

## Daily System Generation Summary on Thursday

Thursday, June 20, 2019

### Availability at Daily Maximum Demand Hour

|              |           |
|--------------|-----------|
| ST-Coal      | 0 MW      |
| ST-Gas       | 0 MW      |
| ST-Oil       | 0 MW      |
| Hydro        | 2,320 MW  |
| Distillate   | 0 MW      |
| Total TNB    | 2,320 MW  |
| Total IPP    | 15,840 MW |
| Total Co-Gen | 47 MW     |
| Total System | 20,452 MW |

### Generation Mix

| Type                    | MWh            | Percentage      |
|-------------------------|----------------|-----------------|
| Hydro                   | 8,585          | 2.28 %          |
| Gas                     | 42,132         | 11.19 %         |
| <b>Total TNB</b>        | <b>50,717</b>  | <b>13.47 %</b>  |
| ST-Coal                 | 202,403        | 53.76 %         |
| ST-Gas                  | 8,584          | 2.28 %          |
| LSS                     | 1,445          | 0.38 %          |
| Gas                     | 111,377        | 29.58 %         |
| <b>Total IPP</b>        | <b>323,809</b> | <b>86.01 %</b>  |
| Co-Gen                  | 1,168          | 0.31 %          |
| <b>Total Co-Gen</b>     | <b>1,168</b>   | <b>0.31 %</b>   |
| <b>Total Generation</b> | <b>375,694</b> | <b>99.79 %</b>  |
| PLTG                    | -77            | -0.02 %         |
| HVDC                    | -699           | -0.19 %         |
| <b>Interconnection</b>  | <b>-776</b>    | <b>-0.21 %</b>  |
| <b>Net Energy</b>       | <b>376,470</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: | 15:00:00 Hour |
| Total Set On Bus              | 19,037 MW     |
| TNB Generation                | 2,555 MW      |
| IPP Generation                | 14,758 MW     |
| Spinning Reserve              | 1,668 MW      |
| Maximum Demand                | 17,470 MW     |
| Net Energy                    | 376,470 MWH   |
| Load Factor                   | 89.79 %       |

### Fuel Cost

|               |                  |
|---------------|------------------|
| Total Cost:   | 74,024,868.50 RM |
| Cost per Unit | 19.68 cents/kWH  |

### Average Spinning Reserve During Peak Hour

| Type         | MW           |
|--------------|--------------|
| GT           | 479          |
| Hydro        | 326          |
| Syncon       | 699          |
| Thermal      | 128          |
| <b>Total</b> | <b>1,632</b> |

| Time      | Weather | Temperature |
|-----------|---------|-------------|
| Afternoon | Hot     | 32          |
| Morning   | Sunny   | 28          |

### Gas Usage

| Station                   | (mmscfd)     |
|---------------------------|--------------|
| GLGR                      | 52           |
| PGPS                      | 36           |
| SRDG                      | 7            |
| TJGS                      | 211          |
| <b>Total TNB</b>          | <b>306</b>   |
| KLPP                      | 7            |
| MPSS                      | 44           |
| NPRI                      | 155          |
| PGLA                      | 106          |
| PLPS                      | 71           |
| PTEK                      | 21           |
| SGB3                      | 23           |
| SGRI                      | 173          |
| SKSP                      | 49           |
| YPKA                      | 82           |
| PKLG                      | 87           |
| <b>Total IPP</b>          | <b>818</b>   |
| <b>Total Gas</b>          | <b>1,124</b> |
| <b>Total Gas Required</b> | <b>1,124</b> |

### Alternate Fuel Usage

| Station      | (mmscfd) |
|--------------|----------|
| <b>Total</b> | <b>0</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 | 15679 | 14836 | 14305 | 13994 | 13563 | 13416 | 13664 | 13566 | 13949 | 15751 | 16554 | 17105 | 17023 | 16630 | 17212 | 17470 | 17391 | 17087 | 15954 | 15781 | 16776 | 16752 | 16248 | 15940 |

Prepared By: -Select Name-

Checked By: -Select Name-

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(Ir. Shanmugam Thoppalan)  
Pengurus Besar Kanan  
Jabatan Sistem Operasi





# Daily MW Generation on Thursday

| 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  |       |       |    |   |
|------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|---|
| UPIA             | HY01 | 7     | 7     | 7     | 7     | 6     | 6     | 7     | 6     | 6     | 7     | 7     | 6     | 7     | 6     | 6     | 6     | 6     | 6     | 6     | 6     | 7     | 6     | 7     | 7     | 7     | 7     | 7     | 7     | 7     | 7     | 7     | 7     | 7     | 7     | 7     | 7     | 7     | 7     | 7     | 7     | 7     | 7     | 7     | 7     | 7     | 7     |       |       |       |    |   |
| Total Hydro      |      | 156   | 161   | 159   | 159   | 158   | 159   | 160   | 347   | 492   | 493   | 494   | 494   | 495   | 516   | 494   | 495   | 493   | 496   | 495   | 434   | 519   | 525   | 580   | 666   | 458   | 357   | 279   | 354   | 361   | 461   | 462   | 432   | 470   | 418   | 233   | 225   | 222   | 221   | 162   | 212   | 307   | 308   | 308   | 251   | 194   | 187   | 185   | 185   |       |    |   |
| 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     |    |   |
| BDLS             | LSS1 | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 1     | 1     | 3     | 5     | 7     | 11    | 15    | 13    | 22    | 19    | 1     | 4     | 6     | 14    | 20    | 26    | 9     | 6     | 13    | 15    | 10    | 6     | 4     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0  |   |
| CHLS             | LSS1 | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 2     | 4     | 7     | 16    | 15    | 24    | 21    | 24    | 38    | 36    | 16    | 32    | 43    | 37    | 34    | 33    | 33    | 25    | 9     | 3     | 4     | 2     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0  |   |
| GBLS             | LSS1 | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 10    | 21    | 22    | 22    | 24    | 21    | 21    | 33    | 32    | 32    | 32    | 33    | 32    | 32    | 11    | 11    | 11    | 3     | 3     | 3     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0  |   |
| GNLS             | LSS1 | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 6     | 7     | 0     | 1     | 1     | 5     | 7     | 7     | 9     | 9     | 10    | 22    | 27    | 30    | 22    | 30    | 19    | 15    | 11    | 12    | 6     | 2     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0  |   |
| KKLS             | LSS1 | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 1     | 2     | 9     | 5     | 8     | 2     | 0     | 3     | 2     | 2     | 3     | 11    | 18    | 24    | 28    | 50    | 38    | 40    | 29    | 15    | 13    | 8     | 3     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0  |   |
| MCLS             | LSS1 | 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     | 29    | 30    | 34    | 14    | 0     | 6     | 13    | 15    | 11    | 12    | 9     | 5     | 3     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |    |   |
| SPLS             | LSS1 | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 1     | 4     | 5     | 6     | 5     | 13    | 18    | 29    | 22    | 45    | 51    | 51    | 50    | 41    | 42    | 40    | 43    | 40    | 11    | 9     | 7     | 4     | 5     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0  |   |
| SSLS             | LSS1 | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 2     | 6     | 6     | 7     | 7     | 18    | 27    | 9     | 25    | 38    | 26    | 41    | 33    | 29    | 25    | 40    | 32    | 29    | 26    | 16    | 10    | 7     | 5     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0  | 0 |
| Total LSS        |      | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 5     | 21    | 34    | 40    | 65    | 82    | 111   | 106   | 123   | 172   | 188   | 195   | 227   | 224   | 215   | 248   | 222   | 204   | 145   | 102   | 74    | 49    | 31    | 10    | 3     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0  |   |
| PCUF             | CUFG | 2     | 1     | 2     | 2     | 3     | 3     | 3     | 2     | 2     | 8     | 7     | 6     | 8     | 10    | 15    | 20    | 22    | 21    | 22    | 21    | 21    | 26    | 27    | 26    | 26    | 26    | 26    | 26    | 26    | 26    | 27    | 26    | 27    | 27    | 26    | 28    | 26    | 27    | 27    | 27    | 27    | 27    | 27    | 26    | 28    | 27    | 27    |       |       |    |   |
| PCUF             | CUFK | 31    | 30    | 30    | 29    | 30    | 32    | 30    | 30    | 32    | 31    | 29    | 31    | 30    | 30    | 30    | 31    | 31    | 30    | 29    | 30    | 29    | 30    | 27    | 28    | 30    | 30    | 28    | 29    | 29    | 29    | 29    | 30    | 29    | 28    | 28    | 29    | 29    | 29    | 29    | 29    | 29    | 29    | 29    | 28    | 29    | 27    | 30    | 29    | 29    |    |   |
| Total Co-Gen     |      | 33    | 31    | 32    | 31    | 33    | 35    | 33    | 32    | 34    | 39    | 36    | 37    | 38    | 40    | 45    | 51    | 53    | 51    | 51    | 51    | 50    | 56    | 54    | 54    | 57    | 56    | 54    | 55    | 55    | 55    | 56    | 56    | 56    | 55    | 54    | 56    | 55    | 57    | 57    | 57    | 55    | 56    | 56    | 55    | 56    | 55    | 56    | 53    | 58    | 56 |   |
| Total Gen        |      | 15629 | 15130 | 14784 | 14489 | 14246 | 14065 | 13950 | 13655 | 13498 | 13411 | 13381 | 13416 | 13592 | 13742 | 13561 | 13408 | 13952 | 15011 | 15704 | 16110 | 16474 | 16864 | 17046 | 17163 | 16960 | 16664 | 16577 | 16993 | 17095 | 17361 | 17369 | 17340 | 17342 | 17333 | 17066 | 16522 | 15960 | 15671 | 15763 | 16391 | 16727 | 16763 | 16707 | 16538 | 16201 | 16109 | 15907 | 15504 | 15504 |    |   |
| 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         |      | -29   | -29   | -29   | -29   | -29   | -29   | -29   | -29   | -29   | -29   | -29   | -29   | -29   | -29   | -29   | -29   | -29   | -29   | -29   | -29   | -30   | -30   | -29   | -29   | -29   | -29   | -29   | -29   | -29   | -29   | -30   | -30   | -29   | -29   | -29   | -29   | -29   | -29   | -29   | -30   | -31   | -29   | -30   | -28   | -31   | -28   | -28   | -28   |       |    |   |
| TIE-PLTG         |      | -17   | -32   | -19   | -11   | -27   | 7     | -11   | 22    | -32   | -21   | -2    | -30   | -39   | 20    | 29    | 67    | 39    | 22    | -9    | -18   | -31   | -17   | -10   | -6    | -11   | -35   | -6    | 0     | -36   | -11   | -25   | 3     | 15    | 13    | 30    | 48    | 48    | 17    | 19    | -8    | -11   | -15   | -8    | -14   | -12   | -2    | 3     | -34   | -34   |    |   |
| Interconnection  |      | -46   | -61   | -48   | -40   | -55   | -21   | -40   | -7    | -61   | -50   | -31   | -59   | -68   | -9    | -1    | 38    | 10    | -7    | -37   | -46   | -60   | -46   | -40   | -35   | -40   | -64   | -36   | -29   | -65   | -40   | -55   | -26   | -14   | -16   | 1     | 19    | 19    | -12   | -10   | -36   | -41   | -46   | -37   | -45   | -39   | -32   | -25   | -63   | -63   |    |   |
| System Total     |      | 15679 | 15195 | 14836 | 14533 | 14305 | 14090 | 13994 | 13666 | 13563 | 13465 | 13416 | 13479 | 13664 | 13755 | 13566 | 13374 | 13949 | 15027 | 15751 | 16182 | 16554 | 16928 | 17105 | 17219 | 17023 | 16775 | 16630 | 17046 | 17212 | 17446 | 17470 | 17403 | 17391 | 17377 | 17087 | 16520 | 15954 | 15692 | 15781 | 16435 | 16776 | 16817 | 16752 | 16591 | 16248 | 16149 | 15940 | 15575 | 15575 |    |   |
| SRev ST-Coal     |      | 139   | 144   | 130   | 276   | 293   | 278   | 287   | 295   | 288   | 296   | 270   | 290   | 283   | 297   | 315   | 302   | 294   | 172   | 125   | 141   | 126   | 138   | 138   | 153   | 157   | 145   | 149   | 152   | 165   | 169   | 149   | 172   | 166   | 147   | 235   | 161   | 295   | 260   | 190   | 154   | -717  | 156   | 137   | 154   | 145   | 184   | 170   | 160   | 160   |    |   |
| SRev OCGT-Gas    |      | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 1     | 8     | 11    | 12    | 99    | 105   | 20    | 9     | 13    | 11    | 12    | 60    | 48    | 47    | 50    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0  |   |
| SRev CCGT-Gas    |      | 799   | 668   | 657   | 493   | 626   | 813   | 917   | 1395  | 1700  | 1787  | 1861  | 1807  | 1641  | 1647  | 1788  | 1971  | 1627  | 967   | 683   | 644   | 476   | 381   | 349   | 317   | 390   | 416   | 562   | 473   | 406   | 273   | 351   | 310   | 447   | 391   | 526   | 729   | 1279  | 1592  | 1349  | 825   | 564   | 557   | 632   | 510   | 663   | 706   | 785   | 848   | 848   |    |   |
| SRev ST-Gas      |      | 77    | 68    | 67    | 67    | 67    | 69    | 68    | 68    | 67    | 69    | 69    | 69    | 68    | 68    | 68    | 69    | 69    | 68    | 75    | 0     | 0     | 0     | 0     | 0     | 4     | 74    | 75    | 11    | -2    | -2    | -1    | -1    | -2    | -3    | -2    | 55    | 65    | 65    | 65    | 65    | 65    | 65    | 65    | 65    | 65    | 65    | 65    | 65    | 69    | 69 |   |
| SRev LSS         |      | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | -1    | 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      |      | 14    | 16    | 15    | 16    | 14    | 12    | 14    | 15    | 13    | 8     | 11    | 10    | 9     | 7     | 2     | -4    | -6    | -4    | -4    | -3    | -9    | -7    | -7    | -10   | -9    | -7    | -8    | -8    | -8    | -9    | -9    | -9    | -8    | -7    | -9    | -8    | -10   | -10   | -10   | -8    | -9    | -9    | -8    | -9    | -6    | -11   | -9    | -9    |       |    |   |
| Syncon           |      | 928   | 928   | 928   | 928   | 928   | 928   | 928   | 827   | 827   | 827   | 827   | 827   | 827   | 827   | 676   | 827   | 827   | 827   | 827   | 827   | 676   | 676   | 489   | 489   | 489   | 651   | 651   | 928   | 928   | 928   | 741   | 741   | 741   | 741   | 741   | 928   | 928   | 928   | 928   | 928   | 626   | 626   | 626   | 777   | 777   | 777   | 777   | 777   | 777   |    |   |
| Hydro            |      | 149   | 144   | 146   | 146   | 147   | 146   | 145   | 259   | 114   | 113   | 112   | 112   | 111   | 241   | 112   | 111   | 113   | 110   | 111   | 223   | 238   | 319   | 414   | 478   | 474   | 475   | 276   | 251   | 344   | 431   | 430   | 310   | 172   | 220   | 168   | 76    | 79    | 80    | 139   | 139   | 396   | 395   | 395   | 301   | 308   | 265   | 267   | 267   | 267   |    |   |
| S.Reserve Total  |      | 2106  | 1968  | 1943  | 1926  | 2075  | 2246  | 2359  | 2859  | 3009  | 3100  | 3150  | 3115  | 2939  | 2936  | 3112  | 3276  | 2924  | 2140  | 1817  | 1680  | 1513  | 1319  | 1390  | 1441  | 1678  | 1851  | 2088  | 1827  | 1842  | 1617  | 1672  | 1535  | 1575  | 1536  | 1895  | 1990  | 2638  | 2915  | 2661  | 2101  | 926   | 1815  | 1871  | 1824  | 1949  | 1991  | 2053  | 2112  | 2112  |    |   |