Cost Camparison Sheet for Hydel Projects for NPSEP

		NPSEP Data-2011				Updated Data-2012				Difference (2012 Data-NPSEP 2011 Data)		
Sr. #	Project	Capacity (MW)	Project Cost (Rs. Million)	Project Cost (US$.Million) 1US$=80Rs	US$ / kW	Capacity (MW)	Project Cost (Rs.Million)	Project Cost (US$.Million) 1US$=90Rs	US$ / kW	Cost (Rs Million)	Cost (US$ Million)	US$ / kW
1	Allai Khwaar	121	8392	104.9	867	121	14595	162	1340	6203	57.3	473.3
2	Khan Khwar	72	3929	49.1	682	72	10281	114	1587	6352	65.1	904.5
3	Duber Khwar	130	9127	114.1	878	130	19509	217	1667	10382	102.7	789.8
4	Jinnah	96	940	11.8	122	96	5754	64	666	4814	52.2	543.6
5	Neelum Jhelum	969	130356	1629.5	1682	969	144650	1607	1659	14294	-22.2	-22.9
6	Skardu	1600	669280	8366.0	5229	1600	742500	8250	5156	73220	-116.0	-72.5
7	Yugo	520	243360	3042.0	5850	520	270000	3000	5769	26640	-42.0	-80.8
8	Diamer Basha*	4500	430196	5377.5	1195	4500	581100	6457	1435	150904	1079.2	239.8
9	Golen Gol	106	10400	130.0	1226	106	7035	78	737	-3365	-51.8	-489.0
10	Kurram Tangi*	83	36400	455.0	5482	83	38714.65	430	5183	2314.65	-24.8	-299.2
11	Tarbela 4th Ext.	960	57440	718.0	748	1410	83520	928	658	26080	210.0	-89.8
12	Munda*	740	72852	910.7	1231	740	81958.5	911	1231	9106.5	0.0	0.0
13	Kohala (IPP)	1100	172400	2155.0	1959	1100	224820	2498	2271	52420	343.0	311.8
14	Keyal Khwar	122	19760	247.0	2025	122	15986	178	1456	-3774	-69.4	-568.7
15	Phandar	80	5600	70.0	875	80	6360	71	883	760	0.7	8.3
16	Basho	28	2880	36.0	1286	28	3607	40	1431	727	4.1	145.6
17	Harpo	33	3520	44.0	1333	34.5	4050	45	1304	530	1.0	-29.0
18	Lawi	70	6720	84.0	1200	70	7954	88	1263	1234	4.4	62.5
19	Dasu	4320	416480	5206.0	1205	4320	734113	8157	1888	317633	2950.8	683.1
20	Bunji	7100	547040	6838.0	963	7100	719272	7992	1126	172232	1153.9	162.5
21	Akhori	600	264000	3300.0	5500	600	297000	3300	5500	33000	0.0	0.0
22	Lower Spat gah	496	55760	697.0	1405	496	66638	740	1493	10878	43.4	87.5
23	Palas Valley	665	61040	763.0	1147	665	73038	812	1220	11998	48.5	73.0
24	Pattan	2800	487280	6091.0	2175	2800	540000	6000	2143	52720	-91.0	-32.5
25	Thakot	2800	480000	6000.0	2143	2800	540000	6000	2143	60000	0.0	0.0
26	Dudhnial	800	146160	1827.0	2284	960	239063	2656	2767	92903	829.3	483.2
27	Yulbo	3000	548080	6851.0	2284	2800	607500	6750	2411	59420	-101.0	127.0
28	Tungas	2200	341200	4265.0	1939	2200	378000	4200	1909	36800	-65.0	-29.5
	Total	32603	4165208	52065.1	-	33015	5249729.2	58330.32	-	1084521.2	6265	-

Cost Camparison Sheet for IPPs Hydel Projects

		NPSEP Data-2011				Updated Data-2012				Difference (2012 Data-NPSEP 2011 Data)		
Sr. #	Project	Capacity (MW)	Project Cost (Rs. Million)	Project Cost (US$.Million) 1US$=80Rs	US$ / kW	Capacity (MW)	Project Cost (Rs.Million)	Project Cost (US$.Million) 1US$=90Rs	US$ / kW	Cost (Rs Million)	Cost (US$ Million)	US$ / kW
1	New Bong Escape	84	17040	213.0	2536	84	19350	215	2560	2310	2.0	23.8
2	Gul Pur	100	12720	159.0	1590	100	14310	159	1590	1590	0.0	0.0
3	Rajdhani	132	13680	171.0	1295	132	15390	171	1295	1710	0.0	0.0
4	Kotli	97	13600	170.0	1753	100	15300	170	1700	1700	0.0	-52.6
5	Patrind	147	18960	237.0	1612	147	32580	362	2463	13620	125.0	850.3
6	Sehra	130	27520	344.0	2646	130	30960	344	2646	3440	0.0	0.0
7	karot	720	117600	1470.0	2042	720	132300	1470	2042	14700	0.0	0.0
8	Asit-Kedam	215	32400	405.0	1884	215	36450	405	1884	4050	0.0	0.0
9	Madyan	157	35040	438.0	2790	157	39420	438	2790	4380	0.0	0.0
10	Azad pattan	222	26640	333.0	1500	640	86400	960	1500	59760	627.0	0.0
11	Chakothi	500	60160	752.0	1504	500	105930	1177	2354	45770	425.0	850.0
12	Suki Kinari	840	86480	1081.0	1287	840	97290	1081	1287	10810	0.0	0.0
13	Kaigah	578	65760	822.0	1422	548	73980	822	1500	8220	0.0	77.9
	Total	3922	527600	6595	-	4313	699660	7774	-	172060	1179	-

*The project cost shown in the table is 65% of the total cost of the project and the rest is used for irrigation purposes.

GENERATION PLAN 2011-12-to 2029-30 - National Power System Expansion Plan 2030 - Pakisatn

Year	Name of Project	Inter-connection Voltage (kV)	Unit Additions				Annual Total (MW)	Retirement (MW)	Cummulative Net Capacity (MW)
			Type	# of units	Unit net capacity (MW)	Plant Total net capacity (MW)			
2010-11									21,455
2011-12	Nandipur Power project	132	CC	1	364	364	950	-	22,405
	CHASHNUPP-II, Punjab	220	Nuclear	1	320	320			
	Khan Kwar	132	Hydro	1	71	71			
	Jinnah	132	Hydro	1	95	95			
	Fauji and Zorlu	132	Wind	2	50	100			
2012-13	UAE G.T, F/Abad Punjab	132	GT	2	134	267	1,515	352	23,568
	Jamal Din Wali R.Y. Khan	132	Bagass	1	76	76			
	BQPS 560, KESC	KESC	CC	1	546	546			
	KESC Bio Waste to Energy	KESC	Biowaste	1	23	23			
	Bin Qasim, KESC (2x210 MW oil to coal conversion)	KESC	Coal	2	176	352			
	Allai Kwar	220	Hydro	1	121	121			
	Duber Kwar	132	Hydro	1	130	130			
2013-14	Guddu-New	500	CC	2	329	658	824	132	24,260
	Kurram Tangi	132	Hydro	1	83	83			
	New Bong Escape, IPP	132	Hydro	1	83	83			
2014-15	Haveli	500	GT	12	153	1,841	2,241	-	26,501
	Candidate wind PP	132	Wind	8	50	400			
2015-16	Haveli	-	GT	-12	153	- 1,841	4,108	490	30,119
	Haveli	500	CC	6	497	2,982			
	Sahiwal	500	CC	2	689	1,378			
	Neelum Jhelum	500	Hydro	4	240	959			
	Gul Pur, IPP	132	Hydro	1	99	99			
	Rajdhani, IPP	132	Hydro	1	131	131			
	Candidate wind PP	132	Wind	8	50	400			
2016-17	Thar#1 or imported coal plant	500	Coal	5	567	2,835	6,025	-	36,144
	CHASHNUPP-III, Punjab	220	Nuclear	1	320	320			
	Kotli HPP, IPP	132	Hydro	1	96	96			
	Patrind HPP, IPP	132	Hydro	1	146	146			
	Sehra HPP, IPP	132	Hydro	1	129	129			
	Candidate wind PP	132	Wind	10	50	500			
	Iran - Pakistan and CASA	500(DC)	I/C	2	1,000	2,000			
2017-18	Thar #2	600(DC)	Coal	4	567	2,268	5,024	-	41,168
	CHASHNUPP-IV, Punjab	220	Nuclear	1	320	320			
	Tarbela 4th Ext.	500	Hydro	2	475	950			
	Golen Gol	132	Hydro	3	35	105			
	Karot HPP, IPP	500	Hydro	1	713	713			
	Asrit-Kedam HPP, IPP	500	Hydro	1	213	213			
	Madyam HPP, IPP	500	Hydro	1	155	155			
	Candidate wind PP	132	Wind	6	50	300			
2018-19	Thar #3	600(DC)	Coal	7	567	3,969	5,306	-	46,474
	Azad Pattan, IPP	500	Hydro	1	220	220			
	Chakothi HPP, IPP	220	Hydro	1	495	495			
	Kalam - Asrit HPP, IPP	500	Hydro	1	195	195			
	Gabral Kalam HPP, IPP	500	Hydro	1	100	100			
	Shogosin HPP, IPP	132	Hydro	1	126	126			
	Shushgai Zhendoli HPP, IPP	132	Hydro	1	101	101			
	Candidate wind PP	132	Wind	2	50	100			
2019-20	Thar #4	600(DC)	Coal	7	567	3,969	6,345	674	52,145
	Chashma	500	Nuclear	1	940	940			
	Harpo	132	Hydro	1	33	33			
	Basho	132	Hydro	1	28	28			
	Suki Kinari HPP, IPP	500	Hydro	4	208	832			
	Kaigah HPP, IPP	500	Hydro	1	543	543			
2020-21	Thar #5	600(DC)	Coal	4	567	2,268	7,297	776	58,666
	Qadirabad	500	Nuclear	1	940	940			
	Phander	132	Hydro	4	20	79			
	Bunji 1	500	Hydro	7	255	1,782			
	Diamer Basha 1	500	Hydro	6	371	2,228			
2021-22	Bhikki	500	CC	2	689	1,378	5,406	819	63,253
	Thar #6	600(DC)	Coal	1	567	567			
	Bunji 2	500	Hydro	7	255	1,782			
	Lawi	132	Hydro	3	23	69			
	Keyal Khwar	132	Hydro	2	61	121			
	Kohala	500	Hydro	4	272	1,089			
	Candidate wind PP	132	Wind	8	50	400			
2022-23	Munda	220	Hydro	1	733	733	5,717	-	68,970
	Bunji 3	500	Hydro	7	255	1,782			
	Palas Valley	500	Hydro	3	191	574			
	Diamer Basha 2	500	Hydro	6	371	2,228			
	Candidate wind PP	132	Wind	8	50	400			

GENERATION PLAN 2011-12-to 2029-30 - National Power System Expansion Plan 2030 - Pakisatn

Year	Name of Project	Inter-connection Voltage (kV)	Unit Additions				Annual Total (MW)	Retirement (MW)	Cummulative Net Capacity (MW)
			Type	# of units	Unit net capacity (MW)	Plant Total net capacity (MW)			
2023-24	Thar #7	600(DC)	Coal	4	567	2,268	8,376	429	76,917
	PAEC-Karachi I	500	Nuclear	1	940	940			
	Dasu	500	Hydro	8	535	4,277			
	Lower Spat Gah	500	Hydro	3	164	491			
	Candidate wind PP	132	Wind	8	50	400			
2024-25	PAEC-Karachi II	500	Nuclear	1	940	940	6,884	836	82,965
	Thakot	500	Hydro	8	347	2,772			
	Pattan	500	Hydro	8	347	2,772			
	Candidate wind PP	132	Wind	8	50	400			
2025-26	Faisalabad	132	GT	2	153	305	5,018	28	87,955
	Thar #8	600(DC)	Coal	6	567	3,402			
	Dudhnial	500	Hydro	1	792	792			
	Taunsa	132	Hydro	1	119	119			
	Candidate wind PP	132	Wind	8	50	400			
2026-27	D.I.Khan	220	CC	2	689	1,379	6,135	244	93,845
	Tungas	500	Hydro	10	198	1,980			
	Yulbo	500	Hydro	10	238	2,376			
	Candidate wind PP	132	Wind	8	50	400			
2027-28	Thar #9	600(DC)	Coal	10	567	5,670	7,010	1,032	99,823
	Chashma	220	Nuclear	1	940	940			
	Candidate wind PP	132	Wind	8	50	400			
2028-29	Lahore	132	GT	2	153	305	6,181	113	105,891
	Thar #10	500	Coal	8	567	4,536			
	PAEC-Karachi III	500	Nuclear	1	940	940			
	Candidate wind PP	132	Wind	8	50	400			
2029-30	Lahore	132	GT	2	153	307	7,756	1,010	112,637
	Balloki	500	CC	2	689	1,379			
	Thar #11	500	Coal	10	567	5,670			
	Candidate wind PP	132	Wind	8	50	400			
							98,116	**6,935**	**91,182**