

EASTERN REGIONAL POWER COMMITTEE
KOLKATA

**Summary sheet for Composite Availability of Intra-Regional Transmission Elements
of POWERGRID in Eastern Region for the year 2005-2006**

| Sl. No. | Name of Element | No. of Elements (Wi) | Availability (%) (Ai) | Wi*Ai |
|---------|---------------------------|-------------------------|--------------------------|----------|
| 1 | AC Lines | 66 | 99.773 | 6584.99 |
| 2 | ICTs | 37 | 98.475 | 3643.58 |
| 3 | Switchable Bus Reactor | 12 | 100.000 | 1200.00 |
| | Total | 115 | | 11428.57 |

| | | |
|---|----------|----------------|
| Composite Availability for intra-regional POWERGRID elements in Eastern Region for 2005-2006 | = | 99.379% |
|---|----------|----------------|

(Rafi-Ud-Din)
Member Secretary I/C

EASTERN REGIONAL POWER COMMITTEE
KOLKATA

**Summary sheet for Composite Availability of Inter-Regional Transmission Elements
of POWERGRID with Eastern Region for the year 2005-2006**

| Sl. No. | Inter-Regional System | AC/HVDC SYSTEM | Availability (%) |
|---------|-----------------------------|---|------------------|
| 1 | EASTERN-NORTHERN | AC HVDC | 99.875 97.704 |
| 2 | EASTERN-NORTHEASTERN | AC | 99.617 |
| 3 | EASTERN-SOUTHERN | AC HVDC | 99.594 96.597 |
| 4 | EASTERN-WESTERN | AC (RAIPUR-ROURKELA D/C) AC (KORBA-BUDIPADAR 3RD CIRCUIT) | 99.125 99.495 |

(Rafi-Ud-Din)
Member Secretary I/C

Availability of Intra-Regional Transmission Lines for the year 2005-2006

| Sl. No. | Element Code | Voltage Level (kV) | Name of Line | Line Length (km) | SIL (MW) | Weightage Factor (Wi) | Ti (Min) | Outage | | Tnai (Min) | Wi(Ti-Tnai)/Ti | 100*Wi(Ti-Tnai)/(Ti*Wi) | Availability (%)=100*Σ[Wi(Ti-Tnai)/Ti] /ΣWi |
|-------------------------------|--------------|--------------------|------------------|------------------|----------|-----------------------|-----------------------|--------|-----|------------|-------------------|-------------------------|---|
| | | | | | | | | Hr | Min | | | | |
| 1 | 101 | 400 | FKK-JRT I | 238 | 515 | 122570 | 525600 | 0 | 0 | 0 | 122570.00 | 100.000 | 99.773 |
| 2 | 102 | 400 | FKK-JRT II | 236 | 515 | 121540 | 525600 | 12 | 43 | 763 | 121363.56 | 99.855 | |
| 3 | 103 | 400 | FKK-DGP I | 150 | 515 | 77250 | 525600 | 0 | 33 | 33 | 77245.15 | 99.994 | |
| 4 | 104 | 400 | FKK-DGP II | 146 | 515 | 75190 | 517052 | 0 | 43 | 43 | 75183.75 | 99.992 | |
| 5 | 105 | 400 | FKK-KHG I | 95 | 515 | 48925 | 525600 | 0 | 0 | 0 | 48925.00 | 100.000 | |
| 6 | 106 | 400 | FKK-KHG II | 95 | 515 | 48925 | 525600 | 0 | 0 | 0 | 48925.00 | 100.000 | |
| 7 | 107 | 400 | MLD-FKK I | 40 | 515 | 20600 | 525600 | 34 | 58 | 2098 | 20517.77 | 99.601 | |
| 8 | 108 | 400 | MLD-FKK II | 40 | 515 | 20600 | 525600 | 9 | 26 | 566 | 20577.82 | 99.892 | |
| 9 | 109 | 400 | KHG-BSF I | 201 | 515 | 103515 | 525600 | 38 | 52 | 2332 | 103055.72 | 99.556 | |
| 10 | 110 | 400 | KHG-BSF II | 201 | 515 | 103515 | 525600 | 12 | 37 | 757 | 103365.91 | 99.856 | |
| 11 | 141 | 400 | KHG-BSF III | 208 | 515 | 107120 | 525600 | 6 | 13 | 373 | 107043.98 | 99.829 | |
| 12 | 142 | 400 | KHG-BSF IV | 208 | 515 | 107120 | 525600 | 9 | 58 | 598 | 106998.12 | 99.886 | |
| 13 | 111 | 400 | KHG-MTN I | 172 | 515 | 88580 | 525600 | 35 | 23 | 2123 | 88222.21 | 99.596 | |
| 14 | 112 | 400 | KHG-MTN II | 172 | 515 | 88580 | 525600 | 16 | 49 | 1009 | 88409.95 | 99.808 | |
| 15 | 113 | 400 | MTN-JSR I | 153 | 515 | 78795 | 525600 | 19 | 20 | 1160 | 78621.10 | 99.779 | |
| 16 | 114 | 400 | MTN-JSR II | 153 | 515 | 78795 | 525600 | 18 | 36 | 1116 | 78627.70 | 99.788 | |
| 17 | 115 | 400 | JSR-RKL I | 152 | 515 | 78280 | 525600 | 19 | 51 | 1191 | 78102.62 | 99.773 | |
| 18 | 116 | 400 | JSR-RKL II | 152 | 515 | 78280 | 525600 | 10 | 27 | 627 | 78186.62 | 99.881 | |
| 19 | 117 | 400 | DGP-JSR | 177 | 515 | 91155 | 512850 | 38 | 12 | 2292 | 90747.82 | 99.553 | |
| 20 | 118 | 400 | RKL-TAL I | 171 | 515 | 88065 | 525600 | 28 | 28 | 1708 | 87778.82 | 99.675 | |
| 21 | 119 | 400 | RKL-TAL II | 171 | 515 | 88065 | 525600 | 51 | 6 | 3066 | 87551.29 | 99.417 | |
| 22 | 120 | 400 | RNG-TAL I | 24 | 515 | 12360 | 525600 | 0 | 0 | 0 | 12360.00 | 100.000 | |
| 23 | 121 | 400 | RNG-TAL II | 24 | 515 | 12360 | 525600 | 0 | 0 | 0 | 12360.00 | 100.000 | |
| 24 | 122 | 400 | RNG-IVT I | 356 | 515 | 183340 | 525600 | 69 | 24 | 4164 | 181887.51 | 99.208 | |
| 25 | 123 | 400 | IVT-JPR I | 71 | 515 | 36565 | 525600 | 0 | 0 | 0 | 36565.00 | 100.000 | |
| 26 | 137 | 400 | TAL-MRL # I | 51 | 515 | 26265 | 525600 | 0 | 0 | 0 | 26265.00 | 100.000 | |
| 27 | 138 | 400 | TAL-MRL # II | 51 | 515 | 26265 | 525600 | 0 | 0 | 0 | 26265.00 | 100.000 | |
| 28 | 139 | 400 | JPR-MRL#I | 456 | 515 | 234840 | 525600 | 18 | 6 | 1086 | 234354.77 | 99.793 | |
| 29 | 144 | 400 | RNG-BRPD(LILO) | 19 | 515 | 9785 | 394560 | 0 | 0 | 0 | 9785.00 | 100.000 | |
| 30 | 145 | 400 | BRPD-KGHT(LILO) | 19 | 515 | 9785 | 394560 | 0 | 0 | 0 | 9785.00 | 100.000 | |
| 31 | 146 | 400 | TALA-SILIGURI-I | 98 | 515 | 50470 | 262080 | 0 | 0 | 0 | 50470.00 | 100.000 | |
| 32 | 147 | 400 | TALA-SILIGURI-II | 98 | 515 | 50470 | 262080 | 0 | 0 | 0 | 50470.00 | 100.000 | |
| 33 | 150 | 220 | CHK-BRP I | 36 | 132 | 4752 | 525600 | 4 | 19 | 259 | 4749.66 | 99.951 | |
| 34 | 151 | 220 | CHK-BRP II | 36 | 132 | 4752 | 525600 | 2 | 11 | 131 | 4750.82 | 99.975 | |
| 35 | 152 | 220 | CHK-BRP III | 38 | 132 | 5016 | 525600 | 0 | 25 | 25 | 5015.76 | 99.995 | |
| 36 | 153 | 220 | BRP-NSLG I | 80 | 132 | 10560 | 525600 | 18 | 16 | 1096 | 10537.98 | 99.791 | |
| 37 | 154 | 220 | BRP-NSLG II | 80 | 132 | 10560 | 525600 | 28 | 37 | 1717 | 10525.50 | 99.673 | |
| 38 | 155 | 220 | BRP-SLKT I | 161 | 132 | 21252 | 525600 | 57 | 50 | 3470 | 21111.69 | 99.340 | |
| 39 | 156 | 220 | BRP-SLKT II | 161 | 132 | 21252 | 525600 | 54 | 24 | 3264 | 21120.02 | 99.379 | |
| 40 | 157 | 220 | SLG-DLK I | 119 | 132 | 15708 | 525600 | 3 | 9 | 189 | 15702.35 | 99.964 | |
| 41 | 158 | 220 | SLG-DLK II | 119 | 132 | 15708 | 525600 | 16 | 54 | 1014 | 15677.70 | 99.807 | |
| 42 | 159 | 220 | DLK-MLD I | 116 | 132 | 15312 | 525600 | 0 | 0 | 0 | 15312.00 | 100.000 | |
| 43 | 160 | 220 | DLK-MLD II | 116 | 132 | 15312 | 525600 | 0 | 0 | 0 | 15312.00 | 100.000 | |
| 44 | 161 | 220 | DLK-PRN I | 41 | 132 | 5412 | 525600 | 34 | 28 | 2068 | 5390.71 | 99.607 | |
| 45 | 162 | 220 | DLK-PRN II | 41 | 132 | 5412 | 525600 | 0 | 49 | 49 | 5411.50 | 99.991 | |
| 46 | 163 | 220 | NSLG-SLG I | 9 | 132 | 1188 | 525600 | 22 | 10 | 1330 | 1184.99 | 99.747 | |
| 47 | 164 | 220 | NSLG-SLG II | 9 | 132 | 1188 | 525600 | 9 | 3 | 543 | 1186.77 | 99.897 | |
| 48 | 165 | 220 | PRN-NPRN # I | 1 | 132 | 132 | 525600 | 1 | 8 | 68 | 131.98 | 99.987 | |
| 49 | 166 | 220 | PRN-NPRN # II | 1 | 132 | 132 | 525600 | 1 | 9 | 69 | 131.98 | 99.987 | |
| 50 | 167 | 220 | SSRM-ARA I | 112 | 132 | 14784 | 525600 | 22 | 10 | 1330 | 14746.59 | 99.747 | |
| 51 | 168 | 220 | SSRM-ARA II | 112 | 132 | 14784 | 525600 | 17 | 58 | 1078 | 14753.68 | 99.795 | |
| 52 | 169 | 220 | ARA-KHAGAUL I | 48 | 132 | 6336 | 525600 | 0 | 0 | 0 | 6336.00 | 100.000 | |
| 53 | 170 | 220 | ARA-KHAGAUL II | 48 | 132 | 6336 | 525600 | 0 | 0 | 0 | 6336.00 | 100.000 | |
| 54 | 171 | 220 | DEHRI-SSRM | 3 | 132 | 396 | 525600 | 0 | 0 | 0 | 396.00 | 100.000 | |
| 55 | 172 | 220 | SSRM-SAHUPURI | 3 | 132 | 396 | 525600 | 0 | 0 | 0 | 396.00 | 100.000 | |
| 56 | 173 | 220 | BTPS-SLKT-I | 4 | 132 | 528 | 262080 | 0 | 0 | 0 | 528.00 | 100.000 | |
| 57 | 180 | 132 | SLG-RNGT-I | 92 | 50 | 4600 | 525600 | 40 | 35 | 2435 | 4578.69 | 99.537 | |
| 58 | 187 | 132 | RANGIT-GANGTOK | 73 | 50 | 3650 | 262080 | 0 | 0 | 0 | 3650.00 | 100.000 | |
| 59 | 188 | 132 | GANGTOK-MELLI | 37 | 50 | 1850 | 262080 | 0 | 0 | 0 | 1850.00 | 100.000 | |
| 60 | 189 | 132 | MELLI-SILIGURI | 92 | 50 | 4600 | 262080 | 6 | 40 | 400 | 4592.98 | 99.847 | |
| 61 | 182 | 132 | RNGT-RMM | 27 | 50 | 1350 | 525600 | 26 | 53 | 1613 | 1345.86 | 99.693 | |
| 62 | 183 | 132 | DEH-SSM | 63 | 50 | 3150 | 525600 | 12 | 8 | 728 | 3145.64 | 99.861 | |
| 63 | 184 | 132 | SSM-KRM | 29 | 50 | 1450 | 525600 | 9 | 40 | 580 | 1448.40 | 99.890 | |
| 64 | 185 | 132 | DMRN-ARA | 2 | 50 | 100 | 525600 | 0 | 0 | 0 | 100.00 | 100.000 | |
| 65 | 186 | 132 | ARA-ARA | 2 | 50 | 100 | 525600 | 0 | 0 | 0 | 100.00 | 100.000 | |
| 66 | 190 | 66 | RNGT-MLI | 37 | 10 | 370 | 525600 | 0 | 0 | 0 | 370.00 | 100.000 | |
| Total Weightage Factor | | | | | | 2586398 | Wi(Ti-Tnai)/Ti | | | | 2580514.24 | | |

Availability of Transformers for the year 2005-2006

| Sl. No. | Element Code | Voltage Level (kV) | Name of ICT | No of Unit | Capacity (MVA) | Weightage Factor (Wk) | Tk (Minutes) | Outage | | Tnak (Minutes) | Wk(Tk-Tnak) /Tk | 100*Wk(Tk-Tnak) / (Tk*Wk) | Availability (%)=100* $\frac{\sum [Wk(Tk-Tnak)/Tk]}{\sum Wk}$ |
|-------------------------------|--------------|--------------------|--------------|------------|----------------|-----------------------|--------------|-----------------------------|-----------|----------------|-----------------|---------------------------|---|
| | | | | | | | | Time (Hr) | Time (Mn) | | | | |
| 1 | 201 | 400 | ICT-I,DGP | 1 | 315 | 315 | 525600 | 0 | 0 | 0 | 315.00 | 100.000 | 98.475 |
| 2 | 202 | 400 | ICT-II,DGP | 1 | 315 | 315 | 525600 | 0 | 0 | 0 | 315.00 | 100.000 | |
| 3 | 203 | 400 | ICT-I,BSF | 1 | 315 | 315 | 525600 | 44 | 45 | 2685 | 313.39 | 99.489 | |
| 4 | 204 | 400 | ICT-II,BSF | 1 | 315 | 315 | 525600 | 13 | 0 | 780 | 314.53 | 99.852 | |
| 5 | 221 | 400 | ICT-III,BSF | 1 | 315 | 315 | 521686 | 0 | 0 | 0 | 315.00 | 100.000 | |
| 6 | 205 | 400 | ICT-I,MTN | 1 | 315 | 315 | 525600 | 0 | 0 | 0 | 315.00 | 100.000 | |
| 7 | 206 | 400 | ICT-II,MTN | 1 | 315 | 315 | 525600 | 0 | 0 | 0 | 315.00 | 100.000 | |
| 8 | 207 | 400 | ICT-I,JSR | 1 | 315 | 315 | 525600 | 28 | 7 | 1687 | 313.99 | 99.679 | |
| 9 | 208 | 400 | ICT-II,JSR | 1 | 315 | 315 | 525600 | 17 | 47 | 1067 | 314.36 | 99.797 | |
| 10 | 209 | 400 | ICT-I,RKL | 1 | 315 | 315 | 525600 | 0 | 0 | 0 | 315.00 | 100.000 | |
| 11 | 210 | 400 | ICT-II,RKL | 1 | 315 | 315 | 525600 | 0 | 0 | 0 | 315.00 | 100.000 | |
| 12 | 211 | 400 | ICT-I, RNG | 1 | 315 | 315 | 525600 | 0 | 0 | 0 | 315.00 | 100.000 | |
| 13 | 212 | 400 | ICT-II, RNG | 1 | 315 | 315 | 525600 | 0 | 0 | 0 | 315.00 | 100.000 | |
| 14 | 213 | 400 | ICT-I, JPR | 1 | 315 | 315 | 525600 | 0 | 0 | 0 | 315.00 | 100.000 | |
| 15 | 214 | 400 | ICT-II, JPR | 1 | 315 | 315 | 525600 | 0 | 0 | 0 | 315.00 | 100.000 | |
| 16 | 215 | 400 | ICT-I,FKK | 1 | 315 | 315 | 525600 | 47 | 43 | 2863 | 313.28 | 99.455 | |
| 17 | 216 | 400 | ICT-III,MLD | 1 | 315 | 315 | 525600 | 0 | 0 | 0 | 315.00 | 100.000 | |
| 18 | 217 | 400 | ICT-V,MLD | 1 | 315 | 315 | 525600 | 0 | 0 | 0 | 315.00 | 100.000 | |
| 19 | 218 | 400 | ICT-I, NSLG | 1 | 315 | 315 | 525600 | 29 | 7 | 1747 | 313.95 | 99.668 | |
| 20 | 220 | 400 | ICT-I, NPRN | 1 | 315 | 315 | 525600 | 0 | 0 | 0 | 315.00 | 100.000 | |
| 21 | 222 | 400 | ICT-I,SSRM | 1 | 315 | 315 | 525600 | 12 | 33 | 753 | 314.55 | 99.857 | |
| 22 | 223 | 400 | ICT-II,SSRM | 1 | 315 | 315 | 525600 | 9 | 20 | 560 | 314.66 | 99.893 | |
| 23 | 224 | 400 | ICT-I, BRPD | 1 | 315 | 315 | 394560 | 2467 | 50 | 148070 | 196.79 | 62.472 | |
| 24 | 263 | 220 | ICT-II, BRPD | 1 | 160 | 160 | 394560 | 0 | 0 | 0 | 160.00 | 100.000 | |
| 25 | 250 | 220 | ICT-II,SLG | 1 | 100 | 100 | 525600 | 46 | 23 | 2783 | 99.47 | 99.471 | |
| 26 | 252 | 220 | ICT-I,PRN | 1 | 100 | 100 | 525600 | 24 | 35 | 1475 | 99.72 | 99.719 | |
| 27 | 253 | 220 | ICT-II,PRN | 1 | 100 | 100 | 525600 | 2 | 5 | 125 | 99.98 | 99.976 | |
| 28 | 254 | 220 | ICT-III,PRN | 1 | 100 | 100 | 525600 | 0 | 0 | 0 | 100.00 | 100.000 | |
| 29 | 261 | 220 | ICT-I, ARA | 1 | 100 | 100 | 525600 | 0 | 0 | 0 | 100.00 | 100.000 | |
| 30 | 262 | 220 | ICT-II,ARA | 1 | 100 | 100 | 525600 | 0 | 0 | 0 | 100.00 | 100.000 | |
| 31 | 256 | 220 | ICT-I,BRP | 1 | 100 | 100 | 525600 | 25 | 26 | 1526 | 99.71 | 99.710 | |
| 32 | 257 | 220 | ICT-II,BRP | 1 | 50 | 50 | 525600 | 24 | 56 | 1496 | 49.86 | 99.715 | |
| 33 | 258 | 220 | ICT-I,MLD | 1 | 50 | 50 | 525600 | 105 | 2 | 6302 | 49.40 | 98.801 | |
| 34 | 259 | 220 | ICT-II,MLD | 1 | 50 | 50 | 525600 | 141 | 8 | 8468 | 49.19 | 98.389 | |
| 35 | 260 | 220 | ICT-IV, MLD | 1 | 50 | 50 | 525600 | 0 | 0 | 0 | 50.00 | 100.000 | |
| 36 | 264 | 132 | ICT-I, GTK | 1 | 50 | 50 | 262080 | 0 | 0 | 0 | 50.00 | 100.000 | |
| 37 | 265 | 132 | ICT-II,GTK | 1 | 50 | 50 | 262080 | 0 | 0 | 0 | 50.00 | 100.000 | |
| Total Weightage Factor | | | | | | | 8405 | Total Wk(Tk-Tnak)/Tk | | | 8276.84 | | |

Availability of Switched Bus Reactor for the year 2005-2006

| Sl. No. | Element Code | Voltage Level (kV) | Name of Bus Reactor | No of Unit | Capacity (MVAR) | Weightage Factor (Wm) | Tm (Minutes) | Outage | | Tnam (Minutes) | Wm(Tm-Tnam) /Tm | 100*Wm(Tm-Tnam) / (Tm*Wm) | Availability (%)=100* $\frac{\sum [Wm(Tm-Tnam)/Tm]}{\sum Wm}$ |
|-------------------------------|--------------|--------------------|---------------------|------------|-----------------|-----------------------|--------------|-----------------------------|------------|----------------|-----------------|---------------------------|---|
| | | | | | | | | Time (Hr) | Time (Min) | | | | |
| 01 | 301 | 400 | 50 1ph B/R ,BSF | 1 | 50 | 50 | 525600 | 0 | 0 | 0 | 50.00 | 100.000 | 100.000 |
| 02 | 302 | 400 | 50 1ph B/R-I ,DGP | 1 | 50 | 50 | 525600 | 0 | 0 | 0 | 50.00 | 100.000 | |
| 03 | 303 | 400 | 50 1ph B/R-II,DGP | 1 | 50 | 50 | 525600 | 0 | 0 | 0 | 50.00 | 100.000 | |
| 04 | 304 | 400 | 50 1ph B/R-I,JSR | 1 | 50 | 50 | 525600 | 0 | 0 | 0 | 50.00 | 100.000 | |
| 05 | 305 | 400 | 50 3ph B/R-II,JSR | 1 | 50 | 50 | 525600 | 0 | 0 | 0 | 50.00 | 100.000 | |
| 06 | 306 | 400 | 50 3ph B/R ,MTN | 1 | 50 | 50 | 525600 | 0 | 0 | 0 | 50.00 | 100.000 | |
| 07 | 307 | 400 | 50 3ph B/R ,RKL | 1 | 50 | 50 | 525600 | 0 | 0 | 0 | 50.00 | 100.000 | |
| 08 | 308 | 400 | 63 3ph B/R ,JPR | 1 | 63 | 63 | 525600 | 0 | 0 | 0 | 63.00 | 100.000 | |
| 09 | 309 | 400 | 50 1ph B/R ,JRT | 1 | 50 | 50 | 525600 | 0 | 0 | 0 | 50.00 | 100.000 | |
| 10 | 310 | 400 | 63 3ph B/R ,NPRN | 1 | 63 | 63 | 262080 | 0 | 0 | 0 | 63.00 | 100.000 | |
| 11 | 311 | 400 | 63 3ph B/R-I, NSLG | 1 | 63 | 63 | 262080 | 0 | 0 | 0 | 63.00 | 100.000 | |
| 12 | 312 | 400 | 63 3ph B/R-II, NSLG | 1 | 63 | 63 | 262080 | 0 | 0 | 0 | 63.00 | 100.000 | |
| Total Weightage Factor | | | | | | | 652 | Total Wm(Tm-Tnam)/Tm | | | 652.00 | | |

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Availability of HVDC Gazuwaka System for the year 2005-2006

| Sl. No. | Voltage Level (kV) | Name of HVDC | No.of Pole (No) | Capacity (MW) | Weightage Factor (Wp) | Tp (Minutes) | Outage | | Tnap (Minutes) | Wp(Tp-Tnap) /Tp | 100*Wp(Tp-Tnap) / (Tp*Wp) | Availability (%)=100* $\frac{\sum[Wp(Tp-Tnap)/Tp]}{\sum Wp}$ |
|---------|--------------------|------------------------|-----------------|---------------|-----------------------|-----------------------------|-----------|------------|----------------|-----------------|---------------------------|--|
| | | | | | | | Time (Hr) | Time (Min) | | | | |
| 1 | 400 | HVDC BTB(VSP)-I | 1 | 500 | 500 | 525600 | 488 | 10 | 29290 | 472.14 | 94.427 | 96.597 |
| 2 | 400 | HVDC BTB(VSP)-II | 1 | 500 | 500 | 525600 | 107 | 58 | 6478 | 493.84 | 98.768 | |
| | | Total Weightage Factor | | | 1000 | Total Wp(Tp-Tnap)/Tp | | | | 965.97 | | |

Availability of HVDC Back to Back Sasaram for the year 2005-2006

| Sl. No. | Voltage Level (kV) | Name of HVDC | No.of Pole (No) | Capacity (MW) | Weightage Factor (Wp) | Tp (Minutes) | Outage | | Tnap (Minutes) | Wp(Tp-Tnap) /Tp | 100*Wp(Tp-Tnap) / (Tp*Wp) | Availability (%)=100* $\frac{\sum[Wp(Tp-Tnap)/Tp]}{\sum Wp}$ |
|---------|--------------------|------------------------|-----------------|---------------|-----------------------|-----------------------------|-----------|------------|----------------|-----------------|---------------------------|--|
| | | | | | | | Time (Hr) | Time (Min) | | | | |
| 1 | 400 | HVDC BTB, SSM | 1 | 500 | 500 | 525600 | 201 | 9 | 12069 | 488.52 | 97.704 | 97.704 |
| | | Total Weightage Factor | | | 500 | Total Wp(Tp-Tnap)/Tp | | | | 488.52 | | |

EASTERN REGIONAL POWER COMMITTEE
KOLKATA

Availability of Inter-Regional Transmission Lines for the year 2005-2006

| Sl. No. | Element Code | Voltage Level (kV) | Name of Line | Line Length (km) | SIL (MW) | Weightage Factor (Wi) | Ti (Minutes) | Outage | | Tnai (Minutes) | Wi(Ti-Tnai) /Ti | 100*Wi(Ti-Tnai) / (Ti*Wi) | Availability(%) =100*Σ[Wi(Ti-Tnai)/Ti] /ΣWi |
|---------|--------------|--------------------|--------------|------------------|--------------|-----------------------|---------------|--------|---------|----------------|------------------|---------------------------|---|
| | | | | | | | | Hour | Minutes | | | | |
| 1 | ER-WR | 400 | RKL-RPR # I | 412 | 515 | 212180 | 525600 | 71 | 45 | 4305 | 210442.11 | 99.181 | 99.125 |
| 2 | | 400 | RKL-RPR # II | 412 | 515 | 212180 | 525600 | 81 | 36 | 4896 | 210203.53 | 99.068 | |
| | | | | | | Total | 424360 | | | | 420645.64 | | |
| 3 | | 220 | BDH-KRB-III | 184 | 132 | 24288 | 525600 | 44 | 14 | 2654 | 24165.36 | 99.495 | 99.495 |
| | | | | | Total | 24288 | | | | | 24165.36 | | |

| | | | | | | | | | | | | | |
|---|-------|-----|------------|-----|--------------|---------------|--------|----|----|------|------------------|---------|--------|
| 1 | ER-NR | 400 | BSF-SSM I | 210 | 515 | 108150 | 525600 | 11 | 30 | 690 | 108008.02 | 99.869 | 99.875 |
| 2 | | 400 | BSF-SSM II | 210 | 515 | 108150 | 525600 | 11 | 18 | 678 | 108010.49 | 99.871 | |
| 3 | | 400 | SSM-SRN I | 76 | 515 | 39140 | 525600 | 0 | 0 | 0 | 39140.00 | 100.000 | |
| 4 | | 400 | SRN-ALB I | 136 | 515 | 70040 | 525600 | 0 | 0 | 0 | 70040.00 | 100.000 | |
| 5 | | 400 | SSM-ALB II | 212 | 515 | 109180 | 525600 | 21 | 3 | 1263 | 108917.64 | 99.760 | |
| | | | | | Total | 434660 | | | | | 434116.16 | | |

| | | | | | | | | | | | | | |
|---|--------|-----|------------------|-----|--------------|---------------|--------|-----|----|------|------------------|---------|--------|
| 1 | ER-NER | 400 | NSLG-BNG I | 216 | 515 | 111240 | 525600 | 19 | 22 | 1162 | 110994.07 | 99.779 | 99.617 |
| 2 | | 400 | NSLG-II-BNG II | 216 | 515 | 111240 | 437760 | 1 | 55 | 115 | 111210.78 | 99.974 | |
| 3 | | 400 | NSLG- II-NPRN-II | 168 | 515 | 86520 | 437760 | 7 | 6 | 426 | 86435.80 | 99.903 | |
| 4 | | 400 | NSLG-MLD I | 222 | 515 | 114330 | 525600 | 122 | 35 | 7355 | 112730.12 | 98.601 | |
| 5 | | 400 | MLD-NPRN II | 167 | 515 | 86005 | 525600 | 76 | 19 | 4579 | 85255.73 | 99.129 | |
| 6 | | 400 | NPRN-BNG II | 384 | 515 | 197760 | 87840 | 0 | 0 | 0 | 197760.00 | 100.000 | |
| | | | | | Total | 707095 | | | | | 704386.50 | | |

| | | | | | | | | | | | | | |
|---|-------|-----|------------|-----|--------------|---------------|--------|----|----|------|------------------|--------|--------|
| 1 | ER-SR | 400 | JPR-GJK-I | 220 | 425 | 93500 | 525600 | 26 | 59 | 1619 | 93211.99 | 99.692 | 99.594 |
| 2 | | 400 | JPR-GJK-II | 220 | 425 | 93500 | 525600 | 44 | 6 | 2646 | 93029.30 | 99.497 | |
| | | | | | Total | 187000 | | | | | 186241.29 | | |

EASTERN REGIONAL POWER COMMITTEE
KOLKATA

**Summary sheet for Composite Availability of Inter-Regional Transmission Elements
of POWERGRID with Eastern Region for the year 2005-2006**

| Sl. No. | Inter-Regional System | AC/HVDC SYSTEM | Availability (%) |
|---------|-----------------------------|---|------------------|
| 1 | EASTERN-NORTHERN | AC HVDC | 99.875 97.704 |
| 2 | EASTERN-NORTHEASTERN | AC | 99.617 |
| 3 | EASTERN-SOUTHERN | AC HVDC | 99.594 96.597 |
| 4 | EASTERN-WESTERN | AC (RAIPUR-ROURKELA D/C) AC (KORBA-BUDIPADAR 3RD CIRCUIT) | 99.125 99.495 |

(Rafi-Ud-Din)
Member Secretary I/C