

Finding an Exit from the Energy Crisis

Institute for Policy Reforms

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What is the crisis?

- Not enough power.
- Why?
- Energy Sector is:
 - Unsustainable: costs do not get recovered
 - Inefficient:
 - Aging equipment, O&M backlog
 - Governance: line losses, under recovery
 - Incentives: TDS, downstream
 - Wrong priorities: insufficient public investment, gas for fertilizer vs power

How much power can we add quickly?

NEPRA's peak estimate of shortage: 6,500 MW in July

- Peak Output Achieved from Thermal: 88,404 GWh
- Output achieved FY 2012-13: 64,184 GWh
- Below Capacity 24,220 GWh
- Of which:
 - IPPs 9,486
 - GENCOs 8,205
 - K Electric 6,529
- Potential increase 37.7%

Gas allocation, O&M, circular debt can substantially fill the gap

How much does shortage cost?

Billions Rupees

Simple Value Added Approach	1,600	7% of GDP Estimate high
Adjusted Value Added	463	A conservative estimate
Difference between projected GDP with no load shedding and actual GDP (2011-12)	1,000	The study considers this a credible estimate
Consumer Surplus Approach (2011-12)	1,000	

Why is it Unsustainable?

Price is high

- Fuel mix: high dependence on furnace oil
- Inadequate investment: public investment tardy, private unsustainable
- High line losses, increase in non-collection of bills
 - TDS does not incentivize the right behaviour
- Affordability, cost of doing business

T&D and Billing Losses

- Power Purchased 98,342 GWh Rs. 1,023 Billion
- Units Billed 75,926 GWh Rs. 847 Billion
- Amount Recovered Rs. 752 Billion
- Less than purchase value *Rs. 271 Billion*
- Less than billed value Rs. 95 Billion

Helps with sustainability, cuts circular debt

Billing Losses

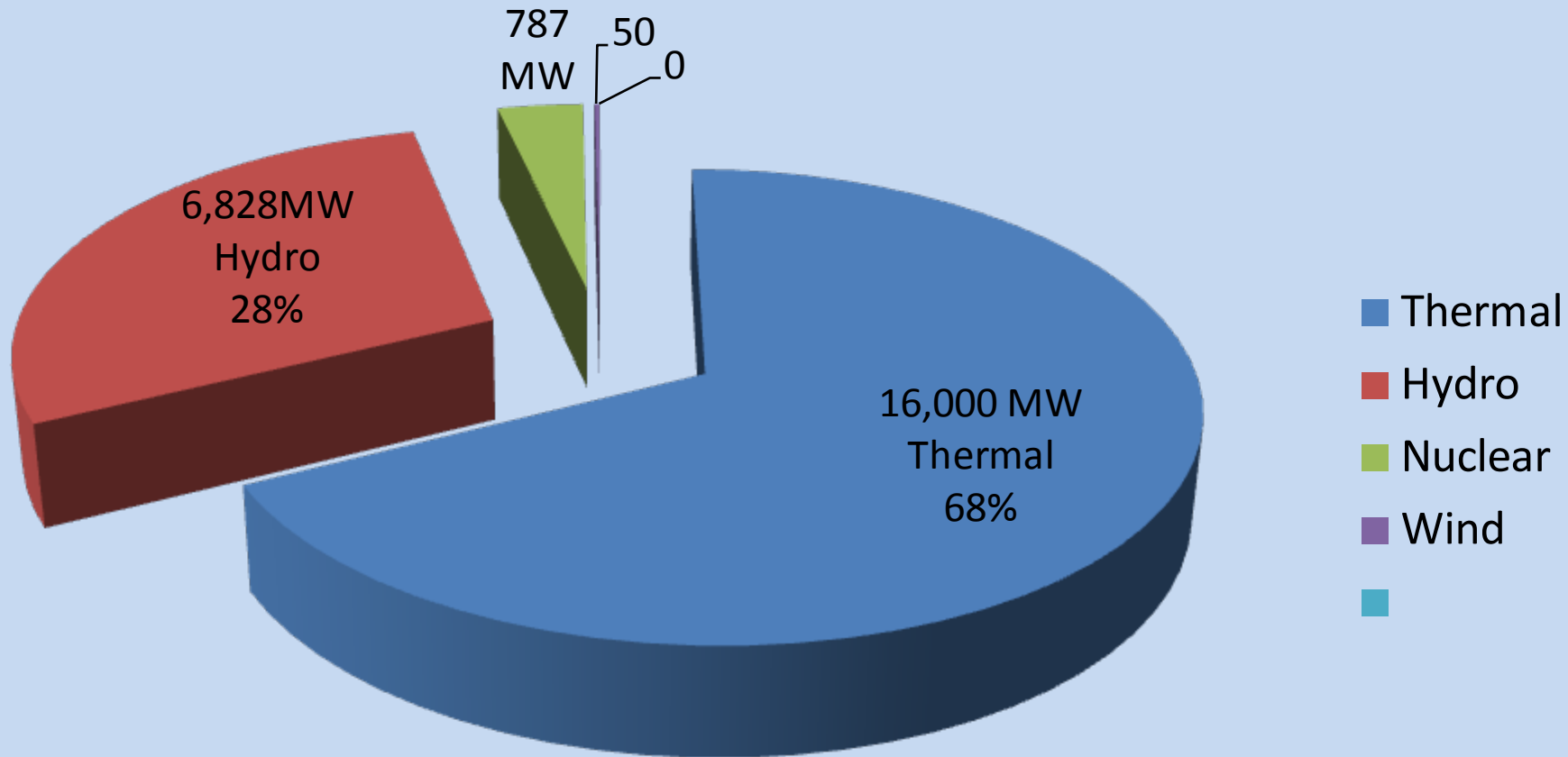
PEPCO	Billion Rupees	%
2012-13	74	10.5
July-Feb 2013-14	78	12.7
	2011-12	2013-14 to Feb
	Loss in %	
LESCO	3.8	4.6
GEPCO	1.6	3.3
FESCO	1.6	-0.5
IESCO	4.1	13.9
MEPCO	2.7	5.4
PESCO	32.1	15
HESCO	30.6	21.3
SEPCO	46.6	44.8
QESCO	63.8	63.4

Public Investment

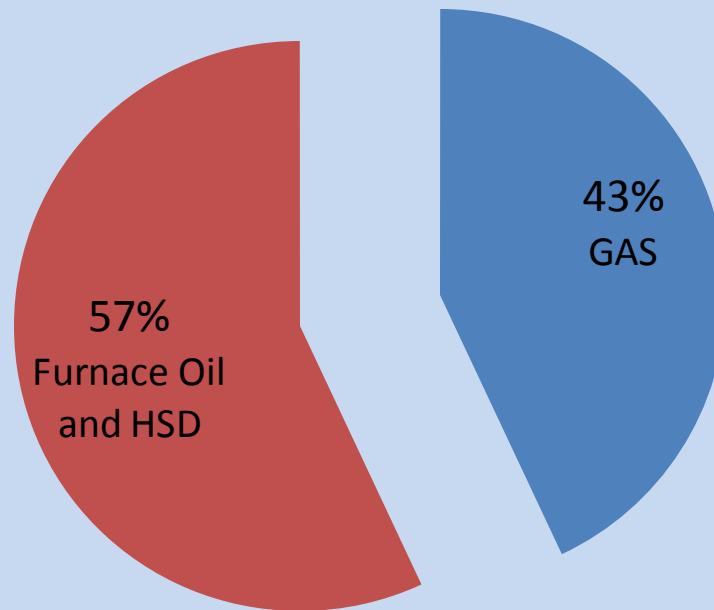
Sector	Cost	Expenditure	Throw Forward	Allocation 2013-14	Years to Complete
	Billion Rupees				
Hydro- Power	1,480	184	1296	82	16
	*651	179	472	74	6.5
T and D	832	296	566	86	7
Total	2312	480	1832	168	

* Without Diامر Bhasha

Type of Power



High Cost of Thermal

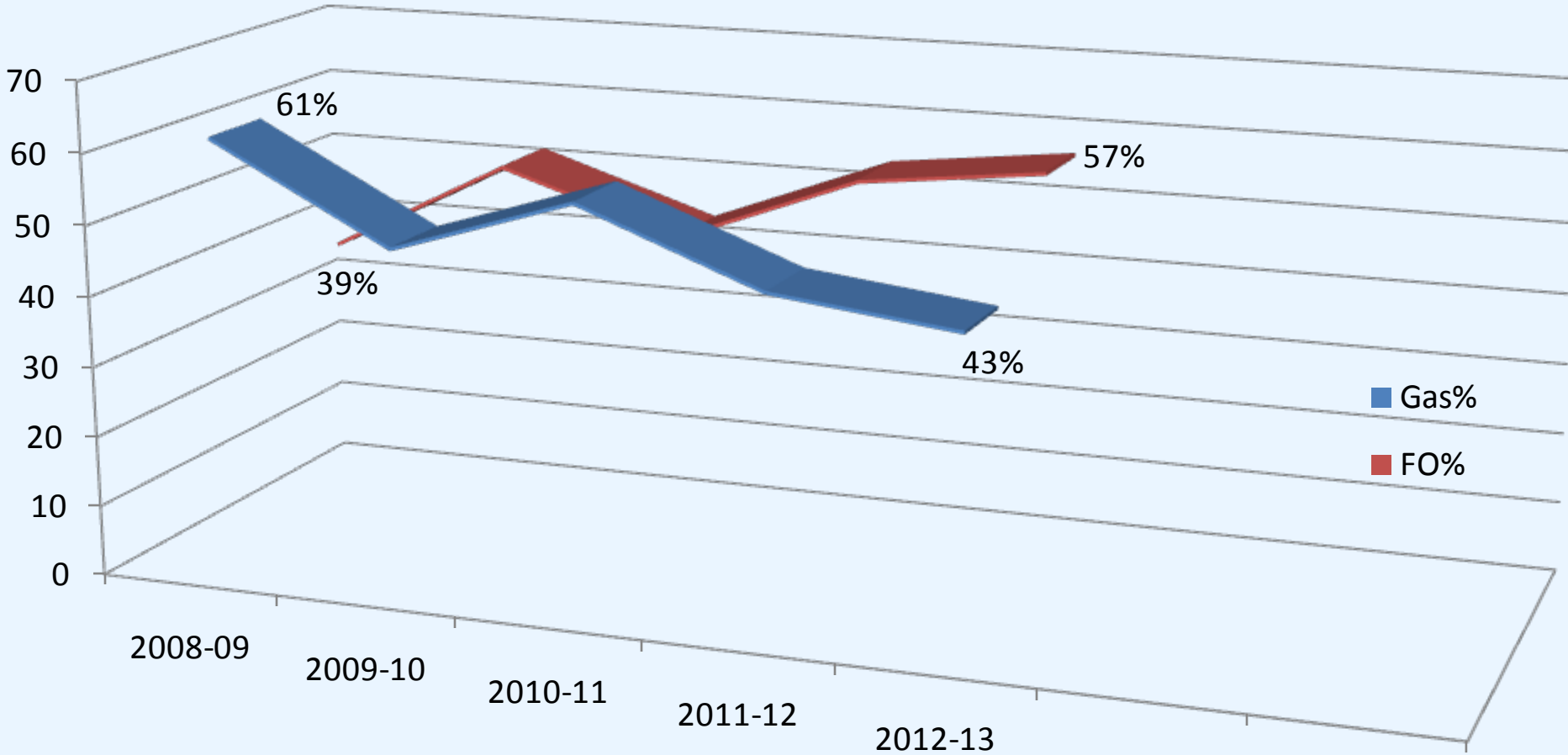


Cost

Furnace Oil and HSD	Rs. 18/KWh
Gas	Rs. 7/KWh

Share of Gas and Furnace Oil in Thermal Power Generation

% of total



Give More Gas to Power to Reduce Cost

- Gas sale for power reduced by 19.5%
- From July–December 2012 to July–December 2013
- Increase in fertilizer production 2013/2012= 28%
- The opportunity cost of allocating gas in favour of fertilizer is 6712 USD/mmcft

No Brainer

Give the target gas to power

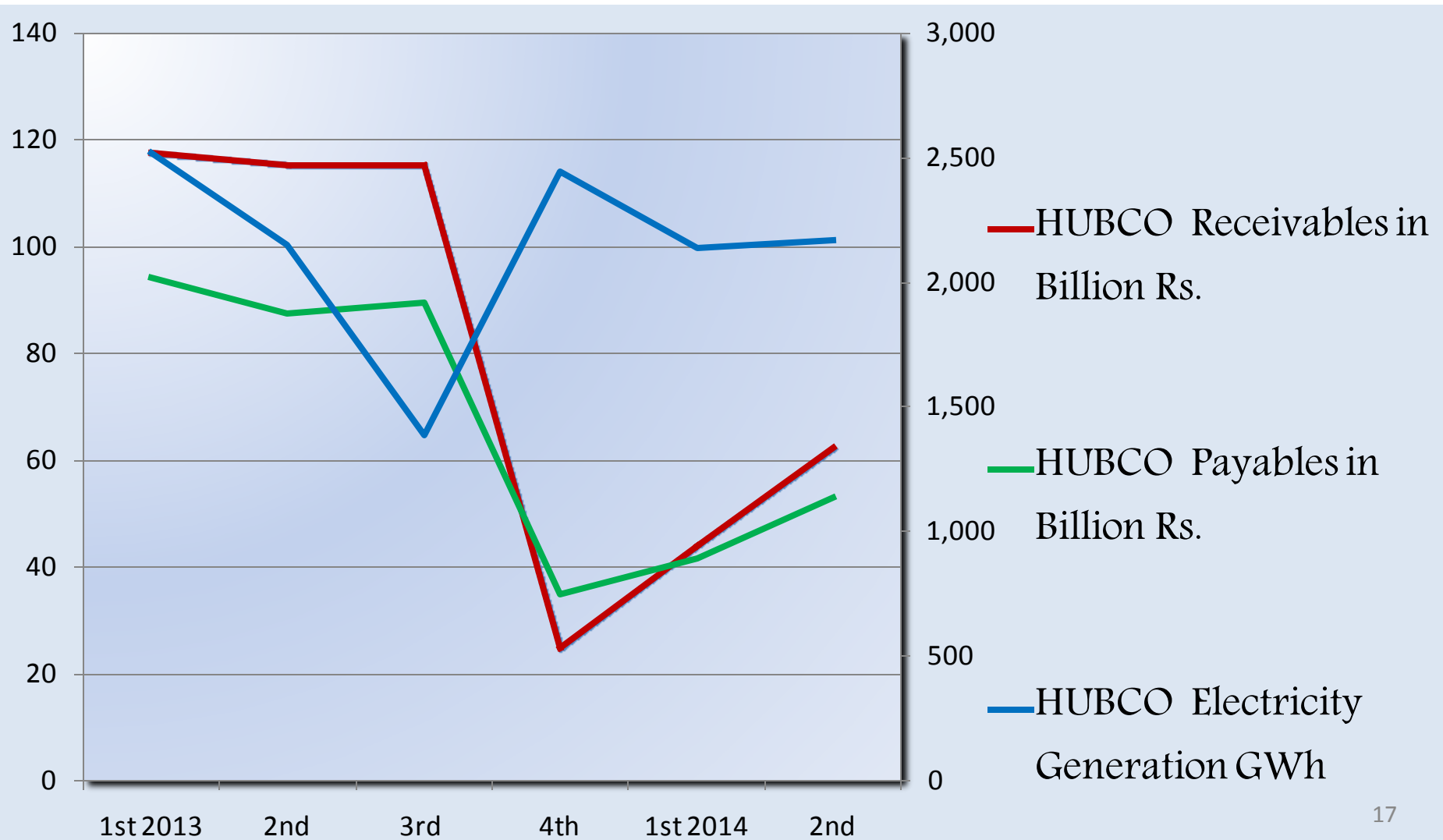
IPP/Genco	Gas Target mmcf/d	Generation Target MW
Rousch	40	200
Saif	40	200
Orient	40	200
Sapphire	40	200
Halmore	40	200
KAPCO	120	600
Faisalabad GTS	50	200
K Elect	100	500
Muzafargarh	40	160
	510	2460

Clear Circular Debt

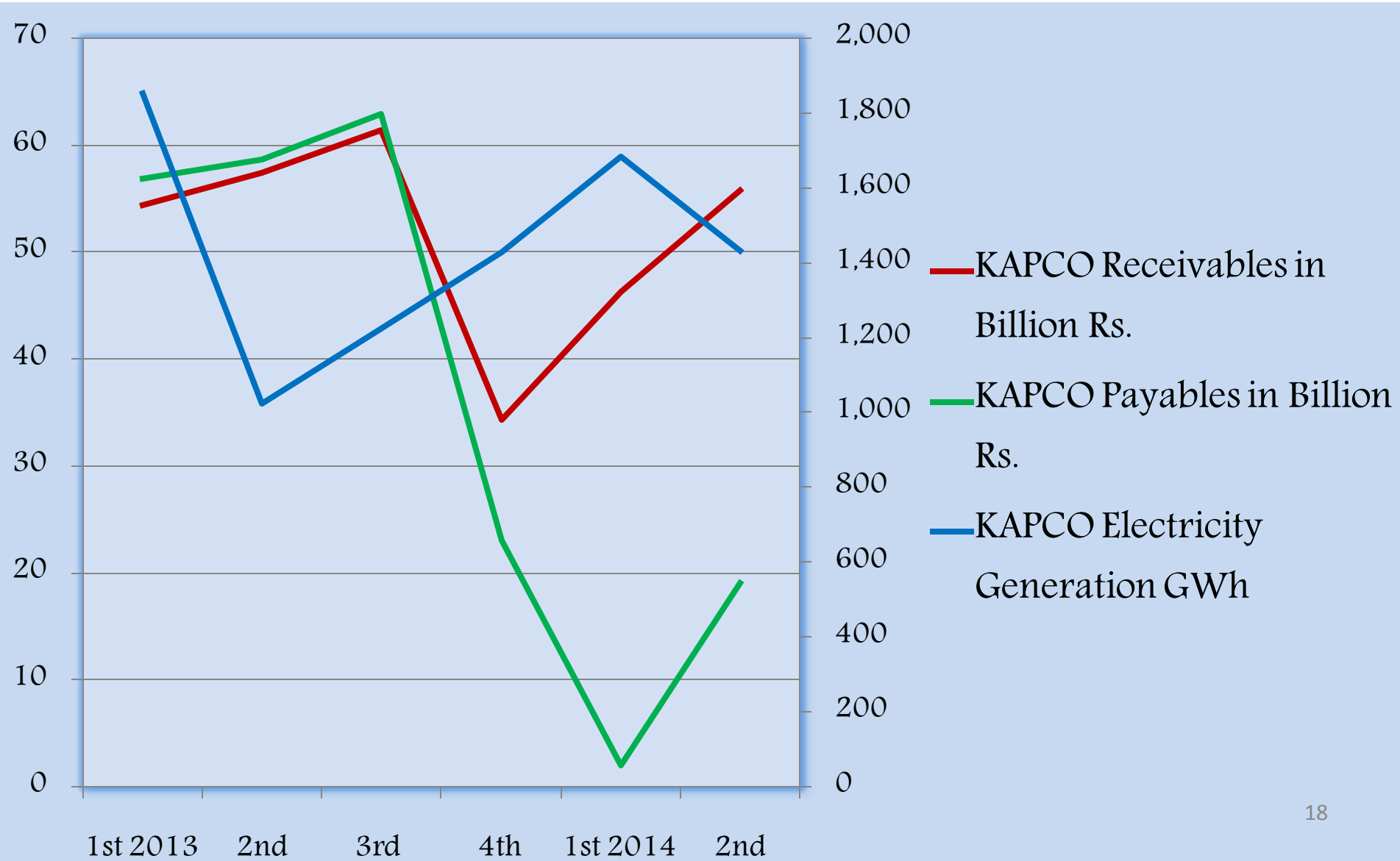
- Annual requirement 355 Billion Rs.
 - Line loss
 - Under recovery of billed amount
 - TDS
 - Mark-up for delayed payment
- This to maintain the present system, no capital formation for investment

Do not under budget

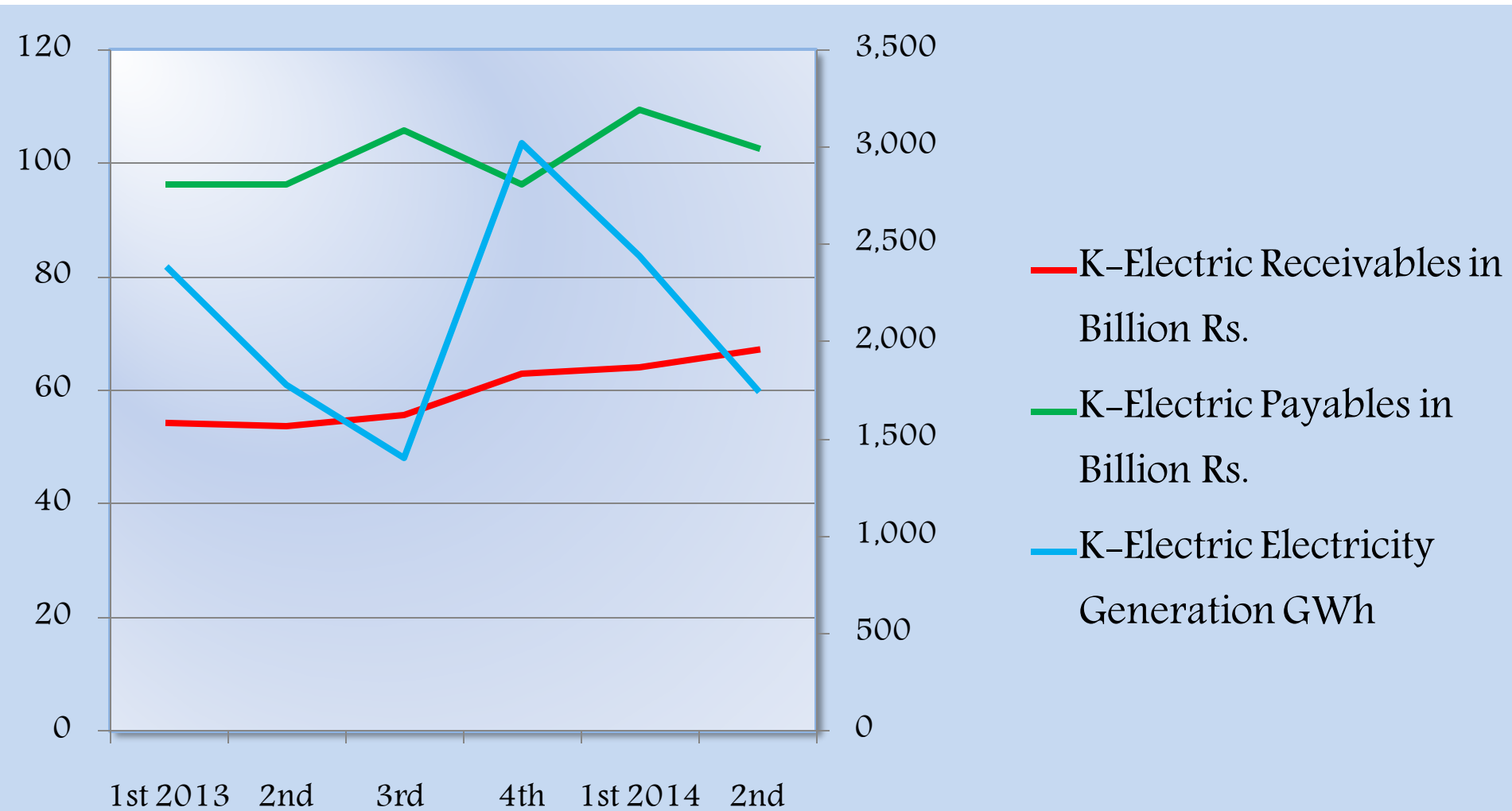
Does it help to pay off circular debt?



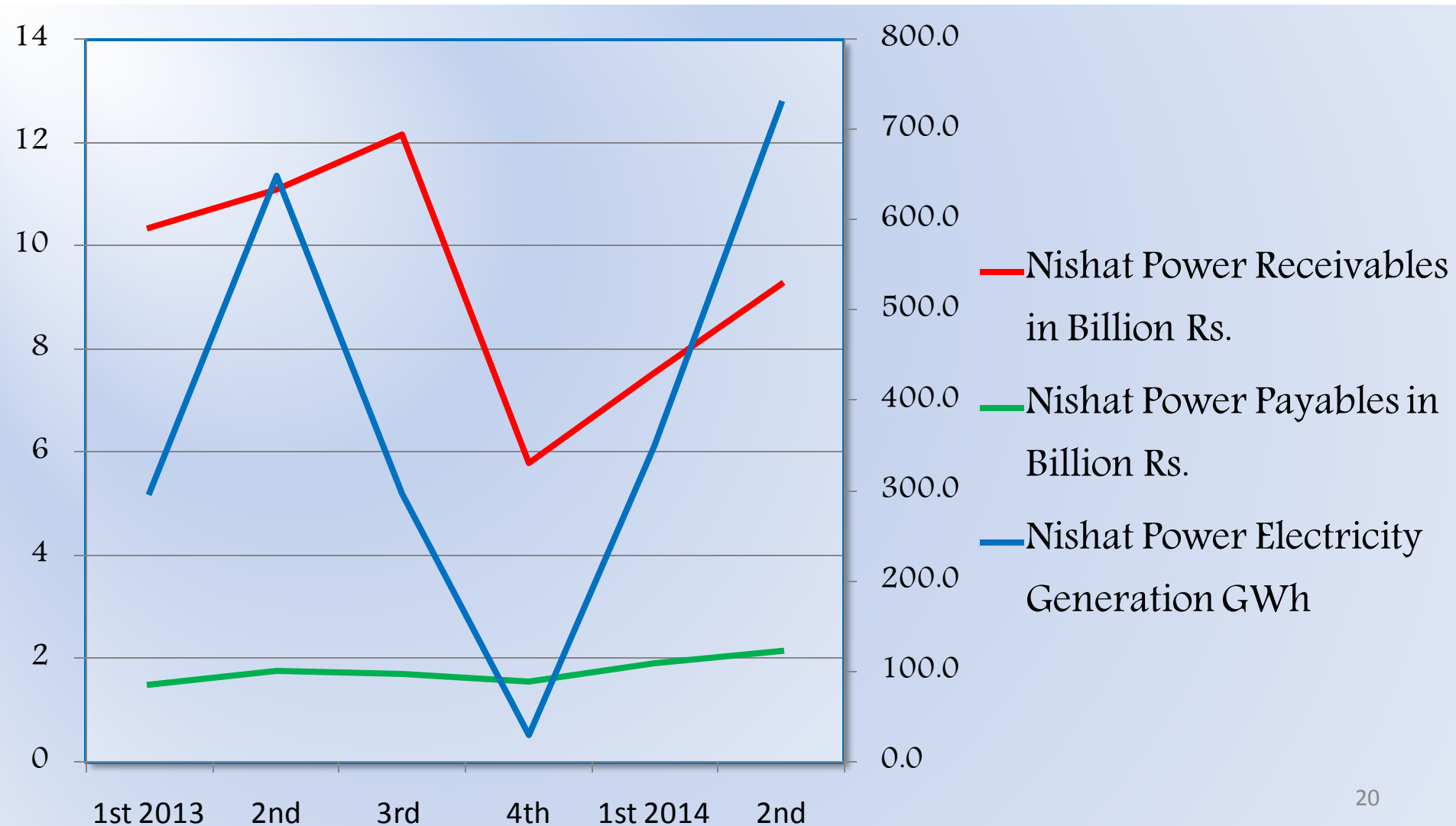
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Does it help to pay off circular debt?



Does it help to pay off circular debt?



Tariff Structure

- Too high: affects affordability and cost of doing business
- Progressive: high end tariff incentivizes pilferage
- Higher than competition: industry non-competitive
- Further increase maybe counter-productive
- TDS structured to fill line losses. No incentive to improve performance

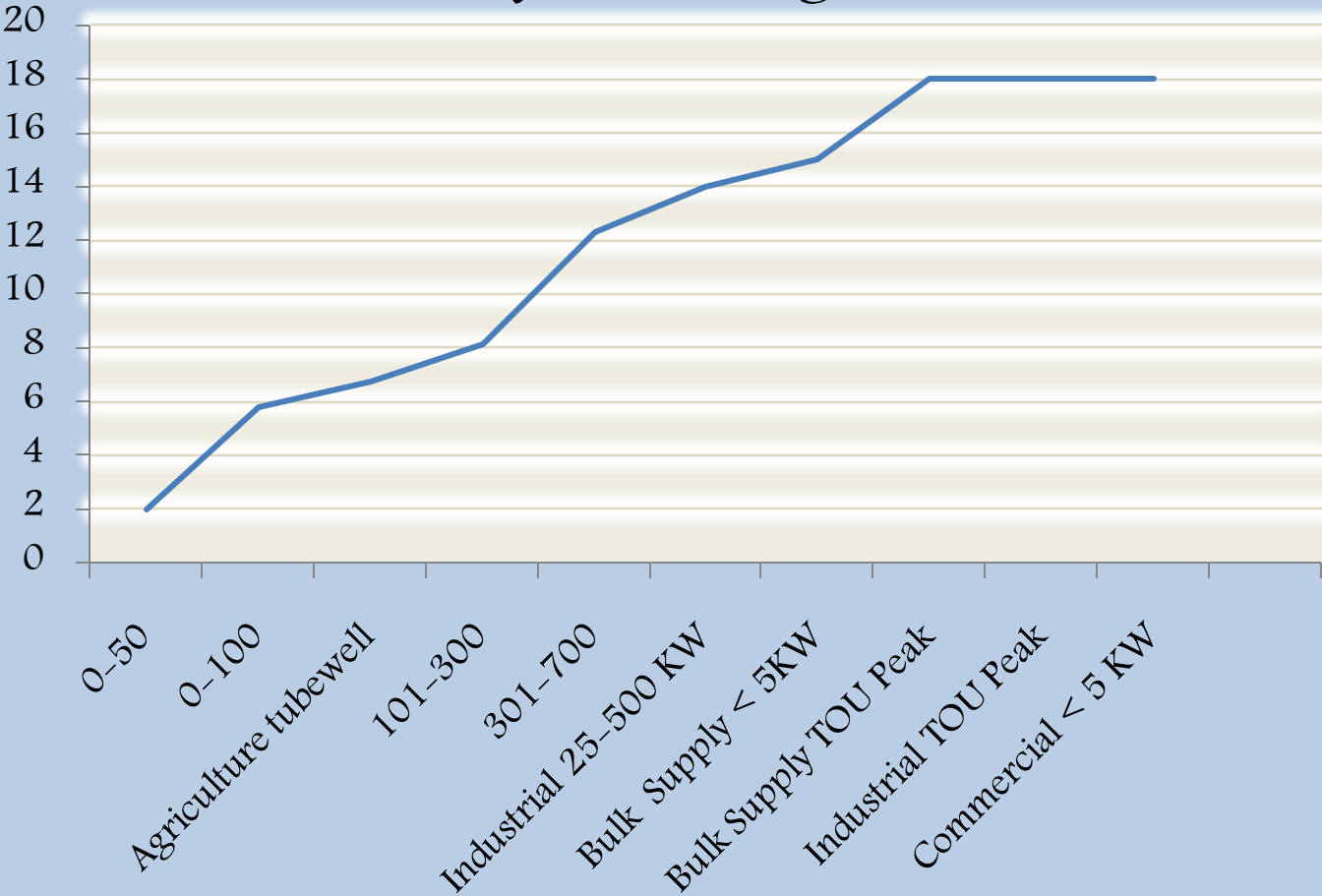
Affordability

% of Expenditure other than food and clothing

	1 st Quintile	2 nd to 4 th Quintile	5th Quintile
Pakistan	8.7	9.4	7.9
Urban	11.43	10.6	7.8
Rural	8.1	8.7	7.9

Rationalize tariff to reduce loss

Too many tariff categories

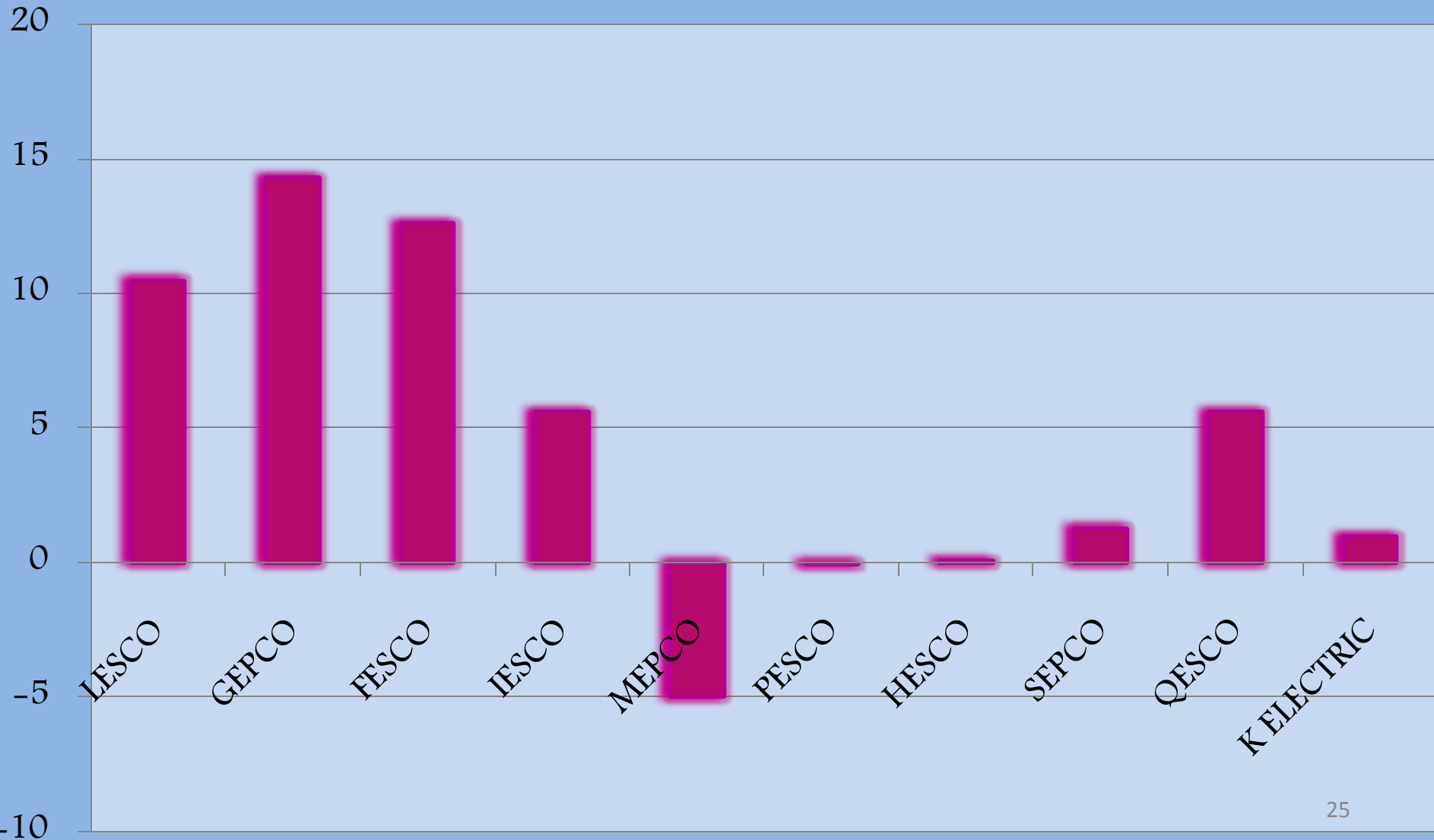


Competitiveness

PKR/KWh

	Pakistan	BD	India
Household	4 to 15	4 to 12.5	
Commercial	14-18 (16-21)	11 to 13	
Industry	14-18 (16-21)	7.5 11.5	
Mumbai Reliance			4.5 to 17.5
Mumbai Tata			1.5 to 9.7
Gujarat			5.2 to 7.7
Haryana			5 to 10

Equity and Incentivize Improvement Projected Growth from 2012-13



Recommendations

- Realize potential capacity by:
 - Increase gas for power generation
 - Prioritize efficient plants
 - Eliminate circular debt
 - With high focus on governance improvement
 - Rationalize tariff
 - Reduce or remove subsidy through tariff and support through enhanced BISP
 - Duty drawback to industry
 - Medium Term

Thank You

Declining Governance

Line Losses						%
	2008-09	09-10	10-11	11-12	12-13	July-Feb 13-14
PEPCO	16.66	19.56	19.56	22.27	21.25	17.0
K Elect	38.46	37.33	34.84	32.63	30.85	27.6

PEPCO	Units Billed	Billed Amount	Realized Amount	Uncollected Amount	%
2012-13	64,985	705	631	74	10.5
July-Feb 13-14	48,325	618	540	78	12.7

Non Collection from Private Sector

Billion Rupees

2008	2009	2010	2011	2012
10	20	26	39	55