



Registrar

National Electric Power Regulatory Authority

Islamic Republic of Pakistan

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No. NEPRA/R/ADG(Tariff)/TRF-100/XWDISCOs/1080-1082

January 11, 2021

Subject: **Decision of the Authority in the matter of Wheeling Costs to be included in the Tariff Determination of DISCOs under Annual & Multi-Year Tariff Regime (FY 2018-19 & FY 2019-20)**

Dear Sir,

Please find enclosed herewith subject Decision of the Authority (07 pages).

2. The Decision of the Authority is being intimated to the Federal Government for the purpose of notification in the official gazette pursuant to Section 31(7) of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997.

Enclosure: As above


(Syed Safer Hussain)

Secretary
Ministry of Energy (Power Division)
'A' Block, Pak Secretariat
Islamabad

CC:

1. Secretary, Cabinet Division, Cabinet Secretariat, Islamabad.
2. Secretary, Ministry of Finance, 'Q' Block, Pak Secretariat, Islamabad.



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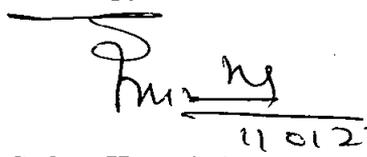
No. NEPRA/R/ADG/TRF-100/XWDISCOs/1083-1094

January 11, 2021

Subject: Decision of the Authority in the matter of Wheeling Costs to be included in the Tariff Determination of DISCOs under Annual & Multi-Year Tariff Regime (FY 2018-19 & FY 2019-20)

The Authority has made its Decision on the subject matter. The Decision has been sent to Ministry of Energy (Power Division) for notification in the official Gazette vide letter No. NEPRA/R/ADG(Tariff)/TRF-100/1080-1082 dated 11.01.2021. A copy of the Decision is served herewith.

Enclosure: As above


(Syed Safer Hussain)

Chief Executive Officer Central Power Purchasing Agency Guarantee Limited (CPPA-G) Shaheen Plaza, 73-West, Fazl-e-Haq Road, Islamabad	Chief Executive Officer, Sukkur Electric Power Company Ltd. Administration Block, Thermal Power Station, Old Sukkur.
Chief Executive Officer, Faisalabad Electric Supply Company Abdullahpur, Canal Bank Road Faisalabad	Chief Executive Officer, Lahore Electric Supply Company Ltd. 22-A, Queens Road, Lahore
Chief Executive Officer, Gujranwala Electric Power Company Ltd. 565/A, Model Town, G.T. Road, Gujranwala	Chief Executive Officer Multan Electric Power Co. Ltd. MEPCO Headquarter, Khanewal Road, Multan
Chief Executive Officer, Hyderabad Electric Supply Co. Ltd. WAPDA Offices Complex, Hussainabad, Hyderabad	Chief Executive Officer Quetta Electric Supply Company Zarghoon Road, Quetta
Chief Executive Officer Islamabad Electric Supply Co. Ltd. Street # 40, Sector G-7/4, Islamabad.	Chief Executive Officer, Peshawar Electric Supply Company (PESCO) WAPDA House, Shami Road, Sakhi Chashma, Peshawar
Chief Executive Officer Tribal Areas Electricity Supply Company Limited (TESCO) Room No. 213, 1 st Floor, WAPDA House, Shami Road, Sakhi Chashma, Peshawar	Managing Director, National Transmission & Despatch Co. Ltd. 414 WAPDA House Shaharah-e-Quaid-e-Azam Lahore



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No. NEPRA/R/ADG/TRF-100/XWDISCOs/1095-1099

January 11, 2021

Secretary, Energy Department. Government of the Punjab. 8th Floor, EFU House, Main Gulberg, Jail Road, Lahore	Secretary Energy Department Government of Sindh 3 rd Floor, State Life Building No. 3, Opposite CM House, Dr. Zai-ud-din Ahmad Road, Karachi
Secretary Energy and Power Department Government of Khyber Pakhtunkhwa, First Floor, A-Block, Abdul Wali Khan Multiplex, Civil Secretariat, Peshawar	Secretary Energy Department Government of Balochistan Civil Secretariat, Zarghoon Road, Quetta
Secretary Water & Power Government of Gilgit Baltistan Near Kara Kuram International University, Gilgit Tele: 05811 – 920306	

Subject: Decision of the Authority in the matter of Wheeling Costs to be included in the Tariff Determination of DISCOs under Annual & Multi-Year Tariff Regime (FY 2018-19 & FY 2019-20)

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Enclosure: As above


11 01 21
(Syed Safer Hussain)



**DECISION OF THE AUTHORITY IN THE MATTER OF WHEELING COSTS TO BE
INCLUDED IN THE TARIFF DETERMINATION OF DISCOS UNDER ANNUAL & MULTI
YEAR TARIFF REGIME (FY 2018-19 & FY 2019-20)**

1. The Authority approved National Electric Power Regulatory Authority (Wheeling of Electric Power) Regulations, 2016 (the Regulations) vide SRO dated June 13, 2016, in order to facilitate wheeling of power in the country. However, different stakeholders voiced their concerns on the Regulations in terms of treatment of T&D losses during wheeling, imposition of Stranded costs and Cross Subsidy charges, if any, applicability of Use of System charges of NTDC, Consumers with wheeling arrangements but at the same time having DISCOs as Back up Source of supply, and Banked Energy etc.
2. The Authority keeping in view the importance of these issues and to have a clear understanding of the additional costs involved, held consultative sessions involving all the stakeholders, in NEPRA as well as in LUMS, Lahore.
3. In addition, the Authority also engaged an international consultant, Mr. Ron McNamara, courtesy USAID on the subject matter for assistance.
4. Pursuant to the above, the Authority decided to address the issue of costs to be made part of wheeling charges through a separate decision and also decided to make two additional issues relating to stranded cost and cross subsidy, under the already filed tariff petitions by XWDISCOs for the FY 2018-19 and FY 2019-20 with the Authority. The Authority also decided to conduct a hearing in this regard.
5. Accordingly, advertisement for the additional issues was published in the newspapers on September 9th & 10th, 2020 and was also uploaded on NEPRA website; Individual notices were also issued to all the stakeholders.
 - i. Whether stranded cost is a relevant cost under wheeling regime and to what extent?
 - ii. Whether cross subsidy charge is relevant under wheeling regime and to what extent?
6. Hearing in the matter was held on September 17, 2020 at NEPRA tower through ZOOM, which was attended by XWDISCOs, CPPA-G, Senator Nauman Wazir Khattak, Fatima Energy, K-Electric, Punjab Power Development Board, Barrister Asghar Khan as representative of Government of KPK and Government of Sindh, Media and General Public etc. Written comments were also received from various stakeholders.
7. A brief of the comments submitted by various stakeholders during the hearing and in writing is as under;
 - i. XWDISCOs specially IESCO, LESCO, PESCO and FECO during the hearing submitted that CPPA-G bills them every month on fixed cost basis i.e. Rs./kW/month whereas, the consumer end tariff is volumetric in nature, thus, any consumers leaving DISCOs, would result in recovery of fixed costs from the remaining consumers, hence, putting additional burden either on the remaining consumers or the same would be picked up by the GoP. FECO also submitted that for such consumers, if DISCO is used as backup, such consumers shall pay certain fixed charges.



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DISCOs submitted the following figures in respect of Stranded cost and Cross subsidy;

HESCO

	Consumer Category	Peak Hours (Rs./kWh)	Off-Peak Hours (Rs./kWh)
Cross Subsidy	B3 11 kV	0	0
	B4 132 kV	8.2	2.3
	C2 11 kV	2.81	0
	C3 132 kV	11.02	4.12
Standard Cost		11 kV (Rs./kWh)	132 kV (Rs./kWh)
		14.11	8.55

PESCO

	Consumer Category	Peak Hours (Rs./kWh)	Off-Peak Hours (Rs./kWh)
Cross Subsidy	B3 11 kV	10.76	4.96
	B4 132 kV	10.95	5.05
	C2 11 kV	13.58	6.78
	C3 132 kV	13.77	6.87
Standard Cost		11 kV (Rs./kWh)	132 kV (Rs./kWh)
		5.02	5.55

IESCO

	Consumer Category	Peak Hours (Rs./kWh)	Off-Peak Hours (Rs./kWh)
Cross Subsidy	B3 11 kV	12.72	6.92
	B4 132 kV	11.07	5.17
	C2 11 kV	15.54	8.74
	C3 132 kV	13.89	6.99
Standard Cost		11 kV (Rs./kWh)	132 kV (Rs./kWh)
		3.79	5.66

GESCO

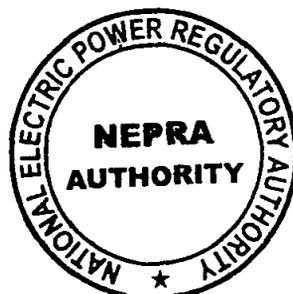
	Consumer Category	Peak Hours (Rs./kWh)	Off-Peak Hours (Rs./kWh)
Cross Subsidy	B3 11 kV	10.76	4.96
	C2 11 kV	13.58	6.78
Standard Cost		11 kV (Rs./kWh)	
		5.7	

TESCO

	Consumer Category	Peak Hours (Rs./kWh)	Off-Peak Hours (Rs./kWh)
Cross Subsidy	B3 11 kV	12.11	6.31
	C2 11 kV	14.93	8.13
Standard Cost		11 kV (Rs./kWh)	
		4.41	

- ii. Barrister Asghar Khan while representing the Government of KPK and Sindh, submitted that first there is need to define the term "Stranded Cost". Stranded cost to the extent of distribution assets is not going to be affected as under the new legislation, the Distribution Business has been converted into two businesses i.e. the Network Business and Supply Business and DISCOs are getting out of the Supply Business. Stranded cost to the extent of not buying power from the IPPs or other bilateral contracts, is going to be in any case as we are moving into a competitive market, which is going to be on two levels; the bilateral contracts and if there is any spill overs of the electricity, the same would be settled through the trading market. Both NTDC and CPPA-G have not conducted any cost of service study for taking into account the stranded cost, so there is no basis for that.

Regarding Cross Subsidy, it was submitted that the as per the original NEPRA Act, concept of cross subsidy was provided under proviso to section 22 (2),



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(22) (2) "Where a bulk power consumer intends to stop purchase of electric power from a distribution company, it shall convey its intention by notice in writing three years before such stoppage.

Provided that such consumer shall continue to make payments to the distribution company equal to the amount of cross-subsidy for uneconomic service for which it would otherwise have provided through purchase of electric power by the Bulk Power consumer."

However, the said clause has been totally eliminated in the amended NEPRA Act. It was also submitted that as per the NEPRA (Tariff Standards and Procedure) Rules 1998, NEPRA should take into account Government subsidies while accounting for the tariff determinations. These standards have now been brought into the Amended Act under Section 31 (3), wherein this particular clauses of Government subsidies have been deleted. Thus, the subsidy being referred originally in the NEPRA Act and Rules, is no longer applicable in the revised dispensation of the amended NEPRA Act. Thus, making the Tariff Rules, 1998 inconsistent with Section 31 of the amended NEPRA Act. It was further submitted that the existing wheeling regulations be continued with the existing tariff components without any inclusion of Stranded Cost and Cross Subsidy charges or for at-least 2,000 MW, before any such costs are levied as it cannot be out of sudden that certain costs are applicable, otherwise the wheeling would become un-bankable. The DISCOs should promote efficiency in their operations and NEPRA should stand by any such organization which promotes efficiencies.

- iii. Senator Nauman Wazir Khattak submitted that wheeling regime is a pre-requisite for development of Energy Market, therefore, wheelers shall be charged only to the extent of cost of network used by the consumers. For Cross subsidy charges, it was submitted that it is the mandate of the Federal Government and NEPRA should stay clear of the cross subsidy especially after the amended NEPRA Act.
- iv. CPPA-G on the issue submitted that Stranded Asset Cost and Cross-Subsidy charges are relevant costs that needs to be incorporated into the wheeling charges and if these issues are not properly taken into account in the existing wheeling regime, it would have huge financial implications on the regulated consumers. CPPA-G also while referring to the consultative sessions carried out by the Authority in NEPRA and LUMS Lahore, submitted that LUMS Energy Institute (LET) based on the discussions, concluded as under;
 - ✓ Cross Subsidy Surcharge (CSS) shall be a part of the wheeling charge based on uniform application of CSS to BPCs being served from DISCOs or through wheeling.
 - ✓ Stranded assets cost is incurred due to inclusion of capacity in the system for all consumers. Based on the five possible allocation of these charges, uniform allocation of stranded assets costs to all consumers will have the least impact on all types of consumers.

CPPA-G also submitted the following financial impacts of the stranded cost and cross-subsidy charges for consideration of the Authority;





- ✓ Cross-Subsidy: For IESCO, the impact of avoiding the cross-subsidy is Rs.5.17/kWh to Rs.8.74/kWh for off-Peak consumption and Rs.11.07/kWh to Rs.13.89/kWh for Peak consumption for all large consumers providing cross-subsidy. Furthermore, at the pool level, the requirement of cross-subsidy is Rs.250 billion for the current year and will increase to Rs.371 billion in the FY 2024-25.
- ✓ Stranded Cost: The resulting financial impact in terms of stranded cost at 11kV and 132 kV consumers respectively ranges from Rs.3.79/kwh and Rs.5.66/kwh for IESCO, and Rs.8.55 /kWh to Rs.14.11/kwh for HESCO.

CPPA-G further submitted that if there is reduction in total energy sales by 1% due to wheeling, the current resulting financial impact on DISCOs/ their consumers is Rs.14 billion for the FY 2020-21. It was also submitted that under Section 31 (3) (g), NEPRA may set tariffs below the level of cost of providing the service to consumers categories consuming electric power below such consumption levels as may be prescribed, as long as such tariffs are financially sustainable. It was further submitted that wheeling is in transitional phase and there are certain transitional costs like stranded costs and cross subsidy; objective of competition should not be to promote inefficiency rather to bring competitiveness by providing a level playing field to all the stakeholders.

CPPA-G regarding Hybrid BPCs submitted that fixed charges mentioned in the tariffs are very minimal (Rs.200-400)/kW/Month, however, the actual cost to DISCOs is around Rs.200/kW/Month. Therefore, actual cost of Rs.2000/kW/month as per tariff determination of FY 2017-18 may be applied to the Hybrid BPCs as fixed charges.

- v. Mr. Fazal Ahmed Sheikh CEO, Fatima Energy Limited (FEL) submitted that there is no data available showing that consumers are leaving the grid, creating a large gap in utilization of network resulting in stranded costs attributed to consumers abandoning the grid. In fact a large increase in consumer demand has been projected for 2047 which requires constant expansion in network. As per IGCEP 2047, power consumption is foreseen to increase to 80,000 MW at low growth rate of GDP. Thus, practically there is no provision for any redundancy of national network resulting from wheeling of few hundred MW of bulk power consumers to cause a stranded cost and load shifted to wheeling will immediately be filled by the waiting consumers. Under current demand supply statistics, the national transmission network has capacity to manage a load of max. 24,000 MW against an installed generation of about 35,000 MW. There is large variation in demand on seasonal basis whereby peak demand is capped at 24,000 MW during summers which drop to about 6,000 MW during winters. This implies that under existing conditions even, there is practically no stranded cost but in fact the network is overloaded during summers and unable to service installed generation.

It was further submitted that wheeling target consumers are primarily industrial connections which have established interconnection with relevant DISCOs on self-finance basis. No cost in this regard has been incurred by DISCOs /CPPA and any capacity expansion made for industrial consumers is normally paid at DISCO level by BPC. No capacity addition has been done at CPPA-G level to cater for the need of industrial consumers, hence, there is no point for adding stranded costs on such



industrial consumers. Stranded cost is not related to wheeling of power rather it is the outcome of imprudent decision making by other participants of power system, which cannot be shifted to wheeling customers as it would create unnecessary barrier for healthy competition. Most of the addition in the generation capacity was done to meet the demand of seasonal/summer cooling load and not for industry for which wheeling services are applicable under the current notified regulations. Burdening CPPA-G plants costs on P2P business is neither fair nor justifiable as no Power producer can compete fairly if it is burdened with other plants/ competitors costs.

On the issue of cross subsidy, FEL while referring to report of its consultant FICHTNER, submitted that as per the report, several studies confirm that cross-subsidies are inferior to direct transfer payments due to wrong price signals, which has been acknowledged by many regulators and have developed plans for its gradual phase-out. Cross-subsidies are considered a major obstacle for a viable wheeling framework. FEL further pointed out that its target customers are actually getting subsidies (cross subsidy + GoP subsidy), therefore, wheeling will help in saving subsidies being provided by the Federal Government on current tariffs of BPCs/ Industry. Cross subsidy, if any, or to fix electricity price for various consumers is the political or socio economic policy of the GoP and it must not impact P2P free market business. If FEL project is permitted to operate under the prevailing wheeling regime, GoP shall save forex up-to USD 30 million per annum on account of usage of indigenous fuel, besides creation of additional jobs and increase in revenue for DISCOs in the form of use of system charges for wheeled energy.

The proposed wheeling charges of Rs.8.30/kWh are neither viable nor practical for successful wheeling regime in Pakistan. Private wheelers would be contributing more than Rs.8/kWh in the form of saving of GoP subsidy of Rs.5.21/kWh, discount to BPC by Rs.1.50/kWh, thereby reducing the cost of doing business in Pakistan and contributing Rs.1.35/kWh towards wheeling charges. A Free and competitive power market would not only increase employment, GDP, and exports for our economy but would also help save losses and subsidies paid by the GoP.

- vi. PEDO submitted that wheeling target consumers are primarily industrial connections which have established interconnection with relevant DISCOs on self-finance basis and no cost in this regard has been incurred by DISCOs/CPPA, hence, there is no point for adding stranded costs on such industrial consumers. As per the amended NEPRA Act, the function of Sale of Power has been segregated from the wire/ network business; the wire business of the DISCO is not being affected, as the wheelers shall be using the same network as was being used earlier. The issue of stranded assets cost does not relate to the existing generators supplying electricity to DISCOs/CPPA on take-and-pay OR take-or-pay basis, who want to switch to wheeling arrangement and also not to a new generator who gives appropriate notice to CPPA-G. CPPA-G registers & allows the new generator and these are included in the IGCEP. Issue of stranded assets cost cannot also be applied, if there is a new consumer/BPCs, which adopts wheeling from its first day of operations. It was also highlighted that most of the addition in the generation capacity was done to meet the demand of seasonal/summer cooling load and not for industry, therefore, wheeling consumers cannot be burdened with stranded costs.



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8. Based on the aforementioned submissions made by the stakeholders, recommendations of the International Consultant and results of the in-house deliberations, the Authority has decided to amend the wheeling charges as prescribed in the DISCOs tariff determinations as follows;
9. **Compensation on account of Technical Losses through provision of additional units**
- 9.1. The Authority observed that the existing wheeling charges, as prescribed in the tariff determination of each DISCO, only accounts for the losses to the extent of Distribution Margin, and does not account for the cost of units lost during the wheeling process.
- 9.2. In view thereof, the Authority has decided that the Wheeler shall ensure that allowed level of technical losses are covered in its agreement with the BPC, so that no extra units are drawn by BPC from the DISCOs system. The issue therefore, needs to be addressed as follows;
- The Wheeler (Generator) shall ensure to produce extra units by grossing up the demand of BPC to the extent of allowed level of technical losses as determined by the Authority for the relevant DISCO in its tariff determination. The extra units generated would be delivered by the Generator in the network, compensating for the technical loss to the network company.
 - Any shortage or excess energy (imbalances) shall be dealt with as per the applicable Wheeling Regulations.
10. **Energy Overdrawn by BPC**
- 10.1. The Wheeling Regulation 14 stipulates that excess energy drawn by BPC is to be settled according to the tariff determined by the Authority. The Authority has therefore decided that for such energy, the determined tariff shall be the applicable tariff for comparable category of consumers in terms of peak or off peak hours as the case may be along-with any monthly/ quarterly/ bi-annual/ annual adjustments as notified from time to time. This provision would be applicable only for the non-hybrid BPCs.
11. **Use of System Charges for the NTDC Network**
- 11.1. As a matter of principle NTDC use of system charge shall only be included in the wheeling charge, if NTDC network has been used during wheeling. However, the Authority also understands that NTDC network / system is necessary to provide stability (frequency and voltage control) and reliability to the overall grid system. The Authority has considered the issue and is of the view that for the time being, notified NTDC use of system charge shall be billed by NTDC to the wheeler of power, only if NTDC network has been utilized during wheeling. However, levying of such costs shall be decided on case to case basis.
12. **Hybrid BPC**
- 12.1. In future tariff determinations of DISCOs, for Hybrid BPCs, fixed charges shall be levied based on their sanctioned load or actual MDI, whichever is higher and will be applicable on such BPCs who retain DISCOs as deemed supplier. In the meanwhile, based on the above formula, NEPRA will determine it on case to case basis. ✓
13. **Stranded Costs and Cross Subsidy Charges**
- 13.1. Regarding Stranded cost and cross subsidy charges, the Authority has considered the submissions that with suppliers setting up their own generation facility or procuring directly



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from an IPP for supplying to BPCs through wheeling, may result in situation whereby the committed future capacities may turn into a stranded cost for a period of time, thus, burdening the regulated consumers. Moreover, the wheeling regime may also provide strong incentive for the eligible consumers, who are presently cross subsidizing, to move away from the regulated tariffs, thus, resulting in either increase in tariff for the remaining consumers or additional support by the Federal Government through subsidy.

- 13.2. Notwithstanding the above, the Authority considers that imposition of such costs as of today would not only discourage wheeling regime in Pakistan but at the same time would also provide no incentive to DISCOs to improve their performance in terms of reduction in T&D losses, minimize pendency of new connections, increase recoveries etc.
- 13.3. In view of thereof, and to promote healthy competition and pressurize DISCOs to improve their performance, the Authority has decided not to include any charges on account of Stranded Costs and Cross Subsidy in the wheeling charges.
14. The decision of the Authority is hereby intimated to the Federal Government for notification in the official gazette in terms of section 31(7) of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997.

AUTHORITY

Engr. Bahadur Shah
Member

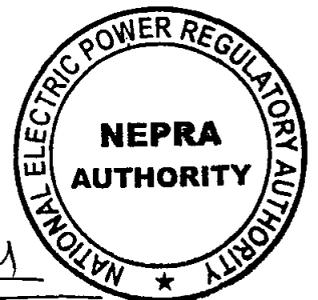
Rehmatullah Baloch
Member

Rafique Ahmed Shaikh
Member

Saif Ullah Chattha
Vice Chairman

24.12.2020

Tauseef H. Farooqi
Chairman



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