

## Daily System Generation Summary on Friday

Friday, December 13, 2019

### Availability at Daily Maximum Demand Hour

|              |           |
|--------------|-----------|
| ST-Coal      | 0 MW      |
| ST-Gas       | 0 MW      |
| ST-Oil       | 0 MW      |
| Hydro        | 2,317 MW  |
| Distillate   | 0 MW      |
| Total TNB    | 2,317 MW  |
| Total IPP    | 14,460 MW |
| Total Co-Gen | 0 MW      |
| Total System | 18,160 MW |

### Generation Mix

| Type                    | MWh            | Percentage      |
|-------------------------|----------------|-----------------|
| Hydro                   | 32,038         | 9.01 %          |
| Gas                     | 31,465         | 8.84 %          |
| <b>Total TNB</b>        | <b>63,503</b>  | <b>17.85 %</b>  |
| ST-Coal                 | 136,067        | 38.25 %         |
| ST-Gas                  | 1,415          | 0.40 %          |
| ST-Oil                  | 9,856          | 2.77 %          |
| LSS                     | 2,280          | 0.64 %          |
| Gas                     | 136,367        | 38.33 %         |
| <b>Total IPP</b>        | <b>285,985</b> | <b>80.39 %</b>  |
| Co-Gen                  | 1,537          | 0.43 %          |
| <b>Total Co-Gen</b>     | <b>1,537</b>   | <b>0.43 %</b>   |
| <b>Total Generation</b> | <b>351,025</b> | <b>98.67 %</b>  |
| PLTG                    | -856           | -0.24 %         |
| HVDC                    | -3,866         | -1.09 %         |
| <b>Interconnection</b>  | <b>-4,722</b>  | <b>-1.33 %</b>  |
| <b>Net Energy</b>       | <b>355,747</b> | <b>100.00 %</b> |

### Maximum Demand Record

|                 |             |
|-----------------|-------------|
| Date: 4/18/2019 | 18,566 MW   |
| Date: 4/18/2019 | 391,845 MWH |

### Set On Bus, TNB, IPP And MD

|                               |               |
|-------------------------------|---------------|
| Daily Maximum Demand Hour at: | 16:00:00 Hour |
| Total Set On Bus              | 17,881 MW     |
| TNB Generation                | 3,132 MW      |
| IPP Generation                | 13,198 MW     |
| Spinning Reserve              | 1,486 MW      |
| Maximum Demand                | 16,698 MW     |
| Net Energy                    | 355,747 MWH   |
| Load Factor                   | 88.77 %       |

### Fuel Cost

|               |                  |
|---------------|------------------|
| Total Cost:   | 67,848,669.23 RM |
| Cost per Unit | 19.31 cents/kWH  |

### Average Spinning Reserve During Peak Hour

| Type         | MW           |
|--------------|--------------|
| GT           | 689          |
| Hydro        | 499          |
| Syncon       | 284          |
| Thermal      | 89           |
| <b>Total</b> | <b>1,561</b> |

| Time      | Weather | Temperature |
|-----------|---------|-------------|
| Afternoon | Hot     | 34          |
| Morning   | Sunny   | 27          |

### Gas Usage

| Station          | (mmscfd)     |
|------------------|--------------|
| GLGR             | 50           |
| PAKA             | 27           |
| SRDG             | 12           |
| TJGS             | 149          |
| <b>Total TNB</b> | <b>237</b>   |
| CBPS             | 54           |
| KLPP             | 112          |
| MPSS             | 59           |
| NPRI             | 142          |
| PGLA             | 114          |
| PLPS             | 80           |
| PTEK             | 16           |
| SGB3             | 74           |
| SGRI             | 118          |
| SKSP             | 35           |
| YPKA             | 104          |
| PKLG             | 14           |
| <b>Total IPP</b> | <b>923</b>   |
| <b>Total Gas</b> | <b>1,160</b> |

**Total Gas Required 1,256**

### Alternate Fuel Usage

| Station      | (mmscfd)  |
|--------------|-----------|
| PKLG         | 96        |
| <b>Total</b> | <b>96</b> |

### 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 | 14519 | 13816 | 13411 | 13003 | 12705 | 12505 | 12625 | 12857 | 13078 | 14629 | 15588 | 16182 | 16069 | 15697 | 15911 | 16559 | 16698 | 16388 | 15491 | 15692 | 16149 | 15908 | 15370 | 15031 |

Prepared By: -Select Name-

Checked By: -Select Name-

Printed on: Friday, January 03, 2020 10:01:14 AM  
(Ir. Shanmugam Thoppalan)  
Pengurus Besar Kanan  
Jabatan Sistem Operasi

### Daily MW Generation on Friday

|               |      | 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 |     |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|
| JMAH          | U001 | 692  | 693  | 703  | 692  | 693  | 691  | 695  | 693  | 689  | 693  | 692  | 695  | 692  | 693  | 692    | 691  | 694 | 694  | 691 | 688  | 694 | 692  | 692 | 694  | 692 | 688  | 692 | 692  | 695 | 692  | 692 | 691  | 693 | 695  | 692 | 692  | 691 | 692  | 692 | 692  | 692 | 693  | 696 | 690  | 691 | 693  | 692 | 691  |     |
| JMHE          | U001 | 977  | 977  | 845  | 851  | 853  | 852  | 853  | 851  | 850  | 849  | 850  | 849  | 850  | 853  | 851    | 849  | 850 | 948  | 980 | 980  | 981 | 976  | 982 | 979  | 976 | 980  | 976 | 979  | 977 | 980  | 978 | 984  | 979 | 980  | 977 | 982  | 977 | 980  | 981 | 980  | 977 | 981  | 980 | 977  | 973 | 979  | 986 | 980  |     |
| JMJD          | U004 | 982  | 978  | 948  | 862  | 850  | 850  | 850  | 851  | 852  | 850  | 853  | 851  | 853  | 851  | 850    | 853  | 849 | 905  | 977 | 980  | 980 | 977  | 979 | 980  | 978 | 978  | 977 | 979  | 981 | 980  | 980 | 978  | 979 | 978  | 977 | 976  | 979 | 977  | 977 | 977  | 977 | 980  | 977 | 975  | 973 | 975  | 978 | 977  |     |
| PKLG          | U003 | 280  | 282  | 282  | 281  | 282  | 281  | 283  | 282  | 281  | 283  | 282  | 280  | 283  | 277  | 280    | 283  | 281 | 283  | 279 | 280  | 282 | 282  | 280 | 281  | 280 | 282  | 281 | 280  | 281 | 279  | 279 | 281  | 281 | 281  | 282 | 282  | 279 | 278  | 281 | 284  | 284 | 283  | 284 | 283  | 281 | 281  | 280 |      |     |
| PKLG          | U004 | 195  | 250  | 266  | 273  | 277  | 280  | 280  | 283  | 280  | 281  | 280  | 281  | 282  | 285  | 284    | 280  | 281 | 281  | 280 | 280  | 276 | 280  | 283 | 281  | 280 | 281  | 280 | 281  | 280 | 281  | 281 | 280  | 281 | 281  | 282 | 280  | 283 | 281  | 278 | 278  | 280 | 278  | 281 | 285  | 282 | 281  | 280 | 281  |     |
| PKLG          | U005 | 467  | 453  | 466  | 466  | 466  | 468  | 470  | 466  | 468  | 470  | 468  | 468  | 468  | 470  | 470    | 466  | 466 | 466  | 466 | 466  | 466 | 468  | 465 | 468  | 466 | 465  | 466 | 467  | 465 | 461  | 468 | 466  | 468 | 468  | 467 | 466  | 466 | 466  | 468 | 468  | 471 | 466  | 469 | 465  | 467 | 466  | 468 | 470  |     |
| TBIN          | U001 | 689  | 691  | 690  | 691  | 690  | 689  | 689  | 689  | 690  | 690  | 687  | 689  | 689  | 687  | 686    | 689  | 690 | 691  | 691 | 689  | 689 | 690  | 689 | 688  | 688 | 686  | 684 | 688  | 693 | 695  | 690 | 691  | 690 | 689  | 690 | 694  | 689 | 690  | 686 | 689  | 692 | 691  | 690 | 691  | 688 | 691  | 690 | 688  |     |
| TBIN          | U002 | 690  | 690  | 688  | 691  | 690  | 693  | 692  | 694  | 694  | 693  | 694  | 693  | 694  | 693  | 691    | 693  | 694 | 692  | 694 | 691  | 692 | 693  | 692 | 691  | 692 | 693  | 689 | 695  | 694 | 691  | 694 | 690  | 696 | 693  | 691 | 696  | 693 | 694  | 692 | 689  | 688 | 693  | 692 | 693  | 691 | 692  | 689 | 692  | 694 |
| TBIN          | U003 | 692  | 692  | 693  | 691  | 692  | 691  | 695  | 692  | 693  | 692  | 693  | 693  | 695  | 691  | 693    | 695  | 692 | 692  | 693 | 693  | 692 | 693  | 692 | 691  | 697 | 692  | 691 | 684  | 695 | 693  | 689 | 701  | 691 | 689  | 695 | 693  | 693 | 687  | 691 | 694  | 691 | 693  | 693 | 691  | 691 | 689  | 691 | 694  | 693 |
| Total ST-Coal |      | 5664 | 5706 | 5581 | 5498 | 5495 | 5497 | 5503 | 5501 | 5499 | 5499 | 5501 | 5503 | 5507 | 5495 | 5496</ |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |

# Daily MW Generation on Friday

| 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 |      |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| SGRI           | GT22 | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |      |
| SGRI           | GT23 | 111  | 115  | 71   | 71   | 70   | 70   | 71   | 70   | 70   | 70   | 70   | 70   | 66   | 109  | 110  | 110  | 113  | 111  | 110  | 110  | 110  | 113  | 113  | 114  | 107  |
| SGRI           | ST24 | 131  | 128  | 96   | 96   | 96   | 96   | 97   | 96   | 96   | 94   | 96   | 92   | 95   | 98   | 97   | 95   | 96   | 125  | 126  | 132  | 197  | 191  | 187  | 189  | 186  |
| SKSP           | BLK1 | 225  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 8    | 128  | 332  | 333  | 332  | 332  | 332  | 323  | 288  | 333  | 287  | 244  |
| TJGS           | GT1A | 224  | 222  | 222  | 224  | 221  | 223  | 222  | 226  | 192  | 165  | 167  | 223  | 216  | 216  | 222  | 200  | 140  | 135  | 234  | 213  | 230  | 223  | 222  | 222  | 220  |
| TJGS           | GT1B | 215  | 213  | 214  | 215  | 213  | 217  | 214  | 218  | 182  | 160  | 160  | 220  | 211  | 209  | 211  | 188  | 139  | 127  | 216  | 205  | 217  | 217  | 216  | 216  | 211  |
| TJGS           | ST1C | 241  | 241  | 241  | 241  | 241  | 241  | 241  | 244  | 223  | 198  | 205  | 237  | 242  | 245  | 242  | 211  | 175  | 193  | 227  | 236  | 250  | 246  | 246  | 246  | 249  |
| TJGS           | GT2A | 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    |
| TJGS           | GT2B | 220  | 220  | 220  | 220  | 220  | 220  | 220  | 144  | 144  | 144  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| TJGS           | ST2C | 121  | 119  | 119  | 113  | 116  | 116  | 116  | 91   | 91   | 88   | 91   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| YPKA           | GT11 | 122  | 123  | 122  | 123  | 124  | 123  | 123  | 125  | 122  | 124  | 123  | 122  | 121  | 123  | 124  | 123  | 125  | 133  | 135  | 135  | 132  | 134  | 133  | 134  | 134  |
| YPKA           | GT12 | 132  | 134  | 133  | 134  | 135  | 134  | 135  | 135  | 134  | 133  | 135  | 133  | 134  | 134  | 134  | 133  | 136  | 134  | 135  | 136  | 132  | 134  | 135  | 132  | 133  |
| YPKA           | ST10 | 120  | 122  | 122  | 122  | 122  | 122  | 122  | 122  | 122  | 122  | 122  | 122  | 121  | 121  | 123  | 122  | 124  | 128  | 128  | 129  | 127  | 127  | 127  | 128  | 127  |
| YPKA           | GT21 | 118  | 119  | 118  | 120  | 120  | 119  | 120  | 120  | 119  | 120  | 119  | 119  | 118  | 119  | 120  | 120  | 121  | 133  | 133  | 132  | 135  | 132  | 133  | 133  | 134  |
| YPKA           | ST20 | 55   | 55   | 55   | 56   | 55   | 55   | 55   | 56   | 55   | 56   | 55   | 55   | 55   | 55   | 53   | 54   | 54   | 54   | 56   | 62   | 63   | 63   | 63   | 62   | 63   |
| Total CCGT-Gas |      | 6820 | 6436 | 6211 | 6267 | 6117 | 5984 | 5695 | 5524 | 5401 | 5253 | 5318 | 5289 | 5422 | 5491 | 5569 | 5472 | 5717 | 6486 | 6789 | 6968 | 7471 | 7493 | 7653 | 7804 | 7585 |
| PTEK           | GT1B | 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    |
| PTEK           | GT2B | 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    |
| SRDG           | GT04 | 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    |
| Total OCGT-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    |
| BSIA           | HY01 | 21   | 21   | 21   | 21   | 21   | 21   | 21   | 21   | 21   | 21   | 21   | 0    | 0    | 0    | 22   | 22   | 22   | 22   | 22   | 22   | 22   | 22   | 22   | 22   | 22   |
| BSIA           | HY02 | 21   | 21   | 21   | 21   | 21   | 21   | 21   | 21   | 21   | 21   | 21   | 22   | 22   | 22   | 21   | 21   | 22   | 21   | 21   | 22   | 21   | 21   | 21   | 21   | 21   |
| BSIA           | HY03 | 22   | 22   | 22   | 22   | 22   | 22   | 22   | 22   | 22   | 22   | 22   | 0    | 0    | 0    | 22   | 22   | 22   | 22   | 22   | 22   | 22   | 22   | 23   | 23   | 23   |
| CEND           | HY01 | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    |
| CEND           | HY02 | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    |
| CEND           | HY03 | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    | 9    |
| CEND           | HY04 | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    | 7    |
| HTRG           | HY01 | 125  | 125  | 125  | 124  | 125  | 125  | 124  | 125  | 124  | 125  | 125  | 125  | 125  | 125  | 124  | 124  | 125  | 124  | 124  | 124  | 124  | 124  | 125  | 125  | 124  |
| HTRG           | HY02 | 125  | 124  | 124  | 124  | 125  | 125  | 124  | 124  | 124  | 124  | 125  | 124  | 124  | 125  | 124  | 125  | 124  | 125  | 124  | 124  | 124  | 124  | 124  | 124  | 125  |
| KNRG           | HY01 | 34   | 34   | 34   | 34   | 34   | 34   | 34   | 34   | 34   | 0    | 0    | 0    | 0    | 0    | 22   | 22   | 22   | 22   | 22   | 22   | 22   | 22   | 22   | 22   | 22   |
| KNRG           | HY02 | 35   | 35   | 35   | 35   | 35   | 35   | 35   | 35   | 35   | 36   | 36   | 36   | 36   | 36   | 36   | 23   | 22   | 22   | 23   | 22   | 22   | 22   | 22   | 22   | 22   |
| KNRG           | HY03 | 34   | 34   | 34   | 34   | 34   | 34   | 34   | 34   | 34   | 0    | 0    | 0    | 0    | 0    | 0    | 22   | 22   | 21   | 22   | 22   | 22   | 22   | 21   | 21   | 21   |
| KNYR           | HY01 | 97   | 98   | 98   | 98   | 98   | 98   | 98   | 98   | 98   | 98   | 97   | 99   | 99   | 98   | 96   | 97   | 98   | 99   | 100  | 99   | 101  | 98   | 98   | 99   | 99   |
| KNYR           | HY02 | 98   | 99   | 99   | 99   | 99   | 99   | 99   | 99   | 99   | 99   | 99   | 98   | 99   | 99   | 99   | 98   | 99   | 99   | 99   | 99   | 99   | 99   | 99   | 99   | 99   |
| KNYR           | HY03 | 98   | 98   | 98   | 99   | 99   | 99   | 99   | 99   | 99   | 99   | 99   | 97   | 99   | 99   | 99   | 97   | 97   | 99   | 100  | 101  | 100  | 102  | 98   | 98   | 100  |
| KNYR           | HY04 | 98   | 99   | 99   | 99   | 99   | 99   | 99   | 99   | 99   | 99   | 98   | 99   | 99   | 99   | 97   | 98   | 99   | 100  | 100  | 101  | 101  | 100  | 102  | 99   | 99   |
| LPIA           | HY01 | 10   | 10   | 10   | 10   | 10   | 10   | 10   | 10   | 10   | 10   | 10   | 10   | 10   | 10   | 10   | 10   | 10   | 10   | 10   | 10   | 10   | 10   | 10   | 10   | 10   |
| LPIA           | HY02 | 18   | 18   | 18   | 18   | 18   | 18   | 18   | 18   | 18   | 18   | 18   | 18   | 18   | 18   | 18   | 19   | 19   | 19   | 19   | 19   | 19   | 19   | 19   | 19   | 19   |
| MNOR           | HY01 | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 5    | 5    | 5    | 5    | 7    | 7    | 7    | 7    | 7    | 7    |
| PGAU           | HY01 | 79   | 80   | 80   | -1   | -1   | -1   | -1   | -1   | -1   | -1   | -1   | -1   | -1   | -1   | -1   | 21   | 21   | 21   | 21   | 21   | 21   | 22   | 22   | 22   | 22   |
| PGAU           | HY02 | 111  | 112  | 111  | -1   | -1   | -1   | -1   | -1   | -1   | -1   | -1   | -1   | -1   | -1   | -1   | -1   | 22   | 22   | 21   | 22   | 21   | 22   | 22   | 22   | 22   |
| PGAU           | HY03 | 79   | 80   | 80   | 22   | -1   | -1   | -1   | -1   | -1   | -1   | -1   | -1   | -1   | -1   | -1   | -1   | -1   | -1   | -1   | -1   | -1   | -1   | -1   | -1   | -1   |
| SIHY           | HY01 | 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    |
| SIHY           | HY02 | 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    |
| SYPS           | HY01 | 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    |
| SYPS           | HY02 | 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    |
| SYPS           | 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    |

### Daily MW Generation on Friday

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