Smart Energy Forecast

| Obs | Unnamed: 0 | Date Time Hour Beginning | Original Res Forecast before Loc | Residual Forecast | RSA Contracted Forecast | Dispatchable Generation | Residual Demand | RSA Contracted Demand | International Exports | International Imports | Thermal Generation | Nuclear Generation | Eskom Gas Generation | Eskom OCGT Generation | Hydro Water Generation | Ge |
|-----|---------------|-----------------------------|--|----------------------|-------------------------------|----------------------------|--------------------|-----------------------------|--------------------------|--------------------------|-----------------------|-----------------------|----------------------------|-----------------------------|------------------------------|---------------|
| 1 | 0 | 01APR18:00:00:00 | 0 | 19904.967 | 20367.066 | 20237 | 20237 | 20722.058 | 1215.902 | 1120 | 19444 | 931 | 0 | 0 | 360 | |
| 2 | 1 | 01APR18:01:00:00 | 0 | 19553.899 | 19988.733 | 19744 | 19744 | 20188.493 | 1203.474 | 1106 | 19297 | 930 | 0 | 0 | 360 | П |
| 3 | 2 | 01APR18:02:00:00 | 0 | 19314.284 | 19731.239 | 19631 | 19631 | 20019.603 | 1177.571 | 1117 | 19165 | 931 | 0 | 0 | 360 | |
| 4 | 3 | 01APR18:03:00:00 | 0 | 19342.679 | 19753.554 | 19731 | 19731 | 20079.454 | 1184.312 | 1118 | 19279 | 930 | 0 | 0 | 360 | П |
| 5 | 4 | 01APR18:04:00:00 | 0 | 19538.89 | 19988.365 | 19890 | 19890 | 20237.49 | 1197.271 | 1108 | 19369 | 930 | 0 | 0 | 360 | |
| 6 | 5 | 01APR18:05:00:00 | 0 | 20103.838 | 20600.806 | 20372 | 20372 | 20729.45 | 1270.385 | 1125 | 19342 | 931 | 0 | 0 | 360 | |
| 7 | 6 | 01APR18:06:00:00 | 0 | 21036.213 | 21560.2 | 21280 | 21280 | 21636.397 | 1289.362 | 1178 | 19363 | 931 | 0 | 0 | 360 | П |
| 8 | 7 | 01APR18:07:00:00 | 0 | 22681.703 | 23447.173 | 22651 | 22651 | 23317.205 | 1367.023 | 1214 | 19867 | 932 | 0 | 0 | 475 | П |
| 9 | 8 | 01APR18:08:00:00 | 0 | 24013.352 | 25242.639 | 23677 | 23677 | 24814.033 | 1396.007 | 1236 | 20645 | 931 | 0 | 0 | 481 | $\overline{}$ |
| 10 | 9 | 01APR18:09:00:00 | 0 | 24241.366 | 25795.037 | 24053 | 24053 | 25485.461 | 1395.675 | 1234 | 20880 | 931 | 0 | 0 | 362 | |
| 11 | 10 | 01APR18:10:00:00 | 0 | 23991.598 | 25713.658 | 23708 | 23708 | 25410.147 | 1407.647 | 1217 | 20593 | 930 | 0 | 0 | 360 | П |
| 12 | 11 | 01APR18:11:00:00 | 0 | 23765.734 | 25541.204 | 23225 | 23637.5 | 25441.002 | 1424.925 | 1209 | 20516 | 930 | 0 | 0 | 360 | |
| 13 | 12 | 01APR18:12:00:00 | 0 | 23523.74 | 25278.346 | 22841 | 23308.5 | 25127.191 | 1435.328 | 1205 | 20099 | 930 | 0 | 0 | 360 | П |
| 14 | 13 | 01APR18:13:00:00 | 0 | 23010.643 | 24725.401 | 22264 | 22264 | 24028.863 | 1263.491 | 1220 | 19700 | 930 | 0 | 0 | 360 | П |
| 15 | 14 | 01APR18:14:00:00 | 0 | 22381.707 | 24038.028 | 21625 | 21625 | 23449.222 | 1227.089 | 1234 | 19145 | 930 | 0 | 0 | 360 | П |
| 16 | 15 | 01APR18:15:00:00 | 0 | 22310.223 | 23847.695 | 21510 | 21510 | 23279.236 | 1224.292 | 1253 | 19010 | 931 | 0 | 0 | 360 | |
| 17 | 16 | 01APR18:16:00:00 | 0 | 22660.859 | 24023.786 | 21739 | 21739 | 23361.206 | 1307.277 | 1230 | 19223 | 931 | 0 | 0 | 360 | П |
| 18 | 17 | 01APR18:17:00:00 | 0 | 23678.06 | 24712.683 | 23074 | 23074 | 24243.66 | 1379.294 | 1238 | 19857 | 930 | 0 | 0 | 360 | |
| 19 | 18 | 01APR18:18:00:00 | 0 | 25714.194 | 26458.402 | 25017 | 25017 | 25859.329 | 1613.563 | 1160 | 21146 | 930 | 0 | 0 | 475 | |
| 20 | 19 | 01APR18:19:00:00 | 0 | 25665.505 | 26328.402 | 24863 | 24863 | 25596.216 | 1631.14 | 1136 | 20817 | 930 | 0 | 0 | 480 | |

Smart Energy Forecast

| Variable | N | Mean | Std Dev | Minimum | Maximun |
|----------------------------------|-------|--------------|-------------|--------------|------------|
| Unnamed: 0 | 43824 | 21911.50 | 12651.04 | 0 | 43823.00 |
| Date Time Hour Beginning | 43824 | 1917041400 | 45543756.37 | 1838160000 | 1995922800 |
| Original Res Forecast before Loc | 43824 | 14268.52 | 12959.32 | 0 | 34900.3 |
| Residual Forecast | 43824 | 24583.76 | 2966.13 | 14319.14 | 34895.8 |
| RSA Contracted Forecast | 43824 | 26140.31 | 3270.66 | 15172.65 | 35562.6 |
| Dispatchable Generation | 43824 | 24414.86 | 2800.05 | 13797.94 | 34256.1 |
| Residual Demand | 43824 | 24617.79 | 2852.83 | 13797.94 | 34906.5 |
| RSA Contracted Demand | 43824 | 26091.47 | 3088.52 | 14929.99 | 35344.8 |
| International Exports | 43824 | 1586.09 | 199.0042199 | 58.9260000 | 2410.2 |
| International Imports | 43824 | 1154.94 | 212.3877387 | 0 | 1765.0 |
| Thermal Generation | 43824 | 21712.48 | 1923.78 | 14062.00 | 30136.0 |
| Nuclear Generation | 43824 | 1313.09 | 414.3905955 | 90.0000000 | 1854.0 |
| Eskom Gas Generation | 43824 | 0.2718014 | 6.7522192 | 0 | 323.000000 |
| Eskom OCGT Generation | 43824 | 179.6882887 | 394.7952510 | 0 | 2120.0 |
| Hydro Water Generation | 43824 | 159.9702684 | 204.1038893 | 0 | 604.000000 |
| Pumped Water Generation | 43824 | 559.0394918 | 590.5067498 | 0 | 2739.0 |
| ILS Usage | 43824 | 5.6193188 | 42.6773797 | 0 | 1339.5 |
| Manual Load_Reduction(MLR) | 43824 | 181.0468958 | 577.3308203 | -0.1040000 | 8736.9 |
| IOS Excl ILS and MLR | 43824 | 16.2635870 | 66.3866252 | -460.0000000 | 1130.0 |
| Dispatchable IPP OCGT | 43824 | 83.1553604 | 211.7773326 | 0 | 1021.8 |
| Eskom Gas SCO | 43824 | -1.8181095 | 0.3668793 | -5.0000000 | |
| Eskom OCGT SCO | 43824 | -2.8173462 | 1.7235596 | -16.5300000 | |
| Hydro Water SCO | 43824 | 0 | 0 | 0 | |
| Pumped Water SCO Pumping | 43824 | -743.1408869 | 901.7700071 | -2848.00 | |
| Wind | 43824 | 830.4764857 | 407.3328329 | 15.6630000 | 2915.1 |
| PV | 43824 | 463.2923051 | 547.6589957 | 0 | 2099.4 |
| CSP | 43824 | 167.2986567 | 150.7270012 | 0 | 506.249000 |
| Other RE | 43824 | 12.6089049 | 5.7006776 | 0.8490000 | 46.153000 |
| Total RE | 43824 | 1473.68 | 767.1577873 | 48.7470000 | 4784.6 |
| Wind Installed Capacity | 43824 | 2363.27 | 361.1111846 | 2077.72 | 3303.1 |
| PV Installed Capacity | 43824 | 1806.69 | 304.4809088 | 1474.19 | 2212.0 |
| CSP Installed Capacity | 43824 | 465.1177594 | 67.9404640 | 300.0000000 | 500.000000 |
| Other RE Installed Capacity | 43824 | 25.0823552 | 7.2577328 | 21.7800000 | 50.580000 |
| Total RE Installed Capacity | 43824 | 4660.17 | 679.3806727 | 3873.69 | 6065.8 |
| Installed Eskom Capacity | 43824 | 45319.34 | 1063.04 | 43691.00 | 47517.0 |
| Total PCLF | 43824 | 4699.61 | 1550.44 | 695.7770000 | 11289.4 |
| Total UCLF | 43824 | 10094.31 | 2333.53 | 3849.93 | 17968.5 |
| Total OCLF | 43824 | 994.2090834 | 582.0409164 | 70.0000000 | 6354.9 |
| Total UCLF+OCLF | 43824 | 11088.02 | 2407.55 | 4119.00 | 19482.0 |
| Non Comm Sentout | 43824 | 455.3537558 | 283.9997797 | 0 | 1922.0 |
| Drakensberg Gen Unit Hours | 43824 | 644.3612162 | 483.1298859 | 0 | 2506.0 |
| Palmiet Gen Unit Hours | 43824 | 82.6984778 | 10.0573516 | 17.1000000 | 102.000000 |
| Ingula Gen Unit Hours | 43824 | 42.8524165 | 8.1994050 | 9.1000000 | 58.810000 |











