

Sector Update

Monthly Power Generation Mix (Aug-20) - Gwh

Source	Aug-20	Aug-19	YoY	CY20TD	YoY
Hydel	5,470	5,668	-3%	27,164	15%
RFO	792	506	57%	3,340	-30%
Gas/LNG	4,460	4,885	-9%	26,043	-26%
HSD	98	-	n/m	212	17.3x
Coal	2,530	1,874	35%	17,961	46%
Others	1,280	1,120	14%	10,021	2%
Total	14,630	14,052	4%	84,742	-1%

Exhibit: Fuel Wise Generation Mix (%)

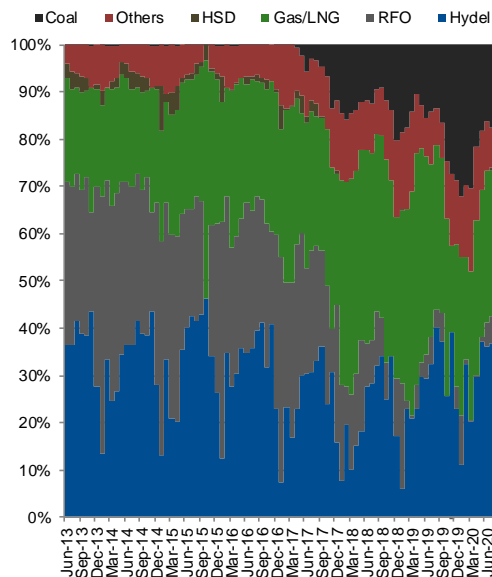
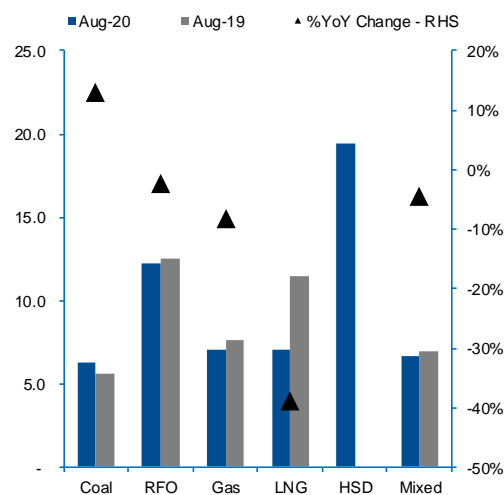


Exhibit: Fuel Wise Cost of Generation - Aug-20 (PKR/Kwh)



Source: NEPRA & IGI Research

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Power Generation & Distribution

Aug-20: Generation up by +4%YoY as demand picks up post Covid-19 lockdowns

- As per latest data available on NEPRA's website, overall power generation during the month of Aug-20 increased by 4% YoY to 14,630Gwh. Power production through RFO/Coal clocked in at 792/2,530Gwh up by +57%/+35% YoY.
- Power generation through RFO in Aug-20 increased by +57%YoY (up by 286Gwh) to 792Gwh. Gas/LNG based power generation dropped by 9% YoY (424Gwh) to 4,460Gwh in Aug-20. As per NEPRA, power cost on RFO during Aug-20 is down by 2% YoY (or down by 12% MoM) to PKR 12.23/Kwh. However, gas price dropped to PKR 7.04/Kwh down by 8% YoY (flat on monthly basis) while generation cost through LNG stood PKR 7.02/Kwh, down by 39% YoY or up +2% MoM.
- FO plants have moved up slightly in the merit in Aug-20 on account of higher demand during summer season. Cost of generation remained relatively mixed on monthly basis as Narowal, NCPL, PKGP and LPL witnessed a drop in fuel cost thus moving up in the merit order list.

Power production increased by +4%YoY during Aug-20

As per latest data available on NEPRA's website, overall power generation during the month of Aug-20 increased by 4% YoY to 14,630Gwh. Power production through RFO/Coal clocked in at 792/2,530Gwh up by +57%/+35% YoY, while generation through Gas-LNG/Hydel decreased by 9%/3% YoY to 4,460/5,470Gwh during Aug-20. Drop in generation compared to Jul-20 (down by 1% MoM) is primarily attributable to power outages in late Aug-20 due to heavy rains witnessed across Pakistan. This brings total generation for CY20TD to 84,742Gwh down by 1% YoY primarily led by 30%/26% YoY decline in production through RFO/Gas-LNG contributing 4%/31% of the total power generation while contribution from coal based power generation is up to 21% as compared to 14% in CY19TD.

FO: Generation up by +57%YoY in Aug-20

Power generation through RFO in Aug-20 increased by +57% YoY (up by 286Gwh) to 792Gwh, owing to higher generation from Narowal, Attock, Atlas and Lalpir (cumulatively up by 184Gwh) while generation from NPL and NCPL was cumulatively down by 21Gwh. This brings total generation for CY20TD to 3,340Gwh down by 30% YoY owing to lower generation from Hub Plant, KAPCO Block I & II and GENCO I & III along with lower generation from smaller inefficient IPPs such as Lalpir and Pakgen.

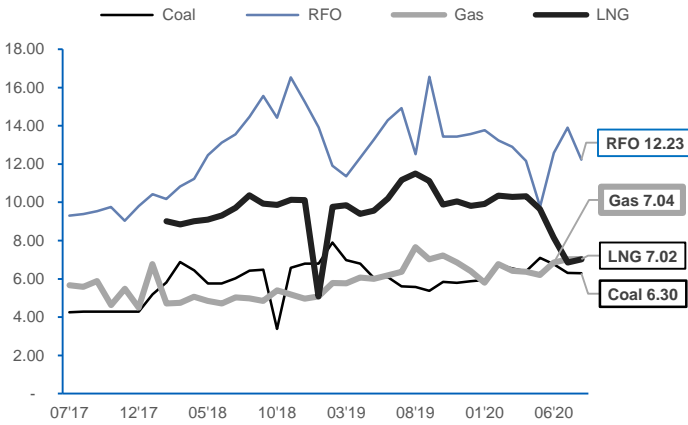
Gas/LNG generation down by 9%YoY during Aug-20

Gas/LNG based power generation dropped by 9% YoY (424Gwh) to 4,460Gwh in Aug-20 on the back of lower generation from a) GENCO I-III (contributing 198Gwh), KAPCO (down by 194Gwh) and Sapphire (down by 72Gwh) while generation from other smaller IPPs increased during the month of Aug-20. This brings total generation in CY20TD to 26,043Gwh down by 26% YoY led by lower generation from KAPCO, GENCO I-III and smaller IPPs.

Generation cost on RFO down by 2% YoY to PKR 12.23/Kwh during Aug-20

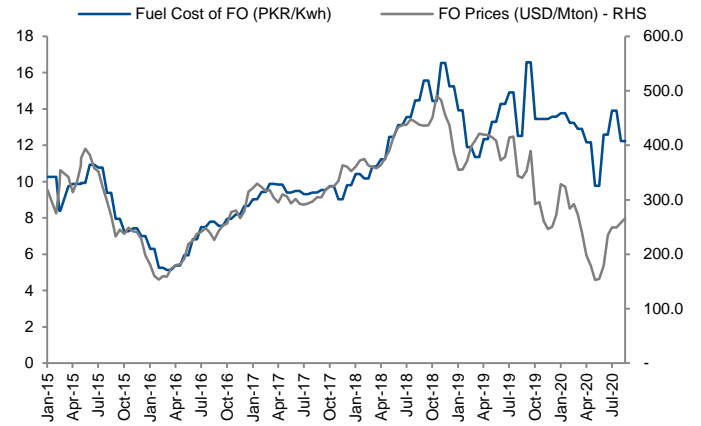
As per NEPRA, power cost on RFO during Aug-20 is down by 2% YoY (or down by 12% MoM) to PKR 12.23/Kwh. However, gas price dropped to PKR 7.04/Kwh down by 8% YoY (flat on monthly basis) while generation cost through LNG stood PKR 7.02/Kwh, down by 39% YoY or up +2% MoM. For the month of Aug-20 to date, international RFO (180cst bunker fuel) prices have averaged USD 251/Mton as compared to USD 261/Mton in the preceding month.

Exhibit: Cost of generation on FO and Gas (According to Data released by NEPRA)



Source: IGI Research, NEPRA

Exhibit: FO Prices (USD/Mton) and Fuel Prices (PKR/Mton)



FO plants moved up slightly on merit order list during Aug-20

FO plants have moved up slightly in the merit in Aug-20 on account of higher demand during summer season. Cost of generation remained relatively mixed on monthly basis as Narowal, NCPL, PKGP and LPL witnessed a drop in fuel cost thus moving up in the merit order list. Mostly FO plants recorded a slight movement up the pecking order as generation cost of LNG plants went up by nearly +2% MoM. Coal plants remained relatively unchanged in the merit order list. Similarly, during first week of Sep-20, FO plants continue to rise gradually up the merit order list PkGP, Kohinoor, Saba and Atlas climbed up the merit order list.

Outlook

Post Covid-19 outbreak, generation mix has remained relatively volatile owing to IMO 2020 and substantial drop in oil prices which pushed FO plants up in the merit order list during early 1H FY20. Due to pricing mechanism of LNG, oil prices have a laggard impact on LNG prices and thus LNG prices are down by 34% in Jul-20 since Apr-20. However going forward, as demand picks up post Covid-19 and peak summer season we believe FO plants are likely to remain operational whereas in the long term contribution of FO plants in total generation mix would remain low whereas LNG and coal contribution would increase.

Exhibit: Pakistan Merit Order													
Plant	Fuel	Capacity (MW)	Merit Order List										
			8-Sep-20	25-Aug-20	7-Aug-20	22-Jul-20	7-Jul-20	Jun-20	Mar-20	Dec-19	Jul-19	Dec-18	Jul-18
Hub Plant	RFO	1,200	104	104	108	108	108	108	85	98	82	89	70
Narowal	RFO	214	70	68	69	80	88	86	63	70	76	70	58
Nishat Power	RFO	195	76	76	71	67	50	101	70	72	70	65	63
Nishat Chunian	RFO	196	82	70	78	82	74	84	56	71	66	64	64
Lalpir	RFO	350	96	48	100	56	84	70	52	83	81	69	76
Pakgen	RFO	349	64	82	77	93	86	87	66	90	79	76	79
Attock Gen	RFO	156	63	55	50	49	48	38	21	24	75	52	68
Kohinoor Energy	RFO	124	55	85	51	89	42	79	48	51	65	66	69
Saba Power	RFO	126	84	86	88	84	90	89	69	88	78	71	74
Atlas Power	RFO	214	78	79	82	69	89	82	59	69	68	62	65
Gulf Powergen	RFO	62	59	59	60	61	64	62	39	41	43	37	44
Liberty	RFO	196	86	69	76	71	82	63	47	66	56	61	56
CPHGC	Coal	1,220	7	8	8	8	9	9	5	6	-	-	-
Engro Power Thar	Coal	660	3	3	3	3	3	3	3	3	4	-	-
Port Qasim	Coal	1,320	4	4	5	5	7	8	6	5	6	9	15
Sahiwal Coal	Coal	1,320	9	10	11	11	11	19	12	9	16	24	25
QATPL	RLNG	1,180	10	9	9	9	8	7	25	23	39	33	31
Haveli Bahdur Shah	RLNG	1,230	6	6	6	6	5	5	22	21	36	31	29
Baloki	RLNG	1,320	8	7	7	7	6	6	24	22	38	32	30
Halmore	RLNG	199	18	17	17	17	14	13	49	43	49	40	37
Saphire	RLNG	203	16	18	18	18	15	14	50	42	47	38	35
Saif	RLNG	204	19	19	19	19	16	15	51	44	48	39	36
Orient	RLNG	213	13	14	14	14	13	12	43	39	45	36	33
Davis	RLNG	10	44	47	41	46	41	42	88	86	84	74	67
Rousch	RLNG	395	25	25	25	25	22	22	61	53	54	54	45
Nandipur	RLNG	411	20	20	20	20	17	16	38	33	42	34	32
Fauji Kabirwala	Gas	151	32	32	33	31	29	30	65	62	65	49	34

Exhibit: Fuel cost of IPPs												
Plant	Fuel Type	Capacity (MW)	Fuel Cost (PKR/Kwh)									
			8-Sep-20	25-Aug-20	7-Aug-20	22-Jul-20	7-Jul-20	Jun-20	Mar-20	Dec-19	Jul-19	
Hub Plant	RFO	1,200	17.3	17.3	17.6	17.2	17.2	17.14	17.14	17.41	17.44	
Narowal	RFO	214	11.6	11.6	11.6	12.4	13.1	13.08	13.07	13.74	14.95	
Nishat Power	RFO	195	12.1	12.1	11.8	11.2	9.4	14.86	13.91	13.74	14.34	
Nishat Chunian	RFO	196	12.6	11.7	12.0	12.4	11.7	12.61	12.05	13.62	13.63	
Lalpir	RFO	350	16.1	10.8	16.0	11.2	13.5	12.83	12.80	16.12	16.97	
Pakgen	RFO	349	12.1	14.0	13.2	15.3	13.9	14.33	14.33	16.40	16.31	
Attock Gen	RFO	156	10.8	10.2	9.8	9.7	9.2	8.64	8.79	8.58	14.46	
Kohinoor Energy	RFO	124	10.7	13.7	10.3	14.0	9.5	12.60	11.93	12.10	14.18	
Saba Power	RFO	126	14.0	15.1	14.1	13.7	14.7	14.68	14.08	16.36	16.06	
Atlas Power	RFO	214	12.2	12.4	12.3	11.2	13.2	12.30	12.33	13.50	14.05	
Gulf Powergen	RFO	62	9.8	9.8	9.8	9.8	9.8	9.85	9.85	9.85	9.85	
Liberty	RFO	196	13.4	11.5	11.8	11.4	12.1	10.52	11.30	13.12	12.84	
CPHGC	Coal	1,220	5.7	6.1	6.1	6.1	6.1	5.93	5.07	5.54	-	
Engro Power Thar	Coal	660	2.7	2.5	2.2	2.2	2.2	2.14	2.07	2.08	3.68	
Port Qasim	Coal	1,320	4.3	4.8	5.8	5.8	5.8	6.11	5.42	5.09	5.46	
Sahiwal Coal	Coal	1,320	6.3	6.7	7.0	7.0	7.0	7.69	8.20	6.88	7.17	
QATPL	RLNG	1,180	6.1	6.1	6.2	5.7	5.7	5.70	10.08	9.38	10.03	
Haveli Bahdur Shah	RLNG	1,230	6.0	6.1	6.1	6.1	5.7	5.65	9.94	9.25	9.89	
Baloki	RLNG	1,320	6.0	6.1	6.1	6.1	5.7	5.69	10.07	9.37	10.02	
Halmore	RLNG	199	7.4	7.5	7.5	7.5	7.0	6.97	12.32	11.46	12.07	
Saphire	RLNG	203	7.4	7.5	7.5	7.5	7.0	6.98	12.35	11.46	12.07	
Saif	RLNG	204	7.4	7.5	7.5	7.5	7.0	6.99	12.35	11.49	12.07	
Orient	RLNG	213	7.4	7.5	7.5	7.5	7.0	6.98	12.35	11.49	12.07	
Davis	RLNG	10	10.2	10.2	10.0	10.2	9.6	9.55	16.91	15.78	17.10	
Rousch	RLNG	395	8.1	8.3	8.3	8.2	7.7	7.69	13.60	12.65	13.69	
Nandipur	RLNG	411	7.5	7.6	7.6	7.6	7.1	7.08	11.30	10.52	11.38	
Fauji Kabirwala (FKPCL)	Gas	151	8.5	8.6	8.6	8.5	8.0	7.99	13.14	13.14	13.06	

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