRM system usability and reliability

Items Out of Scope

IS Delivery

Note: The Total Cost and Capex % have been updated since the initial business case according to the RICEFW files and additional, agreed-upon scope

SC-04k: Business Case and Project Scope

Project ID	SC-04k
Project Name	Ariba Supplier Network
Start Date	9/8/2014

Total Cost FY16	\$9,745,902
Capex %	100%
Opex %	0%

Business Case



SCM

Problem Statement

Supplier Self Service is used to do Supplier collaboration in National Grid. SUS is unstable and SAP's legacy product. SAP will not be providing any new functionalities in SUS and will support for limited time. Supplier faces issues in performing transactions because of slow SUS performance. National Grid has more suppliers then recommend by SAP while using SUS. ASN has no such limitation and can be used by any number of suppliers without any issues.

Project Scope

- Implement Ariba Supplier Network by replacing SUS in a phased approach
- Identify suppliers for pilot implementation
- Develop transition plan to operationalize ASN
- Define specific needs business area and establish business partners by role (Data Stewards and Owners, Power Users, Go2Team, Subject Matter Experts / Centers of Excellence)
- Develop an inventory of WRICEF objects to meet business requirements
- Develop Functional specifications for WRICEF
- Develop business interaction routines by business area; establish roles and responsibilities as well as resourcing expectations
- Provide ASN training to buyers and facilitate National grid to notify suppliers.
- Identify change in business roles
- Conduct change impact assessment of current to future state of supplier collaboration

Objectives and Benefits

- Replace SAP legacy product 'SUS' with SAP's new product "Ariba Supplier Network"
- Integrate Ariba Supplier Network with ECC and SRM
- Ease of use for suppliers to collaborate with National Grid
- Minimal performance issues in using ASN by suppliers
- Fast and 24X 7 resolution of supplier issues

Success Criteria and Key Metrics

- Tight integration of ASN with SRM and ECC
- Supplier able to use ASN with ease and fewer performance issues
- Fewer issues from supplier while using ASN
- Supplier well trained on ASN
- Supplier well informed on benefits of ASN over SUS

Items Out of Scope

IS Delivery

Note: The Total Cost and Capex % have been updated since the initial business case according to the RICEFW files and additional, agreed-upon scope

SC-06a: Business Case and Project Scope

Project ID	SC-06a
Project Name	Optimize and Improve Efficiency of Current IMWM Processes
Start Date	9/8/2014

Total Cost FY16	\$4,657,646
Capex %	96%
Opex %	4%

Business Case



SCM

Problem Statement

The current IMWM system at National Grid does not have adequate visibility on material availability date at maintenance plants. There is a lack of system driven threshold for write off during physical inventory process. Stock is managed only at Sloc level in some of the locations leading to difficulty in tracking and managing inventory at such locations. Investment recovery operation is done outside SAP system

Project Scope

- The purpose of the inventory and warehouse management project are the following:
 - Design and Implement Due Date Management business processes to improve material availability and visibility at warehouses
 - Optimize the Supply Chain process for Long Island gas requirements to direct delivery to plants
 - Ensure Cycle counting policy threshold for write-off for inventory value
 - Add Zero Qty override option to Maximo demand
 - Improve Warehouse efficiency by better error logging mechanism and reporting
 - Changing the Green Point storeroom from an "Inventory Location (IM)" into a true "Central Distribution Center (WM)" including barcode scanner functionality and wireless system access. - **TBD**
 - Introduce investment recovery operations into SAP including the financial accounting aspect and storeroom operations for managing the stock (inventory/scrap material) - **TBD**

Objectives and Benefits

- The objectives and benefits of this project are:
 - Improve inventory accuracy and material availability
 - Establish policies, procedures and processes for business to follow during inventory audit
 - Performance optimization of the warehouse operations
 - Future vision for Inventory and Warehousing
 - Better inventory visibility and tracking ability through introduction of warehouse management to Green point locations
 - Improve Obsolescence process

Success Criteria and Key Metrics

- The success of the project will be measured by the following:
 - Improved actual results against KPI's identified by the IMWM
 - Reduced inventory delinquency during inventory audits
 - Staff at warehouse and IMWM should be self reliant

Items Out of Scope

N/A

Note: The Total Cost and Capex % have been updated since the initial business case according to the RICEFW files and additional, agreed-upon scope

SC-07: Business Case and Project Scope

Project ID	SC-07
Project Name	Improve Maintenance Planning and Implement Rentals of Fleet in SAP
Start Date	9/8/2014

Total Cost FY16	\$2,154,381
Capex %	100%
Opex %	0%

Business Case



SCM

Problem Statement

Fleet rental processes are currently managed outside SAP system, and manual process is used to create/maintain fleet rental data. Vehicles maintenance plans for NG owned vehicles are required to be enhanced to add mileage and it should also meet the critical business requirement of the mileage broken down by state. Limited reporting capability related to Garage Vendor Spend, Fleet Work Order and Annual Mileage reporting

Project Scope

- Include fleet rental processes in SAP and maintain equipment records, maintenance plan, standing orders and settlement orders for rentals in SAP
- Modify current system trigger of maintenance plan for owned equipment's based on Date and Mileage
- Clearly defined odometer reading and state based mileage
- Implement required SAP system validation of cross company code during plant maintenance creates and changes
- Development of Business Reports for:
 - Garage Vendor Spend Report
 - Fleet Work Order Labor by Task c. Annual Mileage for DOT Vehicles
- Changes to the ZIW40 to pick the PO consumption value rather than the Total PO value (CR 589)
- Create a new template to add RBS specific invoices, to FS 504 lease payments, and fs183 lease data update
- Ability to lease the vehicle through operating lease in SAP

Objectives and Benefits

- Management of all rental fleet data in SAP
- Optimization of National Grid SAP Plant Maintenance planning processes
- Better reporting for Garage Vendor Spending, Fleet Work Order Labor by Task, and Annual Mileage for DOT Vehicles
- Validation in SAP to ensure less manual errors when processing standing and settlement orders
- Improve Asset and maintenance management
- Reduce down time and improve procurement processes

Success Criteria and Key Metrics

- Less manual labor hours used by staff to create and maintain rental fleet agreements
- Improved visibility for annual mileage for DOT vehicles, fleet work order by task, NYC consumption, garage vendor spending, Utilimarc benchmarking through new real time reports
- Fleet management operating group should be self reliant

Items Out of Scope

N/A

Note: The Total Cost and Capex % have been updated since the initial business case according to the RICEFW files and additional, agreed-upon scope

RTR



RTR-12: Business Case and Project Scope

Project ID	RTR-12
Project Name	Intercompany Accrual Program
Start Date	9/8/2014

Total Cost FY16	\$656,977
Capex %	80%
Opex %	20%

Business Case



RTR

Problem Statement

Issues in the current cross company purchasing solution process:

- No accounting entries are recorded at the time of Service Confirmation for service and limits Purchase orders, due to which National Grid does not have timely visibility to actual expenses accrued for the month
- Accrual program created to post accrual based on all service confirmations during the month, required lot of manual effort and technical support to be executed
- Reversal, Credit memos, subsequent debits and credits lacks functionality for accurate accounting, which has lead of accumulated of \$9.7M in expensed clearing account C6999999
- Cash discounts recieved on vendor payments are not recorded with correct account assignment, due to which actual cost object or company does not recieve benift of cash discount on their P&L.

Project Scope

- The project aims at providing an enhancement of the CCPS process to
- Reduction in risk for audit error by increasing automation
 - Ensure accounting entries are correct for all scenarios including invoices, credit memos, reversals, and subsequent credits/debits
 - Accruals are recorded more timely and accuracy due to automation
 - Manual effort and technical support required for break/fixes and accounting clean ups is greatly reduced.
 - Cash discounts are accounted to appropriate work-orders

Objectives and Benefits

- Enhancement of CCPS process will involve design and process changes to AP, supply chain and finance areas. Based on inputs received from the business, the following core changes are required to provide a comprehensive end to end solution:
- Evaluate the use of unknown account assignment and split accounting functionality to ensure that all regulatory and compliance requirements continues to be met.
 - Determine the need to record month-end accruals for cross company 3-way match process and evaluate options to post expenses at the time of service confirmation using standard SAP configuration to perform valuated GR otherwise a new enhancement to post accruals at the time of service confirmation will be required.

Success Criteria and Key Metrics


- Improved tracking, accuracy and timeliness of accounting entries
- Improved data integrity contained within SAP to support stand-alone entity financials
- Reduced balance (-9.7 M) in the default gl account (C6999999)/orders(original design balance =0)

Items Out of Scope

N/A

Note: The Total Cost and Capex % have been updated since the initial business case according to the RICEFW files and additional, agreed-upon scope

RTR-17: Business Case and Project Scope

Project ID	RTR-17	Total Cost FY16	\$2,704,263	Business Case  RTR
Project Name	Fleet End-to-End Financial & Inventory Process Improvement	Capex %	80%	
Start Date	9/5/2014	Opex %	20%	

Problem Statement

National Grid Fleet is responsible for the maintenance and repair of vehicles that are used to support various field operations (meter checking to line repair). The Fleet organization has approximately 9,000 vehicles and \$160M in annual spend ranging from maintenance, fuel, and vehicle lease. In the past, Fleet was managed through an ancillary system (interfaced to the Legacy general ledgers). Since Go-Live, Fleet Operations uses a basic design in SAP. Over time we have gained insight through experience of technical and process challenges particularly in reporting and recording of end to end information. To deliver these incremental improvements and efficiencies following areas were identified:

- FERC reporting
- Increased granularity of fleet charges by adding accounting for "Transportation" costs
- Lower the residual balances for transportation costs on balance sheet requiring reclassifying and manual adjustments
- Improve vehicle utilization reporting transparency
- Streamline and minimize non-preferred buying channels for parts

Project Scope

The overall objective is to improve and optimize the Fleet P2P & R2R processes so that they are clear and user friendly to operations but supports the necessary control requirements, audit considerations as well as the necessary recording and accounting for transaction processing from a financial perspective. This is expected to significantly reduce the manual intervention which is not sustainable in the long term. Following are additional specific goals:

- Drive appropriate cost allocations
- Simplify existing cost flow (currently 7 different settlements/assessments in MEC) of charges and make reporting of fleet utilization more relevant
- Eliminate the need for manual journal entries at month end by finance to clear up residual transportation charges that are not allocated out appropriately due to master data/processing issues
- Enable greater procurement control & visibility to spend
- Increase Fleet inventory valuation accuracy (greater importance now that the consignment inventory program has been terminated)
- Free up unionized labor hours (est. 1-3 hours per garage per day) due to current administrative tasks associated with non-preferred buying channels (P-card Reconciliation, etc.)

Success Criteria and Key Metrics

- P2P
 - Uniform processes across garages
 - Alignment from Procurement to Finance
 - System automated to manage replenishment
 - Inventory costs classified accurately
 - Transparency of Fleet purchases and sourcing (This is to address an audit deficiency)
- R2R
 - Less manual journal entries to reclass expenses
 - Reduction in time to Process settlements and assessments related to fleet
 - More accurate reporting of vehicle utilization (This is to address an audit finding that we are significantly showing underutilization from internal audit)
 - Easier external reporting (FERC) module

Note: The Total Cost and Capex % have been updated since the initial business case according to the RICEFW files and additional, agreed-upon scope

BPS



BPS-07: Business Case and Project Scope

Project ID	BPS-07
Project Name	Streamline and Automate User Access Processes
Start Date	6/30/2014

Total Cost FY16	\$2,140,395
Capex %	68%
Opex %	32%

Business Case



BPS

Problem Statement

The current user provisioning process and SOD review process are manual in nature. This creates possibility of manual errors in the provisioning and deprovisioning of user access, in addition to the length of time it takes to process a user request from the moment a user is hired or fired/retired. Without a workflow for segregation of duties review, the visibility of mitigating controls to the business is not apparent and as such does not create a sense of ownership. Furthermore, there are needs for IAM integration analysis as well as further opportunities for control optimization, in order to improve upon the stabilization efforts for User Access processes

Project Scope

- Implement SAP GRC Access Control workflows to address:
 - SOD conflict re-certification
 - Mitigating control governance
 - SOD rule set modifications (including risk rating changes)
- Leverage SAP HR data triggers to automate provisioning and de-provisioning of user accounts and base SAP security roles
- Perform GRC / Identity and Access Management integration assessment to support user access re-certification and user provisioning processes
- Provide continued support of SAP technical security roles
- Evaluate reports supporting detective controls and identify opportunities to provide tailored analysis based on complex transactional data
- Perform evaluation of manual controls to identify opportunities to leverage configurable controls as preventive controls in place of manual controls
- Design report and technical specification to automate generation of weekly FireFighter logs
- Identify requirements and perform solution assessment for automated controls monitoring
- Provide knowledge transfer to National Grid to enable long-term sustainability of compliance and controls processes
- Provide subject matter expertise related to PII

Objectives and Benefits

- Build a more sustainable/mature controls environment through improving the quality of key controls
- Reduce manual control reliance as mitigating controls for high SOD risks
- Design of SOX processes and controls to reduce risk of audit deficiencies
- Establish controls for governance of GRC master data that is key to maintaining SOX compliance
- Automation of User Access processes to reduce risk of errors and audit deficiencies
- Provide auditability of transactional data used for key control reqs
- National Grid ownership and ability to manage controls and compliance requirements
- Faster response time for performance of key processes; enhanced ability to meet service level guidelines

Success Criteria and Key Metrics

- Reduction in audit deficiencies and need to perform substantive audit procedures (e.g., "look back") to address control deficiencies
- Roles automatically provisioned at time of approval; number of days to provision after business approval = 1
- Automated de-provisioning of user accounts and roles at time of termination
- Achievement of service level guidelines for User Access processes
- Reduction in contractor FTE / footprint due to automation of processes
- Increase number of automated controls identified as key controls

Items Out of Scope

N/A

Note: The Total Cost and Capex % have been updated since the initial business case according to the RICEFW files and additional, agreed-upon scope

BPS-08a: Business Case and Project Scope

Project ID	BPS-08a
Project Name	Implement Enhanced Development Environment
Start Date	10/1/2014

Total Cost FY16	\$98,000
Capex %	60%
Opex %	40%

Business Case



BPS

Problem Statement

The current SAP environment does not provide a robust development environment that is consistent with the QA and Production environments for test data. This has contributed to constrained unit / integration testing by the development teams, infrequent refresh of the development environment with production data, and delay of technical validation for changes, in many instances until the User Acceptance test phase. The lack of a robust development environment contributes to inefficiencies in change request completion and defect resolution due to the inability to create comprehensive unit test cases and in many instances to recreate incidents and errors for incident resolution. Inadequate system documentation on the PowerPlan solution and integration also contributes to inefficiencies and delays in PowerPlan requested change progression and incident resolutions

Project Scope

- Enhance capabilities of the current development environment to better manage system maintenance and the change management lifecycle
- Develop a better DEV system regression and unit test bed for SAP and Power Plan
 - Size the Development environment to support the use of full production database client copies
 - Develop a data refresh strategy for the development environment
 - Document the Power Plan solution and interfaces to provide better incident management support and change request impact assessments

Objectives and Benefits

- Size the SAP Development environment to handle production client data refreshes supporting more rigorous unit and regression testing consistent with QA and production environment
- Provide the ability to refresh the development environment with production data at more regular frequencies aligned with QA refreshes
- Increase incident and change testing effectiveness and efficiency
- Establish ability to re-create incidents reported by business, and also support proper change impact analysis
- Reduce number of development and test iterations (due to increased effectiveness of unit tests in development)

Success Criteria and Key Metrics

- Ability to refresh the development environments at more regular intervals without impacting services to the business
- Ability to Synchronize the Development environment with full client copies to be consistent with QA and production data
- Reduce unit testing cycles and the number of instances where unit testing is currently being deferred or passed on for business testing in QA
- Reduction in number of incidents introduced by production releases / migrations

Items Out of Scope

N/A

Note: The Total Cost and Capex % have been updated since the initial business case according to the RICEFW files and additional, agreed-upon scope

BPS-08b: Business Case and Project Scope

Project ID	BPS-08b
Project Name	Enhance Change Management Process
Start Date	10/1/2014

Total Cost FY16	\$98,000
Capex %	60%
Opex %	40%

Business Case



BPS

Problem Statement

The current version of the SharePoint tool used to manage change requests (CRs) for SAP and PowerPlan does not align with the improved Change Management processes created as part of establishing BPS foundational capabilities (BPS-01), requires significant manual effort to execute the workflow, and does not capture key data to facilitate management reporting and process governance

Project Scope

- Develop BPS Change Request Tool v2.0 as a web enabled set of forms and associated SharePoint application to handle all change requests to support and manage integrity of the USFP solution
- Redesign, rebuild, and provide expanded workflow functionality on SharePoint for the CR application including automation of tools and process that are currently manually performed to provide greater control of change management and knowledge management without adding additional work to the existing team
- Provide training to BPS and Vendor staff on the usage of the upgraded BPS Change Request Tool

Objectives and Benefits

- Enable auditability of operational data by providing a system to maintain document trail for all changes that are authorized for build and scheduled for release to production
- Pass audits without significant findings by providing single source of information for CRs, and enable better testing, tracking, deployment and control of change requests
- Expand change request process tool to manage workflow associated with initiation, review, approval, build status, release bundling and close-out of change requests managed by BPS
- Generate reports that provide insight into the performance of the CR process and support CCB reviews, change management prioritization, spending control and management decision making

Success Criteria and Key Metrics

- On-time completion of development, testing and roll-out of the SharePoint CR tool
- All of the requirements stated in CR SharePoint V 2.0 Functional Spec are addressed
- Ability to extract data for reporting of KPIs, management reviews, audit and BPS SLGs
- Auditability of the changes from change request registration, approvals, and closure of change after deployment (or other reasons)

Items Out of Scope

N/A

Note: The Total Cost and Capex % have been updated since the initial business case according to the RICEFW files and additional, agreed-upon scope

BPS-08c: Business Case and Project Scope

Project ID	BPS-08c
Project Name	Automate Failed IDOC Management Process for Interfaces
Start Date	10/1/2014

Total Cost FY16	\$112,700
Capex %	60%
Opex %	40%

Business Case



BPS

Problem Statement

Provide an automated process to provide the business with reporting of failed critical interface IDOCs (business data) for the fiscal year in a timely manner. This process will help the business ensure that critical business data is processed accurately and timely to ensure the National Grid financials are accurate

Project Scope

- Meet the approved framework with audit in terms of business process, technical process, and data. These are spelled out in the BPS-TE SOP and business SOPs
- Communicate with the business owners for failed business data
- Provide daily, weekly monthly (accruals) and yearly reporting on failed business data
- Establish process for business owners and technical partner (AM) to communicate business data remediation and document such communications
- Enable selection of failed business data by business owner, interface, date
- Provide ability to review previously failed business data and associated remediation
- Complete trending analysis against business areas, interfaces and dates, and common failure analysis
- Provide aging reports to management
- Analyze application management response to business request
- Provide sufficient data attributes for reporting and analysis

Objectives and Benefits

- Provide fully automated process that is integrated with the SAP solution
- Provide daily, weekly, monthly reporting to specified business owners and BPS to ensure failed business data is corrected
- Provide Monthly aged reports to National Grid management to help assess business data accuracy by area
- Provide BPS with data on failed business data by business area:
 - Business follow-up
 - Trending
 - Interface design Issues
- Provide accurate design and data for auditing of the interface technical process (IDOC Management)
- Provide a communication vehicle between the business data owner and application support that:
 - Provides accurate communication of actions
 - Documentation of actions
 - Status of business data requests
 - Provide key attributes for each request:
 - Business reason, Requestor, Dates, Technical Resource, Status of request
- Provide a business data (IDOCs) technical process that is fully auditable

Items Out of Scope

N/A

Success Criteria and Key Metrics

- Success will be measured by having an automated process that allows the business owners to accurately handle interface IDOC (business document) errors that meets audit standards.

Note: The Total Cost and Capex % have been updated since the initial business case according to the RICEFW files and additional, agreed-upon scope

Reporting



RPT-01: Business Case and Project Scope

Project ID	RPT-01
Project Name	Performance Reporting
Start Date	10/13/2014

Total Cost FY16	\$1,456,097
Capex %	100%
Opex %	0%

Business Case



Reporting

Problem Statement

Performance reporting in many areas, particularly within Operations, does not provide employees with the information needed to fully monitor and maximize performance against National Grid's strategic objectives.

Project Scope

- Identify, define, rationalize and prioritize Metrics/Reports with business leads
- Create Functional Specification and Technical Specification documents in collaboration with Business and Process Leads and Technical team for Report/Metric and BW enhancement
- Assist and manage the delivery of the scoped Metrics / Reports as part of the sub-project
- Manage integrated release (RA + EVD Summer Release) and deployment planning
- Track release readiness across people, process & technology
- Provide inputs to business enablement team where necessary
- Providing functional and PMO support for the scope of this project
- Advising on testing strategy and test scenarios.
- Functional support during cutover, hypercare and post go-live

Objectives and Benefits

- Short and quick delivery cycles
- Early error detection in Reports/KPIs which would lead to improvement strategy
- Creating platform for rapid development and analytics

Items Out of Scope

- Development and configuration of the SAP solution*
- Actually transporting the solution into production*
- Organizational Readiness and Change Management including training*
- Regression Testing*
- Actual Cutover activities*
- System performance*
- Data loads or validation of data loads in production systems*

Success Criteria and Key Metrics


- Reports/KPIs enabling better enterprise wide decision making capabilities
- Platform for rapid development

Note: The Total Cost and Capex % have been updated since the initial business case according to the RICEFW files and additional, agreed-upon scope

Usability



UI-01: Business Case and Project Scope

Project ID		UI-01	Total Cost FY16		\$1,262,550	Business Case  Usability
Project Name		Usability Innovation	Capex %		100%	
Start Date		11/17/2014	Opex %		0%	

Problem Statement	<ul style="list-style-type: none">Many of the original SAP screens are standard-delivered designs that did not consider usability and future mobility. SAP's latest offerings provide opportunity to improve the usability and user experience of several common business processesKey opportunities include: Time Entry, Time Approval, Shopping Cart Approvals, Travel and Expense Approvals, and commonly-used Finance transactions
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Project Scope	<p>The Usability project will deliver user-centered applications to the workplace with consistency in experience, design, and branding. The scope has been broken into 3 waves:</p> <ul style="list-style-type: none">Wave 1 – NUB PersonasWave 2 – RTR PersonasWave 3 – The following Fiori applications<ul style="list-style-type: none">Time EntryTime ApprovalShopping Cart ApprovalTravel & Expense Approval	Objectives and Benefits	<ul style="list-style-type: none">Improved business-user productivity and transaction throughputIncreased user satisfaction by simplifying complex screens and automating repetitive tasksReduced cost of personalizationDecreased training time for SAP software usersImproved business-user productivity and transaction throughputIncreased user satisfaction by simplifying complex screens and automating repetitive tasksReduced cost of personalizationDecreased training time for SAP software users
Items Out of Scope	<p>Mobility, Crew Time Entry, TDC and Payroll Personas</p>	Success Criteria and Key Metrics	<ul style="list-style-type: none">Reduced amount of time taken to enter time and vehicle informationReduced time to perform approvals for time, shopping carts and travel expensesEasier to access commonly used options within reports and transactions for finance resources

Note: The Total Cost and Capex % have been updated since the initial business case according to the RICEFW files and additional, agreed-upon scope

HANA



RTR-17-HANA: Business Case and Project Scope

Project ID	RTR-17-HANA
Project Name	Fleet Finance Transformation
Start Date	May 18, 2015

Total Cost FY16	\$615,859
Capex %	100%
Opex %	0%

Business Case
N/A

Problem Statement	<ul style="list-style-type: none"> RTR17 – Fleet Finance Transformation project is to develop reporting solution in HANA for Fleet Cost Capture and Settlements process changes in ECC
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Project Scope
<ul style="list-style-type: none"> Develop reporting solution to capture newly designed Fleet Cost flows in ECC and provide enhance End to End reporting solution Develop reporting solution to ensure improved Settlement process from ECC can be captured for Fleet reporting.

Objectives and Benefits
<ul style="list-style-type: none"> Reporting would reflect cost allocation per new process changes for Fleet Cost Capture and settlement

Success Criteria and Key Metrics
<ul style="list-style-type: none"> Fleet detail cost tracing should reflect Fleet Cost Capture and Settlement process changes

Items Out of Scope

Note: The Total Cost and Capex % have been updated since the initial business case according to the RICEFW files and additional, agreed-upon scope

SC-07-HANA: Business Case and Project Scope

Project ID	SC-07-HANA
Project Name	Fleet Utilization Reports
Start Date	May 18, 2015

Total Cost FY16	\$328,295
Capex %	100%
Opex %	0%

Business Case
N/A

Problem Statement

- Supply Chain - Fleet does not have reports to track Labor by Task, Preventative Maintenance Completion and Fleet Non Productive Time (indirect labor hours) which would enable supervisors and managers to focus on improving fleet utilization and efficiency

Project Scope

- Labor by Task, Preventive Maintenance Completion and Fleet Non Productive Time reports development in HANA
- Perform build and unit test activities for the functional requirements for the Enhancement Reports
- Build and unit test the three Enhancement Reports using the SAP Business Objects Universe and Web Intelligence tools.

Objectives and Benefits

- Reports should enable managers and supervisors to focus on improving fleet utilizations and efficiency

Success Criteria and Key Metrics

- Three Reports would be delivered in SAP HANA BI solution

Items Out of Scope

N/A

Note: The Total Cost and Capex % have been updated since the initial business case according to the RICEFW files and additional, agreed-upon scope

Division 9-3

Request:

Referring to Workpaper 6a-6c Service Company Rents, tab IS New Projects RY1, please provide detailed documentation for each project, including project authorization forms or work orders, for projects greater than \$5M, as shown in column J.

Response:

Please see the Company's response to Division 9-5, which includes the full set of project documentation. The table below provides a cross-reference to the subset of projects noted on the IS New Projects RY1 tab.

Line	Investment Name	Total Spend	Documentation	Page Reference
358	INVP 3932 Call Center Customer Contact Center/SDC Technology Upgrade Implement Solution	\$ 27,724,999.79	Attachment DIV 9-5-2	16-33
413	INVP 3737 US CNI GMS SCADA Upgrade	\$ 21,474,909.00	Attachment DIV 9-5-2	34-49
423	Regulatory Mandates - FY20	\$ 20,000,000.00	Attachment DIV 9-5-2	1-4
447	Regulatory Mandates - FY21	\$ 20,000,000.00	Attachment DIV 9-5-2	1-4
390	Regulatory Mandates - FY19	\$ 19,140,000.00	Attachment DIV 9-5-2	1-4
409	INVP 4914 US CNI-EMS Lifecycle Hardware and Software Upgrade	\$ 14,897,000.00	Attachment DIV 9-5-4 REDACTED	1-14
304	INVP 4307 US Win 7 Refresh Ph 3	\$ 13,617,457.42	Attachment DIV 9-5-4 REDACTED	15-30
410	INVP 4750 Customer Experience Transformation Tech Program	\$ 10,496,000.00	Attachment DIV 9-5-4 REDACTED	91-106
315	INVP 3614D1 Ent Network Security	\$ 10,283,270.81	Attachment DIV 9-5-3	177-189
352	INVP 4398 Storms/ISched Upgrade	\$ 9,503,262.63	Attachment DIV 9-5-4 REDACTED	107-120
408	INVP 4570 US CNI Tech Services-Network Equipment Lifecycle Replacements	\$ 9,169,202.87	Attachment DIV 9-5-4 REDACTED	121-132
293	S005242 M112 Systemic Improvement	\$ 8,354,544.53	Attachment DIV 9-5-6	63-65
296	INVP 4464 Data Visualization	\$ 8,068,089.11	Attachment DIV 9-5-4 REDACTED	133-147
356	INVP 4408 Doc Mgmt Systems Replacement Delivery	\$ 6,049,255.64	Attachment DIV 9-5-4 REDACTED	148-164
438	Domain Based Security Phase 2 (Network Segregation)	\$ 6,000,000.00	Attachment DIV 9-5-3	159-176

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4770
Responses to Division's Ninth Set of Data Requests
Issued January 11, 2018

425	INVP 4564 US SAP: Enhancement Pack 9 Upgrade	\$ 5,328,000.00	Attachment DIV 9-5-5	1-4
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Division 9-4

Request:

Referring to Workpaper 6a-6c Service Company Rents, IS Existing Projects with a INVP# equal to USFP, please explain amongst this group of projects which ones relate to the original implementation of USFP. For all projects identified, please provide the costs related to the original implementation of USFP and the allocated costs to Narragansett Electric Company.

Response:

Please see Attachment DIV 9-4 for the work orders related to the original implementation of the US Foundation Program (USFP). Attachment DIV 9-4 contains the following information:

- The requested information for each of the years included in Workpaper 6a-6c (i.e., Rate Year 1, Rate Year 2, and Rate Year 3¹);
- The total cost for each work order can be found in the column labeled "HTY Total Spend"; and
- The allocated costs to Narragansett Gas and Narragansett Electric can be found in the columns labeled "Rate Year 1 NECO G Rent-Return" and "Rate Year 1 NECO G Rent-Deprn" for Narragansett Gas and "Rate Year 1 Total" for Narragansett Electric.

¹ Please note that in the Company's initial filing and responses to discovery in this docket, Rate Year 1 is sometimes referred to as the "Rate Year" (i.e., the twelve-month period ended August 31, 2019); Rate Year 2 is sometimes referred to as "Data Year 1" (i.e., the twelve-month period ended August 31, 2020); and Rate Year 3 is sometimes referred to as "Data Year 2" (i.e., the twelve-month period ended August 31, 2021).

Gas										Distribution			
Line	Investment Name	INVP #	Work Order	HTY Total Spend	Rate Year 1 NECO G Rent- Allocation	Rate Year 1 NECO G Rent- Return	Rate Year 1 NECO G Rent - Depn	Rate Year 1 Distribution Allocation	Rate Year 1 Rent Return	Rate Year 1 Rent Depreciation	Less IFA Salary & Wage Allocator	Rate Year 1 Total	
8	USFP-Tech Delivery - R1	USFP	90000107545	\$4,595,067	2.85%	\$2,954	\$13,095	8.37%	\$8,676	\$38,454	\$6,438	\$40,692	
9	FINANCE STREAM - DESIGN CAPEX	USFP	90000097838	\$1,441,354	2.85%	\$927	\$4,107	8.37%	\$2,722	\$12,062	\$2,019	\$12,764	
10	USFP - PMO-DD	USFP	90000104645	\$4,761,712	2.85%	\$3,062	\$13,570	8.37%	\$8,991	\$39,849	\$6,671	\$42,168	
11	SICHAIN STREAM - DESIGN CAPEX	USFP	90000097846	\$1,038,127	2.85%	\$667	\$2,958	8.37%	\$1,960	\$8,688	\$1,454	\$9,193	
12	SOLUTION DEL - DESIGN CAPEX	USFP	90000097840	\$906,402	2.85%	\$583	\$2,583	8.37%	\$1,711	\$7,585	\$1,270	\$8,027	
17	USFP R3 Finance	USFP	90000142411	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0	
49	USFP-Business Readiness -R1	USFP	90000107548	\$2,020,438	2.85%	\$1,299	\$5,758	8.37%	\$3,815	\$16,908	\$2,831	\$17,892	
70	USFP-Build & Unit Test -R1	USFP	90000107541	\$26,765,794	2.85%	\$17,210	\$76,275	8.37%	\$50,538	\$223,991	\$37,501	\$237,028	
72	USFP-Data Strategy - R1	USFP	90000107543	\$7,738,324	2.85%	\$4,975	\$22,052	8.37%	\$14,611	\$64,759	\$10,842	\$68,528	
73	USFP Test Procure	USFP	90000117369	\$311,956	2.85%	\$201	\$889	8.37%	\$589	\$2,611	\$437	\$2,763	
74	USFP - Cutover-DD	USFP	90000104653	\$118,108	2.85%	\$76	\$337	8.37%	\$223	\$988	\$165	\$1,046	
75	USFP - Data Strategy-DD	USFP	90000104649	\$2,531,924	2.85%	\$1,628	\$7,215	8.37%	\$4,781	\$21,189	\$3,547	\$22,422	
76	DESIGN AUTH - DESIGN CAPEX	USFP	90000097842	\$318,531	2.85%	\$205	\$908	8.37%	\$601	\$2,666	\$446	\$2,821	
78	USFP-Reporting & Info - R1	USFP	90000107544	\$6,197,728	2.85%	\$3,985	\$17,662	8.37%	\$11,702	\$51,866	\$8,683	\$54,885	
79	USFP R3 Finance	USFP	90000142411	\$8,782,504	2.85%	\$10,330	\$25,028	8.37%	\$30,337	\$73,497	\$14,184	\$89,650	
80	USFP R3 Supply Chain	USFP	90000142410	\$9,434,359	2.85%	\$9,650	\$26,885	8.37%	\$28,340	\$78,952	\$14,656	\$92,636	
82	USFP R3 Payroll	USFP	90000142385	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0	
83	USFP R3 Payroll	USFP	90000142385	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0	
104	USFP-Testing -R1	USFP	90000107542	\$61,366,885	2.85%	\$39,457	\$174,878	8.37%	\$115,870	\$513,552	\$85,979	\$543,443	
107	USFP-Process & Design -R1	USFP	90000107540	\$7,564,718	2.85%	\$4,864	\$21,557	8.37%	\$14,283	\$63,306	\$10,599	\$66,990	
108	USFP - Reporting & Info-DD	USFP	90000104650	\$2,503,961	2.85%	\$1,610	\$7,136	8.37%	\$4,728	\$20,955	\$3,508	\$22,174	
109	USFP - Build & Unit Test-DD	USFP	90000104647	\$2,783,413	2.85%	\$1,790	\$7,932	8.37%	\$5,256	\$23,293	\$3,900	\$24,649	
110	USFP - Process & Design-DD	USFP	90000104646	\$17,463,817	2.85%	\$11,229	\$49,767	8.37%	\$32,974	\$146,147	\$24,468	\$154,653	
111	INFORMATION MGMT - DESIGN CAPEX	USFP	90000097845	\$346,941	2.85%	\$223	\$989	8.37%	\$655	\$2,903	\$486	\$3,072	
115	USFP-Testing -R1	USFP	90000107542	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0	
116	US Pre-BLUEPRINT STRATEGY PLAN	USFP	90000094157	\$6,530,003	2.85%	\$4,199	\$18,609	8.37%	\$12,330	\$54,647	\$9,149	\$57,827	
119	USFP R3 Supply Chain	USFP	90000142410	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0	
140	USFP-PMO - R1	USFP	90000107539	\$13,294,040	2.85%	\$8,548	\$37,884	8.37%	\$25,101	\$111,252	\$18,626	\$117,727	
141	USFP - Tech Delivery-DD	USFP	90000104651	\$1,708,792	2.85%	\$1,099	\$4,870	8.37%	\$3,226	\$14,300	\$2,394	\$15,132	
144	USFP-Solution Architecture-R1	USFP	90000107550	\$2,536,861	2.85%	\$1,631	\$7,229	8.37%	\$4,790	\$21,230	\$3,554	\$22,466	
145	USFP-Controls & Roles -R1	USFP	90000107546	\$7,773,544	2.85%	\$4,998	\$22,152	8.37%	\$14,678	\$65,053	\$10,891	\$68,840	
146	USFP Test Finance	USFP	90000117364	\$3,910,865	2.85%	\$2,515	\$11,145	8.37%	\$7,384	\$32,728	\$5,479	\$34,633	
147	USFP - Hardware & Software-DD	USFP	90000104657	\$2,770,640	2.85%	\$1,781	\$7,896	8.37%	\$5,231	\$23,186	\$3,882	\$24,536	
148	PROCESS CONTROL - DESIGN CAPEX	USFP	90000097847	\$138,806	2.85%	\$89	\$396	8.37%	\$262	\$1,162	\$194	\$1,229	
150	SOLUTION ARCH - DESIGN CAPEX	USFP	90000097839	\$199,928	2.85%	\$129	\$570	8.37%	\$377	\$1,673	\$280	\$1,770	
152	USFP Test Net Strat	USFP	90000117362	\$1,305,452	2.85%	\$839	\$3,720	8.37%	\$2,465	\$10,925	\$1,829	\$11,561	
154	USFP - Business Engagement-DD	USFP	90000104655	(\$0)	2.85%	\$0	\$0	8.37%	\$0	\$0	\$0	\$0	
158	USFP R3 Finance	USFP	90000142411	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0	
159	USFP R3 Payroll	USFP	90000142385	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0	
160	USFP R3 Finance	USFP	90000142411	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0	
182	USFP-Business Engagement -R1	USFP	90000107549	\$154,570	2.85%	\$99	\$440	8.37%	\$292	\$1,294	\$217	\$1,369	
183	USFP Test HR	USFP	90000117366	\$9,899	2.85%	\$6	\$28	8.37%	\$19	\$83	\$14	\$88	
184	USFP - Testing-DD	USFP	90000104648	\$209,496	2.85%	\$135	\$597	8.37%	\$396	\$1,753	\$294	\$1,855	
185	HR STREAM - DESIGN CAPEX	USFP	90000097841	\$826,202	2.85%	\$531	\$2,354	8.37%	\$1,560	\$6,914	\$1,158	\$7,317	
186	USFP - Controls & Roles-DD	USFP	90000104652	\$2,694,151	2.85%	\$1,732	\$7,678	8.37%	\$5,087	\$22,546	\$3,775	\$23,858	
187	USFP Release 3 - IT Delivery	USFP	90000142344	\$9,575,835	2.85%	\$9,795	\$27,288	8.37%	\$28,765	\$80,136	\$14,876	\$94,025	
189	BUSINESS CHANGE & COMM-DESIGN CAPEX	USFP	90000097843	(\$0)	2.85%	\$0	\$0	8.37%	\$0	\$0	\$0	\$0	
190	USFP - Business Readiness-DD	USFP	90000104654	(\$0)	2.85%	\$0	\$0	8.37%	\$0	\$0	\$0	\$0	
191	BUSINESS CHANGE & COMM-DESIGN CAPEX	USFP	90000097843	\$0	2.85%	\$0	\$0	8.37%	\$0	\$0	\$0	\$0	
193	USFP R3 Payroll	USFP	90000142385	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0	
207	Plan & Perf for Exec & US Dir	USFP	90000096375	\$294,053	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0	
208	USFP R3 Payroll	USFP	90000142385	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0	
215	US FOUNDATION PRGM ARCH/DECOM	USFP	90000121728	\$1,242,446	2.85%	\$799	\$3,541	8.37%	\$2,346	\$10,397	\$1,741	\$11,003	
216	USFP - Solution Architecture-DD	USFP	90000104656	\$2,908,470	2.85%	\$1,870	\$8,288	8.37%	\$5,492	\$24,340	\$4,075	\$25,756	
217	PROCESS & DATA - DESIGN CAPEX	USFP	90000097844	\$271,405	2.85%	\$175	\$773	8.37%	\$512	\$2,271	\$380	\$2,403	
218	PMO TEAM - DESIGN CAPEX	USFP	90000097837	\$5,995,338	2.85%	\$3,855	\$17,085	8.37%	\$11,320	\$50,172	\$8,400	\$53,093	
219	USFP Test Ops	USFP	90000117358	\$4,359,638	2.85%	\$2,803	\$12,424	8.37%	\$8,232	\$36,484	\$6,108	\$38,607	
220	USFP-Cutover -R1	USFP	90000107547	\$2,728,737	2.85%	\$1,754	\$7,776	8.37%	\$5,152	\$22,836	\$3,823	\$24,165	
221	USFP R3 Payroll	USFP	90000142385	\$7,395,816	2.85%	\$7,673	\$21,076	8.37%	\$22,534	\$61,892	\$11,533	\$72,893	
222	USFP - Business Readiness-DD	USFP	90000104654	\$0	2.85%	\$0	\$0	8.37%	\$0	\$0	\$0	\$0	
223	USFP - Business Engagement-DD	USFP	90000104655	\$0	2.85%	\$0	\$0	8.37%	\$0	\$0	\$0	\$0	
248	USFP Test SS	USFP	90000117367	\$46,113,703	2.85%	\$29,650	\$131,411	8.37%	\$87,070	\$385,905	\$64,608	\$408,367	
249	USFP-Hardware & Software-R1	USFP	90000107551	\$23,426,143	2.85%	\$15,062	\$66,758	8.37%	\$44,232	\$196,043	\$32,822	\$207,454	
255	USFP R3 Payroll	USFP	90000142385	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0	
256	USFP R3 Supply Chain	USFP	90000142410	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0	
271	USFP R3 Payroll	USFP	90000142385	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0	

Gas					Distribution							
Line	Investment Name	INVP #	Work Order	HTY Total Spend	Rate Year 2 NECO G Allocation	Rate Year 2 NECO G Rent- Return	Rate Year 2 NECO G Rent - Depn	Rate Year 2 Distribution Allocation	Rate Year 2 Rent Return	Rate Year 2 Rent Depreciation	Less IFA Salary & Wage Allocator	Rate Year 2 Total
8	USFP-Tech Delivery - R1	USFP	90000107545	\$4,595,067	2.85%	\$2,149	\$13,095	8.37%	\$6,310	\$38,454	\$6,115	\$38,649
9	FINANCE STREAM - DESIGN CAPEX	USFP	90000097838	\$1,441,354	2.85%	\$674	\$4,107	8.37%	\$1,979	\$12,062	\$1,918	\$12,123
10	USFP - PMO-DD	USFP	90000104645	\$4,761,712	2.85%	\$2,227	\$13,570	8.37%	\$6,539	\$39,849	\$6,337	\$40,051
11	SICHAIR STREAM - DESIGN CAPEX	USFP	90000097846	\$1,038,127	2.85%	\$485	\$2,958	8.37%	\$1,426	\$8,688	\$1,381	\$8,732
12	SOLUTION DEL - DESIGN CAPEX	USFP	90000097840	\$906,402	2.85%	\$424	\$2,583	8.37%	\$1,245	\$7,585	\$1,206	\$7,624
17	USFP R3 Finance	USFP	90000142411	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0
49	USFP-Business Readiness-R1	USFP	90000107548	\$2,020,438	2.85%	\$945	\$5,758	8.37%	\$2,774	\$16,908	\$2,689	\$16,994
70	USFP-Build & Unit Test -R1	USFP	90000107541	\$26,765,794	2.85%	\$12,516	\$76,275	8.37%	\$36,755	\$223,991	\$35,618	\$225,128
72	USFP-Data Strategy - R1	USFP	90000107543	\$7,738,324	2.85%	\$3,619	\$22,052	8.37%	\$10,626	\$64,759	\$10,298	\$65,087
73	USFP Test Procure	USFP	90000117369	\$311,956	2.85%	\$146	\$889	8.37%	\$428	\$2,611	\$415	\$2,624
74	USFP - Cutover-DD	USFP	90000104653	\$118,108	2.85%	\$55	\$337	8.37%	\$162	\$988	\$157	\$993
75	USFP - Data Strategy-DD	USFP	90000104649	\$2,531,924	2.85%	\$1,184	\$7,215	8.37%	\$3,477	\$21,189	\$3,369	\$21,296
76	DESIGN AUTH - DESIGN CAPEX	USFP	90000097842	\$318,531	2.85%	\$149	\$908	8.37%	\$437	\$2,666	\$424	\$2,679
78	USFP-Reporting & Info - R1	USFP	90000107544	\$6,197,728	2.85%	\$2,898	\$17,662	8.37%	\$8,511	\$51,866	\$8,247	\$52,129
79	USFP R3 Finance	USFP	90000142411	\$8,782,504	2.85%	\$8,599	\$25,028	8.37%	\$25,251	\$73,497	\$13,489	\$85,259
80	USFP R3 Supply Chain	USFP	90000142410	\$9,434,359	2.85%	\$7,996	\$26,885	8.37%	\$23,482	\$78,952	\$13,992	\$88,441
82	USFP R3 Payroll	USFP	90000142385	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0
83	USFP R3 Payroll	USFP	90000142385	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0
104	USFP-Testing -R1	USFP	90000107542	\$61,366,885	2.85%	\$28,696	\$174,878	8.37%	\$84,269	\$513,552	\$81,662	\$516,159
107	USFP-Process & Design -R1	USFP	90000107540	\$7,564,718	2.85%	\$3,537	\$21,557	8.37%	\$10,388	\$63,306	\$10,067	\$63,627
108	USFP - Reporting & Info-DD	USFP	90000104650	\$2,503,961	2.85%	\$1,171	\$7,136	8.37%	\$3,438	\$20,955	\$3,332	\$21,061
109	USFP - Build & Unit Test-DD	USFP	90000104647	\$2,783,413	2.85%	\$1,302	\$7,932	8.37%	\$3,822	\$23,293	\$3,704	\$23,411
110	USFP - Process & Design-DD	USFP	90000104646	\$17,463,817	2.85%	\$8,166	\$49,767	8.37%	\$23,981	\$146,147	\$23,240	\$146,889
111	INFORMATION MGMT - DESIGN CAPEX	USFP	90000097845	\$346,941	2.85%	\$162	\$989	8.37%	\$476	\$2,903	\$462	\$2,918
115	USFP-Testing -R1	USFP	90000107542	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0
116	US Pre-BLUEPRINT STRATEGY PLAN	USFP	90000094157	\$6,530,003	2.85%	\$3,054	\$18,609	8.37%	\$8,967	\$54,647	\$8,690	\$54,924
119	USFP R3 Supply Chain	USFP	90000142410	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0
140	USFP-PMO - R1	USFP	90000107539	\$13,294,040	2.85%	\$6,216	\$37,884	8.37%	\$18,255	\$111,252	\$17,691	\$111,817
141	USFP - Tech Delivery-DD	USFP	90000104651	\$1,708,792	2.85%	\$799	\$4,870	8.37%	\$2,347	\$14,300	\$2,274	\$14,373
144	USFP-Solution Architecture-R1	USFP	90000107550	\$2,536,861	2.85%	\$1,186	\$7,229	8.37%	\$3,484	\$21,230	\$3,376	\$21,338
145	USFP-Controls & Roles -R1	USFP	90000107546	\$7,773,544	2.85%	\$3,635	\$22,152	8.37%	\$10,675	\$65,053	\$10,344	\$65,384
146	USFP Test Finance	USFP	90000117364	\$3,910,885	2.85%	\$1,829	\$11,145	8.37%	\$5,370	\$32,728	\$5,204	\$32,894
147	USFP - Hardware & Software-DD	USFP	90000104657	\$2,770,640	2.85%	\$1,296	\$7,896	8.37%	\$3,805	\$23,186	\$3,687	\$23,304
148	PROCESS CONTROL - DESIGN CAPEX	USFP	90000097847	\$138,806	2.85%	\$65	\$396	8.37%	\$191	\$1,162	\$185	\$1,168
150	SOLUTION ARCH - DESIGN CAPEX	USFP	90000097839	\$199,928	2.85%	\$93	\$570	8.37%	\$275	\$1,673	\$266	\$1,682
152	USFP Test Net Strat	USFP	90000117362	\$1,305,452	2.85%	\$610	\$3,720	8.37%	\$1,793	\$10,925	\$1,737	\$10,980
154	USFP - Business Engagement-DD	USFP	90000104655	(\$0)	2.85%	\$0	\$0	8.37%	\$0	\$0	\$0	\$0
158	USFP R3 Finance	USFP	90000142411	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0
159	USFP R3 Payroll	USFP	90000142385	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0
160	USFP R3 Finance	USFP	90000142411	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0
162	USFP-Business Engagement -R1	USFP	90000107549	\$154,570	2.85%	\$72	\$440	8.37%	\$212	\$1,294	\$206	\$1,300
183	USFP Test HR	USFP	90000117366	\$9,899	2.85%	\$5	\$28	8.37%	\$14	\$83	\$13	\$83
184	USFP - Testing-DD	USFP	90000104648	\$209,496	2.85%	\$98	\$597	8.37%	\$288	\$1,753	\$279	\$1,762
185	HR STREAM - DESIGN CAPEX	USFP	90000097841	\$826,202	2.85%	\$386	\$2,354	8.37%	\$1,135	\$6,914	\$1,099	\$6,949
186	USFP - Controls & Roles-DD	USFP	90000104652	\$2,694,151	2.85%	\$1,260	\$7,678	8.37%	\$3,700	\$22,546	\$3,585	\$22,661
187	USFP Release 3 - IT Delivery	USFP	90000142344	\$9,575,835	2.85%	\$8,116	\$27,288	8.37%	\$23,834	\$80,136	\$14,202	\$89,767
189	BUSINESS CHANGE & COMM-DESIGN CAPEX	USFP	90000097843	(\$0)	2.85%	\$0	\$0	8.37%	\$0	\$0	\$0	\$0
190	USFP - Business Readiness-DD	USFP	90000104654	(\$0)	2.85%	\$0	\$0	8.37%	\$0	\$0	\$0	\$0
191	BUSINESS CHANGE & COMM-DESIGN CAPEX	USFP	90000097843	\$0	2.85%	\$0	\$0	8.37%	\$0	\$0	\$0	\$0
192	EHR1 - PMO	USFP	90000148055	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0
193	USFP R3 Payroll	USFP	90000142385	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0
207	Plan & Perf for Exec & US Dir	USFP	90000096375	\$294,053	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0
208	USFP R3 Payroll	USFP	90000142385	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0
215	US FOUNDATION PRGM ARCH/DECOM	USFP	90000121728	\$1,242,446	2.85%	\$581	\$3,541	8.37%	\$1,706	\$10,397	\$1,653	\$10,450
216	USFP - Solution Architecture-DD	USFP	90000104656	\$2,908,470	2.85%	\$1,360	\$8,288	8.37%	\$3,994	\$24,340	\$3,870	\$24,463
217	PROCESS & DATA - DESIGN CAPEX	USFP	90000097844	\$271,405	2.85%	\$127	\$773	8.37%	\$373	\$2,271	\$361	\$2,283
218	PMO TEAM - DESIGN CAPEX	USFP	90000097837	\$5,995,338	2.85%	\$2,804	\$17,085	8.37%	\$8,233	\$50,172	\$7,978	\$50,427
219	USFP Test Ops	USFP	90000117358	\$4,359,638	2.85%	\$2,039	\$12,424	8.37%	\$5,987	\$36,484	\$5,801	\$36,669
220	USFP-Cutover -R1	USFP	90000107547	\$2,728,737	2.85%	\$1,276	\$7,776	8.37%	\$3,747	\$22,836	\$3,631	\$22,952
221	USFP R3 Payroll	USFP	90000142385	\$7,395,816	2.85%	\$6,376	\$21,076	8.37%	\$18,725	\$61,892	\$11,012	\$69,605
222	USFP - Business Readiness-DD	USFP	90000104654	\$0	2.85%	\$0	\$0	8.37%	\$0	\$0	\$0	\$0
223	USFP - Business Engagement-DD	USFP	90000104655	\$0	2.85%	\$0	\$0	8.37%	\$0	\$0	\$0	\$0
248	USFP Test SS	USFP	90000117367	\$46,113,703	2.85%	\$21,563	\$131,411	8.37%	\$63,324	\$385,905	\$61,365	\$387,864
249	USFP-Hardware & Software-R1	USFP	90000107551	\$23,426,143	2.85%	\$10,954	\$66,758	8.37%	\$32,169	\$196,043	\$31,174	\$197,038
255	USFP R3 Payroll	USFP	90000142385	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0

Gas								Distribution				
Line	Investment Name	INVP #	Work Order	HTY Total Spend	Rate Year 2 NECO G Allocation	Rate Year 2 NECO G Rent- Return	Rate Year 2 NECO G Rent - Depn	Rate Year 2 Distribution Allocation	Rate Year 2 Rent Return	Rate Year 2 Rent Depreciation	Less IFA Salary & Wage Allocator	Rate Year 2 Total
256	USFP R3 Supply Chain	USFP	90000142410	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0
271	USFP R3 Payroll	USFP	90000142385	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0

Gas										Distribution				
Line	Investment Name	INVP #	Work Order	HTY	Rate Year 3	Rate Year 3	Rate Year 3	Rate Year 3	Rate Year 3	Rate Year 3	Rate Year 3	Rate Year 3	Rate Year 3	Rate Year 3
				Total Spend	NECO G Allocation	NECO G Rent-Return	NECO G Rent - Depn	Distribution Allocation						
8	USFP-Tech Delivery - R1	USFP	90000107545	\$4,595,067	2.72%	\$1,282	\$12,502	8.47%	\$3,993	\$38,935	\$5,864	\$37,064		
9	FINANCE STREAM - DESIGN CAPEX	USFP	90000097838	\$1,441,354	2.72%	\$402	\$3,921	8.47%	\$1,253	\$12,213	\$1,839	\$11,626		
10	USFP - PMO-DD	USFP	90000104645	\$4,761,712	2.72%	\$1,329	\$12,955	8.47%	\$4,138	\$40,347	\$6,077	\$38,408		
11	S/CHAIN STREAM - DESIGN CAPEX	USFP	90000097846	\$1,038,127	2.72%	\$290	\$2,824	8.47%	\$902	\$8,796	\$1,325	\$8,374		
12	SOLUTION DEL - DESIGN CAPEX	USFP	90000097840	\$906,402	2.72%	\$253	\$2,466	8.47%	\$788	\$7,680	\$1,157	\$7,311		
17	USFP R3 Finance	USFP	90000142411	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0		
49	USFP-Business Readiness-R1	USFP	90000107548	\$2,020,438	2.72%	\$564	\$5,497	8.47%	\$1,756	\$17,120	\$2,578	\$16,297		
70	USFP-Build & Unit Test -R1	USFP	90000107541	\$26,765,794	2.72%	\$7,468	\$72,821	8.47%	\$23,259	\$226,793	\$34,157	\$215,895		
72	USFP-Data Strategy - R1	USFP	90000107543	\$7,738,324	2.72%	\$2,159	\$21,053	8.47%	\$6,725	\$65,569	\$9,875	\$62,418		
73	USFP Test Procure	USFP	90000117369	\$311,956	2.72%	\$87	\$849	8.47%	\$271	\$2,643	\$398	\$2,516		
74	USFP - Cutover-DD	USFP	90000104653	\$118,108	2.72%	\$33	\$321	8.47%	\$103	\$1,001	\$151	\$953		
75	USFP - Data Strategy-DD	USFP	90000104649	\$2,531,924	2.72%	\$706	\$6,889	8.47%	\$2,200	\$21,454	\$3,231	\$20,423		
76	DESIGN AUTH - DESIGN CAPEX	USFP	90000097842	\$318,531	2.72%	\$89	\$867	8.47%	\$277	\$2,699	\$406	\$2,569		
78	USFP-Reporting & Info - R1	USFP	90000107544	\$6,197,728	2.72%	\$1,729	\$16,862	8.47%	\$5,386	\$52,515	\$7,909	\$49,991		
79	USFP R3 Finance	USFP	90000142411	\$8,782,504	2.72%	\$6,739	\$23,894	8.47%	\$20,988	\$74,416	\$13,032	\$82,372		
80	USFP R3 Supply Chain	USFP	90000142410	\$9,434,359	2.72%	\$6,055	\$25,668	8.47%	\$18,856	\$79,940	\$13,496	\$85,300		
82	USFP R3 Payroll	USFP	90000142385	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0		
83	USFP R3 Payroll	USFP	90000142385	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0		
104	USFP-Testing -R1	USFP	90000107542	\$61,366,885	2.72%	\$17,123	\$166,960	8.47%	\$53,327	\$519,977	\$78,313	\$494,990		
107	USFP-Process & Design -R1	USFP	90000107540	\$7,564,718	2.72%	\$2,111	\$20,581	8.47%	\$6,574	\$64,098	\$9,654	\$61,018		
108	USFP - Reporting & Info-DD	USFP	90000104650	\$2,503,961	2.72%	\$699	\$6,812	8.47%	\$2,176	\$21,217	\$3,195	\$20,197		
109	USFP - Build & Unit Test-DD	USFP	90000104647	\$2,783,413	2.72%	\$777	\$7,573	8.47%	\$2,419	\$23,585	\$3,552	\$22,451		
110	USFP - Process & Design-DD	USFP	90000104646	\$17,463,817	2.72%	\$4,873	\$47,513	8.47%	\$15,176	\$147,975	\$22,286	\$140,865		
111	INFORMATION MGMT - DESIGN CAPEX	USFP	90000097845	\$346,941	2.72%	\$97	\$944	8.47%	\$301	\$2,940	\$443	\$2,798		
115	USFP-Testing -R1	USFP	90000107542	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0		
116	US Pre-BLUEPRINT STRATEGY PLAN	USFP	90000094157	\$6,530,003	2.72%	\$1,822	\$17,766	8.47%	\$5,675	\$55,330	\$8,333	\$52,672		
119	USFP R3 Supply Chain	USFP	90000142410	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0		
140	USFP-PMO - R1	USFP	90000107539	\$13,294,040	2.72%	\$3,709	\$36,169	8.47%	\$11,552	\$112,644	\$16,965	\$107,231		
141	USFP - Tech Delivery-DD	USFP	90000104651	\$1,708,792	2.72%	\$477	\$4,649	8.47%	\$1,485	\$14,479	\$2,181	\$13,793		
144	USFP-Solution Architecture-R1	USFP	90000107550	\$2,536,861	2.72%	\$708	\$6,902	8.47%	\$2,205	\$21,495	\$3,237	\$20,463		
145	USFP-Controls & Roles -R1	USFP	90000107546	\$7,773,544	2.72%	\$2,169	\$21,149	8.47%	\$6,755	\$65,867	\$9,920	\$62,702		
146	USFP Test Finance	USFP	90000117364	\$3,910,865	2.72%	\$1,091	\$10,640	8.47%	\$3,399	\$33,138	\$4,991	\$31,545		
147	USFP - Hardware & Software-DD	USFP	90000104657	\$2,770,640	2.72%	\$773	\$7,538	8.47%	\$2,408	\$23,476	\$3,536	\$22,348		
148	PROCESS CONTROL - DESIGN CAPEX	USFP	90000097847	\$138,806	2.72%	\$39	\$378	8.47%	\$121	\$1,176	\$177	\$1,120		
150	SOLUTION ARCH - DESIGN CAPEX	USFP	90000097839	\$199,928	2.72%	\$56	\$544	8.47%	\$174	\$1,694	\$255	\$1,613		
152	USFP Test Net Strat	USFP	90000117362	\$1,305,452	2.72%	\$364	\$3,552	8.47%	\$1,134	\$11,061	\$1,666	\$10,530		
154	USFP - Business Engagement-DD	USFP	90000104655	\$0	2.72%	\$0	\$0	8.47%	\$0	\$0	\$0	\$0		
158	USFP R3 Finance	USFP	90000142411	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0		
159	USFP R3 Payroll	USFP	90000142385	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0		
160	USFP R3 Finance	USFP	90000142411	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0		
182	USFP-Business Engagement -R1	USFP	90000107549	\$154,570	2.72%	\$43	\$421	8.47%	\$134	\$1,310	\$197	\$1,247		
183	USFP Test HR	USFP	90000117366	\$9,899	2.72%	\$3	\$27	8.47%	\$9	\$84	\$13	\$80		
184	USFP - Testing-DD	USFP	90000104648	\$209,496	2.72%	\$58	\$570	8.47%	\$182	\$1,775	\$267	\$1,690		
185	HR STREAM - DESIGN CAPEX	USFP	90000097841	\$826,202	2.72%	\$231	\$2,248	8.47%	\$718	\$7,001	\$1,054	\$6,664		
186	USFP - Controls & Roles-DD	USFP	90000104652	\$2,694,151	2.72%	\$752	\$7,330	8.47%	\$2,341	\$22,828	\$3,438	\$21,731		
187	USFP Release 3 - IT Delivery	USFP	90000142344	\$9,575,835	2.72%	\$6,145	\$26,053	8.47%	\$19,139	\$81,138	\$13,698	\$86,579		
189	BUSINESS CHANGE & COMM-DESIGN CAPEX	USFP	90000097843	\$0	2.72%	\$0	\$0	8.47%	\$0	\$0	\$0	\$0		
190	USFP - Business Readiness-DD	USFP	90000104654	\$0	2.72%	\$0	\$0	8.47%	\$0	\$0	\$0	\$0		
191	BUSINESS CHANGE & COMM-DESIGN CAPEX	USFP	90000097843	\$0	2.72%	\$0	\$0	8.47%	\$0	\$0	\$0	\$0		
193	USFP R3 Payroll	USFP	90000142385	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0		
207	Plan & Perf for Exec & US Dir	USFP	90000096375	\$294,053	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0		
208	USFP R3 Payroll	USFP	90000142385	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0		
215	US FOUNDATION PRGM ARCH/DECOM	USFP	90000121728	\$1,242,446	2.72%	\$347	\$3,380	8.47%	\$1,080	\$10,528	\$1,586	\$10,022		
216	USFP - Solution Architecture-DD	USFP	90000104656	\$2,908,470	2.72%	\$812	\$7,913	8.47%	\$2,527	\$24,644	\$3,712	\$23,460		
217	PROCESS & DATA - DESIGN CAPEX	USFP	90000097844	\$271,405	2.72%	\$76	\$738	8.47%	\$236	\$2,300	\$346	\$2,189		
218	PMO TEAM - DESIGN CAPEX	USFP	90000097837	\$5,995,338	2.72%	\$1,673	\$16,311	8.47%	\$5,210	\$50,800	\$7,651	\$48,359		
219	USFP Test Ops	USFP	90000117358	\$4,359,638	2.72%	\$1,216	\$11,861	8.47%	\$3,788	\$36,940	\$5,564	\$35,165		
220	USFP-Cutover -R1	USFP	90000107547	\$2,728,737	2.72%	\$761	\$7,424	8.47%	\$2,371	\$23,121	\$3,482	\$22,010		
221	USFP R3 Payroll	USFP	90000142385	\$7,395,816	2.72%	\$4,849	\$20,122	8.47%	\$15,103	\$62,667	\$10,623	\$67,146		
222	USFP - Business Readiness-DD	USFP	90000104654	\$0	2.72%	\$0	\$0	8.47%	\$0	\$0	\$0	\$0		
223	USFP - Business Engagement-DD	USFP	90000104655	\$0	2.72%	\$0	\$0	8.47%	\$0	\$0	\$0	\$0		
248	USFP Test SS	USFP	90000117367	\$46,113,703	2.72%	\$12,867	\$125,461	8.47%	\$40,072	\$390,733	\$58,848	\$371,957		
249	USFP-Hardware & Software-R1	USFP	90000107551	\$23,426,143	2.72%	\$6,536	\$63,735	8.47%	\$20,357	\$198,495	\$29,895	\$188,957		
255	USFP R3 Payroll	USFP	90000142385	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0		
256	USFP R3 Supply Chain	USFP	90000142410	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0		
271	USFP R3 Payroll	USFP	90000142385	\$0	0.00%	\$0	\$0	0.00%	\$0	\$0	\$0	\$0		