

**QUARTERLY REPORT  
OF  
SOUTHERN REGION (JAN-MAR'15)**



**SOUTHERN REGIONAL LOAD DESPATCH CENTRE  
POWER SYSTEM OPERATION CORPORATION LTD  
BANGALORE**

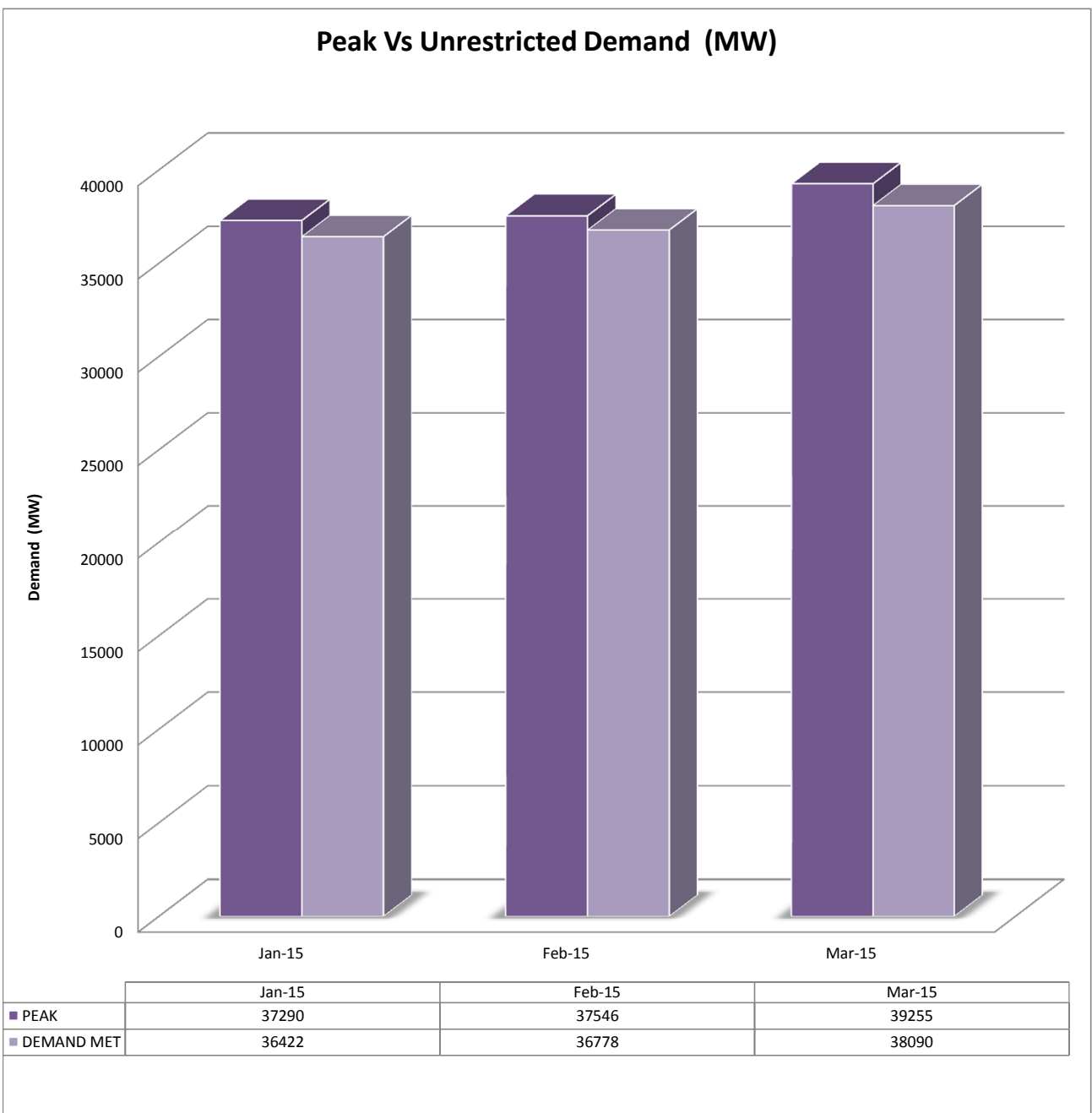
# 1. POWER SUPPLY POSITION

## a) Peak Demand Met and Unrestricted Demand

Month	State/UT	Peak Demand Met (MW)	Unrestricted Demand (MW)	Shortage (MW)	Shortage (%)
Jan-15	Andhrapradesh	6392.00	6392.00	0.00	0.00
	Telangana	6682.00	6870.00	188.00	2.74
	Karnataka	9175.00	9481.00	306.00	3.23
	Kerala	3417.00	3545.00	128.00	3.61
	Tamilnadu	12149.00	12901.00	752.00	5.83
	Pondicherry	314.00	319.00	5.00	1.57
	S.Region	36422.00	37290.00	868.00	2.33
Feb-15	Andhrapradesh	6747.00	6763.72	16.72	0.25
	Telangana	6401.00	6590.52	189.52	2.88
	Karnataka	9349.22	9672.48	323.26	3.34
	Kerala	3433.00	3554.83	121.83	3.43
	Tamilnadu	12642.30	12813.47	171.17	1.34
	Pondicherry	314.00	315.82	1.82	0.58
	S.Region	36778.00	37545.99	767.99	2.05
Mar-15	Andhrapradesh	6784.00	6794.45	10.45	0.15
	Telangana	6755.00	6942.52	187.52	2.70
	Karnataka	9549.21	9892.82	343.62	3.47
	Kerala	3602.27	3715.66	113.39	3.05
	Tamilnadu	13050.90	13694.78	643.88	4.70
	Pondicherry	314.00	315.82	1.82	0.58
	S.Region	38090.00	39254.60	1164.60	2.97

**b.) SR Demand chart**

Month	Peak Demand(MW)	Demand Met(MW)	Shortage(MW)	% Shortage
Jan-15	37290.00	36422.00	868.00	2.33
Feb-15	37545.99	36778.00	767.99	2.05
Mar-15	39254.60	38090.00	1164.60	2.97

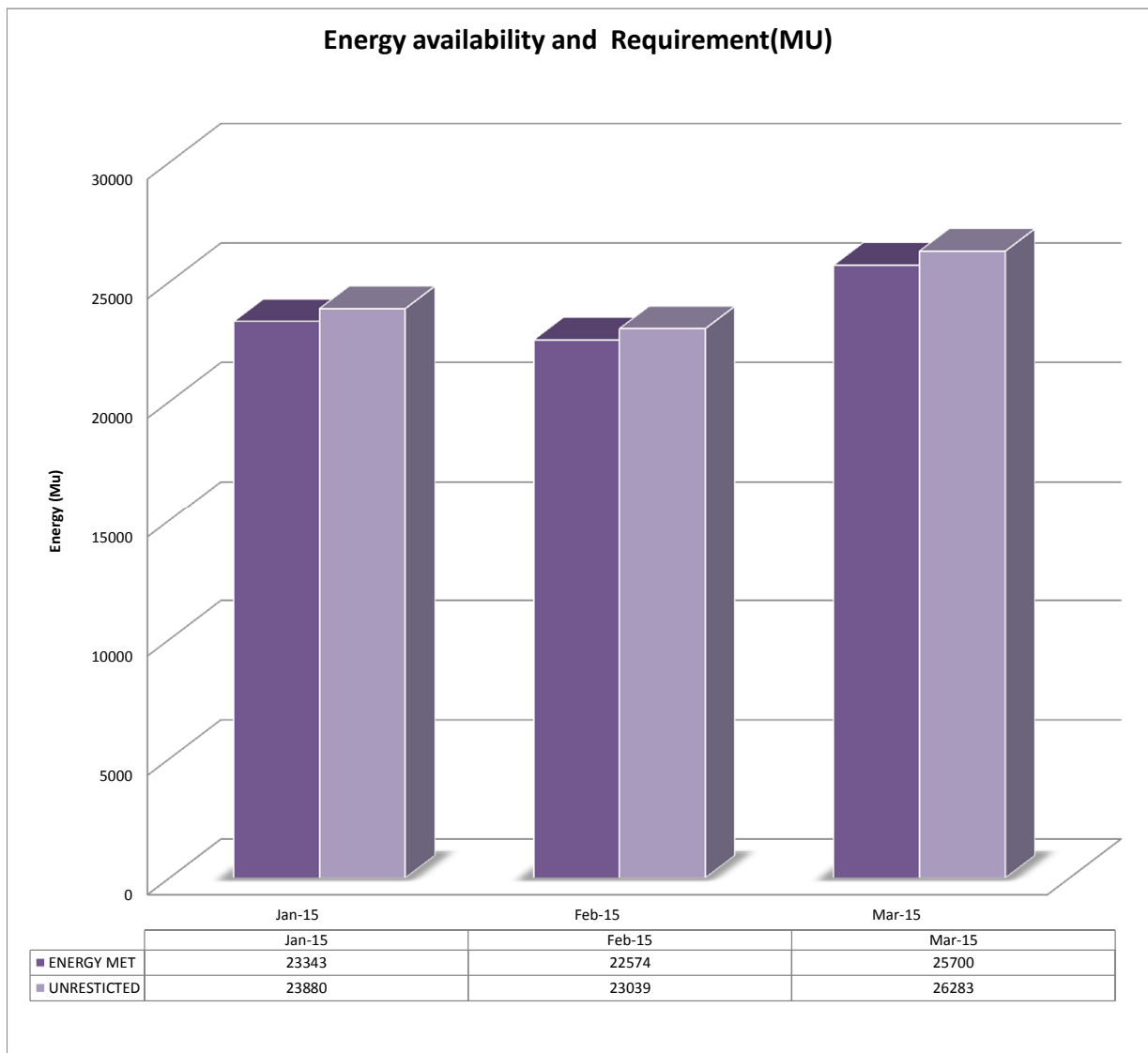


**c) Energy availability and Requirement(MU)**

Month	State/UT	Energy met (MU)	Requirement (MU)	Shortage (MU)	Shortage (%)
Jan-15	Andhrapradesh	4192.00	4193.00	1.00	0.02
	Telangana	3970.00	4070.00	100.00	2.46
	Karnataka	5531.00	5687.00	156.00	2.74
	Kerala	1829.00	1845.00	16.00	0.87
	Tamilnadu	7649.00	7913.00	264.00	3.34
	Pondicherry	172.00	172.00	0.00	0.00
	S.Region	23343.00	23880.00	537.00	2.25
Feb-15	Andhrapradesh	3992.48	3997.85	5.37	0.13
	Telangana	3847.70	3938.45	90.75	2.30
	Karnataka	5375.53	5504.48	128.95	2.34
	Kerala	1743.10	1757.96	14.86	0.85
	Tamilnadu	7444.13	7669.15	225.02	2.93
	Pondicherry	170.78	170.78	0.00	0.00
	S.Region	22573.72	23038.66	464.94	2.02
Mar-15	Andhrapradesh	4510.67	4516.99	6.32	0.14
	Telangana	4374.81	4476.82	102.01	2.28
	Karnataka	5927.08	6085.59	158.51	2.60
	Kerala	2020.66	2035.65	14.99	0.74
	Tamilnadu	8667.77	8969.26	301.49	3.36
	Pondicherry	199.01	199.09	0.08	0.04
	S.Region	25700.00	26283.40	583.40	2.22

d) Energy availability and Requirement(MU) chart

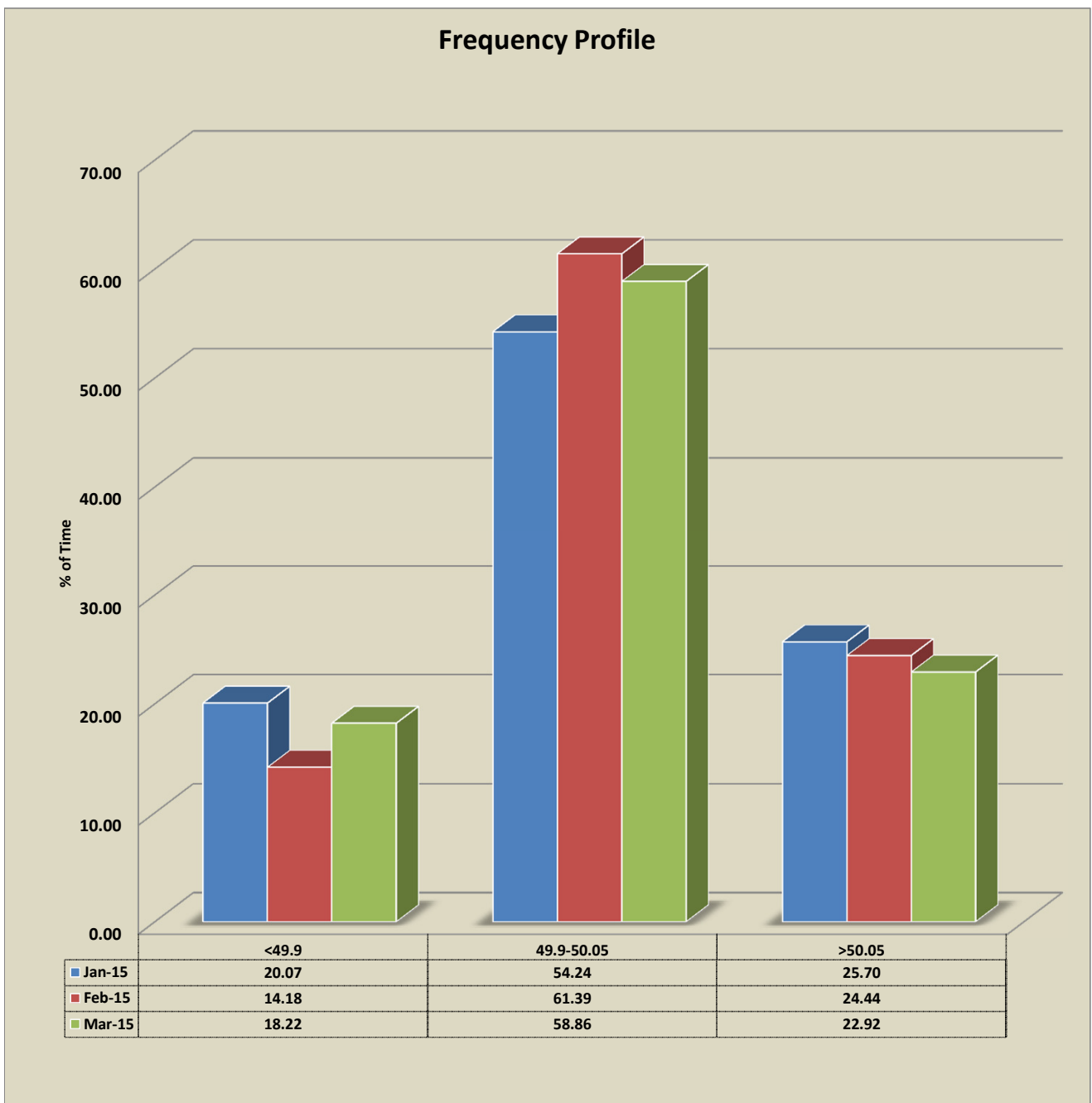
Month	Requirement (MU)	Availability(MU)	Shortage	% Shortage
Jan-15	23343.00	23880.00	537.00	2.25
Feb-15	22573.72	23038.66	464.94	2.02
Mar-15	25700.00	26283.40	583.40	2.22



## 2. QUALITY OF SERVICE

### a) Frequency Profile (% time)

Month	<49.7	<49.7-49.9	49.9-50.05	>50.05-50.20	>50.2
Jan-15	0.79	19.28	54.24	22.95	2.75
Feb-15	0.29	13.89	61.39	23.31	1.13
Mar-15	0.54	17.68	58.86	21.50	1.42



**b) Voltage Profile**

Month	Jan-15		Feb-15		Mar-15	
Station	Max(kV)	Min(kV)	Max(kV)	Min(kV)	Max(kV)	Min(kV)
Ramagundam	420	401	419	403	419	405
Hyderabad	427	399	424	401	423	397
Bangalore	414	379	415	379	413	375
Madras	431	407	429	406	425	399
Neyveli	415	398	412	398	409	395
Kolar	425	395	422	395	421	395
Vijaywada	430	406	430	409	430	407
Trichur	417	374	410	373	409	374
Udumalpet	416	376	408	374	407	379

**3. INTER-REGIONAL EXCHANGES(PHYSICAL) in MU**

Month	Bhadravati	Gazuwaka	Talcher-Kolar	Raichur-Sholapur Line	
	Import SR(MU)	Import SR(MU)	Import SR(MU)	Import SR(MU)	Export from SR(MU)
Jan-15	736.80	522.83	1323.53	242.41	18.45
Feb-15	662.12	441.27	1299.78	216.07	16.07
Mar-15	733.09	483.20	1479.58	238.09	9.25

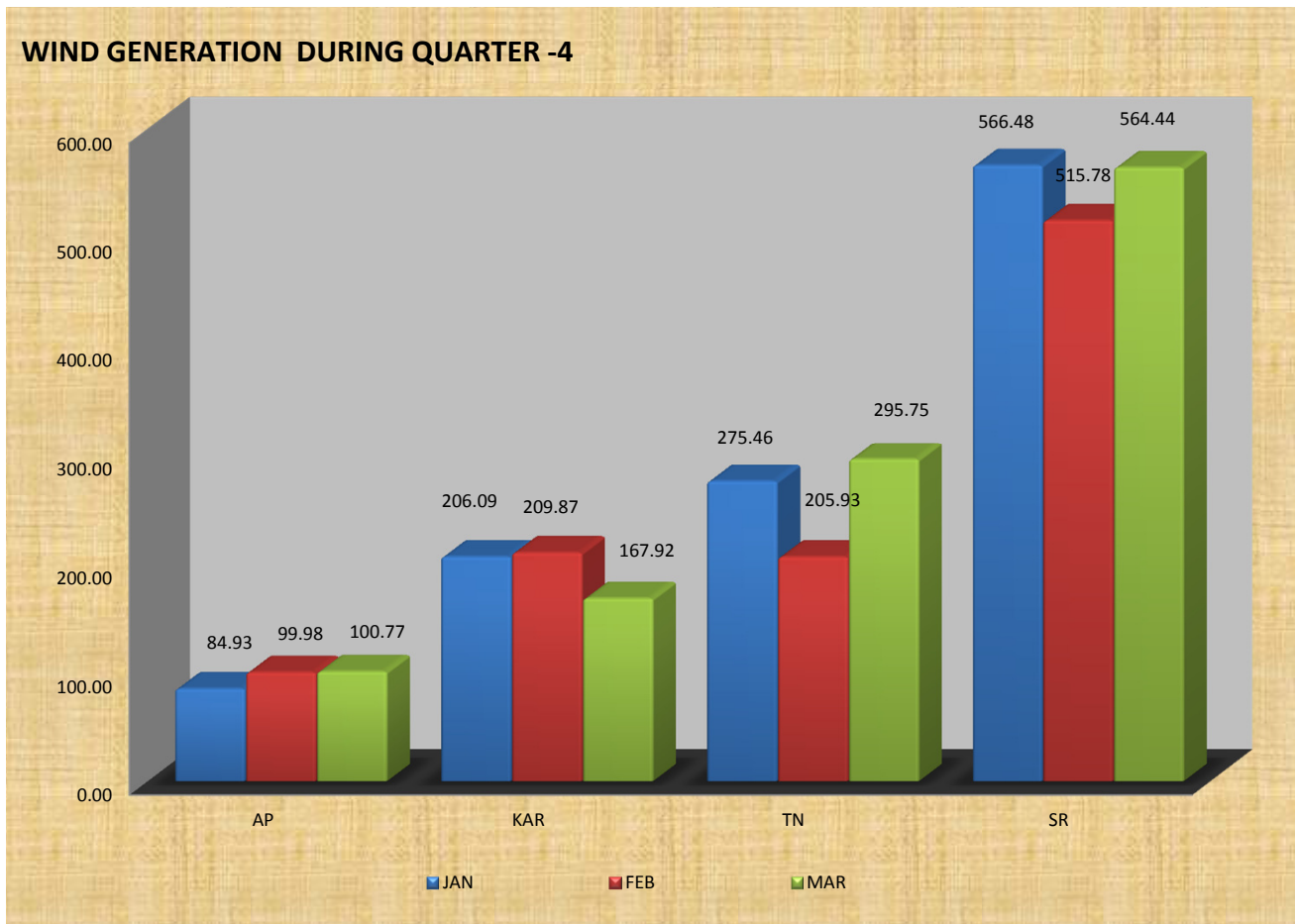
#### 4. SCHEDULE Vs ACUAL DRAWAL BY STATES

Month	STATE/UT	Schedule (MU)	Drawal (MU)	OD(+)/UD(-)
Jan-15	APTRANSCO	680.1	737.31	57.21
	TSTRANSCO	2234.58	2323.67	89.09
	KPTCL	951.81	1040.93	89.12
	KSEB	1343.35	1410.69	67.34
	TNEB	3006.88	3054.14	47.26
	PONDY	175.68	171.71	-3.97
	GOA	67.46	57.94	-9.52
Feb-15	APTRANSCO	767.95	821.42	53.47
	TSTRANSCO	2140.41	2245.87	105.46
	KPTCL	811.98	898.91	86.93
	KSEB	1214.59	1272.69	58.1
	TNEB	2865.5	2861.11	-4.39
	PONDY	169.23	170.78	1.55
	GOA	61.71	58.16	-3.55
Mar-15	APTRANSCO	708.87	775.29	66.42
	TSTRANSCO	2452.71	2531.51	78.8
	KPTCL	839.18	918.23	79.05
	KSEB	1272.45	1324.77	52.32
	TNEB	3367.48	3381.65	14.17
	PONDY	198.38	199.01	0.63
	GOA	59.48	57.5	-1.98



### 5.)Wind Generationin Southern region during Quarter-4

Month	AP(MU)	KAR(MU)	TN (MU)	SR (MU)
Jan-15	84.93	206.09	275.46	566.48
Feb-15	99.98	209.87	205.93	515.78
Mar-15	100.77	167.92	295.75	564.44



### 5.1)% of wind in the total demand met by Region

Month	TOTAL WIND(MU s)	ENERGY MET (MU s)	%ENERGY MET
Jan-15	566.48	23343.00	2.43
Feb-15	515.78	22573.72	2.28
Mar-15	564.44	25700.00	2.20

## 6. SUMMARY REPORT

### I) IMPORTANT EVENTS

#### a) COMMISSIONING OF NEW GENERATING UNITS

SL.NO.	STATE/ISGS	STATION NAME	CAPACITY (MW)	TYPE	DATE
1	JV(TN & NEYVELI)	NTPL	500.000	THERMAL	18-02-2015

#### b) COMMISSIONING OF NEW TRANSMISSION LINES

SL.NO.	CONSTITUENT	LINE NAME	KV	LENGTH	DATE
SL.NO.	CONSTITUENT	LINE NAME & CKT NO.	KV	LENGTH (KM)	DATE
1	PGCIL	NLYTSI EXP -ILFS*	400	60KM	22.01.2015
2	PGCIL	ILFS-TRICHY*	400	104KM	22.01.2015
3	PGCIL	MADURAI-TTNPS 1\$	400	132KM	06.01.15
4	PGCIL	TTNPS-COASTAL\$	400	30KM	06.01.15
5	PGCIL	MADURAI-TTNPS 2#	400	132KM	02.01.15
6	PGCIL	TTNPS-NTPL#	400	35KM	01.01.15
7	PGCIL	400kV Trichy-Nagipattinam 1**	400	160KM	30.03.15
8	PGCIL	765kV KARNOOL-TIRUVELLAM 1	765	355KM	19.03.15
9	PGCIL	765kV KARNOOL-TIRUVELLAM 2	765	355KM	20.03.15
10	PGCIL	400kV Nagipattinam-ILFS 1**	400	46KM	30.03.15

\* The line NLYTSI EXP-TRICHY has been LILO ed @ILFS

\$ The line 400kV MADURAI -COASTAL ENERGN has been LILO ed @TTNPS

# The line 400kV MADURAI -NTPL has been LILO ed @TTNPS

\*\* The line TRICHY-ILFS has been LILO ed @NAGAPATTINAM

#### c) COMMISSIONING OF NEW SUBSTATIONS

SL.NO.	CONSTITUENT	STATION NAME	KV RATIO	CAPACITY (MVA)	DATE
1	ILFS	ILFS	400	-	21.01.15
2	Power grid	NAGAPATTINAM	765/400	-	30.03.15

#### d) COMMISSIONING OF NEW LINE / BUS REACTORS

SL.NO.	CONSTITUENT	STATION NAME	BUS/LINE	CAPACITY (MVAR)	DATE
1	TNEB	NCTPS	BUS 1	63	11-02-2015
2	TNEB	NCTPS	BUS 2	63	24-02-2015
1	PGCIL	VIJAYWADA-NELLORE 3	LINE	63	14.03.15
2	PGCIL	VIJAYWADA-NELLORE 4	LINE	63	14.03.15

## 7) Transmission constraints & Voltage problems affecting

S. No	Corridor	Season/ Antecedent Conditions	Description of the constraints
1	400kV Kolar-Hosur DC line	Whole year	North Chennai TPS St-II both units and Vallur TPS 3 Units are synchronised & Declared CoD. Kadamparai Pump mode operation and Mettur area low generation also causing more flow on these lines. S1-S2 TTC is limited by N-1 of these lines.
2	400kV Hiriyur-Nelamangala DC line	Whole year	With Full generation at Jindal and BTPS, Low generation at UPCL and wind generation high, the flow on 400kV Hiriyur-Nelamangala DC line is continuously above 550MW. Also the 765kV Sholapur-Raichur DC line commissioned without downstream (400kV Gooty-Madhugiri-Yelhanka DC line) Network is creating further increase in the line flow.
3	400kV Udumalpet-Palakkad DC line	Whole year	Kerala drawl is mainly through 400kV Udumalpet-Palakkad DC line. Presently the loading these lines is 450-500 MW.
4	400kV Jindal-BTPS SC Line	Whole year	With the full generation at Jindal TPS, 400kV Jindal-BTPS SC line is getting loaded beyond 650 MW. Other evacuation paths are 400kV Jindal-Guttur and Two ICTs. But at 220kV side also generation is available.
5	220 kV Bangalore Metro Network	Whole Year	220 kV Metro networks (Bangalore Urban area) are now radialised to prevent overloading of lines. The radicalisation decreases the reliability of supply.
6	Overloading of 220 kV Shoolagiri- Hosur(TN)- Yerrandahalli- Somnahally SC line	Whole Year	Somnahally, Yerrandahalli and Hosur are Industrial areas. 220kV Yerandahalli is connected with Hosur (TN) and Somnahally. Normally, 220kV Yerandahalli split and part of load is fed from Hosur (TN) as the Entire load cannot be met from either side (Somnahally or Hosur). The line loading on this line also causes high flows on Shoolagiri-Hosur 230 kV S/C line.
7	220 kV Sharavathi -Shimoga lines (4 nos) and 220 kV Sharavathi -Talaguppa D/C.	During Sharavathi generation is full	With full generation at Sharavathi (>900 MW) there is no N-1 reliability on 220 kV Sharavathi - Shimoga lines (4 nos >150 MW each) and 220 kV Sharavathi-Talaguppa D/C (>180 MW each). With the commissioning of re arrangement at Sharavathi - Talaguppa, the constraint on 220 kV Sharavathi -Talaguppa D/C would be solved to a certain extent.
8	Constraints in Coastal AP	Whole Year	The following lines are heavily loaded in Coastal AP : 220kV Upper - Sileru - Pendurthy S/c and 220kV Lower - Sileru Bommur S/c

09	Northern Kerala System	Whole Year	At present the North Kerala loads are largely fed from 400/220kV Madakathara , 400/220kV Palakkad and through 220kV Kadakola-Kaniyampeta link which is feeding loads of Kaniyampeta, Vadakara and Thali paramba through split bus at Areakode and Kanhirode. The following transmission lines in North Kerala are severely stressed 220kV Madakathara - Areakode S/c, 220kV Madakathara - Shornur S/c and 220kV Madakathara - Malaparamaba S/c. And in central Kerala 220kV Lower Periyar - Madakathara D/c and 220kV Sabarigiri - Pallom S/c. Due the above constraints there have been 6 Disturbances in North Kerala system
10	Constraints in Chennai 230kV System	Whole Year	230kV Alamatty-Manali DC line, 230kV Manali-koratur SC, 230kV Kalavindapattu-S.PKoil SC, 230kV Kalavindapattu-Veerapuram, 230kV Kalavindapattu-Siruseri SC, 230kV NCTPS-ETPS SC, 230kV SVChatram – Oragadam SC and 230kV Sriperumbudur - Koyambedu SC line are severely loaded.
11	Overloaded 220kV Lines in Tamil Nadu	Whole Year	The following lines are heavily loaded in Southern Tamil Nadu 220kV Madurai - Sembatty S/c, 220kV Madurai - Theni S/c , 220kV Pugalur - Mywadi S/c
12	Constraints in 230kV Evacuation lines of MTPS and Kundah complex	Whole year	230kV Kundah PH4-Thudialur line, 230kV MTPS-MTPS-III-Gobi line, 230kV MTPS-Ingur line and 230kV Pugalur4-Mywadi line

### ICT Constraints:

S. No	ICT	Season/ Antecedent Conditions	Description of the constraints
1	400/220kV 2x315MVA ICTs at Gazuwaka SS	During peak period of every day	N-1 condition not satisfies in few occasions
2	400/220kV 2x315MVA ICTs at Vemagiri SS	During peak period of every day	N-1 condition not satisfies in few occasions
3	400/220kV 2X500 MVA ICTs at Somnahally	During peak period of every day	N-1 condition not satisfies in few occasions
4	400/220kV 2X315MVA ICTs at Mysore	During peak period of every day	N-1 condition not satisfies in few occasions
5	400/220kV 2X315MVA ICTs at Kalivindhapattu	During peak period of every day	N-1 condition not satisfies in few occasions
6	400/220kV 2X315MVA ICTs at Pugalur	During peak period of every day	N-1 condition not satisfies in few occasions

7	400/220kV 3X315 MVA ICTs at Udumalpet	During peak period of every day	N-1 condition not satisfies in few occasions
8	400/110kV 2 X 200 MVA ICTs Ramagundam	During peak period of every day	N-1 condition not satisfies in few occasions
9	400/220kV 3 X 315 MVA ICTs at Mamidapally	During peak period of every day	N-1 condition not satisfies in few occasions

### Low Voltage:

S. No	Nodes	Season/ Antecedent Conditions	Description of the constraints
1	400kV Somnahally SS,	During peak load condition	Voltages are low during the peak load condition
2	400kV Nelamangala SS,	During peak load condition	Voltages are low during the peak load condition
3	400kV Mysore SS	During peak load condition	Voltages are low during the peak load condition
4	400kV Udumalpet SS	During peak load condition & high wind period	Voltages are low during the peak load condition & high wind period
5	400kV Salem SS	During peak load condition & high wind period	Voltages are low during the peak load condition & high wind period
6	400kV Palakkad SS	During peak load condition	Voltages are low during the peak load condition
7	400kV Trichur SS	During peak load condition	Voltages are low during the peak load condition

### High Voltage:

S. No	Nodes	Season/ Antecedent Conditions	Has the constraint occurred in earlier quarter?
1	400kV Vijayawada SS	Whole Year	Yes
2	400kV Vemagiri SS	Whole Year	Yes

3	400kV Gooty SS	Monsoon period and off peak period	Yes
4	400kV Kurnool SS	Monsoon period and off peak period	Yes
5	400kV Nellore Pooling Station SS	Monsoon period and off peak period	Yes
6	400kV Mamidapally SS	During off peak	No
7	400kV Srisailem LB SS	During off peak	No
8	400kV Warangal SS	During off peak	No
9	400kV Malakaram SS	During off peak	No
10	400kV Kaiga SS	Whole Year	Yes
11	400kV Guttur SS	Whole Year	Yes
12	400kV Narendra SS	Whole Year	Yes
13	400kV Tirunelveli SS	During off peak	Yes
14	400kV Kudankulam SS		Yes
15	400kV Sriperumbudur SS	During off peak	No
16	400kV Thiruvallam SS	During off peak	No
17	765kV Raichur SS	During off peak	No
18	765kV Kurnool SS		No
19	765kV Nellore PS		No

## 8. Grid Disturbances & Grid Incidents effecting grid Operation

### a) Grid Disturbances

Grid Disturbances						
S. No	Outage		Region	Event	Generat ion/Loa d Loss	Category as per CEA Grid Standards
	Date	Time				
1	15-Feb-15	11:20	SR	Complete outage of 220kV Bahoor substation of Pondy cherry: Bus fault occurred in 110kV bus at 230/110kV Bahoor substation due to failure of insulator in 110kV bus. ICT back up protections did not operate. 220kV lines connected to Bahoor tripped from remote end on operation of back up protection	75 MW load loss	GD-1
2	15-Feb-15	14:24	SR	Complete outage of 220kV Sedam substation of KPTCL: Transient fault occurred in 220kV Sedam-Shahpur line. Fault not cleared from Sedam end due to stuck breaker condition. 220kV lines and ICT's at Sedam tripped on operation of zone-2 and back up protection as LBB protection is not functional at Sedam. This caused complete outage of 220kV Sedam substation.	110 MW load loss	GD-1
3	16-Feb-15	12:56	SR	Complete outage at 220kV Kadra hydro power station of KPTCL: B-phase to earth fault had occurred in 220kV Kadra-Kodasalli line. Line tripped from Kodasalli end only. 220kV Kaiga-Kadra tripped in Zone-3 from Kaiga end. Tripping of evacuating lines caused bus shut down at Kadra hydro station	Nil	GD-1
4	22-Feb-15	11:09	SR	Complete outage of Nagjheri power station: LBB protection got operated due to operation of low forward power relay of Unit-3 during its de-synchronization as Y-pole breaker of Unit-3 was under lockout. This in-turn led to tripping of Bus and all connected 220kV lines and running units at Nagjheri power station.	550 MW	GD-1

S. No	Outage		Region	Event	Generati on/Load Loss	Category as per CEA Grid Standards
	Date	Time				
5	04-Mar-15	08:00	SR	Complete outage of Upper Sileru power station of APGENCO: During de-synchronizing of Unit-4 at Upper Sileru station, breaker was under stuck condition. The LBB protection got operated from P.D relay when breaker was opened and as B-pole breaker was under lockout. 220kV Upper Sileru station is on a single bus operation.	Nil	GD-1
6	12-Mar-15	07:51	SR	Complete outage of 220kV Ambewadi substation of KPTCL: fault occurred in 220kV Ambewadi-Nagjheri line-2. Breaker was under lockout due to CB low air pressure at Ambewadi end. LBB and bus bar protection are not healthy at Ambewadi. This led to tripping of lines from remote ends and ICT on operation of back up protection inorder to clear the fault	Nil	GD-1
7	20-Mar-15	11:22	SR	Complete outage of Srisailam left bank hydro power station: High resistance fault had occurred in GIS at Srisailam left bank station. This fault was sensed by residual over current protection provided in distance relay of 400kV lines at Srisailam which in-turn led to tripping of the line breakers of all 400kV lines at srisailam.	Nil	GD-1
8	22-Mar-15	19:31	SR	Complete outage of 220 kV Tadikonda substation of APTRANSCO: Failure of B-phase CT of 100MVA ICT-1 at Tadikonda. 220kV Tadikonda-VTPS-1&2 and ICT-2, 3&4 tripped due to mal-operation of protection system.	Nil	GD-1



## b) Grid Incidents

S. No	Outage		Region	Event	Generation /Load Loss	Category as per CEA Grid Standards
	Date	Time (Hrs)				
1	07-Jan-15	23:35	SR	Multiple tripping at 400/230kV Kayathar substation of TANTRANSCO <b>Remarks:</b> B-phase CT of ICT-2 failed. Kayathar substation is operating on single 400kV bus. In 40th Protection subcommittee meeting of SRPC, TANTRANSCO has been asked to take the 2nd 400kV bus into service	NIL	GI-2
2	8-Jan-15	9:57	SR/WR	Tripping of HVDC Bhadrawati Pole-2 <b>Remarks:</b> Pole tripped on operation of Non Valid Tap code alarm	NIL	GI-2
3	23-Jan-15	16:10	SR	Tripping of 400 kV Srisailem-Mamidapalli-2 line and 400 kV Srisailem-Satenapalli-1 line and de-energization of 400kV bus-2 at Srisailem Left bank hydro station <b>Remarks:</b> Bus-2 at Srisailem became dead while converting converting Srisailem generator to condenser mode.	NIL	GI-2
4	24-Jan-15	13:15	SR	Tripping of 400 kV NLC EXP- IL&FS line and 400 kV ILFS - TRICHY line and de-energization of 400kV bus at IL&FS <b>Remarks:</b> Transient fault in 400 kV NLC EXP- IL&FS line. Line did not auto reclose. 400 kV ILFS - TRICHY line also tripped at the same instant. Tripping of both 400kV lines led to de-energization of 400kV bus at IL&FS	NIL	GI-2
5	07-Feb-15	17:15	SR	Tripping of 400/220kV ICT-1, 2&3 at Hoody substation of KPTCL <b>Remarks:</b> ICT-1, 2&3 were hand tripped due to arc in 220kV yard due to incorrect operation of isolator in switchyard.	Load Loss 400 MW	GI-2
6	10-Feb-15	07:37	SR/ER	Tripping of HVDC Talcher-Kolar pole-2 <b>Remarks:</b> Pole-2 tripped due to Emergency Switch off (ESOF) from talcher end due to valve cooling problem	Nil	GI-2

S. No	Outage		Region	Event	Generation/ Load Loss	Category as per CEA Grid Standards
	Date	Time (Hrs)				
7	10-Feb-15	16:24	SR/ER	Tripping of HVDC Gazuwaka pole-1&2 and 400kV Jeypore-Gazuwaka line-1&2 <b>Remarks:</b> 400kV lines tripped due to operation of over voltage at Gazuwaka end. HVDC pole-2 tripped due to low DC voltage trip and Pole-1 tripped due to valve winding AC under voltage fault.	NIL	GI-2
8	22-Feb-15	13:12	SR	Tripping of 230kV lines connected to 230kV Theni substation. De-energization of 220kV bus <b>Remarks:</b> As reported LBB got operated for 230kV chekanoorani feeder at Theni substation. 230kV Theni is on a single 220kV bus and there is no bus coupler. Operation of LBB resulted in tripping of all 230kV feeders.	NIL	GI-1
9	23-Feb-15	13:34	SR/ER	Tripping of HVDC gazuwaka pole-1&2 and 400kV Jeypore-Gazuwaka line-1&2 <b>Remarks:</b> HVDC pole-1 got tripped at 13:33:49 hrs. due to failure of 4 no. power supply card of YDUV valve. 400kV Jeypore-Gazuwaka line-1&2 tripped due to operation of Over voltage protection at Gazuwaka end. HVDC pole-2 tripped on DC low voltage trip due to tripping of both 400kV lines.	NIL	GI-2
10	23-Feb-15	15:37	SR/ER	Tripping of HVDC Talcher-Kolar pole-1 <b>Remarks:</b> Pole 1 of Talcher-Kolar HVDC Transmission system tripped on receipt of ESOF (Emergency Switch-off) from Talcher.	NIL	GI-2
11	03-Mar-15	17:02	SR	Tripping of 400/220kV ICT1-&2 at Thrissur substation of KSEB <b>Remarks:</b> During testing of LBB protection got activated and this resulted in tripping of ICT-1&2	load loss : 350MW	GI-2

S. No	Outage		Region	Event	Generation/ Load Loss	Category as per CEA Grid Standards
	Date	Time (Hrs)				
12	08-Mar-15	19:41	SR	Tripping of Unit-4&6 at JSW power station and tripping of 400/220kV ICT-2 at Munirabad <b>Remarks:</b> Failure of L.A in 220kV Lingapur-Munirbad line-2 at lingapur end. Delayed clearance of fault from Munirabad(KPTCL) end. Units at JSW tripped due to tripping of evacuating lines on 220kV side, tripping of 220kV bus coupler breaker and due to tripping of station utility transformer	Gen loss : 600 MW	GI-2
13	09-Mar-15	06:36	SR	Multiple tripping at Raichur TPS of KPCL: 400kV Raichur TPS-Raichur (PG) line-1&2, 400kV Raichur-Mahboobnagar, Unit#7 at RTPS <b>Remarks:</b> B phase to earth fault had occurred in 400kV Raichur TPS-Raichur line-1 and line tripped from both ends. 400kV Raichur TPS-Raichur line-2 tripped at Raichur TPS end due to suspected over-reach of distance relay from Raichur TPS end. 400 kV Raichur-Mahboobnagar line tripped from Mahboobnagar end due to suspected mal-operation of distance protection. Unit-7 and ICT-2 at RTPS tripped on operation of back up protections	Gen loss :200 MW	GI-2
14	11-Mar-15	21:49	SR	Tripping of 220kV Kaiga-Kodasalli line, Unit-2&3 at Kaiga Nuclear power station <b>Remarks:</b> 220kV Kaiga-Kodasalli line tripped due to failure of B-phase CT. Unit-2&3 at Kaiga tripped due to tripping of auxiliaries.	Gen loss :670 MW	GI-I
15	14-Mar-15	17:12	SR/ER	Tripping of HVDC pole-1&2 at Gazuwaka and 400kV Jeypore Gazuwaka line-1 <b>Remarks:</b> 400kV Jeypore-Gazuwaka line-1 tripped on operation of over voltage protection. Tripping of East side Filter banks led to blocking of Pole-1 at Gazuwaka. Pole-2 at Gazuwaka tripped on operation of differential current B-phase trip	---	GI-2

S. No	Outage		Region	Event	Generation/ Load Loss	Category as per CEA Grid Standards
	Date	Time (Hrs)				
16	18-Mar-15	13:55	SR/WR	Tripping of HVDC Bhadrawathi pole-1 <b>Remarks:</b> Pole-1 tripped on “VCC1.MAIN CIRCUIT FULL FLOW - V-LOW” alarm. Due problem in control logic, VCC-1 pump couldn’t attain full speed.	---	GI-2
17	26-Mar-15	15:40	SR	Tripping of ICT-2&3 at 400kV Hosur substation of POWERGRID. <b>Remarks:</b> 230kV Bus-2 at Hosur (PG) got tripped as spurious initiation got extended to LBB relay of 230kV Hosur-Hosur (PG) line at Hosur (PG) end due to shorting of contacts in lockout relay. 400/230kV ICT-2, ICT-3, 230kV Hosur-Vinnamangalam, and 230kV Hosur (PG)-Hosur which were connected to Bus-2 got tripped along with bus coupler breaker.	load loss : 70MW	GI-2
18	30-Mar-15	19:30	SR/ER	HVDC TALCHER - KOLAR POLE 1 AT KOLAR <b>Remarks:</b> CONVERTOR TRANSFORMER OLTC TRIP	---	GI-2