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C Three Quarterly Forecast: North American Transmission Line, Substation & Transformer Projects

Prepared by The C Three Group, LLC™

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This forecast is an optimistic case based on currently announced plans.



Section 1(a): Transmission Line Projects Forecast, June 2011 Data

Table I. Total Mileage of Planned Transmission Line Projects, By Mileage and By Year

North American Transmission Projects By Mileage June 2011 © The C Three Group, LLC™															
Operating Voltage	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	TBD	Total Number of Miles	Number of Projects
69 kV	510	495	1033	899	278	238	446	165	119	89	9	3	405	4689	1085
115 kV	751	764	1041	786	671	455	423	423	250	99	152	21	511	6347	1229
138 kV	1080	1188	1489	1301	856	487	471	469	281	267	91	109	391	8480	1484
161 kV	217	593	490	891	474	195	202	75	56	153	14	0	169	3529	446
230 kV	558	1140	2075	1321	1180	822	991	515	1383	539	425	378	1971	13298	946
345 kV	924	1485	934	1321	4287	2140	1339	503	819	3367	118	179	2887	20303	601
500 kV	42	371	373	492	1084	1533	1937	4966	2379	1715	970	727	3548	20137	264
765 kV	0	0	0	0	0	0	240	3010	249	2731	180	3311	538	10259	52
> 765 kV	0	0	0	8	0	1167	0	0	0	0	0	0	0	1167	2
Total Number of Miles	4082	6036	7435	7019	8830	7037	6049	10126	5536	8960	1959	4728	10420	88209	6109

Notes:

69 kV or less: 1085 total projects, 632 with budgets and 566 with mileage
 115 kV (greater than 69 kV and less than or equal to 115 kV): 1229 Total number of projects, 528 with budget information, 600 with mileage information
 138 kV (greater than 115 kV and less than or equal to 138 kV): 1484 total projects, 855 with budget information and 766 with mileage
 161 kV (greater than 138 kV and less than or equal to 161 kV): 446 total projects, 170 with budgets and 270 with mileage information
 230 kV (greater than 161 kV and less than or equal to 230 kV): 946 projects total, 448 with budget information, 428 with mileage information
 345 kV (greater than 230 kV and less than or equal to 345 kV): 601 total projects; 411 with cost information, 371 with mileage information
 500 kV (greater than 345 kV and less than 500 kV): 264 total projects, 100 have budget numbers, 133 have mileage
 765 kV (greater than 500 kV and less than or equal to 765 kV): 52 total projects, 46 have budget numbers and 40 have mileage.
 765 kV or greater (greater than 765 kV): 2 total projects, 2 have budget numbers and 2 have mileage.

Section 1(a), cont.: Transmission Line Projects Forecast, June 2011 Data



Table II. Number of Planned Transmission Line Projects, By Voltage and By Year

North American Transmission Projects by Voltage June 2011 © The C Three Group, LLC™															
Operating Voltage	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	TBD	Total Number of Miles	Number of Projects
69 kV	120	145	211	172	84	72	58	34	42	25	22	3	97	4689	1085
115 kV	128	155	189	168	137	106	87	84	39	26	29	5	76	6347	1229
138 kV	200	209	274	182	172	127	79	57	33	43	13	15	80	8480	1484
161 kV	58	73	71	87	43	19	16	11	14	22	7	0	25	3529	446
230 kV	65	108	126	122	117	78	81	47	45	25	28	18	86	13298	946
345 kV	55	66	58	66	92	54	41	23	15	61	6	5	59	20303	601
500 kV	9	22	15	21	27	26	29	28	20	13	7	12	35	20137	264
765 kV	0	0	0	0	0	2	3	12	1	22	1	2	9	10259	52
> 765 kV	0	0	0	0	0	2	0	0	0	0	0	0	0	1167	2
Total Number of Projects	635	778	944	818	672	486	394	296	209	237	113	60	467	88209	6109
Notes:															
69 kV or less: 1085 total projects, 632 with budgets and 566 with mileage															
115 kV (greater than 69 kV and less than or equal to 115 kV): 1229 Total number of projects, 528 with budget information, 600 with mileage information															
138 kV (greater than 115 kV and less than or equal to 138 kV): 1484 total projects, 855 with budget information and 766 with mileage															
161 kV (greater than 138 kV and less than or equal to 161 kV): 446 total projects, 170 with budgets and 270 with mileage information															
230 kV (greater than 161 kV and less than or equal to 230 kV): 946 projects total, 448 with budget information, 428 with mileage information															
345 kV (greater than 230 kV and less than or equal to 345 kV): 601 total projects; 411 with cost information, 371 with mileage information															
500 kV (greater than 345 kV and less than 500 kV): 264 total projects, 100 have budget numbers, 133 have mileage															
765 kV (greater than 500 kV and less than or equal to 765 kV): 52 total projects, 46 have budget numbers and 40 have mileage.															
765 kV or greater (greater than 765 kV): 2 total projects, 2 have budget numbers and 2 have mileage.															

Section 1(b): Changes Since January 2011 Transmission Line Forecast



Table III. Changes in Forecasted Transmission Project Mileage, Since January 2011 Analysis

Change in Number of Transmission Miles from January 2011 to June 2011 © June 2011 The C Three Group, LLC™															
Operating Voltage	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	TBD	Total Number of Miles	Number of Projects
69 kV	-9	-109	428	393	44	19	301	9	12	0	5	0	0	1093	182
115 kV	4	-129	234	295	89	196	119	29	45	4	21	9	337	1253	240
138 kV	115	4	441	448	222	63	63	118	-1	-129	46	39	329	1758	422
161 kV	23	129	157	278	302	134	146	55	32	151	7	0	46	1460	128
230 kV	-198	67	743	272	305	-271	355	-414	939	10	288	231	992	3319	183
345 kV	-70	13	-977	-672	-570	649	-342	-600	338	311	118	68	502	-1232	111
500 kV	0	41	49	-818	-31	-328	-4678	4450	-231	990	575	-150	-183	-314	87
765 kV	0	0	0	-120	-220	-471	-1275	1795	249	-453	0	-999	408	-1086	7
> 765 kV	0	0	0	0	0	0	0	0	0	0	-3	0	0	1167	-2
Total Number of Miles	-135	16	1075	76	141	-9	-5311	5442	1383	884	1057	-802	2431	7418	1358

Table IV. Changes in Number of Forecasted Transmission Projects, Since January 2011

Change in Number of Projects By Voltage From January 2011 to June 2011 © The C Three Group, LLC™															
Operating Voltage	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	TBD	Total Number of Miles	Number of Projects
69 kV	-3	-21	73	54	13	10	14	5	7	2	7	1	20	1093	182
115 kV	-2	6	47	42	23	32	24	21	3	3	7	2	32	1253	240
138 kV	15	7	120	64	45	25	38	18	5	3	5	6	71	1758	422
161 kV	8	-2	17	34	28	7	2	6	4	14	5	0	5	1460	128
230 kV	-2	-3	14	29	38	6	29	9	7	2	14	12	28	3319	183
345 kV	3	-12	10	15	1	23	24	1	5	2	6	2	31	-1232	111
500 kV	-2	8	1	5	4	5	5	22	14	0	6	9	10	-314	87
765 kV	-2	-1	0	-2	-6	-1	1	8	1	-4	1	1	1	-1086	7
> 765 kV	0	0	0	-1	0	0	0	0	0	0	-1	0	0	1167	-2
Total Number of Projects	15	-18	282	240	146	107	137	90	46	22	50	33	198	7418	1358

Section 2(a): Substation and Transformer Projects Forecast, June 2011 Data



Table V. Number of Planned Substation and Transformer Projects, By Voltage

North American Substation and Transformer Projects by Voltage June 2011 © The C Three Group, LLC™														
Operating Voltage	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	TBD	Number of Projects
69 kV	37	59	81	36	19	12	10	6	7	7	3	0	20	297
115 kV	61	82	109	97	81	54	40	21	11	8	9	3	38	614
138 kV	90	111	134	66	71	35	55	16	11	10	5	3	69	676
161 kV	24	40	47	44	23	12	2	5	4	10	3	0	8	222
230 kV	49	82	108	78	76	52	47	26	24	21	13	3	46	625
345 kV	49	52	60	68	84	40	36	19	5	22	2	1	51	489
500 kV	12	15	25	16	42	14	22	10	9	10	4	4	14	197
765 kV	2	0	0	1	2	4	5	6	1	6	0	1	8	36
> 765 kV	0	0	0	0	0	2	0	0	0	0	0	0	0	2
Total Number of Projects	324	441	564	406	398	225	217	109	72	94	39	15	254	3158

Notes:

69 kV or less: 297 total projects, 183 with budget information
 115 kV (greater than 69 kV and less than or equal to 115 kV): 614 Total number of projects, 280 with budget information
 138 kV (greater than 115 kV and less than or equal to 138 kV): 676 total projects, 363 with budget information
 161 kV (greater than 138 kV and less than or equal to 161 kV): 222 total projects, 82 with budget information
 230 kV (greater than 161 kV and less than or equal to 230 kV): 625 projects total, 285 with budget information
 345 kV (greater than 230 kV and less than or equal to 345 kV): 489 total projects, 190 with budget information
 500 kV (greater than 345 kV and less than 500 kV): 197 total projects, 70 with budget information
 765 kV (greater than 500 kV and less than or equal to 765 kV): 36 total projects, 20 with budget information
 765 kV or greater (greater than 765 kV): 2 total projects, 2 with budget information

Section 2(b): Changes Since January 2011 Substation and Transformer Projects Forecast



Table VI. Changes in Forecasted Number of Substation Projects Since April 2010

Changes in Number of Substation and Transformer Projects by Voltage from April 2010 to June 2011 © The C Three Group, LLC™														
Operating Voltage	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	TBD	Number of Projects
69 kV	9	16	64	24	13	8	9	2	7	5	3	0	14	174
115 kV	-6	9	54	67	62	44	35	18	2	5	7	1	14	312
138 kV	20	44	89	31	40	24	36	7	4	3	5	3	65	371
161 kV	5	15	30	36	0	11	0	2	4	9	3	0	5	120
230 kV	5	25	61	48	47	35	40	19	19	18	11	2	39	369
345 kV	21	17	14	17	45	32	31	7	4	17	1	1	46	253
500 kV	2	6	16	8	27	9	17	7	7	7	4	4	7	121
765 kV	0	-1	0	1	-1	4	5	2	1	3	0	1	7	22
> 765 kV	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Number of Projects	56	131	328	232	233	167	173	64	48	67	34	12	197	1742