

Pakistan Power Sector

Historic high-power generation registered during CY21, up by 10.6% YoY

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ASIAMONEY

Outstanding Company in the
Financial Sector 2021



Best Brokerage House of
the Year 2021



Best Broker in Pakistan



Corporate Finance House
of the Year: 2021



Best Corporate & Investment
Bank: 2020



Best Economic Research
House of the Year: 2021



Top 25 Companies



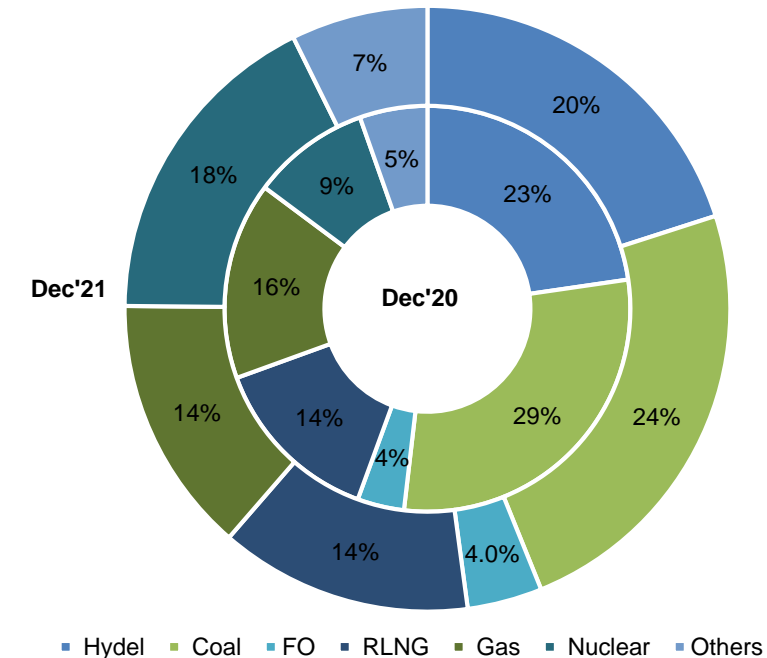
Best Equity Research
Analyst: 2021

Pakistan Power Sector

Highest ever Power Generation during Month of Dec, up 12.0% YoY

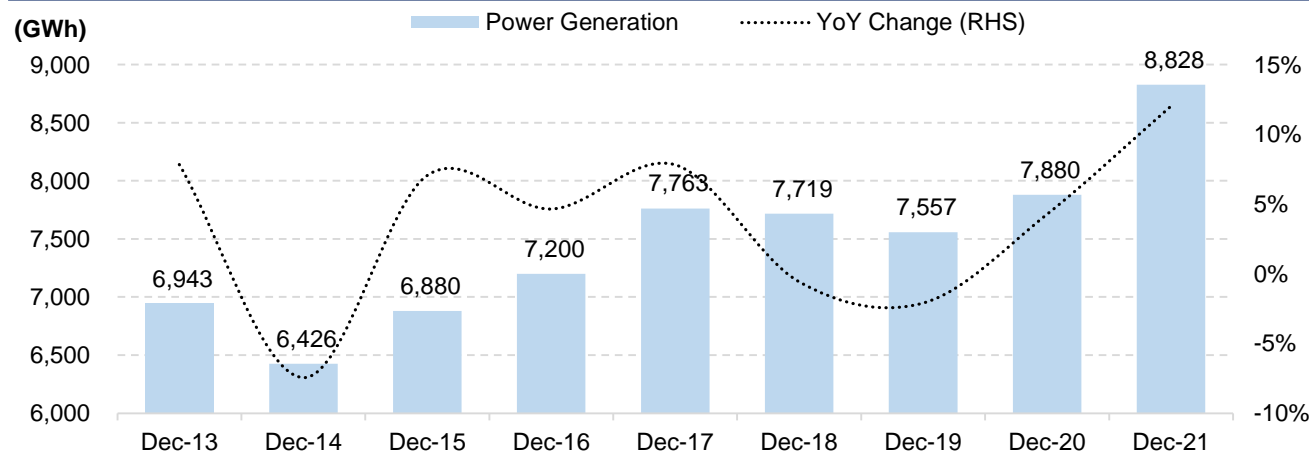
- Power generation went up by 12.0% YoY to 8,828 GWh (11,866 MW) during Dec'21, compared to 7,880 GWh (10,591 MW) during Dec'20. The rise in generation was owed to higher generation from Nuclear, RLNG and FO.
- Major contributors during Dec'21 were Coal (share: 24%), Hydel (share: 20%), Nuclear (share: 18%), Gas (share: 14%), RLNG (share: 14%), FO (share: 4%), HSD (share: 3%), Wind (share: 2%) and Bagasse (share: 1%).
- During the month, Nuclear, FO and RLNG based power generation went up by 109%, 20% and 9%, respectively. However, Coal, Wind, Gas and Hydel based generation declined by 8%, 4%, 2% and 1% YoY, respectively.
- During Dec'21, fuel cost for power generation increased by 72% YoY to PKR 8.24/KWh mainly due to rise in FO, coal and RLNG based cost of generation. In addition to this hydel, wind and solar based generation decreased by 1%, 4% YoY and 10% YoY, respectively.

Exhibit: Power Mix During Dec'21 and Dec'20



Source (s): NEPRA, AHL Research

Exhibit: Historical Power Generation during the month of December



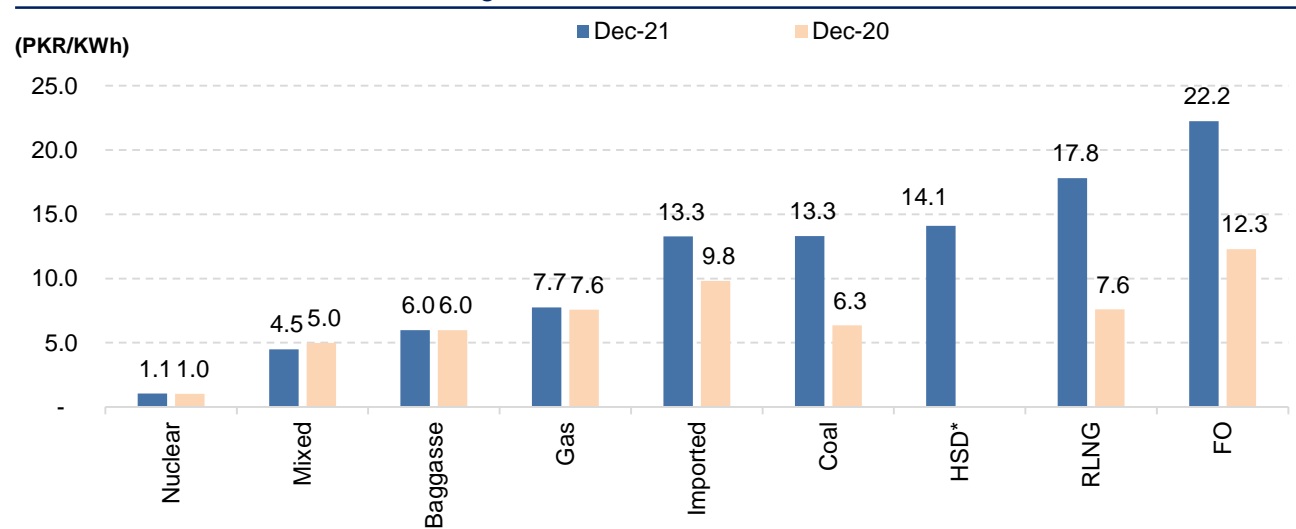
Source (s): NEPRA, AHL Research

Pakistan Power Sector

Fuel Cost up by 72% YoY during Dec'21

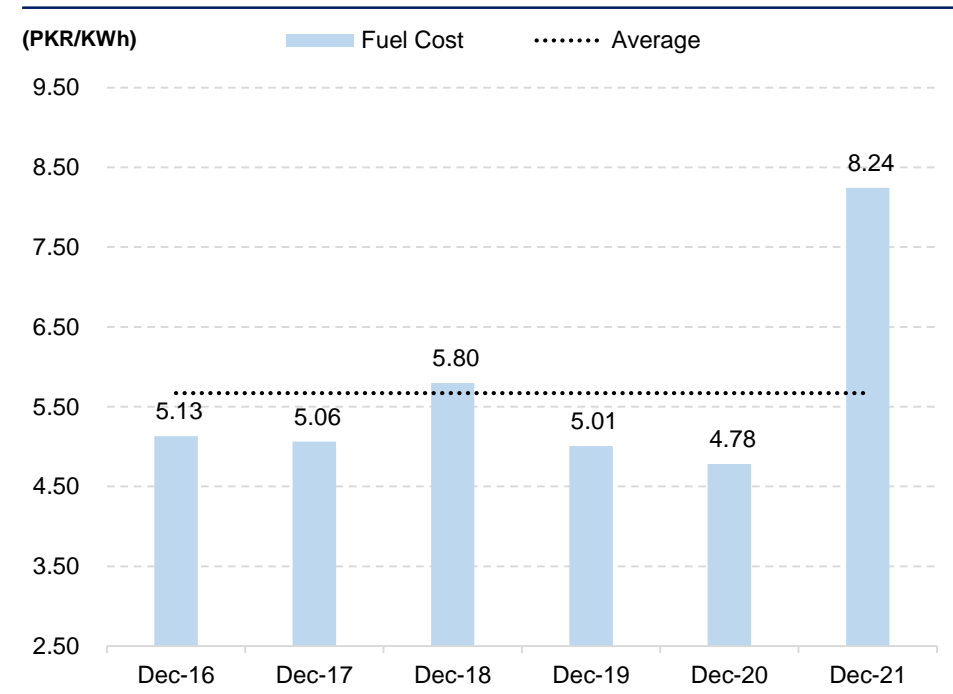
- The rise in fuel cost by 72% YoY to PKR 8.24/KWh during Dec'21 was led by the following reasons:
 - RLNG-based cost of generation increased by 135% YoY to PKR 17.81/KWh due to 66% YoY rise in RLNG prices to PKR 2,241/mmbtu (USD 12.62/mmbtu).
 - Coal-based cost of generation went up by 110% YoY to PKR 13.31/KWh during Dec'21 due to 73% YoY rise in coal prices.
 - FO-based cost of generation increased by 81% YoY to PKR 22.24/KWh.
 - Hydel based generation decreased by 1% YoY.
 - Wind and Solar based generation also decreased by 4% YoY and 10% YoY, respectively.

Exhibit: Source wise fuel cost during Dec'21 and Dec'20



Source (s): NEPRA, AHL Research, * Zero electricity was generated on HSD in Dec'20

Exhibit: Historical Trend of Fuel Cost during December

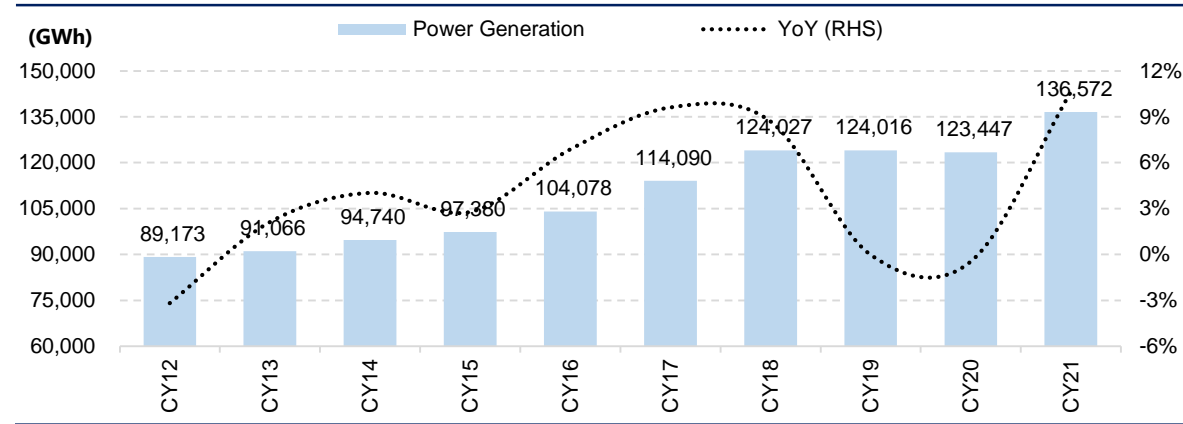


Source (s): NEPRA, AHL Research

Pakistan Power Sector

Focus Charts

Exhibit: Highest ever Power Generation during CY21, up by 10.6% to 136,572 GWh



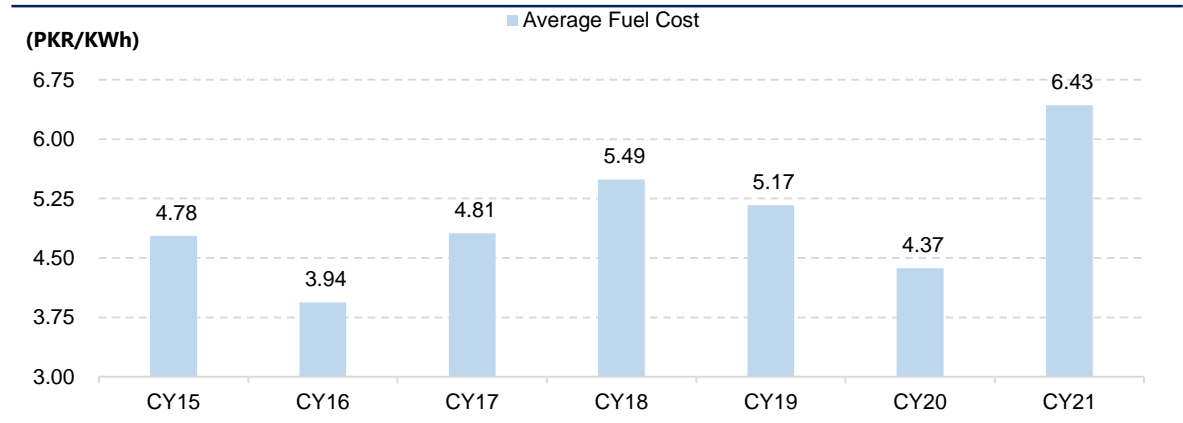
Source (s): NEPRA, AHL Research

Exhibit: Historical Trend of Source wise Power Mix

GWh	CY21	CY20	CY19	CY18	CY17	CY16	CY15	CY14	CY13	CY12	10Y Avg
Hydel	27.6%	32.4%	28.9%	23.5%	26.5%	32.9%	33.5%	34.2%	34.6%	32.4%	30.6%
Coal	20.0%	20.7%	17.0%	12.8%	4.2%	0.1%	0.1%	0.1%	0.1%	0.1%	7.5%
RLNG	19.0%	20.0%	22.7%	22.4%	9.7%	3.1%	0.0%	0.0%	0.0%	0.0%	9.7%
Nuclear	11.4%	7.6%	7.3%	7.3%	6.8%	4.7%	4.1%	4.6%	4.3%	5.4%	6.3%
Gas	10.7%	11.4%	15.2%	17.9%	20.4%	25.1%	27.9%	20.7%	21.2%	25.1%	19.6%
FO	6.8%	3.7%	4.8%	11.5%	26.7%	30.2%	29.8%	35.9%	36.9%	33.9%	22.0%
Wind	2.5%	2.2%	2.5%	2.3%	1.5%	0.9%	0.7%	0.3%	0.2%	0.0%	1.3%
Others	2.0%	1.9%	1.6%	2.4%	4.1%	2.8%	4.0%	4.2%	2.9%	3.1%	2.9%

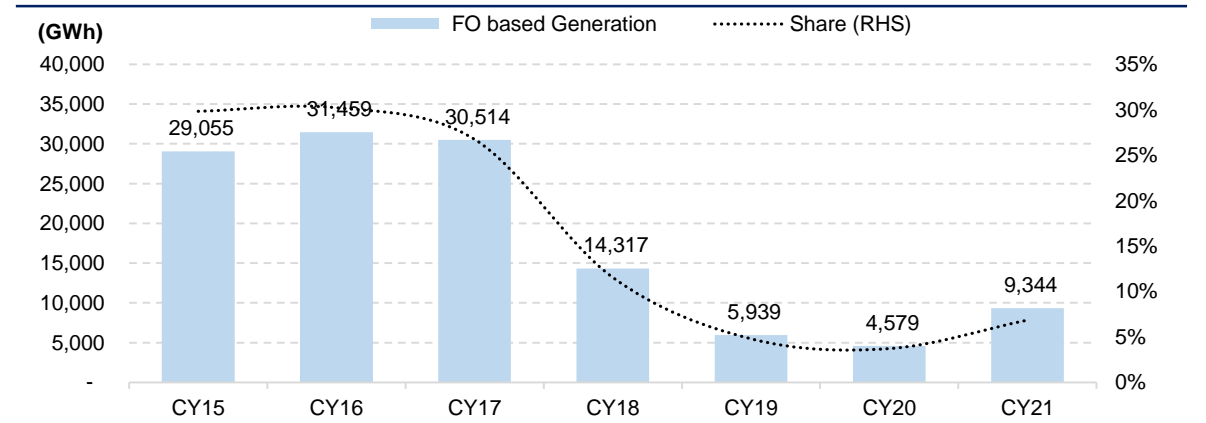
Source (s): NEPRA, AHL Research

Exhibit: Historical Trend of Average Fuel Cost



Source (s): NEPRA, AHL Research

Exhibit: Historical Trend FO Share in Power Mix



Source (s): NEPRA, AHL Research

Pakistan Power Sector

Power Generation up by 9.3% during 1HFY22

Exhibit: Source wise Power Generation

GWh	Dec-21	Dec-20	YoY	Nov-21	MoM	1HFY22	1HFY21	YoY
Coal	2,104	2,297	-8.4%	1,379	52.6%	12,439	12,702	-2.1%
Hydel	1,769	1,789	-1.1%	2,816	-37.2%	22,587	23,702	-4.7%
Nuclear	1,549	741	108.9%	1,485	4.3%	8,999	4,330	107.8%
Gas	1,216	1,240	-1.9%	1,093	11.2%	7,325	7,027	4.2%
RLNG	1,192	1,094	8.9%	1,209	-1.4%	13,790	14,754	-6.5%
FO	353	294	20.1%	145	142.8%	5,964	2,891	106.3%
HSD	251	0	nm	25	904.4%	479	289	65.6%
Wind	210	220	-4.4%	175	19.9%	1,901	1,368	38.9%
Bagasse	95	102	-7.0%	54	74.8%	242	252	-4.0%
Solar	45	50	-9.9%	51	-11.1%	348	343	1.7%
Imported	36	33.23	8.3%	37	-1.9%	248	256	-3.3%
Mixed	8	20.01	-60.0%	12	-32.4%	75	132	-43.4%
Total	8,828	7,880	12.0%	8,482	4.1%	74,396	68,047	9.3%
<i>Fuel Cost*</i>	<i>8.24</i>	<i>4.78</i>	<i>72.4%</i>	<i>6.32</i>	<i>30.4%</i>	<i>7.14</i>	<i>4.15</i>	<i>72.1%</i>

Source (s): NEPRA, AHL Research, * PKR/KWh

Exhibit: Source Wise Share

	Dec-21	Dec-20	Nov-21	1HFY22	1HFY21
Coal	24%	29.1%	16.3%	16.7%	18.7%
Hydel	20%	22.7%	33.2%	30.4%	34.8%
Nuclear	18%	9.4%	17.5%	12.1%	6.4%
Gas	14%	15.7%	12.9%	9.8%	10.3%
RLNG	14%	13.9%	14.3%	18.5%	21.7%
FO	4%	3.7%	1.7%	8.0%	4.2%
HSD	3%	0.0%	0.3%	0.6%	0.4%
Wind	2%	2.8%	2.1%	2.6%	2.0%
Bagasse	1%	1.3%	0.6%	0.3%	0.4%
Solar	1%	0.6%	0.6%	0.5%	0.5%
Imported	0%	0.4%	0.4%	0.3%	0.4%
Mixed	0%	0.3%	0.1%	0.1%	0.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Source (s): NEPRA, AHL Research

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BUY	Upside* of subject security(ies) is more than +10% from last closing of market price(s)
HOLD	Upside* of subject security(ies) is between -10% and +10% from last closing of market price(s)
SELL	Upside* of subject security(ies) is less than -10% from last closing of market price(s)

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AHL Research uses the following valuation technique(s) to arrive at the period end target prices;

- Discounted Cash Flow (DCF)
- Dividend Discounted Model (DDM)
- Sum of the Parts (SoTP)
- Justified Price to Book (JPTB)
- Reserved Base Valuation (RBV)

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The following risks may potentially impact our valuations of subject security (ies);

- Market risk
- Interest Rate Risk
- Exchange Rate (Currency) Risk

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