

State Load Despatch Center, Airoli (MSETCL) Statement I
Daily system Report for 29/Oct/2019 TUESDAY

I GENERATION (MUs)			II EXCHANGES (MUs)		
A) MSPGCL	Daily	Monthly	E) InterState Exchanges	Daily	Monthly
1) Thermal	69.466	3049.157	1) Gujrat	0.301	267.921
2) Hydro	5.738	205.375	2) Madhya Pradesh	4.515	218.153
3) Gas	12.435	282.910	3) Chattisgarh	7.760	125.530
Total MSPGCL	87.639	3537.442	4) Maharashtra	98.692	3598.295
B) 1) APLM	59.506	1255.003	5) Goa (Amona)	-0.902	-13.816
2) JSWEL	19.374	576.141	Total	110.366	4196.083
3) VIPL	0.000	0.000	a) Mumbai Schedule	24.824	881.251
4) RPL(AMT)	0.000	521.793	b) Mumbai Drawl	30.566	981.768
5) WPCL	0.000	0.000	c) MSEDCL Bilateral *	16.812	628.468
6) Other IPP	8.064	247.292	Include PX	-0.305	82.554
7) PGPL	0.000	0.000	d) Mumbai Bilateral *	24.824	881.251
C) 1) TPCL Thermal	12.048	374.197	Include PX	3.052	282.613
2) TPCL Hydro	2.923	107.909	Standby	0.000	0.000
3) TPCL Gas	4.316	111.205	H) ENERGY CATERED (MUs)		
4) AEML Thermal	4.589	178.354	1) MSEDCL	268.506	9768.356
D) STATE			2) Mumbai Discoms	54.441	1753.429
1) Thermal	173.047	6201.937	TOTAL STATE	322.947	11521.785
(A1+C1+C4+(B1-B6))					
2) Hydro (A2+C2)	8.661	313.284			
3) Gas (A3+B7+C3)	16.751	394.115			
4) Wind	8.797	268.516			
6) SOLAR	5.326	147.854			
TOTAL STATE	212.582	7325.706			

* Displayed for information, not added in total.

DETAILS OF MAHARASHTRA STATE PEAK DEMAND(MW) Statement II

PARTICULARS	A. Morning Peak at 9 Hrs	B. Day Peak at 18 Hrs	C. Evening Peak at 19 Hrs	D. Night Minimum at 4 Hrs
MSPGCL Thermal	2905	2983	3045	2689
MSPGCL Hydro	149	90	914	74
MSPGCL Gas	514	521	512	507
MSPGCL Total Generation	3568	3594	4471	3270
Central Sector Receipt	5234	4777	5497	4026
WIND	417	430	350	138
CPP / IPP Thermal	3797	3688	3912	3418
CPP / IPP Gas	0	0	0	0
SOLAR	408	24	0	0
Exchange with Mumbai	-1252	-1281	-1369	-942
MSEDCL DEMAND MET	12172	11232	12861	9910
Load Shedding	0	0	0	0
MSEDCL DEMAND	12172	11232	12861	9910
TPCL GENERATION	735	937	959	640
AEML GENERATION	191	191	191	191
MUMBAI DEMAND	2178	2409	2519	1773
STATE DEMAND MET	14350	13641	15380	11683
STATE DEMAND	14350	13641	15380	11683
Frequency (Hz)	50.02	50.00	49.97	50.03

FREQUENCY PARTICULARS

MAXIMUM FREQ.	MINIMUM FREQ.	AVERAGE FREQ.	FREQ. BELOW 49.2 Hz
50.16 Hz at 11.01 Hrs	49.76 Hz at 14.54 Hrs	50	0 % of Time(min)

Note : The report is based on Operational Data and is for statistical purpose only.

Shift Engineer

Shift Incharge

Daily and Progressive Generation,Maximum,Minimum for 29/Oct/2019

Generating unit	Generation			
	Daily (Mus)	Monthly (Mus)	Max (MW)	Min (MW)
Koradi				
Unit 6	0.00	0.00	0	0
Unit 7	0.00	0.00	0	0
Unit 8	0.22	69.63	136	0
Unit 9	11.09	267.04	503	457
Unit 10	10.10	288.67	460	350
Total	21.42	625.35		
Bhusawal				
Unit 3	0.00	0.00	0	0
Unit 4	8.64	243.66	375	345
Unit 5	8.58	168.55	365	350
Total	17.22	412.20		
Parli				
Unit 4	0.00	0.00	0	0
Unit 5	0.00	0.00	0	0
Unit 6	0.00	41.35	0	0
Unit 7	0.00	109.68	0	0
Unit 8	0.00	71.04	0	0
Total	0.00	222.07		
Chandrapur				
Unit 3	0.00	78.77	0	0
Unit 4	3.72	105.85	161	141
Unit 5	0.00	196.93	0	0
Unit 6	0.00	211.31	0	0
Unit 7	0.00	0.00	0	0
Unit 8	7.39	250.33	360	220
Unit 9	7.34	243.90	360	225
Total	18.46	1087.08		
Paras				
Unit 3	0.00	88.52	0	0
Unit 4	0.00	0.00	0	0
Total	0.00	88.52		
Khaparkheda				
Unit 1	0.00	30.23	0	0
Unit 2	0.00	35.13	0	0
Unit 3	0.00	44.89	0	0
Unit 4	0.00	63.23	0	0
Unit 5	8.84	277.32	430	359
Total	8.84	450.80		
Nasik				
Unit 3	0.00	24.52	0	0
Unit 4	0.00	31.55	0	0
Unit 5	3.54	107.06	156	135
Total	3.54	163.13		
Uran				
All Units	12.44	282.91	547	503
Total	12.44	282.91		
PGPL				
Unit 1	0.00	0.00	0	0
Unit 2	0.00	0.00	0	0
Total	0.00	0.00		
PENCH (MS)				
Pench (MS)	0.53	18.20	50	0

Generating unit	Generation			
	Daily (Mus)	Monthly (Mus)	Max (MW)	Min (MW)
Total	0.53	18.20		
Koyna				
Stage 1-2	2.58	84.96	330	40
Stage 4	0.42	44.86	393	0
Stage 3	1.09	32.21	160	0
Total	4.09	162.03		
Hydro				
KDPH	0.00	10.04	0	0
VTRNA	0.00	0.00	0	0
TILLARI	0.24	6.55	60	0
BHTGR/VEER	0.00	0.00	0	0
BHIRA T.R.	0.22	8.21	80	0
RNGR+BHTSA	0.34	1.36	15	14
BHANDARDRA	0.00	1.93	0	0
ELDARY	0.00	0.00	0	0
SMLHY_PTN	0.38	9.76	17	15
GHATGHAR	0.47	5.49	125	0
Total	1.65	43.34		
Wind				
Total	8.80	268.52	0	0
Total	8.80	268.52		
CPP				
APML(Mus)	59.51	1255.00	0	0
JSWEL(Mus)	19.37	576.14	0	0
VIPL(Mus)	0.00	0.00	0	0
RPLAMT(Mus)	0.00	521.79	0	0
WPCL(Mus)	0.00	0.00	0	0
Other(Mus)	8.06	247.29	0	0
Total	86.94	2600.23		
SOLAR				
Total	5.33	147.85	0	0
Total	5.33	147.85		
Tata				
Trombay 5	7.41	235.96	317	289
Trombay 6	0.00	0.00	0	0
Trombay 7A	2.74	69.41	116	103
Trombay 7B	1.58	41.79	67	62
Trombay 8	4.64	138.24	200	181
TATA Hydro	2.92	107.91	283	0
Total	19.29	593.31		
AEML				
DTPS U-1&2	4.59	178.35	193	190
Total	4.59	178.35		

* Infirm Power			Summary			Summary		
Particulars	Daily (Mus)	Monthly	Particulars	Daily (Mus)	Monthly (Mus)	Particulars	Daily (Mus)	Monthly (Mus)
			MSPGCL Thermal	69.47	3049.16	MSPGCL Total	87.64	3537.44
			MSPGCL Thml+Gas	81.90	3332.07	Koyna 1,2 & 4 Total	3.00	129.82
			MSPGCL Hydro	5.74	205.38	State Total	212.58	7325.71

State Load Despatch Center,Airoli (MSETCL)

Annexure-2

Hourly Load Data As on 29/Oct/2019

TIME SR. NO.	MSPGCL GEN.			TOTAL	WIND	CPP / IPP		SOLAR	CS SHARE	CS RECPT	Mum. NET EXCH.	MSEDCL DEM. MET	LOAD SHEDDI NG	MSEDCL DEM. WITH LS	MUMBAI DEMAND	STATE DEMAND	FREQ. (Hz)
	THM	HY	GAS			THM	GAS										
1	2701	359	514	3574	148	3464	0	0	3975	4142	-1256	10072	0	10072	2104	12176	49.96
2	2678	74	503	3255	118	3413	0	0	4186	4274	-1123	9937	0	9937	1961	11898	49.98
3	2694	70	512	3276	131	3401	0	0	3942	4047	-1011	9844	0	9844	1847	11691	50.00
4	2689	74	507	3270	138	3418	0	0	3905	4026	-942	9910	0	9910	1773	11683	50.03
5	2680	232	533	3445	138	3462	0	0	4019	4142	-931	10256	0	10256	1764	12020	50.00
6	2674	154	533	3361	244	3697	0	0	4744	4797	-994	11105	0	11105	1838	12943	50.00
7	2701	154	541	3396	350	3819	0	10	5373	5192	-1014	11753	0	11753	1873	13626	49.94
8	2764	230	547	3541	368	3827	0	156	5398	5307	-1035	12164	0	12164	1976	14140	49.97
9	2905	149	514	3568	417	3797	0	408	5367	5234	-1252	12172	0	12172	2178	14350	50.02
10	2924	312	522	3758	499	3491	0	642	4624	4846	-1399	11837	0	11837	2372	14209	50.00
11	2941	222	512	3675	575	3429	0	810	4713	4521	-1494	11516	0	11516	2515	14031	50.01
12	2968	167	510	3645	634	3409	0	841	4225	4237	-1526	11240	0	11240	2569	13809	50.03
13	3018	129	509	3656	572	3394	0	793	3983	4141	-1496	11060	0	11060	2545	13605	50.04
14	3032	265	509	3806	492	3430	0	640	3589	3717	-1447	10638	0	10638	2496	13134	50.03
15	3040	235	527	3802	415	3413	0	497	3827	3911	-1422	10616	0	10616	2492	13108	49.92
16	2982	250	509	3741	335	3465	0	354	4239	4267	-1375	10787	0	10787	2487	13274	49.99
17	3054	131	508	3693	286	3653	0	151	4383	4440	-1357	10866	0	10866	2449	13315	50.02
18	2983	90	521	3594	430	3688	0	24	4523	4777	-1281	11232	0	11232	2409	13641	50.00
19	3045	914	512	4471	350	3912	0	0	4990	5497	-1369	12861	0	12861	2519	15380	49.97
20	2963	334	512	3809	352	4107	0	0	5639	5542	-1398	12412	0	12412	2545	14957	50.02
21	2905	360	521	3786	373	3839	0	0	5352	5458	-1329	12127	0	12127	2496	14623	50.03
22	2921	310	512	3743	469	3863	0	0	4954	5005	-1317	11763	0	11763	2452	14215	50.01
23	3046	401	523	3970	436	3831	0	0	4384	4494	-1382	11349	0	11349	2409	13758	50.00
24	3158	122	524	3804	527	3722	0	0	4520	4352	-1416	10989	0	10989	2373	13362	50.06
MUs	69.47	5.74	12.44	87.64	8.80	86.94	0.00	5.33	108.85	110.37	-30.57	268.51	0.00	268.51	54.44	322.95	50.00

NOTE : ALL VALUES IN MW

Mumbai Net Exch is shown with reference to MSETCL system and (-) sign indicates MSETCL periphery to Mumbai system.

State Load Despatch Center,Airoli (MSETCL) Statement-VI

Details of Generating Unit Outages/Trippings for 29/Oct/2019

Position as on 6.30 Hrs of 30/Oct/2019

Generating Company	Name of Generating Unit	Capacity	Tripped Date	Tripped Time	Sync.Date	Sync. Time	Reason of Outage	Expected Date
PLANNED OUTAGE								
CPP	SWPGL U-3	135	01/11/2018	00.28		Continued.	Annual Overhaul	
MSPGCL	Chandrapur Unit 7	500	27/07/2019	00.00		Continued.	Annual Overhaul	
MSPGCL	Ghatghar Unit-1	125	25/09/2019	04.20		Continued.	Withdrawn on shaft seal water leakage. Converted to AOH from 1 Nov 2019.	
FORCED OUTAGE								
IPP	SWPGL U-1	135	16/02/2016	17.09		Continued.	No PPA.	
MSPGCL	Parli Unit 4	210	01/04/2016	00.00		Continued.	Economic shutdown	
MSPGCL	Parli Unit 5	210	01/04/2016	00.00		Continued.	Economic shutdown	
PGPL	PGPL U1	262	07/02/2017	17.30		Continued.	No Schedule	
PGPL	PGPL U2	126	07/02/2017	17.30		Continued.	No Schedule	
IPP	IEPL Unit 1	270	28/08/2018	21.26		Continued.	No PPA	
IPP	SWPGL U-2	135	27/11/2018	00.00		Continued.	No Schedule.	
CPP	SWPGL U-4	135	15/12/2018	00.00		Continued.	No Schedule	
IPP	VIPL U-1	300	29/12/2018	00.30		Continued.	Coal Shortage	
IPP	VIPL U-2	300	17/01/2019	00.15		Continued.	Coal Shortage	
MSPGCL	Paras Unit 4	250	25/08/2019	00.45		Continued.	Annual Overhaul Converted Zero Schedule From 28.10.2019 18.00	
MSPGCL	Koradi Unit 7	210	27/08/2019	09.52		Continued.	Coal Flow Problem Due To Wet Coal.(Converted To Zero Schedule From 12.09.2019 At 20.00 hrs)	
IPP	RPL(AMT) U-1	270	01/09/2019	09.11		Continued.	Generator Protection operated	
MSPGCL	Bhusawal Unit 3	210	01/09/2019	17.56		Continued.	Zero Schedule from 18:00hrs of 28/09/2019	
MSPGCL	Koradi Unit 6	210	06/09/2019	15.41		Continued.	Zero Schedule By MSEDCL.	
AEML	AEML Unit 2	250	07/10/2019	21.18		Continued.	Coal Shortage	
MSPGCL	Nasik Unit 3	210	09/10/2019	23.57		Continued.	Under Case 4 Bidding.	
MSPGCL	Nasik Unit 4	210	09/10/2019	23.59		Continued.	Zero schedule.	
MSPGCL	Khaparkheda Unit 1	210	12/10/2019	00.11		Continued.	Zero Schedule	
MSPGCL	Khaparkheda Unit 2	210	12/10/2019	00.17		Continued.	Zero Schedule	
MSPGCL	Khaparkheda Unit 3	210	13/10/2019	19.57		Continued.	Zero Schedule	
MSPGCL	Parli Unit 8	250	16/10/2019	01.36		Continued.	Flame Failure (Converted To Zero Schedule DT.23.10.2019 18.00.hrs)	
MSPGCL	Khaparkheda Unit 4	210	22/10/2019	23.52		Continued.	Zero Schedule By MSEDCL.	
MSPGCL	Paras Unit 3	250	23/10/2019	00.00		Continued.	Zero Schedule	
MSPGCL	Parli Unit 6	250	23/10/2019	03.30		Continued.	Zero Schedule By MSEDCL.	
MSPGCL	Parli Unit 7	250	23/10/2019	17.00		Continued.	Zero Schedule.	
MSPGCL	Koradi Unit-8	660	24/10/2019	05.27	29/10/2019	21.36	Rotary Air Preheater Trip.	

State Load Despatch Center,Airoli (MSETCL) Statement-VI
Details of Generating Unit Outages/Trippings for 29/Oct/2019

Position as on 6.30 Hrs of 30/Oct/2019

Generating Company	Name of Generating Unit	Capacity	Tripped Date	Tripped Time	Sync.Date	Sync. Time	Reason of Outage	Expected Date
MSPGCL	Chandrapur Unit 5	500	25/10/2019	01.03		Continued.	Bus-1 LBB Operation (Converted into zero schedule 26.10.2019 at 00.23Hrs).	
MSPGCL	Chandrapur Unit 3	210	25/10/2019	01.03		Continued.	Bus-1 LBB Operation (Converted into zero schedule 26.10.2019 at 00.23Hrs).	
IPP	RPL(AMT) U-3	270	25/10/2019	02.00		Continued.	Zero Schedule By MSEDCL.	
IPP	RPL(AMT) U-2	270	25/10/2019	22.00		Continued.	Zero Schedule By MSEDCL.	
IPP	RPL(AMT) U-5	270	26/10/2019	00.30		Continued.	Zero Schedule	
IPP	RPL(AMT) U-4	270	26/10/2019	08.00		Continued.	Zero Schedule	
MSPGCL	Chandrapur Unit 6	500	26/10/2019	21.52		Continued.	Zero Schedule	
MSPGCL	Koradi Unit-8	660	30/10/2019	16.46	30/10/2019	21.33	Master Fuel Trip Protection	

State Load Despatch Center, Airoli (MSETCL)
Details of Line outages/Trippings for 29/Oct/2019

Statement-VII

Position as on 6.30 Hrs of 30/Oct/2019

Name of Line	Inter State / Intra State	Tripped Date	Tripped Time	Sync. Date	Sync. Time	Outage Type	Reason of Outage
400 KV LINE Outages/Trippings							
Karad Solapur (PG)	InterState	03/05/2017	11:49		Continued.	PO	Line Converted As 220 Kv Solapur (PG)- Jeur From LOC 403
Dhule Sar'Sarovar I	InterState	19/10/2019	23.13		Continued.	HT	Over Voltage
Dhule Khandwa I	InterState	21/10/2019	22.06		Continued.	HT	Over Voltage
Chandrapur Bhadravati I	InterState	27/10/2019	14.03		Continued.	HT	Over Voltage
Kolhapur(M)-Kolhapur(GIS) cktII	InterState	30/10/2019	13.17	30/10/2019	13.44	T	Bus-2 Tripped,R Phase Breaker Pole Stuck up at Kolhapur End While Opening Isolator.
Jaigad-Karad Ckt-I	IntraState	19/10/2019	03.20		Continued.	HT	Over Voltage
Chandrapur-II - Nanded ckt II	IntraState	25/10/2019	03.15		Continued.	T	Over Voltage
Chandrapur - Parli	IntraState	26/10/2019	05.58		Continued.	T	Distance Protection (RFC from 26.10.2019 23:14Hrs).
Khadka-Aurangabad (Waluj)	IntraState	26/10/2019	14.55		Continued.	HT	Over Voltage
karad -kolhapur-II	IntraState	26/10/2019	22.52		Continued.	HT	Over Voltage
Lonikand I - Koyna stage-IV	IntraState	26/10/2019	23.01	30/10/2019	09.35	HT	Over Voltage
Dhule- Bableshtar - I	IntraState	27/10/2019	14.05	30/10/2019	09.31	HT	Over Voltage
Akola II - RPL(Rattanindia) Ckt I	IntraState	27/10/2019	14.07		Continued.	HT	Over Voltage
Chandrapur - Khaperkheda	IntraState	28/10/2019	01.45	30/10/2019	07.18	T	Over Voltage
Koradi III(Adani)-Koradi II ckt 2	IntraState	30/10/2019	09.30	30/10/2019	18.22	PO	Maintenance of Bay Equipment.
Alkud-Kolhapur(Talandage)	IntraState	30/10/2019	12.43	30/10/2019	13.02	HT	Sparking On Pentagraph Isolator.
Alkud-Kolhapur(Talandage)	IntraState	30/10/2019	13.15	30/10/2019	13.31	T	Bus-2 Tripped,R Phase Breaker Pole Stuck up at Kolhapur End While Opening Isolator.
Babhaleshtar - Padghe-I	IntraState	30/10/2019	15.23	30/10/2019	20.17	T	Distance Protection
Lonikand I - Koyna stage-IV	IntraState	30/10/2019	22.11		Continued.	HT	Over Voltage
400 KV ICT Outages/Trippings							
400/220/33 Kv 315 Mva ICT 1 @Padghe	IntraState	15/11/2018	10.07		Continued.	T	Differential Protection, Declared Faulty.
400/220/33 Kv 500 Mva Ict 1 @ CHANDRAPUR 2	IntraState	12/04/2019	17.10		Continued.	HT	Due To CVT Porcelain Collars Of The ICT-1 are Damaged.
400/220 Kv 500 MVA ICT 3 @KOLHAPUR-III (TALANDGE)	IntraState	30/10/2019	13.17	30/10/2019	13.36	T	Bus-2 Tripped,R Phase Breaker Pole Stuck up at Kolhapur End While Opening Isolator.
220 KV LINE Outages/Trippings							
Mudshingi Chikodi	InterState	24/09/2019	17.12		Continued.	PO	No Schedule.(close at Mudshingi end only)
Talandage - Chikodi	InterState	01/10/2019	17.10		Continued.	PO	No Schedule.(close at Chikodi end only)
EKLAHARE (OCR) Nasik - Navsari I	InterState	27/10/2019	17.53		Continued.	HT	Over Voltage
Tillari Amona	InterState	29/10/2019	13.00	29/10/2019	13.50	T	Tripped On Backup Protection, Back-Up Relay Operated On Earth Fault.
Mahalakshmi Amona	InterState	29/10/2019	13.00	29/10/2019	13.51	T	Tripped On Backup Protection, Back-Up Relay Operated On Earth Fault.
BOISAR BORIVALI	IntraState	24/07/2018	13.18		Continued.	HT	To Control Line Loading(H/T from Boisar end)
Lonand-Baramati	IntraState	17/09/2019	11.13	29/10/2019	11.04	HT	To Control Overloading of Lonand-Jejuri Line.
Trombay Dharavi 9	IntraState	23/10/2019	08.50		Continued.	PO	Erection Of Tower LoC.I No.23
Trombay - Kalwa	IntraState	28/10/2019	11.40	30/10/2019	12.20	PO	Tower Piling Work.
Abhijeet-Wardha-I	IntraState	28/10/2019	12.35	29/10/2019	18.33	T	Distance Protection
Jamde-Dondaicha 1	IntraState	29/10/2019	03.25	29/10/2019	03.48	T	Distance Protection
Jamde-Dondaicha 2	IntraState	29/10/2019	05.02	29/10/2019	05.17	T	Distance Protection

HT : Hand Tripping, MT : Multiple Tripping, T : Tripping, PO : Planned Outage, EO : Emergency Outage, OO : Opportunity Outage

State Load Despatch Center,Airoli (MSETCL)
Details of Line outages/Trippings for 29/Oct/2019

Statement-VII

Position as on 6.30 Hrs of 30/Oct/2019

Name of Line	Inter State / Intra State	Tripped Date	Tripped Time	Sync. Date	Sync. Time	Outage Type	Reason of Outage
220kv Halkarni- Tillary	IntraState	29/10/2019	13.00	29/10/2019	13.30	T	Tripped On Backup Protection, Back-Up Relay Operated On Earth Fault.
Ranjangaon-Fiat 1	IntraState	30/10/2019	06.43	30/10/2019	17.30	PO	220KV Yard Annual Maintenance
Ranjangaon-Fiat 2	IntraState	30/10/2019	06.43	30/10/2019	17.30	PO	220KV Yard Annual Maintenance.
Khadka-Chalisgaon-2	IntraState	30/10/2019	07.14	30/10/2019	08.31	T	220KV M.B-2 Operated.
Khadaka-Chaligaon III	IntraState	30/10/2019	07.14	30/10/2019	11.28	T	220KV M.B-2 Operated.
Khadka-Bhadli-2	IntraState	30/10/2019	07.14	30/10/2019	08.35	T	220KV M.B-2 Operated.
Walchandnagar-Bhigwan	IntraState	30/10/2019	08.20	30/10/2019	13.20	PO	Jumper Work
Malinagar - Tembhurni	IntraState	30/10/2019	16.20	30/10/2019	17.50	PO	DC leakage,trip Test
VILEBHAGAD KANDALGAON	IntraState	30/10/2019	17.48	30/10/2019	20.05	T	B PH LA Burst at Kandalgaon
Trombay - Kalwa	IntraState	30/10/2019	20.02		Continued.	PO	Tower Pilling Work.
220 KV ICT Outages/Trippings							
220/132 Kv 100 Mva Emco Ict 2 @Dondaicha	IntraState	29/10/2019	12.26	30/10/2019	00.54	T	REF, MTR OPTD.
220/132 Kv 100 Mva Bhel Ict 4 @Khadka	IntraState	30/10/2019	07.14	30/10/2019	08.32	T	220KV M.B-2 Operated.

HT : Hand Tripping, MT : Multiple Tripping, T : Tripping, PO : Planned Outage, EO : Emergency Outage, OO : Opportunity Outage