

February 2019

प्रणाली प्रचालन विवरण

# SYSTEM OPERATION REPORT

SOUTHERN REGION 2018-19



SOUTHERN REGIONAL LOAD DESPATCH CENTRE  
POWER SYSTEM OPERATION CORPORATION LTD  
February 2019 BANGALORE

# SUMMARY REPORT

## Table of Contents

### **A SR Performance**

- 1 IMPORTANT EVENTS**
  - a) COMMISSIONING OF NEW GENERATING UNITS
  - b) COMMISSIONING OF NEW TRANSMISSION LINES
  - c) COMMISSIONING OF NEW SUB-STATIONS
- 2 FREQUENCY PROFILE**
- 3 POWER SUPPLY POSITION**

### **B DETAILED REPORTS**

- 4 INSTALLED CAPACITY**
- 5 SALIENT FEATURES OF SYSTEM CONDITION**
- 6 PERFORMANCE OF CONSTITUENTS**
- 7 RESERVOIR PARTICULARS**
- 8 BRIEF DISCRIPTION OF DISTURBANCES**
- 9 PROGRESS OF SHUNT CAPACITORS**
- 10 FREQUENCY PROFILE CURVE**
- 11 DAILY FREQUENCY VARIATION INDEX OF THE MONTH**
- 12 REGIONAL AVAILABILITY CURVE**
- 13 REGIONAL GENERATION/LOAD CURVE FOR PEAK DEMAND DAY**
- 14 REGIONAL GENERATION/LOAD CURVE FOR MINIMUM DEMAND DAY**
- 15 STATEWISE GENERATION/LOAD CURVE FOR PEAK DEMAND DAY**
- 16 STATEWISE GENERATION/LOAD CURVE FOR MINIMUM DEMAND DAY**
- 17 FLOW CHART OF ENERGY EXCHANGES**
- 18 Net Drawal Schedules and Actual Drawals**
- 19 MAXIMUM DEMAND OF SR STATES**
- 20 CONSUMPTION OF SR STATES**

**SR GRID SUMMARY FOR THE MONTH OF February-2019**

	ANDHRA PRADESH	TELANGANA	KARNATAKA	KERALA	TAMIL NADU
<b>(I) GENERATION DETAILS:(MU)</b>					
HYDRO	228.49	37.26	1096.10	429.53	259.40
THERMAL	1548.86	2538.55	993.84		2479.60
DIESEL	0.00	0.00	0.00	0.00	0.00
GAS	60.67				239.21
<b>TOTAL</b>	<b>1838.02</b>	<b>2575.81</b>	<b>2089.94</b>	<b>429.53</b>	<b>2978.21</b>
INDEPENDENT P.P *	288.67	174.12	632.54	4.38	573.86
INTER REGIONAL IMPORT(HVDC)	As per Annexure				
WIND MILL & SOLAR	<b>840.68</b>	<b>578.68</b>	<b>1352.29</b>	<b>16.23</b>	<b>648.46</b>
CAPTIVE PLANTS * *	0.00	0.00	0.00	0.00	0.00
TOTAL DRAWALS INCL HVDC	2044.02	2124.75	2157.54	1607.47	4546.27
<b>(II)ACTUAL CONSUMPTION (MU)</b>	<b>5011.39</b>	<b>5453.36</b>	<b>6232.31</b>	<b>2057.61</b>	<b>8746.80</b>
<b>(III) MAXIMUM DEMAND(MW)</b>	8969	10196	12012.1675	3845.168	15562
MAX DEMAND ON DATE	27-02-2019	27-02-2019	28-02-2019	28-02-2019	28-02-2019
MAX DEMAND AT TIME	13:00	10:49	12:00	19:15	19:00
FREQUENCY OF MAX DEMAND	50.11	50.09	50.15	49.94	50

REGIONAL MAXIMUM DEMAND:	MW	DATE	TIME	FREQUENCY
	48059	27-Feb-2019	10:50:00	50.09

## II)IMPORTANT EVENTS

### a)COMMISSIONING OF NEW GENERATING UNITS

SL.NO.	STATE/ISGS	STATION NAME	UNIT	CAPACITY (MW)	TYPE	DATE
Nil						

### b)COMMISSIONING OF NEW TRANSMISSION LINES

SL.NO.	CONSTITUENT	ICT/LINE NAME & CKT NO.	KV	Length (CkM)	DATE
1	TSTRANSCO	400 KVJULURUPADU- MANUGURU 1	400	100	9-Feb-19
2	TSTRANSCO	400 KVJULURUPADU- MANUGURU 2	400	100	9-Feb-19
3	POWERGRID	400 KV NLC ST2- NNTPS	400	6.43	12-Feb-19
4	POWERGRID	400 KV PONDY- NNTPS	400	66.47	12-Feb-19
5	POWERGRID	400 kv CADAPA-TUMKUR-1	400	243	26-Feb-19
6	POWERGRID	400 kv CADAPA-TUMKUR-2	400	243	26-Feb-19
7	TSTRANSCO	400 kv SHANKARAPALLY-KETHIREDDYPALLI-2	400		23-Feb-19
8	TSTRANSCO	400 kv SURYAPET-KETHIREDDYPALLI-2	400		23-Feb-19
9	TANTRANSCO	230 kv BHAVANI-KANCHIPURAM-1(IDLE FROM KANCHIPURAM END)	230	80.41	27-Feb-19
10	TANTRANSCO	230 kv BHAVANI-KANCHIPURAM-2 (IDLE FROM KANCHIPURAM END)	230	80.41	27-Feb-19

### c)COMMISSIONING OF NEW SUBSTATIONS

SL.NO.	CONSTITUENT	STATION NAME	KV RATIO	CAPACITY (MVA)	DATE
Nil					

### c)COMMISSIONING OF REACTORS

SL.NO.	CONSTITUENT	STATION/LINE NAME	BUS/LINE	CAPACITY (MVAR)	DATE
Nil					

## III) a) FREQUENCY PROFILE FOR THE MONTH [Hz]

	FREQUENCY (HZ)	DATE	FVI	DATE
MAXIMUM	50.27	27-Feb-19	0.07	21-Feb-19
MINIMUM	49.68	01-Feb-19	0.03	10-Feb-19
AVERAGE	50.00		0.04	

### b) FREQUENCY DISTRIBUTION FOR THE MONTH

The frequency ranges as a percentage of time during the month

%TIME FREQUENCY	< 49.9	49.90-50.05	>50.05
%	7.01	70.52	22.47

## IV) POWER SUPPLY POSITION FOR THE MONTH

	AP	TG	KAR	KER	TN	PONDY	REGION
UNRESTRICTED PEAK DEMAND(MW)	8969	10196	12012.1675	3845.168	15562	399	48059
PEAK DEMAND MET (MW)	8969	10196	12012.1675	3845.168	15562	399	48059
UNRESTRICTED ENERGY REQMT(MU)	5011	5453	6232	2059	8746	207	27708
ENERGY MET (MU)	5011	5453	6232	2058	8747	207	27708

## B) DETAILED REPORTS.

### I. Detailed State wise breakup of installed capacity (MW)

AGENCY	HYDRO	THERMAL	GAS	DIESEL	WIND/OTHERS	NUCLEAR	TOTAL
ANDHRA PRADESH	1797.60	5010.00	272.00	—	5.43	---	7085.03
TELANGANA	2441.76	3682.50	—	—	1.00	---	6125.26
KARNATAKA	3669.45	5020.00	—	0.00	34.00	---	8723.45
KERALA	2017.40	---	—	159.96	150.16	---	2327.52
TAMILNADU	2221.90	4320.00	515.88	—	17.47	---	7075.25
PONDICHERRY	---	---	32.50	—	---	---	32.50
CENTRAL SECTOR	---	13890.00	0.00	—	249.90	3320.00	17459.90
PRIVATE	1054.66	12040.00	5435.71	32.59	35914.97	---	54477.93
TOTAL	13202.77	43962.50	6256.09	192.55	36372.92	3320.00	103306.84

\* The Installed Capacity is reconciled with the data received from states

## **(II) SALIENT FEATURES OF SYSTEM CONDITIONS.**

INSTALLED CAPACITY DERATED (MW)	APTRANSCO	TELANGANA	KPTCL	KSEB	TNEB	PONDY	CENTRAL SECTOR	IPP	REGIONAL
Feb-2018	6492	6335	8973	2322	7630	32.5	15770	43540	91095
Feb-2019	7085	6125	8723	2328	7075	32.5	17460	54478	103306
% INCREASE (i)	9.13	-3.31	-2.78	0.22	-7.28	0.00	10.72	25.12	13.40

ENERGY (GROSS) Unrestricted Requirement(MU)	APTRANSCO	TELANGANA	KPTCL	KSEB	TNEB	PONDY	REGIONAL
Feb-2018	4793	5422	5930	1952	8263	193	26552
Feb-2019	5011	5453	6232	2059	8746	207	27708
Energy Availability (MU)							
Feb-2018	4790	5419	5925	1946	8257	193	26529
Feb-2019	5011	5453	6232	2058	8747	207	27708
Shortage(-)/ Surplus(+)							
Feb 2018 (MU) / %	-3 / (-0.06)	-3 / (-0.06)	-4 / (-0.07)	-6 / (-0.30)	-6 / (-0.07)	0 / (-0.08)	-23 / (-0.09)
Feb 2019 (MU) / %	0 / (-0.00)	0 / (-0.01)	0 / (-0.01)	-2 / (-0.09)	1 / (-0.01)	0 / (-0.01)	0 / (-0.00)

[illegible]

#### IV) PERFORMANCE OF CONSTITUENTS

##### ENERGY GENERATED BY GENERATING STATIONS / UNITS IN SOUTHERN REGION DURING February-2019

ANDHRA PRADESH						
SL.NO.	STATION	EFFECTIVE INSTALLED CAPACITY (MW)			ENERGY GENERATION	
					Feb-19	From 01-04-18 To 28-02-2019
HYDRO						
1	MACHKUND	(3x23+3x17)x70%	=	84.00	28.35	273.00
2	T.B.DAM	(8x9)x80%	=	57.60	6.87	116.76
3	UPPER SILERU	4x60	=	240.00	8.66	314.63
4	DONKARAYI	1x25	=	25.00	60.86	173.94
5	LOWER SILERU	4x115	=	460.00	117.86	971.54
6	SRISAILAM RBPH	7x110	=	770.00	0.25	555.14
7	NSR RT.CANAL.P.H	3x30	=	90.00	0.62	103.32
8	PENNA AHOBILAM	2x10	=	20.00	0.00	1.31
9	Mini Hydro & Nagarjunasagar Tailpond	1+2x25	=	51.00	0.15	5.23
	TOTAL			1797.60	223.62	2514.86
THERMAL						
1	VIJAYAWADA	6x210 + 1x500	=	1760.00	694.37	9854.15
2	RAYALASEEMA	5x210+1X600	=	1650.00	633.18	5666.01
3	KRISHNAPATNAM	2x800	=	1600.00	375.53	6514.52
	TOTAL			5010.00	1703.08	22034.68
GAS/NAPTHA/DIESEL						
1	VIJESWARAM STAGE 1 (GAS)	2x33+1x34	=	100.00	61.31	184.65
2	VIJESWARAM STAGE 2 (GAS)	1x112.5+1x59.5	=	172.00	0.00	851.03
	TOTAL			272.00	61.31	1035.68
WIND/SOLAR						
1	SOLAR JURALA	5.43	=	5.43	0.00	0.00
2	Wind	0	=	0.00	0.00	0.00
	TOTAL			5.43	0.00	0.00
IPP						
1	MINI HYDRO	103.098	=	103.10	7.00	183.90
COAL						
2	HINDUJA POWER CORPORATION LTD	2x520	=	1040.00	0.00	532.55
GAS/NAPTHA/DIESEL						
1	GVK-I (Godavari Gas)	2x45.8+1x48.9+1x75.5	=	216.82	54.71	751.16
2	GVKStg-II EXTENSION(GAS)	1x145+1x75	=	220.00	0.00	0.00
3	SPECTRUM (GAS)	1x46.8+2x46.1+1x68.88	=	208.31	57.12	1062.92
4	LANCO (GAS)	2x115+1x125	=	351.49	94.86	1579.81
5	ISOLATED GAS WELL (GAS) (LVS)	27.04	=	27.04	0.00	0.00
6	RELIANCE ENERGY LTD. (GAS)	1x140+1x80	=	220.00	0.00	0.00
7	VEMAGIRI POWER GENERATION LTD.(GAS)	1x233+1x137	=	370.00	0.00	0.00
8	GAUTAMI CCPP	2x145 + 1x174	=	464.00	0.00	0.00
9	KONASEEMA CCPP	145.9911+140.0899+165	=	444.08	0.00	0.00
10	GMR (BARG)	237	=	237.00	0.00	0.00
	Total			2758.74	8034.54	3393.90
WIND / SOLAR / OTHERS						
1	Solar Energy(RPSSGP, NVVN, Grid interactive)	1996.426	=	1996.43	406.70	363.33
2	Solar Energy (AP State Solar Policy)	844.35	=	844.35		
3	WIND	4061.37	=	4061.37	490.65	8656.03
4	BAGASSE+BIOMASS+WASTE BASED PP+CO-GENERATION (NC)	489.81	=	489.81	117.03	934.42
5	MINI POWER PLANTS	82	=	82.00	0.00	0.00
	RE Total			7473.96	1014.39	9953.78
	TOTAL IPP			11375.79	9807.98	24370.94
	TOTAL ANDHRA PRADESH			18460.824	11795.99	49956.16



TELANGANA						
SL.NO.	STATION	EFFECTIVE INSTALLED CAPACITY (MW)		ENERGY GENERATION		
				Feb-19	From 01-04-18 To 28-02-2019	
HYDRO						
1	SRISAILAM LBPH	6x150	=	900.00	0.38	937.99
2	N'SAGAR	1x110+7x100.8	=	815.60	34.12	297.33
3	NSR LT.CANAL.P.H	2x30	=	60.00	0.00	60.43
4	NIZAMSAGAR	2x5	=	10.00	0.00	2.02
5	POCHAMPAD	4x9	=	36.00	3.14	28.95
6	SINGUR	2x7.5	=	15.00	0.00	0.33
7	JURALA	6x39	=	234.00	0.00	123.94
8	LOWER JURALA	6x40	=	240.00	0.00	154.25
9	PULICHINTALA	4x30	=	120.00	0.00	0.00
10	MINI HYDEL	11.16	=	11.16	0.00	0.00
	TOTAL			2441.76	37.26	667.25
THERMAL						
1	RAMAGUNDAM-B	1x62.5	=	62.50	37.27	376.08
2	KOTHAGUDEM-A	4x60	=	240.00	97.05	1142.23
3	KOTHAGUDEM-B	2x120	=	240.00	61.19	1090.53
4	KOTHAGUDEM-C	2x120	=	240.00	61.80	1826.65
5	KOTHAGUDEM-D	2x250	=	500.00	236.26	3372.89
6	KOTHAGUDEM ST VI	1x500+800	=	1300.00	324.09	3589.90
7	KAKATIYA ST1&ST2	1x500+1x600	=	1100.00	569.55	7624.04
	TOTAL			3682.50	1387.21	19022.32
WIND/SOLAR						
1	Solar	1	=	1.00	0.00	0.00
2	Wind	0	=	0.00	0.00	0.00
	TOTAL			1.00	0.00	0.00
IPP						
1	MINI HYDRO(SMALL HYDRO)	41.605	=	41.61	0.00	0.00
COAL						
1	SINGARENI TPS	2x600	=	1200.00	765.48	7464.16
WIND / SOLAR / OTHERS						
1	Solar	3478.472	=	3478.47	559.35	5219.78
2	BAGASSE+BIOMASS+WASTE BASED PP+CO-GENERATION (NC)	252.2	=	252.20	28.00	333.00
3	WIND	128.1	=	128.10	19.32	255.86
	RE TOTAL			3858.77	47.32	588.86
	TOTAL IPP			5100.38	1931.50	16131.02
	TOTAL TELANGANA			11225.637	3355.97	35820.59
KARNATAKA						
SL.NO.	STATION	EFFECTIVE INSTALLED CAPACITY (MW)		ENERGY GENERATION		
				Feb-19	From 01-04-18 To 28-02-2019	
HYDRO						
1	SHARAVATHY	10x103.5	=	1035.00	485.58	4253.53
2	LINGANAMAKKI.P.H.	2x27.5	=	55.00	26.79	223.82
3	JOG (MGHES)	4x21.6+4x13.2	=	139.20	14.37	176.09
4	NAGJHERI	1x135+5x150	=	885.00	280.72	2453.63
5	SUPA	2x50	=	100.00	62.68	531.61
6	VARAHI	4x115	=	460.00	111.53	1094.27
7	BHADRA POWER HOUSE	1x7+2x12.1+1x2+6	=	39.20	10.15	56.00
8	SIVANSAMUDRAM	6x3+4x6	=	42.00	8.68	282.93
9	SHIMSHA	2x8.6	=	17.20	0.00	29.08
10	MUNIRABAD	1x10 + 3x9	=	28.00	0.12	92.78
11	T.B.DAM SHARE (20 %)	8x9(20%)	=	14.40	2.07	29.08
12	GHATAPRABHA	2x16	=	32.00	12.36	85.31
13	MANI DAM.P.H.	2x4.5	=	9.00	4.58	32.72
14	MINI HYDRO	1.4+0.35+2.7	=	4.45	0.00	0.00
15	MALLAPUR	2x4.5	=	9.00	0.00	0.00
16	KADRA	3x50	=	150.00	26.17	343.09
17	KODASALLI	3x40	=	120.00	29.87	307.32
18	SHARAVATHI TAIL RACE	4x60	=	240.00	47.16	477.76
19	ALMATTI	1x15+5x55	=	290.00	1.60	407.93
	TOTAL			3669.45	1124.43	10876.96



<u>THERMAL</u>						
1	RAICHUR.T.PS.	7x210 +1x250	=	1720.00	704.40	7691.22
2	BELLARY TPS	2x 500+1x700	=	1700.00	382.75	3349.99
3	YERAMARAS TPS	2x800	=	1600.00	0.00	861.56
	TOTAL			5020.00	1087.15	11902.78
<u>GAS/NAPTHA/DIESEL</u>						
<u>WIND/SOLAR</u>						
1	SOLAR	34.00	=	34.00	4.09	37.67
2	Wind	0.00	=	0.00	0.31	4.84
	TOTAL			34.00	4.40	86.74

IPP						
HYDRO						
1	MINI HYDEL	853.46	=	853.46	0.00	0.00
COAL						
1	UPCL(THERMAL)	2x600	=	1200.00	278.27	4553.51
2	JINDAL (COAL & COREX)	2x130+4x300	=	1460.00	27.92	1517.40
				2660.00	306.19	6070.91
GAS/NAPTHA/DIESEL						
1	TATA ELECTRIC (DIESEL)	5x16.26	=	81.30	0.00	0.00
2	RAYAL SEEMA ALKALIES (DIESEL)	3x12	=	36.00	0.00	0.00
3	I T P L (DIESEL)	9	=	9.00	0.00	0.00
				126.30		
WIND / SOLAR / OTHERS						
1	WIND MILL	4737.56	=	4737.56	1648.40	17427.47
2	CO-GENERATION+Biomass	1673.16	=	1673.16		
3	SOLAR	5206.73	=	5206.73		
4	Bio mass	134.03	=	158.80		
RE TOTAL				11776.25	1648.40	17427.47
TOTAL IPP				15416.01	2260.78	23498.38
TOTAL KARNATAKA				24139.460	4476.76	46364.85
KERALA						
SL.NO.	STATION	EFFECTIVE INSTALLED CAPACITY (MW)	ENERGY GENERATION			
			Feb-19	From 01-04-18 To 28-02-2019		
HYDRO						
1	KUTTIADI + EXTENTION + ADDL. EXTN.	3x25 + 50 +50+50	=	225.00	24.83	668.51
2	SHOLAYAR	3x18	=	54.00	20.77	179.22
3	PORINGALKUTHU	4x8	=	32.00	3.28	95.28
4	PORIG. L. BANK	16	=	16.00	7.51	89.00
5	PALLIVASAL	3x7.5+3x5	=	37.50	10.61	174.28
6	SENGULAM	4x12	=	48.00	9.03	113.58
7	PANNIAR	2x16	=	32.00	8.48	94.44
8	NERIAMANGALAM + EXTENSION	3x17.5 +25	=	77.50	13.71	372.95
9	SABARIGIRI	2x60 + 4x55	=	340.00	41.69	1450.11
10	IDUKKI	3x130+3x130	=	780.00	232.13	2699.47
11	IDAMALAYAR	2x37.5	=	75.00	27.79	312.17
12	KALLADA	2x7.5	=	15.00	5.42	66.38
13	PEPPARA	3	=	3.00	0.45	8.30
14	MADUPETTY	2	=	2.00	0.14	1.36
15	MALAMPUZHA	1x2.5	=	2.50	0.27	4.00
16	L.PERIYAR	3x60	=	180.00	14.50	529.89
17	KAKKAD	2x25	=	50.00	4.74	213.57
18	CHEMBUKADAVU	1x2.7+1x3.75	=	6.45	0.00	6.92
19	URUMI	1 x 3.75 + 1 x 2.4	=	6.15	0.00	6.69
20	MALANKARA	3 x 3.5	=	10.50	2.88	30.30
21	LOWER MEENMUTTY	2x1.5 + 1x0.5	=	3.50	0.04	6.67
22	KUTTIADI TAIL RACE	3 x 1.25	=	3.75	0.32	8.26
23	POOZHITHODE	3 x 1.60	=	4.80	0.00	7.65
24	RANIPERUNADU	2 x 2	=	4.00	0.12	3.37
25	VILANGAD	3x2.5	=	7.50	0.00	8.02
26	PEECHI	1 x 1.25	=	1.25	0.24	1.57
TOTAL				2017.40	428.95	7151.96
GAS/NAPTHA/DIESEL						
1	BRAHMAPURAM DGPP (DIESEL)*	3x21.32	=	63.96	0.15	0.28
2	KOZHICODE DPP (DIESEL)*	6x16	=	96.00	0.00	0.15
TOTAL				159.96	0.15	0.42
WIND						
1	WIND MILL	59.30	=	59.30	0.08	1.21
2	solar	90.86	=	90.86	0.70	6.81
TOTAL				150.16	0.78	8.02
IPP HYDRO						
1	MANIYAR	3x4	=	12.00	0.26	21.31
2	KUTHUNGAL	3x7	=	21.00	1.27	60.61
3	ULLUNGAL	2x3.5	=	7.00	0.40	8.73

4	IRUTTUKANAM	1x3	=	3.00	0.00	10.51
5	KARIKKAYAM	3 x 3.5	=	10.50	0.76	45.16
6	MEENVALLAM	1 x 3	=	3.00	0.08	7.52
				<b>56.50</b>	<b>2.78</b>	<b>153.84</b>
<b><u>GAS/NAPTHA/DIESEL</u></b>						
1	RGCCPP,KAYAMKULAM (KSEB) - NTPC	2x116.6(GT)+1x126.38(ST)	=	359.58	0.81	0.81
2	BSES (NAPTHA)	3x40.5(GT)+1x35.5(ST)	=	157.00	0.00	0.00
3	KASARGODE (DIESEL)	3x7.31	=	21.93	0.00	0.00
4	MPS STEEL CASTINGS	1x10	=	10.00	0.00	0.00
				<b>548.51</b>	<b>0.81</b>	<b>0.81</b>
<b><u>WIND/OTHERS</u></b>						
1	AGALI+RAMAKKELMEDU	18.6+14.25	=	57.25	5.62	102.47
2	solar	15	=	59.18	9.60	9.60
3	PCBL Co-Generation	10	=	20.00	0.99	0.99
<b>RE TOTAL</b>				<b>136.43</b>	<b>16.21</b>	<b>113.06</b>
<b>TOTAL IPP</b>				<b>741.44</b>	<b>23.38</b>	<b>422.36</b>
<b>TOTAL KERALA</b>				<b>3068.960</b>	<b>453.26</b>	<b>7582.77</b>

TAMILNADU						
SL.NO.	STATION	EFFECTIVE INSTALLED CAPACITY (MW)			ENERGY GENERATION	
					Feb-19	From 01-04-18 To 28-02-2019
<b>HYDRO</b>						
1	PYKARA	3x6.65+1x11+2x14	=	58.95	0.04	22.04
2	PYKARA MICRO	1x2	=	2.00	0.44	7.70
3	PYKARA ULTIMATE (PUSHEP)	3x50	=	150.00	21.95	475.75
4	MOYAR	3x12	=	36.00	7.43	150.67
5	MARAVAKANDI	1x0.75	=	0.75	0.07	1.23
6	KUNDAH-I	3x20	=	60.00	19.21	182.88
7	KUNDAH-II	5x35	=	175.00	43.96	588.57
8	KUNDAH-III	3x60	=	180.00	25.04	343.75
9	KUNDAH-IV	2x50	=	100.00	2.69	256.46
10	KUNDAH-V	2x20	=	40.00	1.43	44.72
11	SURULIYAR	1x35	=	35.00	2.59	32.64
12	KADAMPARAI	4x100	=	400.00	24.84	607.43
13	ALIYAR	1x60	=	60.00	11.03	0.00
14	POONACHI	1x2	=	2.00	0.02	4.07
15	METTUR DAM	4x12.5	=	50.00	3.80	23.76
16	METTUR TUNNEL	4x50	=	200.00	0.66	0.13
17	LOWER METTUR BARRIAGE - 1 TO 4	8x15	=	120.00	3.38	17.11
18	BHAVANISAGAR MICRO	4x2	=	8.00	3.79	6.01
19	PERIYAR	4x35	=	140.00	17.75	545.49
20	VAIGAI	2x3	=	6.00	0.76	2.43
21	PAPANASAM	4x8	=	32.00	12.09	57.85
22	SERVALAR	1x20	=	20.00	3.07	16.27
23	SARKARAPATHY	1x30	=	30.00	16.32	0.00
24	SHOLAYAR	2x35+25	=	95.00	21.18	0.20
25	KODAYAR	1x60+1x40	=	100.00	10.73	137.01
26	LOWER BHAVANISAGAR	2X4	=	8.00	1.03	0.00
27	SATHANUR DAM PH	1x7.5	=	7.50	2.34	0.73
28	KUNDAH-VI (Parson Valley)	1x30	=	30.00	2.34	0.73
29	MICRO TOTAL	0.70+1.95+2.5+4+1.3+5.25	=	15.70	0.08	49.49
30	BHAVANI KATTALAI BARRAGE - I & II	4x15	=	60.00	0.53	3.44
	<b>TOTAL</b>			<b>2221.90</b>	<b>260.58</b>	<b>3578.57</b>
<b>THERMAL</b>						
<b>COAL/LIGNITE</b>						
1	ENNORE.T.P.S*	2x60+3x110	=	0.00	0.00	0.00
2	TUTUCORIN.T.P.S	5x210	=	1050.00	499.79	5987.66
3	METTUR.T.P.S	4x210 + 1x600	=	1440.00	837.85	7785.55
4	NORTH CHENNAI T.P.S	3x210 + 2x600	=	1830.00	858.62	10643.03
	<b>TOTAL</b>			<b>4320.00</b>	<b>2196.26</b>	<b>24416.23</b>
ENNORE.T.P.S* shutdown of Units permanently from 31.03.17						
<b>GAS/NAPTHA/DIESEL</b>						
1	BASIN BRIDGE (NAPTHA)	4x30	=	120.00	0.00	0.10
2	KOVIL KALAPPAL (GAS)	1x70+1x37.88	=	107.88	50.76	476.39
3	VALATHUR (GAS) STG1	1x60+1x35	=	95.00	48.81	442.83
4	VALATHUR (GAS) STG2	1 x 60 + 1 x 32	=	92.00	20.78	207.73
5	KUTTALAM (GAS)	1x64+1x37	=	101.00	39.14	337.80
	<b>TOTAL</b>			<b>515.88</b>	<b>159.49</b>	<b>1464.85</b>
<b>WIND / SOLAR</b>						
1	TNEB WIND MILL	17.465	=	17.47	0.00	0.00
2	Solar	0	=	0.00	0.00	0.00
	<b>TOTAL</b>			<b>17.47</b>	<b>0.00</b>	<b>0.00</b>
<b>IPP</b>						
<b>LIGNITE/THERMAL</b>						
1	NEYVELI-I (TN) - NLC	6x50+3x100	=	600.00	235.31	3240.51
2	ST - CMS	250	=	250.00	88.21	936.48
				<b>850.00</b>	<b>323.52</b>	<b>4176.99</b>
<b>GAS/NAPTHA/D</b>						

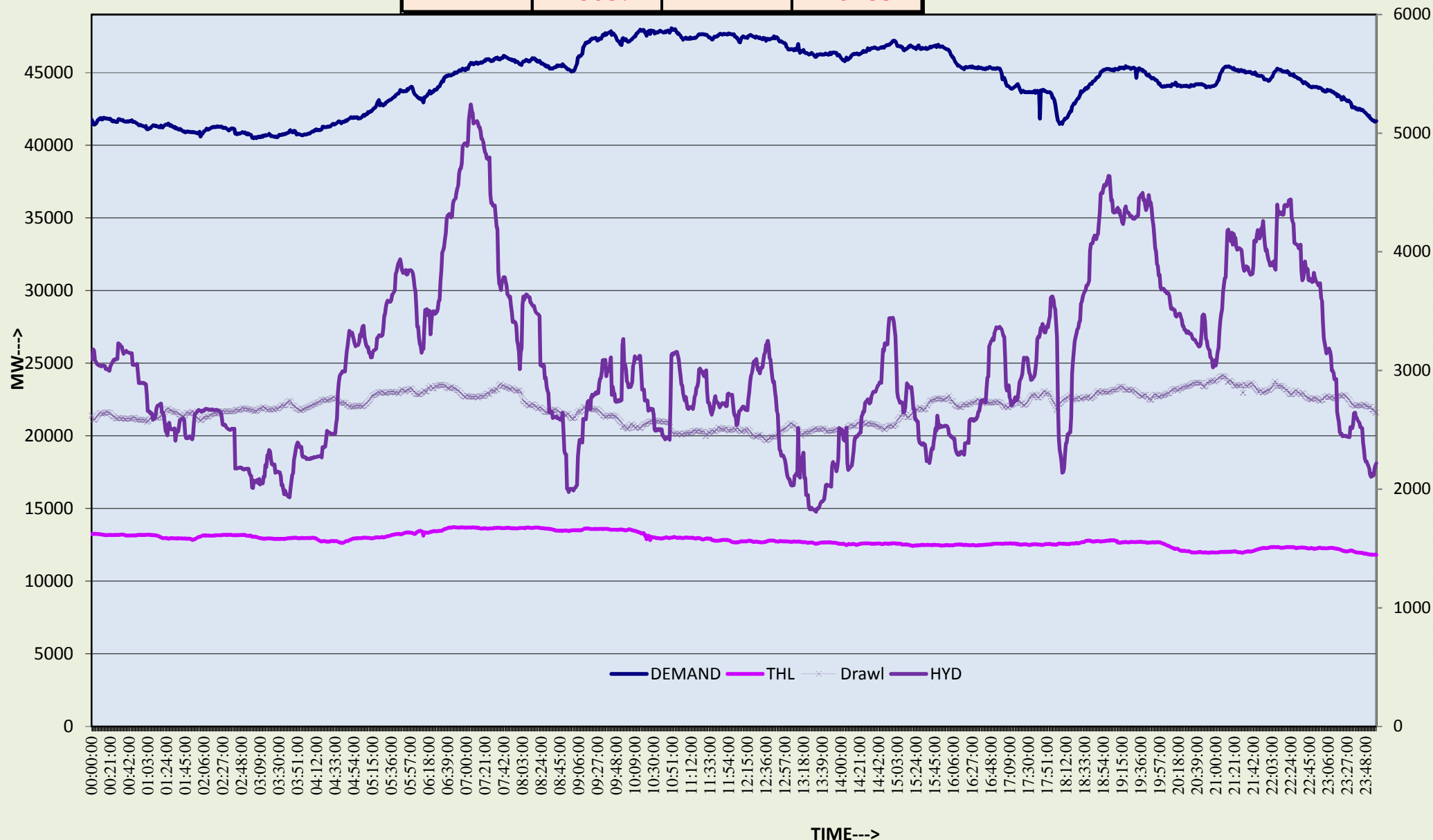
1	WIND MILL *	8359.09	=	8359.09	344.72	23487.66
2	SOLAR	2281.27	=	2281.27	303.75	2967.82
3	CO-GENERATION	688.40	=	688.40	573.856	7737.67
4	BIO-MASS & CPP	237.67	=	266.00		
5	Captive Power Projects (CPPs)	1074.80	=	1074.80	0.000	
	<b>RE TOTAL</b>			<b>11594.76</b>	<b>1222.327</b>	<b>34193.15</b>
	<b>TOTAL IPP</b>			<b>14423.72</b>	<b>2019.89</b>	<b>43969.17</b>
	<b>TOTAL TAMIL NADU</b>			<b>21498.97</b>	<b>4636.22</b>	<b>73428.83</b>



PONDICHERRY					
SL.NO.	STATION	EFFECTIVE INSTALLED CAPACITY (MW)		ENERGY GENERATION	
				Feb-19	From 01-04-18 To 28-02-2019
GAS/NAPTHA/DIESEL					
1	KARAIKAL POWER PLANT (GAS)	22.9 + 9.6	= 32.50	0.00	0.00
	TOTAL		32.50	0.00	0.00
	TOTAL PONDICHERRY		32.50	0.00	0.00
IPP UNDER OPEN ACCESS					
GAS/NAPTHA/DIESEL					
1	LANCO KONDAPPILLI POWER LTD. ST2&ST3	233 + 133+2*(233 + 133)	= 1098.00	0.00	0.00
2	SIMHAPURI ENERGY PVT LTD	4 x 150	= 600.00	0.00	99.46
3	MEENAKSHI ENERGY PVT LTD	2 x 150+1X350	= 650.00	0.00	24.44
4	COASTAL ENERGY	2x600	= 1200.00	467.68	498.95
5	TPCIL	2x660	= 1320.00	355.93	8981.99
6	IL&FS	2x600	= 1200.00	363.83	2716.01
7	SGPL	2x660	= 1320.00	363.83	2105.32
	TOTAL		7388.00	1187.44	12320.85
	TOTAL IPP UNDER OPEN ACCESS		7388.00	1187.44	12320.85
CENTRAL SECTOR					
SL.NO.	STATION	EFFECTIVE INSTALLED CAPACITY (MW)		ENERGY GENERATION	
				Feb-19	From 01-04-18 To 28-02-2019
THERMAL					
COAL					
1	RAMAGUNDAM T.P.S (ISGS) - NTPC	3x200+4x500	= 2600	1465.29	16863.43
2	TALCHER STAGE II (ISGS) - NTPC	4x500	= 2000	1176.04	13189.22
3	SIMHADRI STAGE - I - NTPC	2x500	= 1000	565.15	6224.91
4	SIMHADRI STAGE - II - NTPC	2x500	= 1000	553.29	3617.60
5	VALLUR TPS - NTPC	3x500	= 1500	699.70	6423.09
6	NTPL	2X500	= 1000	264.94	5504.28
7	NTPC KUDGI	3x800	= 2400	923.34	3993.13
LIGNITE					
8	NEYVELI-II (ISGS) - NLC	7x210	= 1470	825.78	9565.08
9	NEYVELI TPS-I (Expansion) (ISGS) - NLC	2x210	= 420	273.13	2407.47
10	NEYVELI TPS-II (Expansion) (ISGS) - NLC	2 x 250	= 500	232.52	769.10
	TOTAL		13890.00	6979.18	68557.29
NUCLEAR					
10	M.A.P.S KALPAKAM (ISGS) - NPC	2x220	= 440.00	143.58	1759.64
11	KAIGA A.P.S (ISGS) - NPC	4x220	= 880.00	468.43	7093.45
12	KUDANKULAM A.P.S (ISGS) - NPC	2x1000	= 2000.00	452.12	7766.14
	TOTAL		3320.00	1064.14	16619.23
SOLAR					
13	RAMANGUNDAM	10.000	= 10.00	1.29	13.97
	TOTAL		10.00	1.29	13.97
WIND					
14	GREEN INFRA	249.900	= 249.90	0.00	0.00
	TOTAL		249.90	0.00	0.00
	TOTAL CENTRAL SECTOR		17469.90	8044.61	85190.49
	GRAND TOTAL		103284.25	33950.25	310664.54

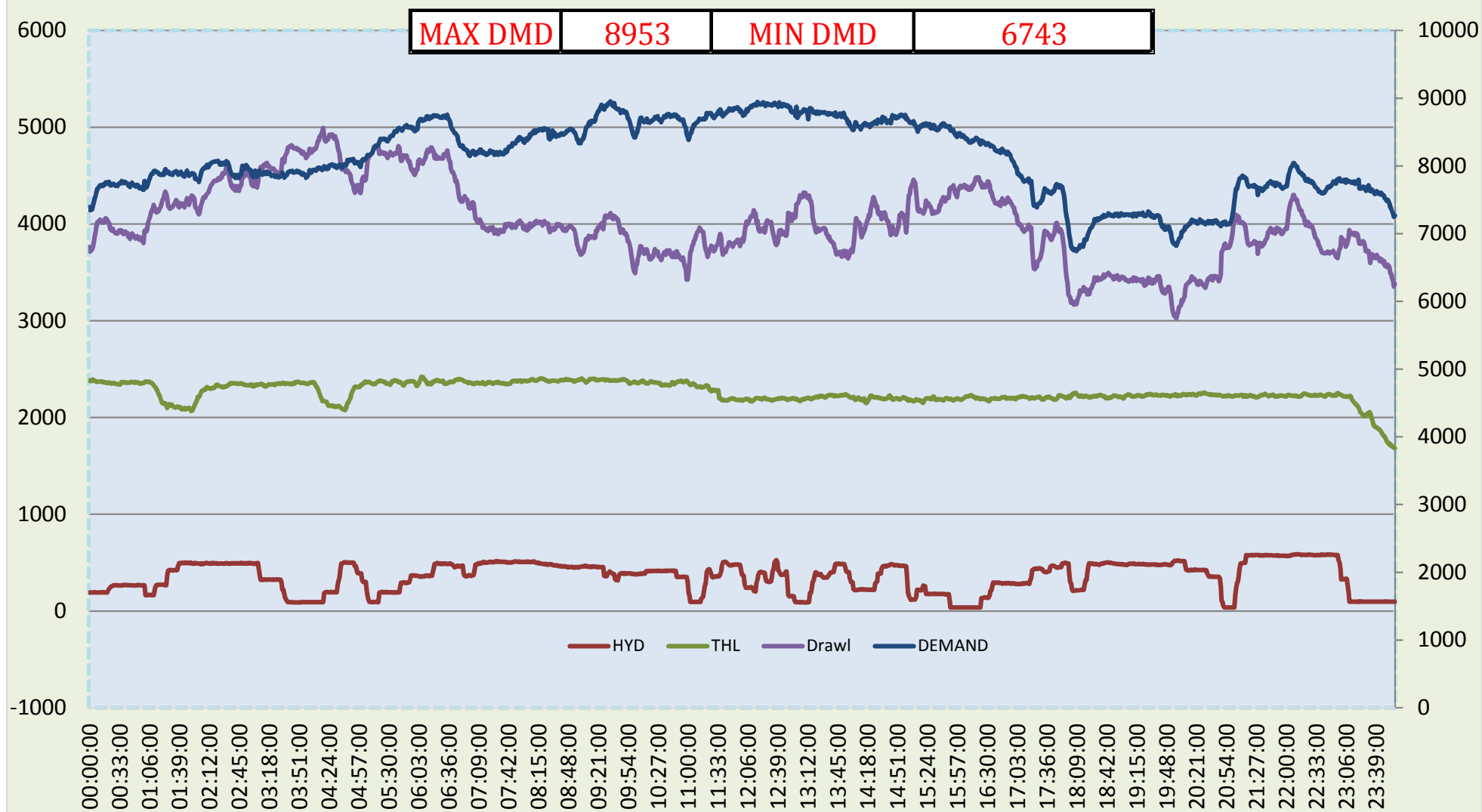
# REGIONAL GENERATION AND DEMAND FOR MINIMUM DEMAND DAY 27-02-2019

MAX DMD 48059 MIN DMD 40485



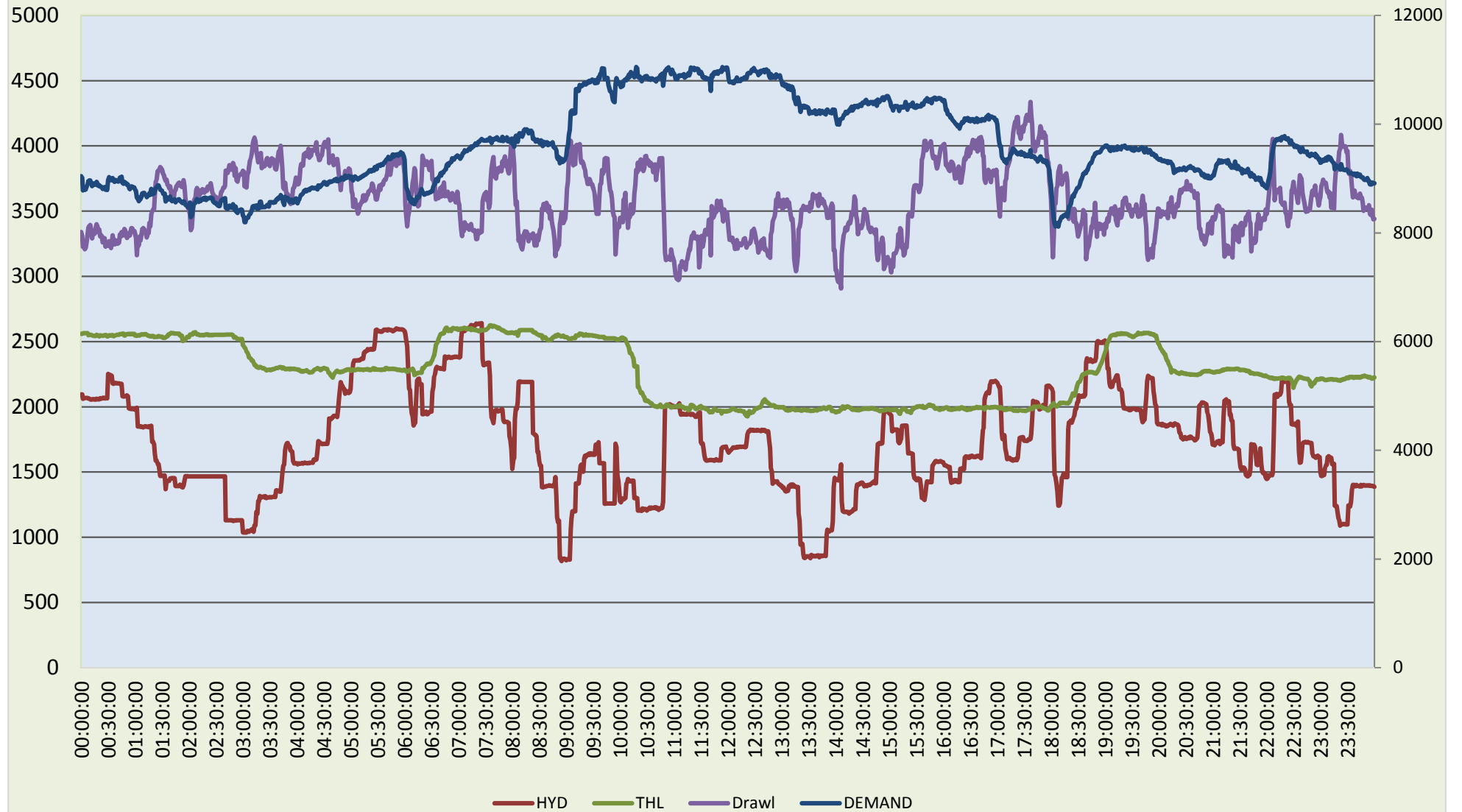


## AP DEMAND ON MAXIMUM DEMAND DAY 27-02-2019



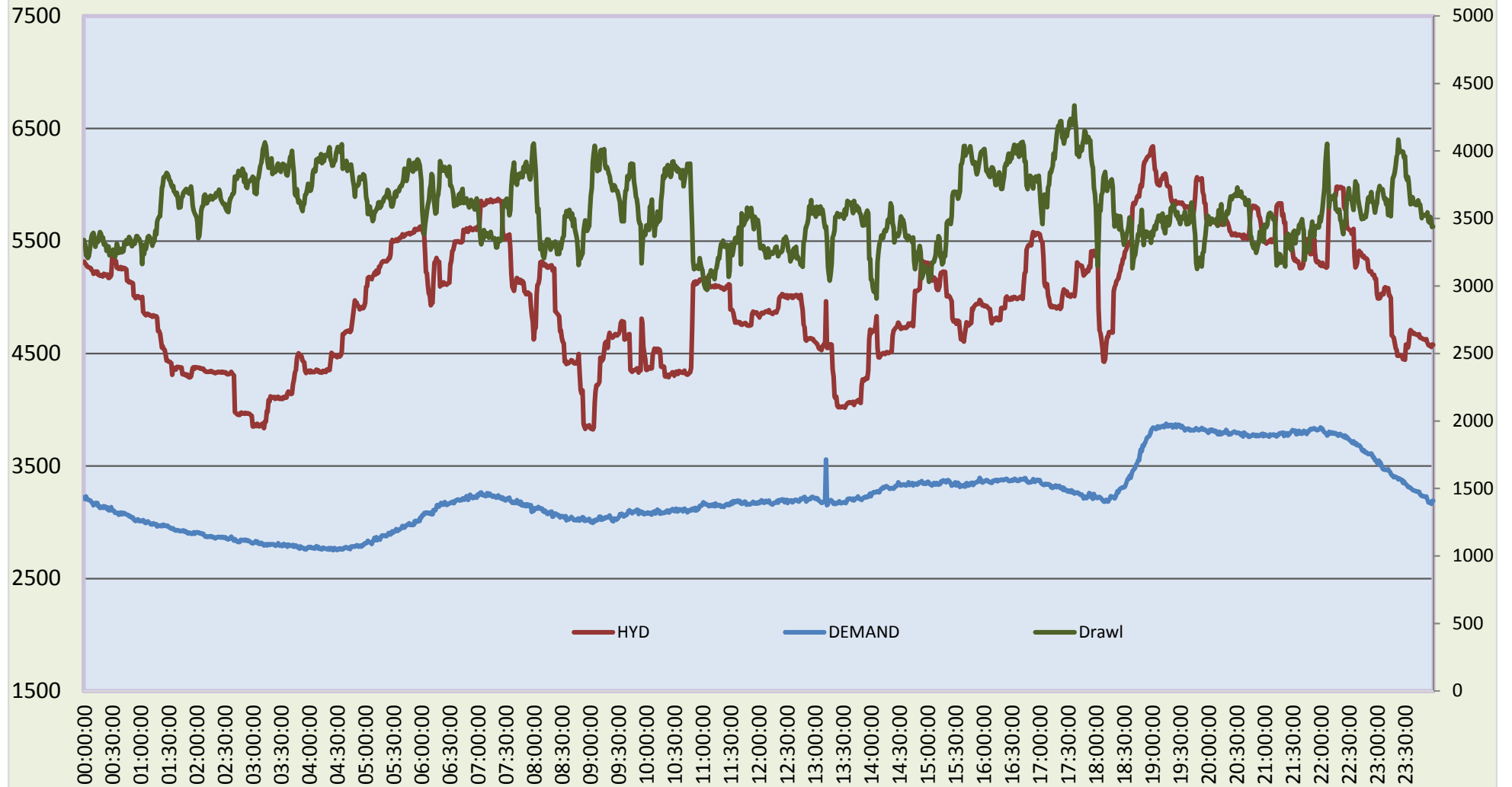
# KARNATAKA ON MAXIMUM DEMAND DAY 27-02-2019

MAX DMD	11051	MIN DMD	8116
---------	-------	---------	------



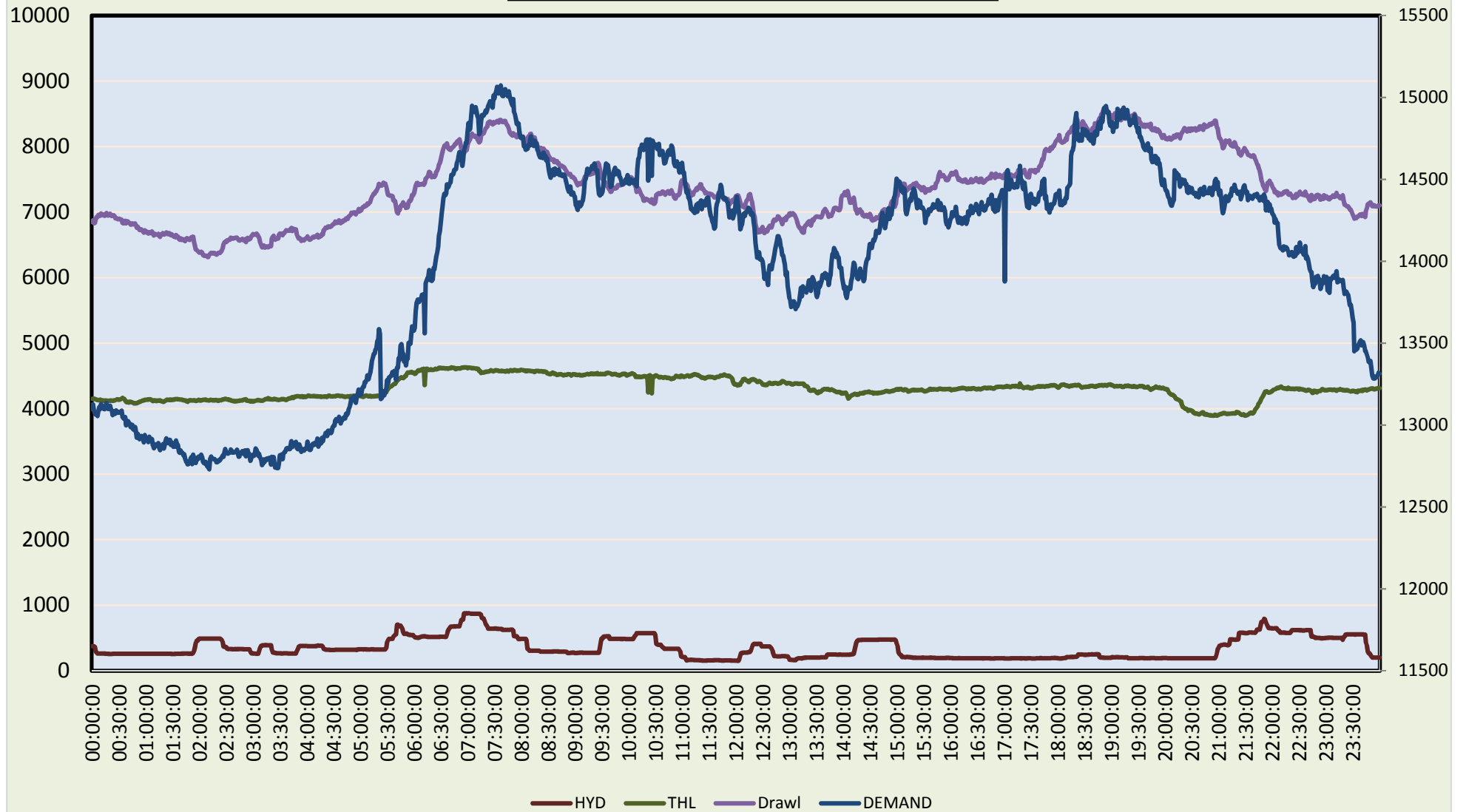
## KERALA ON MAXIMUM DEMAND DAY 27-02-2019

MAX DMD	3876	MIN DMD	2751
---------	------	---------	------



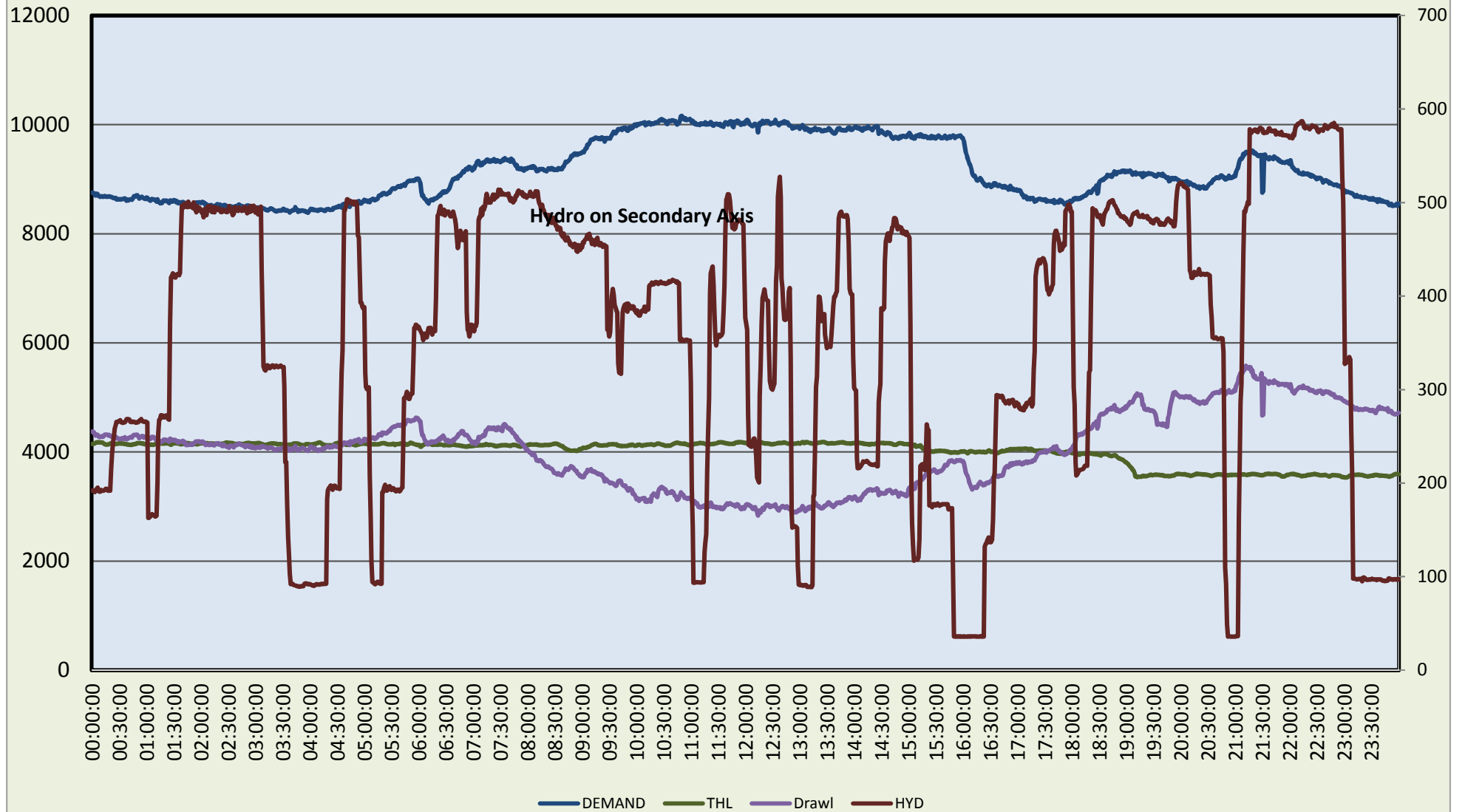
## TAMIL NADU ON MAXIMUM DEMAND DAY 27-02-2019

MAX DMD	15073	MIN DMD	12729
---------	-------	---------	-------

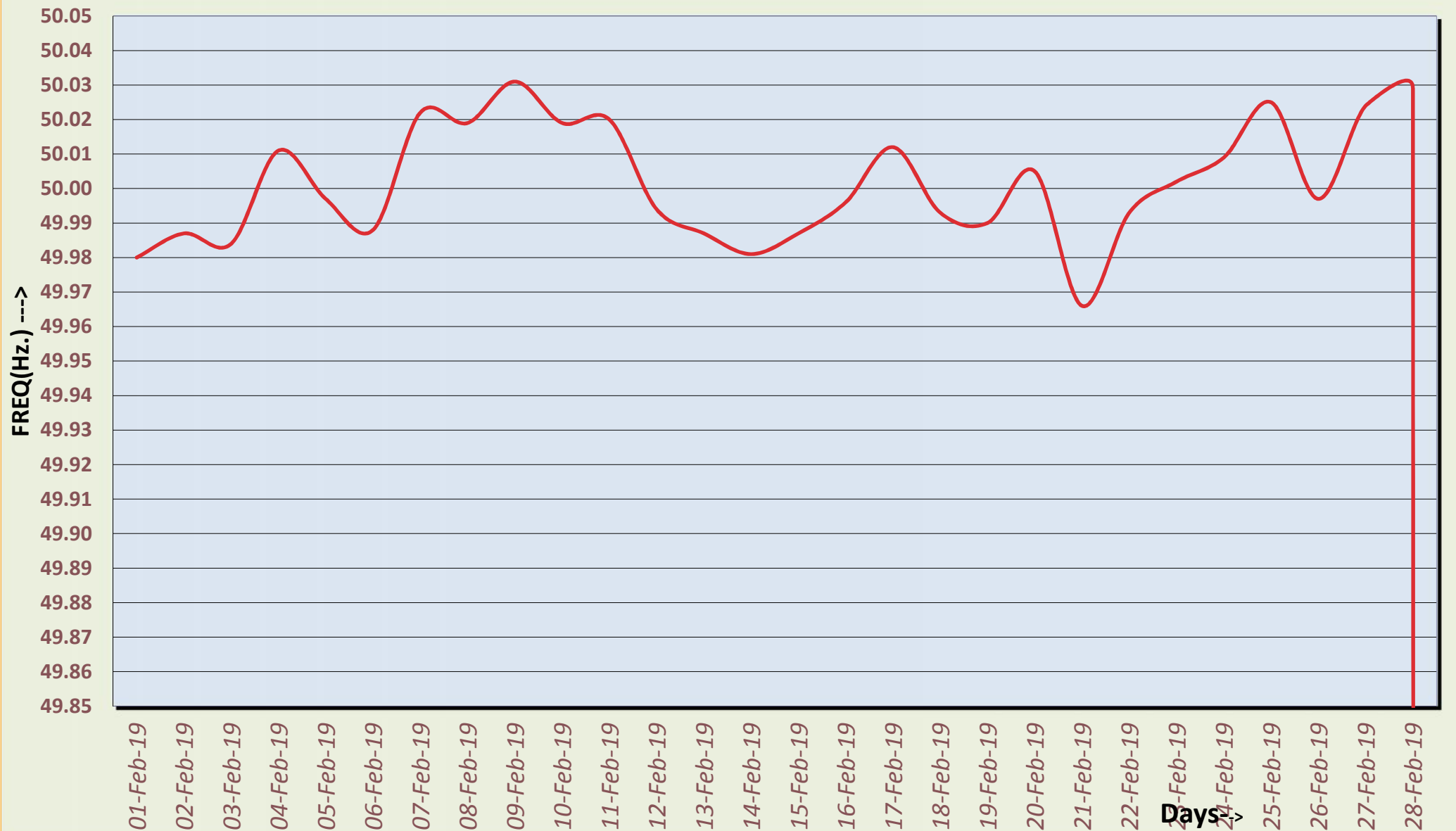


## TELANGANA ON MAXIMUM DEMAND DAY 27-02-2019

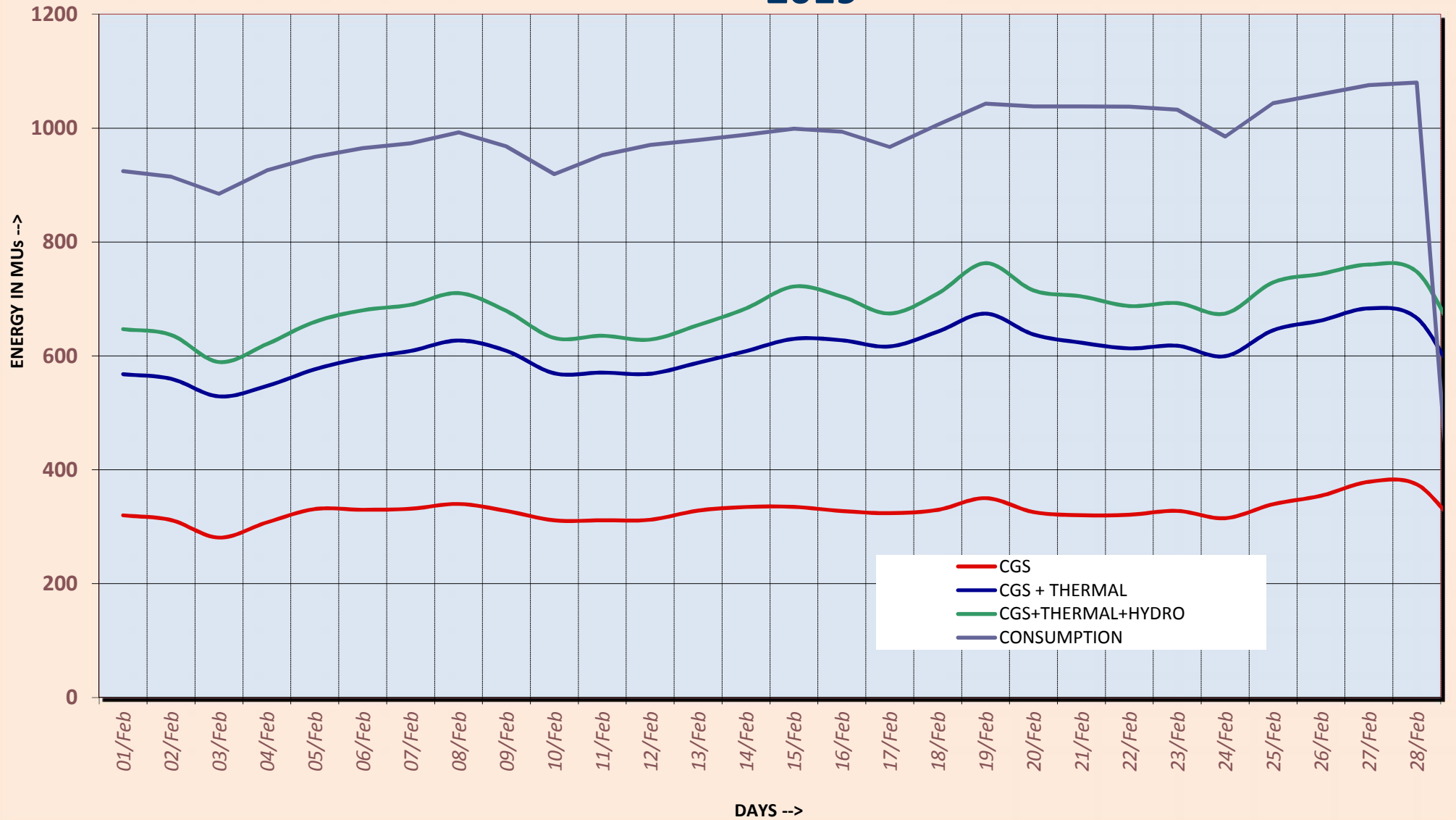
MAX DMD	10161	MIN DMD	8385
---------	-------	---------	------



# FREQUENCY PROFILE FOR THE MONTH OF February-2019



# REGIONAL AVAILABILITY DURING THE MONTH OF February-2019



## FREQUENCY PROFILE FOR February-2019

	MAX	MIN	AVG	<49.9	49.9-50.05	>50.05	FVI	STD_DEV
01-Feb-19	50.17	49.68	49.98	11.51	75.56	12.94	0.050	0.068
02-Feb-19	50.19	49.80	49.99	7.43	77.80	14.77	0.038	0.060
03-Feb-19	50.23	49.71	49.98	12.33	71.60	16.08	0.059	0.075
04-Feb-19	50.17	49.80	50.01	3.03	73.09	23.88	0.032	0.055
05-Feb-19	50.21	49.76	50.00	7.69	72.93	19.39	0.039	0.062
06-Feb-19	50.20	49.72	49.99	11.12	69.62	19.26	0.051	0.070
07-Feb-19	50.24	49.83	50.02	2.23	64.61	33.16	0.037	0.057
08-Feb-19	50.24	49.79	50.02	4.41	65.98	29.61	0.039	0.060
09-Feb-19	50.25	49.79	50.03	2.88	57.64	39.48	0.046	0.060
10-Feb-19	50.20	49.81	50.02	1.30	71.68	27.03	0.030	0.051
11-Feb-19	50.24	49.85	50.02	1.56	67.52	30.91	0.036	0.056
12-Feb-19	50.17	49.82	49.99	5.98	77.00	17.01	0.033	0.057
13-Feb-19	50.21	49.77	49.99	10.20	76.02	13.78	0.044	0.065
14-Feb-19	50.18	49.75	49.98	11.17	74.45	14.39	0.047	0.066
15-Feb-19	50.22	49.70	49.99	12.10	69.70	18.21	0.053	0.072
16-Feb-19	50.16	49.79	50.00	7.16	74.32	18.52	0.036	0.060
17-Feb-19	50.18	49.77	50.01	3.44	69.73	26.83	0.038	0.060
18-Feb-19	50.23	49.81	49.99	7.77	76.23	16.01	0.036	0.060
19-Feb-19	50.18	49.75	49.99	8.57	74.17	17.27	0.043	0.065
20-Feb-19	50.21	49.80	50.01	8.03	66.05	25.91	0.049	0.070
21-Feb-19	50.14	49.72	49.97	20.46	66.47	13.07	0.071	0.077
22-Feb-19	50.17	49.75	49.99	8.47	73.48	18.04	0.041	0.064
23-Feb-19	50.19	49.80	50.00	7.25	72.00	20.75	0.039	0.062
24-Feb-19	50.24	49.75	50.01	6.09	69.25	24.67	0.046	0.067
25-Feb-19	50.23	49.75	50.03	2.56	63.67	33.77	0.039	0.057
26-Feb-19	50.26	49.79	50.00	8.97	69.41	21.62	0.046	0.068
27-Feb-19	50.27	49.84	50.02	1.60	69.10	29.31	0.031	0.050
28-Feb-19	50.23	49.85	50.03	1.00	65.54	33.46	0.038	0.054
<b>AVERAGE</b>	50.21	49.78	50.00	7.01	70.52	22.47	0.04	0.06
<b>MAX</b>	50.27	27-02-2019				21-02-2019	0.071	0.077
<b>MIN</b>	01-02-2019	49.68				10-02-2019	0.030	0.050



**MAXIMUM DEMAND FOR THE MONTH OF February-2019**

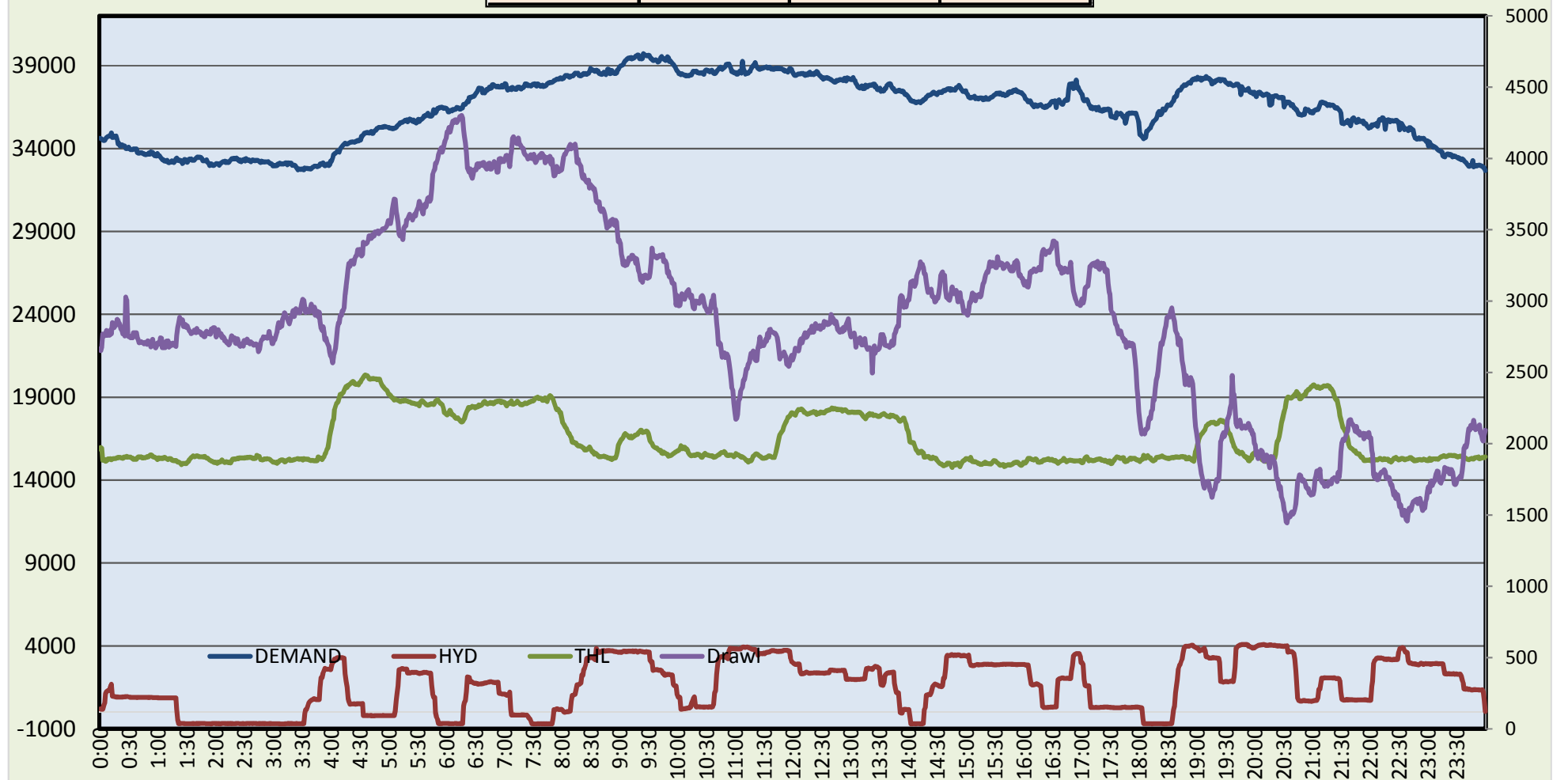
DATE	ANDHRA	TELANGANA	KARNATAKA	KERALA	TAMILNADU	PONDY	S.R
	DEMAND	DEMAND	DEMAND	DEMAND	DEMAND	DEMAND	DEMAND
01-Feb-19	7546	8543	11646	3541	14262	365	43277
02-Feb-19	7845	8539	11546	3578	13953	335	42432
03-Feb-19	7645	8587	10734	3261	13065	313	40920
04-Feb-19	7770	8686	11189	3648	14104	357	42786
05-Feb-19	8071	8751	11348	3706	14372	363	43848
06-Feb-19	8109	8994	11540	3700	14594	360	44508
07-Feb-19	8110	9019	11563	3740	14566	375	44746
08-Feb-19	8300	9238	11636	3672	14817	368	45535
09-Feb-19	8250	8763	11467	3440	14855	369	43592
10-Feb-19	7900	8960	10911	3263	13178	314	39725
11-Feb-19	7997	9329	10489	3712	14451	361	43645
12-Feb-19	8133	9229	10653	3709	14741	373	44227
13-Feb-19	8158	9095	11435	3794	14617	356	44320
14-Feb-19	8216	9062	11411	3736	14521	368	44278
15-Feb-19	8310	9163	11842	3738	14764	364	45351
16-Feb-19	8424	8803	11797	3763	14855	365	43525
17-Feb-19	8364	9034	10767	3469	13330	365	42499
18-Feb-19	8556	9080	10767	3674	14999	368	45730
19-Feb-19	8705	9661	11886	3797	15115	363	46358
20-Feb-19	8683	9480	11919	3837	15265	372	45762
21-Feb-19	8769	9624	11698	3774	15104	369	46230
22-Feb-19	8610	9950	11600	3710	14719	372	46146
23-Feb-19	8468	9746	11468	3629	14494	379	45455
24-Feb-19	8588	9564	10729	3534	13149	338	43437
25-Feb-19	8780	9916	11760	3806	15042	379	46543
26-Feb-19	8877	10054	11736	3825	14779	388	46850
27-Feb-19	8969	10196	11783	3827	14845	378	48059
28-Feb-19	8690	9847	12012	3845	15562	399	47312
AVG	8316	9247	11405	3669	14504	363	44539
MAX	8969	10196	12012	3845	15562	399	48059
MIN	7546	8539	10489	3261	13065	313	39725

**CONSUMTION FOR THE MONTH OF February-2019**

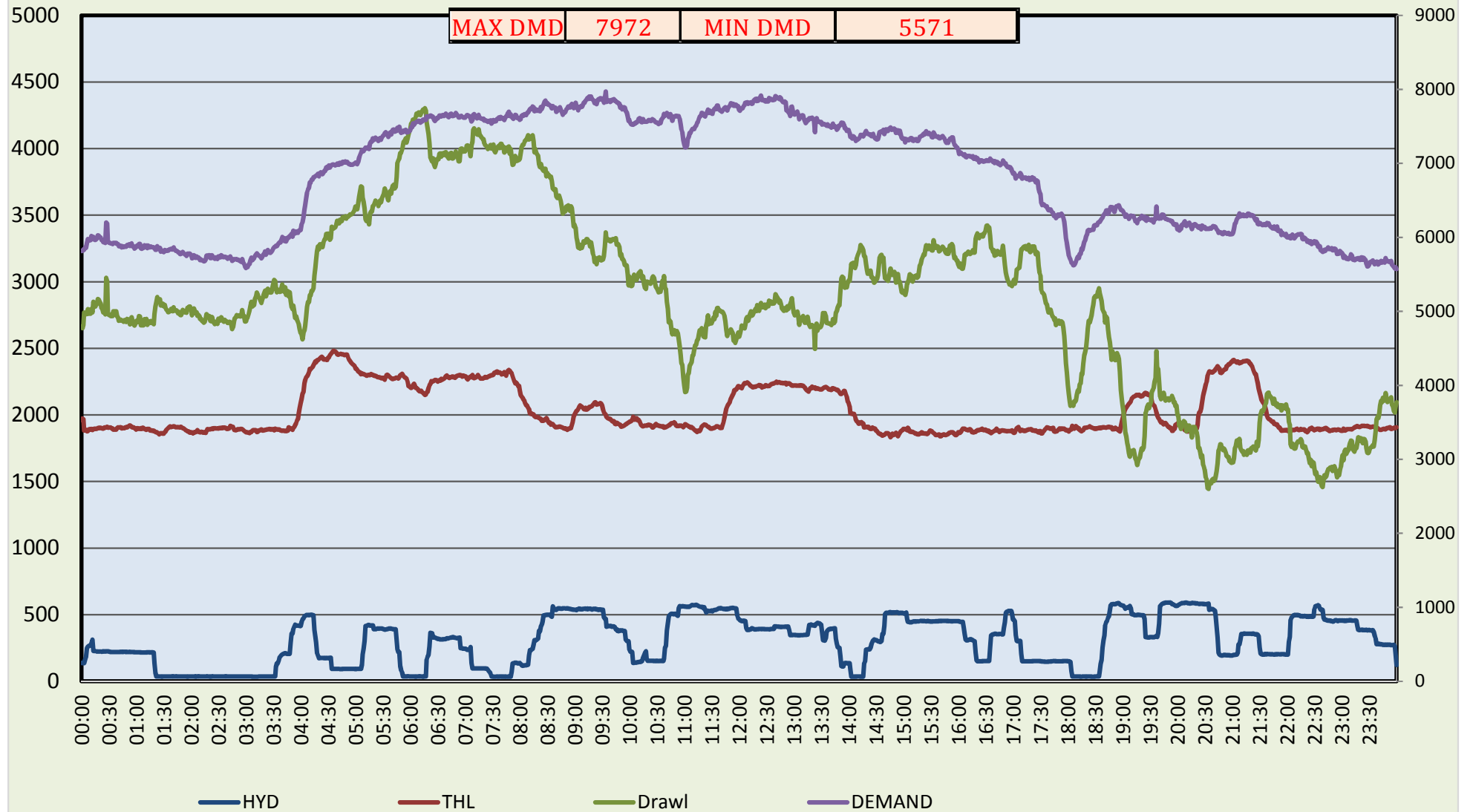
DATE	ANDHRA	TELANGANA	KARNATAKA	KERALA	TAMILNADU	PONDY	S.R
	CONSMPT	CONSMPT	CONSMPT	CONSMPT	CONSMPT	CONSMPT	CONSMPT
01-Feb-19	159.51	167.81	217.56	70.55	302.16	7.11	924.70
02-Feb-19	160.80	169.70	212.85	70.15	294.57	6.59	914.66
03-Feb-19	159.06	172.11	200.42	64.27	282.38	6.48	884.72
04-Feb-19	163.99	173.95	213.11	71.10	296.45	7.02	925.62
05-Feb-19	166.68	179.98	218.58	73.61	303.41	7.17	949.43
06-Feb-19	165.87	183.55	223.39	74.51	310.26	7.33	964.91
07-Feb-19	169.21	187.43	223.32	74.89	311.38	7.37	973.60
08-Feb-19	172.85	188.71	229.86	74.76	318.87	7.62	992.67
09-Feb-19	172.60	185.43	215.20	73.38	313.60	7.40	967.61
10-Feb-19	167.16	182.52	205.10	66.55	291.04	6.72	919.09
11-Feb-19	172.20	190.89	207.94	72.89	301.74	7.14	952.80
12-Feb-19	174.76	193.06	212.34	73.21	309.88	7.37	970.62
13-Feb-19	174.54	192.61	219.54	74.32	310.64	7.29	978.94
14-Feb-19	174.24	194.70	223.23	74.76	313.94	7.43	988.30
15-Feb-19	175.85	192.13	226.18	75.94	321.39	7.54	999.03
16-Feb-19	178.09	189.77	226.76	76.06	315.76	7.51	993.95
17-Feb-19	184.28	194.49	210.23	70.07	300.97	6.92	966.96
18-Feb-19	190.07	195.78	220.32	72.73	319.71	7.52	1006.13
19-Feb-19	192.76	203.28	233.14	75.15	330.87	7.82	1043.02
20-Feb-19	187.73	205.34	234.88	76.56	325.96	7.67	1038.14
21-Feb-19	193.61	205.53	231.54	76.87	323.02	7.67	1038.24
22-Feb-19	192.56	212.43	229.00	75.09	320.99	7.82	1037.89
23-Feb-19	191.94	211.35	228.62	73.95	318.65	7.84	1032.35
24-Feb-19	190.20	209.87	215.44	67.98	294.71	7.16	985.36
25-Feb-19	190.08	217.29	235.05	75.22	318.50	7.61	1043.75
26-Feb-19	194.22	218.53	234.54	77.06	327.62	7.71	1059.68
27-Feb-19	199.56	219.53	237.68	78.24	332.79	7.93	1075.73
28-Feb-19	196.77	215.45	246.34	77.80	335.54	8.09	1079.99
AVG	178.97	194.76	222.58	73.49	312.39	7.39	989.57
MAX	199.56	219.53	246.34	78.24	335.54	8.09	1079.99
MIN	159.06	167.81	200.42	64.27	282.38	6.48	884.72
TOTAL	5011.19	5453.22	6232.16	2057.67	8746.80	206.85	27707.89

## REGIONAL GENERATION AND DEMAND FOR MINIMUM DEMAND DAY 10-02-2019

MAX DMD 39725 MIN DMD 32672

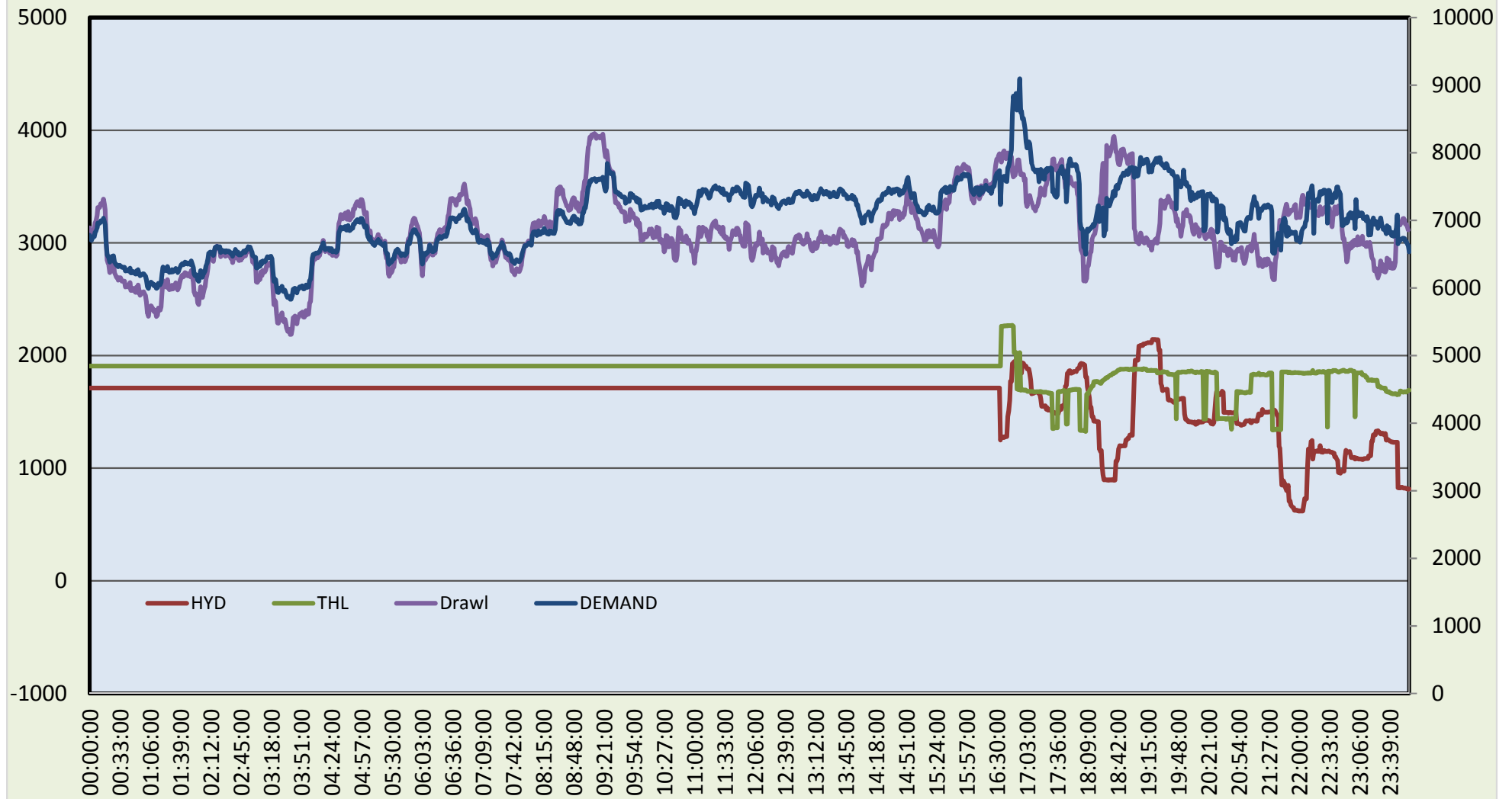


## AP DEMAND ON MINIMUM DEMAND DAY 10-02-2019



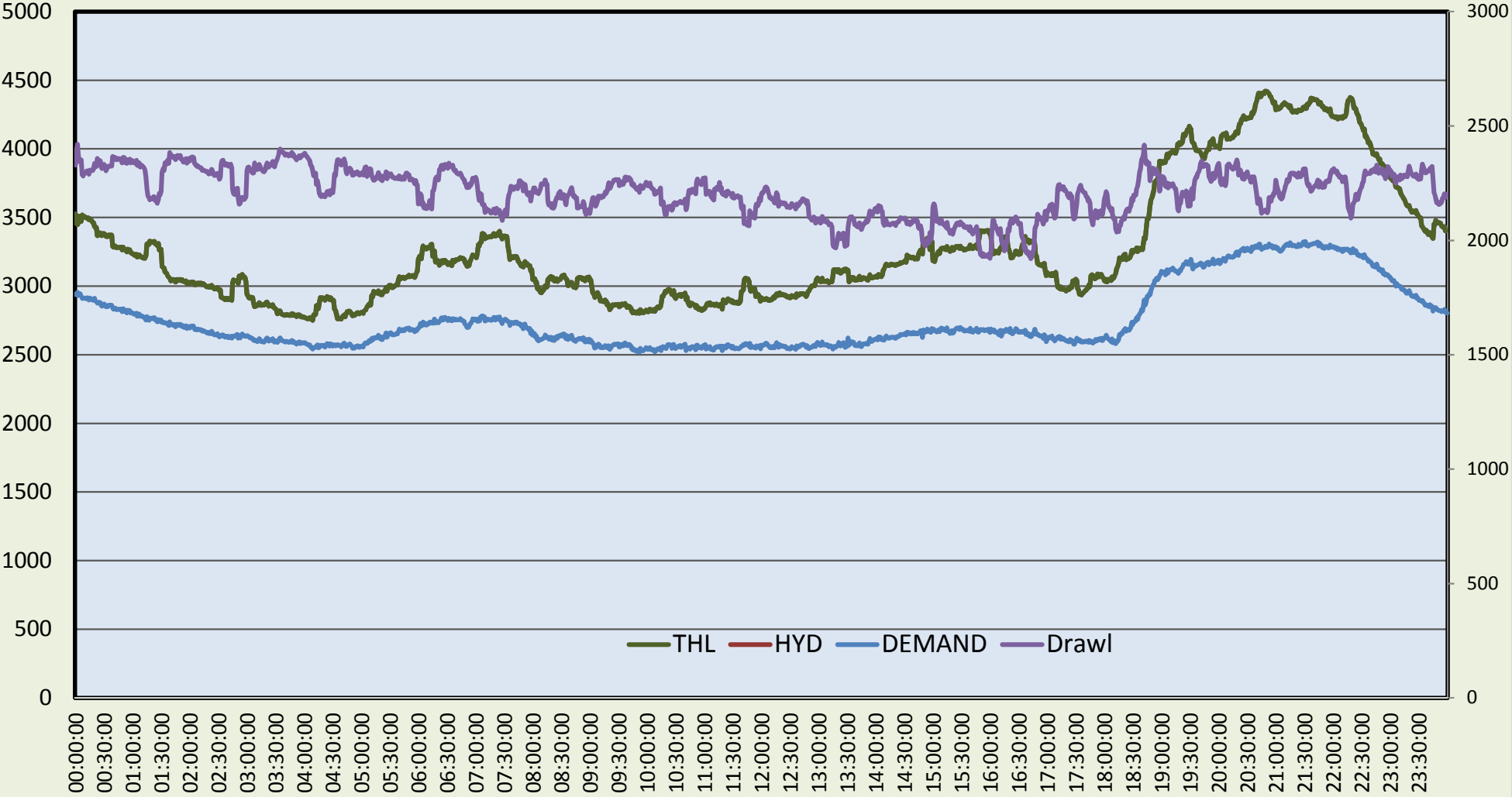
# KARNATAKA ON MAXIMUM DEMAND DAY 10-02-2019

MAX DMD	9095	MIN DMD	5832
---------	------	---------	------



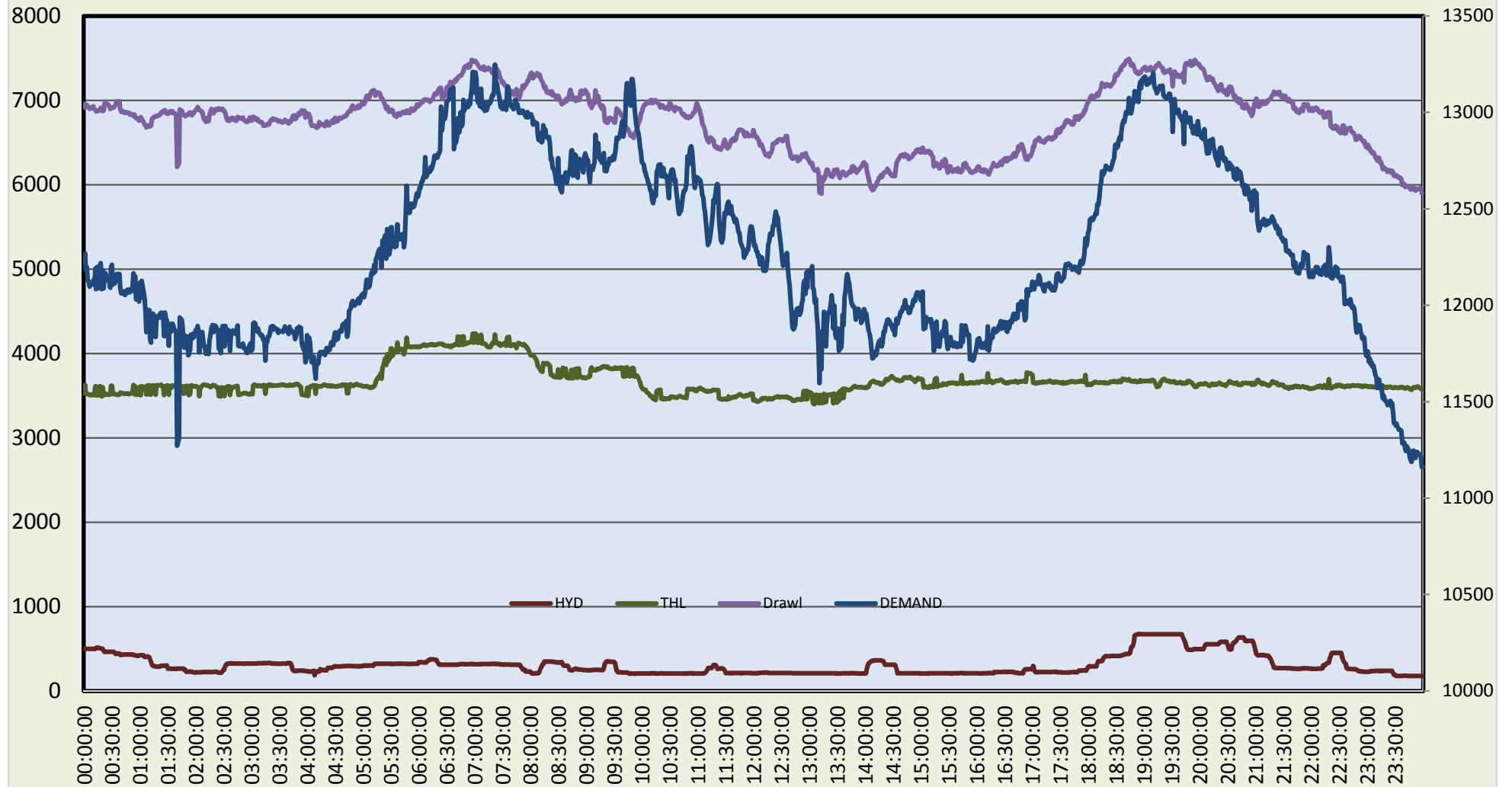
KERALA ON MAXIMUM DEMAND DAY 10-02-2019

MAX DMD	3148	MIN DMD	1969
---------	------	---------	------



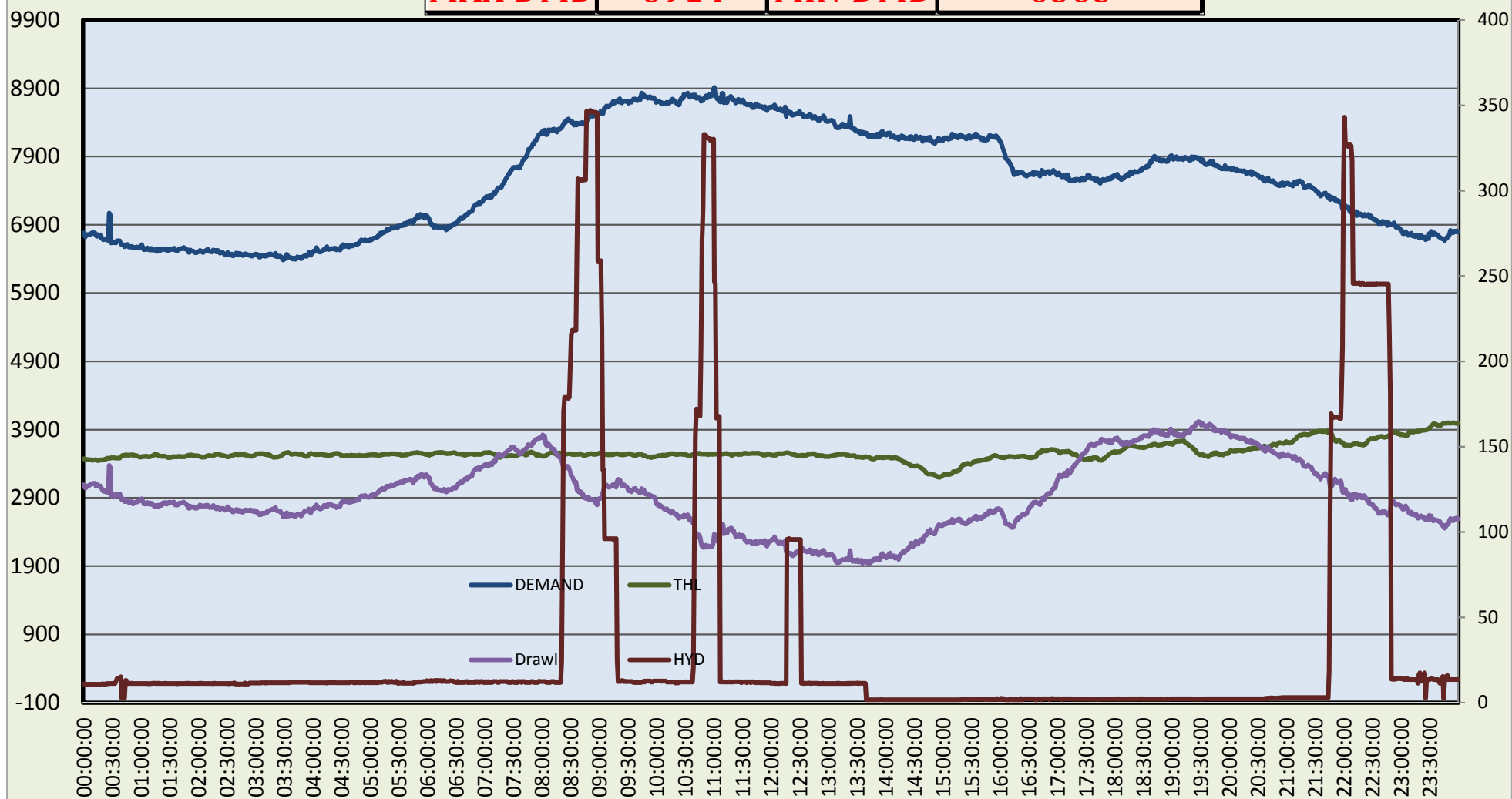
## TAMIL NADU ON MAXIMUM DEMAND DAY 10-02-2019

MAX DMD	13248	MIN DMD	11161
---------	-------	---------	-------



# TELANGANA ON MAXIMUM DEMAND DAY 10-02-2019

MAX DMD	8914	MIN DMD	6385
---------	------	---------	------

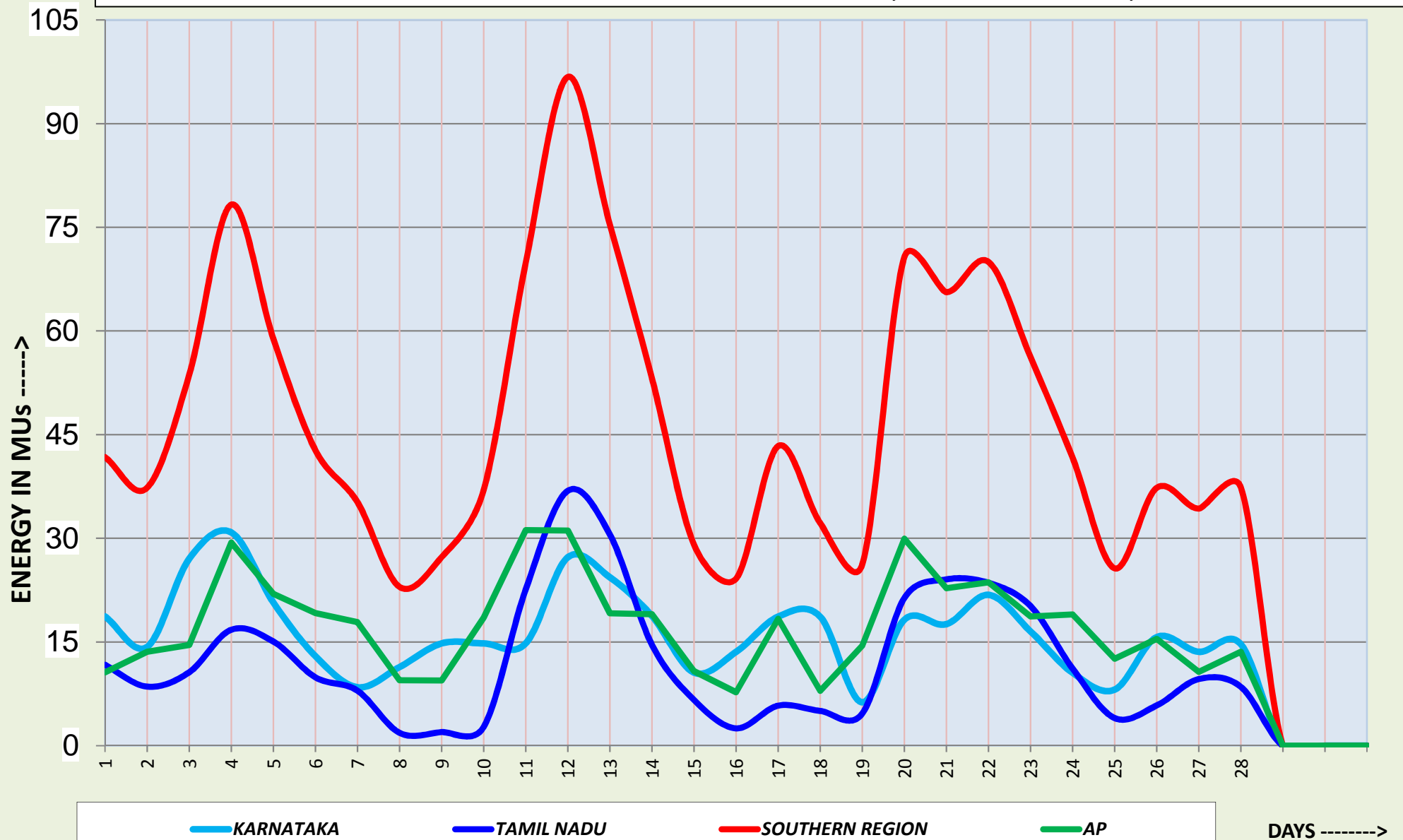




## **NET DRAWAL SCHEDULE AND ACTUAL DRAWAL FOR THE MONTH OF February-2019**

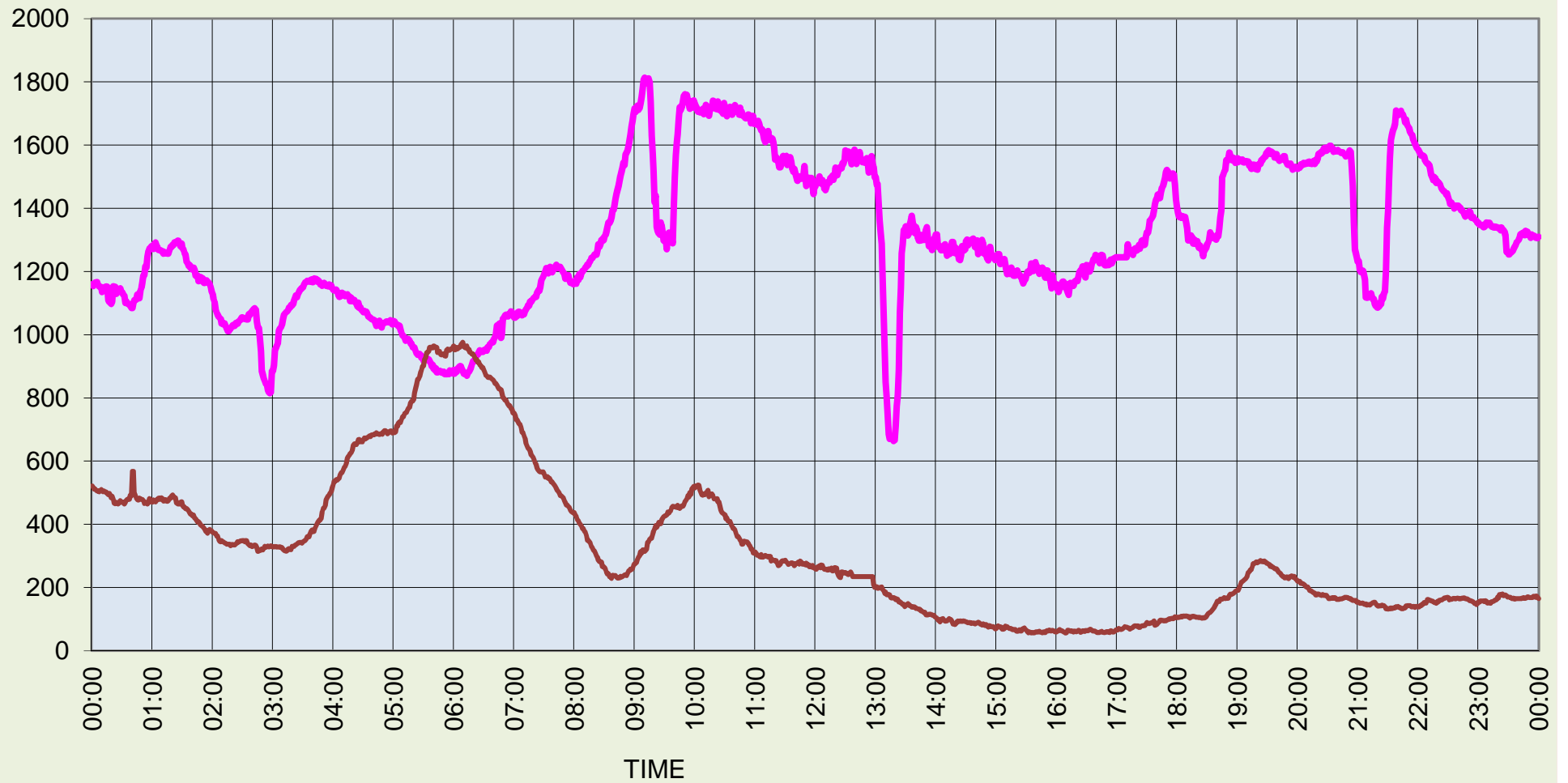
	ANDHRA PRADESH		TELANGANA		KARNATAKA		KERALA		TAMILNADU		PONDICHERRY	
DATE	Net Schd	Act. Drawal	Net Schd	Act. Drawal	Net Schd	Act. Drawal	Net Schd	Act. Drawal	Net Schd	Act. Drawal	Net Schd	Act. Drawal
01-Feb-19	61.90	60.83	72.06	71.83	79.41	79.61	53.30	52.51	155.27	156.12	7.11	7.25
02-Feb-19	65.68	65.06	70.01	69.38	79.16	79.75	52.00	51.31	148.10	148.39	6.59	6.89
03-Feb-19	67.97	67.32	60.63	60.52	64.82	65.38	49.35	48.55	140.68	142.00	6.48	6.73
04-Feb-19	61.63	60.60	66.52	65.62	64.96	65.17	49.23	48.17	149.51	150.70	7.02	7.23
05-Feb-19	72.48	72.04	68.29	67.53	73.98	74.46	53.63	52.81	156.03	156.49	7.17	7.42
06-Feb-19	60.30	60.47	74.78	74.19	82.66	82.31	54.74	53.86	159.21	160.22	7.33	7.47
07-Feb-19	60.17	58.48	77.34	77.10	85.00	84.29	58.42	57.69	166.28	166.67	7.37	7.36
08-Feb-19	72.41	71.13	83.65	83.44	80.49	79.89	57.92	57.27	170.54	170.29	7.62	7.69
09-Feb-19	73.25	71.75	74.88	74.84	75.78	75.76	58.59	57.69	173.32	175.21	7.40	7.56
10-Feb-19	68.25	67.78	70.31	70.00	74.07	74.21	53.06	52.55	162.33	162.99	6.72	6.86
11-Feb-19	63.59	63.12	73.49	71.85	79.24	79.03	58.86	57.92	152.79	153.71	7.14	7.39
12-Feb-19	62.84	62.85	73.46	72.40	77.35	78.13	61.97	61.15	144.01	144.82	7.37	7.62
13-Feb-19	68.26	67.58	70.20	70.18	79.15	79.12	62.86	62.35	153.89	153.64	7.29	7.52
14-Feb-19	61.64	61.92	68.98	68.71	79.68	79.32	62.76	62.16	168.12	168.89	7.43	7.57
15-Feb-19	68.10	67.04	64.79	65.07	78.28	77.61	59.57	59.03	173.02	172.84	7.54	7.69
16-Feb-19	76.35	74.95	62.68	62.04	77.22	77.36	59.31	58.60	173.02	173.12	7.51	7.65
17-Feb-19	69.07	68.87	68.35	68.13	69.34	70.18	57.86	57.02	164.74	165.14	6.92	7.11
18-Feb-19	76.45	75.33	70.05	69.88	79.44	78.91	56.02	55.35	169.05	168.38	7.52	7.64
19-Feb-19	74.94	74.45	75.58	75.15	81.93	82.02	58.75	58.05	174.84	174.29	7.82	7.83
20-Feb-19	65.87	65.45	76.73	76.60	74.93	75.72	58.73	57.68	161.68	162.69	7.67	7.90
21-Feb-19	76.57	76.02	77.31	76.30	68.77	69.50	56.19	55.36	161.99	163.74	7.67	7.79
22-Feb-19	78.84	78.32	84.65	83.54	70.31	70.32	58.39	57.21	161.54	162.19	7.82	7.93
23-Feb-19	83.14	82.66	82.69	82.55	78.96	78.81	59.97	58.90	158.33	158.61	7.84	7.95
24-Feb-19	82.46	81.91	79.90	79.66	74.75	74.69	53.58	52.64	149.89	150.43	7.16	7.33
25-Feb-19	89.19	88.05	87.84	87.08	81.96	80.95	58.39	57.33	167.57	167.35	7.61	7.82
26-Feb-19	88.80	88.29	91.03	90.43	76.55	76.20	59.21	58.23	176.71	176.97	7.71	7.97
27-Feb-19	96.45	95.52	97.19	96.80	85.93	86.12	63.21	62.34	177.18	177.77	7.93	8.02
28-Feb-19	97.42	96.38	101.36	100.67	83.42	83.88	61.60	60.75	176.63	176.17	8.09	8.10
Total	2044.02	2024.17	2124.75	2111.49	2157.54	2158.70	1607.47	1584.48	4546.27	4559.83	206.85	211.29

DAY WISE WIND GENERATION OF SR FROM 01-February-2019 to 28-February-2019 in Mus



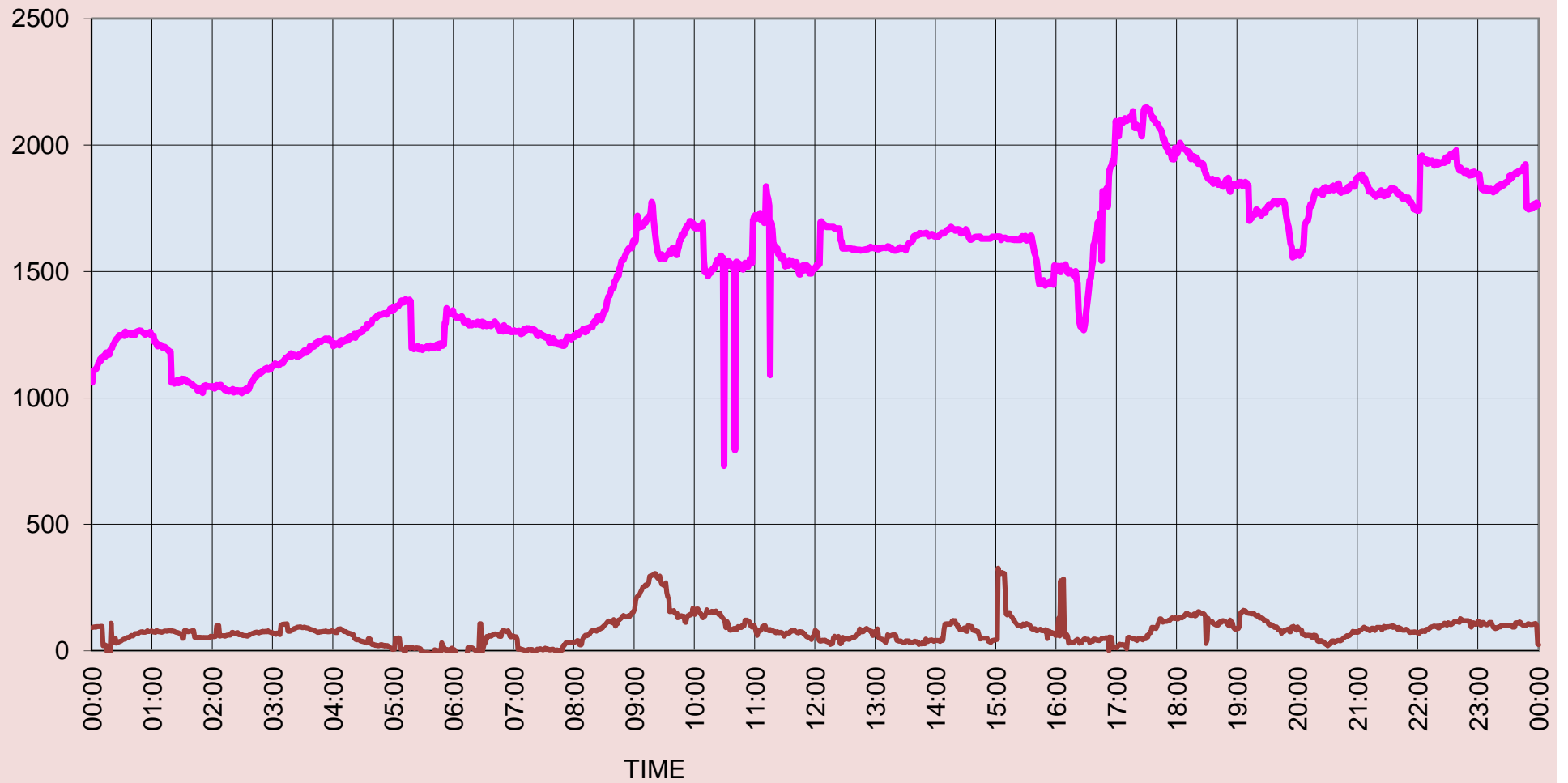
## AP WIND GENERATION ON MAXIMUM AND MINIMUM GENERATION DAYS

Maximum 31.19 MU on 11-02-2019/ Minimum 7.74 MU on 16-02-2019



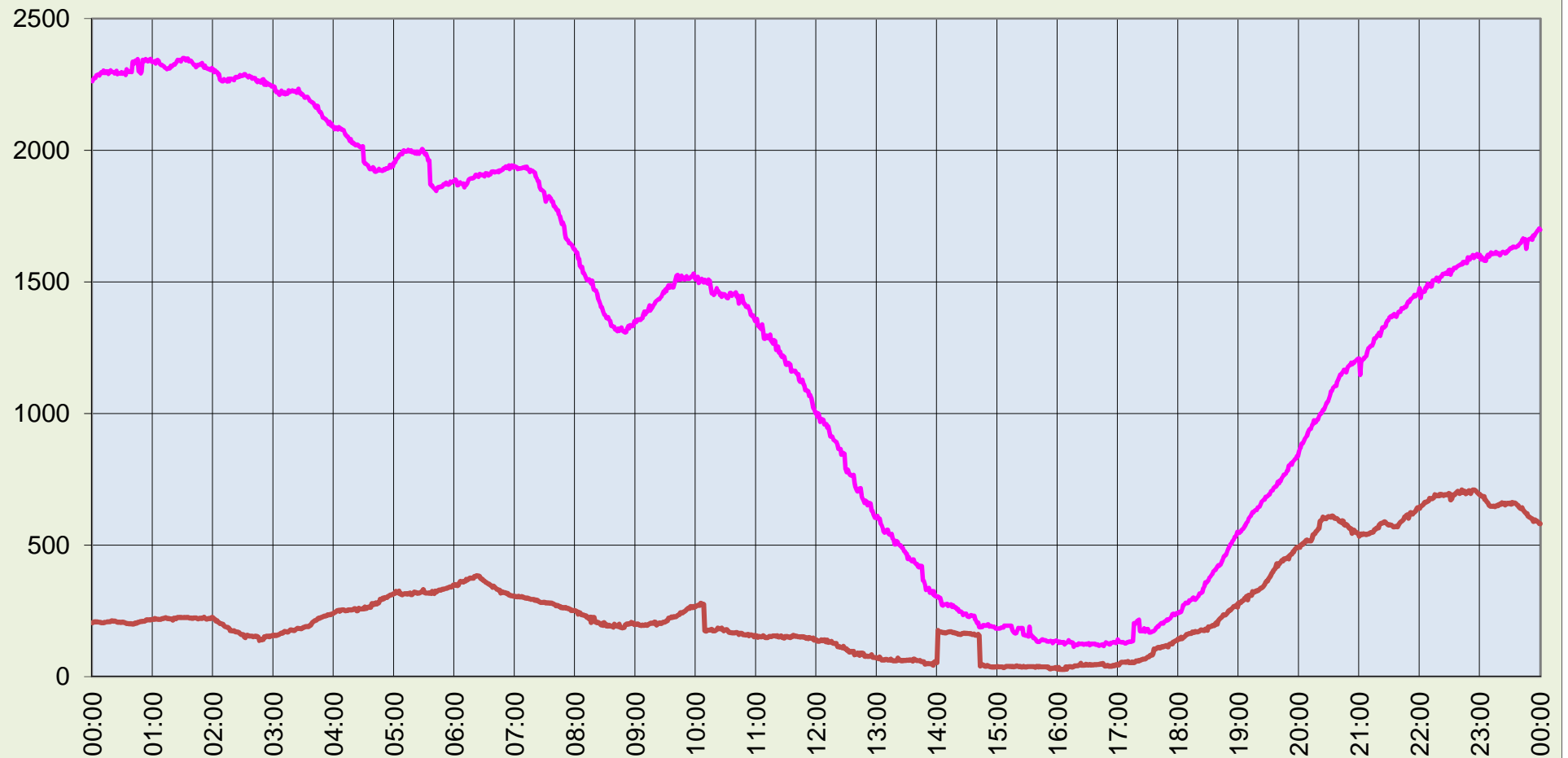
## TAMIL NADU WIND GENERATION ON MAXIMUM AND MINIMUM GENERATION DAYS

Maximum 36.87 MU on 12-02-2019/ Minimum 1.86 MU on 08-02-2019



## KARNATAKA WIND GENERATION ON MAXIMUM AND MINIMUM GENERATION DAYS

Maximum 30.86 MU on 04-02-2019/ Minimum 6.28 MU on 19-02-2019



# पावर सिस्टम ऑपरेशन कारपोरेशन लिमिटेड

(एक भारत सरकार का उद्यम)

**POWER SYSTEM OPERATION CORPORATION LIMITED**

(A Govt. of India Enterprise)

दक्षिण क्षेत्रीय लोड डिस्पैच केन्द्र / SOUTHERN REGIONAL LOAD DESPATCH CENTRE

29, रेस कोर्स क्रॉस रोड, बेंगलूर - 560 009. / 29, RACE COURSE CROSS ROAD, BANGALORE - 560 009.

Phone - 080 2225004, Fax - 080 22268725, E Mail - srlcos@posoco.in, Website - www.srldc.org,  
www.srldc.in