

Annexure 1:**Power Drawn from Adjoining Sub-Stations of Mumbai Sub Urban Section**

Date	IGP	KSRA	TLA	TMM	Total	Megavolt Ampere
23-08-2015 23:45:07	2134589	3760942	5590588	9554823	21040942	21.04
23-08-2015 23:30:06	2642824	3964236	406588	4065882	11079530	11.08
23-08-2015 23:15:06	1931295	5590588	2541176	4574118	14637177	14.64
23-08-2015 23:00:06	3049412	5895529	304941	2439529	11689411	11.69
23-08-2015 22:45:06	2337882	2439529	2439529	7623530	14840470	14.84
23-08-2015 22:30:06	508235	1524706	9453177	4574118	16060236	16.06
23-08-2015 22:15:06	1728000	4167530	406588	4574118	10876236	10.88
23-08-2015 22:00:06	2337883	3456000	609882	12197647	18601412	18.60
23-08-2015 21:45:06	3862588	7013647	12502588	1423059	24801882	24.80
23-08-2015 21:30:06	2337883	7318588	2134588	203294	11994353	11.99
23-08-2015 21:15:07	914823	1829647	3659294	4574118	10977882	10.98
23-08-2015 21:00:06	1728000	1931294	711529	3557647	7928470	7.93
23-08-2015 20:45:06	2134589	3456000	813176	6098823	12502588	12.50
23-08-2015 20:30:06	1321411	4472471	4065882	2744471	12604235	12.60
23-08-2015 20:15:06	1423058	3659294	2744471	1626353	9453176	9.45
23-08-2015 20:00:06	711529	1219765	2541176	1931294	6403764	6.40
23-08-2015 19:45:06	1931294	4879059	7826823	1321412	15958588	15.96
23-08-2015 19:30:06	1829647	5387294	2947765	8233412	18398118	18.40
23-08-2015 19:15:07	2337882	6810353	508235	5590588	15247058	15.25
23-08-2015 19:00:06	2439529	6810353	3964235	11282823	24496940	24.50
23-08-2015 18:45:06	2032941	5590588	3354353	2236235	13214117	13.21
23-08-2015 18:30:06	813176	3151059	1829647	8335059	14128941	14.13
23-08-2015 18:15:06	1219765	4574118	406588	11587765	17788236	17.79
23-08-2015 18:00:06	1626353	5082353	2541176	7725177	16975059	16.98
23-08-2015 17:45:06	304941	1423059	5184000	8640000	15552000	15.55
23-08-2015 17:30:06	1626353	3862588	406588	2642823	8538352	8.54
23-08-2015 17:15:06	2032941	4472471	4269177	203294	10977883	10.98
23-08-2015 17:00:06	4167529	9148235	3049412	2541176	18906352	18.91
23-08-2015 16:45:06	2337882	6302118	508235	3151059	12299294	12.30
23-08-2015 16:30:06	1728000	4167529	4675765	4370823	14942117	14.94
23-08-2015 16:15:06	813176	2032941	2134588	4879059	9859764	9.86
23-08-2015 16:00:06	304941	1219765	3354353	203294	5082353	5.08
23-08-2015 15:45:06	1321412	3862588	2032941	508235	7725176	7.73
23-08-2015 15:30:06	2947765	7928470	3964235	5793882	20634352	20.63
23-08-2015 15:15:06	711529	2032941	3049412	203294	5997176	6.00
23-08-2015 15:00:06	813176	3659294	406588	7013647	11892705	11.89

Date	IGP	KSRA	TLA	TMM	Total	Megavolt Ampere
23-08-2015 14:45:06	2134588	5285647	8131765	7115294	22667294	22.67
23-08-2015 14:30:06	406588	1219765	4879059	3456000	9961412	9.96
23-08-2015 14:15:07	1016471	1626353	9351530	1118118	13112472	13.11
23-08-2015 14:00:06	1423059	2642823	101647	4777412	8944941	8.94
23-08-2015 13:45:06	2846118	6505412	4167529	3760941	17280000	17.28
23-08-2015 13:30:06	1728000	4472471	2032941	3862588	12096000	12.10
23-08-2015 13:15:06	1524706	3964235	2032941	3557647	11079529	11.08
23-08-2015 13:00:06	304941	1321412	406588	10571294	12604235	12.60
23-08-2015 12:45:06	203294	1321412	2337882	3354353	7216941	7.22
23-08-2015 12:30:06	1016471	2947765	3557647	5082353	12604236	12.60
23-08-2015 12:15:06	3862588	8741647	406588	2947765	15958588	15.96
23-08-2015 12:00:06	508235	1524706	2541176	2744471	7318588	7.32
23-08-2015 11:45:06	406588	1016471	711529	3659294	5793882	5.79
23-08-2015 11:30:07	914824	2642823	1321412	4269176	9148235	9.15
23-08-2015 11:15:07	813176	2337882	1829647	2236236	7216941	7.22
23-08-2015 11:00:06	2541176	5997177	2541176	6607059	17686588	17.69
23-08-2015 10:45:06	2541176	5590588	3151059	12604236	23887059	23.89
23-08-2015 10:30:07	1626353	4980706	101647	10876235	17584941	17.58
23-08-2015 10:15:06	4574118	10469647	609882	4370823	20024470	20.02
23-08-2015 10:00:06	1829647	4065882	5285647	4167529	15348705	15.35
23-08-2015 09:45:06	1829647	4370823	2032941	3760941	11994352	11.99
23-08-2015 09:30:07	1728000	3862588	2642823	4370823	12604234	12.60
23-08-2015 09:15:07	2642823	5387294	10164705	3354353	21549175	21.55
23-08-2015 09:00:06	1829647	4879059	304941	9249882	16263529	16.26
23-08-2015 08:45:06	3252706	6810353	3252706	3760941	17076706	17.08
23-08-2015 08:30:06	3151059	6403765	5692235	10977882	26224941	26.22
23-08-2015 08:15:06	1016471	1321412	8233412	3659294	14230589	14.23
23-08-2015 08:00:06	1931294	4777412	5285647	5387294	17381647	17.38
23-08-2015 07:45:06	1016471	2236235	5488941	3659294	12400941	12.40
23-08-2015 07:30:06	1728000	2846118	3456000	3557647	11587765	11.59
23-08-2015 07:15:06	813176	1626353	1626353	406588	4472470	4.47
23-08-2015 07:00:06	711529	1321412	3354353	7420235	12807529	12.81
23-08-2015 06:45:07	711529	1423059	508235	304941	2947764	2.95
23-08-2015 06:30:06	711529	1321412	1219765	3557647	6810353	6.81
23-08-2015 06:15:06	1016471	1829647	711529	4065882	7623529	7.62
23-08-2015 06:00:07	1016471	2032941	406588	711529	4167529	4.17
23-08-2015 05:45:06	2947765	6505412	4065882	304941	13824000	13.82
23-08-2015 05:30:06	1118118	2439529	203294	203294	3964235	3.96
23-08-2015 05:15:06	2846118	7115294	203294	7115294	17280000	17.28
23-08-2015 05:00:06	2744471	6505412	1728000	203294	11181177	11.18

Date	IGP	KSRA	TLA	TMM	Total	Megavolt Ampere
23-08-2015 04:45:07	1423059	3049412	406588	3456000	8335059	8.34
23-08-2015 04:30:06	813176	2236235	304941	304941	3659293	3.66
23-08-2015 04:15:06	3151059	6810353	4879059	304941	15145412	15.15
23-08-2015 04:00:06	2032941	5692235	3151059	5590588	16466823	16.47
23-08-2015 03:45:06	1118118	2744471	508235	5895529	10266353	10.27
23-08-2015 03:30:06	2642823	6403765	1118118	5184000	15348706	15.35
23-08-2015 03:15:06	3456000	8131765	2439529	203294	14230588	14.23
23-08-2015 03:00:06	2846118	6302118	609882	3456000	13214118	13.21
23-08-2015 02:45:06	1321412	4167529	813176	10164705	16466822	16.47
23-08-2015 02:30:06	2032941	5488941	5895529	6403765	19821176	19.82
23-08-2015 02:15:06	2846118	8741647	3557647	11384470	26529882	26.53
23-08-2015 02:00:06	5387294	12502588	10774588	3760941	32425411	32.43
23-08-2015 01:45:06	2236235	7115294	508235	3760941	13620705	13.62
23-08-2015 01:30:06	1016471	5082353	406588	8741647	15247059	15.25
23-08-2015 01:15:07	914824	2439529	813176	5997177	10164706	10.16
23-08-2015 01:00:06	2947765	6505412	2032941	3151059	14637177	14.64
23-08-2015 00:45:06	2134588	5184000	203294	5488941	13010823	13.01
23-08-2015 00:30:06	2846118	6098823	203294	7623530	16771765	16.77
23-08-2015 00:15:06	2032941	4980706	101647	7623530	14738824	14.74
23-08-2015 00:00:06	3760941	10469647	4167529	8843294	27241411	27.24
22-08-2015 23:45:06	1423059	4065882	7420235	7521882	20431058	20.43
22-08-2015 23:30:06	2439529	5793882	1016471	3456000	12705882	12.71
22-08-2015 23:15:06	2541176	6098823	7623530	3964235	20227764	20.23
22-08-2015 23:00:06	3659294	9046588	101647	3456000	16263529	16.26
22-08-2015 22:45:06	2947765	6810353	1219765	4980706	15958589	15.96
22-08-2015 22:30:06	2439529	6708705	1321412	10876235	21345881	21.35
22-08-2015 22:15:07	3862588	9351530	4675765	6302118	24192001	24.19
22-08-2015 22:00:06	1118118	2642823	4879059	1931294	10571294	10.57
22-08-2015 21:45:06	3456000	8843294	5895529	7623530	25818353	25.82
22-08-2015 21:30:06	1728000	4370823	3354353	6302118	15755294	15.76
22-08-2015 21:15:06	2236235	5387294	4574118	304941	12502588	12.50
22-08-2015 21:00:06	1423059	4065882	3354353	8030118	16873412	16.87
22-08-2015 20:45:06	2337882	4879059	6607059	4675765	18499765	18.50
22-08-2015 20:30:06	3964235	9758117	2337882	2439529	18499763	18.50
22-08-2015 20:15:06	3862588	10063059	508235	711529	15145411	15.15
22-08-2015 20:00:06	813176	2337882	3252706	3252706	9656470	9.66
22-08-2015 19:45:06	304941	1524706	3049412	3557647	8436706	8.44
22-08-2015 19:30:06	609882	1423059	3151059	406588	5590588	5.59
22-08-2015 19:15:06	609882	2744471	8131765	7420235	18906353	18.91
22-08-2015 19:00:06	1524706	4777412	7216941	9148235	22667294	22.67

Date	IGP	KSRA	TLA	TMM	Total	Megavolt Ampere
22-08-2015 18:45:06	1118118	4167529	4065882	5590588	14942117	14.94
22-08-2015 18:30:06	3964235	9249882	711529	4574118	18499764	18.50
22-08-2015 18:15:06	2236235	5184000	3964235	1321412	12705882	12.71
22-08-2015 18:00:06	1016471	2947765	8030118	5895529	17889883	17.89
22-08-2015 17:45:06	508235	2032941	3862588	7826823	14230587	14.23
22-08-2015 17:30:07	1118118	4472471	203294	12400941	18194824	18.19
22-08-2015 17:15:06	1626353	3760941	3456000	508235	9351529	9.35
22-08-2015 17:00:06	3354353	8335059	13824000	609882	26123294	26.12
22-08-2015 16:45:06	2032941	5590588	914824	7725177	16263530	16.26
22-08-2015 16:30:06	813176	2846118	2439529	8233412	14332235	14.33
22-08-2015 16:15:06	711529	2236235	2337882	3964235	9249881	9.25
22-08-2015 16:00:06	2541177	4777412	406588	2744471	10469648	10.47
22-08-2015 15:45:06	3964235	6302117	6098823	203294	16568469	16.57
22-08-2015 15:30:06	3049412	7013647	203294	711529	10977882	10.98
22-08-2015 15:15:06	1626353	4370823	1321412	4065882	11384470	11.38
22-08-2015 15:00:07	1321412	3354353	6302118	304941	11282824	11.28
22-08-2015 14:45:06	711529	1728000	304941	2846118	5590588	5.59
22-08-2015 14:30:07	609882	1321412	6912000	1728000	10571294	10.57
22-08-2015 14:15:06	508235	1219765	101647	508235	2337882	2.34
22-08-2015 14:00:06	2337882	2744471	5692235	2846118	13620706	13.62
22-08-2015 13:45:06	2134588	2541176	4777412	5488941	14942117	14.94
22-08-2015 13:30:06	1626353	2134588	3456000	4370823	11587764	11.59
22-08-2015 13:15:06	1829647	2744471	1829647	3049412	9453177	9.45
22-08-2015 13:00:06	1118118	1626353	711529	8741647	12197647	12.20
22-08-2015 12:45:06	609882	813176	1829647	9148235	12400940	12.40
22-08-2015 12:30:06	406588	1626353	711529	6302118	9046588	9.05
22-08-2015 12:15:06	203294	1321412	9961412	3964235	15450353	15.45
22-08-2015 12:00:06	1728000	1728000	914824	9046588	13417412	13.42
22-08-2015 11:45:06	1118118	3151059	3252706	6810353	14332236	14.33
22-08-2015 11:30:06	508235	1728000	8335059	4675765	15247059	15.25
22-08-2015 11:15:07	2541176	6403765	813176	3151059	12909176	12.91
22-08-2015 11:00:06	203294	711529	1524706	2744471	5184000	5.18
22-08-2015 10:45:06	1524706	3964235	304941	1829647	7623529	7.62
22-08-2015 10:30:06	1524706	3862588	508235	4777412	10672941	10.67
22-08-2015 10:15:06	1219765	3659294	2439529	5285647	12604235	12.60
22-08-2015 10:00:06	1321412	3557647	304941	3659294	8843294	8.84
22-08-2015 09:45:07	1829647	3760941	5997177	3151059	14738824	14.74
22-08-2015 09:30:06	1931294	4675765	813176	3659294	11079529	11.08
22-08-2015 09:15:06	3456000	6912000	5285647	4472471	20126118	20.13
22-08-2015 09:00:06	2337882	5387294	9046588	4980706	21752470	21.75

Date	IGP	KSRA	TLA	TMM	Total	Megavolt Ampere
22-08-2015 08:45:06	2744471	6912000	2846118	2846118	15348707	15.35
22-08-2015 08:30:06	1524706	4167529	4980706	5387294	16060235	16.06
22-08-2015 08:15:06	1829647	5184000	914824	8843294	16771765	16.77
22-08-2015 08:00:06	711529	2947765	1524706	11282823	16466823	16.47
22-08-2015 07:45:06	1626353	3760941	12299294	3862588	21549176	21.55
22-08-2015 07:30:06	1423059	3760941	5285647	1423059	11892706	11.89
22-08-2015 07:15:06	711529	1423059	2947765	508235	5590588	5.59
22-08-2015 07:00:06	813176	2337882	914824	7420235	11486117	11.49
22-08-2015 06:45:07	609882	1016471	7420235	2032941	11079529	11.08
22-08-2015 06:30:06	711529	1321412	3354353	11486117	16873411	16.87
22-08-2015 06:15:06	508235	1016471	3964235	1219765	6708706	6.71
22-08-2015 06:00:07	609882	1016471	4777412	4167529	10571294	10.57
22-08-2015 05:45:07	711529	1219765	4675765	1118118	7725177	7.73
22-08-2015 05:30:06	711529	1321412	3557647	304941	5895529	5.90
22-08-2015 05:15:06	711529	1423059	2846118	4269177	9249883	9.25
22-08-2015 05:00:06	813176	1118118	304941	5184000	7420235	7.42
22-08-2015 04:45:06	1321412	2947765	2642823	203294	7115294	7.12
22-08-2015 04:30:06	2642823	6302118	304941	203294	9453176	9.45
22-08-2015 04:15:06	1321412	3049412	914824	203294	5488942	5.49
22-08-2015 04:00:06	1321412	2541176	508235	406588	4777411	4.78
22-08-2015 03:45:06	1219765	2439529	711529	304941	4675764	4.68
22-08-2015 03:30:06	3252706	7115294	304941	1321412	11994353	11.99
22-08-2015 03:15:07	3659294	8741647	508235	2439529	15348705	15.35
22-08-2015 03:00:06	2134588	5692235	3049412	3354353	14230588	14.23
22-08-2015 02:45:06	2236235	5488941	711529	4879059	13315764	13.32
22-08-2015 02:30:06	1118118	2947765	914824	7115294	12096001	12.10
22-08-2015 02:15:07	2032941	4980706	3354353	4980706	15348706	15.35
22-08-2015 02:00:06	2134588	5184000	6708705	5590588	19617881	19.62
22-08-2015 01:45:07	1016471	1931294	4879059	203294	8030118	8.03
22-08-2015 01:30:06	609882	3659294	508235	6505412	11282823	11.28
22-08-2015 01:15:06	914824	5285647	4472471	7420235	18093177	18.09
22-08-2015 01:00:06	3151059	11282823	304941	5387294	20126117	20.13
22-08-2015 00:45:07	1118118	4879059	711529	4574118	11282824	11.28
22-08-2015 00:30:06	1931294	5590588	2846118	3659294	14027294	14.03
22-08-2015 00:15:06	1219765	2236235	4472471	101647	8030118	8.03
22-08-2015 00:00:06	1219765	2541176	2236235	3862588	9859764	9.86
21-08-2015 23:45:06	1626353	4065882	406588	5184000	11282823	11.28
21-08-2015 23:45:06	1880470.5	4167529	4777412	609882	11435294	11.44
21-08-2015 23:15:06	2134588	4574118	508235	3862588	11079529	11.08
21-08-2015 23:00:06	3557647	8335059	203294	2947765	15043765	15.04

Date	IGP	KSRA	TLA	TMM	Total	Megavolt Ampere
21-08-2015 22:45:06	4370823	11587765	2541176	3964235	22463999	22.46
21-08-2015 22:30:06	2337882	6607059	3760941	10063059	22768941	22.77
21-08-2015 22:15:06	2032941	5285647	11587765	4574118	23480471	23.48
21-08-2015 22:00:06	813176	2337882	508235	11486117	15145410	15.15
21-08-2015 21:45:06	1524706	4777412	711529	7013647	14027294	14.03
21-08-2015 21:30:06	1728000	6098824	1321412	6200471	15348707	15.35
21-08-2015 21:15:06	4269177	9859765	4065882	4777412	22972236	22.97
21-08-2015 21:00:06	2032941	5184000	2337882	10571294	20126117	20.13
21-08-2015 20:45:07	1728000	4370823	4269177	5387294	15755294	15.76
21-08-2015 20:30:06	1423059	1728000	3964235	1118118	8233412	8.23
21-08-2015 20:15:06	3659294	4980706	1118118	6200471	15958589	15.96
21-08-2015 20:00:07	3049412	7623529	8741647	3354353	22768941	22.77
21-08-2015 19:45:06	3049412	8131765	6403765	304941	17889883	17.89
21-08-2015 19:30:07	3049412	8131765	203294	7420235	18804706	18.80
21-08-2015 19:15:06	3862588	8640000	3659294	5082353	21244235	21.24
21-08-2015 19:00:06	1321412	2846118	5590588	3151059	12909177	12.91
21-08-2015 18:45:07	1931294	5184000	2947765	7623530	17686589	17.69
21-08-2015 18:30:06	1016471	4269177	2846118	7420235	15552001	15.55
21-08-2015 18:15:06	711529	1321412	8944941	5082353	16060235	16.06
21-08-2015 18:00:06	711529	1728000	711529	7420235	10571293	10.57
21-08-2015 17:45:06	1423059	3659294	2134588	2236235	9453176	9.45
21-08-2015 17:30:06	1321412	3252706	508235	406588	5488941	5.49
21-08-2015 17:15:06	3659294	5895529	5184000	6302118	21040941	21.04
21-08-2015 17:00:07	914824	2642823	304941	4472471	8335059	8.34
21-08-2015 16:45:06	1728000	4370823	3862588	3862588	13823999	13.82
21-08-2015 16:30:07	1118118	3456000	1321412	4370823	10266353	10.27
21-08-2015 16:15:06	1524706	3659294	3049412	4675765	12909177	12.91
21-08-2015 16:00:06	1016471	2134588	6403765	5387294	14942118	14.94
21-08-2015 15:45:07	2744471	6505412	4269177	304941	13824001	13.82
21-08-2015 15:30:06	2032941	4879059	3151059	3456000	13519059	13.52
21-08-2015 15:15:06	2134588	4370823	101647	8538353	15145411	15.15
21-08-2015 15:00:07	1728000	3964235	10368000	508235	16568470	16.57
21-08-2015 14:45:06	1829647	4879059	1728000	3354353	11791059	11.79
21-08-2015 14:30:06	1118118	2947765	4777412	2642823	11486118	11.49
21-08-2015 14:15:06	914824	1931294	101647	304941	3252706	3.25
21-08-2015 14:00:07	1423059	3659294	4980706	5488941	15552000	15.55
21-08-2015 13:45:06	1423059	2236235	7420235	4574118	15653647	15.65
21-08-2015 13:30:07	1931294	4675765	2134588	7318588	16060235	16.06
21-08-2015 13:15:06	1728000	4675765	6200471	203294	12807530	12.81
21-08-2015 13:00:06	2032941	5488941	4472471	101647	12096000	12.10

Date	IGP	KSRA	TLA	TMM	Total	Megavolt Ampere
21-08-2015 12:45:06	203294	1219765	508235	5692235	7623529	7.62
21-08-2015 12:30:06	2846118	6200471	4879059	6098823	20024471	20.02
21-08-2015 12:15:06	3049412	7318588	711529	3456000	14535529	14.54
21-08-2015 12:00:06	813176	1829647	1626353	3557647	7826823	7.83
21-08-2015 11:45:06	711529	914824	7826823	3354353	12807529	12.81
21-08-2015 11:30:06	1118118	2337882	3557647	7521882	14535529	14.54
21-08-2015 11:15:07	3862588	8131765	7623530	4777412	24395295	24.40
21-08-2015 11:00:06	3354353	7521882	101647	1016471	11994353	11.99
21-08-2015 10:45:06	1524706	4065882	304941	7928470	13823999	13.82
21-08-2015 10:30:06	2642823	5387294	1016471	3456000	12502588	12.50
21-08-2015 10:15:06	508235	1016471	3252706	4574118	9351530	9.35
21-08-2015 10:00:06	1118118	2947765	406588	5590588	10063059	10.06
21-08-2015 09:45:06	2236235	5082353	6200471	3760941	17280000	17.28
21-08-2015 09:30:06	2642823	7420235	3659294	7420235	21142587	21.14
21-08-2015 09:15:07	1626353	4269177	1321412	5387294	12604236	12.60
21-08-2015 09:00:06	1626353	4980706	1118118	13010823	20736000	20.74
21-08-2015 08:45:06	2032941	4879059	1423059	9859765	18194824	18.19
21-08-2015 08:30:06	2541176	6403765	203294	1931294	11079529	11.08
21-08-2015 08:15:06	3862588	9046588	4675765	5692235	23277176	23.28
21-08-2015 08:00:06	1423059	3862588	5692235	6200471	17178353	17.18
21-08-2015 07:45:06	2032941	2439529	6912000	4269177	15653647	15.65
21-08-2015 07:30:06	914824	1626353	1829647	3252706	7623530	7.62
21-08-2015 07:15:07	304941	1219765	101647	3252706	4879059	4.88
21-08-2015 07:00:06	304941	914824	1728000	5387294	8335059	8.34
21-08-2015 06:45:06	304941	711529	4675765	406588	6098823	6.10
21-08-2015 06:30:07	304941	609882	4675765	1321412	6912000	6.91
21-08-2015 06:15:06	203294	914824	101647	3151059	4370824	4.37
21-08-2015 06:00:06	304941	914824	609882	3252706	5082353	5.08
21-08-2015 05:45:06	406588	1016471	3151059	406588	4980706	4.98
21-08-2015 05:30:06	304941	609882	2744471	203294	3862588	3.86
21-08-2015 05:15:06	609882	1423059	203294	406588	2642823	2.64
21-08-2015 05:00:06	609882	1524706	406588	1016471	3557647	3.56
21-08-2015 04:45:06	914824	2134588	2744471	5184000	10977883	10.98
21-08-2015 04:30:06	813176	1931294	5082353	304941	8131764	8.13
21-08-2015 04:15:06	1016471	2744471	1219765	711529	5692236	5.69
21-08-2015 04:00:06	914824	1829647	4574118	304941	7623530	7.62
21-08-2015 03:45:07	609882	1321412	508235	609882	3049411	3.05
21-08-2015 03:30:06	914824	2032941	711529	203294	3862588	3.86
21-08-2015 03:15:07	2134588	5793882	406588	1016471	9351529	9.35
21-08-2015 03:00:06	2337882	5184000	406588	101647	8030117	8.03

Date	IGP	KSRA	TLA	TMM	Total	Megavolt Ampere
21-08-2015 02:45:06	1423059	3862588	406588	304941	5997176	6.00
21-08-2015 02:30:06	1931294	5387294	406588	6505412	14230588	14.23
21-08-2015 02:15:06	1829647	4980706	5082353	7216941	19109647	19.11
21-08-2015 02:00:06	2134588	5997177	3659294	3354353	15145412	15.15
21-08-2015 01:45:06	508235	1016471	4269177	304941	6098824	6.10
21-08-2015 01:30:06	406588	1829647	406588	9351530	11994353	11.99
21-08-2015 01:15:06	1016471	2947765	1626353	406588	5997177	6.00
21-08-2015 01:00:06	406588	1524706	203294	203294	2337882	2.34
21-08-2015 00:45:06	304941	1524706	203294	2947765	4980706	4.98
21-08-2015 00:30:06	508235	1016471	3049412	203294	4777412	4.78
21-08-2015 00:15:06	4065882	9758117	101647	203294	14128940	14.13
21-08-2015 00:00:06	1423059	4269177	406588	101647	6200471	6.20
20-08-2015 23:45:06	2236235	5285647	2337882	3659294	13519058	13.52
20-08-2015 23:30:06	203294	1524706	5793882	4980706	12502588	12.50
20-08-2015 23:15:06	1219765	3964235	4370823	4777412	14332235	14.33
20-08-2015 23:00:06	2134588	5082353	3456000	4269177	14942118	14.94
20-08-2015 22:45:06	1728000	4065882	2744471	6098823	14637176	14.64
20-08-2015 22:30:06	711529	2032941	1423059	4370823	8538352	8.54
20-08-2015 22:15:06	2337882	6098823	5488941	4879059	18804705	18.80
20-08-2015 22:00:06	304941	711529	3354353	4370823	8741646	8.74
20-08-2015 21:45:06	1829647	7115294	1728000	7826823	18499764	18.50
20-08-2015 21:30:06	406588	609882	2439529	3151059	6607058	6.61
20-08-2015 21:15:06	5285647	11486117	3354353	3151059	23277176	23.28
20-08-2015 21:00:06	2846118	6403765	203294	5692235	15145412	15.15
20-08-2015 20:45:06	203294	1524706	6912000	6810353	15450353	15.45
20-08-2015 20:30:07	1118118	3151059	203294	6505412	10977883	10.98
20-08-2015 20:15:07	508235	1321412	5387294	8335059	15552000	15.55
20-08-2015 20:00:06	508235	1118118	2846118	3049412	7521883	7.52
20-08-2015 19:45:06	1829647	3659294	5590588	8030118	19109647	19.11
20-08-2015 19:30:06	1016471	2134588	2236235	15450354	20837648	20.84
20-08-2015 19:15:06	1728000	4472471	9961412	3659294	19821177	19.82
20-08-2015 19:00:06	2846118	7420235	1626353	5488941	17381647	17.38
20-08-2015 18:45:07	508235	1423059	5387294	1626353	8944941	8.94
20-08-2015 18:30:07	1219764	3964236	2439529	3151059	10774588	10.77
20-08-2015 18:15:06	1016470	3354353	508235	5488941	10367999	10.37
20-08-2015 18:00:06	508235	1728000	5285647	4167529	11689411	11.69
20-08-2015 17:45:06	2744471	3557647	1524706	7826823	15653647	15.65
20-08-2015 17:30:06	1626352	3151059	3964235	3456000	12197646	12.20
20-08-2015 17:15:06	2439530	4574118	1626353	2541176	11181177	11.18
20-08-2015 17:00:06	1219764	2337882	10876235	1423059	15856940	15.86

Date	IGP	KSRA	TLA	TMM	Total	Megavolt Ampere
20-08-2015 16:45:06	4574117	9453177	101647	4777412	18906353	18.91
20-08-2015 16:30:06	1524705	3049411	3456000	6607059	14637175	14.64
20-08-2015 16:15:07	711529	1626353	203294	8538353	11079529	11.08
20-08-2015 16:00:06	2236236	3354353	406588	5997177	11994354	11.99
20-08-2015 15:45:06	2236236	2846118	1219765	3659294	9961413	9.96
20-08-2015 15:30:06	914823	2744470	1423059	5997177	11079529	11.08
20-08-2015 15:15:06	711529	1626353	2846118	1931294	7115294	7.12
20-08-2015 15:00:06	1626352	3252706	1423059	3354353	9656470	9.66
20-08-2015 14:45:06	1118117	3151059	10469647	3862588	18601411	18.60
20-08-2015 14:30:07	1016470	2236236	508235	5488941	9249882	9.25
20-08-2015 14:15:06	1626352	4879059	101647	5184000	11791058	11.79
20-08-2015 14:00:06	1219764	711529	8131765	3252706	13315764	13.32
20-08-2015 13:45:06	1219764	2236235	1321412	4269177	9046588	9.05
20-08-2015 13:30:06	1931294	1321412	1524706	3659294	8436706	8.44
20-08-2015 13:15:06	4574118	3049412	3049412	3456000	14128942	14.13
20-08-2015 13:00:06	2032941	1829647	2337882	3862588	10063058	10.06
20-08-2015 12:45:06	3354353	2032941	508235	6098823	11994352	11.99
20-08-2015 12:30:07	1321412	1219765	7623530	1524706	11689413	11.69
20-08-2015 12:15:06	711529	711529	1829647	13112470	16365175	16.37
20-08-2015 12:00:07	609882	609882	1524706	10774588	13519058	13.52
20-08-2015 11:45:07	304941	609882	1728000	4065882	6708705	6.71
20-08-2015 11:30:07	711529	711529	3151059	4879059	9453176	9.45
20-08-2015 11:15:07	914823	813176	6403765	7420235	15551999	15.55
20-08-2015 11:00:07	1423059	3252706	6912000	5488941	17076706	17.08
20-08-2015 10:45:06	2642823	5082353	1016471	3049412	11791059	11.79
20-08-2015 10:30:07	304941	2744471	4574118	8436705	16060235	16.06
20-08-2015 10:15:07	3862588	9351530	203294	3964235	17381647	17.38
20-08-2015 10:00:06	304941	1321412	2947765	4879059	9453177	9.45
20-08-2015 09:45:06	1423059	3760941	1626353	5793882	12604235	12.60
20-08-2015 09:30:06	609882	711529	6098823	4065882	11486116	11.49
20-08-2015 09:15:06	2947765	5488941	5184000	4574118	18194824	18.19
20-08-2015 09:00:06	1829647	1423059	3760941	1931294	8944941	8.94
20-08-2015 08:45:06	3049412	5997176	5997177	3659294	18703059	18.70
20-08-2015 08:30:08	1524705	4065883	4574118	3862588	14027294	14.03
20-08-2015 08:15:06	1016470	3049411	3760941	4777412	12604234	12.60
20-08-2015 08:00:06	3964235	8233411	813176	11994353	25005175	25.01
20-08-2015 07:45:07	1219764	2846117	12197647	5082353	21345881	21.35
20-08-2015 07:30:06	304941	1219765	1219765	5590588	8335059	8.34
20-08-2015 07:15:06	914824	1829647	6098823	3557647	12400941	12.40
20-08-2015 07:00:06	1829647	4574118	304941	7623530	14332236	14.33

Date	IGP	KSRA	TLA	TMM	Total	Megavolt Ampere
20-08-2015 06:45:07	2541176	5997177	1524706	2947765	13010824	13.01
20-08-2015 06:30:06	609882	1626353	304941	406588	2947764	2.95
20-08-2015 06:15:06	5183999	6098823	101647	1219765	12604234	12.60
20-08-2015 06:00:06	2947765	12807529	2846118	2947765	21549177	21.55
20-08-2015 05:45:06	1219765	2642823	8538353	203294	12604235	12.60
20-08-2015 05:30:06	1118118	2642823	3862588	2642823	10266352	10.27
20-08-2015 05:15:06	2642823	5488941	4065882	203294	12400940	12.40
20-08-2015 05:00:06	2236235	6302118	203294	304941	9046588	9.05
20-08-2015 04:45:06	2439529	6098823	2337882	203294	11079528	11.08
20-08-2015 04:30:07	5590588	13010823	1118118	101647	19821176	19.82
20-08-2015 04:15:06	2744471	7318588	2744471	7216941	20024471	20.02
20-08-2015 04:00:06	2642823	7623530	4472471	8233412	22972236	22.97
20-08-2015 03:45:06	1118118	3964235	1016471	14535530	20634354	20.63
20-08-2015 03:30:06	2337882	6912000	4065882	13315764	26631528	26.63
20-08-2015 03:15:06	2032941	4777412	7725177	5387294	19922824	19.92
20-08-2015 03:00:06	2439529	6403765	1016471	5590588	15450353	15.45
20-08-2015 02:45:06	3151059	9351530	609882	7318588	20431059	20.43
20-08-2015 02:30:06	1118118	4269177	1118118	14332236	20837649	20.84
20-08-2015 02:15:06	914824	1931294	4777412	8436705	16060235	16.06
20-08-2015 02:00:06	3252706	7318588	5997177	8538353	25106824	25.11
20-08-2015 01:45:06	1016471	1829647	4574118	203294	7623530	7.62
20-08-2015 01:30:06	1321412	3252706	609882	508235	5692235	5.69
20-08-2015 01:15:06	2541176	6403765	1118118	4574118	14637177	14.64
20-08-2015 01:00:06	2642823	6098823	2642823	1219765	12604234	12.60
20-08-2015 00:45:06	1829647	4574118	4167529	4777412	15348706	15.35
20-08-2015 00:30:06	3354353	8436705	406588	1016471	13214117	13.21
20-08-2015 00:15:06	2134588	4879059	6708705	3964235	17686587	17.69
20-08-2015 00:00:06	1524706	4167529	5997177	5387294	17076706	17.08
19-08-2015 23:45:06	2439529	5997177	4574118	7521882	20532706	20.53
19-08-2015 23:30:06	914824	1728000	609882	101647	3354353	3.35
19-08-2015 23:15:06	2846118	6505412	3456000	2846118	15653648	15.65
19-08-2015 23:00:06	4065882	8843294	101647	4675765	17686588	17.69
19-08-2015 22:45:06	5082353	10571294	5082353	3659294	24395294	24.40
19-08-2015 22:30:07	3354353	8436705	2947765	7623530	22362353	22.36
19-08-2015 22:15:06	2947765	7521882	3354353	5082353	18906353	18.91
19-08-2015 22:00:07	1524706	3456000	813176	11587765	17381647	17.38
19-08-2015 21:45:06	2236235	4777412	6098823	7928470	21040940	21.04
19-08-2015 21:30:06	1118117	1931294	406588	8233412	11689411	11.69
19-08-2015 21:15:06	914823	1829647	5184000	8944941	16873411	16.87
19-08-2015 21:00:07	1524705	2642823	1524706	12299294	17991528	17.99

Date	IGP	KSRA	TLA	TMM	Total	Megavolt Ampere
19-08-2015 20:45:06	2541177	4472471	2541176	2642823	12197647	12.20
19-08-2015 20:30:06	914823	1321412	2642823	203294	5082352	5.08
19-08-2015 20:15:06	3151059	4879059	3151059	3557647	14738824	14.74
19-08-2015 20:00:06	813176	2236235	2236235	3049412	8335058	8.34
19-08-2015 19:45:06	2134589	3557647	3862588	2439529	11994353	11.99
19-08-2015 19:30:06	2642824	3659294	3354353	203294	9859765	9.86
19-08-2015 19:15:06	1016470	1423059	914824	2236235	5590588	5.59
19-08-2015 19:00:06	1626352	4574118	101647	5590588	11892705	11.89
19-08-2015 18:45:07	3354353	3862589	914824	5387294	13519060	13.52
19-08-2015 18:30:06	5183999	7826823	6200471	3659294	22870587	22.87
19-08-2015 18:15:06	3557647	9148235	203294	1118118	14027294	14.03
19-08-2015 18:00:06	2541176	7725177	6708705	5895529	22870587	22.87
19-08-2015 17:45:06	1524706	3964235	813176	3252706	9554823	9.55
19-08-2015 17:30:06	1219765	3456000	406588	7928470	13010823	13.01
19-08-2015 17:15:06	914824	1931294	6403765	3049412	12299295	12.30
19-08-2015 17:00:06	2134588	5488941	5590588	7521882	20735999	20.74
19-08-2015 16:45:06	1931294	3659294	406588	11282823	17279999	17.28
19-08-2015 16:30:07	203294	1321412	5285647	2744471	9554824	9.55
19-08-2015 16:15:06	1524706	4574118	3964235	9758117	19821176	19.82
19-08-2015 16:00:06	3456000	10164706	1321412	9453177	24395295	24.40
19-08-2015 15:45:06	2439529	10876236	6098823	2846118	22260706	22.26
19-08-2015 15:30:06	203294	914823	1829647	4980706	7928470	7.93
19-08-2015 15:00:06	1016471	3557647	4574118	7216941	16365177	16.37
19-08-2015 14:45:07	2947765	9961412	7928470	7725177	28562824	28.56
19-08-2015 14:30:06	711529	2134588	4980706	8538353	16365176	16.37
19-08-2015 14:15:06	711529	3252706	3760941	2439529	10164705	10.16
19-08-2015 14:00:07	1219765	4675765	6200471	4370823	16466824	16.47
19-08-2015 13:45:06	1524706	7318588	1219764	8131765	18194823	18.19
19-08-2015 13:15:06	1016471	2134589	4777412	4065882	11994354	11.99
19-08-2015 13:00:06	1016471	5793883	6810353	8436706	22057413	22.06
19-08-2015 12:45:06	1016471	4472471	11079530	19922822	36491294	36.49
19-08-2015 12:30:06	1016471	2337882	4269177	4574118	12197648	12.20
19-08-2015 12:15:07	2439529	6302118	9249882	3456000	21447529	21.45
19-08-2015 12:00:06	2439529	7928470	8741647	4879059	23988705	23.99
19-08-2015 11:45:06	203294	1626353	4675765	8131765	14637177	14.64
19-08-2015 11:30:06	203294	1626353	101647	3456000	5387294	5.39
19-08-2015 11:15:06	304941	2642823	2541176	5184000	10672940	10.67
19-08-2015 11:00:06	203294	1016471	5387294	3557647	10164706	10.16
19-08-2015 10:45:07	2947765	5082353	3964235	2032941	14027294	14.03
19-08-2015 10:30:06	2032941	5895529	2236235	4675765	14840470	14.84

Date	IGP	KSRA	TLA	TMM	Total	Megavolt Ampere
19-08-2015 10:15:06	2337882	3760941	5793882	4879059	16771764	16.77
19-08-2015 10:00:06	1219765	3760941	4879059	5285647	15145412	15.15
19-08-2015 09:45:06	304941	1321412	2337882	3964235	7928470	7.93
19-08-2015 09:30:06	609882	2236235	4472471	4370823	11689411	11.69
19-08-2015 09:15:06	1728000	2134588	1524706	3760941	9148235	9.15
19-08-2015 09:00:06	3964235	8436705	3252706	4370823	20024469	20.02
19-08-2015 08:45:06	3151059	8640000	4167529	5997176	21955764	21.96
19-08-2015 08:30:06	0	508235	3456000	4879059	8843294	8.84
19-08-2015 08:15:06	2032941	3354353	1626353	7013647	14027294	14.03
19-08-2015 08:00:06	1016471	2134588	914824	4980706	9046589	9.05
19-08-2015 07:45:06	2541176	6912000	7420235	4167529	21040940	21.04
19-08-2015 07:30:07	813176	3862588	5387294	304941	10367999	10.37
19-08-2015 07:15:06	1118118	3049412	3557647	304941	8030118	8.03
19-08-2015 07:00:06	1118118	7826823	1016471	8131765	18093177	18.09
19-08-2015 06:45:06	1473882.5	6962823	7013647	203294	15653647	15.65
19-08-2015 06:30:06	1829647	6098823	3049412	1321412	12299294	12.30
19-08-2015 06:15:07	711529	1829647	711529	2744471	5997176	6.00
19-08-2015 06:00:07	1016471	2236235	1423059	406588	5082353	5.08
19-08-2015 05:45:06	1016471	2337882	2846118	203294	6403765	6.40
19-08-2015 05:30:06	1016471	1626353	2541176	2744471	7928471	7.93
19-08-2015 05:15:07	711529	2337882	6403765	5488941	14942117	14.94
19-08-2015 05:00:06	711529	2337882	203294	5285647	8538352	8.54
19-08-2015 04:45:06	1829647	3049412	3354353	203294	8436706	8.44
19-08-2015 04:30:06	3151059	5895529	406588	203294	9656470	9.66
19-08-2015 04:15:06	1219765	2744471	5793882	101647	9859765	9.86
19-08-2015 04:00:06	1118118	2134588	1626353	3557647	8436706	8.44
19-08-2015 03:45:06	2032941	3862588	3151059	1321412	10368000	10.37
19-08-2015 03:30:06	1016471	2947765	406588	304941	4675765	4.68
19-08-2015 03:15:06	2337882	7521882	609882	101647	10571293	10.57
19-08-2015 03:00:06	1931294	8233412	406588	9554823	20126117	20.13
19-08-2015 02:45:06	3252706	9453177	508235	7420235	20634353	20.63
19-08-2015 02:30:06	1016471	2642823	6403765	5997177	16060236	16.06
19-08-2015 02:15:07	1626353	6302118	5184000	9046588	22159059	22.16
19-08-2015 02:00:06	1626353	3252706	7826823	5895529	18601411	18.60
19-08-2015 01:45:06	2032941	5488941	6200471	3760941	17483294	17.48
19-08-2015 01:30:06	914824	2032941	3557647	4777412	11282824	11.28
19-08-2015 01:15:06	1016471	1626353	406588	3049412	6098824	6.10
19-08-2015 01:00:06	1016471	1626353	4879059	406588	7928471	7.93
19-08-2015 00:45:06	1016471	1423059	1626353	2439529	6505412	6.51
19-08-2015 00:30:06	2134588	4065882	813176	101647	7115293	7.12

Date	IGP	KSRA	TLA	TMM	Total	Megavolt Ampere
19-08-2015 00:15:06	3659294	7216941	609882	101647	11587764	11.59
19-08-2015 00:00:06	1524706	6708705	406588	101647	8741646	8.74
18-08-2015 23:45:06	3760941	10672941	3862588	2032941	20329411	20.33
18-08-2015 23:30:06	1016471	2439529	609882	9758117	13823999	13.82
18-08-2015 23:15:06	2337882	8640000	2846118	203294	14027294	14.03
18-08-2015 23:00:06	2744471	5997177	508235	2642823	11892706	11.89
18-08-2015 22:45:06	1219765	2032941	5184000	3049412	11486118	11.49
18-08-2015 22:30:07	2744471	8538353	5184000	5793882	22260706	22.26
18-08-2015 22:15:06	1829647	7623530	6912000	6708705	23073882	23.07
18-08-2015 22:00:07	1829647	4370823	4879059	4574118	15653647	15.65
18-08-2015 21:45:07	3557647	6810353	6810353	2134588	19312941	19.31
18-08-2015 21:30:06	2541176	5997177	2032941	1423059	11994353	11.99
18-08-2015 21:15:07	6098823	15145411	4065882	508235	25818351	25.82
18-08-2015 21:00:06	4879059	12807530	203294	12197647	30087530	30.09
18-08-2015 20:45:07	2541176	4472471	13620706	2642823	23277176	23.28
18-08-2015 20:30:06	1219765	2439529	203294	3557647	7420235	7.42
18-08-2015 20:15:06	1219765	3964235	1321412	5387294	11892706	11.89
18-08-2015 20:00:06	1219765	1626353	5692235	6302118	14840471	14.84
18-08-2015 19:45:06	1219765	3151059	3964235	203294	8538353	8.54
18-08-2015 19:30:06	3659294	9351530	508235	203294	13722353	13.72
18-08-2015 19:15:06	2744471	4879059	3151059	6810352.5	17584942	17.58
18-08-2015 19:00:06	2134588	4879059	1423059	13417411	21854117	21.85
18-08-2015 18:45:07	2846118	4777412	7318588	3252706	18194824	18.19
18-08-2015 18:30:07	1321412	1524706	6505412	4574118	13925648	13.93
18-08-2015 18:15:06	1321412	2236235	2846118	6607059	13010824	13.01
18-08-2015 18:00:06	2337882	6505412	1829647	5692235	16365176	16.37
18-08-2015 17:45:06	1931294	2846118	2439529	3049412	10266353	10.27
18-08-2015 17:30:06	1931294	5895529	3456000	8436705	19719528	19.72
18-08-2015 17:15:06	2642823	4370823	3354353	304941	10672940	10.67
18-08-2015 17:00:06	609882	3151059	2236235	3456000	9453176	9.45
18-08-2015 16:45:06	3049412	6302118	2744471	2134588	14230589	14.23
18-08-2015 16:30:06	1118118	5285647	508235	9249882	16161882	16.16
18-08-2015 16:15:06	2439529	7420235	1423059	12604235	23887058	23.89
18-08-2015 16:00:07	1728000	4980706	9351530	3862588	19922824	19.92
18-08-2015 15:45:06	2337882	5692235	1626353	203294	9859764	9.86
18-08-2015 15:30:07	1219765	1524706	6912000	3456000	13112471	13.11
18-08-2015 15:15:06	1524706	2541176	3557647	4980706	12604235	12.60
18-08-2015 15:00:06	3760941	6505412	5488941	4675765	20431059	20.43
18-08-2015 14:45:06	2541176	6403765	2744471	609882	12299294	12.30
18-08-2015 14:30:06	914824	1931294	3354353	3456000	9656471	9.66

Date	IGP	KSRA	TLA	TMM	Total	Megavolt Ampere
18-08-2015 14:15:06	2032941	3862588	2846118	4472471	13214118	13.21
18-08-2015 14:00:06	3760941	8131765	2846118	4675765	19414589	19.41
18-08-2015 13:45:06	1524706	2744471	2642823	4879059	11791059	11.79
18-08-2015 13:30:06	2846118	6403765	12096000	203294	21549177	21.55
18-08-2015 13:15:06	1728000	4879059	1728000	203294	8538353	8.54
18-08-2015 13:00:06	813176	1931294	203294	3760941	6708705	6.71
18-08-2015 12:45:06	813176	1524706	12096000	7826823	22260705	22.26
18-08-2015 12:30:06	1829647	3252706	6098823	3862588	15043764	15.04
18-08-2015 12:15:06	1829647	4980706	8436705	2236235	17483293	17.48
18-08-2015 12:00:06	711529	1423059	4777412	7318588	14230588	14.23
18-08-2015 11:45:06	711529	1626353	7826823	304941	10469646	10.47
18-08-2015 11:30:06	1829647	4269177	2541176	1219765	9859765	9.86
18-08-2015 11:15:07	4777412	9453177	4370823	3252706	21854118	21.85
18-08-2015 11:00:06	813176	3151059	2744471	3659294	10368000	10.37
18-08-2015 10:45:06	2947765	5895529	1524706	3151059	13519059	13.52
18-08-2015 10:30:06	2947765	5793882	3862588	4980706	17584941	17.58
18-08-2015 10:15:06	1321412	1423059	2337882	3252706	8335059	8.34
18-08-2015 10:00:06	1321412	5285647	101647	9249882	15958588	15.96
18-08-2015 09:45:06	1423059	3862588	1321412	7521882	14128941	14.13
18-08-2015 09:30:06	1626353	3151059	4472471	2541176	11791059	11.79
18-08-2015 09:15:06	1626353	3456000	813176	3760941	9656470	9.66
18-08-2015 09:00:06	1626353	3456000	406588	5793882	11282823	11.28
18-08-2015 08:45:06	1524706	6403765	2236235	9859765	20024471	20.02
18-08-2015 08:30:06	5285647	11689412	2846118	5590588	25411765	25.41
18-08-2015 08:15:06	1829647	4167529	9351530	406588	15755294	15.76
18-08-2015 08:00:06	2032941	3557647	4777412	4167529	14535529	14.54
18-08-2015 07:45:06	2439529	6302118	5793882	9758117	24293646	24.29
18-08-2015 07:30:07	813176	2439529	1423059	406588	5082352	5.08
18-08-2015 07:15:06	813176	711529	1245176.5	330352.75	3100234.3	3.10
18-08-2015 07:00:06	813176	711529	1067294	254117.5	2846116.5	2.85
18-08-2015 06:45:06	813176	1321412	711529	101647	2947764	2.95
18-08-2015 06:30:06	3659294	8233412	4675765	5387294	21955765	21.96
18-08-2015 06:15:06	914824	2032941	304941	5488941	8741647	8.74
18-08-2015 06:00:06	914824	2337882	1219765	2846118	7318589	7.32
18-08-2015 05:45:06	914824	1931294	3557647	203294	6607059	6.61
18-08-2015 05:30:07	914824	1016471	3151059	203294	5285648	5.29
18-08-2015 05:15:07	914824	2236235	711529	406588	4269176	4.27
18-08-2015 05:00:06	1016471	3456000	3049412	2642823	10164706	10.16
18-08-2015 04:45:06	1016471	2134588	406588	4269177	7826824	7.83
18-08-2015 04:30:06	1016471	2236235	406588	4472471	8131765	8.13

Date	IGP	KSRA	TLA	TMM	Total	Megavolt Ampere
18-08-2015 04:15:06	3659294	8233412	4065882	304941	16263529	16.26
18-08-2015 04:00:06	2642823	6708705	1728000	304941	11384469	11.38
18-08-2015 03:45:06	1626353	1524706	813176	1219765	5184000	5.18
18-08-2015 03:30:06	1626353	1524706	5793882	2846118	11791059	11.79
18-08-2015 03:15:06	2541176	4777412	508235	6810353	14637176	14.64
18-08-2015 03:00:06	2642823	7521882	2541176	8030118	20735999	20.74
18-08-2015 02:45:06	2642823	6098823	7216941	4574118	20532705	20.53
18-08-2015 02:30:06	1626353	4675765	5387294	3151059	14840471	14.84
18-08-2015 02:15:06	1626353	2439529	2744471	5285647	12096000	12.10
18-08-2015 02:00:07	1728000	5082353	4777412	3557647	15145412	15.15
18-08-2015 01:45:06	3252706	6708705	508235	1423059	11892705	11.89
18-08-2015 01:30:07	3049412	5590588	203294	4167529	13010823	13.01
18-08-2015 01:15:06	2846118	4777412	1118118	609882	9351530	9.35
18-08-2015 01:00:07	2846118	5387294	4269177	3252706	15755295	15.76
18-08-2015 00:45:06	2032941	4370823	203294	914824	7521882	7.52
18-08-2015 00:30:06	3151059	5590588	711529	4879059	14332235	14.33
18-08-2015 00:15:07	3151059	8436705	609882	3151059	15348705	15.35
18-08-2015 00:00:06	1423059	5793882	508235	2846118	10571294	10.57
17-08-2015 23:45:06	914824	3659294	3354353	9453177	17381648	17.38
17-08-2015 23:30:06	1728000	7420235	9249882	8436705	26834822	26.83
17-08-2015 23:15:06	609882	1524706	1931294	6505412	10571294	10.57
17-08-2015 23:00:06	609882	1423059	2439529	3252706	7725176	7.73
17-08-2015 22:45:06	1423059	3557647	2541176	3760941	11282823	11.28
17-08-2015 22:30:06	1728000	3354353	2236235	203294	7521882	7.52
17-08-2015 22:15:06	2134588	4167529	4167529	203294	10672940	10.67
17-08-2015 22:00:07	1118118	1423059	3862588	914824	7318589	7.32
17-08-2015 21:45:06	3760941	8538353	7013647	7521882	26834823	26.83
17-08-2015 21:30:06	1219765	1423059	3557647	5285647	11486118	11.49
17-08-2015 21:15:06	2642823	6708705	914824	2846118	13112470	13.11
17-08-2015 21:00:06	3964235	9453177	3964235	7826823	25208470	25.21
17-08-2015 20:45:06	2846118	7420235	8233412	7115294	25615059	25.62
17-08-2015 20:30:06	2134588	2947765	304941	3354353	8741647	8.74
17-08-2015 20:15:07	914824	1423059	5488941	508235	8335059	8.34
17-08-2015 20:00:06	3252706	5184000	7928470	4065882	20431058	20.43
17-08-2015 19:45:06	2236235	5590588	4269177	406588	12502588	12.50
17-08-2015 19:30:06	4065882	10469647	2642823	3151059	20329411	20.33
17-08-2015 19:15:06	1219765	2642823	304941	5184000	9351529	9.35
17-08-2015 19:00:06	2337882	6708705	3456000	8843294	21345881	21.35
17-08-2015 18:45:06	2337882	4879059	4167529	2134588	13519058	13.52
17-08-2015 18:30:07	2337882	4777412	6912000	203294	14230588	14.23

Date	IGP	KSRA	TLA	TMM	Total	Megavolt Ampere
17-08-2015 18:15:13	1931294	5793882	1423059	8335059	17483294	17.48
17-08-2015 18:00:06	1728000	3760941	3862588	3557647	12909176	12.91
17-08-2015 17:45:06	2947765	5590588	2134588	5184000	15856941	15.86
17-08-2015 17:30:06	3049412	8335059	3354353	3354353	18093177	18.09
17-08-2015 17:15:06	3049412	6912000	5285647	203294	15450353	15.45
17-08-2015 16:45:07	2439529	8436705	3252706	7318588	21447528	21.45
17-08-2015 16:30:06	1219765	2134588	5285647	3049412	11689412	11.69
17-08-2015 16:15:06	1728000	3964235	6403765	12197647	24293647	24.29
17-08-2015 16:00:06	1728000	3354353	4675765	7725177	17483295	17.48
17-08-2015 15:45:06	1728000	2134588	5285647	406588	9554823	9.55
17-08-2015 15:30:07	1219765	2642823	7623530	2642823	14128941	14.13
17-08-2015 15:15:06	711529	2134588	2337882	6302118	11486117	11.49
17-08-2015 15:00:06	1829647	3252705	3456000	609882	9148234	9.15
17-08-2015 14:45:06	1931294	5488941	406588	1219765	9046588	9.05
17-08-2015 14:30:06	4167529	9453176	1931294	2947765	18499764	18.50
17-08-2015 14:15:06	3964235	10571294	7216941	6912000	28664470	28.66
17-08-2015 14:00:06	1728000	2236235	3557647	1423059	8944941	8.94
17-08-2015 13:45:06	1829647	2337882	4675765	3760941	12604235	12.60
17-08-2015 13:30:06	2337882	3151058	3151059	813176	9453175	9.45
17-08-2015 13:15:06	2541176	4879059	2134588	304941	9859764	9.86
17-08-2015 13:00:06	4065882	4879059	6403765	6505412	21854118	21.85
17-08-2015 12:45:06	2032942	6708706	3964235	2439529	15145412	15.15
17-08-2015 12:30:07	1016471	3354353	203294	4980706	9554824	9.55
17-08-2015 12:15:07	813176	1829647	10266353	3557647	16466823	16.47
17-08-2015 12:00:06	304941	4472470	3659294	11892705	20329410	20.33
17-08-2015 11:45:06	406588	2032941	6607059	10672941	19719529	19.72
17-08-2015 11:30:06	304941	2032941	2744471	3557647	8640000	8.64
17-08-2015 11:15:06	406588	2439529	9148235	3557647	15551999	15.55
17-08-2015 11:00:07	609882	2541176	1321412	3456000	7928470	7.93
17-08-2015 10:45:06	2236235	6302117	304941	8843294	17686587	17.69
17-08-2015 10:30:06	1118118	2744470	5082353	5082353	14027294	14.03
17-08-2015 10:15:06	2134588	5488941	406588	3151059	11181176	11.18
17-08-2015 10:00:07	1219765	3557647	711529	3049412	8538353	8.54
17-08-2015 09:45:07	1219765	2032941	5184000	4675765	13112471	13.11
17-08-2015 09:30:06	1524706	4675764	406588	2541176	9148234	9.15
17-08-2015 09:15:06	508235	2439529	1728000	4370823	9046587	9.05
17-08-2015 09:00:07	2236235	5997176	7115294	2947765	18296470	18.30
17-08-2015 08:45:06	2744471	6912000	6505412	5488941	21650824	21.65
17-08-2015 08:30:06	2947765	8436705	2846118	6302118	20532706	20.53
17-08-2015 08:15:07	609882	2439529	3252706	5184000	11486117	11.49

Date	IGP	KSRA	TLA	TMM	Total	Megavolt Ampere
17-08-2015 08:00:06	711529	4269176	2642823	4370823	11994351	11.99
17-08-2015 07:45:06	711529	4269176	9046588	6912000	20939293	20.94
17-08-2015 07:30:06	304941	1728000	4675765	6098823	12807529	12.81
17-08-2015 07:15:06	1423059	3151058	1931294	3862588	10367999	10.37
17-08-2015 07:00:06	2541176	6200470	1321412	1829647	11892705	11.89
17-08-2015 06:45:07	1219765	2236235	3659294	203294	7318588	7.32
17-08-2015 06:30:06	4675765	8335058	813176	3049412	16873411	16.87
17-08-2015 06:15:06	3557647	10164705	0	1829647	15551999	15.55
17-08-2015 06:00:06	1524706	2744470	2744471	406588	7420235	7.42
17-08-2015 05:45:06	1524706	2236235	1626353	406588	5793882	5.79
17-08-2015 05:30:06	1524706	2541176	2642823	508235	7216940	7.22
17-08-2015 05:15:06	1524706	2134588	4472471	5488941	13620706	13.62
17-08-2015 05:00:06	1524706	4675764	203294	2236235	8639999	8.64
17-08-2015 04:45:06	2642823	5692235	813176	7725177	16873411	16.87
17-08-2015 04:30:06	3964235	11282823	304941	1728000	17279999	17.28
17-08-2015 04:15:06	1829647	7013647	406588	4574118	13824000	13.82
17-08-2015 04:00:06	1829647	2134588	3659294	8436705	16060234	16.06
17-08-2015 03:45:06	1829647	4675764	2947765	7725177	17178353	17.18
17-08-2015 03:30:06	1931294	3456000	3557647	406588	9351529	9.35
17-08-2015 03:15:06	5285647	14230588	3659294	203294	23378823	23.38
17-08-2015 03:00:06	2947765	7623529	406588	9351530	20329412	20.33
17-08-2015 02:45:06	3151059	5793882	3964235	8538353	21447529	21.45
17-08-2015 02:30:06	1118118	2744470	5387294	3049412	12299294	12.30
17-08-2015 02:15:06	2439529	9453176	5184000	5082353	22159058	22.16
17-08-2015 02:00:06	1626353	5488941	2846118	6607059	16568471	16.57
17-08-2015 01:45:06	1626353	4370823	813176	609882	7420234	7.42
17-08-2015 01:30:06	609882	3151058	406588	7725177	11892705	11.89
17-08-2015 01:15:06	609882	1931294	2134588	5387294	10063058	10.06
17-08-2015 01:00:06	609882	2134588	3862588	508235	7115293	7.12
17-08-2015 00:45:06	711529	2236235	304941	2642823	5895528	5.90
17-08-2015 00:30:06	1829647	4065882	3151059	203294	9249882	9.25
17-08-2015 00:15:06	1829647	4065882	508235	609882	7013646	7.01
17-08-2015 00:00:06	2541176	5285647	7725177	304941	15856941	15.86

Annexure 2: Portfolio of Materials as used by Indian Railway

Portfolio Analysis of all stock items purchased on Indian Railways is carried out. On MMIS all the stock items are tagged on the basis of A, B, C category of annual usage value and vital safety and ordinary items, on the basis of importance of usage. MMIS data from 2001 till 2016 is utilized to carry out Portfolio Analysis.

The items were classified as below.

- High Value 'A' category items having number of sources less than 3 is classified as 'Strategic Items'.
- High value 'A' category items having sources more than 2 are classified as 'Leverage items'.
- Low annual usage value, critical vital and safety items having sources less than 3 are classified as 'Bottleneck items'.
- All other items are 'Routine items'.

Portfolio Analysis of all the Items as per above choice criteria is carried out result is given in table 1 below

Table 1: Portfolio Analysis of spears items on Indian Railways

SN	Railway		Category A B C	Vital Safety & Others	Number of Sources	Numbers of Items	Item Type
	Code	Name					
1	1	CR	A	Other	Less than 3	65	Strategic Item (79)
2	1	CR	A	Vital & Safety	Less than 3	14	
3	1	CR	A	Other	Greather than 2	138	Leverage Item (221)
4	1	CR	A	Vital & Safety	Greather than 2	83	
5	1	CR	B & C	Vital & Safety	Less than 3	287	Bottleneck Item (287)
6	1	CR	B & C	Other	Less than 3	7015	Routine Item (13462)
7	1	CR	B & C	Other	Greather than 2	5579	
8	1	CR	B & C	Vital & Safety	Greather than 2	868	
9	2	ER	A	Other	Less than 3	74	Strategic Item (87)
10	2	ER	A	Vital & Safety	Less than 3	13	
11	2	ER	A	Other	Greather than 2	150	Leverage Item (206)
12	2	ER	A	Vital & Safety	Greather than 2	56	
13	2	ER	B & C	Vital & Safety	Less than 3	96	Bottleneck Item (96)
14	2	ER	B & C	Other	Less than 3	5864	Routine Item

SN	Railway		Category A B C	Vital Safety & Others	Number of Sources	Numbers of Items	Item Type
	Code	Name					
15	2	ER	B & C	Other	Greather than 2	3028	(9055)
16	2	ER	B & C	Vital & Safety	Greather than 2	163	
17	3	NR	A	Other	Less than 3	55	Strategic Item (76)
18	3	NR	A	Vital & Safety	Less than 3	21	
19	3	NR	A	Other	Greather than 2	197	Leverage Item (273)
20	3	NR	A	Vital & Safety	Greather than 2	76	
21	3	NR	B & C	Vital & Safety	Less than 3	97	Bottleneck Item (97)
22	3	NR	B & C	Other	Less than 3	4896	Routine Item (11342)
23	3	NR	B & C	Other	Greather than 2	6145	
24	3	NR	B & C	Vital & Safety	Greather than 2	301	
25	4	NER	A	Other	Less than 3	11	Strategic Item (19)
26	4	NER	A	Vital & Safety	Less than 3	8	
27	4	NER	A	Other	Greather than 2	29	Leverage Item (61)
28	4	NER	A	Vital & Safety	Greather than 2	32	
29	4	NER	B & C	Vital & Safety	Less than 3	751	Bottleneck Item (751)
30	4	NER	B & C	Other	Less than 3	1534	Routine Item (2555)
31	4	NER	B & C	Other	Greather than 2	564	
32	4	NER	B & C	Vital & Safety	Greather than 2	457	
33	5	NFR	A	Other	Less than 3	16	Strategic Item (32)
34	5	NFR	A	Vital & Safety	Less than 3	16	
35	5	NFR	A	Other	Greather than 2	77	Leverage Item (135)
36	5	NFR	A	Vital & Safety	Greather than 2	58	
37	5	NFR	B & C	Vital & Safety	Less than 3	685	Bottleneck Item (685)
38	5	NFR	B & C	Other	Less than 3	1920	Routine Item (4104)
39	5	NFR	B & C	Other	Greather than 2	1697	
40	5	NFR	B & C	Vital & Safety	Greather than 2	487	
41	6	SR	A	Other	Less than 3	29	Strategic Item (39)
42	6	SR	A	Vital & Safety	Less than 3	10	
43	6	SR	A	Other	Greather than 2	118	Leverage Item (208)
44	6	SR	A	Vital & Safety	Greather than 2	90	
45	6	SR	B & C	Vital & Safety	Less than 3	409	Bottleneck Item (409)
46	6	SR	B & C	Other	Less than 3	2894	Routine Item (6433)
47	6	SR	B & C	Other	Greather than 2	2941	
48	6	SR	B & C	Vital & Safety	Greather than 2	598	
49	7	SCR	A	Other	Less than 3	570	Strategic Item (574)
50	7	SCR	A	Vital & Safety	Less than 3	4	
51	7	SCR	A	Other	Greather than 2	229	Leverage Item (322)
52	7	SCR	A	Vital & Safety	Greather than 2	93	

SN	Railway		Category A B C	Vital Safety & Others	Number of Sources	Numbers of Items	Item Type
	Code	Name					
53	7	SCR	B & C	Vital & Safety	Less than 3	140	Bottleneck Item (140)
54	7	SCR	B & C	Other	Less than 3	4775	Routine Item (10027)
55	7	SCR	B & C	Other	Greather than 2	4536	
56	7	SCR	B & C	Vital & Safety	Greather than 2	716	
57	8	SER	A	Other	Less than 3	29	Strategic Item (52)
58	8	SER	A	Vital & Safety	Less than 3	23	
59	8	SER	A	Other	Greather than 2	107	Leverage Item (196)
60	8	SER	A	Vital & Safety	Greather than 2	89	
61	8	SER	B & C	Vital & Safety	Less than 3	251	Bottleneck Item (251)
62	8	SER	B & C	Other	Less than 3	3062	Routine Item (6624)
63	8	SER	B & C	Other	Greather than 2	2872	
64	8	SER	B & C	Vital & Safety	Greather than 2	690	
65	9	WR	A	Other	Less than 3	63	Strategic Item (72)
66	9	WR	A	Vital & Safety	Less than 3	9	
67	9	WR	A	Other	Greather than 2	141	Leverage Item (281)
68	9	WR	A	Vital & Safety	Greather than 2	140	
69	9	WR	B & C	Vital & Safety	Less than 3	410	Bottleneck Item (410)
70	9	WR	B & C	Other	Less than 3	5082	Routine Item (10130)
71	9	WR	B & C	Other	Greather than 2	3877	
72	9	WR	B & C	Vital & Safety	Greather than 2	1171	
73	11	ECOR	A	Other	Less than 3	11	Strategic Item (19)
74	11	ECOR	A	Vital & Safety	Less than 3	8	
75	11	ECOR	A	Other	Greather than 2	38	Leverage Item (136)
76	11	ECOR	A	Vital & Safety	Greather than 2	98	
77	11	ECOR	B & C	Vital & Safety	Less than 3	636	Bottleneck Item (636)
78	11	ECOR	B & C	Other	Less than 3	1882	Routine Item (3697)
79	11	ECOR	B & C	Other	Greather than 2	1154	
80	11	ECOR	B & C	Vital & Safety	Greather than 2	661	
81	12	NCR	A	Other	Less than 3	13	Strategic Item (24)
82	12	NCR	A	Vital & Safety	Less than 3	11	
83	12	NCR	A	Other	Greather than 2	59	Leverage Item (114)
84	12	NCR	A	Vital & Safety	Greather than 2	55	
85	12	NCR	B & C	Vital & Safety	Less than 3	759	Bottleneck Item (759)
86	12	NCR	B & C	Other	Less than 3	3953	Routine Item (7643)
87	12	NCR	B & C	Other	Greather than 2	2569	
88	12	NCR	B & C	Vital & Safety	Greather than 2	1321	
89	13	NWR	A	Other	Less than 3	51	Strategic Item

SN	Railway		Category A B C	Vital Safety & Others	Number of Sources	Numbers of Items	Item Type
	Code	Name					
90	13	NWR	A	Vital & Safety	Less than 3	47	(98)
91	13	NWR	A	Other	Greather than 2	13	Leverage Item (65)
92	13	NWR	A	Vital & Safety	Greather than 2	52	
93	13	NWR	B & C	Vital & Safety	Less than 3	517	Bottleneck Item (517)
94	13	NWR	B & C	Other	Less than 3	2995	Routine Items (3169)
95	13	NWR	B & C	Other	Greather than 2	121	
96	13	NWR	B & C	Vital & Safety	Greather than 2	53	
97	14	SECR	A	Other	Less than 3	7	Strategic Item (17)
98	14	SECR	A	Vital & Safety	Less than 3	10	
99	14	SECR	A	Other	Greather than 2	68	Leverage Item (106)
100	14	SECR	A	Vital & Safety	Greather than 2	38	
101	14	SECR	B & C	Vital & Safety	Less than 3	168	Bottleneck Item (168)
102	14	SECR	B & C	Other	Less than 3	1812	Routine Item (3669)
103	14	SECR	B & C	Other	Greather than 2	1665	
104	14	SECR	B & C	Vital & Safety	Greather than 2	192	
105	15	SWR	A	Other	Less than 3	26	Strategic Item (46)
106	15	SWR	A	Vital & Safety	Less than 3	20	
107	15	SWR	A	Other	Greather than 2	16	Leverage Item (45)
108	15	SWR	A	Vital & Safety	Greather than 2	29	
109	15	SWR	B & C	Vital & Safety	Less than 3	466	Bottleneck Item (466)
110	15	SWR	B & C	Other	Less than 3	1678	Routine Item (1859)
111	15	SWR	B & C	Other	Greather than 2	124	
112	15	SWR	B & C	Vital & Safety	Greather than 2	57	
113	16	WCR	A	Other	Less than 3	43	Strategic Item (58)
114	16	WCR	A	Vital & Safety	Less than 3	15	
115	16	WCR	A	Other	Greather than 2	131	Leverage Item (211)
116	16	WCR	A	Vital & Safety	Greather than 2	80	
117	16	WCR	B & C	Vital & Safety	Less than 3	382	Bottleneck Item (382)
118	16	WCR	B & C	Other	Less than 3	7294	Routine Item (13010)
119	16	WCR	B & C	Other	Greather than 2	4741	
120	16	WCR	B & C	Vital & Safety	Greather than 2	975	

On above basis portfolio analysis of all stock carried and summary of result is given in Table:2
Table 2: Summary of Portfolio Analysis of spare items

SN	Railways	No.of Strategic Items	No.of Leverage Items	No.of Bottleneck Items	No. of Routine Items
1	Central Railway	79	221	287	13000
2	Eastern Railway	87	206	96	9000
3	Northern Railway	76	273	97	11000
4	North Eastern Railway	20	61	750	2500
5	North Frontier Railway	32	135	680	4000
6	Southern Railway	39	208	409	6400
7	South Central Railway	574	320	140	10000
8	South Eastern Railway	52	196	251	6600
9	Western Railway	72	281	410	10000
10	East Coast Railway	19	136	630	3600
11	North Central Railway	24	114	750	7600
12	North Western Railway	98	65	517	3160
13	South East Central Railway	17	106	168	3600
14	South Western Railway	46	45	466	1850
15	West Central Railway	58	211	382	13000

Strategic Items: The indicative list of strategic items is given in Table 3. Currently these items are procured on Annual Contract Basis and generally closely monitored because the availability of these items is a problem. In the proposed system it is recommended to have the accurate forecast on the basis of zero based budgeting and monitor the consumption. In case of any deviation from the forecast the corrective action is required to be taken on the continual basis. For these items continuous Vendor Meeting, early involvement of vendors, participation of vendor for problems solving and vendor development exercise should be carried out in a efficient and effective manner.

Table 3 Strategic **Items:**

Strategic Items					
SN	P.L. No	Description	Sources	AAC	Value
1.	10330744	NOZZLE ASSEMBLY TO MICO PART NO.94300 33300. CAT. 22310219-1 FOR 16 CYLINDER	2	1691	2248000
2.	11123187	EQUILISER BEAM LONG (BG) RDSO DRG.NO. SKVL 178. REF.1. ALT-5	2	105	2102000
3.	11250495	BRAKE SHOE FOR YDM4 LOCO (NORMAL SIZE), TO DRG. NO.D/BG-1493 ,ALT.5 RDSO specification No.M&C/MTD/101/2007	2	4000	4611000
4.	17451115	DRAFT GEAR WITH YOKE ASSEMBLY FOR EMD LOCOMOTIVE TO EMD PART NO 8420236 TO DLW	1	4	653000

		PART NO17451115.			
5.	17452417	High Friction Composition Brake Block,HHP Locomotives (Drg. No.SK-DP-3630 Alt.2 SPEC No. MP.0.0100.10 Rev.03,MAY 07)	2	8180	5815000
6.	25109443	EQUALISER SPRING SEAT FOR CO-CO BOGIE AS PER RDSO DRG NO.SKDL-3867 ALT-2 REF.1,3,4,5,7 AND MODIFIED SAFETY BRACKET OF EQUALISER SPRING SEAT AS PER RDSO DRG NO.SKEL-4609,ALT 0 ADDITIONAL TEST PROCEDURE DURING MANUFACTURING AND INSPECTION AS PER ANNEXURE 1,II,III OF SMI 0225/2001 DATED 15/01/2002	1	90	950000
7.	30210318	DRAW BAR AND CASTLE NUT FOR DRAW GEAR ARRANGMENT	2	750	1365000
8.	30217180	RUBBER SPRING FOR DRAW GEAR AS PER RDSO DRG NO.SK-K 3004 ALT. NIL CONFORMING TO RDSO SPECN.C-9501 (REV-3 OF JAN-2003)	2	1075	2511000
9.	31020306	M-48 Maintenance Kit for Air Dryer M/s. Knorr- Bremse make as per list attached of 50 Items.(Suitable For EMU Coach) One set consists of 50 ITEMS	1	100	2530000
10.	38106097	SIDE FRAME KEY FOR CTRB (For Casnub Bogies with NARROW & WIDE JAW ADAPTERS) NARROW & WIDE JAW ADAPTERS) TO RDSO DRG. No. SK-69594 ALT. 36 ITEM 6.	2	32100	2889000
11.	38124750	Slack Adjuster Complete type IRSA-750 for BCNHL/ BOXNHL Wagon as per RDSO Drg.no.WD-93061-S-01, Alt.no.1 & conforming to STR.NO.19-ABR-07,read WITH ALL AMDTS,LATEST amendment no.2 of March-2008	2	160	2135700 0
12.	38161758	POH KIT FOR KEO TYPE DISTRIBUTOR VALVE CONFORMING TO AIR BRAKE MAINTENANCE MANUAL G-97 READ WITH ALL AMDTS.LATEST AMDT.NO.3 OF JAN-2010 TOTAL 48 ITEMS AS PER ANEX-XIII/1.	2	1411	4339000
13.	38163822	DISTRIBUTOR VALVE TYPE C3W OR KEO INCLUDING ADOPTER WITH ISOLATING COCK,& GASKET BUT WITHOUT COMMON PIPE BRACKET AND CONTROL RESERVIOR FOR AIR BRAKE SYSTEM FITTED ON FREIGHT STOCK.OTHER TECHNICAL REQUIREMENTS CONFIRMING TO STR NO 02-ABR-02,READ WITH ALL AMENDMENTS LATEST AMEND. 3 OF APRIL-2010.	3	130	2376610 00
14.	47200017	Dry type Power distribution Transformaer 60KVA capacity,750/415 V,3-Phase for LHB type AC coaches as per RDSO Specification No: RDSO/PE/SPEC/AC/0080 (Rev.-O)-2007 with amendment 1 and 2.	2	21	5344500

Leverage Items: The indicative list of leverage items is given in Table 4. These are the items where the railway can leverage the power of purchase to get the best deal from the supplier. Currently these items are also purchased on Annual Contract Basis in the same manner as strategic items. It is recommended to take the advantage of power of purchase and procure these

items through decentralize contract, inviting open tender. The system of vendor managed inventory and arranging logistic through 3rd party logistic service provider is recommended

Table 4 Leverage Items

Leverage Items					
SN	P.L. No	Description	Sources	AAC	Value
1.	10082785	MODIFIED LARGE AFTER COOLER ASSLY. WITH TOP & BOTTOM COVER , AS PER DLW DRG. NO.SKE-0970 & DLW PART NO.10082785.	5	19	2805000
2.	10130974	FLOATING BUSHING FOR FUEL INJECTION PUMP LIFTER TO DLW PART NO 10 13 0974 DRG No.32C72250-2 ALT	7	1211	829000
3.	10150018	MAIN BEARING SHELL INTER FOR ALCO LOCOS TO DLW DRG NO. 14B 72083-3 DRP REF 14308B CAT. NO. 21410166 DLW/DMW PT. NO.10150018	6	1510	3562000
4.	10244384	EXHAUST SIDE VAVLE(INCONEL) 45 DEGREE DMW/DLW.PT.NO.1024.4384.	6	1450	4576000
5.	11021251	MG LOCOMOTIVE WHEELS YDM-4 to Drg.No. W/WL-4955/R.	6	175	5149000
6.	23829310	FINGER CONTACT AND FLEXIBLE SHUNT ASSLY FOR REVERSER AND CTF , TO CLW DRG NO.4 TWD-101-064 ALT 6 (SHEET"0") CAPACITY 1500 AMPS.	7	437	2115000
7.	25040753	OUTER SPRING (MOTOR TRUCK)AS PER RDSO DRG.NO. SK.DL-3739,ALT-5 AND COMPARING TO RDSO SPCN. NO.MP-0-4900.12,REV.02 OF NOV.2012	6	676	5020000
8.	25109194	Repair kit for motor suspension unit (msu) of Hitachi TM type HS-15250 A,to Hitachi drg.No. 10P-701-897 WAR00. Set consists of 7 items as per enclosed list.	5	40	9202000
9.	25890013	ELECTRO MAGNETIC CONTACTOR COMPLETE ASSLY., TYPE 291-01, 80 AMPS. RATING WITH AUXILIARY SWITCHES 2 No. + 1 NC, AS PER CLW DRG.NO.1 TWD-291-033 ALT-9 , ARRANGEMENT 'A' AND TO SPECN. NO.4TTS-291-001 ALT.8 SUITABLE FOR BUILT ELECTRIC LOCOS.	8	71	1834000
10.	25963004	EP CONTACTOR COMPLETE, TYPE TCP-3421-25-2M AS PER CLW DRG.NO.4-TWD-112-043 ALT 4 , SUITABLE FOR 1500 AMPS RATING. EP CONTACTOR SHOULD BE MANUFACTURED AS PER CLW DRG.NO.4 TWD-112-043 ALT 4 FOR GENERAL ARRANGEMENT BUT UPRATED FOR 1500AMPS TO CLW SPCN CLW-4TES-110-001.alt-1 .	9	55	1919000
11.	30016204	SOLID FORGED WHEEL FOR BG COACHES TO Drg. No. W/WL - 1660/R Alt 12 & Confirming to RDSO Specification IRS-R-19/93, Part-II (Rev-4)of July-2012 OR Cast Steel Wheel for BG Coaches to RWF Drg.No.	7	2922	8555900 0

		WAP/SK-M-343, Alt.m			
12.	30020098	ICF BG COCHING AXLES TO Drg No. WTAC-3-02-303 W/WL-1661/R, Conforming to RDSO Specn.No.IRS R-16-95 with corrigendum No.3 of April,2012 OR RWF DRG.NO.WAP-091.	9	508	2635600 0
13.	30050716	Bolster helical spring for AC Coach to ICF DRG.NO WTAC-0-5-202 ALT.r/7 &Conforming RDSO Specn No.WD-01-HLS-1994,	6	301	3474000
14.	30247020	FOOT STEP ARRANGEMENT COMPLETE AS PER ICF DRG. NO.ICF/STD-2-4-001,Alt-n/Nil, Col-I & II.	17	1877	3070000
15.	30550907	FRP GLASS SHUTTER ASSEMBLY FOR LAVATORY WINDOW TO RDSO DRG.NO.-SK-K-0046,ALT-1.COLOUR-OFF WHITE, MATERIAL CONFIRMING TO RDSO SPECN.No.RDSO/2007/ CG-02 (REV.1)OF FEB.-2008.	15	6382	6363000

Bottleneck Items: The indicative list of bottleneck items is given in Table 5. These items are purchased through Annual Contract Basis. These items are difficult because source of supply are limited and value of purchase is small. Here the suppliers are more in commanding position. It is recommended to go for centralized purchase and volume assurance for these items. Good Buffer Stock is also required. For vendor development continuous search of supplier and value engineering is suggested.

Table 5 Bottleneck Items

Bottleneck Items					
SN	P.L. No	Description	Sources	AAC	Value
1.	10140920	LIFTER FOR FUEL PUMP CROSS HEAD DLW DRG.NO.32 B 72247 - 1 DMW/DLW PART NO.10.14.0920 ALT-C	2	220	1119000
2.	10160115	SPRING AIR AND EXHAUST VALVE to DLW DRG SPRING AIR AND EXHAUST VALVE to DLW DRG No 46D72023 ALT 'K'.DMW/DLW PART NO. 10160115 MATL SPEC IS:4454(PART GRADE 2D OR SUPERCLEAN VERSION OF DIN 172250 T-70SC) RDSO MP.IB.EN.04.23.08 from DLW sources only. Annex C item.	2	1225	238000
3.	10210477	LOCK SPRING SEAT FOR AIR AND EXHAUST VALVES TO DRG. NO.23D71170-1 DMW/DLW.PT.NO. 10.21.0477. ALT. I.	2	2650	1568000
4.	10210775	SHAFT FOR AIR AND EXHAUST VALVE LEVER TO DRG.NO. 24 C 72078 ALT d DMW/DLW PART NO. 10.21.0775.	1	368	676000
5.	10211123	THRUST BALL LEVER SEAT. AS PER DRAWING NO.24 D 72031 ALT.e TO. DLW/DMW .PART NO.	2	1183	765000

		10.21.1123			
6.	23869379	Master controller for Electric loco as per CLW Drg.No 1 TWD-241-115 Alt 11	2	38	1436400 0
7.	23890060	C-118 Contactor Complete. CLW Specification no. CLW/ES/SK-3/C-15/C.	2	8	521000
8.	25518562	STAINLESS STEEL CORRUGATED FLEXIBLE HOSE ASSLY. FOR MAIN COMPRESSOR, TO DRG.NO.WR-CCG-EL/4-CX-011 ALT-1, REF.1 TO 5.	1	515	451000
9.	25519130	3 PIECES DESIGN CONNECTING ROD AND CRANK SHAFT ASSLY. COMPLETE WITH BEARING FOR ELGI MAKE MAIN COMPRESSOR TO ELGI PT.NO.A-070069(NEW).	1	28	9908000
10.	25718150	AOH REPLACEMENT KIT FOR SINGLE BOTTLE VCB OF M/s.Schneider Electric Infrastructure Ltd. TYPE 22CB AS PER ANNEXURE A.	1	42	495000
11.	30050042	POH KIT NO.S-955001,B1 FOR GABRIEL SHOCK ABSORBER CONSISTING OF 19 ITEMS AS PER LIST ATTACHED.	1	416	707000
12.	30236071	Bent Coupling Link with Trunion Nut to RDSO Drg. no.SK-99001 Alt-4(or latest), Item no.2, Fitted with Item no.6(In assembled condition)	2	290	729000
13.	30358814	SPARE PARTS KIT SET FOR C3W DISTRIBUTOR VALVE REQUIRED FOR COACHING STOCK CONSISTING OF 42 ITEMS AS PER LIST ATTACHED.	2	210	504000
14.	31027064	AXLE BOX HOUSING FINISH MACHINED AS PER ICF DRG.	2	54	601000
15.	31500006	Desiccant kit (4 Kg/ Vessel) to Knorr-Bremse part no. 503329.	1	175	628000

Routine Items: Around 70% items are Routine items in nature. Indicative list is given in Table 6. Currently these items are purchased on annual contract basis. These Item require product standardization, variety reduction and inventory management.

Table 6: **Routine Items**

Routine Items					
SN	P.L. No	Description	Sources	AAC	Value
1.	10050243	FUEL INJECTION TUBE ASSLY TO RDSO DRG NO. SKDP-3925 ALT-a DLW PART.10 05 1703.	9	561	1486650
2.	10050760	FULCRUM PIN FOR FUEL PUMP CROSS HEAD LIFTER FOR FOR FUEL EFFICIENT LOCOS	5	630	850500
3.	10051727	LARGE FUEL PRIMARY FILTER ELEMENT (LOW MEAN PORE SIZE)AS PER DRG.NO.SKDP 3901.	5	298	805303.2 8
4.	10121158	MAIN CASING FOR 350C TURBO SUPER CHARGER AS PER Drg. No. 26AA71750 ALT. h	5	5	539632.4 5

5.	10124639	VALVE GUIDE (AIR & EXHAUST) for 251+ CYL HEAD (STANDARD SIZE) TO DLW PT NO.10124639 , TO DLW DRG NO.23C 71081-1. Alt.C.	6	4600	1044936
6.	23251979	GUIDE PROFILE AND KEY FOR SAFETY GLASS ON SIDE WALL TO DRG.NO.WR/CCG/EL/4-GK-033 ALT-4 REF 1 & 3 & CLW Ref no. 01/3/44/52" & specification no.IRS-R-57-75 CL-10 as advised in case no. 22.15.1123	13	1142	568567.5 4
7.	23569384	CONNECTING TERMINAL COMPLETE FOR TAP CHANGER TO BOMBARDIER PT NO S-1225 DRG NO AG-546099 R1 OR AAL PT NO G-1225 DRG NO 9980383472801	5	90	296612.1
8.	23569918	CONTROL LEVER COMPLETE FOR TAP CHANGER M/S BT PT NO A 4540,DRG NO HAGT-225320-R1.	4	10	1109335. 5
9.	23799160	ICAR CAPACITOR 0.47 MICRO FARAD +/-10% RATED AC VOLTAGE 600V-URMS,PERIODIC PEAK VOLTAGE UMAX - 1050 V, RATED INSULATION VOLTAGE U -600 V , MODEL CCR 25E1, CAPACITOR CYLINDRICAL SHAPED WITH 8 MM DIA X 10MMLONG, FIXED STUD AT THE BOTTOM, DIA OF CAPACITOR -34 MM +/- 1 MM LENTH 55 +/- 2 MM, EXCLUDING STUD AT THE TERMINAL.OF GE USA MODEL.;A2,BE 5668.OR SUNNY BRAND CAPACITOR MANUFACTURED BY M/S YASH CAPPACITOR PVT LTD,NASIK TYPE YRC-4,0.47MFD 660V FOR EARTHING CIRCUIT "	6	818	892405.2 8
10.	25971487	CAPACITOR SUITABLE FOR RC DAMPING NETWORK TYPE ICAR/ITALY MSR 25-D-22-50 (22 MFD 550 V) OR ADVANCE MYSORE ASPR 15 (25 MFD 660 V) OR YE-001 (25 MFD 660 V) MANUFACTURED BY TO IS 13648-1993 (DAMPING PURPOSE MSR TYPE)	9	880	1963500
11.	33500022	Ball Joint Roll Link to Drg.no.C53.973 REB BRED 8416 Rev.3R(FF no.1560095.4)to be read with T.S. 17.531.100 03,T.S.17.617.100 02 & MDTs 148 Rev.01.	11	900	4329000
Routine Items					
SN	P.L. No	Description	Sources	AAC	Value
12.	33500046	Lateral Bump Stop to FIAT Drg.no.C53.973.REB BRED 8374 Rev.02(Firm's no.PIRELLI/98.2.00010B)to be read with T.S.17.531.100.03,T.S.17.617 100.02 and MDTs 148 Rev.01. & MDTs-122 Rev.03.	9	456	1258035. 6
13.	33501002	PRIMARY VERTICAL DAMPER TO RCF DRG.NO. LW-05102, Alt-A CONFIRING TO . SPECIFICATION NO. T.S. 17 560 100 03.	9	970	4753000
14.	35016449	COLLER FOR AXLE BOX ROLLER BEARING ARRANGMENT TO ICF DRG.NO. EMU/M-0-2-005 ALT.n/NIL.	8	696	501774.2 4

15.	36440012	ROOF VENTILATOR ASSEMBLY (TRA TYPE) WITH FIXING ARRANGEMENT AS PER ICF DRG NO.	7	430	467302.5
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Annexure 3

Questionnaire to Measure Quality issues along Procurement Processes of the Indian Railways

Dear Colleagues,

I request you to kindly provide your scores for various issues pertaining to what service quality your suppliers offer along various procurement processes of the Indian Railways. The purpose of this questionnaire is academic only.

Name: IR Zone: Designation:

Area of Work (Items dealt):

Thanking you for your valuable time and scores.

Atul Gupta,
Professor (Materials Management),
National Academy of Indian Railways, Vadodara

Measurement of External Service Quality on 5 point Likert scale *5 means strongly agree and 1 means poor agreement with the statement*

External Service Quality: Service Quality Offered by Indian Railways Suppliers	Expectation	Actual
Agility		
Your supplier shares transaction related information with your organization.		
Your supplier has collaborative relationships with your organization.		
Your supplier has contingency plans and crisis management teams.		
Your supplier has latest IT infrastructure		
Relationship		
Your supplier takes joint improvement activities.		
Your supplier takes initiative to upgrade technical capabilities.		
Your supplier tries to understand how your organization works		
Adaptability		
Your supplier monitors the external environment.		
Your supplier helps in flexible product design.		
Alignment		
Your supplier defines clear roles and responsibilities for self and for your organisation.		
Your supplier shares risk, costs and profits in an equitable manner.		
Your supplier shares risk, costs and profits in an equitable manner.		

Service Reliability		
Your supplier's products have reliable design.		
Your supplier values confidentiality in operations.		
Your supplier provides best quality at right time.		
Your supplier has required knowledge, expertise and skills.		
Service Competence		
Your supplier understands the requirements of your organization.		
Your supplier maintains consistency in quality of products and services delivered.		
Your supplier has competent and technically sound employees.		
Your supplier possesses right tools and equipment.		
Credibility		
Your supplier maintains honesty in its dealings		
Your supplier has market reputation.		
Your supplier is innovative and strives for continuous improvement.		
Your supplier has financial strength.		

Annexure 4

Request for Quotation (RFQ)

Vendor Name :

Vendor Code :

Part No.

Part Name:

Quantity

Validity period: _____ to _____

Material Cost

SN	Material/ Child Part	Source *	Size	Qty per part	Unit Cost (Rs.)	Amount (Rs.)	Remarks
1.							
2.							
Scrap							
Subtotal (a)							

* In case of assemblies, copies of this form to be filled for each of the child parts for furnishing entails of material cost, processing cost and tool amortization.

Processing Cost

SN	Process	Equipment	Time (Man Minutes)	Rate per man minute	Amount (Rs.)	Remarks
1.						
2.						
Subtotal (b)						

Cost of Continuous Processes (e.g. surface treatment, heat treatment etc.)

SN	Name of Treatment	Units	Rate per unit	Amount (Rs.)	Remarks
1.					
2.					
Subtotal (c)					

Tool amortization

SN	Name Of Tool	Tool Investment		Amortization for the year	Interest cost for the year	No. of units over which amount. for year to be distributed	Amortisation per component	Remarks
		Gross Block	Net Block at start of year					
1.								
2.								
Subtotal (d)								

Material Cost (a)	
Processing Cost (b)	
Processing Cost (c)	
Direct Cost, $e = a+b+c+d$	

Over heads:

Administrative expenses (f)	
Interest Cost (g)	
Other Costs (h)	
Packing and Transportation Cost (i)	
Profit (j)	
Total Amount ($e+f+g+h+i+j$)	

Details of Imported Parts**Annexure B**

		Remarks
Part No.		
Part Name		
Source		
Currency		
FOB value		
Factor for Insurance & freight		
CIF Value		
Custom duty		
Other Duties (specify)		
Landed value		
Exchange Rate		
Landed Value in Rs.		
Clearing Charges		
Inland Transportation		
Net Cost		