

Daily System Generation Summary on Tuesday

Tuesday, August 16, 2022

Availability at Daily Maximum Demand Hour

ST-Coal	0 MW
ST-Gas	0 MW
ST-Oil	0 MW
Hydro	2,512 MW
Distillate	0 MW
Total TNB	2,512 MW
Total IPP	18,652 MW
Total Co-Gen	0 MW
Total System	24,240 MW

Generation Mix

Type	MWh	Percentage
Hydro	24,773	6.50 %
Gas	42,369	11.11 %
Total TNB	67,142	17.61 %
ST-Coal	217,567	57.07 %
LSS	4,560	1.20 %
Gas	91,516	24.01 %
Total IPP	313,643	82.27 %
Co-Gen	460	0.12 %
Total Co-Gen	460	0.12 %
Total Generation	381,245	100.00 %
PLTG	1,901	0.50 %
HVDC	-1,884	-0.49 %
Interconnection	17	0.00 %
Net Energy	381,228	100.00 %

Maximum Demand Record

Date: 5/24/2022	19,183 MW
Date: 5/24/2022	398,523 MWH

Set On Bus, TNB, IPP And MD

Daily Maximum Demand Hour at:	16:30:00 Hour
Total Set On Bus	19,065 MW
TNB Generation	3,381 MW
IPP Generation	14,489 MW
Spinning Reserve	1,177 MW
Maximum Demand	17,847 MW
Net Energy	381,228 MWH
Load Factor	89.00 %

Fuel Cost

Total Cost:	128,260,793.12 RM
Cost per Unit	33.63 cents/kWH

Average Spinning Reserve During Peak Hour

Type	MW
GT	488
Hydro	385
Syncon	363
Thermal	222
Total	1,458

Time Weather Temperature

Afternoon	Hot	33
Morning	Sunny	28

Gas Usage

Station	(mmscfd)
GLGR	48
TJGS	99
Total TNB	147
CBPS	49
EMPP	206
KLPP	78
NPRI	159
PCGP	74
PGLA	27
SKSP	10
SPGP	140
Total IPP	743
Total Gas	890
Total Gas Required	890

Alternate Fuel Usage

Station	(mmscfd)
Total	0

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	15803	14973	14502	14116	13603	13409	13572	13571	13932	15539	16336	16727	16667	16299	17179	17627	17845	17535	16356	16292	17559	17528	17025	16550

Prepared By: -Select Name-

Checked By: -Select Name-

Printed on: Tuesday, September 6, 2022 11:19:04 AM

(Ir. Shanmugam Thoppalan)
Head
Grid System Operator

Daily MW Generation on Tuesday

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																									
JMAH	U001	706	704	575	447	257	216	221	213	216	217	216	215	216	215	216	215	240	468	701	706	706	704	705	703	707	705	706	706	706	705	706	705	702	704	706	703	710	705	704	706	707	708							
JMAH	U002	704	705	704	704	703	370	219	216	213	215	214	214	215	215	213	214	214	357	663	708	708	709	706	706	704	706	703	705	703	705	707	703	706	705	704	708	707	706	706	706	705	706	707	708					
JMHE	U002	981	981	980	904	899	901	901	896	851	855	852	851	850	850	849	852	851	980	982	981	981	984	982	983	984	979	978	983	979	980	981	983	974	976	976	977	977	976	983	968	978	973	977	975	974	975	973	978	
JMJG	U001	587	590	590	590	585	589	591	594	599	598	600	640	640	649	643	640	645	645	640	667	672	673	665	668	626	640	637	635	640	640	643	639	638	640	637	645	639	635	639	636	634	579	598	598	643	643	637	632	
JMJG	U002	670	671	660	667	666	663	666	666	657	669	667	666	667	664	668	667	671	667	665	666	667	668	665	668	668	660	666	666	669	662	668	662	667	662	666	659	664	667	660	666	667	657	662	664	658	665	662	671	
JMJG	U003	667	662	670	662	667	658	666	668	671	664	669	663	669	669	666	671	668	676	662	674	662	671	664	669	668	667	673	666	670	670	668	665	671	662	668	670	667	662	668	631	590	596	596	598	596	595	596	598	
JMJG	U004	973	973	972	941	900	902	898	860	851	852	851	852	853	850	852	853	909	967	973	972	971	973	974	972	973	972	972	975	976	973	974	974	972	970	972	972	972	972	973	972	970	972	973	975	975	974	972		
JMJG	U005	982	983	980	903	903	900	904	848	850	849	852	850	849	851	850	852	852	977	981	976	981	983	983	979	979	977	978	980	979	981	981	979	978	978	981	980	979	976	976	975	978	975	977	977	978	976	977	977	
PKLG	U004	148	146	147	147	146	144	148	146	149	150	150	146	148	147	148	148	147	146	148	146	148	148	147	143	145	147	148	146	148	148	150	145	225	275	273	271	215	144	149	150	218	254	271	243	164	152	151	147	
PKLG	U006	269	269	269	269	269	269	268	268	268	269	269	268	269	268	268	268	268	268	268	269	270	268	270	269	269	269	269	269	269	269	268	341	428	447	445	375	289	268	269	338	436	449	443	398	284	268	268		
TBIN	U001	698	697	699	700	699	700	700	697	699	703	698	700	700	699	700	700	701	699	697	716	716	713	716	714	716	714	716	716	710	698	701	699	693	698	696	697	655	447	268	226	217	217	216	217	216	214	219	222	
TBIN	U002	697	701	702	702	708	700	702	703	696	703	702	701	703	703	703	702	698	699	701	719	722	717	718	719	722	721	715	718	716	699	702	701	698	701	702	700	699	701	701	696	705	700	700	700	700	704	702	700	
TBIN	U003	405	228	212	211	213	211	211	210	211	211	212	212	212	212	211	210	212	212	265	470	705	699	702	706	698	700	702	699	702	702	700	706	702	702	701	700	701	706	698	702	696	702	698	701	697	702	707		
TBIN	U004	944	942	944	921	902	904	903	854	851	854	853	853	853	853	853	856	851	940	942	943	940	944	944	944	943	945	943	943	945	943	942	943	945	939	942	942	941	941	940	942	940	940	941	941	938	940	941	942	
Total ST-Coal		9431	9252	9104	8768	8517	8127	7998	7839	7782	7808	7804	7833	7842	7848	7841	7850	7845	8390	8744	8918	9149	9622	9833	9844	9808	9800	9803	9804	9809	9778	9792	9767	9922	10044	10070	10073	9895	9523	9341	9234	9348	9403	9470	9443	9351	9230	9215	9227	
Total ST-Oil		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	
Total ST-Gas		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	
CBPS	BLK2	323	325	325	329	323	327	323	311	319	319	314	319	286	200	191	205	322	328	332	324	326	329	322	332	324	195	194	204	331	328	331	334	321	328	327	323	332	332	335	336	330	331	332	328	329	328	321	322	
EMPP	BLK1	710	710	707	719	709	714	710	676	690	689	681	690	679	701	681	715	709	679	711	705	712	693	684	710	686	686	621	713	709	710	710	714	678	712	688	682	563	695	715	718	696	712	693	693	710	710	693	687	
EMPP	BLK2	709	710	708	709	711	713	712	706	706	707	707	707	705	711	706	708	711	708	710	710	709	709	708	710	706	708	651	710	710	710	711	711	706	709	707	707	562	695	710	711	710	712	710	708	710	710	710	707	
GLGR	GT01	107	71	67	69	68	69	68	68	68	68	67	68	68	67	66	69	67	67	68	67	68	68	67	68	68	68	65	65	66	66	103	102	104	103	65	65	67	72	105	105	105	105	105	105	105	105	105	105	105
GLGR	GT02	106	68	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	65	65	64	64	102	102	103	102	65	65	64	65	72	105	105	105	105	105	105	105	105	
GLGR	ST1C	98	80	72	72	72	72	72	71	72	71	72	72	72	71	71	72	71	71	72	71	71	71	71	71	71	72	71	72	71	70	71	89	94	94	94	77	70	70	71	93	93	93	93	75	70	70	70		
KLPP	GT13	140	140	69	74	70	73	70	103	69	68	65	69	65	69	64	74	69	112	113	112	128	126	109	113	109	110	109	113	112	113	113	112	139	140	139	139	122	111	140	140	140	140	140	139	105	104	102	101	
KLPP	GT14	156	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	21	54	151	152	116	113	145	148	140	145	140	141	112	115	111	0		
KLPP	GT15	140	140	70	70	70	70	70	96	71	71	71	71	71	71	71	71	71	110	110	110	135	135	110	110	110	110	110	110	110	110	110	110	110	135	135	135	135	110	110	135	135	135	135	135	135	135	135	135	135
KLPP	ST17	213	174	108	98	97	96	98	124	96	93	93	96	91	96	94	96	100	131	132	133	142	139	132	133	131	132	132	133	133	133	134	143	211	212	205	192	212	212	210	210	211	211	191	191	189	149			
NPRI	BLK1	517	515	517	525	515	520	515	498	509	509	503	509	500	515	503	520	517	509	515	516	518	511	503	515	506	388	389	521	515	512	516	518	502	511	509	506	516	517	520	523	512	517	516	511	517	517	506	508	
NPRI	BLK2	521	519	520	530	520	527	520	502	514	512	507	514	502	521	506	516	521	512	463	520	520	512	507	520	495	341	328	533	521	518	520	523	506	515	512	507	520	521	523	534	518	521	519	515	520	520	511	512	
PCGP	PGRG	404	401	401	419	402	411	603	536	438	584	516	590	573	522	475	547	602	591	601	600	432	395	392	403	390	385	385	408	503	543	603	609	574	592	433	379	401	402	411	526	546	553	502	494	500	403	388	384	
PGLA	GT11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47	133	176	136	136	211	218	223	222	211	0	0													

Daily MW Generation on Tuesday

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
CEND	HY04	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
HTRG	HY01	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
HTRG	HY02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
KNRG	HY01	31	31	21	21	21	31	31	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
KNRG	HY02	37	37	23	24	23	37	37	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
KNRG	HY03	35	35	22	23	23	35	35	21	22	22	22	22	22	37	37	37	37	35	35	35	35	35	35	35
KNYR	HY01	101	101	101	102	102	101	102	101	101	101	101	101	101	102	101	101	101	100	101	101	103	101	102	101
KNYR	HY02	105	105	105	105	105	105	105	101	101	101	101	101	102	101	101	101	102	101	102	101	103	102	102	101
KNYR	HY03	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	102	102	102	103
KNYR	HY04	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
LPIA	HY01	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
LPIA	HY02	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
MNOR	HY01	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
PGAU	HY01	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	22	23	23	22	23	22	22	22
PGAU	HY02	21	21	21	21	22	22	21	21	21	22	21	21	21	22	0	0	0	0	0	0	0	0	0	0
SIHY	HY01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SIHY	HY02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SIHY	HY03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SYPS	HY01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SYPS	HY03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SYPS	HY04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TMGR	HY01	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
TMGR	HY02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TMGR	HY03	41	45	75	82	82	71	46	37	41	40	38	40	37	42	38	83	79	41	64	41	82	40	38	83
TMGR	HY04	34	34	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
UJLI	HY01	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
UJLI	HY02	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
UPIA	HY01	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
UPIA	HY02	5	5	5	5	4	4	4	5	4	4	4	4	4	3	3	2	2	2	4	4	4	4	4	7
Total Hydro		769	773	730	741	739	764	710	629	599	594	591	595	588	652	636	638	883	957	915	1097	1232	1098	996	1047
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
BDLS	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
BKLS	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
BSLS	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
CHLS	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
GBLS	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
GELS	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
GNLS	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
JELS	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
JSLS	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
KDLS	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
KKLS	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
KMLS	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
KNLS	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
KRLS	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
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
MNLS	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

Daily MW Generation on Tuesday

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		
PKLS	LSS1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	32	54	59	37	95	101	106	109	114	110	54	38	33	39	39	39	44	26	18	13	8	3	3	3	3	0	0	0	0	0	0
SPLS	LSS1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	3	12	16	21	35	41	45	41	42	39	37	37	50	36	28	36	20	29	11	7	3	1	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	0	1	4	9	20	16	14	42	36	42	40	43	7	4	7	21	14	25	29	25	25	25	0	0	0	0	0	0	0	0	0	0	0	
STLS	LSS1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	4	8	19	22	18	26	9	10	15	28	16	22	8	9	7	5	6	10	7	6	4	0	0	0	0	0	0	0	0	0	0	
TBLS	LSS1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8	16	23	30	30	30	30	30	30	30	30	31	28	16	15	10	9	7	7	7	4	2	1	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	8	76	144	256	309	329	452	554	466	571	658	674	595	652	585	567	456	426	395	351	298	180	92	28	4	3	3	0	0	0	0	0	0	0
PCUF	CUFG	18	17	16	17	17	17	17	17	16	16	17	18	17	18	17	16	20	7	6	5	13	14	13	13	12	12	14	12	11	12	13	13	13	15	15	13	15	16	15	18	15	15	16	17	17				
PCUF	CUFK	4	5	5	5	3	5	4	3	4	4	4	4	5	4	4	4	3	5	6	5	6	5	5	5	5	4	4	5	5	4	5	5	4	5	3	4	6	4	4	3	4	4	5	4	3	3	4	5	
Total Co-Gen		22	22	21	22	20	22	21	20	20	20	21	22	22	21	22	20	21	26	12	12	10	18	19	18	17	17	17	18	19	17	16	16	18	18	17	21	19	17	18	20	19	23	19	18	19	21	22		
Total Gen		15858	15377	14978	14708	14545	14313	14163	13854	13656	13568	13495	13495	13632	13757	13590	13552	13943	15017	15486	16002	16279	16675	16675	16862	16600	16386	16243	16607	17148	17520	17608	17656	17873	17888	17580	17013	16350	16075	16294	17212	17594	17582	17557	17449	17031	16867	16575	16190	
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	
TIE-HVDC		29	31	31	-42	-49	-47	-47	-50	-50	-48	-48	-50	-99	-99	-96	-98	-97	-99	-96	-98	-100	-100	-97	-97	-98	-97	-97	-97	-97	-98	-98	-99	-99	-99	-97	-97	-98	-96	-96	-98	-98	-100	-96	-99	-98	-98	-97	-49	
TIE-PLTG		26	12	-26	42	92	52	94	114	103	99	134	135	109	81	117	62	108	84	46	60	41	27	48	-12	30	41	-23	66	82	79	39	126	138	142	169	92	81	98	116	132	136	125	118	104	93	123	6		
Interconnection		55	43	5	-1	43	4	47	64	53	51	86	85	60	-18	19	-34	11	-13	-53	-36	-57	-73	-52	-110	-67	-58	-56	-120	-31	-66	-16	19	-60	28	41	45	71	-6	-16	2	18	35	36	29	6	-4	25	-43	
System Total		15803	15334	14973	14709	14502	14309	14116	13790	13603	13517	13409	13410	13572	13775	13571	13586	13932	15030	15539	16038	16336	16748	16727	16972	16667	16444	16299	16727	17179	17536	17627	17716	17845	17847	17535	16942	16356	16091	16292	17194	17559	17546	17528	17430	17025	16871	16550	16233	
SRev ST-Coal		265	265	343	549	602	691	671	720	732	713	714	687	672	666	670	670	719	469	394	272	311	226	177	162	199	170	168	164	161	192	180	200	198	166	140	137	249	280	267	335	260	294	236	249	210	254	256	243	
SRev CCGT-Gas		473	554	921	1227	915	634	450	518	779	888	955	639	935	1020	1032	950	715	539	499	378	487	551	770	558	1072	1438	1540	1135	840	486	389	336	464	315	311	567	1433	1344	912	521	370	257	332	336	538	708	803	956	
SRev LSS		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
SRev ST-Gas		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
SRev OCGT-Gas		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
SRev Co-Gen		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
Syncon		588	588	676	676	676	676	676	676	676	676	676	676	676	588	588	676	500	500	500	500	313	374	374	374	374	374	374	651	651	525	525	525	151	151	338	338	525	525	525	151	0	338	338	338	525	338	525	254	
Hydro		407	403	358	347	349	324	378	411	361	366	369	365	372	396	412	295	351	342	434	252	304	377	479	428	475	601	513	476	419	304	307	291	449	358	421	499	524	526	463	255	560	401	419	422	233	287	234	254	
S.Reserve Total		1733	1810	2298	2799	2542	2325	2175	2325	2548	2643	2714	2367	2655	2670	2702	2591	2285	1850	1827	1402	1415	1528	1800	1522	2120	2583	2872	2426	1945	1507	1401	978	1262	1177	1210	1728	2731	2675	2167	1262	1190	1290	1325	1345	1506	1587	1818	1978	