



## Evaluation of Views of the Ministry of Water and Power Versus NEPRA on the State of the Power Sector

### About IPR

Institute for Policy Reforms is an independent and non-partisan think tank established under Section 42 of the Companies Ordinance. IPR places premium on practical solutions. Its mission is to work for stability and prosperity of Pakistan and for global peace and security. IPR operations are supported by guarantees from the corporate sector.

### Summary

The power sector regulator, NEPRA, and the Ministry of Water and Power have expressed divergent views about performance of the power sector. They have voiced these differences openly. In its Annual Report, NEPRA highlights a number of hard and soft infrastructure and governance issues that affect the power supply chain. These issues include power generation, tariff policy, system inefficiencies, transmission constraints, and circular debt. In an advertisement in the media, the Ministry of Water and Power contests most of NEPRA's findings.

Power shortage is a critical matter for the people of Pakistan. Based on official data, IPR has analyzed objectively the stated positions of the two public sector institutions. This is important to inform the people of Pakistan on a subject of key importance to them. IPR addresses these issues according to the points raised in the Ministry's advertisement:

### Power Generation Capacity

The Ministry refers to government initiatives to increase generation capacity. The increase may happen in coming years, especially after execution of CPEC. So far, however, facts speak otherwise. It is true that generation and consumption increased by 9% in fiscal 2013-14, the highest in the last seven years. This resulted from better use of existing capacity upon retirement of circular debt of almost Rs. 480 billion.

With respect to increase in generation capacity, an appreciable increase took place during the PPP government of 2008-13. So far, increase in capacity during the last two years has been modest. In fact, generation actually declined in the first 9 months of 2014-15. Transmission and distribution losses have reduced during 2013-15 to improve supply, though much more needs to be done. With respect to power generation, IPR finds mixed performance by the government.

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## Level and Distribution of Load Shedding

The advertisement also claims, first, uniform load shedding in the country, second, its reduced and predictable incidence (six hours in urban areas and eight in rural), and, third, zero load shedding for industry. These claims are not valid. Load shedding hours vary widely among DISCOs in the country. While load shedding was marginally reduced in 2013-14 because of payment of circular debt, there was no improvement during 2014-15. Also, industry continues to suffer power breakdowns.

## Merit Ordering of Plants

The Ministry contests NEPRA's statement about not using all of the generation capacity available in the system. It states that economics of merit order of plants dictated use of generation capacity. While this is valid, their rationale seems to be weak in the face of reduced oil prices. The unused capacity could have been brought in service, as their cost of operation was lower than the economic loss to production units from power outages.

## Supply of Fuel

Ministry has claimed that improved cash flow through the power supply chain has helped IPPs and GENCOs maintain sufficient stock of fuel. This claim too is not supported by facts. In January 2015, there was a major fuel crisis in the country. It happened because PSO did not have the means to open L/C in the presence of a high level of receivables.

## Circular Debt

Ministry states that it now fully liquidates financial claims of IPPs, PSO, and gas companies and that circular debt stands capped at Rs. 320 Billion. This claim is valid only if we do not take account of liabilities likely to occur in coming months. Flow of funds in the sector has begun to deteriorate again. Government must heed warning signs.

## Consumer Price of Electricity

Ministry claims that prudent use of generation capacity has brought down production cost with pass through benefit for the consumer. Generation cost has declined largely because of reduced oil prices internationally and to a lesser extent from increased use of natural gas. However, for reasons given below the cost advantage from lower oil prices is not being fully transferred.

## **Reforms in IMF Program**

Government has committed to the IMF to reduce power sector subsidy by half. It has also committed to reduce power sector arrears. A tariff rationalization surcharge has been levied, which is expected to yield Rs. 100 Billion. This will help government deliver on this target. The surcharge has increased consumer price of electricity by 20% to 33%. This affects competitiveness of Pakistani industry. Industrial tariff in Pakistan is 23% more than in India and substantially more than in Bangladesh. Government has also agreed to privatize three DISCOs. The rationale to privatize efficient units like FESCO, LESCO and IESCO and to keep loss-making DISCOs is flawed. Government also may consider privatizing loss-making distribution feeders.

## **Hidden Taxes**

Government has introduced quietly a number of duties and taxes on furnace oil. Estimated additional revenue from these levies amounts to Rs. 31 billion. They reduce the transmission to negative fuel adjustment charge from lower oil prices.

## **Removal of Bottlenecks**

NEPRA states that restricted transmission and distribution is a bottleneck, which prevents maximum use of production capacity. The Ministry states that sufficient funds have been provided to install new grid stations, transmission lines and transformers and that more than two thirds of the bottleneck stands removed. Review of the Federal PSDP shows that these funds were insufficient to begin with and that NTDC has used just 25% of the allocated amount. This puts to question both government priority for T&D and implementation capacity of NTDC and DISCOs. This situation may limit expected benefits from CPEC power projects.

## **Ranking of Discos**

Ministry does not agree with NEPRA's ranking of DISCO performance. Through its own modeling, IPR agrees mostly with the Ministry's position in this regard. The top ranked DISCOs are FESCO, GEPCO and IESCO.

## **Conclusions**

IPR finds NEPRA's position to be too negative while the Ministry is too positive about its own stated achievements. There is much still to be done in the power sector for reliable, improved and affordable supply. Both NEPRA and the Ministry owe this to the public and must accept responsibility. While the Ministry must improve sector delivery, the regulator must strengthen its incentive and penalty mechanisms and exercise greater vigilance in the larger public interest.

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## ACRONYMS

APTMA	All Pakistan Textile Manufacturers' Association
CPEC	China-Pakistan Economic Corridor
DISCO	Distribution Company
FCA	Fuel Charges Adjustment
GDP	Gross Domestic Product
GENCOs	Generation Companies of WAPDA
IMF	International Monetary Fund
IPP	Independent Power Producer
IPR	Institute for Policy Reforms
L/C	Letter of Credit
MOF	Ministry of Finance
MOW & P	Ministry of Water & Power
NEPRA	National Electric Power Regulatory Authority
NTDC	National Transmission and Dispatch Company
OCAC	Oil Companies Advisory Committee
PEPCO	Pakistan Electric Power Company
PES	Pakistan Economic Survey
PML (N)	Pakistan Muslim League (Nawaz)
PPP	Pakistan Peoples' Party
PSDP	Public Sector Development Program
PSO	Pakistan State Oil
RFO	Furnace Oil
SRO	Statutory Regulatory Order
T & D	Transmission and Distribution
TDS	Tariff Differential Subsidy
TPS	Thermal Power Station
USAID	United States Agency for International Development
WAPDA	Water and Power Development Authority

## Introduction

The Annual Report for 2014-15 of NEPRA has been released recently. In the first page of this Report, the Authority has summarized its views on the state of the power sector of Pakistan in the following paragraphs:

***'It is a fact that the power sector in Pakistan is beset with power outages and faces significant challenges in revamping its network. High power tariff, inefficiencies in production and distribution, low recovery and an inefficient subsidies mechanism leading to a resilient "circular debt" are the major challenges faced by the country's power sector.***

***Inadequate capacity in the networks is a bottleneck in the system and prevents the existing power plants from operating at their maximum capacity while also delaying the commissioning of new power generation plants, thereby adding to the energy deficit. This persistence of energy deficit has grown into a severe energy crisis affecting future economic growth and leaving little financial space to help poverty reduction efforts.'***

In other pages of the report, various management deficiencies in the sector are also highlighted. Needless to say, as a regulatory agency, NEPRA must accept some responsibility for the state of the power sector. In particular, NEPRA has not been able to provide the right incentive environment for greater efficiency by instituting an appropriate system of rewards and penalties.

The Ministry of Water and Power has reacted strongly against the Report. In an ad in major newspapers on October 3, 2015 it has said that 'Facts speak Louder: Response to NEPRA Report 2014-15'. The ad highlights, first, the inherited challenges. Second, it projects the present Government's performance, both in terms of policy decisions and achievements in 2014-15 (especially those ignored in the NEPRA report). Third, it presents facts on some issues mentioned in the NEPRA report.

The objective of this paper is to undertake a careful evidence-based analysis of the negative perceptions of NEPRA about the power sector and the Government's efforts to remove these perceptions. IPR hopes that this will help in resolving the controversies that have risen following the report and lead to a better understanding of the structural and management aspects of the sector.

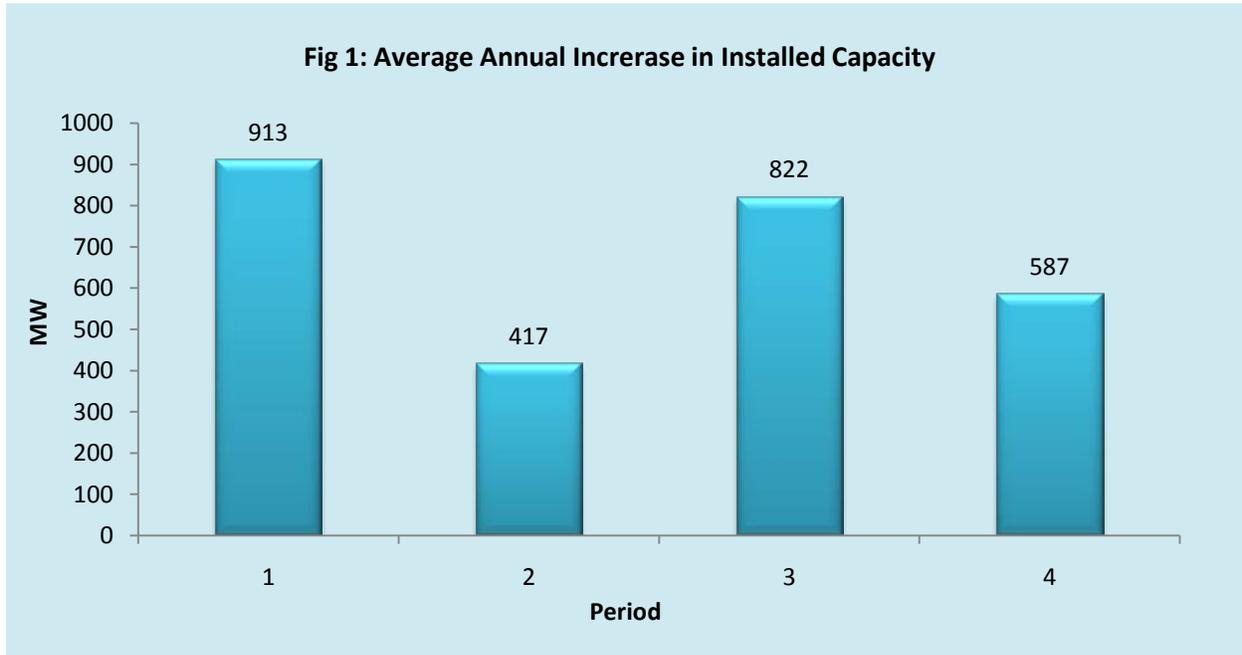
The methodology adopted is to quote a particular statement either in the NEPRA report or in the Ministry ad. An effort is made to determine its authenticity on the basis of information available from various sources, which are explicitly identified.

## Installed Capacity and Generation

The ad of the MOW&P states the following:

***'The present Government took initiatives to increase the overall generation capacity'***.

Figure 1 gives the annual increase in installed capacity in different periods. The largest increase was observed in the 90s, especially in response to the attractive 1994 IPP Policy.



**Period 1:** 1990-91 to 1998-99

**Period 2:** 1998-99 to 2007-08

**Period 3:** 2007-08 to 2012-13

**Period 4:** 2012-13 to 2014-15(March)

**Source:** Pakistan Economic Survey, 2014-15

The rate of expansion was less than halved in the Musharraf Era. There was a spurt in the tenure of the PPP Government, although not large enough to substantially reduce load shedding. In the first two years of the PML (N) government, the performance has been relatively modest<sup>1</sup>. This is expected to pick up in the next few years, especially as investment takes place in the CPEC power projects.

The actual quantities of electricity generated and consumed respectively are given in Table 1, from 2007-08 onwards. It is significant that the fastest growth, both in generation and consumption, in seven years was observed in 2013-14, the first year of the present government.

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<sup>1</sup> It is not clear if the Nandipur Project is part of the reported expansion in capacity.

**Table 1: Electricity Generated and Consumed,  
2007-08 to 2014-15**

(Gwh)

	<b>Generation</b>	<b>Growth Rate (%)</b>	<b>Consumption</b>	<b>Growth Rate (%)</b>	<b>T &amp; D Losses (%)</b>
2007-08	95860		73400		23.4
2008-09	91843	-4.2	70371	-4.1	23.4
2009-10	95607	4.1	74348	5.7	22.2
2010-11	94653	-1.0	77099	3.7	18.5
2011-12	90670	-4.2	76761	-0.4	15.3
2012-13	96496	6.4	76789	0.0	20.4
2013-14	104089	7.9	83409	8.6	19.9
<b>July-March</b>					
2013-14	73435		62015		15.5
2014-15	71712	-2.3	62846	1.3	12.4
<b>Source: PES</b>					

The increase of almost 9% in consumption must have contributed to less power load shedding. However, in the first nine months of 2014-15, generation has actually fallen while consumption has increased only marginally.

Transmission and distribution losses have been falling since 2007-08, although there was a significant deterioration in 2012-13. Major progress has been made in reducing these losses in 2013-14 and 2014-15.

Overall, the power sector has shown a mixed performance in the last two years. In the first year, 2013-14, in particular, of the present Government there was a big jump in generation and a quantum reduction in transmission and distribution losses.

### **Level and Distribution of Load shedding**

The MOW &P ad states the following:

*‘A uniform policy for load management be enforced for the entire country with:*

- a. A reduced and predictable load shedding schedule for domestic consumers (6 hours for urban and 8 hours for rural except for high theft areas: even lesser during Ramzan when zero load shedding was observed during Sehr, Iftar and Taraweeh).*
- b. Zero load shedding for Industries to help the economy and creation of jobs, for most of the year (except for January during Canal closure & in Ramzan).’*

There are two issues here. The first is whether there is, more or less, uniform load shedding throughout the country. Second, has the incidence of outages been brought down to the levels given above?

The State of Industry Report for 2014 of NEPRA reports the average level of load shedding by DISCO, as shown in Table 2.

<b>Table 2: Average Level of Load shedding daily by DISCO</b>		
(hrs)		
<b>Disco</b>	<b>2012-13</b>	<b>2013-14</b>
PESCO	4.8	4.8
TESCO	-	10.5
IESCO	5.6	5.0
GEPCO	3.2	3.2
LESCO	0.6	3.5
FESCO	7.8	7.2
MEPCO	9.0	10.0
HESCO	7.3	3.8
SEPCO	2.0	2.0
QESCO	11.1	10.5
K-EL	2.4	2.3
<b>Source: NEPRA</b>		

Two conclusions emerge from table. First, in the majority of DISCOs there has been some reduction in the incidence of outages in 2013-14, following the big increase in supply, as speculated above. Second, there is substantial variation in the level of load shedding among the different regions of the country. It is ten hours or more daily in areas covered by TESCO, MEPCO and QESCO. The minimum frequency is observed in K-EL, SEPCO and GEPCO. As such, contrary to the statement by MOW&P, a uniform policy of load management is not being followed in the country. Following the small increase in electricity consumption in 2014-15, the level of load shedding has remained unchanged as in 2013-14 or increased somewhat.

Turning to the policy of zero load shedding for industries this is not borne out by statements by entities like APTMA. Also, a sizeable proportion of large-scale industrial units have back up capacity for self-generation in the event of outages. In 2014-15, industrial consumption of electricity has gone up by 2%, as compared to the growth in production of 3%.

## Merit Ordering of Plants

As part of the policy decisions, the ad of the MOW&P states the following:

*‘Merit Order generation dispatch must be adhered to, as this was the only way to save consumers’ interest’.*

*Keep only the most efficient and economical plants running on full time basis and the costlier ones be run only to meet peak demands. Achieve lower cost of generation and pass on the benefits to the consumers’.*

Consequently, MOW&P disagrees with the NEPRA report that generation capacity was not utilized. Specifically, the following plants were decommissioned: TPS Muzaffergarh, SPS Faisalabad, GTPS Shahdra, GTPS Faisalabad, TPS Multan and NGPS Multan.<sup>2</sup> According to MOW&P, these are the most inefficient plants and the cost of electricity generated from them ranges between Rs 15-25 per unit (against the current cost of Rs 7-9 per unit).

Table 3 gives the latest costs by fuel of plants low in the merit order. Following the reduction of oil prices, the cost per Kwh of a plant operating on furnace oil or HSD has come down by one third and that of a plant using mixed fuel (natural gas plus furnace oil) has come down by one sixth.

<b>Table 3: Estimated Fuel Cost of Plants Low in the Merit Order, 2014-15</b>					
(Rs/Kwh)					
		<b>Gas</b>	<b>Estimated Mixed</b>	<b>RFO</b>	<b>HSD</b>
<b>Muzaffergarh</b>					
Unit 1-3		6.35	9.93	12.31	
Unit 4		6.29	9.84	12.20	
Unit 5-6		7.15	11.10	13.88	
<b>NGPS Multan</b>					
Unit 1-4		8.30	13.06*	16.22	27.40
<b>SPS Faisalabad</b>					
Unit 1-2		8.45	13.32	16.58	
<b>GTPS Faisalabad</b>					
Unit 1-2		9.04		15.30	15.30
Unit 5-9					
TPS Multan and GTPS Shahdara are not given in the Merit Order List by NEPRA in Table 40, SIR, 2014					
<b>Source: NEPRA</b>					

<sup>2</sup> NEPRA also mentions that the Nandipur plant was not used.

The decommissioned plants mentioned above could be operated on furnace oil. Their cost ranges now from Rs 12 to Rs 17 per kwh. This is a lower range of cost than that given by MOW&P. Further, it is not much higher than the cost of plants which were operated with furnace oil.

The policy that plants lower down the merit order should not be operated depends on the relationship between the cost of generation and the cost to production units of electricity not generated. According to a major study by the Institute of Public Policy, Lahore,<sup>3</sup> the cost of outages is very high. It ranges from a maximum of Rs 60 per kwh for industrial units to a low of Rs **30 per kwh** for households. These costs are substantially higher than the marginal cost of generation, which justifies the use of more capacity to reduce further the level of load shedding.

IPR is of the view that the real reason for lower capacity utilization lies more in the liquidity problems confronted by the sector in the form of `circular debt`. This is discussed in the next section.

## **Supply of Fuel**

The MOW&P ad indicates that one of the inherited challenges was that `PSO remained in financial troubles and its L/Cs defaulted frequently causing erratic supplies of fuel to GENCOs and to IPPs`. As one the achievements, the Ministry says that with better funding available the stock of fuel with GENCOs and IPPs has almost trebled. PSO supplies have also become more predictable and stable.

There was in fact, a fuel crisis in early 2015. PSO imports over 90% of the furnace oil and imports account for 67% of the total supply. Table 4 gives the monthly imports of furnace oil from July 2012 to June 2015.

PSO was having difficulty in opening L/Cs in late 2014. By September 2014, the receivables of PSO had risen to the colossal figure of Rs 222 billion. Consequently, Imports of furnace oil fell by 37% in November 2014, 22% in December 2014 and 56% in January 2015. For the year, 2014-15, as a whole, import of furnace oil fell by over 6%.

The massive retirement of circular debt of Rs 480 billion by the PML (N) Government in the middle of 2013 greatly facilitated imports of petroleum products. Imports of furnace oil went up by almost 9% in 2013-14. This was one of the major factors contributing to the high growth in electricity generation of over 8% in 2013-14.

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<sup>3</sup> This study was commissioned by USAID.

**Table 4: Monthly Imports of Furnace Oil  
2012-13 to 2014-15**

('000 tons)

Month	2012-13	2013-14	Growth Rate (%)	2014-15	Growth Rate (%)
July	598	692	15.7	756	9.2
August	850	710	-16.5	749	5.5
September	538	598	11.1	518	-13.4
October	373	540	44.8	608	12.6
November	304	426	40.1	268	<b>-37.1</b>
December	612	398	-35.0	311	<b>-21.9</b>
January	388	599	54.3	265	<b>-55.8</b>
February	477	319	-33.1	512	60.5
March	263	533	102.7	594	11.4
April	484	506	4.5	599	18.4
May	545	529	-3.0	507	-4.2
June	617	733	18.8	483	-34.1
<b>TOTAL</b>	<b>6049</b>	<b>6583</b>	<b>8.8</b>	<b>6170</b>	<b>-6.3</b>

Source: Oil Companies Advisory Committee (OCAC)

The impact of lower furnace oil imports on electricity generation is visible in Table 5. The generation from furnace oil fell by as much as 12%. In fact, overall generation declined each month from September 2014 to March 2015. Fortunately, this was mostly made up by increased use of natural gas.

**Table 5: Electricity Generation <sup>a</sup> by Different Fuels  
2013-14 and 2014-15**

(Gwh)

Generation by	2013-14	%	2014-15	%	Growth Rate
Hydel	32238	34.0	32560	33.7	1.0
Furnace Oil	36026	37.9	31681	32.8	-12.0
Natural Gas	18917	19.9	22479	23.2	18.8
Others	7764	8.2	10007	10.3	
<b>TOTAL</b>	<b>94945</b>	<b>100.0</b>	<b>96727</b>	<b>100.0</b>	<b>1.9</b>

<sup>a</sup> Generation by all plants, excluding those owned by K-Electric

Source: NEPRA

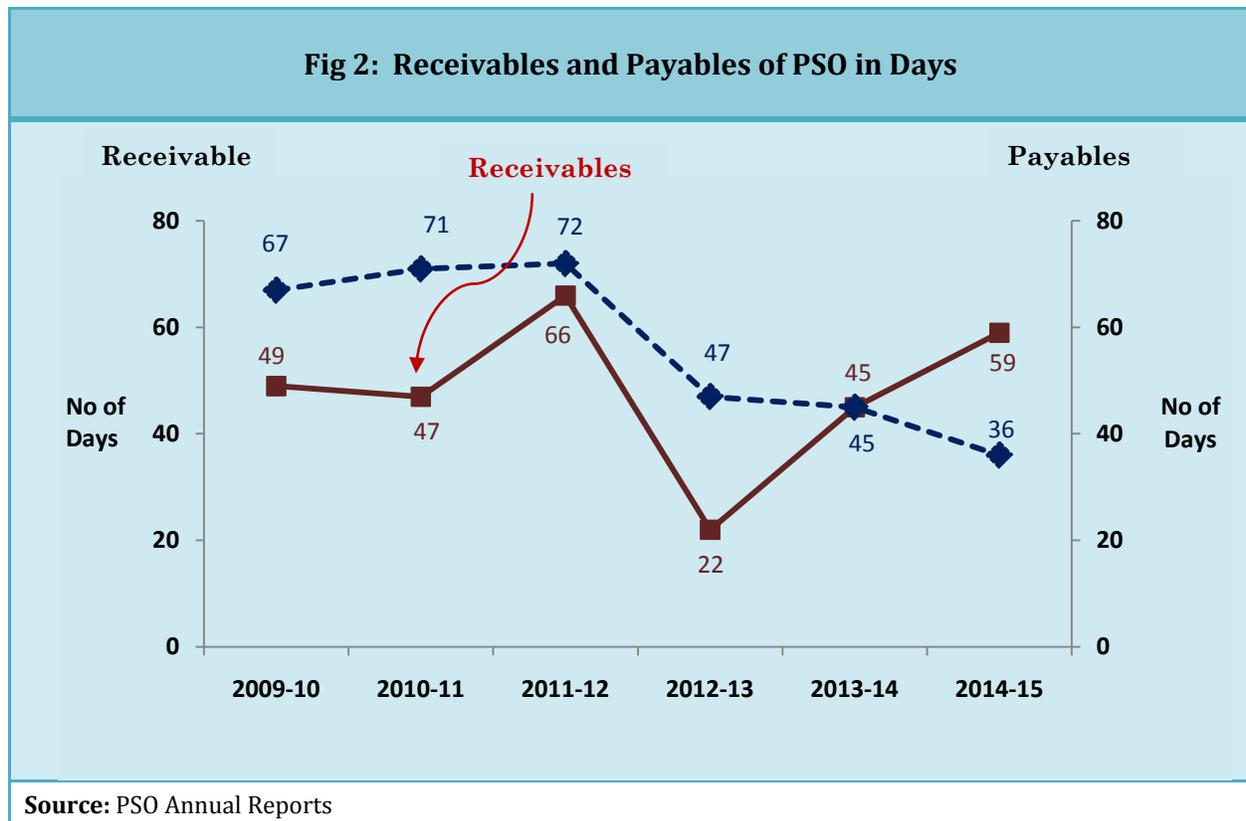
This has contributed to a lower overall fuel cost. According to an earlier study in 2014 by IPR, diversion of gas to power generation from other uses is a sensible policy from the viewpoint of overall savings in foreign exchange. However, it is unfortunate that due to the 'circular debt' problem, the use of furnace oil was restricted at a time when its price was falling sharply.

## The Circular Debt Problem

The MOW&P states that one of the principal objectives of the Government is to 'reduce accumulation of circular debt'. As one of the achievements of 2014-15, the claim is made that payments of current bills of power entities including IPPs, PSOs and Gas Companies rose from 80% to 102% in 2014-15. Consequently, after the initial difficulty in controlling the circular debt growth, it has been successfully capped at Rs 320 billion for the whole year since October 2014.

We have already seen above how the fuel crisis was created in the middle of 2014-15 by the accumulation of receivables with PSO. This limited greatly its liquidity and rendered difficult the opening of LCs. Since then there has been improvement, but conditions are beginning to deteriorate once again in the flow of funds within the sector.

Figure 2 highlights the path of receivables and payables (in number of days) of PSO as indicated in its Annual Reports. Receivables have started rising once again sharply in 2014-15. This does not auger



well for coming months. Retirement of a major part of the circular debt is becoming essential if interruptions in fuel supply are to be avoided.

## Consumer Price of Electricity

The ad of the MOW&P states the following:

*' The prudent generation strategy helped bring generation costs down and its benefits were passed on the consumers every month in the form of reduction of Rs. 2 to Rs 4.3 per unit'*

The decrease in consumer price is reflected in the fuel charges adjustment (FCA) on a monthly basis. The magnitude of the FCA in 2014-15 is given table 6. With the fall internationally in oil prices, the fuel cost per kwh of generation with furnace oil has been coming down from July 2014 onwards. By June 2015, it had fallen by 30%. Consequently, the overall fuel cost per kwh has declined from Rs 7.50 to Rs 4.63 in 2014-15, a big fall of 38%. Given the reference cost, the fuel charges adjustment has been negative since October 2014. It reached a peak of negative Rs 4.43 per kwh in February 2015.

The decline in effective consumer price is due both to a fall in price of furnace oil and a better fuel mix (see Table 5). The major contributor to the, extent of 75%, is due to the first factor, that is, lower price of furnace oil.

<b>Table 6: Monthly Fuel Cost , RFO and Total Fuel Charges Adjustment, 2013-14 and 2014-15</b>							
							(Rs per kwh)
	RFO			Total Fuel Cost			Fuel Charges Adjustment
	2013-14	2014-15		2013	2014-15		
	Actual	Reference	Actual	Actual	Reference	Actual	
July	15.87	15.52	15.95	6.77	7.06	7.50	0.43
Aug	15.48	16.72	15.74	6.76	7.08	6.78	-0.30
Sept	15.60	15.97	15.66	6.58	6.25	6.77	0.52
Oct	15.88	18.65	15.64	8.24	7.55	7.07	-0.48
Nov	16.95	17.06	13.86	7.24	7.42	4.45	-2.97
Dec	16.75	17.06	12.21	8.87	9.53	6.29	-3.24
Jan	17.08	18.09	10.27	11.78	11.36	9.28	-2.08
Feb	15.96	18.13	8.40	7.58	9.00	4.57	-4.43
March	16.23	18.24	9.73	8.90	9.63	6.01	-3.62
April	15.28	17.84	9.87	8.49	8.93	7.07	-1.86
May	14.69	17.61	9.93	7.56	8.10	5.41*	-2.69
June	15.67	14.59	10.93	7.44	6.83	4.63	-2.20
July	15.95	14.67	10.76	7.50	6.49	4.35	-2.13

Source : NEPRA

## Reforms in the IMF Program

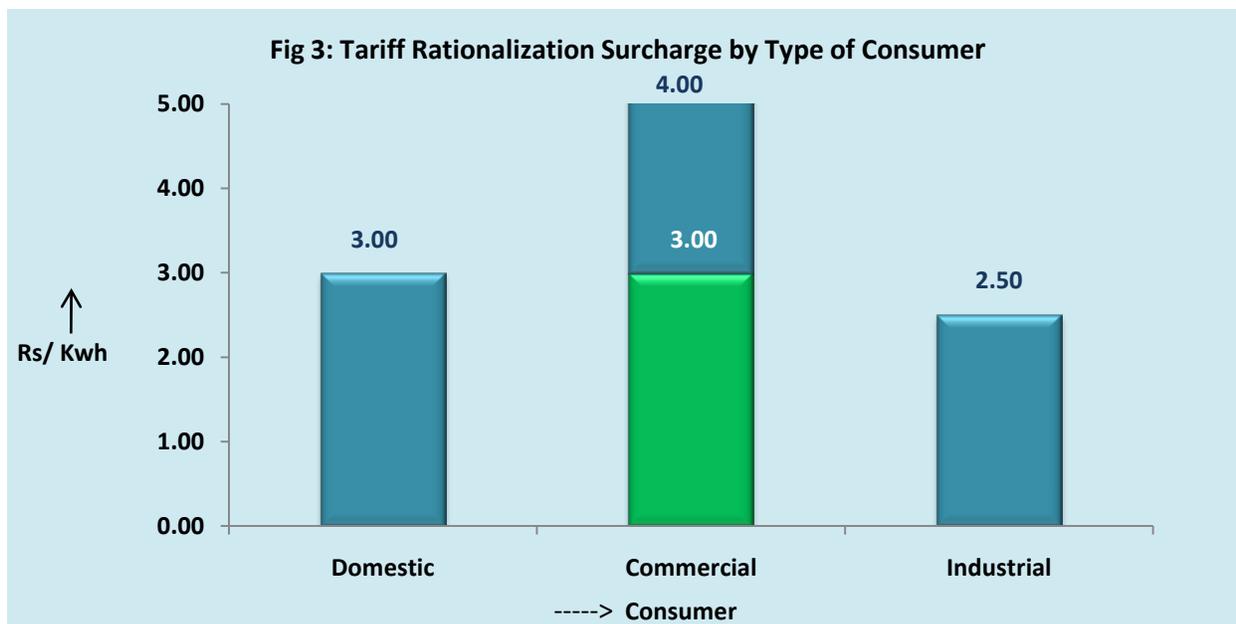
Following the seventh review of the on-going IMF program in March 2015, agreement has been reached on a number of structural reforms in the power sector, as follow:

- Power Sector Subsidies to come down to 0.3% of the GDP from 0.8% of the GDP and lower power sector arrears by 0.1% of the GDP.
- As of the March 2015, stock of billing arrears stood at over 2% of the GDP. A new quarterly Indicative Target (Starting in June 2015) on the build-up of arrears is specified. This is expected to eliminate both the stock and flow of new circular debt over time, down on a flow basis to Rs 29 billion by end -June 2016. The magnitude of power sector subsidies, in the form of the Tariff Differential Subsidy (TDS), is given in Table 7. These have fallen from 1.2% of the GDP in 2013-14 to 0.8%, a decline of Rs 88 billion.

<b>Table 7: Power Tariff Differential Subsidy Paid out of the Federal Budget, 2013-14 to 2015-16</b>				
(Rs in Billion)				
	<b>2013-14</b>	<b>2014-15</b>		<b>2015-16</b>
		<b>Budget</b>	<b>R.E</b>	<b>Budget</b>
<b>TDS</b>	<b>309.4</b>	<b>185.1</b>	<b>221.0</b>	<b>118.0</b>
WAPDA/PEPCO	245.1	156.1	185.0	98.0
K-Electric	64.3	29.0	36.0	20.0
<b>% of GDP</b>	<b>1.23</b>		<b>0.81</b>	<b>0.38</b>
<b>Source:</b> MOF, Budget-in-Brief				

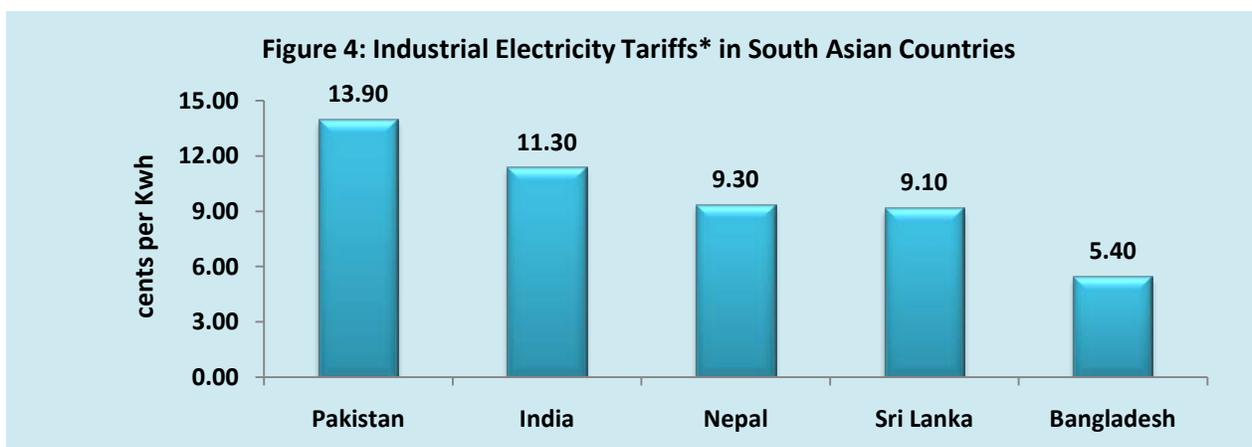
This could be one factor which has contributed to the increase in circular debt in 2014-15. It is projected that the TDS will decline further to below 0.4% of the GDP in 2015-16.

How is this to be achieved? NEPRA has notified a Tariff Rationalization Surcharge in June 2015. The objective is to finance the reduction in subsidy. The magnitude of this surcharge is given in Figure 3. It effectively represents an increase in the tariff of 20% to 33%. The estimated revenue in 2015-16 from the surcharge is Rs 100 billion. This fully compensates for the decline in TDS.



Source: NEPRA

The MOW&P does not mention, of course, the imposition of the tariff rationalization surcharge, in an effort to reduce the burden of the power sector on the exchequer. This has happened at a time when furnace oil prices are falling. Consequently, Pakistani industry is more uncompetitive in international markets and higher energy costs are one of the main factors contributing to the fall in exports. A comparison of electricity tariffs currently faced by industry in South Asian countries is given in Figure 4.



\* excluding taxes and other charges

Sources: Faisal Jamal[2013]'Comparison of Electricity Supply and Tariff Rates in South Asian Countries'

Turning to arrears of billing, the outstanding amount as of 30<sup>th</sup> June 2014 was Rs 513 billion, according to NEPRA. The increase in arrears, due to non-recovery, was Rs 114 billion in 2013-14. The position as of end June 2015 is not known yet, but it is likely to have approached Rs 600 billion.

The IMF expects that the problem of increasing circular debt will be eventually controlled by a reduction in arrears. As highlighted above, an ambitious target has been set on the flow of arrears in 2015-16. However, the recovery of bills will become more difficult due to the effective increase in tariffs, following the levy of the tariff rationalization surcharge. In particular, almost 39% of the arrears are with Government consumers. Special efforts will have to be made for recovery from these consumers.

Agreement has been reached with the IMF on the privatization of three DISCOS, namely FESCO, LESCO and IESCO, by September 2016. These DISCOS are relatively more efficient with fewer losses. The policy should have been to transfer the ownership of the less efficient DISCOs to the private sector. Also, consideration should be given to privatization of loss-making feeders, subject to making improvements.

## **Hidden Taxes**

As if the introduction of the tariff rationalization charge is not enough, the Government has levied some taxes to mop up more revenues from the energy sector in a regime of falling oil prices. These include the following measures on furnace oil:

### **SRO 393 (1) /2015: 30-04-2015**

Levy of a Regulatory Duty at 7% on Furnace Oil

### **Customs Tariff: 2015-16**

Statutory Duty on Furnace Oil of 5%

### **SRO 962 (1) / 2015: 30-09-2015**

GST at 20% on Furnace Oil

Consequently, the domestic price of furnace oil is higher. This effectively reduces the pass-through to consumer of the fall in international price in the form of a negative Fuel Charges Adjustment. The estimated additional annual revenue to FBR from the above measures is Rs 31 billion.

## **Removal of Bottlenecks**

NEPRA has highlighted the inadequate capacity in the networks which acts as a bottleneck in the system and prevents the existing power plants from operating at their maximum capacity, while also delaying the commissioning of new plants. The MOW&P has replied in the ad with the following statement:

‘Aggressive campaigns were launched and sufficient funds were provided to each DISCO to provide new Grid Stations, Transmission Lines, Power Transformers and Distribution Transformers. More

than two-third of the distribution constraints and bottlenecks were removed and a smooth supply of electricity by DISCOs was witnessed in most parts of the country expect for few areas .’

The way to evaluate the process of removal of bottlenecks is to determine the PSDP allocations to NTDC and the DISCOs. They are given in Table 8. Only 25% of the cost has been incurred by NTDC on on-going projects in transmission projects. The throw forward is large at over Rs 310 billion. On the basis of the proposed allocation of Rs 65 billion in 2015-16, the projects will take on average another four years to complete. A similar situation is observed in the case of projects being implemented by the DISCOs. There is a great need for increasing allocations and enhancing implementation capacity if T&D bottlenecks are not to delay the commissioning of CPEC power projects.

<b>Table 8: PSDP Allocations to NTDC and DISCOs Projects and Expenditure to date 2015-16</b>						
						(Rs in Billion)
	<b>Number of Projects</b>	<b>Cost</b>	<b>Expenditure to Date</b>	<b>Throw forward</b>	<b>Allocation in 2015-16</b>	<b>Ratio (Years)</b>
NTDC	51	416.1	105.8 (25.4)*	310.3	65.4	4.7
DISCOs	71	288.4	163.7 (56.7)*	124.7	36.2	3.4
<b>TOTAL</b>	<b>122</b>	<b>1336.4</b>	<b>402.4</b>	<b>934.0</b>	<b>181.8</b>	<b>5.1</b>
*% of cost incurred by end of 2014-15						
Source: Planning Commission						

## Ranking of DISCOs

Finally, we take up the contentious issue of the performance ranking of DISCOs and K-Electric. Table 9 gives the NEPRA ranking as contained in the latest Annual Report. According to this ranking, IESCO is ranked first, followed by k-Electric and GEPCO. The lowest rankings are given to LESCO, PESCO and SEPCO. It is important that NEPRA reveals the indicators which have been used to arrive at these rankings.

The MOW&P has made the following observations on the NEPRA rankings:

*‘The Ministry was surprised to see the ranking of the DISCOs, which was highly erratic to say the least. The company with the highest number of complaints by consumers, losses above 23% (against the NEPRA limit of 15%) and an exhibited faulty distribution as experienced in Ramzan was given second number in the ranking. The companies with losses of less than 12% such as FESCO and GEPCO with very few complaints and zero system constraints were ranked at 3<sup>rd</sup> and 5<sup>th</sup>.*

Most surprising was the ranking of QESCO, with less than 20% of recovery due to difficult law and order conditions it was ranked at number four, much above the DISCOs with almost 100% recoveries’.

<b>Table 9: Rankings of DISCOs</b>			
	<b>NEPRA Ranking</b>	<b>IPR Ranking</b>	<b>Difference</b>
PESCO	9	8	-1
TESCO	n.a	11	n.a
IESCO	1	2	1
GEPCO	3	2	-1
LESCO	8	4	-4
FESCO	5	1	-4
MEPCO	6	5	-1
HESCO	7	7	0
SEPCO	10	10	0
QESCO	4	9	5
K-ELECTRIC	2	6	4
*IPR-NEPRA Sources: NEPRA Statistical Annex			

IPR has tried to resolve the issue of rankings with the use of objective indicators in 2013-14, related to T&D losses and extent of under recovery of billing (see Statistical Annex). The resulting rankings are in Table 9 are more in line with the views expressed above by the MOW&P.

According to the IPR ranking, FESCO gets first place, followed by GEPCO and IESCO. K-electric gets a low ranking of sixth, while LESCO moves up to fourth. QESCO goes down to the 9<sup>th</sup> position. SEPCO and PESCO continue to get the lowest ranking.

## Conclusions

The above analysis indicates that both NEPRA and MOW&P are right on some observations about the power sector and wrong on others. The findings are summarized below.

- i. Power generation grew at the fastest rate of almost 9% in seven years in 2013-14, following the large-scale retirement of circular debt. However, the momentum has not been sustained in 2014-15.
- ii. Contrary to the statement by MOW&P, there is no uniform load management strategy throughout the country. Substantial variation is observed among DISCOs and K-Electric in the level of load shedding.

- iii. The merit order of plants has been largely preserved from the view point of a cost minimization strategy. However, the marginal cost of power generation is substantially lower than the economic cost of outages to production units. This justifies a higher rate of capacity utilization.
- iv. The middle period of 2014-15 witnessed a fuel shortage. Imports of furnace oil by PSO fell sharply leading to a decline in power generation. The position has improved since then but recent indications are that PSO may again be having liquidity problems. There is need for intervention to reduce the circular debt.
- v. Contrary to the view of MOW&P, the negative fuel charge adjustment is due three-fourths to the fall in price of furnace oil and the remaining one-fourth because of a better fuel mix and higher efficiency.
- vi. Following an agreement with the IMF the power sector subsidy is being halved from 0.8% of the GDP in 2014-15 to 0.4% of the projected GDP in 2015-16. Neither NEPRA nor MOW&P has highlighted this cut back. A tariff rationalization surcharge has been imposed in June 2015, which will effectively increase the consumer price to large domestic, commercial and industrial consumers by 20% to 33%, and yield additional revenues of over Rs 100 billion. However, this has made the export sector of Pakistan even less competitive.
- vii. Without much dissemination of information, a number of taxes have been introduced on furnace oil. These include a 5% statutory import duty and a 7% regulatory duty. In addition, the GST rate has been enhanced from 17% to 20%. These measures will fetch revenues of Rs 31 billion to FBR. However, they will reduce the pass through effect of lower international prices of oil to electricity consumers.
- viii. Investments to eliminate distribution bottlenecks are proceeding at a slow pace due to relatively low PSDP allocations and utilization. Only 25% of the cost has been incurred up to end-June 2015 on on-going transmission projects of NTDC. On average, the projects will take four more years to complete. There is a dire need for increasing allocations and project implementation capacity if T&D bottlenecks are not to delay the commissioning of CPEC and other power projects.
- ix. On the performance rankings of DISCOs and K-Electric by NEPRA, objective criteria indicate that the views of the MOW&P are more valid. A ranking based on losses in 2013-14 yields very different results, closer to the observations of MOW&P. FESCO is ranked first, followed by GEPCO and IESCO. K-Electric gets a ranking of sixth.

In conclusion, NEPRA's views are perhaps too negative on the state of the power sector while those of MOW&P are too positive. Both institutions will need to take responsibility and work hard to ensure that power load shedding is eliminated by the end of 2017.

# **STATISTICAL ANNEX**

## Ranking of DISCOs and K-Electric

### Methodology

Two indicators are used for the ranking as follows:

- (i) Units Sold as % of Units Purchased
- (ii) Revenues as % of Billing

The data is for 2013-14 from NEPRA.

For each an index is constructed as follows:

$$I_{ij} = \frac{\text{Actual}_{ij} - \text{Min}_i}{\text{Max}_i - \text{Min}_i}$$

$$0 \leq I_{ij} < 1$$

And  $i=2, j=11$

The composite indicator is

$$I_j = 1/2 \sum_{i=1}^2 I_{ij}$$

The results are given in Table S-1

**Table S-1 : RANKING OF DISCOs AND K-ELECCTRIC**

<b>Company</b>	<b>Units Sold as % of Units Purchased</b>	<b>I<sub>1</sub></b>	<b>Revenues as % of Billing</b>	<b>I<sub>2</sub></b>	<b>I (=1/2(I<sub>1</sub>+I<sub>2</sub>))</b>	<b>Ranking</b>
PESCO	66.51	0.043	86.27	0.852	0.448	8
TESCO	72.58	0.285	6.64	0.000	0.142	11
IESCO	90.53	1.000	90.41	0.897	0.949	2
GEPCO	89.03	0.940	96.14	0.958	0.949	2
LESCO	86.56	0.842	97.86	0.977	0.910	4
FESCO	88.74	0.929	100.05	1.000	0.965	1
MEPCO	82.53	0.681	96.04	0.957	0.819	5
HESCO	73.54	0.323	79.19	0.777	0.550	7
SEPCO	65.44	0.000	59.69	0.568	0.284	10
QESCO	78.07	0.503	42.19	0.381	0.442	9
K-ELECTRIC	71.63	0.247	87.06	0.861	0.554	6

**Source: NEPRA**