

Pakistan – The Current Energy Crisis

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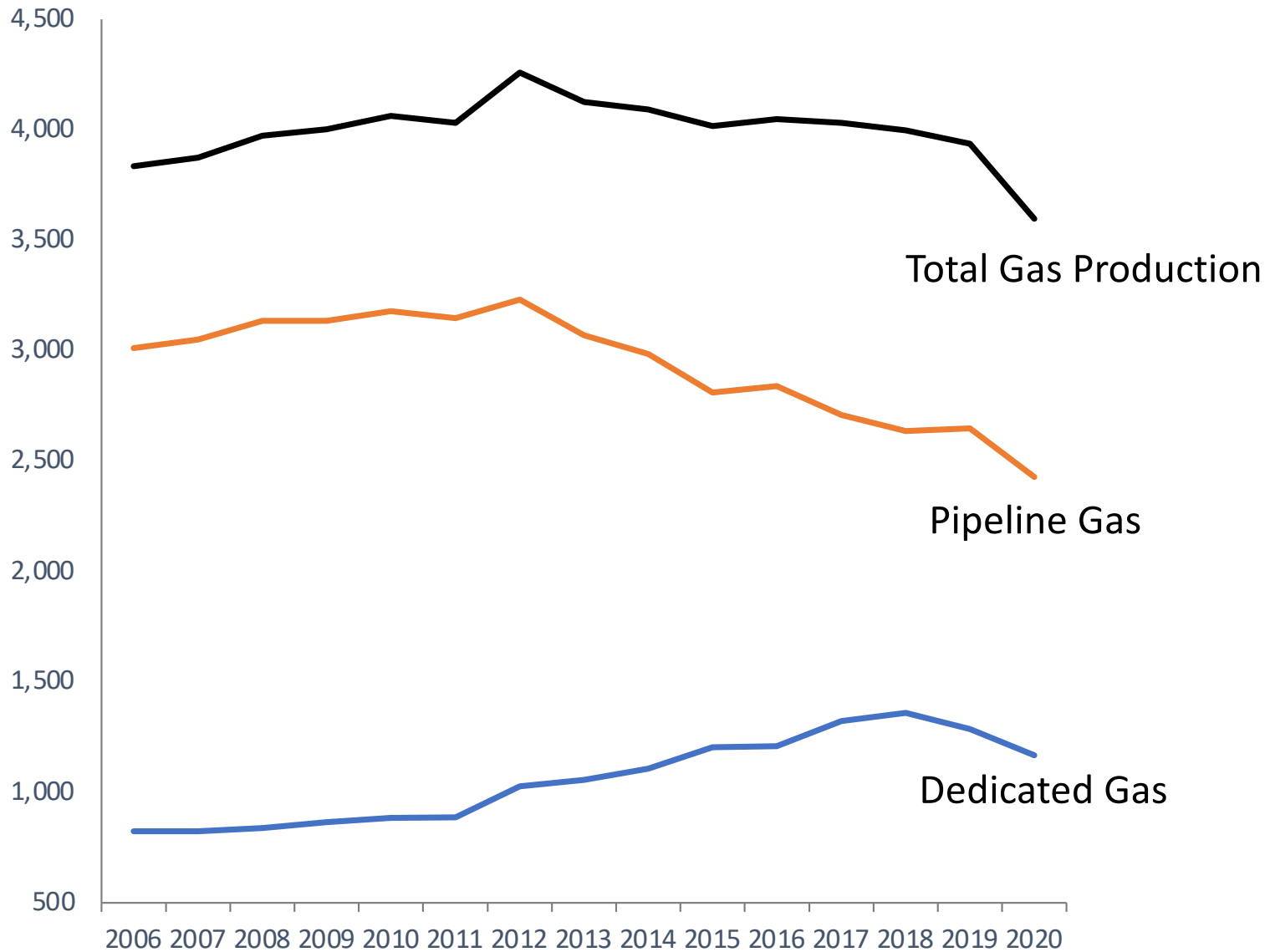
30 December 2021

Primary Fuel

	ENVIRONMENT	EFFICIENCY	AVAILABILITY	TIME	CAPEX
NATURAL GAS / LNG	↑	↑	↑	↑	↑
FUEL OIL	↓	↓	↑	↑	↑
COAL	↓	↑	↑	↑	↑
NUCLEAR	↓	↑	↑	↓	↓
HYDEL	↑	↑	↓	↓	↓
SOLAR	↑	↑	↓	↑	↓

Gas Production in Pakistan

Total gas production fell by 10% between 2018 and 2020



Gas Price Comparison

	2018	2021
Domestic	310	987
Commercial	670	1,006
Industry	600	780
Cement	750	1,283
Fertilizer Feed	106	627
Fertilizer Fuel	264	540
Power	481	933
CNG	700	1,021

LNG Delivery, Price Volatility & Savings

LNG Delivery		
LNG Cargo	3,200,000	MMBTU
	100	MMCFD/ Month
LNG Terminal Capacity	16	Cargoes/ Month
Qatar Gas	5	Cargoes/ Month
Traders	3	Cargoes/ Month
Average Price / 8 Cargoes	13	% of Brent

2020/2021 LNG Price Volatility		
Pakistan - 8 Cargoes Trader Offer/3 Years	10.5	\$/MMMBTU
Spot Cargoes	30	\$/MMBTU
Pakistan Policy Price for Gas	6	\$/MMBTU

Savings		
Savings on 8 Pakistan Cargoes	5,529,600,000	\$
Savings on 8 Spot Cargoes	17,971,200,000	\$
Savings on 16 Cargoes vs Pakistan Policy Rate	2,764,800,000	\$

New Power Generation in Pakistan: 2013 - 2018

PLANT	CAPACITY (MW)	QTY	TOTAL (MW)	AVAILABILITY %	GEN POTENTIAL (Billion KWh)
FOSSIL FUEL					
NEW RLNG	1200	4	4,800	95	40
COAL	1335	3	4,005	95	33
THAR	660	2	1,320	95	11
			10,125		
OPERATING DUE TO RLNG AVAILABILITY					
NANDIPUR	530	1	530	90	4
ROUCHE	450	1	450	90	4
FAUJI KABIRWALA	150	1	150	90	1
4 SISTERS *	250	4	1,000	90	8
KAPCO	1000	1	1,000	90	8
			3,130		
GREEN					
SOLAR/WIND	1000	1	1,000	35	3
NUCLEAR	3000	1	3,000	98	26
NEELAM JHELUM	950	1	950	40	3
TARBELA IV	1200	1	1,200	30	3
			6,150		
TOTAL			19,405		144

RLNG	65
Coal	44
Green	35

~625 KWh per Capita

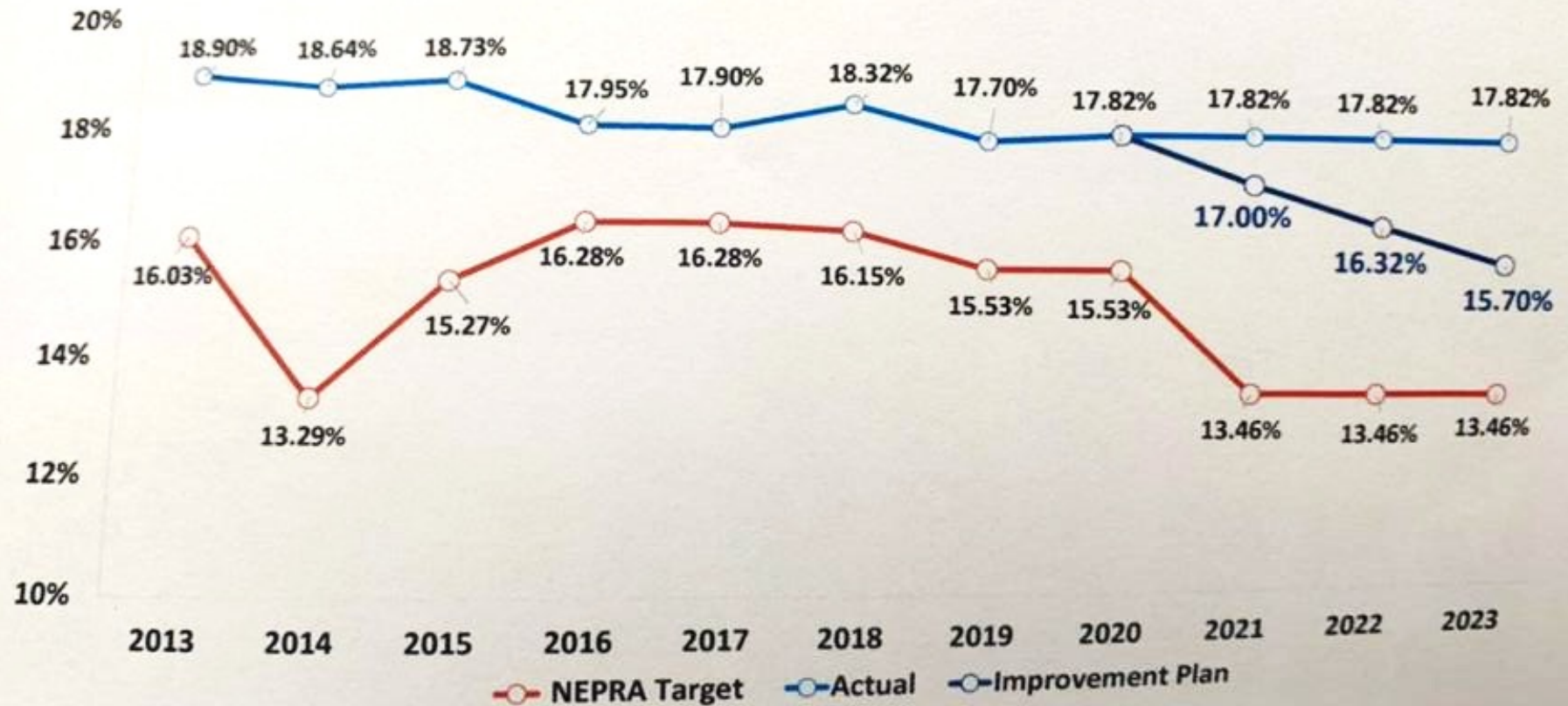
Fuel Cost Comparison

Fuel Cost / KWh (Rs.)	
RLNG	6.8
Fuel Oil	12.8
Diesel	18.9
TOTAL	

RLNG vs Diesel - 1000 MW	
Annual Production (Billion KWh) @ 95% utilization	8.3
Fuel Cost - RLNG	56.6
Fuel Cost - Diesel	157.3
Cost Savings (Rs. in Billion)	100.7

RLNG vs Fuel Oil - 4800 MW	
Annual Production (Billion KWh) @ 95% utilization	40.0
Fuel Cost - RLNG	272.0
Capacity Cost @ Rs.3/KWh - RLNG	120.0
Fuel Cost - Fuel Oil	512.0
Capacity Cost @ Rs 0/KWh - Fuel Oil	0.0
Cost Savings (Rs. in Billion)	120.0

DISCOs Technical Losses



DISCOs Recovery

