

Daily System Generation Summary on Tuesday

Tuesday, August 02, 2016

Availability at Daily Maximum Demand Hour

| | |
|--------------|------------------|
| ST-Coal | 0 MW |
| ST-Gas | 0 MW |
| ST-Oil | 0 MW |
| Gas | 3,589 MW |
| Hydro | 2,075 MW |
| Distillate | 0 MW |
| Total TNB | <u>5,664 MW</u> |
| Total IPP | <u>14,939 MW</u> |
| Total Co-Gen | <u>50 MW</u> |
| Total System | <u>21,217 MW</u> |

Generation Mix

| Type | MWh | Percentage |
|-------------------------|----------------|-----------------|
| Gas | 51,181 | 14.49 % |
| Hydro | 12,646 | 3.58 % |
| Total TNB | 63,827 | 18.07 % |
| ST-Coal | 179,890 | 50.93 % |
| Gas | 109,333 | 30.95 % |
| Total IPP | 289,223 | 81.89 % |
| Co-Gen | 587 | 0.17 % |
| Total Co-Gen | 587 | 0.17 % |
| Total Generation | 353,637 | 100.12 % |
| PLTC | -285 | -0.08 % |
| HVDC | 719 | 0.20 % |
| Interconnection | 434 | 0.12 % |
| Net Energy | 353,203 | 100.00 % |

Maximum Demand Record

| | |
|-----------------|-------------|
| Date: 4/20/2016 | 17,788 MW |
| Date: 4/20/2016 | 372,457 MWH |

Set On Bus, TNB, IPP And MD

| | |
|-------------------------------|---------------|
| Daily Maximum Demand Hour at: | 16:00:00 Hour |
| Total Set On Bus | 18,469 MW |
| TNB Generation | 3,591 MW |
| IPP Generation | 13,173 MW |
| Spinning Reserve | 1,693 MW |
| Maximum Demand | 16,764 MW |
| Net Energy | 353,203 MWH |
| Load Factor | 87.79 % |

Fuel Cost

| | |
|---------------|------------------|
| Total Cost: | 46,207,197.45 RM |
| Cost per Unit | 13.55 cents/kWH |

Average Spinning Reserve During Peak Hour

| Type | MW |
|--------------|--------------|
| GT | 475 |
| Hydro | 398 |
| Syncon | 503 |
| Thermal | 172 |
| Total | 1,548 |

| Time | Weather | Temperature |
|-----------|---------|-------------|
| Afternoon | Sunny | 33 |
| Morning | Cloudy | 29 |

Gas Usage

| Station | (mmscfd) |
|------------------|------------|
| CBPS | 35 |
| GLGR | 31 |
| PAKA | 29 |
| PGPS | 49 |
| SRDG | 31 |
| TJGS | 213 |
| Total TNB | 389 |

| | |
|------------------|------------|
| CBPS | 54 |
| KLPP | 101 |
| MPSS | 58 |
| NPRI | 146 |
| PDPS | 11 |
| PGLA | 107 |
| PKLG | 4 |
| PLPS | 92 |
| PTEK | 20 |
| SGRI | 183 |
| SKSP | 50 |
| Total IPP | 826 |

Total Gas 1,215

Total Gas Required 1,215

Alternate Fuel Usage

| Station | (mmscfd) |
|--------------|----------|
| Total | 0 |

Hourly System MW Generation

| | 00:00 | 01:00 | 02:00 | 03:00 | 04:00 | 05:00 | 06:00 | 07:00 | 08:00 | 09:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 |
|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| System Total | 14239 | 13629 | 13077 | 12618 | 12401 | 12175 | 12365 | 12325 | 12734 | 14440 | 15538 | 16098 | 16059 | 15705 | 16370 | 16620 | 16764 | 16433 | 15045 | 14779 | 16090 | 16074 | 15640 | 15373 |

Prepared By: Mohd Yusof bin Ismail

Checked By: Siti Nurhamizatul Aini

Printed on: Wednesday, August 03, 2016 8:19:40 AM

(Gurcharan Singh)
Pengurus Besar Kanan
Jabatan Sistem Operasi

Daily MW Generation on Tuesday

| Station | Unit | 0000 | 0100 | 0200 | 0300 | 0400 | 0500 | 0600 | 0700 | 0800 | 0900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|----|
| TMGR | HY02 | 33 | 34 | 33 | 36 | 33 | 35 | 33 | 34 | 36 | 34 | 33 | 36 | 39 | 35 | 35 | 34 | 36 | 39 | 39 | 63 | 66 | 64 | 64 | 58 | 62 | 57 | 83 | 80 | 82 | 82 | 82 | 82 | 82 | 81 | 81 | 37 | 37 | 35 | 39 | 41 | 84 | 84 | 84 | 83 | 84 | 35 | 35 | | | |
| TMGR | HY03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| TMGR | HY04 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | |
| UJLI | HY02 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | |
| UPIA | HY01 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Total Hydro | | 164 | 168 | 167 | 169 | 395 | 398 | 395 | 417 | 401 | 398 | 397 | 396 | 401 | 404 | 399 | 400 | 399 | 402 | 430 | 332 | 796 | 625 | 973 | 1028 | 896 | 493 | 478 | 416 | 661 | 951 | 882 | 875 | 1035 | 1073 | 1004 | 716 | 311 | 247 | 248 | 253 | 542 | 664 | 661 | 576 | 462 | 443 | 326 | 324 | | |
| Total Distillate | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PCUF | CUFG | 26 | 27 | 26 | 25 | 27 | 26 | 28 | 27 | 26 | 25 | 25 | 25 | 26 | 25 | 26 | 28 | 26 | 27 | 25 | 24 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | |
| PCUF | CUFK | 16 | 15 | 13 | 13 | 13 | 14 | 14 | 14 | 14 | 14 | 14 | 13 | 14 | 13 | 14 | 14 | 13 | 14 | 14 | 13 | 13 | 14 | 14 | 13 | 13 | 14 | 14 | 15 | 14 | 13 | 12 | 12 | 13 | 12 | 13 | 15 | 15 | 13 | 14 | 14 | 13 | 14 | 12 | 13 | 13 | 15 | 13 | 14 | 13 | 14 |
| Total Co-Gen | | 42 | 42 | 39 | 38 | 40 | 40 | 42 | 41 | 40 | 39 | 39 | 39 | 39 | 39 | 41 | 40 | 41 | 38 | 38 | 13 | 13 | 12 | 12 | 13 | 13 | 13 | 14 | 13 | 12 | 11 | 11 | 12 | 11 | 12 | 11 | 12 | 14 | 14 | 12 | 13 | 13 | 12 | 13 | 11 | 12 | 12 | 14 | 12 | 13 | |
| Total Gen | | 14209 | 13882 | 13685 | 13295 | 13109 | 12923 | 12643 | 12440 | 12424 | 12209 | 12187 | 12226 | 12456 | 12640 | 12385 | 12299 | 12731 | 13795 | 14454 | 15040 | 15559 | 15841 | 16118 | 16311 | 16103 | 15854 | 15726 | 15998 | 16343 | 16696 | 16653 | 16711 | 16776 | 16744 | 16493 | 15667 | 14966 | 14833 | 14815 | 15660 | 16140 | 16128 | 16140 | 15995 | 15639 | 15668 | 15409 | 14955 | | |
| TIE-EGAT | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TIE-HVDC | | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 29 | 29 | 29 | 29 | 31 | 31 | 31 | 31 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 29 | 29 | 29 | 29 | 29 | 29 | 30 | 30 | 30 | 30 | 29 | 29 | 29 | 29 | 29 | 29 | 30 | 31 | 31 | 30 | 30 | |
| TIE-PLTC | | -60 | -27 | 26 | -23 | 1 | -52 | -4 | -42 | -8 | -30 | -17 | 17 | 62 | 40 | 29 | 25 | -34 | -14 | -16 | -37 | -9 | -102 | -10 | -4 | 13 | -57 | -9 | -74 | -57 | -43 | 4 | 16 | -17 | 36 | 30 | -74 | -109 | -8 | 7 | 25 | 21 | -3 | 36 | 23 | -31 | -4 | 6 | -10 | | |
| Interconnection | | -30 | 3 | 56 | 7 | 32 | -22 | 25 | -12 | 23 | 1 | 12 | 47 | 91 | 70 | 60 | 56 | -3 | 16 | 14 | -7 | 21 | -72 | 20 | 26 | 44 | -27 | 21 | -44 | -27 | -13 | 33 | 46 | 12 | 65 | 60 | -45 | -79 | 22 | 36 | 54 | 50 | 26 | 66 | 53 | -1 | 27 | 36 | 20 | | |
| System Total | | 14239 | 13679 | 13629 | 13288 | 13077 | 12945 | 12618 | 12452 | 12401 | 12209 | 12175 | 12179 | 12365 | 12570 | 12325 | 12243 | 12734 | 13779 | 14440 | 15047 | 15538 | 15913 | 16098 | 16285 | 16059 | 15881 | 15705 | 16042 | 16370 | 16709 | 16620 | 16665 | 16764 | 16679 | 16433 | 15712 | 15045 | 14811 | 14779 | 15606 | 16096 | 16102 | 16074 | 15942 | 15840 | 15641 | 15373 | 14935 | | |
| SRev ST-Coal | | 174 | 174 | 236 | 272 | 266 | 258 | 362 | 404 | 414 | 411 | 408 | 405 | 409 | 415 | 412 | 411 | 406 | 401 | 333 | 144 | 184 | 96 | 144 | 148 | 205 | 202 | 193 | 130 | 171 | 166 | 163 | 162 | 156 | 158 | 165 | 158 | 178 | 168 | 185 | 168 | 145 | 190 | 201 | 181 | 169 | 175 | 169 | 161 | | |
| SRev OCGT-Gas | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 128 | -9 | 17 | 59 | 131 | 24 | 127 | 19 | 35 | 32 | 121 | 56 | 46 | 60 | 87 | 192 | 134 | 131 | 131 | 78 | 57 | 61 | 61 | 62 | -5 | -7 | 7 | 7 | 0 | |
| SRev CCGT-Gas | | 601 | 583 | 437 | 792 | 1212 | 1409 | 1584 | 1766 | 1755 | 2066 | 2180 | 2143 | 1914 | 1727 | 1980 | 2070 | 1691 | 985 | 839 | 405 | 423 | 304 | 599 | 442 | 467 | 381 | 388 | 325 | 388 | 332 | 328 | 329 | 461 | 514 | 663 | 898 | 1123 | 1095 | 1098 | 328 | 180 | 266 | 238 | 318 | 531 | 358 | 490 | 835 | | |
| SRev ST-Gas | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SRev Co-Gen | | 8 | 8 | 11 | 12 | 10 | 10 | 8 | 9 | 10 | 11 | 11 | 11 | 11 | 11 | 11 | 9 | 10 | 9 | 12 | 12 | 37 | 37 | 38 | 38 | 37 | 37 | 37 | 36 | 37 | 38 | 39 | 39 | 38 | 39 | 38 | 39 | 38 | 36 | 36 | 38 | 37 | 37 | 38 | 37 | 39 | 38 | 38 | 36 | 38 | 37 |
| Syncon | | 1082 | 1082 | 1082 | 1082 | 880 | 880 | 880 | 729 | 880 | 880 | 880 | 880 | 880 | 881 | 730 | 730 | 730 | 730 | 831 | 469 | 469 | 311 | 235 | 242 | 579 | 579 | 806 | 680 | 495 | 495 | 495 | 394 | 387 | 387 | 471 | 698 | 799 | 799 | 799 | 658 | 572 | 572 | 572 | 572 | 522 | 799 | 799 | | | |
| Hydro | | 120 | 116 | 117 | 115 | 91 | 88 | 91 | 220 | 85 | 88 | 89 | 90 | 85 | 82 | 87 | 87 | 88 | 85 | 207 | 204 | 152 | 373 | 487 | 608 | 639 | 380 | 395 | 230 | 436 | 431 | 500 | 507 | 598 | 561 | 530 | 421 | 352 | 315 | 314 | 309 | 246 | 275 | 278 | 213 | 327 | 416 | 186 | 188 | | |
| S.Reserve Total | | 1985 | 1963 | 1883 | 2273 | 2459 | 2645 | 2925 | 3128 | 3144 | 3456 | 3568 | 3529 | 3299 | 3115 | 3371 | 3307 | 2925 | 2210 | 2121 | 1596 | 1393 | 1270 | 1596 | 1530 | 1721 | 1603 | 1719 | 1546 | 1747 | 1494 | 1646 | 1588 | 1693 | 1719 | 1870 | 2176 | 2521 | 2546 | 2564 | 1719 | 1324 | 1401 | 1389 | 1384 | 1632 | 1590 | 1689 | 2020 | | |