

# Electric Power Industry Statistics in Asia (FY2009)

Items	APEC(Asia-Pacific Economic Cooperation) Signatory														SAARC(South Asian Association for Regional Cooperation)					-----																			
	OECD Signatory		ASEAN(Association of Southeast Asian Nations) Signatory												Signatory																								
	Japan	South Korea	China	(Taiwan)	Singapore	Malaysia	Thailand	Philippines	Indonesia	Vietnam	Laos	Cambodia	Myanmar	India	Bangladesh	Sri Lanka	Nepal	Bhutan	Mongolia																				
<b>General</b>																																							
Population (Millions)	127.1	48.3	1,334.7	23.1	4.7	27.5	67.8	92.0	230.0	85.8	6.3	14.8	50.0	1,198	162.2	20.2	29.3	0.7	2.7																				
Surface (000's km <sup>2</sup> )	377.9	99.7	9,600	36.2	0.7	329.8	513.1	300.0	1,904.6	331.2	236.8	181.0	676.6	3,287.3	144.0	65.6	147.2	38.4	1,564.1																				
GDP (US Billion \$)	5,068	832.9	4,991	379.0	177.1	191.4	263.5	161.0	540.3	97.2	5.5	10.0	34.3	1,273.5	89.6	42.0	12.5	1.3	4.2																				
GDP per Capita (US \$/Capita)	39,746	17,086	3,590	16,392	35,503	6,759	3,938	1,745	2,590	1,068	920	678	571	1,088	621	2,052	428	1,826	1,555																				
GDP Real Rates of Growth (%) <sup>*1</sup>	▲ 5.2	0.2	9.1	▲ 1.9	▲ 2.0	▲ 1.7	▲ 2.3	0.9	4.5	5.3	7.6	▲ 1.9	4.9	7.2	5.9	3.5	4.7	7.4	▲ 1.6																				
<b>Utility</b>																																							
Electrification Ratio(%) <sup>*2</sup>	100	100	99.4	100	100	93.5	85.8	73.0	65.80	95.00	69.3	17.21	26	90.4	41	85.4	38.0	72.1	67																				
Major Electric Power Utilities	IOEPCO,EPDC,JAPC	KEPCO,GenCo,KPX	State Power,5GenCo	Taiwan Power	Sing.Power	TNB, SESB, SESCO	EGAT,MEA,PEA	NPC,TransCo,MERALCO	PT,PLN	EVN	EDL	EDC	MEPE,YCESB,ES	NTPC,NHPC,SEB	BPDB,DESA,PBS	CEB,LECO	NEA	BPC, DGPC	UBEDN																				
The Number of Employee <sup>*3</sup>	133,435	35,014	2,319,200	22,503	N.A.	29,309	58,758	13,978	42,096	93,913	3,378	2,241	14,506	561,790	N.A.	16,466	9,168	2,478	8,914																				
<b>Generating Facilities</b>																																							
Generating Capacity (MW,%)	45,221	19.1%	5,515	7.5%	196,290	22.5%	4,539	11.3%	-	-	2,106	8.5%	3,488	11.4%	3,291	21.1%	3,661	12.1%	6,786	38.4%	1,837	99.9%	13	3.6%	2,047	69.6%	36,885	23.5%	230	4.2%	1,391	51.8%	644	92.3%	1,488	99.4%	28	3%	
[Installed] <sup>*4</sup>	142,574	60.1%	47,493	64.6%	651,080	74.5%	30,194	75.0%	9,581	100%	22,412	91.0%	24,504	80.1%	10,301	66.0%	25,583	84.3%	10,883	61.6%	1	0.1%	353	94.9%	895	30.4%	100,351	64.0%	5,263	95.8%	1,290	48.1%	53	7.7%	9	0.6%	848	93%	
Nuclear	48,847	20.6%	17,716	24.1%	9,080	1.0%	5,144	12.8%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Others <sup>*5</sup>	512	0.2%	2,746	3.7%	17,650	2.0%	370	0.9%	-	-	116	-	2,615	8.5%	2,017	12.9%	1,111	3.7%	-	-	1.3	0.1%	6	1.6%	-	-	15,427	9.8%	-	-	3	0.1%	0	0.0%	0	0.0%	32	4%	
Total	237,153	100%	73,470	100%	874,100	100%	40,247	100%	9,581	100%	24,634	100%	30,607	100%	15,609	100%	30,355	100%	17,669	100%	1,839.0	100%	372	100%	2,941	100%	156,784	100%	5,493	100%	2,684	100%	698	100%	1,497	100%	908	100%	
Generating Capacity per Capita(kW/Capita)	1.87	1.52	0.65	1.74	2.02	0.90	0.45	0.17	0.13	0.21	0.29	0.03	0.06	0.13	0.03	0.13	0.02	2.15	0.34																				
Thermal Efficiency of Coal based Power plants (Gross) (%)	40.26	39.5	36.1	35.66	N.A.	33.7	34.5	N.A.	N.A.	N.A.	-	N.A.	N.A.	30.7	32.26	N.A.	-	-	31.40																				
Generating Capacity (Planned)	2018	2020	2015	2020	N.A.	2010	2021	2030	2019	2015	2020	2012	2020	2012	2020	2022	2020	2020	2020																				
Hydro	47,880	18.2%	6,289	6.7%	325,000	25.2%	4,738	8.4%	N.A.	N.A.	N.A.	N.A.	9,211	10.7%	13,601	32.1%	5,112	74.0%	6,783	36.0%	11,271	93.3%	52,512	16.7%	N.A.	N.A.	1,335	24.2%	3,967	98.9%	13,207	99.9%	220	10.9%					
Thermal	154,720	58.8%	58,658	62.2%	963,000	68.1%	43,108	76.2%	N.A.	N.A.	N.A.	N.A.	27,783	68.2%	N.A.	N.A.	69,527	81.0%	25,371	59.9%	1,800	26.0%	12,039	64.0%	805	6.7%	160,044	50.9%	N.A.	N.A.	3,955	71.7%	43	1.1%	9	0.1%	1,754	86.7%	
Nuclear	60,110	22.8%	27,316	29.0%	42,940	3.2%	7,844	13.9%	N.A.	N.A.	N.A.	N.A.	2,000	4.9%	N.A.	N.A.	0	0.0%	0	0.0%	-	-	-	-	-	-	7,500	2.0%	N.A.	N.A.	-	-	-	-	-	-	-	-	
Others <sup>*5</sup>	530	0.2%	2,015	2.1%	104,390	3.5%	857	1.5%	N.A.	N.A.	N.A.	N.A.	6,991	17.2%	N.A.	N.A.	7,101	8.3%	3,369	8.0%	-	-	-	-	-	-	94,127	30.0%	N.A.	N.A.	225	4.1%	0	0.0%	0	0.0%	50	2.5%	
Total	263,220	100%	94,278	100%	1,435,330	100%	56,547	100%	N.A.	N.A.	22,802	N.A.	40,710	100%	16,550	N.A.	85,839	100%	42,341	100%	6,912	100%	18,822	100%	12,076	100%	314,184	100%	16,643	N.A.	5,515	100%	4,010	100%	13,216	100%	2,024	100%	
<b>Demand &amp; Supply</b>																																							
Gross Electric Power Production (GWh,%)	Hydro	74,539	8.1%	5,641	1.3%	571,700	15.5%	7,019	3.6%	-	-	6,886	6.3%	7,148	4.8%	9,788	15.8%	10,307	6.6%	27,007	31.9%	10,086	100%	47	3.8%	5,256	75.5%	114,081	15.3%	417	1.6%	3,905	39.5%	3,064	99.6%	6,847	100%	11	0.3%
Thermal	568,399	61.4%	271,718	62.7%	3,011,700	81.8%	145,756	75.3%	45,368	100%	102,853	93.7%	126,382	85.2%	41,744	67.4%	142,986	91.2%	57,758	68.1%	-	-	1,181	95.6%	1,708	24.5%	590,101	79.0%	26,187	98.4%	5,975	60.5%	13	0.4%	0	0.0%	3,990	99.7%	
Nuclear	279,750	30.2%	147,771	34.1%	70,100	1.9%	39,981	20.7%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Others <sup>*5</sup>	2,703	0.3%	8,474	2.0%	27,700	0.8%	849	0.4%	-	-	87	-	14,860	10.0%	10,403	16.8%	3,504	2.2%	-	-	-	-	6	0.5%	-	-	27,731	3.7%	-	-	3	0.0%	0	0.0%	-	-	-	-	
Total	925,392	100%	433,604	100%	3,681,200	100%	193,605	100%	45,368	100%	109,826	100%	148,390	100%	61,935	100%	156,797	100%	84,765	100%	10,086	100%	1,235	100%	6,964	100%	746,626	100%	26,604	100%	9,882	100%	3,077	100%	6,847	100%	4,001	100%	
Electric Power Sales (GWh,%)	Residential	275,913	32.1%	57,595	14.6%	457,500	12.5%	40,359	22.5%	7,305	17.7%	19,245	21.2%	30,367	22.8%	17,504	34.4%	54,945	40.8%	30,661	40.2%	814	42.8%	415	36.3%	2,015	40.4%	120,918	20.9%	N.A.	N.A.	3,363	35.5%	1,109	42.6%	108	7.9%	N.A.	N.A.
Commercial	309,536	36.1%	121,203	30.7%	394,400	10.8%	30,318	16.9%	16,693	40.5%	45,347	34.0%	14,756	29.0%	24,825	18.4%	3,524	4.7%	500	26.3%	368	32.2%	1,072	21.5%	46,685	8.1%	N.A.	N.A.	1,932	20.4%	193	7.4%	30	2.2%	N.A.	N.A.			
Industrial	259,989	30.3%	197,744	50.1%	2,807,600	76.7%	91,698	51.2%	17,202	41.8%	38,966	43.0%	56,670	42.5%	17,084	33.6%	46,204	34.3%	37,715	50.4%	404	21.2%	253	22.1%	1,850	37.1%	265,407	45.9%	N.A.	N.A.	2,709	28.6%	1,008	38.7%	680	49.6%	N.A.	N.A.	
Others <sup>*5</sup>	13,078	1.5%	17,932	4.5%	0	0.0%	16,862	9.4%	0	0.0%	1,476	1.6%	1,063	0.8%	1,523	3.0%	8,607	6.4%	3,516	4.7%	184	9.7%	107	9.4%	55	1.1%	144,950	25.1%	N.A.	N.A.	1,474	15.6%	293	11.2%	83	6.1%	N.A.	N.A.	
Total	858,516	100%	394,474	100%	3,659,500	100%	179,237	100%	41,200	100%	90,673	100%	133,447	100%	50,867	100%	134,581	100%	74,816	100%	1,901	100%	1,143	100%	4,991	100%	577,960	100%	23,937	100%	9,478	100%	2,603	100%	1,372	N.A.	N.A.	2,747	100%
Sales per Capita (kWh/Capita)	6,755	8,161	2,742	7,759	8,697	3,301	1,969	553	585	872	300	77	99	482	147	468	88	1,968	1,028																				
Peak Load (MW) <sup>*7</sup>	155,116	66,797	541,140	31,011	6,041	15,960	22,025	9,472	23,438	15,560	405	313	1,129	101,609(116,281)	4,162	1,868	885	237	649																				
Growth Rates of Peak Load (%)	▲ 11.5	6.4	14.3	▲ 1.0	▲ 0.5	2.7	▲ 2.3	4.6	11.0	16.5	17.5	24.6	6.4	1.0 (0.9)	0.8	▲ 2.8	9.0	22.9	2.9																				
Interchange of Electricity (GWh)	Export	-	-	18,000	-	N.A.	166	1,560	-	540	1,904	-	-	290	-	-	74	5,405	21																				
Import	-	-	6,100	-	N.A.	-	2,439	-	4,102	819	-	842	-	5,230	-	-	613	0	181																				
Balance	-	-	▲ 11,900	-	N.A.	▲ 116	879	-	-	3,562	▲ 1,085	842	-	4,940	-	-	538	▲ 5,405	160																				
<b>T&amp;D Facilities</b>																																							
Transmission Line Route Length (km)	200kV or over	18,154	9,305	398,790	2,556	N.A.	10,204	17,188	7,407	6,103	13,157	407	91	3,659	188,747	1,323	349	-	629	1,044																			
under 200kV	83,236	20,952	829,940	9,795	N.A.	13,330	23,904	12,370	28,846	12,594	2,364	333	5,536	188,082	3,192	1,763	1,918	1,790	3,641																				
Total	101,390	30,257	1,228,730	12,351	N.A.	23,534	41,092	19,778	34,949	25,751	2,771	424	9,195	376,829	4,515	2,112	1,918	2,149	4,685																				
Distribution Line Route Length (km)	High Voltage	725,378	204,078	3,148,070	N.A.	N.A.	N.A.	308,217	N.A.	268,612	129,514	14,750	1,454	19,426	2,573,568	13,212	25,212	N.A.	2,997	15,608																			
Low Voltage	569,937	216,181	8,133,687	N.A.	N.A.	N.A.	487,811	N.A.	370,905	189,898	12,420	2,639	15,522	4,328,549	15,964	99,445	N.A.	4,237	5,646																				
Total	1,295,315	420,259	11,281,757	183,556	N.A.	736,392	796,028	258,554	639,517	319,412	27,170	4,093	34,948	6,902,117	29,176	124,657	100,746	7,234	21,254																				
Transmission & Distribution Loss (%) <sup>*8</sup>	5.2	4.1	6.72	4.9	N.A.	8.7	5.9	12.2	10.13	9.57	11.98	10.6	26.7	26.91	16.95	14.6	26.6	6.8	17.7																				
<b>Supply Reliability</b>																																							
[Total Minutes of Outage per Customer <sup>*9</sup> ]	14	15.6	541(City area)	19.2	0.45	65	46.0 / 385.9	366.6	1,002	169	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	1,032.7	17,664																				
<b>Performance Index</b> [Sales per Employee (MWh/Cap.)]	6,434	11,266	1,578	7,965	N.A.	3,094	2,271	N.A.	3,197	797	563	288																											