Power Generation Sector of Pakistan

Initiating Coverage

Tahir Hussein Ali
tahir.ali@igi.com.pk

Muhammad Ashar Khaliq
ashar.khaliq@igi.com.pk

IGI Securities

CONTENTS

Key Highlights

Table 1: IGI Power Generation Universe: Key Valuation Statistics

Price/Earnings	11.12
Price/Sales	0.99
EV/EBITDA	6.59
Sales Growth (%)	35.53
Gross Margin (%)	16.51
Operating Margin (%)	16.48
Dividend Yield (%)	10.09
ROA (%)	9.82
ROE (%)	17.30

Source: Bloomberg & IGI Research

- According to Pakistan Power Infrastructure Board (PPIB) projections, power demand in the country is likely to grow at a 3year CAGR of 7.5% and is expected to cross 20,000MWh in FY10. Thus, Pakistan is expected to face major power shortage in years ahead and supply-demand deficit is likely to surge to 5,500MWh FY10.

- To cover the exchange rate variations risk, various tariff components are indexed for variation in the Pak Rupee and US$ exchange rates. Keeping in view, surging trade deficit, it is expected that Pak rupee is likely to depreciate against greenback by 1.15%. In such a scenario the sector provides a perfect tool to investors particularly foreign investors for hedging exchange rate risk.

- The Government of Pakistan (GOP) guarantees the performance obligation of its entities such as the power purchaser, fuel supplier, etc. and provinces. GOP also provides protection to sponsors and lenders in case of termination of the project. The Government of Pakistan guarantees protection against changes in taxes & duties and specified “political risks”.

- Any variation in price of fuel would be passed through to the power purchaser. Similarly any additional taxation over and above the Tariff assumptions is liable to be passed on to the power purchaser.

- According to PPIB, 60 power projects are expected to come online in next 10years. These projects are expected to fetch total anticipated investments of US$14.68bn. 42 projects are based on Oil and Hydel with 21 each while 18 projects are based on pipeline quality gas/dual-fuel, coal and dedicated gas fields with 6 each. If all these projects will come on line then it will take the total installed capacity of power generation in Pakistan to almost 29,000MWatts in next 10years.

- Out of 60 expected projects, Letter of Intent (LoI) has been issued to 33 projects while 13 projects have been issued Letter of Support (LoS) under 2002 Power Policy. 12 projects have reached implementation agreement out of which eight projects have achieved financial close.

- Compared to other companies of the region, Pakistan’s power generation sector extends more lucrative opportunities to investors. The average sales growth of the sector stands at 35.53%YoY; well above the regional average of 14.78%. Above regional average ROA of 13.64% indicates high level of operational efficiency and technical competency of the local companies. Despite this, the local companies trade at an average PE multiple of just 11.12 times compared to the regional average of 24.22 times. We find immense opportunities in Pakistan’s power generation sector from the investment point of view, which is still largely un-catered relative to the region.

Table 2: Regional Comparison: A Relative Investment Snapshot

	Pakistan		India		Thailand			Philippine	China		Average	
	HUBC PA	KAPCO PA	PTCIN IN	NLC IN	RATCH TB	GLOW TB	EGCO TB	EDC PM	GD Power	Shenzhen Energy	Domestic Avg	Regional Avg
Price/Earnings	13.54	8.70	64.88	60.99	11.37	9.30	6.42	8.95	27.52	30.51	11.12	24.22
Price/Sales	0.81	1.17	0.61	18.83	1.43	1.49	4.25	2.89	2.50	3.65	0.99	3.76
EV/EBITDA	8.34	4.83	n/a	48.29	10.31	7.39	8.57	11.58	n/a	n/a	6.59	14.19
Sales Growth (%)	58.11	12.95	21.24	(4.24)	(5.63)	0.72	(18.56)	(2.61)	78.12	7.71	35.53	14.78
Gross Margin (%)	9.44	23.58	n/a	n/a	14.45	19.05	47.04	52.71	23.33	27.40	16.51	27.13
Operating Margin (%)	8.86	24.09	1.02	15.08	11.19	17.53	37.52	46.11	19.04	25.54	16.48	20.60
ROA (%)	6.00	13.64	7.49	4.94	8.00	9.13	13.84	9.35	3.18	7.84	9.82	8.34
ROE (%)	8.99	25.61	13.66	6.94	16.15	19.80	22.34	34.25	16.09	18.40	17.30	18.22

Source: PPIB

The Hub Power Company

- Using the Dividend Discount Model (DDM) model at the WACC of 12.71%, our fair value of the scrip is **PRs36.66** per share. At the current market price, the stock offers an upside potential of 15.46% w.r.t. our fair value. We hold a Positive stance on the share and recommend investors to **Over-Weight** the stock in their portfolio.

Table 3: Valuation Statistics @ PRs31.75

	FY05	FY06	FY07	FY08	FY09	FY10
Gross profit margin (%)	42.15%	15.61%	9.44%	10.22%	13.45%	18.82%
Operating profit margin (%)	42.37%	15.57%	9.23%	9.79%	13.00%	18.38%
Net profit margin (%)	31.72%	9.92%	6.01%	5.58%	8.44%	14.90%
EPS (PRs)	4.65	2.39	2.29	2.47	3.74	4.82
DPS (PRs)	3.90	3.10	2.85	2.60	2.74	2.37
ROE (%)	17.00%	9.23%	9.14%	9.89%	14.36%	17.80%
BV (PRs)	27.37	25.91	25.11	24.93	26.01	27.05
P/E (x)	6.82	13.27	13.84	12.88	8.50	6.59
P/BV (x)	1.16	1.23	1.26	1.27	1.22	1.17
Dividend yield (%)	12.28%	9.76%	8.98%	8.18%	8.64%	7.45%

Source: Company Reports

The Kot Addu Power Company

- Using DDM at WACC of 13.86%, we compute the KAPCO's fair value to be **PRs60.23**. At the current market price, the stock offers an upside potential of 20.94%. We thus hold a positive stance towards the scrip and recommend investors to **Over-weight** the stock in their respective investment portfolios.

Table 4: Valuation Statistics @ PRs49.80

	FY05	FY06	FY07	FY08	FY09	FY10
Gross profit margin (%)	35.32%	29.95%	23.58%	23.49%	24.84%	26.76%
Operating profit margin (%)	35.90%	30.65%	24.03%	24.38%	25.85%	27.35%
Net profit margin (%)	29.20%	16.19%	13.46%	13.62%	14.61%	15.77%
EPS (PRs)	9.14	6.04	5.67	6.75	7.10	7.37
DPS (PRs)	8.00	8.10	6.00	6.00	10.65	11.06
ROE (%)	36.11%	26.43%	26.46%	29.64%	32.25%	39.69%
BV (PRs)	25.32	22.86	21.43	22.78	22.02	18.58
P/E (x)	5.45	8.24	8.78	7.38	7.01	6.75
P/BV (x)	1.97	2.18	2.32	2.19	2.26	2.68
Dividend yield (%)	16.06%	16.27%	12.05%	12.05%	21.39%	22.21%

Source: IGI Research

The Bottomline: An Investment Perspective

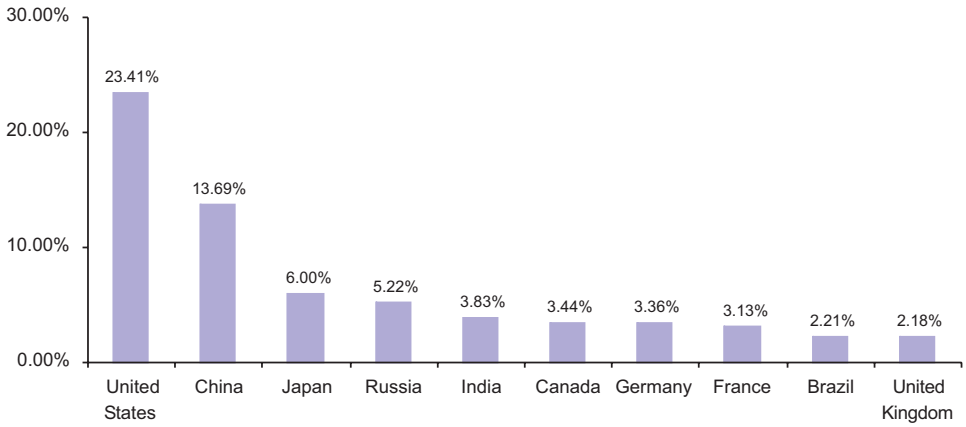
At prevailing levels, we hold a **POSITIVE** stance on the Power Generation sector of Pakistan and advice investors to **OVERWEIGHT** the sector in their investment portfolio.

The World of Power: A Global Scenario

Prominent Power Players

Since 1973, global demand for electricity has witnessed robust growth and increased by almost 200% in three decades. Total global electricity production jumped to 18,235TW in CY2005 from 6,116TWh in CY1973 translating into a Compounded Annual Growth Rate (CAGR) of 3.58%p.a. United States of America (USA) is the largest electricity producer of the world contributing 23.5% of the total global electricity production. Asian electricity giants namely China and Japan are the second and third largest electricity producer in the world with 13.69% and 6.00% share respectively in the cumulative global electricity production.

Chart 1: Top Ten Electricity Producer of the World



Source: International Energy Agency (IEA)

Many European countries play a prominent role in global electricity trade. France, Germany and Paraguay are respectively the largest electricity exporter. Germany, Italy and United States are respectively the major electricity importers in the world. Interestingly, most Asian countries are large producers of electricity but none made it into the list of prominent electricity exporters or importers. Overall, around 3.5% of the global electricity productions are used for exports while rest is consumed domestically.

Table 5: Prominent Power Players of the World

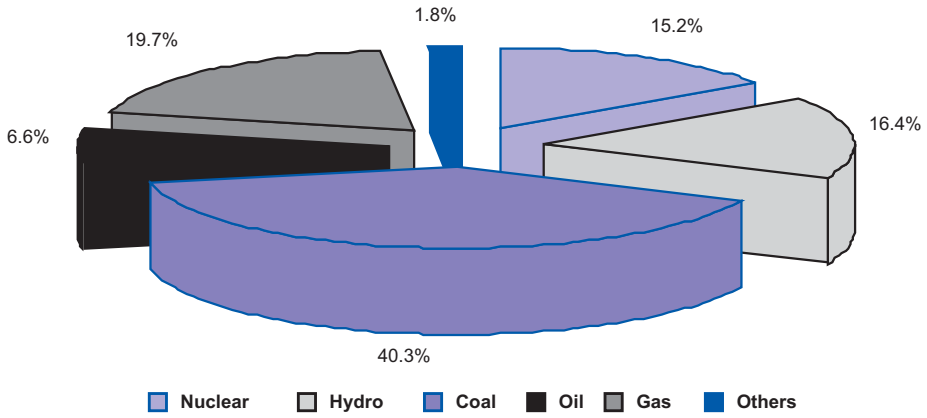
	Major Producers	TW		Major Exporters	TW		Major Importers	TW
1	United States	4,268	1	France	68	1	Germany	57
2	China	2,497	2	Germany	61	2	Italy	50
3	Japan	1,094	3	Paraguay	44	3	United States	45
4	Russia	951	4	Canada	44	4	Brazil	39
5	India	699	5	Switzerland	32	5	Switzerland	38
6	Canada	628	6	Czech Republic	25	6	Netherlands	24
7	Germany	613	7	Russia	23	7	Austria	20
8	France	571	8	Sweden	22	8	Canada	20
9	Brazil	403	9	United States	20	9	Finland	18
10	United Kingdom	398	10	Austria	18	10	Hungary	16
	Rest of the World	6,113		Rest of the World	270		Rest of the World	285
	World	18,235		World	627		World	612

Source: International Energy Agency (IEA)

Electricity from Fossil Fuel

Coal has largest contribution in the global electricity production. Almost 40% of the global electricity is produced through coal while 20% is produced from gas. United States is the largest coal based electricity producer in the world which satisfies 50% of its domestic electricity demand through coal. China and India are respectively second and third largest coal based electricity producers in the world. China satisfies 79%, while India meets almost 69% of its electricity demand from coal based power plants.

Chart 2: Resources Contribution in Global Electricity Production



Source: International Energy Agency (IEA)

Fuel oil is the most expensive mean of producing electricity. With rising fuel oil prices in the global market, contribution of fuel oil in power generation has reduced substantially over past three decades. In 1970s, almost 25% of the global electricity used to be produced from oil which reduced to only 6.6% in CY2005. However, except for India and China, most of the Asian countries still depend on fuel oil for power generation. Japan and Saudi Arabia are among top three oil based power generation countries in the world while Kuwait, Iran, Indonesia, and Iraq also make the list of top ten oil based power generation nations of the world. On the contrary, gas contribution has increased from 12% in 1973 to almost 20% in CY2005. United States, Russia and Japan are respectively largest gas based power generation countries in the world. Iran is the sixth largest gas based power generation country in the world and it satisfies almost 90% of its total domestic power demand from gas based power plants.

Table 6: Major Electricity Producers from Fossil Fuels

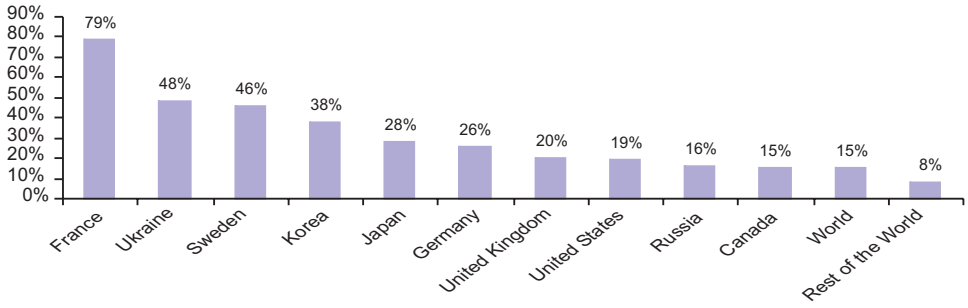
	Coal	TW		Oil	TW		Gas	TW
1	United States	2,154	1	Japan	146	1	United States	783
2	China	1,972	2	United States	141	2	Russia	439
3	India	480	3	Saudi Arabia	90	3	Japan	231
4	Japan	309	4	Mexico	69	4	United Kingdom	153
5	Germany	305	5	China	61	5	Italy	149
6	South Africa	229	6	Italy	47	6	Iran	132
7	Australia	201	7	Indonesia	41	7	Thailand	94
8	Russia	166	8	Kuwait	36	8	Saudi Arabia	86
9	Korea	149	9	Iraq	33	9	Mexico	85
10	Poland	145	10	Iran	33	10	Egypt	81
	Rest of the World	1,241		Rest of the World	504		Rest of the World	1,364
	World	7,351		World	1,201		World	3,597

Source: International Energy Agency (IEA)

Nuclear Electricity

Nuclear based electricity production process has gained significant popularity in recent past and its contribution in global electricity production has surged to 15% from merely 3.3% in mid 1970s. United States, France, and Japan are respectively the largest producers of Nuclear Electricity in the world. 85% of the world's total nuclear electricity generation capacity resides in just 10 countries; with US alone contributing almost 30%. France meet more than 70% of its domestic electricity requirements from Nuclear based power plants.

Chart 3: Percentage of domestic electricity needs satisfied through nuclear source



Source: International Energy Agency (IEA)

Table 7: Top Ten Nuclear Electricity Producers of the World

	Producers	Tera Watt		Installed Capacity	Tera Watt
1	United States	811	1	United States	847
2	France	452	2	France	544
3	Japan	305	3	Japan	415
4	Germany	163	4	Germany	173
5	Russia	149	5	Russia	190
6	Korea	147	6	Korea	147
7	Canada	92	7	Canada	112
8	Ukraine	89	8	Ukraine	112
9	United Kingdom	82	9	United Kingdom	104
10	Sweden	72	10	Sweden	78
	Rest of the World	406		Rest of the World	458
	World	2768		World	3180

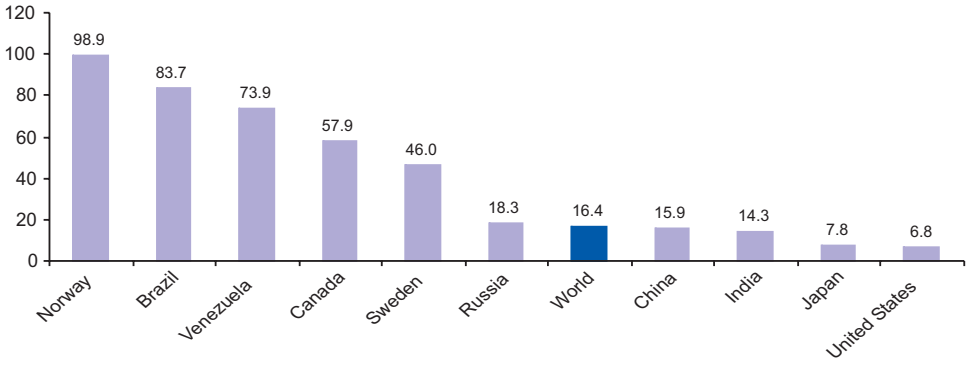
Source: International Energy Agency (IEA)

Despite relatively high capital costs and the need to internalize all waste disposal and decommissioning expenses, nuclear energy generation is at most still lower than that of through fossil fuel in most places. If the social, health and environmental costs of fossil fuels are also taken into account, electricity generated from nuclear sources proved out to be comparatively cheaper than the thermal generation means.

Hydro Electricity

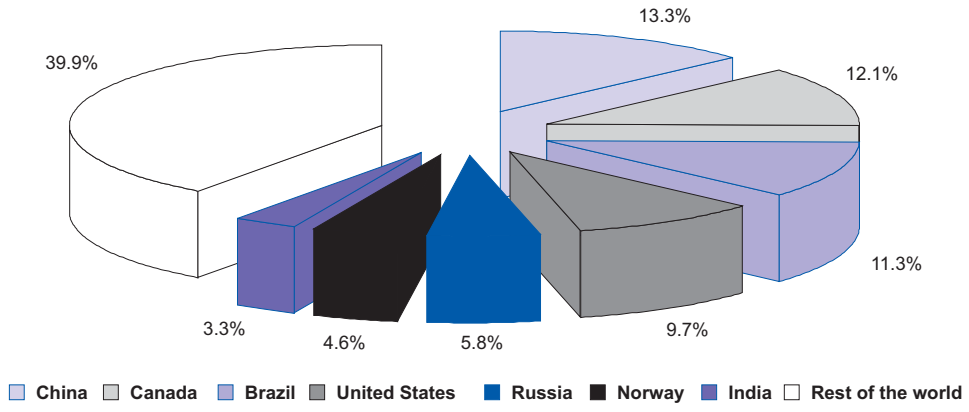
Over the past three decades, contribution of hydro electricity in global electricity production has reduced from 21% in mid 1970s to 16% in CY2005. China is the largest hydro electricity producer followed by Canada and Brazil. Almost 60% of the world's cumulative hydro electricity generation plants reside in only 10countries of the world. Norway satisfies more than 95% of its total domestic electricity through hydro based power plants.

Chart 4: Percentage of domestic electricity needs satisfied through hydel source



Source: International Energy Agency (IEA)

Chart 5: Global Market Share of Major Hydro Electricity Producers



Source: International Energy Agency (IEA)

Electricity Costing: A Comparison of Various Fuel Sources

According to a general study of external costs of various fuel cycles, nuclear energy incurs about one-tenth of costs of coal. External costs are the quantifiable costs in relation to health and environment which are not built into the cost of electricity. If these cost were in fact included, the European price of electricity from coal would double while that from gas would increase by 30%; that too without including the effects of global warming.

Even in hard cash terms, the findings suggested that only wind energy is cheaper than nuclear energy which costs 0.1-0.2 Euro cents per KWh. Nuclear energy costs around 0.4 Euro cents per KWh, which includes all expenditures normally made for fuel management, plant decommissioning and final waste disposal. Electricity generated from gas costs around 2 Euro cents per KWh, while generation costs of hydro and coal could range from 4.1 to 7.3 Euro cents per KWh.

The International Energy Agency suggests the following global average total costs versus the output over the lifetime of the plant. Costs include construction, operations & maintenance, fuel and decommissioning.

Table 8: Global Average Electricity Generation Costs

	US Cents / KWh		US$ / KW(e)
Fuel Mix	**5% discount rate**	**10% discount rate**	**Construction Costs**
Coal	2.5-5.0	3.5-6.0	1,000-1,500
Gas	3.7-6.0	4.0-6.3	400-800
Nuclear	2.1-3.1	3.0-5.0	1,000-2,000
Wind	3.5-9.5	4.5-14.0	1,000-2,000
Hydro	4.0-8.0	6.5-10.0	NA
Solar	15.0	20.0	NA
Combined Heat and Power	2.5-6.5	3.0-7.0	NA

Source: International Energy Agency (IEA)

The data highlights the emergence of nuclear technology as the cheapest source of electricity around the world, levelized upon the construction cost of the facility. Interestingly enough, the average construction cost of a nuclear plant is at par with those of coal and wind. To further strengthen our view of nuclear energy being the cheapest form of energy, we present the following case. In January 2007, the approximate cost in US$/Kg of uranium ($UO_2$) reactor fuel were as follows:

Table 9: Uranium Fuel Cost Element

Cost Element	**Break up**	**Cost**
Uranium:	8.9 kg U_3O_8 x $53	472
Conversion:	7.5 kg U x $12	90
Enrichment:	7.3 SWU x $135	986
Fuel fabrication:	Per Kg	240
Total cost of fuel	US$ per Kg	1,787

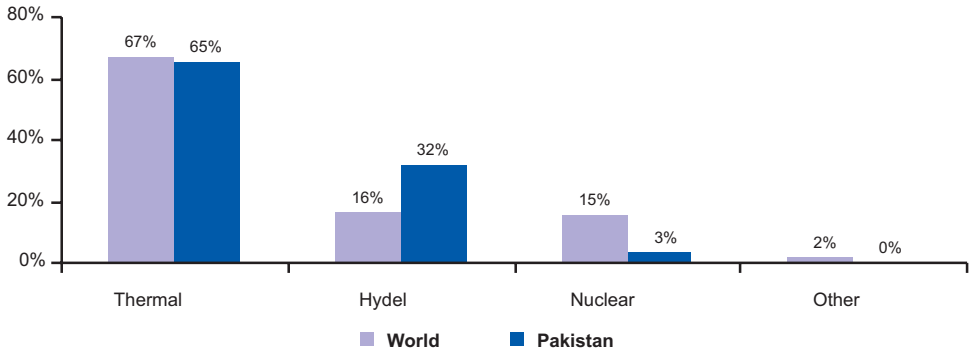
Source: The Economic of Nuclear Power," Briefing 8, Australian Uranium Association

The usual burn-up rate of Uranium is 45,000MW-day/ton. Thus, a 33% efficient nuclear plant would produce 360MWh of electricity from one Kg of Uranium. This implies a generation cost of just 0.50 US cents per KWh. Nuclear fuel cost is one area steadily gaining efficiency and hence reducing generation cost. For instance, in Spain nuclear electricity cost was reduced by 29% from 1995 to 2001. This involved boosting enrichment levels and burn up to achieve 40% fuel cost reduction.

Power Generation Sector of Pakistan

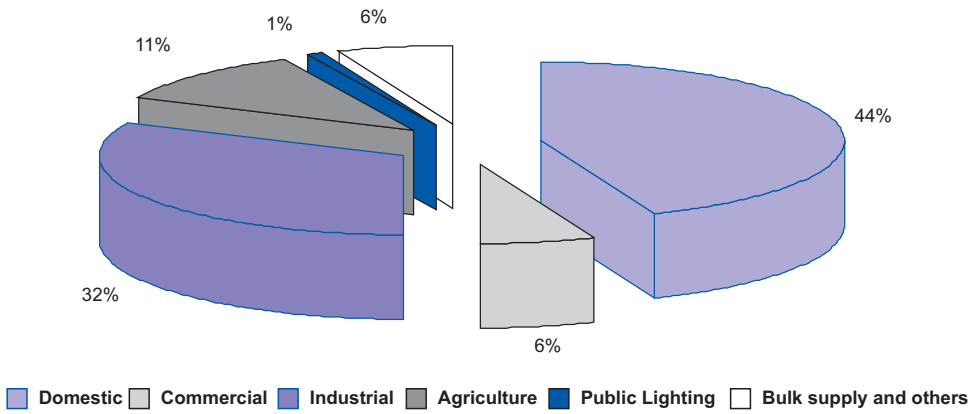
The nation satisfies most of its power needs by thermal means (65%). Due to a mild shortage of natural gas in the country, low calorific value of the domestic coal, and lower water levels in rivers; most existing and upcoming thermal power projects are furnace oil based, which is the most expensive mean of electricity generation in Pakistan. Federal Bureau of Statistics of Pakistan provides the following data about electricity generation and consumption in the country.

Chart 6: Sources of Electricity Consumption: A Relative Comparison



Source: Federal Bureau of Statistics of Pakistan

Chart 7: Sectorwise Electricity Consumption in Pakistan



Source: Federal Bureau of Statistics of Pakistan

Hydel Power Generation

Pakistan's hydel power generation capacities have deteriorated as a result of lower water-levels in rivers. Hydel electricity is a considerably cheaper source when compared to thermal sources. WAPDA controls the country's major hydroelectric plants; with the largest being the Tarbela plant at 3,046MWh installed capacity. The Tarbela plant was the largest hydroelectric plant in Asia until China began building the Three Gorges project, which will have 18,000 MW of installed capacity. Additional hydroelectric plants in operation include Mangla (1,000MWh), Warsak (240MWh), and Chashma (184MWh). Hydroelectric power represents about a third of Pakistan's power source, however, periodic droughts affect the availability of hydropower production. It is thus that WAPDA and other electricity distribution companies have to rely more on thermal power generators to cater the power demand of the country and are facing difficulties in coping with high international oil prices. Nonetheless, PPIB believes that the country still possess an untapped hydel potential of 27,000MWh.

Thermal Power Generation

WAPDA operates the majority of thermal power plants in Pakistan, with over 5,000MW of installed capacity in its control. The Guddu plant is the largest plant operated by WAPDA, with a capacity of 1,650MW. In recent years, growth in Pakistan's thermal power generation has come primarily from new independent power producers (IPPs), some of which have been funded by foreign investors. The two largest IPPs in Pakistan are Kot Addu (1,600MW) and Hub Power (1,292MW), both of which supply power to WAPDA. Following are major IPPs presently operational in Pakistan.

Table 10: Presently Operational IPPs in Pakistan

Company	Capacity	Location	Technology	Power Purchaser	Fuel Supplier	Term of the PPA
AES Lalpir Limited	362 MW	Mehmood Kot, Punjab	Oil-Fired Steam Turbine	WAPDA	PSO	30 Years
AES Pak Gen (Private) Company	365 MW	Mehmood Kot, Punjab	Residual Furnace Oil (RFO)	WAPDA	PSO	30 Years
Altern Energy Limited	29 MW	Fateh Jang, Attock	Gas	WAPDA	OGDC	30 Years
Fauji Kabirwala Power Company	157 MW	Kabirwala, District Khanewal	Low BTU Gas + Pipeline Quality Gas	WAPDA	OGDC	30 Years
Gul Ahmed Energy	136.2 MW	Korangi Town, Karachi	Furnace Oil	KESC	PSO	22 Years
Habibullah Coastal Power (Pvt.) Company	140 MW	Quetta	Natural Gas	WAPDA	SSGC	30 Years
Japan Power Generation	120 MW	Off Raiwind Road, Near Jia Bagga	Residual Furnace Oil (RFO)	WAPDA	PSO	30 Years
Kohinoor Energy Limited	131.4 MW	Raiwind-Manga Road, Near Lahore	Residual Furnace Oil (RFO)	WAPDA	PSO	22 Years
Liberty Power Limited	235 MW	Daharki, District Ghotki, Sindh	Natural Gas	WAPDA	SNGPL	25 Years
Rousch (Pakistan) Power Limited	412 MW	Abdul Hakeem (Near Sidhnai Barrage)	Residual Fuel Oil (RFO)	WAPDA	PSO	30 Years
Saba Power Company	114 MW	Farouqabad, Shiekhupura, Punjab	Residual Fuel Oil (RFO)	WAPDA	PSO	30 Years
Southern Electric Power Project	115.2 MW	Raiwind, Lahore	Residual Fuel Oil (RFO)	WAPDA	PSO	30 Years
Tapal Energy (Pvt.) Limited	126 MW	District West, Karachi	Furnace Oil	KESC	PSO	22 Years
Uch Power Limited	586 MW	Dera Murad Jamali, Balochistan	Low BTU Gas	WAPDA	OGDC	30 Years
Hub Power Company	1292 MW	Tehsil Hub, Balochistan	Residual Furnace Oil (RFO)	WAPDA	PSO	30 Years
Kot Addu Power Co. Ltd.	1600 MW	Kot Addu, District Muzaffargarh	Natural Gas, Low Sulphur Furnace oil and HSD	WAPDA	PSO/SNGPL	25 Years

Source: Pakistan Power & Infrastructure Board (PPIB)

The Government of Pakistan is now realizing that most of the thermal plants in the country run on fuel oil, which besides being an expensive means of electricity generation, produce considerable amount of pollution. The economic surge of Pakistan increased its overall energy demands and hence also put a pressure on gas supply. The gas production facilities that were sufficient to support the country's needs a decade ago are now unable to fully satisfy the nation's requirements at current supply facilities. Natural gas reserves in Pakistan are estimated to be 28.2tn cubic feet (cf) but, unfortunately, most of the reserves reside in the province of Baluchistan, which currently suffers from critical law and order situation. Until the situation gets under control and exploration and production activities could be carried out in the province, the country is faced with a gas shortage problem that may turn severe in the coming few years. A sigh of relief is Iran-Pakistan-India (IPI) gas pipeline that is eventually showing progress and Gas Supply & Purchase Agreement (GSPA) is expected to be signed during 1st Quarter CY2008.

Coal is primarily classified into four major categories: lignite, sub-bituminous, bituminous and anthracite. One of the most valuable content of coal is carbon, which supplies most of its heating value. However, other factors such as moisture level, ash content, and sulphur content are also important in determining the coal quality and their lower levels improve the heating value. Anthracite, is top ranked coal, with highest carbon content that ranges between 86-98% and has a heat value of nearly 15,000BTUs per pound. Bituminous and sub-bituminous 'ranks' of coal are inferior to anthracite. The bituminous variety is used primarily to generate electricity and to make coke for the steel industry.

Pakistan has nearly 3.36bn tons of proven coal reserves and if 30-40% of these reserves are properly utilized then it would be sufficient to generate 100,000MW of electricity for next 30years. The local coal falls in the lignite and sub-bituminous categories. Because of the relatively higher moisture, sulphur, and ash contents; the domestic commodity offers a lower calorific value. Lignite, the indigenous coal mostly found in Pakistan, has the lowest carbon content of just 25-35% and also the lowest heat value of only 6,000-10,000BTUs per pound.

Because of insufficient deposits of high quality coal, upcoming power plants would need to rely on imported coal which might drastically increase the cost of production. Secondly, in an effort to reduce pollution and generation cost, the government would like to see fuel oil and coal powered plants converted to natural gas in the future. Thus, upcoming imported coal fired power plants may not likely receive assuring incentives and share of coal in production of electricity may decrease further. However, the uncertain gas availability situation in the country is keeping most private investors at bay from investing in gas-fired plants.

Nuclear Power Generation

Pakistan has two nuclear power plants, Chashma-1 and KANUPP, with 300MWe and 125MWe respectively, of installed capacity. The Pakistan Atomic Energy Commission operates both nuclear plants. KANUPP was Pakistan's first nuclear power reactor and the project started in 1971. Chashma-1 started up in May 2000 and is also known as CHASNUPP-1. Pakistan is currently working on a third nuclear power plant, Chashma-2, with the help of China National Nuclear Corporation. The plant will have 325MWe of installed capacity and expected to be completed by 2009 and assigned to grid by 2011.

According to the global average rates of electricity generation by fuel source that we discussed in the last section, the power generation cost per KWh should be approximately 4.545cents. The current electricity requirement of Pakistan is approximately of 16,000MWh. The total expenditure on generation of electricity of Pakistan should be around US$727,200 per hour. (The actual electricity generation expense of Pakistan is estimated around US$561,000 per hour during 2005-06 @WTI average of US$65 per barrel.)

In the previous section, we computed the cost of nuclear electricity generation to be US0.50cents per KWh. Hypothetically; if the entire electricity demand of the country (approx. 16,000MWh) is to be fulfilled through nuclear source it would require 44.44Kg of Uranium each hour costing just around US$80,000 per hour; a considerable saving over the current expense levels.

From 2005, the Government of Pakistan has adapted an Energy Security Plan, calling for a huge increase in generation capacity to more than 160,000MWe by 2030. It includes plans for lifting nuclear capacity to 8800MWe, 900MWe of this by 2015 and a further 1500MWe by 2020 which is eventually to reach 8800MWe by 2030.

The Great DISCO Credit Crunch

As mentioned before, Pakistan's hydel power generation capacities have deteriorated as a result of lower water-levels in the rivers. Hydel electricity is a considerable cheaper source when compared to thermal sources. Now WAPDA and other electricity distribution companies have to rely more on thermal power generators to cater the power demand of the country and are facing difficulties while coping with the expensive source.

In addition, most tariff structures of such thermal power generators also allow passing the rising cost of fuel over to DISCOs (Distribution Companies). Thus WAPDA is also indirectly hit by international energy crisis and high levels of oil prices. WAPDA owes a cummulative of around PRs18bn to HUBCO and KAPCO alone.

To make the situation worse for WAPDA, the domestic and commercial consumers electricity consumption tariff is regulated by the National Electric Power Regulatory Authority (NEPRA) of Pakistan. Tariff rates have not been revised at pace with the production cost of electricity that is borne mostly by the
distributor; courtesy of the Power Purchase Agreements (PPA) with IPPs.

The Government of Pakistan (GoP) has, however, stepped in to the rescue and has extended as-per-guarantee a running finance credit line to various IPPs through a consortium of commercial banks.

However, extending credit lines is barely a solution to the problem faced by the sector, even in short terms. Until and unless WAPDA and other DISCOs are supported to climb out of the dry well of insolvency, the entire power generation sector will be gasping for liquidity. Internationally soaring energy prices are beyond the control of the Government of Pakistan (GoP); the only choice left for the authorities is to allow a tariff increase to DISCOs.

A 33% tariff increase was suggested by power regulators for DISCOs in February 2007, but the government disallowed any increase of more than 10%. Due to the severity of the mess DISCOs have ended up in, NEPRA has again decided to substantially revise the tariff upwards.

In a developing country with an evolving economy, skyrocketing inflation, and a large part of population living under the poverty line; raising electricity tariff is nothing less than choosing between the devil and the deep sea. A raise in electricity tariff can only put an adverse affect on the country's inflationary pressures, but the authorities are left with no other choice. A status quo is going to make DISCO's credit shortage more severe and could ultimately result in shutting down of some IPPs due to their inability to meet their running finances. This would of course create a power shortage in the country, and hence, tariff would increase nonetheless.

An increase in tariff is becoming crucial, not just for the power sector but for the entire economy of the country. We can only hope that the concerned authorities are able to strike the right balance of tariff so they can pull DISCOs out of the crisis without 'greatly' jeopardizing the interests of the consumers.

Private Power Policies

Prior to 1985 power generation, Pakistan was solely held in the public sector. Keeping in view the electricity demand patterns and lack of funds in the public sector, the Government of Pakistan decided to mobilize private sector resources by inducting it into power generation. In November 1985, the GOP announced measures and offered lucrative incentives to entice private sector participation in the power sector. The 1292 MW Hub Power Project (HUBCO) was initiated at the same time, which was the first private sector power project of its size and kind in the entire world. It took almost 12 years for HUBCO to reach its completion, when in March 1997 it was fully commissioned. These initiatives were followed by Power Policies in Pakistan. The first successful policy being the 1994 Power Policy, followed by the 1995 Hydel Policy, the 1995 Transmission Line Policy, the 1998 Power Policy, and finally the 2002 Power Policy. Salient features of all these policies are given in the following table. Moreover, some additional concessions and new amendments were made in the 2002 Power Policy, which are also given in the table.

Table 11: Power Policies in Pakistan

Salient Features of Power Policy 1994
The investors were free to propose the site and opt for the technology and fuel.
Investors could propose projects based on hydro, or other renewable and / or non-conventional sources of energy.
The power was to be purchased by WAPDA / KESC under the long-term contracts covering the concession period.
The Policy offered an up-front Bulk Power Tariff.
Thermal projects were to be implemented on Built-Own-Operate (BOO) model
Availability of draft security agreements.
Assurance for convertibility of Rupees and availability of foreign exchange to cover necessary expenses of the projects.
PSEDF could provide up to 40% of the capital costs of the project.
Removal / reform of Section 13 of 1947 Foreign Exchange Regulation Act.
Exemption from corporate income tax on income earned from sale of electricity.
Exemption from Sales Tax, Iqra, Flood Relief and other surcharges.
Exemption from custom duties on the import of plant and equipment.
Exemption from Income Tax in Pakistan for foreign lenders to such companies
Salient Features Transmission Lime Policy 1995
Transmission Line to be identified by GOP and constructed and maintained by private sector sponsor.
Implementation of Projects on Build-Own-Maintain (BOM) model.
Policy to cover Transmission Line & Grid Station above 220 KV.
Right of Way to be provided by the Power Utility.
Term of Agreements 30 years.
Selection of Sponsors through International Competitive Bidding.
Transmission Company to be paid service charge in $/month/km.
Availability of PSEDF up to 40% of the project capital cost.
Exemption form corporate income tax and custom duties.
Salient Features of Hydel Policy 1995
Run-of-river hydroelectric projects (preferably) up to 300 MW.
Built-Own-Operate-Transfer (BOOT) model.
Up-front tariff which was later changed to negotiated tariff.
PSEDF could provide up to 30% of the capital costs of the project.
Exemption from corporate income tax on income earned from sale of electricity.
Exemption from Sales tax, Iqra, Flood relief and other surcharges.
2% custom duties on imported plant and equipment.
The ownership of the complex to be transferred to the Government.
In case of non-despatch by WAPDA, ninety-five (95%) percent of the energy that could be generated by the hydropower plant based on average historic hydrology for the month to be paid (to the IPP) by WAPDA
Salient Features of Power Policy 1998
Feasibility studies for projects to be prepared before bids were invited.
Hydel projects on Built-Own-Operate-Transfer (BOOT) model (Transfer of the Assets to the Province) and thermal projects on a Build-Own-Operate (BOO) basis.
The GOP guaranteed the terms of executed agreements, including payment terms.
Implementation of projects through both solicited and unsolicited proposals.
Permission to issue shares at discounted rate and corporate bonds.
Uniform tax facilities for private sector instruments.
LTCF facility to provide a portion of the capital cost of the project.
Removal/reform of Section 13 of 1947 Foreign Exchange Regulation Act.
90% First Year Allowance (FYA), for hydel and indigenous coal base projects the cost of plant, machinery and equipment.
No respite in customs duties, sales tax, Iqra, Flood relief and other surcharges as well as Import License Fees.
Permission to raise local and foreign finance.
Hydel projects to be transferred to the province in which it is situated at the end of concession period.
The GOP to bear the hydrological Risk.

Source: Pakistan Power & Infrastructure Board (PPIB)

Table 12: Power Policy-2002

Salient Features of Power Policy 2002

Scope of the Policy covers private, public-private and public sector projects;
Invitation of bids on tariff through International Competitive Bidding (ICB);
Encourage exploitation of indigenous resources including hydel, coal, gas and renewable resources through active involvement of the local engineering, design and manufacturing capabilities.
Customs duty at the rate of 5% on the import of plant and equipment not manufactured locally.
To enhance share of Renewable Energy Sources, hydel and fuels other then oil-based fuels, full levy of income tax on oil-fired power projects.
For projects above 50 MW One – Window support to be provided at the Federal level. For projects below and upto 50 MW One Window support to be provided at the respective Provincial/AJK level.
Ministry of Water and Power (through PPIB) to remain the focal point at Federal level.
To develop raw sites whose feasibility studies are not available, unsolicited bids would be welcomed. The sponsors of feasibility studies on raw sites will have first right of refusal.
Two-part tariff structure consisting of fixed capacity and variable energy component is recommended with the proviso that fixed capacity payment for Hydel projects would fall between 60% to 66% of the total tariff;
Hydrological Risk to be borne by power purchaser (WAPDA/NTDC/KESC).

ADDITIONAL CONCESSIONS/AMENDMENTS IN POWER POLICY-2002

1) Income Tax Exemption for Dual-Fuel / Exclusively Oil-Fired Projects

Exemption from Income Tax, including turnover rate tax and withholding tax on imports, is now available to dual-fuel (gas and liquid fuel; in case of limited gas availability), as well as exclusively oil-fired power plants.

2) Indexation of Foreign O&M Cost (variable and fixed) with US CPI

The foreign component of O&M Cost (variable and fixed) would be indexed with US CPI, effective from the month of application by the IPP to NEPRA for tariff determination, if it is demonstrated by the IPP to NEPRA that the inflation indexation is not already covered in the O&M contract.

3) EPC Cost Escalation

IPPs are expected to apply for tariff to NEPRA on the basis of reasonable assurance of 'fixed price EPC contract', while taking into account all timelines and milestones up to the Financial Closing. However, any legitimate cost escalation between the date of application to NEPRA (for tariff determination) and the Financial Closing, would be accounted for in the NEPRA-determined tariff by taking into consideration the period in which prices of EPC contract are fixed, and the timelines and milestones up to the Financial Closing (which are known to both the IPP & NEPRA at that time). These timelines and milestones would be recorded in the tariff determination. If any delay in meeting the milestones can be legitimately attributed to the Government, then justifiable escalation in tariff would be allowed by NEPRA.

4) Concession Period for Hydropower projects

The term of the concession period for hydropower projects in the private sector will be up to fifty (50) years.

5) GOP Guarantee for up to 50 MW Projects

The Guarantee being extended to projects above 50 MW will also be provided to projects up to 50 MW provided that the Power Purchaser is a Federal entity and the tariff is approved by the National Electric Power Regulatory Authority (NEPRA).

6) Solicitation of Hydel / Coal Proposals through Advertisement in Press

For raw hydel and coals site projects, expression of interest will be invited through advertisement in the press and the Sponsors who submit the best proposal, as decided by the PPIB Board, will be issued LOI for feasibility study.

7) GOP Approval for Gas/Oil Based Thermal Projects

In view of the worsening fuel mix, no further gas or oil based thermal power proposals will be entertained by PPIB without the approval of the GOP.

8) Award of Gas/Oil/Dual-Fuel based Thermal Projects only through ICB

The projects will only be awarded on ICB basis wherever gas is made available by the producers to the Government and the Government allocates it for Power sector. Same will apply to oil or dual-fuel projects. Similarly, all projects for which feasibility has been prepared will be offered to the private sector on ICB basis.

9) Improved Procedure for Tariff Negotiations

If an IPP wishes to submit an unsolicited bid and wants to settle tariff through negotiations, NEPRA will determine tariff in consultation with the IPP and the power purchaser; instead of the IPP first negotiating tariff with the power purchaser.

10) Elimination of Secretary's Committee

Secretary's Committee stands eliminated and proposals will now be submitted directly to the Board of PPIB.

11) Revised Composition of the Board with Co-opted Members

The composition of the Board of PPIB has been revised, including amendments to reflect the co-option of the Provincial Minister or Secretary Irrigation and Power (proposed by the Provincial Government) as member of the PPIB for such meetings where items /projects pertinent to the particular Province /AJK form part of the Agenda.

NEW AMENDMENTS IN POWER POLICY-2002

Currency Exchange Rate:

(i) To enable maximum competition from Suppliers and Contractors, the IPPs should not be exposed to impact of exchange rate variation between US dollars, Euros, Pounds Sterling and Japanese Yen upto Commercial Operation Date (COD). Consequences of this variation, whether resulting in increase or decrease in tariff, should be reflected in final tariff to be fixed at COD. EPC contracts denominated in these four currencies besides rupees should thus be accepted by NEPRA.

(ii) At the COD, the capital cost be fixed in US dollars based on actual currencies of EPC Contract accepted by NEPRA at the time of tariff determination, sources of financing, payments and actual exchange rates against rupee for the four currencies (US dollars, Euro, Pound Sterling and Japanese Yen) on the relevant dates. Towards this end IPPs should establish the relevant cost details to NEPRA with actual documents and proofs regarding EPC contract, sourcing of equipment and finances.

(iii) To broaden the access for debt financing, debt can be obtained by IPP in US Dollar, Pound Sterling, Euro and Yen. This should receive the same treatment as currently available for US dollar denominated debt.

(iv) As O&M costs are incurred subsequent to COD, O&M Cost Adjustment should continue to be based on exchange rate variations between Pak Rupee and US dollars.

(v) NEPRA should stop the practice of accepting EPC costs on the basis of quotations etc. Instead, they should base their determination on firm (non-reopenable) competitive price duly initialed/signed by the IPP/EPC contractors.

(vi) The Performance Guarantees to PPIB/GOP and Letter of Credits in favour of Power Purchaser may be accepted in Euro, Pound Sterling and Yen in addition to US$.

Return on equity:

(vii) The Return on Equity should be allowed in one currency i.e. US dollars. All Return on Equity (for foreign exchange and rupee based equity) be converted to equivalent US dollars amount at reference exchange rate (as noted in NEPRA's determination) and adjusted for variations in US$/Rs rates as presently being done for return on foreign component of equity.

Pakistan Force Majeure:

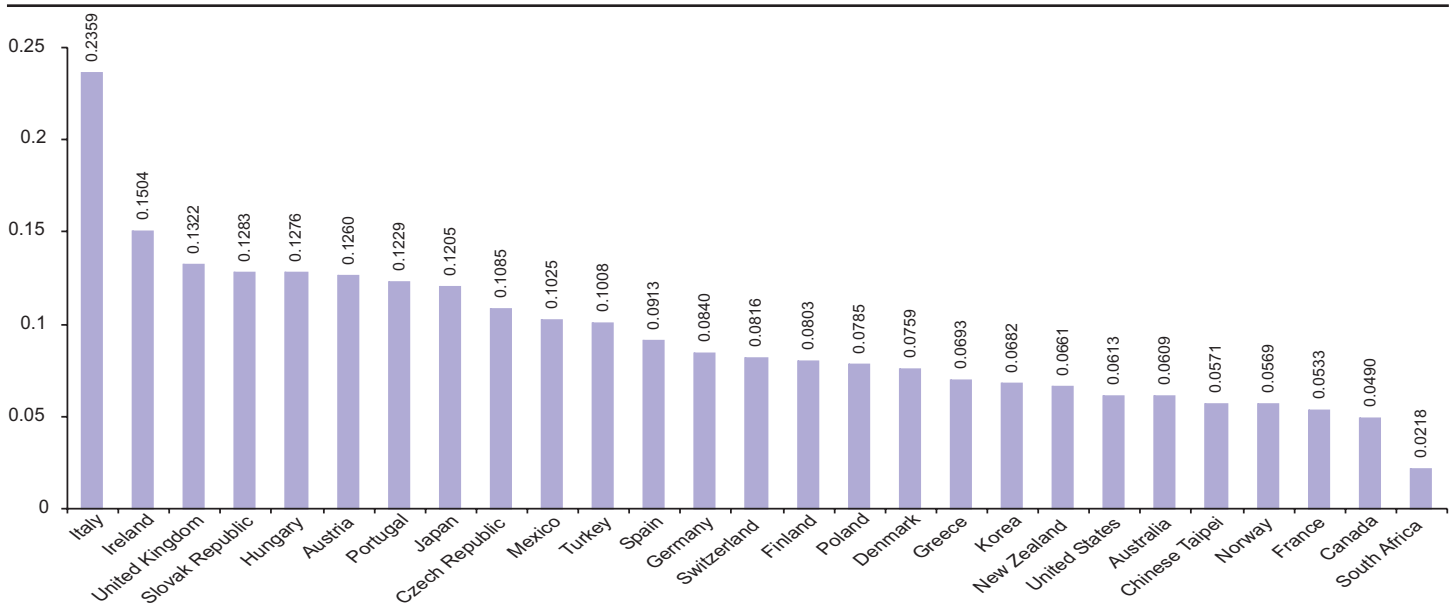
The present policy of not guaranteeing payment obligations of Fuel Supplier should continue. However, the nation wide shortage of fuel to be recognized as Pakistan Political Force Majeure Event in the Security Package.

Source: Pakistan Power & Infrastructure Board (PPIB)

Power Pricing: Too Expensive in Europe

Industrial tariff structure prevailing in different countries of world hovers in the band of US$0.02/KWh to US$0.15/KWh. Nevertheless, in the following graph it can be seen glaringly that electricity prices for industrial consumers in Italy is significantly higher than rest of the world and hovers around US$0.24/KWh. Moreover, industrial tariff structure in Europe is comparatively on higher side, which can be witnessed in the following graph. However, industrial tariff structure in South Africa is one of the lowest in world. Excluding outliers, average industrial tariff structure in major countries of the world hovers around US$0.09/KWhr.

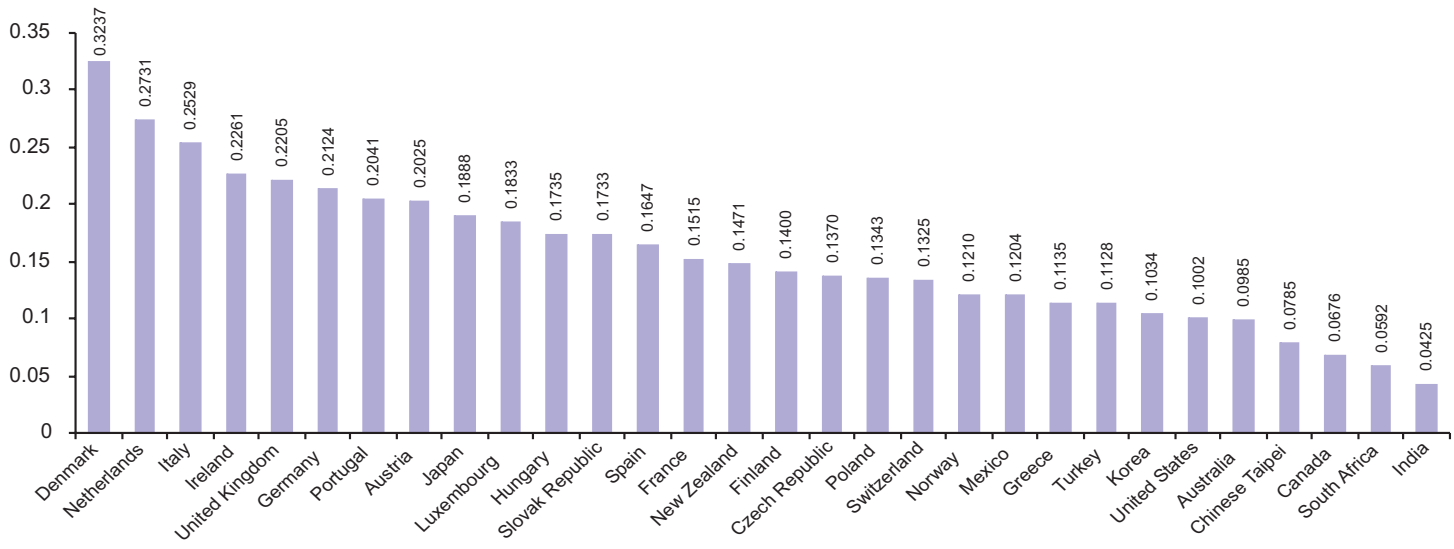
Chart 8: Tarif Structure for Industry in Major Global Countries **(US$/KWH)**



Source: International Energy Agency (IEA)

According to International Energy Agency (IEA), tariff structure for household prevailing in different countries of the world hovers in the band of US$0.0425/KWh to US$0.33/KWh. In India, tariff structure for household is one of the lowest in the world. Nevertheless, household tariff structure is most expensive in European nations and is the highest in Denmark among all the countries as represented in the following graph.

Chart 9: Traiff Structure for Household in Major Countries **(US$/KWH)**



Source: International Energy Agency (IEA)

Power Pricing in Pakistan

Tariff structure in Pakistan for residential and industrial consumption is comparatively lower than that of most of the European countries; however, these are almost in line with average global electricity prices. Electricity prices for domestic usage hovers in the range of US$0.02-US$0.12 per KWh. Moreover, domestic tariff structure for industrial users hovers in the band of US$0.052-US$0.095 per KWh which are almost inline with average global prices, however, are relatively expensive than that of India.

Table 13: Power Pricing in Pakistan

		Fixed Charges Rs./Kw	Energy charges Rs./kWh	Fuel Adj. charges Rs./kWh	Additional surcharge Rs./kWh	Variable Charges Rs./kWh	Variable Charges US$/kWh
CATEGORY TARIFF		**-1**	**-2**	**-3**	**-4**	**-5**	
Domestic (Tax Charged) A1-R						(2 to 4) Rs.	
upto50 kWh			0.61	0	0.79	1.4	0.023
FOR CONSUMPTION ABOVE 50 UNITS							0.000
1 to100 kWh			0.41	0.6	1.64	2.65	0.043
101 to300 kWh			0.58	0.69	2.37	3.64	0.060
301 to 1000 kWh			1.51	0.92	3.72	6.15	0.101
Above 1000 kWh			1.88	0.94	4.59	7.41	0.121
Domestic (Tax Free) A1-R							
upto 50 kWh			0.61	0	0.79	1.4	0.023
FOR CONSUMPTION ABOVE 50 UNITS							
1 to 100 kWh			0.41	0.6	1.64	2.65	0.043
101 to 300 kWh			0.58	0.69	2.37	3.64	0.060
301 to 1000 kWh			1.51	0.92	3.72	6.15	0.101
Above 1000 kWh			1.88	0.94	4.59	7.41	0.121
Commercial (Tax Charged) A2-C							
Upto 100 kWh			2.86	0.44	4.18	7.48	0.123
Above 100 kWh			3.1	0.47	4.05	7.62	0.125
Commercial (Tax Free) A2-C							
Upto 100 kWh			2.86	0.44	4.18	7.48	0.123
Above 100 kWh			3.1	0.47	4.05	7.62	0.125
Industrial B							
B-1 (upto 40 kW)			1.81	0.54	3.27	5.62	0.092
B-2 (41-500kW)		300	1.3	0.58	2.5	4.38	0.072
B-2 TOD	(OFF PEAK HRS)	300	1.2	0.53	2.09	3.82	0.063
	(PEAK HOURS)	300	1.98	0.71	3.13	5.82	0.095
B-3 11KV (501-5000kW)		290	1.29	0.56	2.34	4.19	0.069
B-3 TOD 11KV (501-5000kW)	(OFF PEAK HRS)	290	1.15	0.48	1.66	3.29	0.054
	(PEAK HOURS)	290	1.97	0.66	2.66	5.29	0.087
B-4 66/132KV (over 5000kW)		280	1.24	0.54	2.15	3.93	0.064
B-4 TOD 66/132KV (over 5000kW)	(OFF PEAK HRS)	280	1.11	0.47	1.62	3.2	0.052
	(PEAK HOURS)	280	1.87	0.64	2.56	5.07	0.083
B-5 220KV and above for all loads		273	1.24	0.53	2.08	3.85	0.063
B-5 TOD 220KV & above for all loads	(OFF PEAK HRS)	273	1.11	0.48	1.7	3.29	0.054
	(PEAK HOURS)	273	1.87	0.64	2.51	5.02	0.082
Bulk Supply C							
C-1 400 Volts		220	1.09	0.94	3.54	5.57	0.091
C-2 11 Kv		216	1.06	0.92	3.45	5.43	0.089
Agriculture D							
D-1		72	0.75	0.65	2.36	3.76	0.062
D-2		176	0.75	0.57	1.52	2.84	0.047

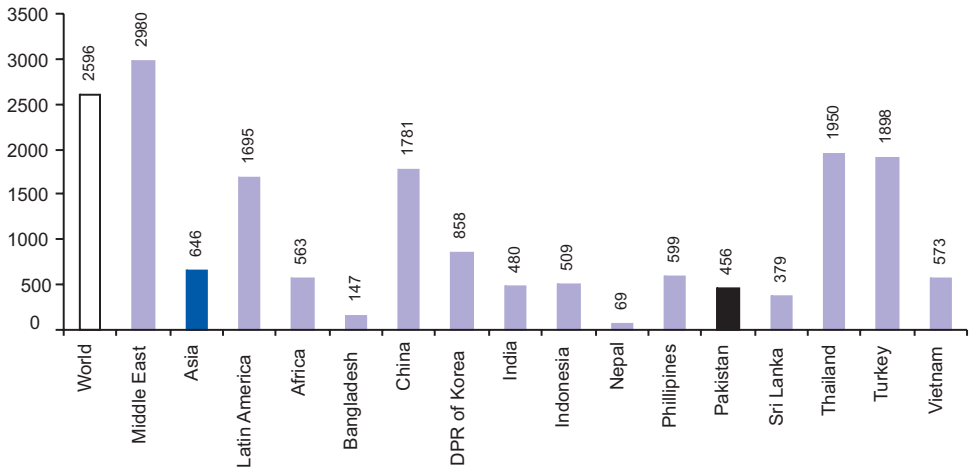
Source: finance.yahoo.com & IGI Research

Supply-Demand Scenario

Per Capita Power Consumption

The average per capita power consumption of the world hovers around 2,596KWh. Per capita consumption of Asia (not including China and Middle East) is 646KWh while that of China alone is 1,781KWh. Moreover, in Pakistan, per capita electricity consumption is about 456KWh, which is 41% lower than that of Asia and significantly lower than the average per capita power consumption of the world. It can be seen glaringly in the graph below that the per capita power consumption in Pakistan is relatively lower than that of most of the emerging Asian nations.

Chart 10: Per Capita Power Consumption in Different Regions and Asian Nations (KWh)



Source: International Energy Agency (IEA)

The key reason for low per capita consumption in Pakistan is relatively lower installed power generation capacity. The developing economy of the country has put an immense demand pressure on electricity which the current installed capacities are failing to meet. Private Power and Infrastructure Board of Pakistan (PPIB) estimates total power demand in the country to be 16,548MWh while the supply is of only 15,091MWh.

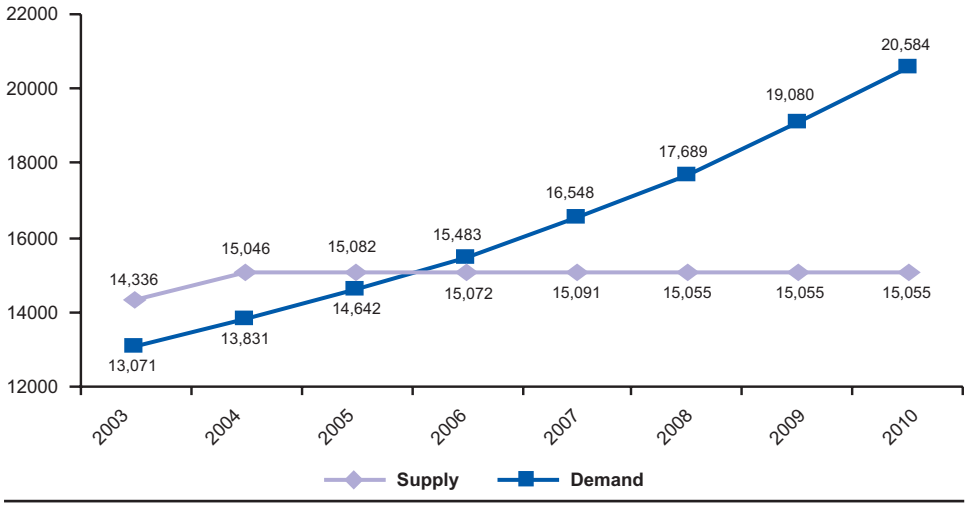
If power consumption of Pakistan is to somehow catch up on the Asian average in the next five years, assuming that the Asian average remains constant at 646KWh, the power consumption would need to increase with a CAGR of 7.21% each year. If the population of Pakistan grows by 2% p.a., then the power consumption of the country needs to grow with a CAGR of 9.21% each year during the next five years. Alternatively, if our power generation capacities remain stagnant and our population is assumed to grow at 2% each year, then our per capita electricity consumption would reach that of Sri Lanka (379KWh) within the next ten years (assuming per capita consumption of Sri Lanka remains stagnant) and the country will be in an even greater shortage of power.

Demand Forecast

The cumulative electricity demand in Pakistan has consistently been growing over 5-6%YoY since the last five years, which is almost in line with the GDP growth rate. During FY07, power demand grew by 6.88%YoY in the country. The domestic power generation sector has, however, so-far failed to keep up with the country's emerging needs. There couldn't have been a more sorry sight than the current energy scenario, the lifeblood of any economy, jeopardizing its future growths. Regulatory bodies indicate a demand-to-supply deficit of 1,457MW during FY07; however, the actual is even more severe and the electricity shortage faced by the country during the mentioned period is being estimated at 2,500MW.

According to PPIB projections, power demand in the country is likely to grow at a 3year CAGR of 7.5% and is expected to cross 20,000MWh in FY10. Thus, Pakistan is expected to face major power shortage in years ahead and supply-demand deficit is likely to surge to 5,500MWh FY10.

Chart 11: Supply Demand Scenario



Source: PPIB

Investment Attractiveness

Beside expected fairly decent economic growth, following are some key rational as to why one should make investment in Power Sector of Pakistan.

- Robust Demand for Electricity: Presently the demand is outstripping supply of electricity and by 2010 demand is expected to exceed supply by approximately 5,500 MW.
- Predictable Long Term Tariff: A long term tariff of 25 years will be contracted with the power purchaser. The IPPs are not subjected to the market risk for their output. The projects are expected to provide good and stable return on equity.
- Pass through of the fuel cost and additional taxation: Any variation in price of fuel would be passed through to the power purchaser. Similarly any additional taxation over and above the Tariff assumptions is liable to be passed on to the power purchaser.
- Risk of Exchange Rate Variation: To cover the exchange rate variations risk, various tariff components are indexed for variation in the Pak Rupee and US$ exchange rates. Keeping in view, surging trade deficit, it is expected that Pak rupee is likely to depreciate against greenback. In such a scenario the sector provides a perfect tool to investors particularly foreign investors for hedging exchange rate risk.
- Available GOP's Guarantees and Protection: GOP guarantees the performance obligation of its entities such as the power purchaser, fuel supplier, etc. and provinces. GOP also provides protection to sponsors and lenders in case of termination of the project.
- The Government of Pakistan guarantees protection against changes in taxes & duties and specified "political risks".

Upcoming Power Projects

According to PPIB, 60 power projects are expected to come online in next 10years. These projects are expected to fetch total anticipated investments of US14.68bn. 42 projects are based on Oil and Hydel with 21 each while 18 projects are based on pipeline quality gas/dual-fuel, coal and dedicated gas fields with 6 each. If all these projects will come on line then it will take the total installed capacity of power generation in Pakistan to almost 29,000MWatts in next 10years.

Table 14: Upcoming Power Projects

S. No.	Category	No of Projects	Capacity (MW)	Estimated Cost (US $ Million)
1	OIL BASED	21	4603	3452
2	PIPELINE QUALITY GAS/DUAL-FUEL	6	1600	1201
3	DEDICATED GAS FIELDS	6	1174	882
4	HYDEL	21	5128	5594
5	COAL	6	3550	3550
	Total	**60**	**16055**	**14682**

Source: PPIB

Out of 60 expected projects, Letter of Intent (LoI) has been issued to 33 projects while 13 projects have been issued Letter of Support (LoS) under 2002 Power Policy. 12 projects have reached implementation agreement out of which eight projects have achieved financial close.

Table 15: Projects Achieving Financial Close

S. No.	Project	Capacity (MW)	Location	Financial Close
1	Orient Power Project	225	Balloki Punjab	Dec-06
2	Muridke(Sapphire) Power Project	225	Muridke Punjab	Jun-07
3	Fauji Mari Power Project	202	Daharki Sindh	Sep-07
4	Sahiwal(Saif) Power Project	225	Sahiwal Punjab	Sep-07
5	AttockGen Power Project	165	Rawalpindi	Sep-07
6	Atlas Power Project	225	Sheikhupura	Nov-07
7	Nishat Chunian Power Project	200	Lahore	Jan-08
8	Nishat Power Project	200	Lahore	Jan-08
	Total	**1667**		

Source: PPIB

Table 16: Implementation Agreements Signed

S. No.	Project	Capacity(MW)	Signed on
1	Orient Power	225	10-Nov-2006
2	Muridke(Sapphire) Power Project	225	07-Mar-2007
3	Sahiwal(Saif) Power Project	225	13-Jul-2007
4	AttockGen Power Project	165	24-Aug-2007
5	Fauji Mari	202	30-Aug-2007
6	New Bong	84	31-Aug-2007
7	Nishat Chunain	200	15-Sep-2007
8	Nishat Power	200	15-Sep-2007
9	Atlas Power	225	18-Sep-2007
10	Star Power	134	27-Sep-2007
11	Halmore	225	23-Oct-2007
12	Engro Power	227	29-Oct-2007
	Total	**2337**	

Source: PPIB

Table 17: Expected Upcoming Power Projects

Sr. No.	Project (Oil Based)	Loction	Capacity(MW)	Status	Investments US$ mn	Expected COD*
1	Attock Gen Power Project	Rawalpindi	150	FCA	113	8-Oct
2	Gulf Power	Sahuwala	179	LOS	134	8-Oct
3	Taiyo Hills	Emenanabad	127	LOS	95	8-Oct
4	Eastern Power (EPCO)	Pasrur	150	LOS	113	8-Oct
5	Associated Technologies Project	Lahore	200	NS	150	9-Mar
6	Warda Power Project	Near Lahore	200	LOI	150	9-Mar
7	Amazon Power Project	Lahore	117	NS	88	9-Oct
8	Kohinor Energy-Capacity Expansion	Near Lahore	143	NS	107	9-Oct
9	Tapal Energy-Capacity Expansion	Near Lahore	161	NS	121	9-Oct
10	Japan Power-Capacity Expansion	Near Lahore	101	NS	76	9-Oct
11	Nishat Power Project	Faisalabad	200	FCA	150	9-Dec
12	Sheikhupura (Atlas) Power Project	Sheikhupura	225	FCA	169	9-Mar
13	Gujranwala (Gulistan) Project	Gujranwala	200	NS	150	10-Mar
14	HUBCO-Narowal Project	Narowal	225	NS	169	10-Mar
15	KAPCO-Expansion Project	Kot Addu	400	LOI	300	10-Mar
16	Nishat Chunian Power Project	Lahore	200	FCA	150	10-Jun
17	InterGen Power Project	Kohat, NWFP	150	LOI	113	10-Jun
18	Chichoki Mallian ICB Project	Chickoki Mallian	350	NS	263	10-Jun
19	Shaheen (SBIG) Power Project	Bhikki, Punjab	800	NS	600	10-Jun
20	Liberty Power Tech Project	Faisalabad	200	NS	150	10-Dec
21	Fatima Sugar Cogeneration Project	Sananwan, Kot Addu	125	NS	94	11-Jul
	Sub Total (Oil)		4603		3455	
	PIPELINE QUALITY GAS/DUAL-FUEL					
22	Orient Power Project	Balloki	225	FCA	169	8-Dec
23	Muridke (Sapphire) Power Project	Muridke	225	FCA	169	9-Mar
24	Bhikki Power Project	Bhikki, Punjab	225	IAS	169	9-Oct
25	Tecna	Faisalabad	300	NS	225	9-Dec
26	Sahiwal (Saif) Power Project	Sahiwal	225	FCA	169	10-Feb
27	Faisalabad ICB Project	Faisalabad	400	NS	300	10-Jun
	Sub Total (Pipeline Quality Gas/Dual-Fuel)		1600		1201	
	DEDICATED GAS FIELDS					
28	Fauji Mari Power Project	Daharki	175	FCA	131	9-Sep
29	Green Power Project (Phase 1)	Dadu, Sindh	205	LOI	154	9-Jun
30	Engro Power Project	Daharki	150	IAS	113	9-Dec
31	Star Thermal Power Project	Daharki	134	IAS	101	10-Feb
32	Uch II ICB Project	Kashmore	450	NS	338	10-Nov
33	Kandra ICB Project	Kandra near sukkur	60	NS	45	11-Jul
	Sub Total (Dedicated Gas Fields)		1174		882	
	HYDEL					
34	New Bong Escape Hydel Project	Near Mangla, AJK	84	IAS	105	11-Mar
35	Kotli Hydro Power Project	Kotli, AJK	100	LOI	125	11-Jun
36	Gulpur Hydro Power Project	Gulpur, AJK	100	LOI	125	11-Nov
37	Gabral-Kalam Hydropower Project	Swat, NWFP	101	LOI	126	12-Jun
38	Rajdhani Hydro Power Project	Mangla,AJK	132	LOS	165	12-Sep
39	Matiltan Hydro Power Project	Dir, NWFP	84	LOS	105	12-Dec
40	Patrind Hydropower Project	NWFP/ AJK	130	LOI	163	13-Jan
41	Madyan Hydropower Project	NWFP	148	LOI	185	13-Dec
42	Sharmai Hydropower Project	NWFP	115	LOI	144	13-Dec
43	Karot Hydel Project	AJK	240	LOI	300	14-Jan
44	Azad Patan Hydel Project	AJK	222	LOI	278	14-Jan
45	Asrit_Kedam Hydel Project	NWFP	209	LOI	261	14-Jan
46	Kalam-Asrit Hydel Project	NWFP	197	LOI	246	14-Jan
47	Sehra Hydel Project	AJK	65	LOI	81	14-Jan
48	Tarbela 4th Extension	NWFP	960	LOI	500	15-Jan
49	Chakoti Hattian Project	AJK	139	LOI	174	15-Jan
50	Munda Hydropower Project	NWFP	660	LOI	825	15-Mar
51	Shogosin Hyderpower Project	NWFP	102	NS	128	15-Jun
52	Shushgai Zhendoli Hydel Project	NWFP	127	NS	159	15-Jun
53	Kaigah Hydel Project	NWFP	548	LOI	685	16-Jan
54	Suki Kinari Hydropower Project	NWFP	665	LOI	819	16-Apr
	Sub Total (Hydel)		5128		5594	
	COAL					
55	Habibullah Energy Coal Project	Ghotki, Sindh	150	LOI	150	12-Jun
56	Dababhoy Coal Project	Jherruk-Sonda, Sindh	200	LOI	200	12-Jun
57	Lakhra Coal Project by Fateh Group	Lakhra, Sindh	200	LOI	200	12-Jun
58	AES Imported Coal Project	Near Karachi	1000	LOI	1000	12-Jun
59	MitSui Imported Coal Project	Near Karachi	1000	LOI	1000	12-Jun
60	Hassan Associates Coal Project	Thar, Sindh	1000	LOI	1000	12-Jun
	Sub Total (Coal)		3550		3550	
	GRAND TOTAL		**16055**		**14682**	

Source: PPIB

Commercial Operation Date

FCA=Financial Close Achieved *IAS=Implementation Aggrement Signed* *LOS=Letter of Support*
LOI=Letter of Intend *NS= Not Specified*

Comparative Investment Analysis

Compared to other companies of the region, Pakistan's power generation sector extends more lucrative opportunities to investors. The average sales growth of the sector stands at 35.53%YoY; well above the regional average of 14.78%. Though it enjoys lower gross profit and operating profit margins compared to the regional margins, the sector's return on equity (ROE) is very competitive to others in the region. Above regional average ROA of 13.64% indicates high level of operational efficiency and technical competency of the local companies. Despite this, the local companies trade at an average PE multiple of just 11.12 times compared to the regional average of 24.22 times. We find immense opportunities in Pakistan's power generation sector from the investment point of view, which is still largely un-catered relative to the region.

Table 18: Regional Comparison: A Relative Investment Snapshot

	Pakistan		India		Thailand			Philippine	China		Average	
	HUBC PA	KAPCO PA	PTCIN IN	NLC IN	RATCH TB	GLOW TB	EGCO TB	EDC PM	GD Power	Shenzhen Energy	Domestic Avg	Regional Avg
Price/Earnings	13.54	8.70	64.88	60.99	11.37	9.30	6.42	8.95	27.52	30.51	11.12	24.22
Price/Sales	0.81	1.17	0.61	18.83	1.43	1.49	4.25	2.89	2.50	3.65	0.99	3.76
EV/EBITDA	8.34	4.83	n/a	48.29	10.31	7.39	8.57	11.58	n/a	n/a	6.59	14.19
Sales Growth (%)	58.11	12.95	21.24	(4.24)	(5.63)	0.72	(18.56)	(2.61)	78.12	7.71	35.53	14.78
Gross Margin (%)	9.44	23.58	n/a	n/a	14.45	19.05	47.04	52.71	23.33	27.40	16.51	27.13
Operating Margin (%)	8.86	24.09	1.02	15.08	11.19	17.53	37.52	46.11	19.04	25.54	16.48	20.60
ROA (%)	6.00	13.64	7.49	4.94	8.00	9.13	13.84	9.35	3.18	7.84	9.82	8.34
ROE (%)	8.99	25.61	13.66	6.94	16.15	19.80	22.34	34.25	16.09	18.40	17.30	18.22

Source: Bloomberg

The Bottomline: An Investment Perspective

At prevailing levels, we hold a **POSITIVE** stance on the Power Generation sector of Pakistan and advice investors to **OVERWEIGHT** the sector in their investment portfolio.

Stock Summaries

Hub Power Company

Fair Value: 36.66
Recommendation: BUY
Strategy : Over weight

Investment Consideration

- The prevailing political situation, increasing shortage of electricity, and declining exports; Pakistan is faced against some severe challenges. The central bank has revised down the economic growths targets for the current year and the prevailing uncertainty shrouds the future. HUBCO's earnings is driven through a Project Company Equity (PCE) component in real US$ terms. Thus, the stock offers an excellent hedge to investors against any future Rupee devaluations. In fact, HUBCO's earnings increase as the US dollar appreciates against the local currency.

- HUBCO is a 38% efficiency plant running on Refined Furnace Oil (RFO). During FY07, the plant operated at a load factor of 68.63% and supplied 7,214GW electricity to WAPDA. Due to immense shortage of electricity in the country, all power generation facilities including HUBCO would be required to operate at their maximum limits. This would positively affect the company's topline and improve the likelihood of meeting its running finance and dividend payout requirements.

- The company is eyeing expansion through a 224MW, RFO fired power plant at Narewal in the province of Punjab. The project's PPA offers an IRR of 15% to the investors. We have incorporated the dividend stream coming from the new project in our model and have assumed a financing strategy of 50%debt - 50%equity.

- We forecast that HUBCO would pay a cumulative dividend of PRs2.60 per share during FY08. At the prevailing market price, the stock offers a dividend yield of 8.19% during FY08.

- Using the DDM model at the WACC of 12.71%, our fair value of the scrip is **PRs36.66** per share. At the current market price, the stock offers an upside potential of 15.46% w.r.t. our fair value. We hold a Positive stance on the share and recommend investors to **Over-Weight** the stock in their portfolio.

KSE code	*HUBC*
Bloomberg code	*HUBC PA*
Reuters code	*HUBC KA*
Market Price in PRs	*31.75*
Market Cap in PRs (mn)	*36,739.65*
Market Cap in US$ (mn)	*587.83*
Outstanding shares (mn)	*1,157.15*
Free Floot (%)	*18.43*
Index Weight (%)	*1.010*

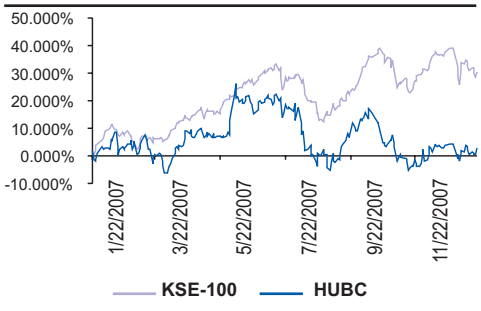
12months price data (PRs)

max	*38.80/share*
min	*27.00/share*
average	*32.54/share*

12months volume data

max	*30.67mn*
min	*0.25mn*
average	*3.73mn*

Chart 12: HUBC V/S KSE



Source: Bloomberg & IGI Research

Table 19: Valuation Statistics @ PRs31.75

	FY05A	FY06A	FY07A	FY08F	FY09F	FY10F
Gross profit margin (%)	42.15%	15.61%	9.44%	10.22%	13.45%	18.82%
Operating profit margin (%)	42.37%	15.57%	9.23%	9.79%	13.00%	18.38%
Net profit margin (%)	31.72%	9.92%	6.01%	5.58%	8.44%	14.90%
EPS (PRs)	4.65	2.39	2.29	2.47	3.74	4.82
DPS (PRs)	3.90	3.10	2.85	2.60	2.74	2.37
ROE (%)	17.00%	9.23%	9.14%	9.89%	14.36%	17.80%
BV (PRs)	27.37	25.91	25.11	24.93	26.01	27.05
P/E (x)	6.82	13.27	13.84	12.88	8.50	6.59
P/BV (x)	1.16	1.23	1.26	1.27	1.22	1.17
Dividend yield (%)	12.28%	9.76%	8.98%	8.18%	8.64%	7.45%

Source: Company Reports & IGI Research

Tahir Hussein Ali
tahir.ali@igi.com.pk

Muhammad Ashar Khaliq
ashar.khaliq@igi.com.pk

IGI Securities

Company Overview

The Hub Power Project started in 1985 when the Government of Pakistan (GoP) realized the severe shortage of electricity in the country and decided to involve the private investors in the power generation process. A consortium of sponsors led by Xenel Industries of Saudi Arabia was requested to present a proposal for a 1292MW power plant. Shortly thereafter, the World Bank became involved with the sponsors in the development process and set about establishing the support of a number of governments as co-financiers in the Private Sector Energy Development Fund (PSEDF) for Pakistan.

In 1991, HUBCO was incorporated in Pakistan as a limited liability company for the purpose of implementing the project. The 1292MW, furnace oil fired power plant finally commenced operations in 1996 and was fully commission on March 31, 1997.

Project Cost & Financing

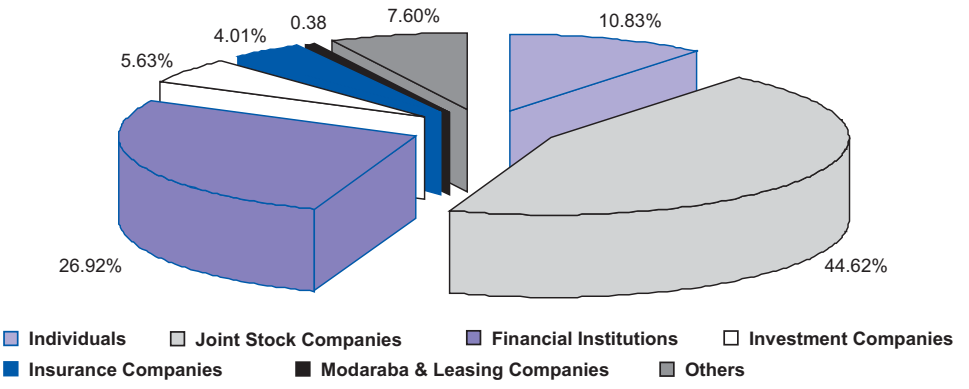
The Hub power plant took about US$1.57bn to complete. The project was financed through 24% equity and 72% debt, while 4% of the costs were extracted from the net operational revenues generated before the commissioning of the plant. The company had raise US$712.1mn worth of senior debt from supporting organizations of various countries including the World Bank. The company has fully retired all its senior debt by FY05.

HUBCO's GDR was issued on October 9, 1994, offered at the price of US$10.825 per GDR and comprised of 404.6mn shares. Of the international offer, 69.29mn shares were offered to the public in Pakistan. In the issue, one GDR consisted of 25 ordinary shares.

Shareholding Pattern

Currently, HUBCO has 1,157,154,387 shares outstanding out of 1.2bn shares authorized. and is listed on Karachi, Lahore, Islamabad, and Luxembourg stock exchanges.

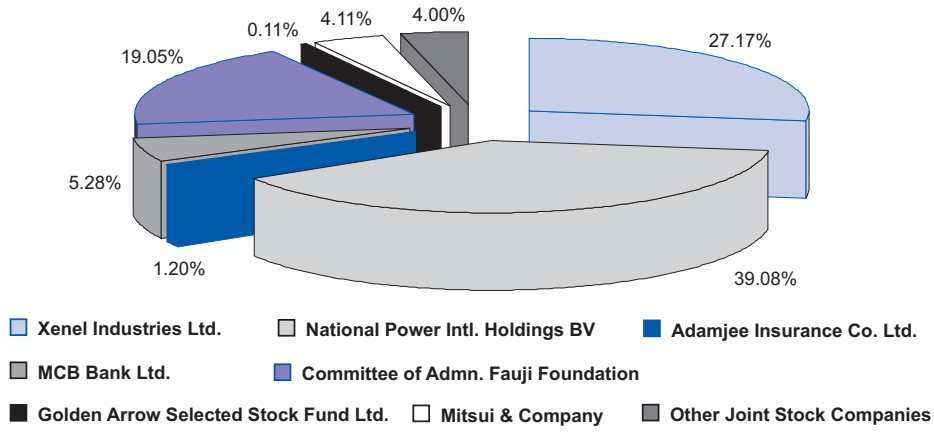
Chart 13: Shareholding pattern by sector



Source: Company Reports

The company has a diverse portfolio of shareholders but the bulk of ownership is maintained by the initial sponsors of the project. The joint stock companies, combined, own approximately 44.62% of HUBCO. Because of the innately stable nature of IPP business, the financial sector apparently has much interest in the company which provides a decent platform to hedge and diversify investment portfolios. Financial institutions, investment companies, and insurance companies own 26.92%, 5.63%, and 4.01% of HUCO respectively.

Chart 14: Shareholding pattern by company



Source: Company Reports

Among the joint stock companies, National Power Intl. Holdings BV holds the bulk of the ownership and claims 17.44% stake in the company. Xenel Industries Ltd. of Saudi Arabia, the leading founder-sponsor of the project, own 12.12% shares while the Fauji Foundation (a foundation for the welfare of military personnel) own 8.50% shares.

Plant Details

Technical Details

The Hub Power Plant consists of four generating units each rated at 323MW gross output, with an oil-fired single re-heat boiler and tandem compound, two cylinder condensing steam turbines directly coupled to a hydrogen cooled generator. The gross generation capacity of the plant is 1292MWh, however 92MWh is consumed by the plant itself during the electricity generation process. Thus the net generation capacity that can be supplied by HUBCO is 1290MWh.

The design net available output is exported to WAPDA's national grid via the power station's 500KV switchyard. Both the plant configuration and the steam conditions represent conventional design based on proven technology

The plant can attain a thermal efficiency of about 37%, i.e. for every 100btu of furnace oil burned by the plant produces around 37btu worth of electricity. Theoretical maximum output of the plant during a year is 10,512GWh (1200MWh x 24 x 360).

Power Purchase Agreement

The Power Purchase Agreement (PPA) commenced from the date of first commercial production by the plant in 1997, for 30 years (ending 2027). Hubco is supposed to maintain an essential plant availability of 79% to WAPDA. In case the plant outages exceed 21%, WAPDA can enforce a penalty on the company depending upon the severity of the losses faced by the distributor. There are two main components of the tariff structure: the Capacity Purchase Price (CPP), and the Energy Purchase Price (EPP).

The Capacity Purchase Price
The Capacity Purchase Price (CPP) comprises of the debt service element, the insurance cost element, and the fixed operating cost element.

The ***Debt Service Element*** of the CPP comprises all of the company's scheduled loan interest and repayment obligations with respect to loans advanced to the company by the consortium of lenders during the construction phase.

The ***Insurance Cost Element*** for the project covers the insurance premiums payable by the company for the obligatory insurances required during the construction as well as the operating phase.

The ***Fixed Operating Costs Element*** of CPP covers the fixed operating cost and O&M cost components in foreign as well as in local currency.

The Energy Purchase Price
The Energy Purchase Price (EPP) consists of the Fuel Cost Element and the variable operation and maintenance (O&M) costs comprising of: the rupee variable and foreign currency variable O&M cost elements; and claimable customs duty on import of equipments on foreign currency variable O&M cost element.

The ***Fuel Cost Element (FCE)*** of EPP is linked with the Fuel Supply Agreement (FSA) and varies with the cost of RFO borne by the company. The FCE is computed as per the following formula:

$$FCE = FCE_{ref} * RFO\ price\ inflator * RFO\ calorific\ value\ factor * HRDF$$

Where,
FCE_{ref} = The base reference tariff for fuel cost element as set in PPA
RFO price inflator = The factor by which the FCE is to be inflated
RFO calorific value factor = The calorific value adjustment for the gas supplied to the company.
HRDF = Heat rate deterioration factor

It is imperative to note here that as the company is not directly affected by the RFO prices prevailing in the free market. The company purchases RFO as per the FSA signed with PSO with base fuel rates as set by OGRA. Nonetheless, RFO prices do get revised upwards when international fuel prices rise and consequently HUBCO's fuel expenses soar. Luckily, most of the impact of fuel cost rise is passed on to WAPDA through the FCE element of EPP as described above. The company has to bear only a part of expenses arising from fuel price changes in case of any power wastage during its operations. The Energy Purchase Price (EPP) is adjusted to conform to the calorific value of the RFO actually supplied by PSO.

Considering all fixed and variable factors, the levelized tariff of HUBCO (including EPP and CPP) is expected to be US$0.125 per KWh during 2008.

WAPDA is obligated to purchase a minimum of 6,791GW of net electrical output from the company each year, which corresponds to 60% of maximum theoretical capacity of the plant.

Fuel Supply Agreement (FSA)

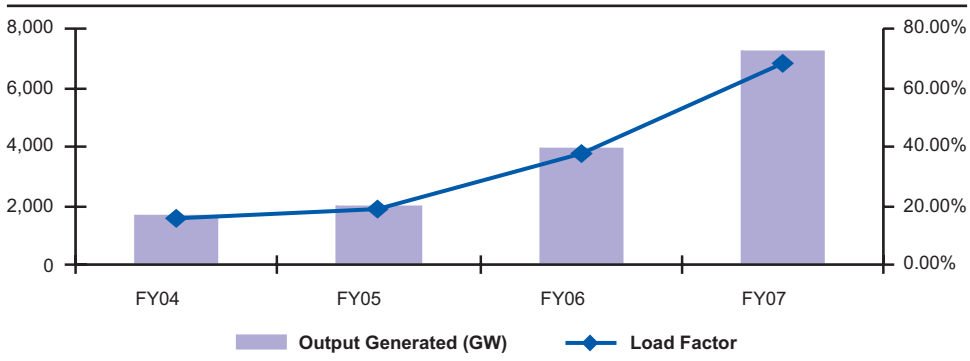
The company is engaged in a fuel supply agreement with PSO under which the supplier is liable to provide the Refined Furnace Oil (RFO) to HUBCO required to operate the power plant. The calorific value of the RFO supplied by PSO is supposed to be 10,200 Kcal/Kg at a base price of PRs2,350 per ton. The base price of RFO, however, varies and is periodically regulated by OGRA. Most of the fuel price rises are passed on to WAPDA, courtesy of the EPP component of the tariff agreement. The company accounts its fuel inventory on First-in-First-out (FIFO) basis.

Past Performance

Operational Performance

As mentioned earlier, HUBCO is a 38% efficiency plant running on Refined Furnace Oil (RFO). Modern power plants of the world can attain thermal efficiency levels of upto 54%. However, power generation technology runs somewhat behind in Pakistan as most power plants operate in the thermal efficiency band of 38-44%. One of the reasons of low thermal efficiency of HUBCO is that the plant was constructed in 1991 when it was the prevailing technology.

Chart 15: Operational highlights (GW)



Source: Company Reports

Table 20: Operational Statistics

	FY04	FY05	FY06	FY07
Theoretical Max Output per Year (GW)	10,512	10,512	10,512	10,512
Output Generated (GW)	1,647	1,975	3,930	7,214
Load Factor	15.67%	18.79%	37.39%	68.63%
Plant Availability	N/A	74.10%	82.00%	86.40%

Source: Company Reports

The theoretical maximum output per year is computed as cumulative net capacity per hour of HUBCO times the total hours in a year, or:

1,200MWh x 24 x 365 = 10,512,000 MW = 10,512 GW

The load factor is computed as the actual electricity generated by the plant during a year divided by the maximum theoretical output during the year. For example in FY07,

7,214GW generated / 10,512 GW capacity = 68.63%

The plant availability is the percent of times HUBCO was ready and able to deliver electricity to WAPDA. In case of plant breakdowns and emergencies the plant is unavailable to dispatch any load upon request of WAPDA and hence loses plant availability rating. In case the plant availability slips below 79%, and WAPDA requests a high load from the company, HUBCO would be liable to any damages or penalties that WAPDA has to face as a result of inability of the company to deliver the requested power as per agreement. It is worth noting that plant availability had slip down to 74.10% during FY05, but WAPDA's requirements were quite low during the year so HUBCO wasn't required to offer high availability and thus not liable to any penalties.

Until a couple of years, Pakistan was self sufficient in its electricity requirements and WAPDA was more focused towards hydel power generators rather than the more-expensive thermal power plants such as HUBCO. Thus, thermal power plants including HUBCO operated at

low loads. Pakistan's racing economy, however, caught up on the power suppliers pretty fast and the country currently faces immense shortage of electricity. Thus, thermal power plants have been running at considerable load factors for the last couple of years.

Financial Performance

As per the Power Purchase Agreement (PPA), WAPDA is obligated to purchase a minimum of 60% load from HUBCO each year regardless of the power requirements of the distributor. As a result, even though HUBCO was required to run on low load factors during FY04 and FY05, the company's gross profit margin were insanely huge due to low cost of production.

However, as the country's power requirements grew, WAPDA purchased more electricity from the company consequently increasing the turnover, but the company's operating cost also grew as a result of increased operations. The increasing cost of fuel in international market also influenced the fuel cost of the company as per its Fuel Supply Agreement (FSA). A large part of fuel cost surge was passed on to WAPDA through the EPP, but there is also a retained portion that sabotaged the company's gross profit margin.

Table 21: Financial Performance

	FY04	FY05	FY06	FY07
Turnover (PRs '000)	16,002,782	16,978,466	27,911,386	44,130,911
Gross profit	7,896,145	7,156,968	4,358,341	4,163,869
Gross profit margin	49.34%	42.15%	15.61%	9.44%
Net profit (PRs '000)	5,462,964	5,385,449	2,768,437	2,654,237
Net profit margin	34.14%	31.72%	9.92%	6.01%

Source: Company Reports

Secondly, the company had retired a major portion of the long term debts that were raised during the construction phase of the project. As the payment of loan tranches, coupled with the tariff premium, was charged to WAPDA, the post-loan-retirement turnover was considerably low. The gross profit margin and net profit margin of the company started declining from 49.34% and 34.24% respectively during FY04 and dropped to 9.44% and 6.01% respectively by end of FY07.

Recent Result Review

International oil prices stretching to touch the US$100 a barrel rate could be no less than a nightmare coming true; especially for thermal power generation units. Luckily, the tariff agreement is phrased such that HUBCO can pass on bulk of its soaring fuel expenses over to WAPDA. Yet, unfortunately however, WAPDA is undergoing a period of severe credit crunch and is unable to pay for what it owes. HUBCO has around PRs6.67bn worth of over-due claims against WAPDA, which are secured through a letter of credit and a guarantee from the Government of Pakistan.

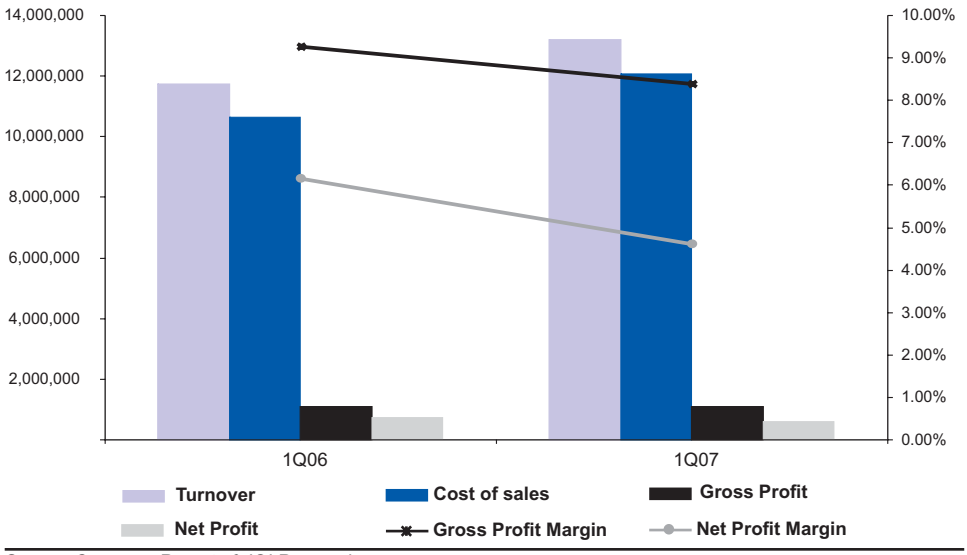
Table 22: HUBCO P&L Statements (PRs'000)

	1Q07	1Q06	% Chng
Turnover	13,191,234	11,725,430	12.50%
Residual Fuel Oil	11,087,857	9,718,230	14.09%
Operation and Maintenance	458,731	402,984	13.83%
Insurance	84,233	92,326	-8.77%
Depreciation	413,256	410,185	0.75%
Amortization	806	1,366	-41.00%
Miscellaneous	41,615	13,245	214.19%
Operating Costs	(12,086,498)	(10,638,336)	13.61%
Gross Profit	1,104,736	1,087,094	1.62%
Other Income	14,723	62,468	-76.43%
General & Administrative Expense	(65,068)	(70,899)	-8.22%
Finance Cost	(447,268)	(356,425)	25.49%
Worker's profit participation fund	-	-	0.00%
Profit for the period	607,123	722,238	-15.94%
EPS (PRs)	**0.52**	**0.62**	**-15.94%**

Source: Company Reports & IGI Research

In addition to the passed on rising fuel costs, the company operated at an average load factor of 71% during the quarter and hence supplied more output to WAPDA. HubCo's topline consequently grew by 12.5%YoY during 1QFY08.

Chart 16: 1Q Financial Highlights



Source: Company Reports & IGI Research

The company's fuel expenses rose by 14%YoY leading to its operating costs to swell by 13.6%YoY. Even though the company's gross profit improved by 1.62%YoY, its gross profit margin has dropped to 8.37% during the quarter from 9.27% during the corresponding period last year.

The credit crunch arising from WAPDA's payment delays forced the company to utilize its liquid assets to finance its running expenses. The low interest earnings on bank deposits and investments due to unavailable free cash led to low 'other income' account. Moreover, the company's finance cost increased by 25%YoY lending to the 16%YoY plunge in the bottomline. The company's EPS during the first quarter comes out to be PRs0.52 as compared to PRs0.62 during the corresponding period last year.

Future Performance

Pakistan is currently faced with a severe power crunch as electricity demand has surpassed the generation capacities of the current supply facilities. In addition, despite being an agricultural country, the country is also faced with an unusual, but critical, problem of water shortages. Rivers and canals that have been flowing for thousands of years and thus borne some of the most ancient civilizations of the world along the banks of River Indus is suddenly experiencing lower water levels as a result of geological changes.

Apart from the problems such geological catastrophes could cause for the agricultural sector, the reduced water levels have led to low power generation capacities of hydel power plants in the country. Hydel power generators are the cheapest source of electricity of the power distribution companies, but now WAPDA and other power distribution companies have to rely more on other sources such as thermal power generators like HUBCO, and KAPCO.

It is thus, we believe that thermal power generators would be required to run on high load factors over the coming years. We have assumed that HUBCO would continue to maintain the high load requirement of 68.63% during the years to come like it did during FY07.

The high load requirement would obviously lead to a high topline for the company, but would also inflate its cost of operations. Thus, and because of increased fuel costs, we do not expect HUBCO to attain the extremely high gross profit margins of near 50% as it once used to enjoy, at least during the coming few years. Nonetheless, the earnings would be amply sufficient to finance its running operations and dividends payout as per schedule.

The company is also eyeing for expansion through a 225MW, RFO fired thermal power plant at Narewal, near the city of Multan, Punjab. The approximate cost of the project is expected to be US$225mn and is expected to commence operations from March 2010.

Feasibility study is also being carried out for a 1,200MW thermal power plant with collaboration of Mitsui & Company of Japan. The understudy plant is planned to operate on imported coal and would be situated at Gidani, also in the province of Baluchistan. There is, as yet, no information about what the outcome of the study could be.

Key assumptions

The levelized tariff per unit for HUBCO is computed to be US$0.125, varying with the changes in fuel supply charges

As mentioned before, the levelized tariff per unit for HUBCO is computed to be US$0.125, varying with the changes in fuel supply charges. Despite the current energy crisis of the world, we believe that international oil prices would not maintain themselves at such high levels for too long. We do not foresee the world could avoid hitting a great recession reef if the fuel prices continue to rise further. Thus, the oil supply would necessarily rise in case of greater shortages and hence the prices have been assumed to remain almost stagnant over the years. The levelized tariff is therefore assumed to remain fixed at 12.5 cents per KWh, or PRs7.66 per KWh during FY08.

The company's topline and bottomline is very susceptible to the exchange rate parity between the local currency and the US dollar

A major impact on the company's topline arises from the exchange rate parity between the local currency and the US dollar. The greenback is faced with a challenging situation and slipping sharply against other major currencies of the world amid the US economy fearing recession since the housing mortgage credit-crunch scandal. Nonetheless, the prevailing political uncertainty and recent economic disturbances have caused the local Rupee to instead decline versus the dollar. Going forward, the US economy will likely recover in a couple of years and then the Pakistani Rupee would depreciate further. Thus, we have assumed that the local Rupee would depreciate throughout by 1.15%YoY.

Most IPP's, including HUBCO, were required to operate at low load factors until FY06 as the country was self-sufficient in its power requirements. The operational load factors and the electricity output generated by HUBCO during the past recent years are as follows:

Table 23: Operational Load Factors

	FY04	FY05	FY06	FY07
Load factor	16%	19%	37%	68.60%
Generation (GW)	1,647	1,975	3,930	7,214

Source: Company Reports

HUBCO's operational load factor has increased exponentially during the last couple of years

As Pakistan's power requirements grew, the country was faced with severe electricity shortage due to insufficient installed facilities. WAPDA had to rely more on thermal power generators, which are more expensive than the alternate hydel sources, to fulfill the distribution needs. As a result, HUBCO's operational load factor has increased exponentially during the last couple of years.

We feel that HUBCO would continue to be required to operate at high load factors during the coming years because of the power shortage faced by the country. We have assumed that HUBCO will maintain the high operational load factor of 68.63% as it did during FY07.

The Practical Load Factor of HUBCO falls between 79% and 82%, a considerable high rate of operation

It may seem at first that this may not be a sufficiently high load factor and HUBCO should run at a much higher load factor, but it is not so. A power plant is scheduled for maintenance outages each year that could consume about 10-15% of its available time each year. For example, scheduled availability for HUBCO may range from 85% to 87%, planned for at the start of the year. Therefore, the Maximum Theoretical Capacity of HUBCO being 10,512GW a year, the Actual/Practical Maximum Capacity of the plant could range from 8935GW to 9145GW a year. Thus the Practical Load Factor of HUBCO at 68.6% theoretical load factor actually falls between 79% and 82%, a considerable high rate of operation.

In addition, we have assumed that HUBCO would maintain its mandatory availability to WAPDA each year and would not be liable to any penalties.

HUBCO burns approximately 0.2313Kg of furnace oil to produce one KWh of electricity

The bulk of the cost of operations is tied up with the furnace oil consumption expense. As per the company's management, HUBCO is a 38% efficient power generator that burns approximately 0.2313Kg of furnace oil to produce one KWh of electricity. We have maintained the suggested efficiency level for the plant while forecasting future fuel consumption expenses.

Valuation

HUBCO has a predefined dividend schedule that the company is subject to follow, unless in case of insolvency. The stock behaves like a pseudo-bond, i.e. it's not actually a bond but because of the certainty of investor returns it behaves like one.

The expected dividend schedule is expressed in real term dollars at PRs30.58/US$. We thus had to convert it into nominal form and then translate it into Rupees using the respective-expected Dollar-Rupee exchange rate. In addition to the existing dividends, HUBCO has also committed to bring up the 224MW Narewal power project by March 2010. The project guarantees a 15% IRR, which is set considerably high owing to the current severe power shortage in the country.

The company's beta is computed to be 0.661, and because of the stable nature of the company's business, we have used a market risk premium of 4% while computing its cost of equity. The company's WACC is determined to be 12.71%. Applying the Dividend Discount Model (DDM) on the company's proposed dividend schedule thus yields a present value of PRs34.60 per share.

Table 24: HUBCO Fair Value (without Narewal Project) **(PRs)**

Year	Dividend (Real US$ mn)	CPI Inflation (%)	Nominalized Dividends (US$ mn)	Dividend Per Share (US$)	Exchange rate (PRs/US$)	Dividend Per Share (PRs)	Present Value (PRs)
FY08	42.93	2.09%	49.07	0.04	61.27	2.60	2.45
FY09	43.85	2.14%	51.20	0.04	61.97	2.74	2.29
FY10	50.26	2.19%	59.97	0.05	62.68	3.25	2.41
FY11	56.91	2.25%	69.43	0.06	63.40	3.80	2.50
FY12	58.54	2.31%	73.07	0.06	64.13	4.05	2.36
FY13	61.4	2.37%	78.45	0.07	64.87	4.40	2.28
FY14	59.25	2.43%	77.55	0.07	65.62	4.40	2.02
FY15	57.27	2.49%	76.82	0.07	66.37	4.41	1.80
FY16	60.65	2.56%	83.44	0.07	67.14	4.84	1.75
FY17	62.61	2.63%	88.41	0.08	67.91	5.19	1.66
FY18	62.57	2.70%	90.73	0.08	68.69	5.39	1.53
FY19	62.46	2.77%	93.08	0.08	69.48	5.59	1.41
FY20	62.19	2.84%	95.32	0.08	70.28	5.79	1.30
FY21	62.43	2.92%	98.47	0.09	71.09	6.05	1.20
FY22	65.65	2.99%	106.65	0.09	71.90	6.63	1.17
FY23	72.79	3.07%	121.88	0.11	72.73	7.66	1.20
FY24	77.68	3.15%	134.17	0.12	73.57	8.53	1.18
FY25	82.38	3.23%	146.88	0.13	74.41	9.45	1.16
FY26	89.16	3.32%	164.25	0.14	75.27	10.68	1.17
FY27	144.53	3.41%	275.32	0.24	76.13	18.11	1.76
						Fair Value	**34.60**

Source: IGI Research

Moreover, the Narewal project has an IRR of 15%. We expect the project to be financed 50% through debt and 50% through equity. According to our calculations, the new project would thus have an impact of PRs2.06 per share on the fair value of the company. Hence, we present HUBCO's actual fair value to be PRs36.66. At the current market price, the stock offers an upside potential of 15.46% w.r.t. our fair value. We hold a Positive stance on the share and recommend investors to **Over-Weight** the stock in their portfolio.

Sensitivity Analysis

The Narewal project has a significant influence on HUBCO's valuation

It is essential to mention here that the Narewal project has a significant influence on HUBCO's valuation. As a result of the country being in dire need of electricity, the IRR of the new project is 15%, as compared to that of HUBCO of 12.09%. HUBCO's valuation is very susceptible to how the management decides to finance the project. If HUBCO finances the project through its current balance sheet or debt, its share price will skyrocket. However, we doubt the company's ability to fund the project through its balance sheet considering the credit crisis arising from the insolvency of WAPDA. At least for as long as WAPDA is not able to clear its dues, HUBCO's balance sheet also doesn't seem to be strong enough to attract a suitable financing rate. Thus, we assumed the management would settle for a debt:equity ratio of 50:50 and have presented the respective fair value of the company. In case the company manages to fund the project without a right share issue, its value would be significantly higher than what we have proposed here.

In order to transform HUBCO's dividend schedule from real to nominal terms, we used the moving-average of the historic percentage increases in the US inflation rate to forecast the indicator for subsequent years (default case). The company's value is, however, somewhat vulnerable to the US inflation rate assumption and we provide the following table for the convenience of our reader:

Table 25: HUBCO Fair Price Sensitivity Upon US CPI Rate

US CPI	Default	1.50%	1.75%	2%	2.25%	2.50%	2.75%	3%
Fair Price	36.66	36.31	36.39	36.47	36.55	36.63	36.72	36.81

Source: IGI Research

In our base case, we have also assumed the US dollar to appreciate against Pakistani Rupee by 1.15% each year. Caeteris paribus, if the US dollar increases at a different rate during the coming years, the following table illustrates HUBCO's legitimate value.

Table 26: HUBCO Fair Price Sensitivity Upon US$-PRs Parity Inflation Rate

USD Infl.	Default (1.15%)	1%	2%	3%	4%	5%
Fair Price	36.66	36.17	39.64	43.54	47.94	52.90

Source: IGI Research

Because of the historic and the prevailing economic conditions of the country relative to that of the world's, we have not considered the case where the US$ could depreciate against the Rupee and deem it as 'unreasonable to consider' under the world affairs.

Last but not the least; HUBCO's valuation is vulnerable to the company's WACC, which can vary considerably with changes in the company's market risk premium assumptions, and the prevailing risk free rate in Pakistan.

We have assumed 4% market risk premium for the company

Due to the inherently stable nature of business of the stock, our assumption of 4% market risk premium may appear pessimistic to some investors. In addition, the considerably-high prevailing risk free rate in Pakistan of 10% is also often anticipated to decline over the long-term perspective. Both these indicators influences the company's cost of equity and hence its WACC. We, therefore, provide the following comprehensive table of HUBCO's fair price per share at various WACC for the convenience of out reader.

Table 27: HUBCO Fair Price Sensitivity Upon Company's WACC

WACC	9.00%	9.50%	10.00%	10.50%	11.00%	11.50%*	12.00%	12.50%	13.00%	13.50%	14.00%
Fair Value	49.96	47.78	45.74	43.82	42.03	40.34	38.75	37.26	35.86	34.53	33.28

Source: IGI Research

The default-case assumptions of 1.15% dollar inflation, and moving-average US inflation were assumed to hold while computing the above table.

Kot Addu Power Company

Fair Value: 60.23
Recommendation: BUY
Strategy : Over weight

Investment Considerations

- Kot Addu Power Company (KAPCO) operates the largest thermal power generator of Pakistan. The plant has a capacity of 1600MWh and is able to operate on multiple fuel sources. KAPCO is capable of operating on light sulphur furnace oil, gas, and high speed diesel (HSD).
- The Power Purchase Agreement (PPA), signed in 1996, allowed the company a tax holiday of ten years that has expired in 2006. The company is now liable to be taxed at 36% on its earnings from the power generation process as per its PPA.
- Due to severe shortage of electricity in the country, all thermal power plants, including KAPCO, would be required to operate on high load factors. The energy component of the tariff is a variable component that increases with each KW of electricity provided to WAPDA. Thus, KAPCO's topline is expected to grow steeply over the coming years.
- The US dollar is rising sharply against the Pakistani Rupee because of poorer economic growth prospect of Pakistan during the coming few years. The rising dollar greatly inflates KAPCO's escalable component of the tariff. Such gain in the escalable component of tariff runs down till the company's bottomline and greatly improves its EPS.
- KAPCO has been given permission for the 445MWh capacity expansion project. The company has filed for a tariff petition to NEPRA and demands a 15% IRR for the expansion project. We believe that the company would easily win the required IRR from NEPRA owing to the severe power shortage in the country.
- Using DDM at the WACC of 13.86%, we compute the company's fair value to be PRs60.23. At the current market price, the stock offers an upside potential of 20.94%. We thus hold a positive stance towards the scrip and recommend investors to Over-weight the stock in their respective investment portfolios.

Table 28: Valuation Statistics @ PRs49.80

	FY05A	FY06A	FY07A	FY08F	FY09F	FY10F
Gross profit margin (%)	35.32%	29.95%	23.58%	23.49%	24.84%	26.76%
Operating profit margin (%)	35.90%	30.65%	24.03%	24.38%	25.85%	27.35%
Net profit margin (%)	29.20%	16.19%	13.46%	13.62%	14.61%	15.77%
EPS (PRs)	9.14	6.04	5.67	6.75	7.10	7.37
DPS (PRs)	8.00	8.10	6.00	6.00	10.65	11.06
ROE (%)	36.11%	26.43%	26.46%	29.64%	32.25%	39.69%
BV (PRs)	25.32	22.86	21.43	22.78	22.02	18.58
P/E (x)	5.45	8.24	8.78	7.38	7.01	6.75
P/BV (x)	1.97	2.18	2.32	2.19	2.26	2.68
Dividend yield (%)	16.06%	16.27%	12.05%	12.05%	21.39%	22.21%

Source: Company Reports & IGI Research

KSE code	*KAPCO*
Bloomberg code	*KAPCO PA*
Reuters code	*KAPCO KA*
Market Price in PRs	*49.80*
Market Cap in PRs (mn)	*43,880.62*
Market Cap in US$ (mn)	*702.08*
Outstanding shares (mn)	*880.25*
Free Floot (%)	*18.00*
Index Weight (%)	*1.19*

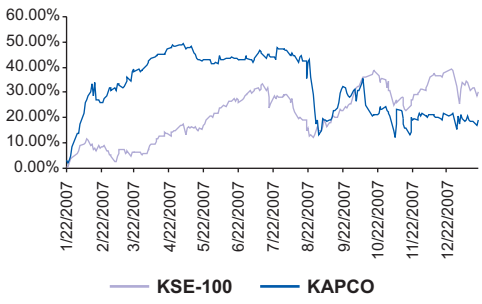
12months price data (PRs)

max	*62.55/share*
min	*40.50/share*
average	*54.74/share*

12months volume data

max	*39.87mn*
min	*0.024mn*
average	*2.35mn*

Chart 17: KAPCO V/S KSE-100



Source: Bloomberg & IGI Research

Tahir Hussein Ali
tahir.ali@igi.com.pk

Muhammad Ashar Khaliq
ashar.khaliq@igi.com.pk

IGI Securities

Company Overview

The Kot Addu Power Company Limited (KAPCO) was built by the Pakistan Water and Power Development Authority (WAPDA) in five phases between 1985 and 1996 at Kot Addu, a small town in the province of Punjab. It was incorporated in April 1996 as a public limited company with WAPDA maintaining the entire shareholding. On June 27, 1996, following an international bidding by the Privatization Commission of Pakistan, 26% shareholding was transferred to International Power (then known as National Power) of UK. International Power (IP) purchased 228,865,840 shares of KAPCO, representing 26% stake in the company for US$215mn (i.e. then PRs33.64 per share). Later, International Power (IP) further increased its shareholding by 88,025,322 shares or 10%, raising its cumulative shareholding in the company to 36%.

However, because of the ailing dollar against major currencies of the world, especially the British Pound, IP wants to demutualize and reduce its holding in the company. KAPCO's earnings are driven up when the US dollar rises against the local Rupee and thus hedges the local investor who manages his/her returns in the local currency. However, the British owner company undergoes losses because of the falling US dollar. The Government authorities have granted IP to demutualize its shareholding. IP has not yet decided whether it will offload its holding in the local market or subscribe the company at a foreign exchange.

Plant Details

KAPCO operates and maintains a 1600MW power plant. The complex is situated on a site of about 350 acres in the province of Punjab, approximately 90Km north-west of the city of Multan, and 20Km east of the River Indus. Its name is taken from the local village of Kot Addu in its vicinity. The complex consists of a housing colony and the plant facility.

The plant technology attains 43% efficiency rate and comprises of ten multi-fuel fired gas turbines, five steam turbines, and ten heat recovery steam generators. An ancillary plant includes water extraction and treatment systems, cooling towers, oil storage tanks, and fuel oil treatment plants.

Initially the machines were designed to run only on high speed diesel (HSD), but were progressively converted to operate on low-sulphur residual fuel oil and gas as well as HSD. Currently, eight of the ten gas turbines can operate on residual fuel oil while all ten can operate on both high speed diesel and gas. This gives KAPCO a unique distinction from other power generators of Pakistan and immense flexibility in operations so the company can rely on other sources of fuel in case of shortage of one.

KAPCO has full flexibility to switch over between gas and furnace oil as the fuel source for generation. Fuel switching can be carried out whilst the machines are generating and therefore the company has the ability to generate electricity on either fuel or a combination of both.

Power Purchase Agreement (PPA)

The term of the PPA commences from June 27, 1996 for a period of 25 years (expires in 2021). WAPDA is the sole customer of KAPCO. As per the agreement, KAPCO is obligated to generate and deliver electricity to WAPDA up to the available net capacity of the plant. The supply should, however, not be less than the prevailing dependable capacity.

The tariff payable by WAPDA to KAPCO has two components: the capacity purchase price (CPP), and the energy purchase price (EPP).

The CPP is further divided into two parts: escalable and non-escalable. The escalable component covers the fixed costs and an implicit return, whereas the non-escalable component covers the payment of senior and subordinate loan, raised during the construction phase of the project. The non-escalable component declines over time as the loan is gradually paid off.

The Capacity Payment made monthly in arrears is the product of the Capacity Purchase Price (CPP) and the relevant “Winter Dependable Capacity” or “Non Winter Dependable Capacity.” The season may have a significant influence on fuel’s calorific value and availability; the Net Dependable Capacity (NDC) of the company thus varies on the time of the year. The NDC ranges from a little over 70% during winter (Dec-Mar) to about 62.5% during non-winter (Apr-Nov) months. The capacity payment is not dependant on the electricity actually delivered to WAPDA, it infact rewards the company for being ready and able to supply electricity in case of an immediate, sudden requirement by WAPDA.

EPP covers the variable costs as per tariff schedule including fuel costs and variable operations & maintenance costs. The Energy Payment is dependant on the electricity delivered to WAPDA, varying slightly with the mix of fuel used to generate that electricity. The levelized tariff for the Energy Component is around US$0.0504 per KWh.

The tariff payments being linked to the US dollar, the earnings of such IPPs are dependant on Dollar-Rupee relationship. A weakening Rupee against the US dollar considerably inflates the earnings of IPPs. Thus such stocks are also an effective means for hedging against adverse movements of the Pakistani Rupee.

Supply Agreements

KAPCO has two fuel supply agreements: Oil Supply Agreement (OSA) with Pakistan State Oil (PSO), and Gas Supply Agreement (GSA) with Sui Northern Gas Pipelines Ltd. (SNGPL).

Under the Oil Supply Agreement (OSA), PSO supplies low sulphur furnace oil, high speed diesel, greases, lubricants, and other additives to KAPCO. Most of the supply is performed from the Attock Refinery. PSO has the option to either deliver the fuel through pipeline or by road; however, all supplies must meet KAPCO's defined specifications. Government of Pakistan (GoP) periodically regulates the prices of various petroleum products that serves as the reference rate for payments to PSO for the supplies.

Under the Gas Supply Agreement (GSA), SNGPL guarantees a firm supply to KAPCO during the off-peak months (March 16 to November 14) of 70mmcfd Specification Gas. However, during the peak months (November 15 to March 15), SNGPL is not liable to guarantee deliveries of any amount of gas to KAPCO. In case of gas shortage, the company has to rely more on furnace oil and diesel.

The agreements define the required calorific value of the fuel and also their base reference prices as decided in 1996. The base rates are now only used as a benchmark and are significantly higher than the ones mentioned in the agreements.

Table 29: Fuel Supply Specifications

Fuel type	Calorific Value	Base Fuel Prices (1996)
Residual fuel oil	39.900 KJ/Kg	PRs3,195/ton
Gas	30.173 KJ/m3	PRs298.33/hundred m3
HSD	36.300 KJ/litre	PRs6.94/litre

Source: Company's PPA

KAPCO however has to purchase a minimum of 30% of guaranteed deliveries of gas each year from SNGPL. In addition, KAPCO is also required to maintain a security deposit at SNGPL worth the cost of two months' guaranteed deliveries.

Past Performance

Operational Performance

The company increasingly utilizes gas as the main fuel source for power generation because of it being substantially cheaper than furnace oil. It is approximately 70% more expensive for KAPCO to produce one KWh of electricity on fuel oil than to produce the same through gas. But when gas supplies are insufficient to meet the total generation requirements, KAPCO has little choice but to switch over to furnace oil, thereby increasing the cost of power generation.

However, the tariff structure recognizes the use of different fuels and the company is somewhat compensated. Nonetheless, as the tariff increases, it may become less attractive to WAPDA to purchase electricity from the company. WAPDA may reduce the electricity purchased from KAPCO and turn its emphasis more towards alternative, cheaper sources.

Fortunately for Kapco, and unfortunately for the entire nation however, the country is currently faced with severe power shortage which is feared to prevail during the coming few years. Thus all IPPs would be required to run on high loads up to their net capacities and power distributors like WAPDA and KESC would want to purchase all available power in the country at whatsoever high tariff to cater the nation's need.

Interests of the company are also secured through the Capacity Payment component of the Power Purchase Agreement (PPA). Therefore, shareholder's returns will not be too adversely affected even during lower power demand by WAPDA, provided that KAPCO maintains a minimum level of Net Available Capacity.

KAPCO's operational efficiency is about 43%; i.e. for every unit of energy consumed in terms of fuel, it produces 0.43 units of equivalent energy in the form of electricity. The following table illustrates the operational highlights of the company during the past few years.

Table 30: Operational Statistics

	2004	2005	2006	2007
Theoretical capacity (GW)	11,755	11,756	11,756	11,756
Generation (GW)	5,678	8,135	8,292	8,182
Load factor	48%	69%	71%	69.60%
Actual plant availability	86%	88.50%	88%	86%

Source: Company Reports

The plant availability is the percent of times KAPCO was ready and able to deliver electricity to WAPDA. In case of plant breakdowns and emergencies the plant is unavailable to dispatch any load upon request of WAPDA and hence loses plant availability rating. In case the plant availability declines below the threshold of 65%, KAPCO can be held liable by WAPDA for any losses the distributor incurs as a result. KAPCO has, however, maintained a high, stable availability rating to WAPDA over the years.

Financial Performance

Table 31: Financial Highlights

	FY05	FY06	FY07
Turnover (PRs '000)	27,563,546	32,833,378	37,086,650
Gross profit (PRs '000)	9,736,536	9,835,037	8,743,361
Net profit (PRs '000)	8,047,790	5,317,362	4,991,409
Gross profit margin (%)Ê	35.32%	29.95%	23.58%
Net profit margin (%)	29.20%	16.19%	13.46%
EPS	9.14	6.04	5.67
DPS	8.00	8.10	6.00

Source: Company Reports

The 10 year tax holiday of the company expired during FY05 and earnings of the last three days of the company during the year were taxed. KAPCO's earnings are subject to 36% income tax following the tax holiday.

The cost of energy component is inflating very rapidly owing to the surging cost of fuel all over the world and thus also raising KAPCO's topline.

The tariff agreement allows most cost items to be passed on to WAPDA and IPP's earnings are in general fairly stable. However, the costs that arise from any operational inefficiency on part of KAPCO cannot be passed on and are borne by the company.

KAPCO has managed high availability to WAPDA over the years and thus the Capacity Purchase Price (CPP) component has remained fairly stable. The CPP is however declining over the years because of its non-escalable. The non-escalable component of KAPCO's tariff decreases as the company retires its debt, and hence the component is lesser than before each year.

Because of reduced earnings from the non-escalable component, KAPCO's gross profit margin of the company has been declining over the years.

Recent Result Review

KAPCO's topline grew by 16.5%YoY during the first quarter of the current financial year. The power company generated 2,514GW of electricity during the period at a phenomenal load factor 84.7% and impressive commercial availability of 96.7% to WAPDA. The high load factor and commercial availability greatly inflated the EPP and CPP components of tariff, ballooning the company's turnover.

Table 32: KAPCO P&L Statements (PRs'000)

	1Q08	1Q07	% Chng
Sales	10,232,194	8,785,256	16.47%
Fuel Cost	7,307,070	5,957,862	22.65%
Salaries, wages, and benefits	153,737	127,322	20.75%
Plant maintenance	31,123	29,797	4.45%
Gas turbines overhauls	25,671	218,632	-88.26%
Repair and renewals	5,468	98,865	-94.47%
Depreciation	384,503	396,444	-3.01%
Amortization	174	21	728.57%
Provision for store obsolescence	10,233	-	15.95%
Cost of Sales	(7,917,979)	(6,828,943)	18.29%
Gross Profit	2,314,215	1,956,313	69.53%
Admin and general expenses	(98,658)	(58,194)	121.43%
Other operating income	192,003	86,710	21.30%
Profit from operations	2,407,560	1,984,829	26.43%
Finance cost	(392,219)	(310,237)	20.35%
Profit Before Tax	2,015,341	1,674,592	26.64%
Tax	(703,590)	(555,600)	17.23%
PAT	1,311,751	1,118,992	
EPS (PRs)	**1.49**	**1.27**	

Source: Company Reports & IGI Research

The cost of sales grew by 16%, mainly because rising oil prices. Fuel expense increased by 23%YoY for KAPCO; fortunately the expense is a pass-through item and covered by the tariff. The power generation process was driven 75.5% through gas, 24.4% through furnace oil, and 0.1% through HSD.

Gas is more readily available during the summer when the overall demand for it in the country is low; as winter approaches, gas finds more uses for itself as a heating source at homes and industries and thus becomes short. KAPCO preferably runs on gas whenever it can because of the lower generation cost but SNGP is not able to supply it as much during the peak season.

Other operating income of the company increased by 121% by the interest accrued on "late" payments by WAPDA. Once WAPDA starts paying its dues, accounting gains of many power project companies would eventually be realized and the power generation compaines would obviously become very happy. Until then, the accounting gains are the only celebrations for these power production companies including KAPCO.

KAPCO's bottomline grew by 7.23%YoY posting an EPS of PRs1.49 during the first quarter. The company's net profit margin has improved to 12.82% as compared to 12.74% during the corresponding period last year.

Future Performance

As we have discussed earlier that because of shortage of electricity in the country and reduced hydel generation capacities arising because of lower water levels in our rivers, Pakistan would need to rely more on thermal generation than before. As a result, all power generation facilities in the country would be required to run on high load factors, KAPCO being no exception.

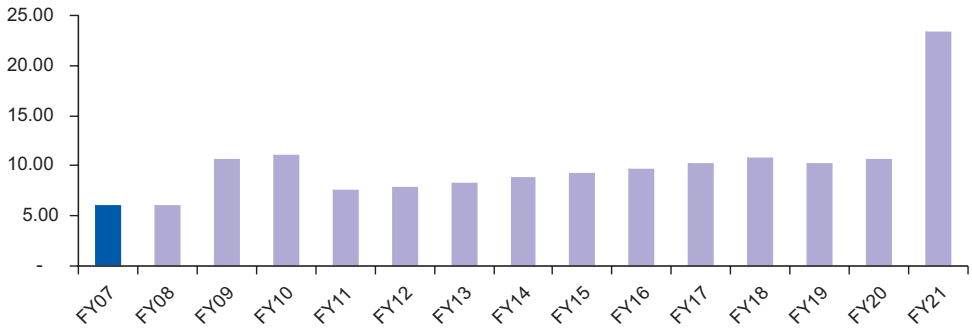
We believe KAPCO would continue to generate high loads of electricity during the coming years. We assume a generation load factor of 70% for KAPCO which would significantly contribute to the Energy Price component of the turnover.

We also believe that KAPCO would continue its high operational standards and maintain high availability to WAPDA as it has been doing in the past. The high availability will contribute positively to the escalable component of Capacity Purchase Price (CPP) of KAPCO.

As a result, the company's topline would continue to grow. But as bulk of the turnover growth owes its gratitude to the passed-on costs from its cost of operations, the gross profit and net profit margins will not get any healthier; especially true as the non-escalable component of the tariff depletes itself with the company's debt retirement.

KAPCO has also been granted permission to proceed with a capacity expansion of 450MWh within the existing plant. The company has also applied for a tariff petition to NEPRA for the expansion; however, the company will not take a final decision over the expansion project until a consensus is reached between NEPRA's suggested IRR and the company's financial feasibility for the project.

Chart 18: Dividend Forecast



Source: Company Reports & IGI Research

Valuation

Unlike HUBCO, KAPCO doesn't have a predefined dividend schedule. We have utilized the free cash available to firm method as an estimate of its dividend schedule; and discounted the stream to calculate the scrip's fair price. It is imperative to mention that key underlying assumptions in our financial model for the company (KAPCO) is almost in line with HUBCO, which have been mention earlier in the report on page 33.

KAPCO adopts a 'maximum payout' dividend policy. We employ a market risk premium of 6% for the share considering the stability of its earnings and operations. Historic price fluctuations of the stock suggest a beta of 0.637. Under WACC of 13.85%, we compute the company's fair value to be PRs60.23. At the current market price, the share offers an upside potential of 20.94%. We thus hold a positive stance for the share and recommend investors to Over-weight the scrip in their investment portfolio.

Table 33: KAPCO Fair Value

	Dividend Forecast	PV
FY08	6.00	5.62
FY09	10.65	8.77
FY10	11.06	8.00
FY11	7.55	4.79
FY12	7.88	4.39
FY13	8.30	4.07
FY14	8.74	3.76
FY15	9.19	3.47
FY16	9.66	3.21
FY17	10.17	2.97
FY18	10.70	2.74
FY19	10.19	2.29
FY20	10.68	2.11
FY21	23.28	4.04
	Fair value	**60.23**

Source: IGI Research

However, the company has petitioned for a tariff agreement to NEPRA demanding a 15% IRR on a capacity increment project of 445MWh at the existing plant. HUBCO has been offered the same IRR on their new power plant project being set up at Narewal. We believe that due to the prevailing power shortage in the country, the company would be allowed the desired IRR on its expansionary project.

The project is estimated to cost around US$450mn and would be financed through a mix of debt and equity. We believe that the expansion would become operational at some time during FY10 and additional earnings would start coming from FY11. The leased life of the expansion plant is of 30 years and would enjoy tax holiday throughout its life. The existing KAPCO plant would however complete its term by 2021.

At 50:50 debt-equity ratio and IRR of 15%, we believe the expansion project adds a value of PRs6.25 per share. Hence our cumulative valuation of KAPCO stands at PRs66.48 per share.

Sensitivity Analysis

Unfortunately, our economic growth prospects are no longer as strong as they were being predicted just a few months ago. Despite the US economy lingering amid the current credit crisis; the widening trade deficit and severe political unrest has put a lot of pressure on the local currency which is losing worth against the greenback. The economic slump may take years to resolve and it is yet uncertain how long could it take the country to achieve stability and win back the confidence it has lost within a matter of months.

Kapco's earnings are very sensitive to the US$-PRs parity. The company's high capacity and availability yield to large escalable component of tariff. The escalable component undergoes an inflation and exchange rate adjustment as per the US inflation rate and the price of US dollar against the Pak Rupee.

We thus believe that KAPCO's share offers an ideal sanctuary to the investor, sheltering against the ailing Rupee in the coming years. We have assumed that Rupee would depreciate by 1.15% from 2008 onwards. However, we present the following fair prices under US dollar inflating at various other rates, for the convenience of our reader.

Table 34: US$ inflation Sensitivity analysis

US$ inflation rate	0%	0.50%	1%	1.15%	1.25%	1.50%	1.75%	1.90%	2%	2.50%	3%
Without expansion	56.32	57.98	59.7	60.23	60.59	61.49	62.41	62.97	63.35	65.27	67.27
With expansion	62.59	64.24	65.95	66.48	66.83	67.72	68.63	69.18	69.56	71.45	73.42

Source: IGI Research

Sensitivity Analysis

Unfortunately, our economic growth prospects are no longer as strong as they were being predicted just a few months ago. Despite the US economy lingering amid the current credit crisis; the widening trade deficit and severe political unrest has put a lot of pressure on the local currency which is losing worth against the greenback. The economic slump may take years to resolve and it is yet uncertain how long it could take the country to achieve stability and win back the confidence it has lost within a matter of months.

KAPCO's earnings are very sensitive to the US$-PRs parity. The company's high availability rating to WAPDA yields to large escalable component of tariff. The escalable component undergoes an inflation and exchange rate adjustment as per the US inflation rate and the price of US dollar against the Pak Rupee.

We thus believe that KAPCO's share offers an ideal sanctuary to the investor, sheltering against the ailing Rupee in the coming years. We have assumed that Rupee would depreciate by 1.15% from 2008 onwards. However, we present the following fair prices under US dollar inflating at various other rates, for the convenience of our reader.

Research Team

Tahir Hussein Ali	Oil & Gas, IPPs, Mutual Funds	Tel: (92-21) 111-234-234 Ext.:806	tahir.ali@igi.com.pk
Sobia Muhammad Din	Strategy, Economy, Global Markets, Financial Sector, Chemical, Textile	Tel: (92-21) 111-234-234 Ext.:809	sobia.din@igi.com.pk
Shayan Hasan Jafry	Politics, Commodity, Cement, Fertilizer, Telecommunication	Tel: (92-21) 111-234-234 Ext.:808	shayan.jafry@igi.com.pk
Ashar Khaliq	Automobile, IPPs	Tel: (92-21) 111-234-234 Ext.:811	ashar.khaliq@igi.com.pk
Sarah Junejo	Refinery	Tel: (92-21) 111-234-234 Ext.:823	sarah.junejo@igi.com.pk
Ahmed Raza Khan	Consumer	Tel: (92-21) 111-234-234 Ext: 804	ahmed.raza@igi.com.pk
Abdul Sajid	Database	Tel: (92-21) 111-234-234 Ext.:813	abdul.sajid@igi.com.pk
Mansoor Ahmed	Design, Layout	Tel: (92-21) 111-234-234 Ext.:812	mansoor.ahmed@igi.com.pk

Equity Sales

Tanvir Abid, CFA (KHI)	Tel: (92-21) 530-1304	tanvir.abid@igi.com.pk
Sher Afgan (LHR)	Tel: (92-42) 630-0082	sher.afgan@igi.com.pk
Shafqat Ali Shah (ISL)	Tel: (92-51) 280-2243	shafqat.ali@igi.com.pk
Chaudhry Usman Javed (SKT)	Tel: (92-52) 3242689	usman.javed@igi.com.pk
Muhammad Ejaz Rana (FSD)	Tel: (92-41) 254-0854	ejaz.rana@igi.com.pk

International Equity Sales

Tanvir Abid, CFA	Tel: (92-21) 530-1304	tanvir.abid@igi.com.pk
Manizeh Kamal	Tel: (92-21) 530-1711	manizeh.kamal@igi.com.pk

Analyst Certification

We, Tahir Hussein Ali & Muhammad Ashar Khaliq, hereby certify that the views expressed in this research report accurately reflect our personal views about the subject, securities and issuers. We also certify that no part of our compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed in this research report.

Head Office

7th Floor, Nacon House, MDM Wafai Road, Karachi
Phone: 021-5687494 Fax: 021-5684087

Branch Offices

Karachi
7th Floor, The Forum, Suite No. 701-713, G-20, Block 9, Khayaban-e-Jami, Clifton, Karachi
Phone 111-234-234 Fax: 111-567-567

Karachi - KSE
Room # 123, 3rd Floor, KSE Building, Stock Exchange Road, Karachi
Phone 021-2429601 Fax: 021-2429607

Lahore
5 F.C.C, Ground Floor, Syed Maratib Ali Road, Gulberg, Lahore
Phone: 042-5756701, 577861-70 Fax: 042-5762790

Lahore
Office # 1, 1st Floor, Y Block, Commercial Market, DHA, Lahore
Phone: 042-5747810-14 Fax: 042-5747815

Lahore - LSE
Room # 302, 3rd Floor, Lahore Stock Exchange Building, 19 Khayaban, Aiwan-e-Iqbal, Lahore
Phone: 042-6300082-85 Fax: 042-6311179

Islamabad
Mezzanine Floor, Razia Plaza, 90 Blue Area G-7, Islamabad
Phone: 051-2802241-43, 051-111-234-234 Fax: 051-2802244

Faisalabad
9th Floor, State Life Building, Faisalabad
Phone: 041-2540845-43 Fax: 041-2540815

Sialkot
Room # 26, Sialkot Trading Floor, 2nd Floor, Cantt Plaza, Allama Iqbal Road, Sialkot Cantt
Phone: 052-3242689-92 Fax: 052-3242693

Sialkot Office
Suite No. 10 & 11, 1st Floor, Soni Square, Khadam Ali Road, Mubarik Pura, Sialkot
Phone: 052-3258437 Fax: 052-3258438

IGI
Securities