

REGISTERED No. **M - 302**
L.-7646



**EXTRAORDINARY
PUBLISHED BY AUTHORITY**

ISLAMABAD, FRIDAY, OCTOBER 20, 2023

PART II

Statutory Notifications (S. R. O.)

GOVERNMENT OF PAKISTAN

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY

NOTIFICATION

Islamabad, the 19th October, 2023

S. R. O. 1450(I)/2023.— In pursuance of sub-section (7) of section 31 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (XL of 1997), NEPRA hereby notifies the Determination of the Authority in the matter of WAPDA Hydroelectric Tariff Petition for **FY 2022-23** in Case No NEPRA/TRF-583/WAPDA-2022.

2. While effecting the Decision, the concerned entities including Central Power Purchasing Agency Guarantee Limited (CPPAGL) shall strictly comply with the orders of the courts (if any) notwithstanding this Decision.

[No. NEPRA/TRF-583/34853-55.]

ENGR. MAZHAR IQBAL RANJHA,
Registrar.

3237(1—53)

Price: Rs. 80.00

[1999(2023)/Ex. Gaz.]



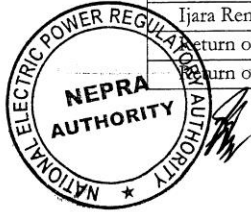
DETERMINATION OF THE AUTHORITY IN THE MATTER OF
WAPDA HYDROELECTRIC TARIFF PETITION FOR FY 2022 – 23

DETERMINATION OF THE AUTHORITY IN THE MATTER OF WAPDA HYDROELECTRIC TARIFF PETITION FOR FY 2022 – 23

INTRODUCTION

1. WAPDA was established under the WAPDA Act in 1958 as an autonomous body for the development and use of the water and power resources, however, after structural reforms in the power sector, WAPDA Power Wing Hydroelectric emerged which became responsible for operations, maintenance, upgradation and construction of in-operations and new power projects, respectively on built, own and operate (BOO) basis.
2. WAPDA Hydroelectric (hereinafter referred to as the “**Petitioner**”, or “**WAPDA**”) filed a tariff petition (hereinafter referred to as the “**Petition**”), vide No. GMFP/CPCC/4525/446, dated May 14, 2022, for revision of tariff for FY 2022 – 23 for sale of power to NTDC/CPPA, pursuant to NEPRA Tariff Standards and Procedure) Rule, 1998 (Tariff Rules). The Authority admitted WAPDA’s Petition in RM 22 – 275, held on June 2, 2022.
3. The notice of admission/hearing was published in national newspapers on July 26, 2022. Separate written notices were also sent to provincial Governments seeking their recommendations, as required under Section 7 of the NEPRA Act. In response to notice of admission, no intervention request has been received. Hearing was held as per schedule on August 4, 2022.
4. The Petitioner submitted that the projected change in its revenue requirement for FY 2022-23 has been worked out on the basis of:
 - Audited financial statements of FY 2019-20, 2020-21
 - Actual Number (un-audited) for six (6) months for FY 2021 – 22, Projected provisional numbers for last six (6) months of FY 2021 – 22, and
 - Budgeted numbers for FY 2022 - 23
5. Subsequently, the Petitioner, vide email dated October 6, 2022, submitted revised numbers for FY 2021 – 22 based on 12 months actual/unaudited numbers, and later vide letter dated January 3, 2023, submitted audited accounts for FY 2021 – 22.
6. Following is a comparison of the tariff determined by NEPRA for FY 2021-22 and the tariff proposed by the petitioner for FY 2022-23 as mentioned in the petition.

Annual Revenue Requirement of WAPDA	NEPRA Determined	Claimed
	2020 – 21	2022 – 23
	<i>Rs. in Millions</i>	
O&M	17,622	27,084
Depreciation	6,869	8,025
Ijara Rental (Sukuk Bonds Repayment)	1,690	0
Return on Investment - Power Stations	28,330	30,311
Return on Investment - Power Projects	21,030	35,931





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Annual Revenue Requirement of WAPDA	NEPRA Determined	Claimed
	2020 – 21	2022 – 23
Other Income	(698)	(536)
Sub Total	74,843	100,815
Regulatory Revenue Gap	15,515	22,501
Mark-up on NHP Loans	11,024	0
Total Revenue Requirement	101,382	123,316
Hydel Levies – Regular		
Govt. of KP	24,562	28,643
Govt. of Punjab	10,517	11,649
Govt. of A&K (WUC)	712	5,440
IRSA	151	157
Total Regular Hydel Levies	35,942	45,889
NHP Arrears	8,710	
Estimated Generation (Net GWh)	30,104	31,352

ISSUES FRAMED FOR HEARING

7. Based on the available information and input from other departments/professionals, the following issues were framed for the hearing:
 - I. Whether Petitioner's request for allowance of O&M expense amounting to Rs 23, 616 million is justified?
 - II. Whether Petitioner's request for allowance of Depreciation charge amounting to Rs 8,025 million is justified?
 - III. Whether Petitioner's request for allowance of WACC based return on power stations amounting to Rs 30,385 million is justified?
 - IV. Whether Petitioner's request for allowance of WACC based return on investment on power projects amounting to Rs 34,265 million is justified?
 - V. Whether other income claimed to be Rs. 767 million is justified?
 - VI. Whether Petitioner's request for allowance of Regulatory Gap amounting to Rs. 26,285 million is justified?
 - VII. Whether the Petitioner's request for payment of NHP at the uniform rate of Rs. 1.10/kWh is justified?
 - VIII. Whether WUC, at par with NHP paid to provinces at Rs. 1.10/kWh, for Mangla HPP, NJ HPP and any other future public sector projects of AJK is justified?
 - IX. Whether PPRA Guidelines/rules were followed during procurement of goods/services under the project/plants?

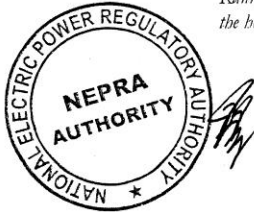


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- X. Whether the claims under Tariff Petition are eligible payments i.e., as per approved PC-I / approved contracts and Government policies in vogue?
 - XI. Whether it is justified to consider higher tariff for small hydel plants being inefficient and with low plant factor?
 - XII. Whether it is justified to consider capacity payment/hydrology risk for the plant for which full water discharge is otherwise available but the available water cannot be utilized due to delay in maintenance/design issues?
 - XIII. Whether the actual generation for FY 2021-22 and projected generation for FY 2022-23 is justified?
 - XIV. Whether the expected annual generation, and other technical parameters, claimed cost and construction period for ongoing development projects under CWIP are justified?
8. Subsequent to the hearing, the Authority, vide letter dated September 6, 2022, directed WAPDA to provide the following information/documentary evidence within 10 working days of receipt of the letter:
- i. EPC, EPC Lot Contracts, Management Consultancy Contracts, or any other relevant contracts for under developing projects included in CWIP. It may be noted that NEPRA team solicited these documents vide email dated August 18, 2022, however, WAPDA provided incomplete documents which devoid of necessary information and included only 5-10 pages comprising of title and signature pages (sample attached),
 - ii. bidding documents and bid evaluation reports of under developing projects included in CWIP,
 - iii. Audited or budgeted figures for FY 21 – 22,
 - iv. detailed breakup in terms of number of dams being monitored, justification and documentary evidence for the cost claimed on account of "Dam & Hydrology Monitoring",
 - v. details regarding the number feasibility studies or any other related studies conducted under the heads of "Other Project Costs" claimed in CWIP and "Survey and Experiment costs" head claimed in Admin Expenses. Also, explain the difference between the two aforementioned heads.
 - vi. detailed breakup, justification and documentary evidence for the cost claimed on account of "Power, Gas & Water" under the head of Admin Expenses,
 - vii. detailed breakup of the actual costs incurred, justification and documentary evidence for "Management/ Authority Overheads" claimed under the head of Admin Expenses, including, but not limited to, the number of employees (regular and contractual) along-with their designations of officers and their respective salaries and any other benefits,
 - viii. detailed breakup, justification and documentary evidence for the cost claimed on account of "Vehicle Running Expense" under the head of Admin Expenses and the difference between Fuel Charges under the head of "Repair & Maintenance",

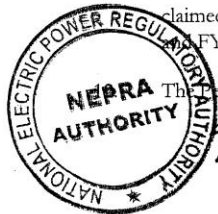


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- ix. detailed breakup, justification and documentary evidence for the cost claimed on account of "Other Operating Expense" under the head of Admin Expenses,
 - x. detailed breakup, actual coverage and documentary evidence for the cost claimed on account of "Insurance" claimed under the head of R&M, including any relevant contracts,
 - xi. details regarding the number of workforce employed by WAPDA hydroelectric, and also explain, certify and provide documentary evidence, where required, that costs of employees of WAPDA hydroelectric engaged with under construction projects and other operational projects like Neelum Jhelum are not being claimed in "O&M" cost,
 - xii. timelines for land acquisition and its actual progress for Dasu and Mohmand hydropower projects. Justify the number of employees deployed for land acquisition of Mohmand and Dasu hydropower projects,
 - xiii. comprehensive cost benefit analysis including payback periods, tariffs and the benefits that will accrue from WAPDA hydroelectric's T5 & Koyal Khwar Projects' implementation,
 - xiv. cost-benefit analysis of Koyal Khwar HPP with updated hydrology and civil works & E&M costs,
 - xv. details along with documentary evidence for funding the retirement benefits through TDR in compliance with Authority's directions,
 - xvi. justification of including IRSA charges in the tariff, supported by CCI's approval, if any,
 - xvii. plant-wise comparison of O&M costs of WAPDA's plants with IPPs and international O&M cost comparison of similar plant sizes, and
 - xviii. detailed justifications regarding the delay in complete restoration of Golen Gol HPP.
9. WAPDA, vide email dated September 23, 2022, requested for extension in time in order to submit the requisite consolidated information. The Authority, vide letter dated September 30, 2022, again directed WAPDA to provide the requisite information within 3 days of receipt of the instant reminder, otherwise the Petitioner was informed that decision shall be taken based on available information. WAPDA, vide letter dated October 5, 2022, submitted its response which is discussed under the relevant sections of the decision.
10. The issue-wise submissions of the Petitioner, discussions and decisions of the Authority are presented hereunder:
- Issue No. 1: Whether Petitioner's request for allowance of O&M expense amounting to Rs 23, 616 million is justified?**
- Issue No. 10: Whether the claims under Tariff Petition are eligible payments i.e., as per approved PC-I/approved contracts and Government policies in vogue?**
11. According to the Petitioner, O&M expenses comprise of Employee Cost, Repair & Maintenance and Administration cost. According to the Petitioner, O&M expenses have been claimed on the basis of audited financial statements of WAPDA for FY 2019-20, FY 2020-21, FY 2021-22, and budgeted numbers for FY 2022-23.



The Petitioner has requested the following on account of O&M costs expressed in Rs million:

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Components of O&M cost	2019 – 20		2020 – 21		2021 – 22	2022 – 23
	Audited	Allowed	Audited	Allowed	Audited	Projected
Employee's Salaries & Benefits	5,787		5,296		6,319	7,972
Post-Retirement Benefits	8,886		7,891		9,211	11,514
Repair & Maintenance	976		1,460		1,912	2,389
Administrative Expenses	3,029		3,470		3,705	5,208
Total	18,678	16,311	18,117	17,622	21,148	27,084

13. The Petitioner, regarding issue No. 10 submitted that the claims under Tariff Petition are eligible payments duly supported and in line with the Government policies and approvals as well as notified NEPRA tariff determinations for WAPDA Hydroelectric and Audited Accounts. The Petitioner submitted that all relevant documents have been submitted with the Tariff Petition.
14. The Authority considered WAPDA's response in the matter of Issue No. 10 as satisfactory.
15. WAPDA, in its earlier tariff petitions, informed that the operation & maintenance of hydel power stations is carried out through self-arrangement. WAPDA appoints the human personnel and fixes their terms of employment by exercising administrative powers conferred under Section 17 & 18 of the WAPDA Act. The manpower strength is reviewed each year keeping in view the functional requirement at the Hydel power stations. Being a fully GoP owned autonomous body, WAPDA has adopted National Pay Scales, therefore, the salary package of the employees is adjusted year to year in line with adjustments made by the federal government for its employees in each financial year budget. WAPDA makes procurement of material and hires additional services in connection with O&M of power plants by observing PPRA Rules.
16. According to information provided by WAPDA in its earlier tariff petitions, it administers the progress of its projects through establishing an independent project management unit, which is disbanded on completion of the project and handed-over for O&M to another formation. Therefore, the expenditure claimed and traditionally allowed to WAPDA under the head of O&M pertains only to its in-operation stations, and does not pertain to its under-construction/ under-development projects. Subsequent to the hearing, WAPDA, vide letter dated August 12, 2022, also submitted station-wise O&M cost for its plants in-operations.

Employee Salaries and Benefits

17. According to WAPDA, it has requested Employee Costs on the basis of audited financial statements of FY 2019 – 20, FY 2020 – 21, FY 2021 – 22 and projections for FY 2022 – 23. The breakup of the claimed Employee Costs, as provided by the Petitioner, is reproduced hereunder:

	FY 2019 – 20	FY 2020 – 21	FY 2021 – 22	FY 2022 – 23
		Audited		Projected
Salaries and Wages	4,210	4,359	5,107	6,638
Employees Benefits	1,577	937	1,212	1,334
Total	5,787	5,296	6,319	7,972

Rs. in Millions



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18. According to the Petitioner, the increase in forecasted Employee salary & wages during FY 2021-22 over FY 2020-21 is due to grant of Disparity Reduction and Adhoc Relief allowances by GoP as well as effect of annual increments. Further, budgeted Employee salary & wages for FY 2022-23 are proposed with 30% increase over FY 2021-22 to adjust already granted 15% Disparity Reduction allowance, and annual increments. For the FY 2022 – 23, budgeted numbers, according to the Petitioner, the sanctioned manpower strength has been kept unchanged.
19. The Authority, vide determination dated April 5, 2021, initially assessed the following Employee Salaries and Benefits on the basis of projections for FY 2019 – 20 and FY 2020 – 21:

Employees Cost <i>Determined Previously</i>	FY 2019 – 20	FY 2020 – 21
Salaries and Wages	4,993	5,243
Employees Benefits	798	838
Total	5,791	6,081
<i>Rs. in Millions</i>		

20. In the previous determination dated April 5, 2021, the Authority approved plant-wise employees' salaries/ wages and benefits. Further, according to para 23 of Authority's decision, plant-wise salaries and wages projected for the FY 2019-20 and FY 2020-21 were subject to adjustment at actual on the basis of audited accounts of respective years provided the actual costs are less than the approved cost. It was noted that, WAPDA provided audited figures for FY 2021 – 22, there were no determined numbers for that year, so FY 2021 – 22 will be dealt separately in the forthcoming forecasting section. Based on the above mechanism, the following plant-wise O&M costs have been approved by the Authority on account of Salaries and Wages and Employee Benefits:

Employees Cost <i>Approved</i>	FY 2019-20	FY 2020-21
Salaries and Wages	4,204	4,333
Employees Benefits	794	771
Total	4,998	5,104
<i>Rs. in Millions</i>		



21. For FY 2021 – 22, based on the audited figures, the Petitioner claimed 17% and 29% increases in Salaries and Wages, and Employee Benefits, respectively, over the previous year's claimed numbers. This increase of 17% in Salaries and Wages, according to the Petitioner, is due to grant of Disparity Reduction and Adhoc Relief allowances by GoP as well as effect of annual increments. The increase of 29% in Employee Benefits, according to the Petitioner, is due to the fact that GoP increased some allowances resulting in increase of employee benefits for FY 2021 – 22.
22. For FY 2022 – 23, a 30% increase in Salaries and Wages and 10% increase in Employee Benefits has been assumed by the Petitioner, respectively. The increase of 30% in Salaries and Wages, according to the Petitioner, is to adjust already granted 15% Disparity Reduction allowance, and annual increments. The following table summarizes the projection rates as claimed by the Petitioner:

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	FY 2021-22	FY 2022-23
Salaries and Wages	17%	30%
Employees		
Benefits	29%	10%

23. WAPDA was directed by the Authority to provide requisite information/documentary evidence with regards to the workforce that WAPDA has engaged. WAPDA, vide letter dated October 5, 2022, submitted its response. Authority's concern and WAPDA's response related to O&M costs is reproduced hereunder:

Details regarding the number of workforce employed by WAPDA hydroelectric, and also explain certify and provide documentary evidence, where required, that costs of employees of WAPDA hydroelectric engaged with under construction projects and other operational projects like Neelum Jhelum are not being claimed in "O&M" cost.

As mentioned in Note-32 of audited accounts of WAPDA Hydroelectric for FY 2020-21 total No. of working active employees is 9,052 whereas total no. of pensioners is 9,135, accordingly cost of only active employees and pensioners has been demanded in the O&M cost. Station wise detail of active employees and pensioners of WI-IE is attached. Cost of employees working in Neelum Jhelum HPP is not included in the O&M cost claim.

24. It was noted that for FY 2020 – 21, the inflation, as reported by the Asian Development Bank, was 8.9% when the instant Petition was considered by the Authority. Given that, the projection rates claimed by the Petitioner for Employee Benefits seemed on the higher side (10%-30% as tabulated above) and the same were adjusted to the rate of inflation of 8.9%, as report by the ADB and in line with the mechanism adopted in the previous determination.
25. Given the above, the following costs are approved by the Authority, which, except for FY 2021 – 22, shall be subject to adjustment at actual on the basis of audited accounts of respective years provided the actual costs are less than the projected/approved costs:

Employee Costs <i>Approved</i>	FY 2021-22	FY 2022-23
Salaries and Wages	4,719	5,138
Employees		
Benefits	840	914
Total	5,558	6,053
<i>Rs. in Millions</i>		



26. Recapitulating the above, the Authority approved the following Employee Salaries & Benefits:

	FY 2019 – 20	FY 2020 -21	FY 2021-22	FY 2022-23
	<i>Approved</i>			<i>Projected</i>
Salaries and Wages	4,204	4,333	4,719	5,138
Employees Benefits	794	771	840	914
Total (Rs in Millions)	4,998	5,104	5,558	6,053

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Post-Retirement Benefits:

27. According to the Petitioner, Post-Retirement Benefits consist of Pension, Medical, Electricity and compensated absences benefits in line with IAS-19 (Employee Benefits) based upon Actuarial Valuation Report as per Projected Unit Credit Cost method. According to the Petitioner, the Post-Retirement Benefits from FY 2019-20 to FY 2020-21 are as per Actuarial Valuation Report and audited financial statements. The Petitioner initially projected Post-Retirement Benefits for FY 2021-22 with 4% increase over the actuarial estimates for FY 2020-21 and later provided the actuarial valuation report for FY 2021-22, vide email dated November 4, 2022, whereas, for FY 2022-23 these benefits were projected with a further 25% increase over FY 2021-22 due to non-availability of actuarial valuation reports.
28. As per para 24 of the previous determination, the Authority allowed post-retirement benefits for FY 2019 – 20 and FY 2020 – 21 to be trued up in the succeeding tariff petition.
29. A comparison of determined, claimed and verified costs on account of Post-Retirement Benefits is as follows:

Post-Retirement Benefits	FY 2019 – 20	FY 2020 – 21	FY 2021 – 22
Determined Previously	6,700	8,009	-
Claimed (based on Audited Accounts)	8,886	7,891	9,211
Verified from Audited Accounts	8,886	7,891	9,211
<i>Rs. in Millions</i>			

30. Given the above and as per practice in vogue, for determining the tariff for the FY 2022-23, the figures of the last FY audited accounts and the Actuarial Valuation Report have been considered and a rate of 8.9% inflation is applied, which shall be subject to adjustment as per actual based on the annual audited account for the respective years. The projected figures for FY 2022-23 approved by the Authority are as under:

Post-Retirement Benefits	FY 2022 – 23
Projection	10,031

31. Recapitulating the above, the Post-Retirement Benefits assessed and projected work out as follows:

	FY 2019 – 20	FY 2020 – 21	FY 2021 – 22	FY 2022 – 23
		Verified		Projected
Post-Retirement Benefits	8,886	7,891	9,211	10,031
<i>Rs. in Millions</i>				

32. Further, the Authority noted that vide para 27 of Determination dated April 5, 2021, the Petitioner was directed the following:

"Since the Authority has been allowing provision for the postretirement benefit to the Petitioner, since FY 2016-17 therefore, the Authority is of the opinion that the Petitioner shall ensure to deposit the differential of the amount of provision allowed to the Petitioner vs. the actual payment made by the Petitioner on this account in the post-retirement benefit created by the Petitioner. In case of failure, the Authority may while determining the next tariff petition deduct the differential amount of provision vs. the actual payment and may also charge a certain financial cost as a penalty for the amount retained by the Petitioner."



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33. The Petitioner in this regard submitted the following in the Tariff Petition:

"Since the Authority has been allowing provision for the postretirement benefit to the Petitioner, since FY 2016-17 therefore, the Authority is of the opinion that the Petitioner shall ensure to deposit the differential of the amount of provision allowed to the Petitioner vs. the actual payment made by the Petitioner on this account in the post-retirement benefit created by the Petitioner. In case of failure, the Authority may while determining the next tariff petition deduct the differential amount of provision vs. the actual payment and may also charge a certain financial cost as a penalty for the amount retained by the Petitioner."

Post Employment Benefits (PEB)					(Mn Rs.)
	2017-18	2018-19	2019-20	2020-21	Total
Charge for Employee Benefits in Statement of Profit & Loss - (A)	4,493	6,357	8,886	7,891	27,627
Employee benefits paid during the year - (B)	2,141	2,737	3,103	3,858	11,839
Difference - (C=A-B)	2,352	3,620	5,783	4,033	15,788
TDR Placed for Fund purpose - (D)					5,000
Balance Amount - (E=D-C)					10,788

WAPDA Hydroelectric main source of revenue stems from sale of power to CPPA(G), which make partial and unreliable payments against WAPDA Power Sale Invoices, due to which Power Sale Receivables from CPPA(G) has accumulated to Rs. 234,144 mln. Despite less and erratic payments from CPPA(G), WAPDA Hydroelectric has managed to invest Rs. 5,000 million as TDRs against the required Rs. 15,788 million. Upon recovery of dues and start of full regular receipts against power Sale invoices from CPPA(G) balance Rs. 10,788 million shall also be recouped besides establishment of Pension Fund"

34. Subsequently, WAPDA was directed by the Authority to provide requisite information/documentary evidence with regards to the TDR. WAPDA, vide letter dated October 5, 2022, submitted its response. The directions of the Authority and WAPDA's response related to TDR is reproduced hereunder:

Details along with documentary evidence for funding the retirement benefits through TDR in compliance with Authority's directions

WAPDA maintains investment in TDR on account of retirement benefits which are accounted for by Actuarial consultant in actuary of post-retirement benefits of WAPDA (Power Wing).

35. Subsequently, when WAPDA, vide email dated November 4, 2022, submitted signed actuarial report for FY 2021 – 22, it was ascertained that WAPDA had dedicated a total of Rs. 10,000 million (of which Rs. 2,000 million was verified from financial statements for the FY 2020-21) as its contribution for post-retirement benefits in pursuance to the Authority's directions in the previous determination. Given that, it was noted that the differential of Rs. 5,788 million still existed. Therefore, the Authority has decided to deduct Rs. Rs. 5,788 million (differential amount on account of post-retirement benefits).



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Repair and Maintenance

36. The Petitioner submitted that regular scheduled daily, weekly and annual preventive/unforeseen R&M activities/schemes of Power Generation and General Plant & Assets as well as Civil structures & other Physical Properties necessary for proper up-keeping and smooth running of the aging Assets of WAPDA Power Stations is carried out. According to the Petitioner, Routine Repair and Maintenance (R&M) of all Hydel Power Stations during FY 2022-23 has been planned as per the manufacturers recommendations within the maintenance hours allowed in the PPA.
37. The breakup of the claimed Repair and Maintenance cost, as provided by the Petitioner, is reproduced hereunder:

	FY 2019 – 20	FY 2020 – 21	FY 2021 – 22	FY 2022 – 23
		Audited (Rs million)		Projected (Rs million)
Fuel Charges	22	19	19	20
Repair and Maintenance	904	1,241	1,776	2,138
Insurance	49	199	116	122
Consultancy	0	1	2	109
Total	976	1,460	1,912	2,389
<i>Rs. in Millions</i>				

38. According to para 32, of the Authority's decision dated April 5, 2021, the amounts claimed by Petitioner for FY 2019 – 20, FY 2020 – 21 and FY 2021 – 22 were allowed subject to adjustment as per actual. Accordingly, the amounts verified and approved by the Authority on account of Repair and Maintenance for FY 2019 – 20, FY 2020 – 21 and FY 2021 – 22 are as follows:

	FY 2019 – 20	FY 2020 – 21	FY 2021 – 22
		Verified (Rs million)	
Fuel Charges	22	19	19
Repair and Maintenance	904	1,241	1,776
Insurance	49	199	116
Consultancy	0	1	2
Total	976	1,460	1,912
<i>Rs. in Millions</i>			

39. However, for FY 2022 – 23 projections, the Petitioner did not provide any specific reasons for claiming such exorbitant increases in Repair and Maintenance and Consultancy sub-heads, therefore, for these two sub-heads, an inflation of 8.9% has been considered while keeping the rates for the rest of the sub-head as per the original claim. The projected figures of the FY 2022-23 will be subject to adjustment as per actual based on the on audited financial statement of that year.
40. Further, WAPDA was directed by the Authority to provide requisite information/documentary evidence with regards to Insurance. WAPDA, vide letter dated October 5, 2022, submitted its response. The Authority's directions and WAPDA's response reproduced hereunder:



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Detailed Breakup, actual coverage and documentary evidence for the cost claimed on account of "Insurance" claimed under the head R&M, including any relevant contracts.

WAPDA Hydroelectric equipment at Power Houses are protected/insured under WAPDA EQUIPMENTS PROTECTION SCHEME (WEPS). WEPS which is a Special Protection Cell working under the supervision of WAPDA Insurance Directorate and a Protection Fund is being maintained by Board of Management WEPS which also fix Insurance Premium Rate that is to be paid per annum to WEPS on written-down Value of Fixed Assets in Operation covered under WEPS Policy. WEPS Policy document appended.

41. Upon scrutiny of documents, the Authority noted that neither the amounts claimed by the Petitioner under the head of insurance could be attributable to the document nor the fact that the amounts claimed under insurance pertain to hydel power stations only. Having said that, the Authority decided not to deduct the insurance amounts requested by the Petitioner at this stage and hereby directs the Petitioner to provide the requisite documentary evidence to the satisfaction of the Authority failing which the insurance amounts will be adjusted.
42. Accordingly, the approved amounts, on account of Repair and Maintenance, work out as follows:

	FY 2019 – 20	FY 2020 – 21	FY 2021 – 22	FY 2022 – 23
	<i>Approved</i> (Rs million)		<i>Projected</i> (Rs million)	
Fuel Charges	22	19	19	20
Repair and Maintenance	904	1,241	1,776	1,934
Insurance	49	199	116	122
Consultancy	0	1	2	2
Total	976	1,460	1,912	2,077
<i>Rs. in Millions</i>				



Administration Costs

43. According to the Petitioner, Administrative Expenses mainly comprise expenses involving payments to other organizations like; Dams & Hydrology monitoring, Survey & Investigation, Security contracts, NEPRA Fees, Office Rent, utility bills, Authority Overheads etc. which cannot be curtailed and have to be paid as per the bill. The Petitioner submitted that the rest of the admin expenses have been proposed with bare minimum increase despite exorbitantly high and volatile inflation rate. Further, according to WAPDA, it has to make payments of Rs. 60 million annually on account of local area security arrangement "NIKAT" to 89 Badraga of Mahsud tribe deployed at Gomal Zam Dam project which it has claimed as Admin costs in Gomal Zam Dam Project.
44. The breakup of Administration costs, as claimed by the Petitioner, is as follows:

	FY 2019 – 20	FY 2020 – 21	FY 2021 – 22	FY 2022 – 23
	<i>Audited</i> (Rs million)		<i>Projected</i> (Rs million)	
Dams and Hydrology Monitoring cost	702	944	689	689

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Survey and Experiment	292	350	372	391
Power, Gas and Water	432	413	592	626
Management/ Authority				
Overheads	993	1,138	1,359	2,435
Vehicle Running Expenses	222	206	271	295
NEPRA Fees	141	157	169	436
Other Operating Expenses	247	261	254	336
Total	3,029	3,469	3,705	5,208
<i>Rs. in Millions</i>				

45. According to para 37 of the Authority's decision dated April 5, 2021, the Authority determined amounts for FY 2019 – 20 and FY 2020 – 21 were subject to adjustment at actual provided the same are lower than the approved budgeted numbers. Based on the adjustment mechanism provided, the station-wise Administration costs of FY 2019 – 20 and FY 2020 – 21 were verified through the audited financial statements and the lower of actual or determined has been approved by the Authority.
46. The Authority, vide letters dated September 6, 2022, and September 30, 2022, directed WAPDA to provide details with regards to certain O&M sub-heads. WAPDA, vide letter dated October 5, 2022, submitted its response. The directions of the Authority and WAPDA's responses are reproduced hereunder:

"Details regarding the number feasibility studies or any other related studies conducted under the heads of, "Other Project Costs" claimed in CWIP and "Survey and Experiment Costs" claimed in Admin Expenses. Also, explain the difference between the two aforementioned heads.

Survey and Investigation is legitimate cost claimed under Admin costs which comprise of expenditures on the activities pertaining to internal research and study for development of prospective/ potential hydropower projects sites including but not limited to the formulation, design, evaluation and selection of possible alternatives for materials, devices, products, processes, systems or services etc. and are recognized as an expense when incurred because in research phase it is not possible to demonstrate that such studies/ activities will generate probable future economic benefits. This treatment is in line with IAS- 38 "Intangible Assets" and also acknowledged as a prudent cost by the NEPRA Authority at Para-v of its decision dated 08-01-2016 in the matter of Motion for Leave for Review on the Determination of WAPDA Bulk Supply Tariff for FY 2015-16.

The development phase is the further advance phase which comes after the research phase. At this point it is possible to demonstrate the availability of adequate technical, financial and other resources to complete the development as well as probable future economic benefits of asset development. Accordingly, the cost of approved technical/ feasibility studies of prospective hydropower project sites which will generate future benefits and expected to develop internally by WAPDA through modification of its Generation License are clubbed as Other Project Costs being part of Capital Works in Progress. Moreover, ongoing/ new CAPEX of in operation Hydel power station which are expected to bring additional economic benefits are also depicted under Other Project Costs and subsequently transferred to Fixed Assets. Details are attached.



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Detailed Breakup, justification and documentary evidence for the cost claimed on account of "Power, Gas & Water" under head Admin Expense

The cost claimed under "Power, Gas & Water" is the amount of bills for the office buildings and infrastructure paid by offices and power stations of WAPDA Hydroelectric paid to the respective service provider including DISCOs, SNGPL, SSGPL etc. which is approximately 1.9% of the total O&M cost. The cost of Power, Gas & Water are not claimed under any other head in the instant tariff petition. Details are attached.

Detailed Breakup, Justification and documentary evidence for the cost claimed on account of "Vehicle Running Expense" under the head of Admin Expenses and the difference between Fuel Charges under the head of "Repair & Maintenance"

Vehicle running expenses under the Admin Expenses purely pertain to operational transport vehicles used at Hydel Power Stations and comprises Repair, Petrol, Oil & Lubricants and Licenses & Insurances of vehicles to keep them on road. Fuel Charges under the head Repair & Maintenance are claimed specifically for fuel consumed in running operational assets of hydel power stations like; DG Sets installed at Power Houses to keep the machinery operational during shut-downs, gentry/mobile cranes, dumpers, fork-lifters, bulldozers, tractors, ambulances etc. Detail of operational assets of Hydel power stations is attached.

Detailed Breakup, justification and documentary evidence for the cost claimed on account of "Other Operating Expense" under the head of Admin Expenses

Various Petty nature admin expenses like; 4% Return on Assets, outside services employed, Travelling Expenses, Advertisement & Periodicals, Communication, Rent / Rates & Taxes, sundry expenses etc. are clubbed as "Other Operating Expenses" which have not been claimed under any other head of account in the instant tariff petition. Details of "Other Operating Expenses" are attached.

47. Further, it may be noted that the Authority during the hearing directed the Petitioner to provide a breakup of the claimed Management/ Authority Overheads. This was also communicated to WAPDA vide letter and reminder to the same dated September 6, 2022, and September 30, 2022, respectively. WAPDA, vide letter dated October 5, 2022, submitted its response in this regard. The Authority's direction and WAPDA's response related to Management/Authority Overhead costs is reproduced hereunder:

Detailed Breakup of the actual costs incurred, Justification and documentary evidence for "Management/Authority Overheads" claimed under the head of Admin Expenses, including, but not limited to, the number of employees (regular and contractual) along with their designations of officers and their respective salaries and any other benefits.

WAPDA Hydroelectric is required to pay Authority Overheads @ 5% of O&M Budget and 1% of Development Budget in compliance of Ministry of Water & Power office order No. 4(4) / B&A dated 25.08.1996 and revised Notification No. 4(4)/2010-B&F dated 15.08.2011. The overheads collected are utilized by WAPDA Authority for meeting its expenses as well as expenses of offices under its control performing centralized functions of General & HR Administration,



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Legal Affairs, Contracts proofing, Employees Welfare, and Transport Division,
Internal Audit etc.

48. The Authority noted that the Petitioner has not provided the requisite information/documentary evidence with regards to actual expenditure on account of Management/ Authority Overheads. Therefore, in order to rationalize Management/ Authority Overheads, the average of the audited figures of the past 5 years, with the exception of FY 14 – 15, has been considered by the Authority.
49. Given the above, the approved numbers on account of Administration Costs are as follows:

	FY 2019 – 20	FY 2020 – 21	FY 2021 – 22
		<i>Approved</i>	
		(Rs million)	
Dams and Hydrology Monitoring cost	689	687	689
Survey and Experiment	291	305	323
Power, Gas and Water	318	413	450
Management/ Authority Overheads	645	645	645
Vehicle Running Expenses	221	204	223
NEPRA Fees	141	146	169
Other Operating Expenses	239	248	252
Total	2,544	2,648	2,751

50. The Petitioner claimed the following increases for FY 2022 – 23 over the previous year:



	<i>Claimed percentage increase</i>	FY 2022 – 23
Dams and Hydrology Monitoring cost		0%
Survey and Experiment		5%
Power, Gas and Water		6%
Management/ Authority Overheads		79%
Vehicle Running Expenses		9%
NEPRA Fees		158%
Other Operating Expenses		33%

51. The Authority noted that no justification of the forecasted increases, except for increases in rates due to inflation, has been provided by the Petitioner. Therefore, the Authority has decided to apply the applicable inflation rate of 8.9% to sub-heads of Administration costs where the claimed rate is higher, except for NEPRA Fees.
52. Further, the Authority has decided to allow retired employees' pension costs, on a preliminary estimate of Rs. 72 million p.a. to WAPDA for FY 2022 – 23 and directed WAPDA to submit complete documentary evidence in this regard.
53. The Authority has also decided to allow the cost of Badraga amounting to Rs. 60 million as per the request of the Chief Badraga Committee, in line with the earlier directions of the Authority during a stakeholder discussion meeting held on October 18, 2022. The cost has been included in Gomal Zam's Other Operating Expenses and shall be paid by WAPDA.
54. Given the above, the approved Repair and Maintenance costs for FY 2019 – 20 to FY 2022 – 23 are as follows:

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	FY 2019 - 20	FY 2020 - 21 <i>Approved</i> (Rs million)	FY 2021 - 22	FY 2022 - 23 <i>Projected</i> (Rs million)
Dams and Hydrology Monitoring cost	689	687	689	689
Survey and Experiment	291	305	323	340
Power, Gas and Water	318	413	450	477
Management/ Authority Overheads	645	645	645	645
Vehicle Running Expenses	221	204	223	242
NEPRA Fees	141	146	169	205
Other Operating Expenses	239	248	252	335
Total	2,544	2,648	2,751	2,933

55. The Authority, vide Determination dated April 5, 2021, decided to benchmark O&M costs for power stations below 100 MW. Accordingly, after applying the same approved benchmarks to the above assessed O&M costs, the following has been approved by the Authority:

	FY 2019-20		FY 2020 - 21		FY 2021 - 22		FY 2022 - 23	
	(Rs million)							
	Reques ted	Benchma rked	Reques ted	Bench marked	Reques ted	Bench marked	Reques ted	Bench marked
Total O&M	18,678	17,193	18,117	17,037	20,575	19,210	24,243	20,961

Issue No. 2: Whether Petitioner's request for allowance of Depreciation charge amounting to Rs 8,025 million is justified?

56. The Petitioner submitted that depreciation charges claimed in the tariff modification petition are justified and duly supported with relevant details and have been worked out on a straight-line method based on the carrying cost of the Fixed Assets at the approved rates. Further submitted that as per policy proportionate depreciation is charged on new assets additions during the year in accordance with International Accounting Standard (IAS-16). Depreciation, according to the Petitioner, is charged at the following rates:

Sr. No	Description of Assets	Depreciation Rates
1	Land	0%
2	Building & Civil Works	2%
3	Power Generation Plant	2%-5%
4	Transmission Equipment	4%
5	Dam & Reservoirs	1%-1.25%
6	General Plant Assets	10%
7	Office Equipment	10%-25%
8	Furniture and Fixtures	10%
9	Transportation Equipment	20%



57. The Petitioner stated that in Para-101 of Tariff Determination for FY 2020-21 dated 05.04.2021, NEPRA did not allow depreciation on certain fixed assets/parts such as "Transmission equipment" and "other assets" for want of plant-wise breakup. Accordingly, the Petitioner submitted that station-wise details of depreciation charges of each group of

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Fixed Assets in Operation including “Transmission Equipment” have been provided with the instant petition.

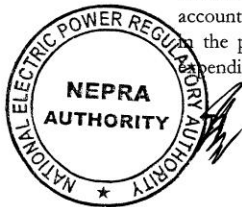
58. The Petitioner stated that depreciation for FY 2019-20, FY 2020-21 and FY 2021-22 is as per audited financial statements, whereas depreciation for FY 2022-23 is projected and given below:

Description	Audited FY 2019-20	Audited FY 2020-21	Audited FY 2021-22	Projected FY 2022-23
		(Rs million)		
Depreciation Charge	7,696	8,060	7,428	8,025

59. The Authority, in the tariff determination for FY 2020-21, allowed the amount of depreciation for the FY 2019-2020 and FY 2020-21 subject to adjustment as per actual based on annual audited accounts of the concerned period. Therefore, the audited financial statements were considered to ascertain depreciation.
60. The breakup of the consolidated determined and claimed depreciation amount is as follows:

Depreciation	FY 2019-2020	FY 2020-21	FY 2021-22
	Rs. Million		
Determined (Based on Projection)	6,826	6,869	
Claimed (Based on Audited Accounts)	7,696	8,060	7,428
Verified from Audited Accounts	7,695	8,060	6,691

61. The Authority noted that in para 50 of the Determination dated April 5, 2021, it disallowed the fixed asset cost of “Transmission Equipment” and “Others Assets” pertaining to power stations owing to the fact the same could not be verified from the audited financial statements. The Authority also noted that it directed the Petitioner to provide plant-wise details duly audited in the next tariff petition for consideration. It was noted that WAPDA in its tariff petition for FY 2022 – 23 provided plant-wise disclosure with regards to Transmission Equipment only, however, the plant-wise breakup of Other Assets was not provided in the audited financial statements. Therefore, in-line with the previous decision of the Authority, fixed asset costs on account of Other Assets for power stations has been disallowed by the Authority.
62. Further, with regards to the Transmission Equipment, the Authority noted that in other hydel cases, it has not allowed the cost of transmission equipment in the generation tariff and since WAPDA is a licensed power generation company, it is be imprudent and inconsistent with the Authority’s earlier decisions to allow the cost transmission equipment in generation tariff. Therefore, the fixed asset cost on account of Transmission Equipment pertaining to power stations has also been disallowed.
63. Further, it was also noted that in case of Golen Gol, which achieved COD in FY 2017-18 and was transferred from CWIP to operational projects by the Authority in the previous determination, the Petitioner has claimed depreciation cost of Rs.5.23 million per annum on account of capital/investment cost of Rs. 4,220 million incurred post-COD. It was noted that in the previous determination, the Authority had not considered such post-COD capital expenditures and on the basis of the same, its depreciation cost has been disallowed.



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64. Accordingly, for FY 2019 – 20, FY 2020 – 21 and FY 2021 – 22, the assessed depreciation costs, after exclusion of Transmission Equipment and Other Assets, work out as follows and the same are approved:

Depreciation	FY 2019-2020	FY 2020-21	FY 2021 – 22
		Rs. Million	
Assessed Depreciation	7,037	7,277	6,691

65. It is pertinent to mention that for determining the tariff for the FY 2021-2022 & FY 2022-23, the assumptions taken by the Petitioner have been considered after excluding Transmission Equipment and Other Assets and the same shall be subject to adjustment as per actual based on the annual audited account for the respective years. The projected approved depreciation for FY 2022-23 is tabulated below:

Depreciation	FY 2022-23
	Rs. Million
Projections	7,273

Ijara Rental

66. Regarding the Ijara Rental, the Petitioner has stated that SUKUK-III has been redeemed during FY 2021-22. In FY 2020-21 & FY 2021-22, Ijara Rental has been taken as per terms of the Ijara Rental Agreements of SUKUK III. According to the Petitioner, Ijara Rentals pertain only to Tarbela Dam Project. The following breakup, as provided by the Petitioner is reproduced hereunder:

Description	Audited FY 2019-20	Audited FY 2020-21	Audited FY 2021-22
		Rs. Million	
Ijara Rental	1,780	1,574	374

67. The Authority, in the tariff determination of 2020-21, allowed the amount on account of Ijara Rental for the FY 2019-2020 and FY 2020-21 subject to adjustment as per actual based on annual audited accounts of the concerned period. Therefore, based on the audited financial statements, the amount of Ijara Rental has been verified and approved as follows:

Depreciation	FY 2019-2020	FY 2020-21	FY 2021 – 22
		Rs. Million	
Determined (Based on Projection)	1,857	1,690	-
Claimed (Based on Audited Accounts)	1,780	1,574	374
Verified from Audited Accounts	1,780	1,574	374

Issue No. 3: Whether Petitioner's request for allowance of WACC based return on power stations amounting to Rs 30,385 million is justified?

68. The Petitioner in the tariff petition stated that the average RAB has been worked out on the average historical cost of Net Fixed Assets in operation after taking into effect additions/transfers to Fixed Assets, depreciation charges and disposal of Fixed Assets. According to the Petitioner, NEPRA has been allowing return for hydel power stations at a benchmark debt-equity ratio of 70%:30%, therefore, in line with NEPRA's approach, debt



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equity ratio for power stations (except T-4 and Golen Gol) has been claimed as 70%:30%. According to the Petitioner, since T-4 and Golen Gol HPPs have been completed and transferred to operation from Capital Work in Progress at D/E ratio of 80%:20% i.e., a benchmark set by NEPRA for development projects, therefore, return for these two projects has been proposed at D/E ratio of 80%:20%.

69. The Petitioner further submitted that NEPRA in its Tariff determination of WAPDA Hydroelectric for FY 2021-21 dated 05.04.2021 at para no.50 had not allowed "Transmission Equipment" and "Other Assets" as part of fixed assets in operation due to lack of plant-wise details. The Petitioner submitted that plant-wise fixed assets details of "Transmission Equipment" and "Other Assets" have been prepared and attached with the tariff petition as an annex and are also included in the Regulatory Asset Base.
70. The Petitioner stated that the Regulatory Assets Base of Hydel Power Stations, Debt/ Equity Ratio, WACC and Return on Investment from FY 2019-20 to FY 2021-22 has been calculated based on audited accounts while incorporating budgeted CAPEX of Hydel Power Stations during FY 2022-22.
71. The Petitioner's Projected Consolidated Net Regulatory Assets Base of Hydel Power Station (for return purposes i.e., excluding financing through a grant) for FY 2022-23 is estimated as Rs. 241,009 million, comprising debt financing of Rs. 176,724 million (73%) and equity, of Rs. 64,285 million (27%) whereas WACC works out as 12.61% against 12.9% determined by NEPRA in tariff determination for FY 2020-21. The consolidated statement, as claimed by the Petitioner, is given below:

WACC for Hydel Power Station	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Rs. Million			
	<i>Audited</i>	<i>Audited</i>	<i>Actual</i>	<i>Projected</i>
Average RAB	265,141	260,689	253,923	247,024
Less: Financing of RAB through Grant	6,055	6,226	5,982	5,860
RAB for Return Purpose	259,086	254,462	247,941	241,164
<u>Financing of RAB</u>				
Average Debt	190,091	186,737	181,920	176,926
Average Equity	68,995	67,725	66,021	64,237
Cost of Debt (%age)	13.538%	13.555%	13.497%	13.501%
ROE (%age)	17.00%	10.00%	10.00%	10.00%
WACC (%age)	14.46%	12.61%	12.57%	12.57%
Debt/Equity Ratio	73:27	73:27	73:27	73:27
(Return on Investment ROI)	37,464	32,086	31,155	30,311

72. The above claims of the Petitioner were considered by the Authority and it was noted that in the cases of Golen Gol and T-4, the Petitioner claimed a capital structure of 80:20 during operations, instead of the Authority's determined debt: equity ratio of 70:30 for during operations phase in the last determination. Since this matter has been settled in the previous determination, a capital structure of 70:30 in the case of Golen Gol and T-4 has been considered by the Authority.



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73. It was also noted that the Authority in para 50 of the Determination dated April 5, 2021, disallowed the fixed asset cost of "Transmission Equipment" and "Others Assets" pertaining to power stations owing to the fact the same could not be verified from the audited financial statements. The Authority further directed the Petitioner provide plant-wise details duly audited in the next tariff petition for consideration. It was noted that WAPDA in its tariff petition for FY 2022 – 23 provided plant-wise disclosure with regards to Transmission Equipment only and the plant-wise breakup of Other Assets was neither provided in the tariff petition nor it was available in the audited financial statements. Therefore, in-line with the previous decision of the Authority, fixed asset costs on account of Other Assets for power stations has been disallowed.
74. Further, with regards to the Transmission Equipment, it is pertinent to mention that in other hydel cases, the Authority has not allowed the cost of transmission equipment in the generation tariff and since WAPDA is a licensed power generation company, it is imprudent and inconsistent with the Authority's earlier decisions to allow the cost transmission equipment in generation tariff. Therefore, the fixed asset cost on account of Transmission Equipment pertaining to power stations has also been disallowed.
75. The cost of debt claimed by the Petitioner, for each power station, has been verified from the audited financial statements of FY 2019 – 20, FY 2020 – 21 and FY 2021 – 22, however, it is important to highlight here that in the previous determinations, the Authority observed that the cost of debt claimed by the Petitioner is on the higher side and accordingly directed the Petitioner to . . . *submit summary to the GoP for modification of the relending rates at actual terms & conditions available to GoP, so that in the next Petition, the cost of debt can be reduced and its benefit can be passed on to the consumer.* However, it was noted that the Petitioner has not submitted any documentary evidence regarding the compliance of the above.
76. For rate of return, the Authority noted that the CCOE in its meeting dated August 27, 2020, decided to revise NEPRA allowing return of all public sector power plants. Within these plants, it was decided that the return of 17% allowed to WAPDA will be reduced to 10%. Since the decision date of CCOE of August 27, 2020, falls in the FY 2021, therefore, the Authority, in its earlier determination, allowed application of revised rates effective from FY 2021. Accordingly, RoE of 10% has been approved in FY 2020 – 2021 and onwards. While calculating plant-wise RAB, a debt-equity ratio of 70:30 has been considered as allowed in previous determinations. For FY 2022 – 23 projections, the claimed costs, subject to above assessments, have been approved which shall be subject to adjustment as per actual on the basis of respective audited financial statements. Accordingly, based on the above assessments, the Authority has decided to approve the following ROIs:





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WACC for Hydel Power Station	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Rs million			
	Audited	Audited	Actual/Audited	Projected
Average RAB	249,972	244,015	237,898	231,666
Less: Financing of RAB through Grant	6,055	6,226	6,029	5,954
RAB for Return Purpose	243,917	237,788	231,869	225,712
Financing of RAB				
Average Debt	170,742	166,452	162,308	157,998
Average Equity	73,175	71,337	69,561	67,714
Cost of Debt (%age)	13.31%	13.31%	13.26%	13.26%
ROE (%age)	17.00%	10.00%	10.00%	10.00%
WACC (%age)	14.41%	12.32%	12.28%	12.28%
Debt/Equity Ratio	70:30	70:30	70:30	70:30
(Return on Investment ROI)	35,159	29,284	28,472	27,728

Issues No. 14: Whether the expected annual generation, and other technical parameters, claimed cost and construction period for ongoing development projects under CWIP are justified?

Issue No. 4: Whether Petitioner's request for allowance of WACC based return on investment on power projects amounting to Rs. 34,265 million is justified?

77. The Petitioner has reiterated that the expected annual generation, technical parameters and construction periods for ongoing development projects are justifiable from many perspectives. According to the Petitioner, WAPDA, does not decide these factors on its own, as international reputable consultants are hired by WAPDA after rigorous international open competition, and then these consultants while conducting the feasibility studies and detailed design studies choose optimum levels of these parameters based on international prudent practices and site conditions of the specific power plant, so NEPRA should feel satisfied that WAPDA neither determines annual generation values, nor the construction periods required for development of any project. In the next screening level, according to the Petitioner, PC-Is containing these important details like generation levels, construction periods and other technical parameters are presented to various government forums for approval like CDWP and ECNEC where experts, after assuring their confidence level on these parameters, accord approval accordingly.

78. For the claimed cost aspect of WAPDA's projects, the Petitioner submitted that it is subject to more multi-layer scrutiny checks, as after passing through PC-I approval process, the cost factor is regularly audited by WAPDA internal audit, government audit and commercial auditors, so only the actual costs which are incurred on any specific projects, gets included in WAPDA's financials and annual accounts prepared by reputable chartered accounting firms and costs appearing in these audited financial statements form the very basis of WAPDA's tariff petition and presented to NEPRA for approval.





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WACC based Return for Power Projects:

79. According to the Petitioner, WAPDA has been developing new power projects with multiple sources of financing. WAPDA submitted that it is actively pursuing its development program and that its prospective projects include Dasu, Keyal Khwar, Tarbela 5th ext. Hydropower projects as well as the multipurpose Diamer Bhasha and Mohmand Dam. According to WAPDA, these projects are also included in IGCEP 21 – 30.
80. According to the Petitioner, Dasu, Diamer Bhasha Dam, and Keyal Khwar HPP are already included in the Generation License of WAPDA whereas upon the direction of NEPRA, a Licensee Proposed Modification (LPM) seeking inclusion of Tarbela 5th Ext. and Mohmand Dam in the existing Generation License of WAPDA Hydroelectric has been filed on 28.02.2022.
81. The Petitioner, vide email dated October 6, 2022, revised its claims with regards to WACC for power projects, on the basis of actual/unaudited numbers of FY 2020 – 21, and subsequently the same were again revisited vide email dated January 17, 2023, based on the audited accounts of FY 2021 – 22. The same are reproduced hereunder:

WACC for Hydel Power Project	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Rs million			
	<i>Audited</i>	<i>Audited</i>	<i>Audited</i>	<i>Projected</i>
Average RAB	136,320	191,618	250,594	438,234
Less: Financing of RAB through Grant	23,368	47,803	59,786	118,941
	112,951	143,815	190,808	319,293
Financing of RAB (Through Debt & Equity)				
Average Debt	79,066	100,671	133,566	223,505
Average Equity	33,885	43,145	57,243	95,788
Debt/Equity Financing Ratio				
Debt	70%	70%	70%	70%
Equity	30%	30%	30%	30%
WACC				
Cost of Debt	9.89%	9.82%	11.10%	11.57%
Return on Equity	17.0%	10.0%	10.0%	10.0%
WACC	12.0%	9.9%	10.8%	11.1%
(Return on Investment ROI)	13,584	14,204	20,552	35,431

82. The Petitioner has submitted that the Regulatory Assets Base (RAB) of WAPDA Hydroelectric includes Average Capital Works in Progress (CWIP). Average RAB for CWIP has been calculated as per NEPRA decisions with the following variables:

- Opening CWIP balances.
- Adding annual additional capital investment in under-development licensed power projects estimated on the basis of approved/ revised PSDP.

Excluding annual IDC being period cost.



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d) Average of the resultant closing balance of CWTP and opening CWTP.

83. Moreover, the Petitioner submitted that as per NEPRA determined percentage for power sector, ROI of DBD @ 49% cost has been included in the instant tariff petition. According to the Petitioner, expenditures incurred for different projects through Grant were not included in RAB for return purposes. The Petitioner submitted that post-COD expenses on T4 & Golen Gol HPP are legitimate and necessary, therefore, expenditure incurred during FY 2019-20 to FY 2022-23 are included in RAB.
84. The Petitioner further submitted that in compliance with NEPRA's decision, instead of actual debt equity ratio, the current tariff petition has been based on debt equity ratio of 80:20.
85. The Petitioner further submitted return on RAB in respect of each Project is calculated exclusively at its respective WACC which transpires from benchmark debt equity ratio of 80:20 contracted cost of debts and return on equity as per GOP decision. According to the Petitioner, the cost of Mohmand Dam Project incurred during FY 2022 – 23 from other than Grant has been included in the RAB.

Diamer Bhasha Dam Project

86. According to the Petitioner, Diamer Bhasha Dam (DBD) Project is a multipurpose project having installed capacity of 4,500 MW situated on Indus River near Chillas (Khyber Pakhtunkhwa & Gilgit-Baltistan). The Petitioner submitted that PC-I of DBD (Land Acquisition & Resettlement) was approved in 2015 and to date almost 90% land has been acquired for the project. The Petitioner also submitted that certain preliminary works for upgradation of surrounding area and welfare of local community as per PC-I approved are also underway.
87. The Petitioner further submitted that PC-I of DBD Dam Part was approved in 2018 whereas, Main Works Contract was awarded to M/S Power China-FWO JV on May 13, 2020. The Contractor has been mobilized and work is in progress at the dam site. The Petitioner also submitted that till now 4.80% physical progress has been achieved. According to the Petitioner, PC-I of Power Generation Facilities of DBD has also been submitted to MoWR on 17.09.2021 which is under approval.
88. In the Determination dated April 5, 2021, the Authority, based on the apportionment of 49% for power wing, determined Rs. 6,568 million and Rs. 7,924 million on account of ROIs for FY 2019 – 20 and FY 2020 – 21, respectively, which were subject to adjustment as per actual based on the respective audited financial statements.
89. The Authority noted that as already mentioned by the Petitioner, the Authority vide para 80 of the Determination dated April 5, 2021, apportioned DBD's costs between power and water wings as 49% and 51%, respectively. Based on that apportionment, the above-mentioned claimed costs have been compared with the audited financial statements for FY 2019 – 20, FY 2020 – 21 and FY 2021 – 22.



The cost of debt in the case of DBD has been verified from the financial statements for the FY 2019-2020, FY 2020-21 and FY 2021 – 22 and for the rate of return, they decided to approve 10% in line with the CCOE's decision. Since the decision date of CCOE of August 27, 2020, falls in the FY 2021, therefore, the Authority, in its earlier determination, allowed

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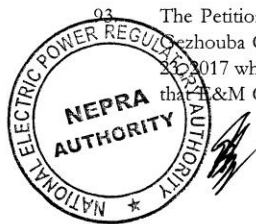
application of revised rates effective from FY 2021. Accordingly, RoE of 10% has been approved in FY 2020 - 2021. While calculating plant-wise RAB, a debt-equity ratio of 80:20 has been approved as allowed in previous determinations. For FY 2022 – 23 projections, the claimed costs have been considered which shall be subject to adjustment as per actual on the basis of respective audited financial statements.

91. Based on the above, the Authority has decided to approve the following WACC and ROI in the case of Diamer Bhasha:

DBD Investment on the basis of 49% share to Power Sector	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Rs million			
WACC for Hydel Power Project	<i>Audited</i>	<i>Audited</i>	<i>Audited</i>	<i>Projected</i>
Average RAB	56,138	74,022	85,125	109,495
Less: Financing of RAB through Grant	16,845	35,732	42,791	45,486
	39,293	38,290	42,334	64,009
Financing of RAB (Through Debt & Equity)				
Average Debt	27,505	26,803	29,634	44,806
Average Equity	11,788	11,487	12,700	19,203
Debt/Equity Financing Ratio				
Debt	70%	70%	70%	70%
Equity	30%	30%	30%	30%
WACC				
Cost of Debt	10.2%	10.2%	10.2%	10.2%
Return on Equity	17.0%	10.0%	10.0%	10.0%
WACC	12.2%	10.1%	10.1%	10.1%
(Return on Investment ROI)	4,804	3,877	4,283	6,476

Dasu Hydropower Project

92. The Petitioner submitted that Dasu HPP Stage-1, having installed capacity of 2,160 MW, is one of WAPDA's prominent projects situated on River Indus. PC-I of Dasu HPP Stage-1 was approved in 2014. However, according to the Petitioner, pace of work on project remained slow due to land acquisition issues which are beyond the control of WAPDA, since it is the sole responsibility of Provincial Govt. of KP/ District Administration of Kohistan Upper to acquire land and hand it over to WAPDA for implementation of the project as per Land Acquisition Act 1894. Resolution of land acquisition issues in 2019 took considerable time and effort which resulted in the delay of the project for almost three (03) years. To date almost 85% of the land required for the project has been acquired including the priority areas required for Main Civil Works. Remaining land, according to the Petitioner, falls in the reservoir area that does not affect the pace of the project, which is also expected to be acquired within the next few months. Overall Preparatory Works are almost 50% complete which include Project Colony, Access Infrastructure and a dedicated 132 KV Dubai-Dasu transmission line submitted the Petitioner.



93. The Petitioner submitted that the Main Civil Works Contract was awarded to M/s China Gezhouba Group Company (CGGC) and work on Dasu HPP Stage-I commenced on June 2017 which was expected to be completed by June 2023. The Petitioner further submitted that E&M Contract was awarded to M/s Power China-General Electronics JV in Feb 2021

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with expected completion in March 2026. According to the Petitioner, the pace of work on main civil works remained slow initially, however, after resolution of land acquisition issues in 2019, work on the project was going on smoothly and gaining momentum amid COVID-19 Pandemic outbreak until July 14, 2021 when an unfortunate terrorist attack took place on a bus of Chinese Contractor staff resulting in several casualties and injuries which caused complete suspension of work for the next almost four months. The Petitioner submitted that after concrete efforts of WAPDA and GoP, M/s CGGC (Main Work Contractor) resumed the halted work on October 25, 2021, albeit in a phased manner and is expected to get fully mobilized during 1st half of 2022. This delay, according to the Petitioner, has badly impacted the construction schedule as the major milestone of River Diversion which was earlier scheduled in Nov-Dec 2021 has been slipped to Dec-2022 causing a one-year delay. According to the information provided by the Petitioner, the overall Physical progress achieved to date is 12%.

94. Due to Land acquisition issues, COVID Pandemic, and terrorist incidents which are all beyond the control of WAPDA, the Petitioner submitted that the expected COD of Dasu Stage-1 HPP has been pushed till FY 2026-27. Accordingly, the Petitioner has requested the Authority to also allow the extension in COD.
95. The Authority noted that in its Determination dated April 5, 2021, the Authority determined Rs. 6,169 million and Rs. 10,847 million on account of ROIs for FY 2019-20 and FY 2020-21, respectively, which were subject to adjustment as per actual based on the respective audited financial statements.
96. The Authority, vide letters dated September 6, 2022, and September 30, 2022, directed WAPDA to provide, among others, EPC and other relevant contracts for projects under development which the Petitioner has included in CWIP. The Petitioner, vide letter dated October 5, 2022, submitted its response.
97. Based on the information provided by the Petitioner, the Authority decided to allow WACC based return to Dasu hydropower project and further decided to restrict Dasu's total cost and construction period to Rs. 288.36 billion and 68 months, respectively.
98. Based on the above, the Authority has decided to approve the following WACC and ROI in the case of Dasu Hydropower project:

WACC for Dasu Hydropower Project	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Rs million			
-	<i>Audited</i>	<i>Audited</i>	<i>Audited</i>	<i>Projected</i>
Average RAB	58,920	84,250	115,675	166,338
Less: Financing of RAB through Grant				
	58,920	84,250	115,675	166,338
Financing of RAB (Through Debt & Equity)				
Average Debt	41,244	58,975	80,972	116,436
Average Equity	17,676	25,275	34,702	49,901
Debt/Equity Financing Ratio				
Debt	70%	70%	70%	70%



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Equity	30%	30%	30%	30%
WACC				
Cost of Debt	8.9%	8.9%	10.9%	10.9%
Return on Equity	17.0%	10.0%	10.0%	10.0%
WACC	11.3%	9.2%	10.6%	10.6%
(Return on Investment ROI)	6,656	7,748	12,295	17,679

Keyal Khwar HPP

99. According to the Petitioner, Keyal Khwar HPP has an installed capacity of 128 MW and is located on Keyal Khwar Nallah of the Indus River in Lower Kohistan District of Khyber Pakhtunkhwa. WAPDA submitted that the contract for civil works was awarded to M/S Sinohydro-Hajvairy JV which was terminated due to non-performance. The Petitioner further submitted that NEPRA in its Tariff determination dated 05.04.2021 for FY 2020-21 has also disallowed ROI due to the fact that bidding process has been annulled and alternate financing arrangements after withdrawal of lender are not available.
100. Now, WAPDA submitted that Re-Tendering of Civil and E&M contracts is under process and 3rd Revised PC-I amounting Rs. 49,648.67 million is cleared by MoWR and forwarded to the Planning Commission for approval. The Petitioner submitted that the Donor Agencies have also been approached through EAD, who have expressed their interest to finance the project and enter into agreement(s) once 3rd Revised PC-I is approved. Till now, according to the Petitioner, the project has achieved 10% physical progress.
101. The Authority noted that the Petitioner has not claimed any amount on account of Keyal HPP ROI.
102. The Authority also noted that in the previous determination, the Authority owing to the fact that the project has not materialized since the bidding process for the E&M equipment contractor has been annulled by WAPDA Hydroelectric and EIB has withdrawn its loan therefore, the Authority disallowed the ROI allowed previously and the period under review.
103. Based on the submission of the Petitioner, it is evident that no significant progress has been made with regards to the project's PC – I approval, E&M bidding and financing arrangements, therefore, the Authority has not considered the project in the instant tariff determination.

Tarbela 5th Extension

104. According to WAPDA, Tarbela 5th Extension Hydropower Project has generation capacity of 1530 MW with three generating units of 510 MW each and is being constructed on Tunnel No. 5 of Tarbela Dam with approved PC-I of US\$ 807 million with following Financing Arrangements:

• World Bank + AIIB	US\$ 690 Million
• WAPDA	US\$ 109 Million
• NTDC	US\$ 8 Million



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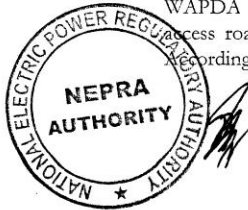
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105. The Petitioner submitted that the project upon completion will provide 1.347 billion units of low-cost hydel electricity to the National Grid on average every year. With completion of Tarbela 5th Extension Hydropower Project, installed capacity at Tarbela Dam will rise from 4888 MW to 6418 MW. The contract for E&M works has been awarded to JV of M/s Harbin Electric Intl and M/s Harbin Electric Machinery, while Transmission Line contact is undertaken by NTDC.
106. The Authority, vide letters dated September 6, 2022, and September 30, 2022, directed WAPDA to provide, among others, EPC and other relevant contracts for projects under development which the Petitioner has included in CWIP. The Petitioner, vide letter dated October 5, 2022, submitted its response.
107. Given the above, the Authority approved the following WACC based return to T-5 hydropower project and further decided that the construction timelines and cost shall be fixed during the next tariff petition. Given the above, the Authority has approved the following in the case of T-5:

WACC for T – 5 Hydropower Project	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Rs million			
	<i>Audited</i>	<i>Audited</i>	<i>Audited</i>	<i>Projected</i>
Average RAB	418	5,708	13,539	22,435
Less: Financing of RAB through Grant	-	-	-	-
	418	5,708	13,539	22,435
Financing of RAB (Through Debt & Equity)				
Average Debt	293	3,996	9,477	15,705
Average Equity	125	1,712	4,062	6,731
Debt/Equity Financing Ratio				
Debt	70%	70%	70%	70%
Equity	30%	30%	30%	30%
WACC				
Cost of Debt	12.0%	12.0%	12.0%	12.0%
Return on Equity	17.0%	10.0%	10.0%	10.0%
WACC	13.5%	11.4%	11.4%	11.4%
(Return on Investment ROI)	56	651	1,543	2,558

Mohmand Dam Hydropower Project

108. WAPDA submitted that Mohmand Dam HPP with generation capacity of 800 MW is located on Swat River about 5 km upstream of Munda Head Works in Mohmand Tribal District, KP. According to the Petitioner, the project commenced on September 20, 2019 and the main works contract was awarded to a joint venture of M/S China Gezhouba Group Company (CGGC) and M/S Descon. Mohmand Dam is a multipurpose project and offers numerous benefits to the economy besides 700 MW of hydropower generation including flood mitigation 16737 acres of additional agriculture land, socio-economic uplift of people of the area. WAPDA submitted that the Land for the project is fully acquired and work on permanent access roads, Project Colony, Diversion & Access Tunnels Spillway etc. are in Progress. According to the Petitioner, the physical progress of the project is 15.18%.



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109. The Authority, vide letters dated September 6, 2022, and September 30, 2022, directed WAPDA to provide, among others, EPC and other relevant contracts for projects under development which the Petitioner has included in CWIP. The Petitioner, vide letter dated October 5, 2022, submitted its response.
110. Given the above, the Authority has decided to allow WACC based return to Mohmand Hydropower project and further decided that the construction timelines and cost shall be fixed during the next tariff petition. Given the above, the Authority has approved the following in the case of Mohmand:

WACC for Mohmand Hydropower Project	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Rs million			
	<i>Audited</i>	<i>Audited</i>	<i>Actual/Audited</i>	<i>Projected</i>
Average RAB	-	-	-	91,972
Less: Financing of RAB through Grant	-	-	-	55,540
	-	-	-	36,432
Financing of RAB (Through Debt & Equity)				
Average Debt	-	-	-	25,502
Average Equity	-	-	-	10,930
Debt/Equity Financing Ratio				
Debt	70%	70%	70%	70%
Equity	30%	30%	30%	30%
WACC				
Cost of Debt	15.0%	15.0%	15.0%	15.0%
Return on Equity	17.0%	10.0%	10.0%	10.0%
WACC	0.0%	0.0%	0.0%	13.5%
(Return on Investment ROI)	-	-	-	4,918

Tarbela 4th Extension & Golen Gol HPPs

111. The Petitioner submitted that the Authority in its Tariff Determination dated 05.04.2021 for WAPDA Hydroelectric for FY 2020-21 disregarded investment made post-COD in T-4 and Golen Gol HPP for the purpose of computing WACC-based return while observing that WAPDA has not submitted evidence that substantiates/justify such transactions.
112. WAPDA requested an amount of Rs. 4,338 million on account of ROI for the periods from FY 2019-20 to FY 2022-23 and submitted that in this regard it may be mentioned that Tarbela 4th Extension Project has been designed to operate the powerhouse through raised intake structures of existing tunnel-4. According to WAPDA, the project was substantially completed on 30-06-2018 and Powerhouse was available for operation through the existing lower intake of Tunnel-4 despite the non-completion of raised intakes due to reservoir level constraints. The Petitioner submitted that energy was generated through Lower intake during the high flow season of 2018-19. According to the Petitioner, work on Raised intakes of Tunnel-4 was continued in parallel from June 2018 to 2022.



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113. The Petitioner further submitted that it is pertinent to mention that raising of existing intake of Tunnel-3 was also part of this project due to the anticipated delta pile-up in future. So, according to the Petitioner, the raised intake will provide maximum energy in the long run. WAPDA submitted that work is only possible during the low flow season when water recedes and that during high flow season energy is generated. According to the Petitioner, during the Year 2019-20 permanent plugging of lower intakes was completed and during 2020-21 trash racks were installed during low flow season. Presently, WAPDA submitted that work is being carried out on removal of rock barriers around raised intakes and that the remaining minor punch list items will be finished by the end of financial year 2022-23.
114. Regarding 108 MW Golen Gol HPP, the Petitioner requested an amount of Rs. 678 million on account of ROI for the periods from FY 2019-20 to FY 2022-23 and submitted that it was completed and transferred to Fixed Assets in Operation in FY 2018-19. The Petitioner further submitted that Post COD expenses on Golen Gol HPP include payments in respect of leftover cases of affectees through concerned DC office, cases in Arbitration, and Retention Money are logical/ legitimate. Moreover, according to the Petitioner, successive GLOF incidents post COD in the project area which are beyond the control of WAPDA also necessitates several rehabilitation and preventive works for restoration of full generation capacity of the project which are underway.
115. The Authority noted that in para 68 of the determination dated April 5, 2021, rejected the Petitioner's claim on account of post-COD cost of funds on investments in Tarbela 4th Extension & Golen Gol HPPs by stating the following:
- "On the issue of claiming the cost of funds on investment appearing post-COD in the accounts, the Authority observed that the Petitioner has not submitted evidence that substantiates/justify such a transaction other than arguing that it has been actually incurred and reflected in the accounts. In the instant case, the Authority is being constrained to disregard investment made post COD for the purpose of computing WACC based return."*
116. Given the above, as already decided by the Authority in para 68 of the determination dated April 5, 2021, the Authority has decided not to allow the post-COD costs for T-4 and Golen Gol projects.

Mangla, Warsak Rehabilitation and Others

117. According to the Petitioner, in order to secure and boost the life of the present capacity of Mangla & Warsak Hydel Power Stations replacement, refurbishment and Up-gradation activities have been initiated as per the recommendations of the feasibility studies expenditures incurred on these activities have also been included in CWIP. The Petitioner submitted that Mangla Refurbishment project has been mainly financed through USAID Grant and AFD loan, while WARSAK Rehabilitation is being financed through AFD loan, KFW loan, and EU Grant. According to the Petitioner, despite Covid pandemic restrictions during the last two years. The Petitioner submitted that it managed to keep on moving with Mangla Refurbishment and Warsak Rehabilitation projects and achieve physical progress of 53% & 14%, respectively.
118. The Authority, vide letters dated September 6, 2022, and September 30, 2022, directed WAPDA to provide, among others, EPC and other relevant contracts for projects under





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development which the Petitioner has included in CWIP. The Petitioner, vide letter dated October 5, 2022, submitted its response.

119. Based on the information provided, the Authority has decided to restrict the ROI/WACC based return pertaining to Warsak till FY 2019 – 2020 (Rehabilitation completion period) and further decided to allow ROI/WACC based return pertaining to Mangla Rehabilitation but restrict the same till FY 2022 – 23. Based on the above, the Authority has approved the following:

	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Rs million			
WACC for Mangla Rehabilitation	<i>Audited</i>	<i>Audited</i>	<i>Audited</i>	<i>Projected</i>
Average RAB	9,038	13,402	17,253	21,886
Less: Financing of RAB through Grant	6,093	10,958	15,376	16,296
	2,946	2,444	1,877	5,590
Financing of RAB (Through Debt & Equity)				
Average Debt	2,062	1,711	1,314	3,913
Average Equity	884	733	563	1,677
Debt/Equity Financing Ratio				
Debt	70%	70%	70%	70%
Equity	30%	30%	30%	30%
WACC				
Cost of Debt	12.0%	12.0%	12.0%	12.0%
Return on Equity	17.0%	10.0%	10.0%	10.0%
WACC	13.5%	11.4%	11.4%	11.4%
(Return on Investment ROI)	398	279	214	637

	FY 2019-20
	<i>Audited</i>
WACC for Warsak Rehabilitation	Rs million
Average RAB	1,104
Less: Financing of RAB through Grant	
	1,104
Financing of RAB (Through Debt & Equity)	
Average Debt	773
Average Equity	331
Debt/Equity Financing Ratio	
Debt	70%
Equity	30%
WACC	
Cost of Debt	15.0%
Return on Equity	17.0%
WACC	15.6%
(Return on Investment ROI)	172



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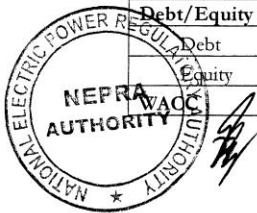
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120. However, in the case of "Others", the Authority in para 94 of the determination dated April 5, 2021, directed the Petitioner to share proper details and justification of each subhead of it to be considered for assessment of ROI in the next tariff petition.
121. Regarding the above directions of the Authority, the Petitioner submitted that the number of WAPDA Hydroelectric projects are at inception stage / feasibility stage and expenditures on these projects are clubbed under subhead "Others". According to the Petitioner, the provision of details of these projects in Financial Statements will make them bulky, therefore duly audited figures of these projects have been clubbed on the face of Financial Statements under the subhead "Others".
122. Further, the Petitioner in this regard also provided the breakup of CWIP of Others which is reproduced hereunder:

Other Projects - Capital Work In Progress				
Rs. In '000'				
Inception Stage Projects	Name of Project	2019	2020	2021
	Tarbela 5th Extension Hydro Power Project - (TXF)	63,019	773,507	10,642,430
	Bunji H/Power Project-BPP	2,132,747	2,132,747	2,132,747
	Thakot HPP (THP)	769,216	988,800	991,777
	Pattan HPP (PPD)	575,851	575,851	575,851
	Phandar Hydro Project-PHP	125,927	125,927	125,927
	Shyok Dam Multipurpose Project- (SDM)	126,571	130,841	130,774
	Other Projects	771,911	2,100,872	2,776,787
	Total	4,565,242	6,828,545	17,376,293

123. Given the above, the Authority has decided to disallow the ROI/WACC based return pertaining to Other Projects as the expenditure on this account relates to future hydro power projects' feasibility and related expenses which are at inception stage and not part of the Petitioner's license.
124. Based on the above discussions, the overall allow ROI of all projects combined is given hereunder:

	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
WACC for Hydel Power Project	Rs million			
	Audited	Audited	Audited	Projected
Average RAB	125,619	177,382	231,592	412,126
Less: Financing of RAB through Grant	22,937	46,690	58,167	117,322
	102,682	130,692	173,425	294,804
Financing of RAB (Through Debt & Equity)				
Average Debt	71,877	91,484	121,397	206,363
Average Equity	30,805	39,208	52,027	88,441
Debt/Equity Financing Ratio				
Debt	70%	70%	70%	70%
Equity	30%	30%	30%	30%





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Cost of Debt	9.53%	9.44%	10.82%	11.35%
Return on Equity	17.0%	10.0%	10.0%	10.0%
WACC	11.8%	9.6%	10.6%	10.9%
(Return on Investment ROI)	12,086	12,554	18,335	32,268

Issue No. 5: Whether other income claimed to be Rs. 767 million is justified?

125. The Petitioner submitted that the actual other income derived from “assets other than financial assets” for the period from FY 2021-2022 to FY 2022-23 against the NEPRA determined for FY 2021. Further submitted that other incomes during the FY 2019-20, FY 2020-21 and FY 2021 – 22 have been taken as per the audited accounts whereas for FY 2022-23 other income is assumed at the same level as FY 2020-21. The breakup of other income claimed by the petitioner is given hereunder:

	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Rs million			
Misc. Income	(556)	(797)	(536)	(536)

126. The Petitioner subsequently in its response on this specific issue submitted that the claim of other income is justified. Other Income accruing from “assets other than financial assets” mainly comprising amortization of grants and income from the sale of scrap has been taken and actual other income of Rs.767 million derived from “assets other than financial assets” during FY 2020-21 as per the audited accounts has been assumed at the same level during FY 2021-22 & FY 2022-23.
127. The Authority, in the tariff determination of WAPDA for the FY 2020-21, allowed other income amounting to Rs. 698 million for the FY 2019-20 and 2020-21, respectively. The allowed amount was subject to adjustment as per actual based on audited accounts of the respective years. The other income allowed was proportionate based on the capacity of each power station to show its impact on the tariff of each power station.
128. The other incomes for the FY 2019-20, 2020-2021 and FY 2021 – 2022 have been verified from the annual audited accounts of the respective years. However, it was observed that the total of the other income for the FY 2020-21 as per the audited accounts (Rs. 797.458 Mln) is different from the figure inserted in the tariff model (Rs. 767 million). On inquiring about this anomaly, the officials of the WAPDA responded that the figure in the tariff model is a mistake and has been rectified in the updated tariff model and the same may be considered. The breakup of the approved/verified cost for the FY 2019-2020 to FY 2021-2022 is tabulated below:

Other Income	FY 2019-2020	FY 2020-21	FY 2021 – 22
	Rs. Million		
Determined (Based on Projection)	698	698	-
Claimed (Based on Audited Accounts)	556	797	536
Verified from Audited Accounts	556	797	536



129. It is pertinent to mention that for determining the tariff for FY 2022-23 as per practice in the past, the figures of the last FY audited accounts are assumed as for projection, therefore in

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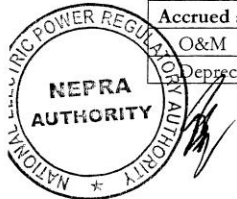
the instant case the figure of Rs. 536 million is assumed for projection which will be subject to adjustment as per actual based on the annual audited account for the respective years. Other Income for FY 2022-23 approved by the Authority is tabulated as below:

Other Income	FY 2022-23 Rs. Million
Projections (based on the Audited Accounts FY 2021-22)	(536)

Issue No. 6: Whether Petitioner's request for allowance of Regulatory Gap amounting to Rs. 26,285 million is justified?

130. According to the Petitioner, the Regulatory Revenue Gap has been calculated based on the audited accounts from FY 2019-20 & FY 2020-21 and for FY 2021-22 is based on 12 months actual numbers. The Petitioner submitted that the Regulatory Revenue Gap has mainly arisen due the following reasons:
- The prudently incurred actual O&M expenses were higher than estimates allowed by NEPRA while determining revenue requirement.
 - Return & Depreciation on some classes/parts of Fixed Assets in operation were not allowed by NEPRA for want of supplementary details which are now provided.
 - Actual additions to the Capital Work in Progress (CWIP) remained higher than the estimates.
 -
 - Late determination of tariff for FY 2020-21 coupled with its late notification by the GoP in Official Gazette render WAPDA Hydroelectric unable to apply the tariff whole agreement year.
131. Based on the above, the summary of the regulatory gap of Rs. 26,285 million, as claimed by the Petitioner, is reproduced hereunder:

Consolidated Revenue Gap	2019-20	2020-21	2021-22
NEPRA Determined	Rs million		
O&M	15,937	17,622	17,622
Depreciation (At Carrying Cost)	6,826	6,869	6,869
Ijara Rental	1,857	1,690	1,690
Return on Investment	32,033	28,330	28,330
Provision for Future Development	14,354	21,030	21,030
Misc. Income	(698)	(698)	(698)
Total	70,308	74,843	74,843
Accrued as per Audited/Provisional			
O&M	18,678	18,117	21,358
Depreciation (At Carrying Cost)	7,696	8,060	8,058



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DETERMINATION OF THE AUTHORITY IN THE MATTER OF
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Ijara Rental	1,780	1,574	746
Return on Investment	37,464	32,085	31,234
Provision for Future Development	12,781	14,179	20,328
Misc. Income	(556)	(767)	(767)
Revenue Gap	-	-	-
	77,842	73,248	80,958
Revenue Gap			
O&M	2,741	495	3,737
Depreciation (At Carrying Cost)	870	1,191	1,189
Ijara Rental	(77)	(116)	(944)
Return on Investment	5,431	3,755	2,904
Provision for Future Development	(1,572)	(6,851)	(702)
Misc. Income	142	(69)	(69)
Revenue Gap	-	-	-
	7,534	(1,595)	6,114
Total Revenue Gap			
NEPRA det. Revenue (To be Billed)	70,308	74,843	74,843
Sales Revenue (Actually Billed)	62,764	64,348	71,466
Gap due to late notification	7,545	10,495	3,377
(+) Gap (Audited-NEPRA det)	7,534	(1,595)	6,114
Total Revenue Gap Accrued	15,079	8,901	9,491
(-) Rev. Gap provisionally determined by NEPRA	7,186	-	-
R. Gap Claim for this Petition	7,893	8,901	9,491

132. As per the discussion in the preceding paragraphs, the approved revenue gap works out to be negative Rs 2768 million. Since the Authority has decided to shift tariff of smaller older and non - performing power plants to take & pay as discussed in the decision, its corresponding revenue gaps which collectively amounts to negative 103 million in nature is thus being allocated on MW to power stations which have two part tariffs.

Issue No. 7: Whether the Petitioner's request for payment of NHP at the uniform rate of Rs. 1.10/kWh is justified?

133. The Petitioner submitted that the payment of NHP at a uniform rate of Rs. 1.10/kWh is justified as NEPRA Authority in its determination dated 05-04-2021 as well as in the revised decision dated 07-06-2021 allowed payment of NHP @ Rs. 1.10/kWh which were notified by GoP on 18-05-2021 and 18-10-2021 respectively. Subsequently, GoKP filed a Motion for Leave for Review (MLR) dated 30.04.2021 for revision of the above decision. After consideration of GoKP's contention, NEPRA Authority issued a revised determination dated 23.08.2021 and provisionally allowed two (02) separate rates for payment of NHP to the provinces i.e., Rs.1.404/kWh for power station situated in KPK and Rs.1.337/kWh for power station situated in Punjab, with the following directions imparted at para-3 & 4 of order:



Para-3:

The GoKP (Petitioner) shall approach CCI to obtain clear guidelines on the issue of NHP and notification (if any) within six months of notification of this decision, till such time.

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DETERMINATION OF THE AUTHORITY IN THE MATTER OF
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- a) "NHP Regular" rates as stated shall be applicable. In case the Petitioner fails to obtain an explicit decision of CCI on NHP and its indexation (if any) then the "NHP Regular" shall be paid at Rs 1.1 per kWh to the provinces.
- b) "NHP Arrears" as stated shall be applicable. In case the Petitioner fails to obtain an explicit decision of CCI on NHP and its indexation (if any) then the "NHP Regular" shall be paid at Rs 1.10 per kWh to the provinces and no payment shall be charged on this account, however, for Gomal Zam HPP, "NHP Arrears" shall be paid @ Rs.454.646 per kW per month.

Para-4:

Any excess payment made (due to the application of 5% indexation) to the provinces as a result of the failure of the Petitioner to obtain clear guidelines on NHP from CCI shall be adjusted in the next tariff determination of WAPDA Hydroelectric.

135. According to the Petitioner, the GoP has not yet notified the revised NEPRA decision dated 23.08.2021 and 06 months' time limit stipulated in the above NEPRA decision has also expired. Therefore, payment of NHP to the provinces has been requested by WAPDA at the uniform rate of Rs.1.10/kWh.
136. The Authority noted that it has already decided the matter via its decisions dated September 9, 2022, and December 29, 2022, wherein 5% indexation over Rs. 1.10/kWh was maintained subject to adjustment if any in the light of CCI's decision. Accordingly, an arrear amount as estimated as Rs. 19.05 billion and Rs. 5.27 billion for KPK and Punjab province respectively is being allowed which shall be subject to adjustment in the next tariff petition in case of any under or over recovery than the actual number. the KP and Punjab NHP arrears have been allocated on MW basis to respective province wise plants.

Issue No. 8: Whether WUC, at par with NHP paid to provinces at Rs. 1.10/kWh, for Mangla HPP, NJ HPP and any other future public sector projects of AJK is justified?

137. The Petitioner submitted that WAPDA Hydroelectric has been making payment of Water Usage Charges (WUC) to GoA&K @ Rs.0.15/kWh on the generation of Mangla Hydel Power Stations, in terms of clause 5.6 of the Mangla Dam Raising Agreement 2003.
138. Subsequently, ECC in its decision dated 20-03-2019 notified vide MoWR letter dated 28.03.2019, decided that:

"Water Usage Charges (WUC) @ Rs.1.10/ kWh should be allowed on Mangla HPP, NJHPP and any other future public sector power projects, to AJK at par with NHP paid to the provinces. Any future revision in the rate of NHP for provinces shall also apply to WUC for AJ&K."

139. The Petitioner submitted that in order to implement the above ECC decision, WAPDA filed a Tariff Modification Petition dated 28-11-2019 for revision /enhancement of WUC rates payable to GoA&K at par with the rate of NHP payable to provinces. However, the said WAPDA request was not acceded by NEPRA Authority with the observation that payment of WUC to AJK was agreed in MoU signed at the time of Mangla Dam Raising Project therefore the same should first be amended.



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140. According to the Petitioner, now requisite amendment in Mangla Dam Raising Agreement of 2003 has been made which is notified vide MoWR letter dated 28-02-2022. Since the NEPRA requirement with reference to Mangla HPS (included in the generation license of WAPDA Hydroelectric) has been fulfilled, therefore payment of WUC to AJK on the generation from Mangla HPS has been proposed @ Rs.1.10/kWh at par with the NHP payable to the provinces.
141. The Petitioner further submitted that, however, Neelum Jhelum HPP is not included in the generation license of WAPDA Hydroelectric and has no linkage whatsoever with the instant tariff modification petition. Similarly, payment of WUC to Public Sector Power Projects of AJK in future may be dealt with by NEPRA on a case to case basis.
142. The Authority, vide decision dated July 23, 2020, in the matter of tariff modification petition filed by WAPDA Hydroelectric for revision of NHP/WUC payable to Government of AJ&K on generation from Mangla rejected the enhancement of the WUC and relevant extracts of the decision leading to the rejection are reproduced hereunder:

Whether Net Hydel Profit (NHP) can be provided to AJ&K within the ambit of the Constitution of Pakistan?

The Petitioner during the hearing as well as in writing submitted that, NHP is paid to the Provinces under Article 161(2) of the Constitution of Islamic Republic of Pakistan whereas, Water Usage Charges (WUC) are paid to other units of the Federation like AJ&K and are covered in Article (1) of the Constitution of Pakistan, as per GoP policy to ensure National harmony and parity between units of Federation.

The Authority considered the arguments put forward by the Petitioner both written and oral during the hearing and observed that the issue of application of WUC rate (as mentioned in Power Generation Policy 2015) and NHP on Federal Government owned plants located in the territory of AJ&K also emerged during the proceedings of tariff petition of Neelum Jhelum Hydro power project which is also located in the territory of AJ&K. In that proceeding the Petitioner (Neelum Jhelum Power Company) requested to allow water use charge at a rate of Rs 0.425 per kWh to the project. The Authority considered this request and accordingly rejected it based on the argument which were reflected in the para 5.7 of Determination in the matter of Tariff Proposal submitted by CPPA-G for import of 969 MW from Neelum Jhelum Hydropower Project dated November 19, 2018. The para 5.7 of the said determination is reproduced as under:

5.7 The Authority also considered whether the Water Use Charge (WUC) is payable by the project to AJK government under the applicable law/ GOP policy. It was noted that as per clause 5.3 of Power Generation Policy 2015, WUC @ Rs 0.425 per kWh is payable by private projects to the Provinces/AJK/GB, whereas, for public sector projects, NHP is payable. The Authority understands that the instant Project is established in SPV mode, however the Project itself is government owned and no private equity investment has been injected. Further AJK is not entitled to payment of NHP as per the interpretation of the Constitution. Hence, as per the strict definition of law, it can be concluded that the Project is neither entitled for WUC nor NHP. In the opinion of the Authority, there is no denial of the fact that a region where hydro stations are situated provinces/regions ought to get a



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payment for use of its resources. The Authority considers that this specific Project unfortunately falls in the grey area of law where both WUC and NHP is not applicable and its component can't be allowed at this stage. The Authority, however considers that the Seller may take up this issue at the relevant forum for its early resolution.

Therefore, the Authority is of the view, that for NHP to be given, the power houses, owned and operated by federal government have to be situated in the province, and AJK is not the province as per the Constitution of Pakistan therefore, enhancing current WUC rate of Rs 0.15 per kWh to the NHP rate of Rs 1.10 per kWh is not justified.

Whether the necessary approvals have been obtained for application of revised Water Use Charge (WUC) on Mangla Power Station? & whether the relevant agreements between GoP and GoAJK for application of Water Use Charge on generation from Mangla have been amended?

The Petitioner during the hearing as well as in its written comments stated that, the instant petition seeking revision of Water Usage Charge rate for Mangla Power Station has been filed in line with the decision of the Economic Coordination in case # 76/11/2019 dated: 20.03.2020 and upon directions of Ministry of Water Resources. The Petitioner further stated that as per the ECC decision, Agreement is to be signed between the Government of AJK and other stakeholders of Pakistan and that, Government of AJK has prepared a draft agreement and submitted it to the Ministry of Water Resources, which is under review at different forums.

The Authority is of the considered opinion that, the payment of Water Usage Charges (WUC) to AJK is agreed in the MoU signed at the time of Mangla Dam Raising Project @ Rs.0.15 per kWh on generation of power from Mangla Power Station in line with the GoP Power Policy 2002, which has been accordingly incorporated for payment of WUC to AJK in the tariff of WAPDA Hydro Electric. This warrants that if any change in rate is to be incorporated in the WAPDA hydroelectric tariff, the underlying agreement i.e. Mangla Dam Raising agreement has to be amended first and the same has also been stated in the above-mentioned ECC decision, which is reproduced as under:

"ix. An agreement incorporating the above recommendation may be signed between the Government of AJK and other stakeholders of the Government of Pakistan, amending the Mangla Raising Agreement of 2003 to the extent of WUC and terms of power supply to AJK."

The Authority noted that the Mangla Raising Agreement of 2003 is yet to be amended, therefore, in the absence of revision in the base agreement; revising the rate from the current Rs. 0.15 per kWh is not justified at this stage.

143. The Amendment in the Mangla Raising agreement dated February 28, 2022, as submitted by the Petitioner provides the following details:





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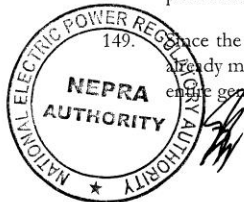
WHEREAS, pursuant to the decision of the Economic Coordination Committee (ECC) of the Federal Cabinet, Government of Pakistan dated March 20, 2019, the Parties hereby agree to substitute Sub-Clause 5.6 of Clause-5 of the Agreement, as under:

- “5.6 (a) Water Use Charges (WUC) @ Rs. 1.10/kWh should be allowed to the Government on Mangla Hydro Power Project prospectively as well as Neelum Jhelum Hydro Power Project, and any other future public sector hydro power project, in Azad Jammu and Kashmir (AJ&K), at par with Net Hydel Profit (NHP) paid to the provinces. Any future revision in the rate of NHP for provinces shall also apply to WUC for AJ&K;
- (b) WUC at the revised rate of Rs. 1.10/kWh shall be paid prospectively only, once the recovery through tariff begins, after tariff determination by NEPRA. This arrangement shall not have retrospective effect.”

144. Given the above, the Authority has decided to apply the revised rate of WUC prospectively from the date of the amendment to Mangla Raising Agreement dated February 2022. Further, the Authority has decided to apply the rate of Rs. 1.1/kWh with future indexations in line with NHP indexation.
145. The Authority has also decided to allow WUC arrears amounting to Rs. 354.04 million which pertains to the period (18.10.2021 to 26.05.2022) for which no WUC rate for Mangla was mentioned in the determination.

IRSA Charges

146. According to the Petitioner, the Authority in the tariff determination dated April 5, 2021, determined IRSA Charges at the rate of Rs. 0.005 per kWh for managing water for hydro power generation to be paid by WAPDA in terms of Ministry of Water & Power S.R.O. (1)/2011 dated 25th August 2011 and S.R.O. (1)/2017 dated 10th Feb 2017. The Petitioner submitted that since there is no change in the rate of IRSA Charges made by the Federal Government, it is proposed that the present rate of IRSA charges may be continued for FY 2020-21.
147. The Authority vide letters dated September 6, 2022, and September 30, 2022, directed WAPDA to provide, among others, justification for including IRSA charges in tariff. The Petitioner, vide letter dated October 5, 2022, submitted its response according to which the Ministry of Water and Power, in pursuance of CCI decision case No. CCI 6/3/2011, dated 01.06.2011, vide S.R.O. (1)/2011, dated 25.08.2011, and subsequent S.R.O. No. (1)/2017, dated 10.02.2017, issued “Financial Autonomy of Indus River System Authority Rules, 2011” vide which, Paisa 0.5 per KWh for managing water for hydropower generation of nuclear power generation to be paid by WAPDA and PAEC.
148. The Authority directed WAPDA to provide justification of IRSA charges, including any CCI’s approval. In this regard, the Petitioner submitted that the Financial Autonomy of Indus River System Authority Rules, 2011, vide which IRSA charges are being applied were made in pursuance of CCI’s decision dated 01.06.2011.



149. Since the Petitioner has provided the desired CCI’s approval and because the Authority has already made the principal decision of incorporating IRSA charge at Rs 0.005 per kWh on the entire generation of WAPDA, therefore, the issue stands addressed.

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DETERMINATION OF THE AUTHORITY IN THE MATTER OF
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Issue No. 9: Whether PPRA Guidelines/rules were followed during procurement of goods/services under the project/plants?

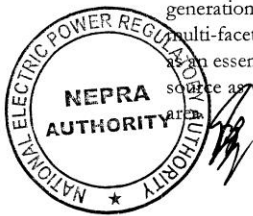
150. The Petitioner in its written response to the issue framed for hearing submitted that WAPDA, being a public sector organization, strictly follows PPRA Guidelines / Rules while procuring goods / services. It has framed its WAPDA's Procurement and Contracts Manual and placed it in every office for reference and compliance which not only contains PPRA Guidelines but also mentions the details of the competent authorities authorized to undertake procurements / services. WAPDA has its dedicated Central Contract Cell (CCC) from where soliciting expert opinion is mandatory before undertaking material procurements
151. The submission of WAPDA on the issue was considered and found to be satisfactory.

Issue No. 11: Whether it is justified to consider higher tariff for small hydel plants being inefficient and with low plant factor?

Issues No. 12: Whether it is justified to consider capacity payment/hydrology risk for the plant for which full water discharge is otherwise available but the available water cannot be utilized due to delay in maintenance/design issues?

Higher tariff for small hydel plants

152. The Petitioner in its written response to these specific issues stated that Hydropower developments represent the best concept of sustainable development. They offer a vast potential where development is most necessary. Hydroelectric installations bring electricity, highways, industry and commerce to communities, thus developing the economy, expanding access to health and education, and improving the quality of life. In the perspective of such comprehensive and diversified sustainable development merits, decommissioning of hydropower plants for saving a few million rupees may not outweigh its demerits.
153. The Petitioner further stated that equally important are the facts that majority of these power plants are located in remote and less developed areas and serve as the only grid connected source of electricity supply for large rurally categorized but vulnerable populations as well as these power plants serve as necessary voltage boosting facilities to improve the quality of electricity for making it usable for the end consumers. So, the absence of these power plants would not only deprive those localities from the power generated by these plants but would also make the available electricity supply from the grid unusable being of low quality due to depressed voltages.
154. The Petitioner quoted that for example, 108 MW Golen Gol HPP, located in Chitral District is the only source of electricity supply in the area and its capacity, in excess of the local area demand, shall serve as an electricity source for future requirements and this project can also be linked to Gilgit Baltistan, establishing the necessary transmission network link between GB and national grid. So, NEPRA is requested to not only focus on current short-term power generation stats of these projects as these projects are built in view of the long-term future multi-faceted requirements of the area. Gomal Zam HPP also has similar dynamics and serves as an essential infrastructure development in the area from the perspective of electricity supply source as well as a first step / launching pad towards further development of the conflict hit





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155. The Petitioner further stated NEPRA, by virtue of its mandate to protect the interests of consumers, is justified in highlighting the higher unit costs associated with these hydropower plants and demanding the rationale. WAPDA is also concerned about the spiralling unit costs and unsatisfactory performance of these hydropower plants, but WAPDA considers the option of decommissioning of these power plants as unviable and imprudent owing to the few facts recorded above. Therefore, WAPDA has already started the rehabilitation and refurbishment projects for these hydropower plants. Even for Chitral Rehabilitation, PC-I from GOP has been approved whereas for Renala and Kurram Garhi, the approvals of PC-Is are in process. In the backdrop of the aforementioned explanations, NEPRA is requested to consider rehabilitation and refurbishment of these hydropower projects as an alternative and viable solution to deal with the issues of higher unit costs of these hydropower plants contrary to the concept of decommissioning.

Capacity payments for plants with delays in maintenance/ design issues

156. The Petitioner in its written response to this issue submitted that theoretically, if the water is available and due to reasons associated with the operator, the plant could not fully utilize the available water, then the plant should be allowed capacity payment commensurate with its average delivered capacity. However, the transfer of hydrological risk to the operator exposes it to significant uncertainty of cash flows for reasons beyond its control. WAPDA Hydroelectric operates in the power sector in a very dismal situation as it has no government guarantee for securing its payments from CPPA-G (Power Purchaser) neither it charges any late payment interest to CPPA-G on its outstanding payments claims spiralled over 300 billion PKR for the reason that such interest claim would only result in a bookish entry in CPPA-G records and further increase the circular debt as all stakeholders in the power sector are fully aware of the liquidity crunch of CPPA-G.
157. The Petitioner further stated that however, passing of hydrological risk over the producers shall force the power producers, WAPDA in this case, to arrange insurance instruments to cover such hydrological risk as well as to short term borrowings / working capital to meet expenses in lean / dry water flow periods. These costs, obviously, shall be added to the tariff and require more complicated changes in the tariff structure as well as in the PPA. The situation can further be aggravated due to delayed payments from CPPA-G. Moreover, managing such uncertain cash flows and risk instruments shall require rigorous financial and risk management measures at WAPDA's end again resulting in expending of efforts and costs and most likely would outweigh the intended benefits of take and pay concept, yielding a zero-sum equation.
158. Given the above, the Authority hereby directs the Petitioner with clear directions to complete capacity tests of its power stations.
159. The Authority has also decided to convert tariffs of 7 small old and non-performing power stations to take & pay. These plants which have a combined capacity of 69 MW shall include Kurram Garhi, Chitral, Rasul, Nandipur, Shadiwal, Chichoki and Renala Kurd. The tariff of which shall be given in the order section



Issues No. 13: Whether the actual generation for FY 2021-22 and projected generation for FY 2022-23 is justified?

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160. The Petitioner submitted that the question of justification of actual generation for FY 2021-22 needs further explanation as that is the energy actually and already delivered. If it means whether WAPDA has utilized the available water for power generation. The answer is yes. There are certain situations faced at the projects apart from unavailability of water during lean periods which restrict the power generation capability of a certain power station like excessive trashes, flooding situations, canal closures, siltation of the ponds / reservoirs with the passage of time, force majeure events etc. These and such other events of comparable nature temporarily affect the power generation; however, aggregate average annual generation benchmark for WAPDA Power Stations has been achieved. For expected generation of FY 2022-23, it is based on a rationalized approach of previous years generation levels as well any additions due to commissioning of new power plants or deletions of energy stats due to non-availability of any power plants units taken out for refurbishment / rehabilitation purposes. Furthermore, WAPDA has almost no incentive to make aggressive assumptions for energy estimates as its 95% annual revenue requirement is safeguarded through capacity payments, so its energy projections always tend to be realistic.
161. In this regard, the Authority noted that it had already identified plants which are non-performing for which a decision has been made to convert tariffs to Take and Pay basis. Therefore, this issue stands addressed.
162. In addition to the above issues of hearing, the Authority, in its previous tariff determination directed WAPDA and CPPA-G to finalize the PPAs for WAPDA Hydropower stations and submit the same before the Authority in the next tariff petition.
163. In compliance to the above, CPPA-G has submitted the same on June 8, 2022, which was then reviewed and the Authority decided the following:
- Directed that the PPA should be consistent with the Tariff Determination of WAPDA Hydro Plants for FY 2020-21 and FY 2022-23.
 - Directed that CPPA-G and WAPDA to sign PPA for all under-developing WAPDA power projects wherein, a clear mechanism for LDs, RCOD, Outages, Technical Specifications, Testing Protocols etc. should be mentioned and submitted to NEPRA for approval.
 - Approved the provision of "Secured Outages". However, no further extension to "Secured Outages" should be allowed. Moreover, after refurbishment/ rehabilitation of any plant, the Tariff and Energy Generation shall be revised accordingly.
 - CPPA-G is directed to conduct separate capacity tests for each WAPDA Hydel Station and submit a report to NEPRA for further necessary action.
 - Mechanism for calculation of LDs shall be in accordance with the standard PPA for hydropower i.e., Forced and Scheduled outages should be dealt separately for calculation of LDs.
 - There should be a nexus between Terms of PPA and GL for every plant. A proviso/caveat may be added that the Term of any new plant should be linked with its life or 30 years from its COD.
 - Fixed Charge Payment shall be calculated for each power plant separately as per tariff determination of WAPDA.



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DETERMINATION OF THE AUTHORITY IN THE MATTER OF
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- A proper Mechanism for calculation of Auxiliary Consumption beyond allowed limits for Take or Pay plants should be mentioned in the PPA.
- In order to establish availability of a plant due to hydrology constraints, WAPDA installed a water flow meter and submit data to CPPA-G.
- Detailed billing/payment mechanism shall be provided in the PPA i.e., NHP, IRSA charges etc.
- CPPA-G to submit a revised copy of PPA, after incorporating the above-mentioned directions of the Authority, for approval of NEPRA within 3 months.

ORDER

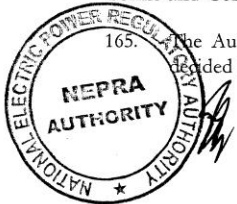
164. WAPDA Hydroelectric is allowed to charge the Central Power Purchasing Agency Guarantee Limited (CPPA-G) the following tariff of each plant at the bus bar of its hydroelectric power stations connected directly or indirectly to the transmission system of NTDC:

Sr.No.	Power Stations	Net Capacity MW	Wapda Tariff				Hydel Levies			
			Take or Pay Tariff				NHP Regular	NHP Arrears	WUC	IRSA
			Variable Rate Rs/kWh	Fixed Rate Rs/kWh/M	Revenue Gap Rs/kWh/M					
1	Tarbela	3,477	0.0366	516.8347	(119.4792)	1.5480	282.7009	-	0.0050	
2	Warsak	242	0.0981	895.6492	(95.1060)	1.5480	282.7009	-	0.0050	
3	Duber Khawar	130	0.2449	2,098.5585	26.3914	1.5480	282.7009	-	0.0050	
4	Allai Khawar	121	0.2187	1,848.2347	(482.2222)	1.5480	282.7009	-	0.0050	
5	Tarbela 4th Ext.	1,409	0.1366	908.9830	306.1646	1.5480	282.7009	-	0.0050	
6	Golen Gol	108	1.0408	2,155.9257	363.5538	1.5480	282.7009	-	0.0050	
7	Jabban	22	0.2723	3,009.6817	(1,045.0192)	1.5480	282.7009	-	0.0050	
8	Dargai	20	0.1025	1,180.4423	(118.1924)	1.5480	282.7009	-	0.0050	
9	Gomal Zam	17	0.6972	4,203.7858	(1,594.5239)	1.5480	282.7009	-	0.0050	
10	Khan Khawar	72	0.2400	1,941.5096	58.6807	1.5480	282.7009	-	0.0050	
11	Jinnah HPP	96	0.3207	1,861.4462	273.6677	1.4740	254.0779	-	0.0050	
12	Ghazi Barotha	1,449	0.0791	890.0105	(190.2811)	1.4740	254.0779	-	0.0050	
13	Chashma	183	0.1954	1,738.0903	(20.2201)	1.4740	254.0779	-	0.0050	
14	Mangla	999	0.0745	903.5691	93.4512	-	-	1.1000	0.0050	

Sr.No.	Power Stations	Capacity MW	Take & Pay Tariff			
			Tariff w/o Hydel levies	NHP Regular	IRSA	Total Tariff with Levies
			Rs/kWh	Rs/kWh	Rs/kWh	Rs/kWh
1	Kuram Garhi	4	6.811	1.548	0.005	8.364
2	Chitral	1	9.355	1.548	0.005	10.908
3	Rasul	22	3.5093	1.474	0.005	4.988
4	Nandipur	14	4.5876	1.474	0.005	6.067
5	Shadiwal	13	4.9401	1.474	0.005	6.419
6	Chichoki	13	5.1803	1.474	0.005	6.659
7	Renala Khurd	1	16.1770	1.474	0.005	17.656

Terms and Conditions

165. The Authority reviewed the PPA of WAPDA Hydroelectric submitted by CPPA-G and decided the following:



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DETERMINATION OF THE AUTHORITY IN THE MATTER OF
WAPDA HYDROELECTRIC TARIFF PETITION FOR FY 2022-23

- Directed that the PPA should be consistent with the Tariff Determination of WAPDA Hydro Plants for FY 2020-21 and FY 2022-23.
 - Directed that CPPA-G and WAPDA to sign PPA for all under-developing WAPDA power projects wherein, a clear mechanism for LDs, RCOD, Outages, Technical Specifications, Testing Protocols etc. should be mentioned and submit to NEPRA for approval.
 - Approved the provision of "Secured Outages". However, no further extension to "Secured Outages" should be allowed. Moreover, after refurbishment/ rehabilitation of any plant, the Tariff and Energy Generation shall be revised accordingly.
 - CPPA-G be directed to conduct separate capacity tests for each WAPDA Hydel Station and submit a report to NEPRA for further necessary action.
 - Mechanism for calculation of LDs shall be in accordance with the standard PPA for hydropower i.e., Forced and Scheduled outages should be dealt separately for calculation of LDs.
 - There should be a nexus between Terms of PPA and GL for every plant. A proviso/caveat may be added that the Term of any new plant should be linked with its life or 30 years from its COD.
 - Fixed Charge Payment shall be calculated for each power plant separately as per tariff determination of WAPDA.
 - A proper Mechanism for calculation of Auxiliary Consumption beyond allowed limits for Take or Pay plants should be mentioned in the PPA.
 - In order to establish availability of a plant due to hydrology constraints, WAPDA installed a water flow meter and submit data to CPPA-G.
 - Detailed billing/payment mechanism shall be provided in the PPA i.e., NHP, IRSA charges etc.
 - CPPA-G to submit a revised copy of PPA, after incorporating the above-mentioned directions of the Authority, for approval of NEPRA within 3 months.
 - The revenue gap including NHP arrear shall be applicable one year from date and notification and henceforth cease to be applicable
166. The order is to be intimated to the Federal Government for notification in the official gazette under section 31(7) of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997.
167. In view of discussions in the preceding paragraphs, the total revenue requirement of the Petitioner approved for the financial year 2021 is given below, station wise revenue requirement is attached as Annex – I.





DETERMINATION OF THE AUTHORITY IN THE MATTER OF
WAPDA HYDROELECTRIC TARIFF PETITION FOR FY 2022-23

AUTHORITY

Amina Ahmed
Member

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Mathar Niaz Rana (nsc)
Member

My additional note is attached
Handwritten signature of Engr. Rafique Ahmed Shaikh in black ink.

Engr. Rafique Ahmed Shaikh
Member

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Engr. Maqsood Anwar Khan
Member

(Retired)

Tauseef H. Farooqi
Chairman



ANNEX-I**Consolidated - Revenue Requirement**

	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Assessed	Assessed	Assessed	Assessed
	(Min Rs)			
Block wise Bulk Supply Tariff				
Installed Capacity	8,411	8,411	8,411	8,411
Est. Generation (Net Electrical Output)	32,295	32,073	28,903	31,255
Plant Factor	44%	44%	39%	42%
Revenue Requirement (Min Rs)				
O&M	17,193	17,035	19,210	20,961
Depreciation (At Carrying Cost)	7,037	7,277	6,691	7,273
Ijara Rental	1,780	1,574	374	-
Return on Investment	35,159	29,284	28,472	27,728
Provision for Future Development	12,086	12,554	18,335	32,268
Misc. Income	(556)	(797)	(536)	(536)
Total Revenue Requirement	72,698	66,928	72,547	87,695
Regulatory Revenue Gap				
FY - 2019-20 - Audited				2,749
FY - 2020-21 - Audited				2,580
Adjustment of differential amount on Post-Retirement Benefits				(6,049)
FY - 2021-22 - Audited				(2,048)
NHP Indexation Arrears				
Arrears of NHP - KP				19,054
Arrears of NHP - Punjab				5,267
Total Revenue Gap				21,553
Total Revenue Requirement with Rev. Gap				109,247
Total Revenue Requirement of WAPDA				109,247

Hydel Levies

NHP - Regular	40,139
Arrears of NHP/WUC to Provinces for FY 2017-18.	-
WUC	5,440
IRSA Charges	156
Total Hydel Levies	45,735
Total - With Hydel Levies	154,982
Generation	31,255
Average Tariff (Rs./kWh)	4.9587

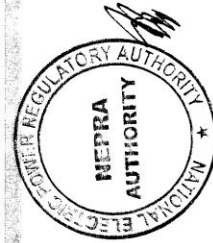


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Revenue Requirement

Unit	Allai				Khan				Jabban			
	FY 2019-20 (Min Rs)	FY 2020-21 (Min Rs)	FY 2021-22 (Min Rs)	FY 2022-23 (Min Rs)	FY 2019-20 (Min Rs)	FY 2020-21 (Min Rs)	FY 2021-22 (Min Rs)	FY 2022-23 (Min Rs)	FY 2019-20 (Min Rs)	FY 2020-21 (Min Rs)	FY 2021-22 (Min Rs)	FY 2022-23 (Min Rs)
Operating Data												
Installed Capacity												
Generation (Net Electrical Output)												
Plant Factor												
	(MW)	121	121	121	121	121	121	121	22	22	22	22
	(GWh)	469	439	373	463	274	231	162	138	134	135	136
	(%)	44%	42%	35%	44%	44%	37%	26%	72%	70%	71%	71%
Revenue Requirement												
OSM	(Min Rs)	173	340	271	294	241	254	323	143	130	176	226
Depreciation (At Carrying Cost)	(Min Rs)	187	246	244	245	125	149	169	116	141	121	141
Ijara Rental	(Min Rs)											
Return on Investment	(Min Rs)	1,815	1,559	1,523	1,488	1,183	1,019	1,000	476	402	392	374
Provision for Future Development	(Min Rs)	173	180	263	463	103	107	156	31	33	48	84
Misc. Income	(Min Rs)	(1)	(2)	(1)	(1)	(1)	(7)	(11)	(0)	(0)	(0)	(0)
Total Revenue Requirement w/o Rev. Gap	(Min Rs)	2,348	2,323	2,300	2,489	1,651	1,522	1,638	766	704	735	824
Regulatory Revenue Gap												
FY - 2019-20 - Audited				55				360				(77)
FY - 2020-21 - Audited				(694)				(484)				(118)
Adjustment of differential amount on Post-Retirement Benefits				(87)				(52)				(16)
FY - 2021-22 - Provisional				23				228				(62)
NHP Indexation Arrears												
Arrears of NHP - KP												
Arrears of NHP - Punjab												
Total Revenue Gap				(697)				51				(273)
Total Revenue Requirement with Rev. Gap				1,792				1,795				551
Total Revenue Requirement of WAPDA				1,792				1,795				551
Hydel Levies												
NHP - Regular				717				474				211
Arrears of NHP - KP				(694)				(484)				1
Arrears of NHP - Punjab				2				2				211
WUC												762
IRSA Charges				719				475				
Total Hydel Levies				2,511				2,271				
Total - With Hydel Levies												



f.k. Q

Revenue Requirement

Dargai

Kurrum Garhi

Chitral

Unit	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
	Audited	Audited	Actual/Audited	Projected	Audited	Audited	Actual/Audited	Projected	Audited	Audited	Actual/Audited	Projected
	(Min Rs)	(Min Rs)	(Min Rs)	(Min Rs)	(Min Rs)	(Min Rs)	(Min Rs)	(Min Rs)	(Min Rs)	(Min Rs)	(Min Rs)	(Min Rs)

Operating Data

Installed Capacity
Generation (Net Electrical Output)
Plant Factor

Revenue Requirement

O&M
Depreciation (At Carrying Cost)
Ijara Rental
Return on Investment
Provision for Future Development
Misc. Income
Total Revenue Requirement w/o Rev. Gap
Regulatory Revenue Gap

FY - 2019-20 - Audited
FY - 2020-21 - Audited
Adjustment of differential amount on Post-Retirement Benefits
FY - 2021-22 - Provisional
NHP Indexation Arrears
Arrears of NHP - KP
Arrears of NHP - Punjab
Total Revenue Gap
Total Revenue Requirement with Rev. Gap
Total Revenue Requirement of WAPDA

Hydel Levies

NHP - Regular
Arrears of NHP - KP
Arrears of NHP - Punjab
WUC
IRSA Charges
Total Hydel Levies
Total - With Hydel Levies



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Revenue Requirement									
Ghazi Barotha									
S.No	FY 2019-20		FY 2020-21		FY 2021-22		FY 2022-23		Jinnah
	Audited (Min Rs)	Actual/Audited (Min Rs)	Audited (Min Rs)	Actual/Audited (Min Rs)	Audited (Min Rs)	Actual/Audited (Min Rs)	Audited (Min Rs)	Actual/Audited (Min Rs)	
(MM)	1,449	1,449	1,449	1,449	183	183	183	183	
(Cust)	6,482	6,811	6,782	6,600	747	772	796	840	
(%)	51%	54%	53%	52%	47%	48%	50%	52%	
Operating Data									
Installed Capacity									
Generation (Net Electrical Output)									
Plant Factor									
Chashma									
(Min Rs)	2,397	2,346	2,664	2,880	1,359	1,348	1,699	1,844	
(Min Rs)	1,631	1,643	1,657	1,643	457	488	587	487	
(Min Rs)	7,889	6,388	6,138	5,977	1,376	1,121	1,075	1,023	
(Min Rs)	2,082	2,163	3,159	5,559	253	273	399	703	
(Min Rs)	(25)	(60)	(82)	(62)	(27)	(33)	(71)	(71)	
(Min Rs)	13,974	12,480	13,556	15,996	3,429	3,197	3,690	3,985	
Total Revenue Requirement w/o Rev. Gap									
Regulatory Revenue Gap									
FY - 2019-20 - Audited				(204)				(2)	
FY - 2020-21 - Audited				(1,531)				(81)	
Adjustment of differential amount on Post-Retirement Benefits				(1,042)				(132)	
FY - 2021-22 - Provisional				(514)				172	
NHP Indexation Areas									
Areas of NHP - KP									
Areas of NHP - Punjab									
Total Revenue Gap				(3,291)				(42)	
Total Revenue Requirement with Rev. Gap				12,706				3,943	
Total Revenue Requirement of WAPDA				12,706				3,943	
Hydel Levies									
NHP - Regular				9,728				1,238	
Areas of NHP - KP									
Areas of NHP - Punjab									
WUC									
IRSA Charges									
Total Hydel Levies				9,761				1,242	
Total - With Hydel Levies				22,467				5,185	

Revenue Requirement

Unit	Rasul				Nandipur				Shadiwal			
	FY 2019-20 Audited (Mn Rs)	FY 2020-21 Audited (Mn Rs)	FY 2021-22 Actual/Audited (Mn Rs)	FY 2022-23 Projected (Mn Rs)	FY 2019-20 Audited (Mn Rs)	FY 2020-21 Audited (Mn Rs)	FY 2021-22 Actual/Audited (Mn Rs)	FY 2022-23 Projected (Mn Rs)	FY 2019-20 Audited (Mn Rs)	FY 2020-21 Audited (Mn Rs)	FY 2021-22 Actual/Audited (Mn Rs)	FY 2022-23 Projected (Mn Rs)
Operating Data:												
Installed Capacity	22	22	22	22	14	14	14	14	13	13	13	13
Generation (Net Electrical Output)	34	77	59	52	34	32	29	44	14	32	28	40
Plant Factor	18%	40%	31%	48%	29%	27%	24%	37%	12%	27%	24%	34%
Revenue Requirement:												
OM	151	159	176	195	95	102	110	142	92	100	108	139
Depreciation (At Carrying Cost)	6	7	7	7	3	5	3	5	5	5	4	5
Lease Rental												
Return on Investment	43	38	39	38	7	7	8	9	10	10	11	11
Provision for Future Development	31	33	48	84	20	20	30	52	19	20	29	51
Misc. Income	(0)	(0)	(1)	(1)	(3)	(3)	(5)	(5)	(2)	(1)	(7)	(7)
Total Revenue Requirement w/o Rev. Gap	231	236	269	323	121	130	147	202	125	134	144	198
Regulatory Revenue Gap												
FY - 2019-20 - Audited				17				(3)				3
FY - 2020-21 - Audited				18				(57)				(31)
Adjustment of differential amount on Post-Retirement Benefits				(16)				(10)				(10)
FY - 2021-22 - Provisional				23				5				4
NHP Indexation Arrears												
Arrears of NHP - KP												
Arrears of NHP - Punjab												
Total Revenue Gap	42							(66)				(33)
Total Revenue Requirement with Rev. Gap	355							136				164
Total Revenue Requirement of WAPDA	355							136				164
Hydel Levies												
NHP - Regular												
Arrears of NHP - KP												
Arrears of NHP - Punjab												
WUC												
IRSA Charges												
Total Hydel Levies	136							65				59
Total - With Hydel Levies	501							201				223



Revenue Requirement

Unit	Chichuki				Renala				Mangla			
	FY 2019-20 Audited (Mn Rs)	FY 2020-21 Audited (Mn Rs)	FY 2021-22 Actual/Audited (Mn Rs)	FY 2022-23 Projected (Mn Rs)	FY 2019-20 Audited (Mn Rs)	FY 2020-21 Audited (Mn Rs)	FY 2021-22 Actual/Audited (Mn Rs)	FY 2022-23 Projected (Mn Rs)	FY 2019-20 Audited (Mn Rs)	FY 2020-21 Audited (Mn Rs)	FY 2021-22 Actual/Audited (Mn Rs)	FY 2022-23 Projected (Mn Rs)
Operating Data												
Installed Capacity	13	13	13	13	1	1	1	1	999	999	999	999
Generation (Net Electrical Output)	30	27	22	38	2	2	2	2	4,589	5,314	4,201	4,945
Plant Factor (%)	25%	24%	19%	33%	23%	23%	23%	28%	52%	61%	48%	57%
Revenue Requirement												
DDM	90	97	105	135	21	23	25	32	3,035	3,181	3,246	3,501
Depreciation (At Carrying Cost)	4	5	4	5	1	1	2	1	611	637	625	637
Ignia Rental												
Return on Investment	10	11	11	11	3	3	3	3	4,106	3,442	3,329	3,253
Provision for Future Development	19	19	28	50	1	1	2	4	1,435	1,491	2,178	3,832
Misc. Income	(2)	(3)	(5)	(5)	(1)	(0)	(1)	(1)	(135)	(238)	(24)	(24)
Total Revenue Requirement w/o Rev. Gap	122	130	144	197	26	28	31	39	9,051	8,513	9,353	11,199
Regulatory Revenue Gap												
FY - 2019-20 - Audited				(1)				1				802
FY - 2020-21 - Audited				(22)				(14)				559
Adjustment of differential amount on Post-Retirement Benefits				(9)				(1)				(718)
FY - 2021-22 - Provisional				3				6				491
NHP Indexation Arrears												
Arrears of NHP - KP												
Arrears of NHP - Punjab												
Total Revenue Gap				(29)				(8)				1,132
Total Revenue Requirement with Rev. Gap				168				32				12,332
Total Revenue Requirement of WAPDA				168				32				12,332
Hydel Levies												
NHP - Regular				56				4				
Arrears of NHP - KP												
Arrears of NHP - Punjab												
WUC				0				0				5,440
IRSA Charges												25
Total Hydel Levies				56				4				5,464
Total - With Hydel Levies				224				35				17,796



I am of the considered opinion that WAPDA should have provided documentary evidence for O&M cost and also that Tariff of underperforming power plants need to be converted into Take & Pay basis.

Since this petition is for FY 2022-23, WAPDA to address the above queries in its next tariff petition for FY 2023-24.

12/10/23

