

PCA Case No. 2023-01
IN THE MATTER OF AN ARBITRATION

-before-

THE COURT OF ARBITRATION CONSTITUTED
IN ACCORDANCE WITH THE INDUS WATERS TREATY 1960

-between-

THE ISLAMIC REPUBLIC OF PAKISTAN

-and-

THE REPUBLIC OF INDIA

FIRST PHASE ON THE MERITS

PAKISTAN'S POST-HEARING SUBMISSION

1 NOVEMBER 2024

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I. INTRODUCTION

1.1. Following the conclusion of the Hearing on the First Phase on the Merits (“**the Hearing**”), the Court of Arbitration (“**the Court**”), by its Procedural Order No. 13 of 13 August 2024 (“**PO13**”), directed Pakistan to file a post-hearing submission addressing the following issues:

“[1] Questions relating to the calculation of Pondage, including the methodology for the calculation of Pondage advanced by Pakistan in the *Baglihar* neutral expert proceedings, the reason for the modification of that approach, and associated questions raised by Members of the Court during the Hearing;

[2] Pakistan’s current method of calculating Pondage as modified to accommodate a seven-day period;

[3] The relevance of Annexure E when considering: (i) the object and purpose of the Indus Waters Treaty; (ii) the context when interpreting Article III and Annexure D, including the calculation of Pondage in Annexure E; and (iii) Pakistan’s concern as to the ‘weaponization’ of the Western Rivers through India’s ability to store and release water;

[4] What role, if any, should the criterion of the prevention of harm/adverse effects play where there are existing Pakistani Agricultural Uses or hydro-electric uses of the Western Rivers (other than in relation to uses on the Tributaries of the Jhelum, for which the criterion is expressly applied per para. 15(iii) of Annexure D and para. 10 of Annexure E to the Treaty); and

[5] Whether the concept of abuse of rights in international law is of any relevance to the principle of good faith, as raised by Pakistan in its Memorial (e.g., paras. 8.33–8.36) and during the Hearing, when interpreting or applying the Treaty.”¹

1.2. The Court also gave Pakistan leave to “address in its post-hearing submission, by way of brief observations, supplementary points of smaller detail that arose during the course of the Hearing”.²

1.3. This Post-Hearing Submission (“**PHS**”) addresses the Court’s questions as well as a number of points of smaller detail that arose during the Hearing.

1.4. This PHS proceeds as follows. **Chapter II** addresses the Court’s questions on Pondage – Questions 1 and 2 above – as well as two further questions on Pondage that arose during the course of the Hearing. **Chapter III** addresses the Court’s Question 3 above on the relevance

¹ PO13, ¶ 3.1.

² *Id.*, ¶ 3.2.

of Annexure E to various issues addressed by Pakistan in its Memorial on the First Phase on the Merits (“**COA Memorial**”) and its oral submissions during the Hearing. **Chapter IV** addresses the Court’s Question 4 on the role, if any, of the criterion of the prevention of harm/adverse effects where there are existing Pakistani Agricultural Uses or hydro-electric uses of the Western Rivers. **Chapter V** addresses the Court’s Question 5 on the relevance of the concept of abuse of rights to the principle of good faith in the interpretation and application of the Indus Waters Treaty (“**the Treaty**”). Finally, **Chapter VI** closes this PHS with a brief concluding observation.

1.5. Before turning to the Court’s questions, Pakistan takes the opportunity of this PHS to recall three points that it made in the course of the Hearing but which bear repetition. The first is the Treaty framework with which the Court is concerned. This is not a reference to the three Bargains that Pakistan addressed and elaborated on its written and oral submissions – the Peace Bargain, the Treaty Bargain, and the Western Rivers Run-of-River Hydro Bargain – although these are important and stand at the heart of the Parties’ dispute. It is, rather, a reference to the framework of Article III and Annexure D of the Treaty.

1.6. The starting point of this framework is that Pakistan has a right of unrestricted use of the waters of the Western Rivers. This right is expressed in unambiguous terms in Article III(1) of the Treaty. India’s obligations, corollaries of Pakistan’s right, expressly stated, are to let flow the waters of the Western Rivers, not to permit any interference with those waters (subject to limited exception), and not to store any water of, or construct any storage works on, the Western Rivers (again, subject to limited exception). The starting point, though, is Pakistan’s right of unrestricted use, subject only to tightly constrained exceptions. And, materially, India’s entitlements are expressly characterised as exceptions, rather than as correlative rights, both in the formulation of Article III and in the relationship between Article III and Annexure D, as is evident from, for example, Paragraph 1 of Annexure D.³

1.7. The second point is that, particularly given India’s significant Western Rivers Run-of-River HEP programme, and the inevitable consequences that this will have for Pakistan, and the exercise of its rights under the Treaty, holding India to scrupulous observance of the design criteria in Paragraph 8 of Annexure D, **at the design phase**, is Pakistan’s only protection. Once

³ Transcript of Hearing for the First Phase on the Merits, Day 5 (12 July 2024), p. 221, line 15 – p. 216, line 12 (Sir Daniel Bethlehem KC).

India's Western Rivers Run-of-River hydroelectric plants ("HEPs") are sunk in concrete, Pakistan has little effective recourse to remedy breaches of the Treaty that may occur in the operation of those HEPs, and remains constantly vulnerable to abuse by India. It is essential, therefore, that India is held to the Paragraph 8 design criteria, **at the design phase**.

1.8. The third point is that, in approaching the dispute of which it is seised, the Court cannot lose sight of the three Bargains that stand at the heart of the Treaty, and the appreciation that the Treaty, as concluded, was a balanced arrangement that accorded rights to and imposed obligations on both parties. India was accorded unrestricted use of the waters of the Eastern Rivers, subject to exceptions, and it has used, and continues to use, those waters in a manner that has, in some cases, resulted in a complete cessation of the flow of those waters into Pakistan. India has banked its rights to the Eastern Rivers and seeks, through its exorbitant interpretation of the design criteria in Paragraph 8 of Annexure D, to encroach ever more onto Pakistan's rights to the Western Rivers. The Court's task in these proceedings, its solemn responsibility, is to construe the Treaty in a manner that reflects the Bargains that were struck in 1960.

1.9. India, by operation of the exceptions to Pakistan's right of unrestricted use in Article III, is not entitled to design Run-of-River HEPs that go beyond the design criteria of Paragraph 8 of Annexure D of the Treaty. It is not entitled to design, construct and operate its Western River HEPs without regard to Pakistan's rights, including with regard to the hydrology of the rivers on which those HEPs are located, site constraints that may impact India's ability to fulfil its Treaty obligations, the planned installed capacity of such plants and their integration into India's electricity grid, or any other factor. The Paragraph 8 design criteria are hinged on the hydrology of the Western Rivers, in terms of the siting of the plants, maximum allowable Pondage, sediment management, flood control, and the related design and placement constraints in respect of outlets, spillways and power intakes. Pakistan considers that the interpretative case that it has presented to the Court properly and fairly reflects the balance struck in the Treaty. It looks to the Court to affirm and uphold its rights.

1.10. With those opening comments, Pakistan turns, in the remainder of this PHS, to address the questions posed by the Court.

* * *

II. THE COURT'S QUESTIONS ON PONDAGE

2.1. The Court directed Pakistan to address the following issues relating to the calculation of Pondage:

- (a) **First**, “Questions relating to the calculation of Pondage, including the methodology for the calculation of Pondage advanced by Pakistan in the *Baglihar* neutral expert proceedings, the reason for the modification of that approach, and associated questions raised by the Members of the Court during the Hearing;”⁴ and
- (b) **Second**, “Pakistan’s current method of calculating Pondage as modified to accommodate a seven-day period”.⁵

2.2. In this Chapter, Pakistan addresses both these issues as well as, more briefly, two other questions on Pondage that arose in the course of the Hearing, as follows:

- (a) **Section A** addresses Pakistan’s case on Pondage in the *Baglihar* Neutral Expert proceedings and the reason why that case was modified in favour of the methodology advanced by Pakistan in the course of the present proceedings before the Court.
- (b) **Section B** addresses two questions on Pondage that arose in the course of the Hearing.
- (c) **Section C** addresses the modification of the methodology for the calculation of Pondage that Pakistan has advanced in these proceedings, which turns on a 24-hour period, to accommodate a seven-day period.

2.3. At the outset, Pakistan reaffirms that, in its view, the approach to the calculation of maximum Pondage set out in its Memorial⁶ is the correct approach under the Treaty – both as a matter of sound and robust Treaty interpretation and as a matter of common sense (once the object and purpose of the Treaty is properly taken into account). While the interpretation of Paragraph 8(c) of Annexure D – the provision addressing the calculation of maximum Pondage

⁴ PO13, ¶ 3.1.1.

⁵ *Id.*, ¶ 3.1.2.

⁶ COA Memorial, Parts 11B–11C.

– does not yield a simple solution, Pakistan is firm in its conviction that the approach advanced in the present proceedings is the only sound and sustainable interpretative approach that has been advanced to date with respect to this provision by either Party or by the Neutral Expert in the *Baglihar* proceedings.

2.4. With respect to the Court's question in relation to the modification of Pakistan's 24-hour methodology to accommodate a weekly calculation of Pondage, Pakistan notes that, while a direct transposition of its 24-hour methodology to a weekly approach is possible as an engineering matter, when such a modification is read against the terms of the Treaty, it becomes quickly apparent that that approach cannot be correct as a matter of law. This said, Pakistan's proposed approach to the calculation of Pondage is fit for use as both a daily and a weekly mechanism for the calculation of "Pondage required for Firm Power", within the meaning of Paragraph 8(c) of Annexure D – reaffirming, once again, its correctness. This appreciation is unpacked and elaborated in **Chapter II.C.2** below.

A. PAKISTAN'S PONDAGE CALCULATION METHODOLOGY IN THE *BAGLIHAR* PROCEEDINGS

2.5. This section addresses the approach that Pakistan took to the calculation of Pondage in the *Baglihar* proceedings ("**the *Baglihar* Approach**"), expanding on the submissions on this issue in the course of the Hearing.⁷ It thereafter explains the reasons why Pakistan revisited and revised its approach in the wake of the *Baglihar* Neutral Expert determination. Pakistan's change in approach took place in two phases: first, by way of an evolution in Pakistan's thinking in 2016 ("**Interim Approach**"), and thereafter, in the course of its adoption of the approach advanced in the present proceedings ("**Pakistan's Revised Approach**").

1. Pakistan's position on Pondage before the *Baglihar* proceedings

2.6. Before turning to Pakistan's approach to the calculation of Pondage in the *Baglihar* proceedings, it is helpful to address Pakistan's position prior to those proceedings, in the early years of the Treaty's operation. During that time, Pakistan did not actively contest India's approach to the calculation of Pondage. It is important to understand why.

⁷ Transcript of Hearing for the First Phase on the Merits, Day 4 (11 July 2024), p. 232, line 7 – p. 242, line 9 (Sir Daniel Bethlehem KC); Transcript of Hearing for the First Phase on the Merits, Day 7 (16 July 2024), p. 83, line 20 – p. 88, line 9 (Dr Miles).

2.7. In short, Pakistan's initial reluctance to challenge India's approach to Pondage was based on two factors: first, India's HEP construction programme on the Western Rivers was limited; second, the HEPs that India was building on the Western Rivers tended to have limited Pondage,⁸ either or both because their installed capacity was relatively small and/or because of limitations at each HEP site. In these circumstances, in the interest of good relations with India, Pakistan did not consider the calculation of maximum Pondage to warrant dispute. As a result, any discussion within the Permanent Indus Commission ("**the Commission**") over the issue was largely confined to disagreement over the calculation of the "minimum mean discharge" ("**MMD**").⁹

2.8. India's approach in this period was set out in detail in its Counter-Memorial in the *Baglihar* proceedings.¹⁰ As a matter of Treaty interpretation, it rested on the following premises:¹¹

- (a) The Treaty places no restriction on the installed capacity of an Indian HEP on the Western Rivers, nor on turbine discharge necessary to meet variations in the daily and weekly loads of the HEP. The HEP load dispatch schedule, however, must comply with volume restrictions over the weekly cycle.
- (b) If the benefits of a HEP are to be optimised, it must be afforded the greatest volume of Pondage available given technical limitations and site conditions. This is "an essential and critical component" of the HEP. To that end:

⁸ For example, the Salal HEP was constructed as effectively a pure run-of-river HEP with no Operating Pool of significance. While Salal prompted considerable controversy within the Commission, Pondage was not a point of contention: *see, e.g.*, Record of the 40th Meeting of the Permanent Indus Commission, 19-23 December 1974, dated 23 December 1974, **Exhibit P-0647.40**, pp. 2–3; Record of the 42nd Meeting of the Permanent Indus Commission, 28 March-2 April 1976, dated 2 April 1976, **Exhibit P-0647.42**, ¶¶ 2–21; Record of the 43rd Meeting of the Permanent Indus Commission, 26-30 April 1976, dated 31 May 1984, **Exhibit P-0647.43**, ¶¶ 2–17. Further: Agreement between the Government of the Islamic Republic of Pakistan and the Government of the Republic of India regarding the Design of the Salal Hydro-electric Plant on the River Chenab Main, 14 April 1978, **Exhibit PLA-0053**. The filling of the Salal HEP reservoir also proved controversial: Record of the 65th Meeting of the Permanent Indus Commission, 6-11 December 1986, dated 11 December 1986, **Exhibit P-0647.63**, ¶ 5; Record of the 67th Meeting of the Permanent Indus Commission, 14-19 February 1987, dated 19 February 1987, **Exhibit P-0647.67**, ¶ 5; Record of the 68th Meeting of the Permanent Indus Commission, 21-26 May 1987, dated 26 May 1987, **Exhibit P-0647.68**, p. 3.

⁹ *See, e.g.*, Record of the 32nd Meeting of the Permanent Indus Commission, 2-8 January 1970, dated 8 January 1970, **Exhibit P-0647.32**, p. 3; Record of the 45th Meeting of the Permanent Indus Commission, 24-29 September 1977, dated 29 September 1977, **Exhibit P-0647.45**, ¶ 2(i).

¹⁰ *Baglihar Hydroelectric Plant (Pakistan v India)*, Counter-Memorial of the Government of India dated 23 September 2005, **Exhibit P-0547/BR-0008**, §§ 2.5–2.6 ("**Baglihar Counter-Memorial**").

¹¹ *Id.*, § 2.5.1.

“[Pondage] should provide the necessary flexibility in the operation of the plant and its role in the power supply system to meet variations in the daily and weekly loads, which may undergo substantial changes over the life of the plant. The Pondage, in essence, is to enable redistribution of the energy content of Firm Power over a week to meet the system load demand variations within the same week. The Pondage, besides meeting variations in the power demand, has to take care of variations in flows over the day/week, and also provide for loss of live storage capacity on account of heavy silt loads carried by the Indus basin rivers and ensure flexibility in the operation of the plant over its useful life.”¹²

- (c) The provisions relating to Pondage in Annexure D reflect this concept – even as they limit the live storage of an Indian HEP on the Western Rivers. The key provision is Paragraph 2(c) of Annexure D, which defines Pondage as “Live Storage of only sufficient magnitude to meet fluctuations in the discharge of the turbines arising from variations in the daily and weekly loads of the plant”. The Treaty does not regulate these discharges – leaving them to India to set them in accordance with the requirements of its power system, subject to the daily and weekly storage and discharge requirements set out in Paragraph 15 of Annexure D, which must be considered as part of the Pondage calculation.
- (d) Paragraph 8(c) of Annexure D provides that maximum Pondage shall not exceed twice the Pondage required for Firm Power corresponding to the MMD. In accordance with this criterion, Pondage has been calculated to meet the mismatch between the varying turbine discharges as per load variation and MMD – subject again to Paragraph 15.
- (e) So far as Firm Power is concerned, this represents the minimum quantum of energy that would be available to meet the energy component of power demand on all days throughout the year, taking into account the most adverse recorded conditions. To that end (emphasis original):

“Being a Run-of-River Plant with weekly Pondage, this firm energy is utilised for meeting peak demands of the system by varying the *turbine discharges* (hourly loads of the Plant) within the restrictions on the *volume* of releases (energy) over a weekly cycle, i.e. conforming to Firm Power. This is the concept and basis for determination of Pondage. Twice the amount so determined for Firm Power generation is permitted under Paragraph 8(c) of the Treaty.”¹³

¹² *Id.*

¹³ *Id.*

2.9. Despite India's protestations that this approach strictly limited Pondage under the Treaty, in reality it allowed India to set its design discharge wherever it liked, by reference to Paragraph 2(c), and then regulate it solely by reference to daily and weekly operational storage and discharge schedule in Paragraph 15. In other words, assuming a river flow at the MMD, India asserted that it was able to store water with a view to maximising HEP peaking at the installed capacity – rather than at the Firm Power level – and assuming a storage and discharge schedule during the design phase irrespective of the actual requirements of the power system.¹⁴ On India's approach, it is difficult to detect any material role for Paragraph 8(c) in the maximum Pondage calculation exercise beyond the doubling of the relevant amount at the end of it.

2.10. Pakistan appears not to have contested India's approach to the calculation of maximum Pondage on five occasions from 1960 to 1990.¹⁵ In each case, India claimed that the available storage was limited by the conditions at the HEP site.

- (a) Stakna HEP (on the Indus, 4MW) – 0.136Mm³.
- (b) Lower Jhelum HEP (on the Jhelum, 105MW) – 0.962Mm³.
- (c) Upper Sindh-II HEP (on the Jhelum, 105MW) – 0.404Mm³.
- (d) Kargil HEP (on the Indus, 3.75MW) – 0.114Mm³.
- (e) Parnai HEP (on the Jhelum, 37.5 MW) – 0.677Mm³.

2.11. The size of the resulting Operating Pool in each of these cases speaks for itself: these HEPs did not entail significant Live Storage. Indeed, they involved, in relative terms, almost no Live Storage at all.

2.12. Pakistan's lack of complaint over India's approach during this early period constituted neither an acquiescence nor waiver of its rights under the Treaty. This follows expressly from Article IV(14) of the Treaty, which provides:

¹⁴ *Id.*, § 2.5.2.

¹⁵ *Id.*, Annexure 2.6. In its Counter-Memorial, India also listed the Dul Hasti HEP as a plant in respect of which Pakistan accepted India's approach. As addressed below, that is incorrect. Indeed, the Dul Hasti HEP was one of the first cases in which the *Baglihar* Approach was put forward to resist India's claims to exaggerated maximum Pondage, even if this objection was subsequently dropped in negotiations: Letter No WT/(104)/(5304-A)/PCIW from the PCIW to the ICIW dated 14 September 1992, **Exhibit P-0649.0773**, ¶ 6.

“In the event that either Party should develop a use of the waters of the Rivers which is not in accordance with the provisions of this Treaty, that Party shall not acquire by reason of such use, by prescription or otherwise, a right to a continuance of such use.”

2.13. Pakistan's forbearance of India's approach to the calculation of Pondage in the early years of the Treaty reflected the circumstances of the day – only a few planned, small capacity HEPs and a political imperative focused on accommodation. Relying on Article IV(14) of the Treaty, there was no abandonment of rights by Pakistan during this period.¹⁶

2.14. In the course of the Hearing, the Chairman noted with respect to the Parties' interpretation of Paragraph 8(c) during this period:

“[I]n your Memorial at Appendix C1, you do provide a list of 54 completed hydroelectric plants on the Western Rivers. [...] [I]t just feels as though there should be some degree of practice operating here that the parties were in relative harmony on, up until the point where you get to Baglihar. And if that's true, then it seems like it should give us some insights into how the parties were jointly interpreting the treaties up until that point. [...] Perhaps the answer will still be that the pondage was minimal; perhaps that there were no issues of the kind that are at stake in this proceeding. But it feels as though there's a bit of a gap in our understanding of this element of the way in which we might be interpreting the Treaty.”¹⁷

2.15. In light of the history just recounted, the Chairman's supposition, that Pakistan adopted the position it did because “the pondage was minimal” and “there were no issues of the kind that are at stake in this proceeding”, is correct. This appreciation is reinforced by Pakistan's response to India's proposals to build HEPs on the Western Rivers with progressively increasing Live Storage.

2.16. The first clear indication that Pakistan's reading of the maximum Pondage calculation differed from India's appeared almost immediately following India's proposal of the Baglihar HEP on 20 May 1992.¹⁸ The design of the Baglihar HEP adopted India's approach for the calculation of Pondage as described above. But rather than the limited Operating Pools of

¹⁶ India appears to have attempted to argue otherwise on the basis of “subsequent practice” concerning the interpretation and application of the Treaty in *Baglihar*: *Baglihar* Counter-Memorial, **Exhibit P-0547/BR-0008**, § 2.6. This argument does not appear in the relevant section of the Neutral Expert's final decision, and so may be taken to have been implicitly rejected: *Baglihar Hydroelectric Plant (Pakistan v India)*, Indus Waters Treaty Annexure F, Neutral Expert Determination, **PLA-0002**, § 5.9 (“**Baglihar Determination**”). For Pakistan's response, relying (*inter alia*) on Article IV(14) of the Treaty, see *Baglihar Hydroelectric Plant (Pakistan v India)*, Reply of the Government of Pakistan to the Counter Memorial by Government of India dated 25 January 2006, **Exhibit P-0547/BR-0011**, § 5.3 (“**Baglihar Reply**”).

¹⁷ Transcript of Hearing for the First Phase on the Merits, Day 2 (9 July 2024), p. 105, line 8 – p. 106, line 9 (The Chairman).

¹⁸ Letter No 3/1/84-IT/597 from the ICIW to the PCIW dated 20 May 1992, **Exhibit P-0585**.

India's earlier Western Rivers HEPs, which topped out at 0.962Mm³, the design of the Baglihar HEP included a Pondage requirement of 37.722Mm³.

2.17. This enormous proposed increase in Pondage crystallised the dispute between the Parties on the calculation of maximum Pondage. On 12 August 1992, Pakistan's Commissioner wrote to his counterpart as follows:

“Pakistan, on the basis of the information received, is obliged to take the view that the design of the [Baglihar HEP] does not conform to the criteria (a), (b), (c), (e) and (f) laid down in Paragraph 8 of Annexure D and accordingly objects to the design of the Plant. [...]

The criterion (c) laid down in Paragraph 8 of Annexure D to the Treaty provides that, ‘The maximum Pondage in the Operating Pool shall not exceed twice the Pondage required for Firm Power’. In the absence of calculation of the [MMD], it is not possible to ascertain whether the criterion (c) laid down in Paragraph (8) of Annexure D to the Treaty is met. Moreover, Firm Power defined in Paragraph 2(i) of Annexure D to the Treaty means: ‘Firm Power’ means the hydro-electric power corresponding to the [MMD] at the site of the plant ...’. However, the calculations for the ‘Pondage’ supplied vide Annexure III to your letter under reference is based on a very hypothetical load curve, which provides for a Firm Power, which does not correspond to the [MMD] intimated by you. The Pondage provided in the design of the Plant is therefore, more than twice the Pondage required for Firm Power. Therefore, the design of the Plant contravenes the criterion (c) laid down in Paragraph (8) of Annexure D to the Treaty.”¹⁹

2.18. By this letter, Pakistan's Commissioner set out Pakistan's position on the centrality of Paragraphs 8(c) and 2(i) of Annexure D to the calculation of maximum Pondage. At the same time, the PCIW objected to India's use of a load curve in the calculation on the basis that the putative load on a HEP did not (necessarily) correspond to the MMD at its site.

2.19. A month later, on 14 September 1992, Pakistan sent a letter in almost identical terms to India concerning the Dul Hasti HEP, which had been the subject of discussion in the Commission for some time, and was designed to include an Operating Pool of 8Mm³ – also far larger than India's earlier Western Rivers HEPs. Once again, Pakistan took issue with the proposed maximum Pondage of that HEP on the ground that it was calculated on the basis of “a very hypothetical load curve” that provided a Firm Power “which did not correspond to the [MMD] intimated by India”. It followed, in Pakistan's view, that “the design of the Plant

¹⁹ Letter No WT(127)/(5283-A)/PCIW from the PCIW to the ICIW dated 12 August 1992, **Exhibit P-0586**, ¶¶ 3, 5.

contravenes the criterion (c) laid down in Paragraph 8 of Annexure D to the Treaty”.²⁰

2.20. This correspondence was followed, on 24 May 1993, by a further communication in respect of the Thirot HEP, in which Pakistan's Commissioner noted:

“In [India's] statement of calculations for [the] Operating Pool [...], Pondage has been calculated as Pondage required for maximum aggregate capacity of power units for Firm Power and Secondary Power. It should be limited to the extent required for Firm Power only, as per scheme of things incorporated in the Treaty.”²¹

2.21. By mid-1993, therefore, Pakistan's position on India's approach to the calculation of maximum Pondage had been set out clearly and repeatedly.

2.22. Pakistan did not, subsequently, pursue its opposition to the size of the Dul Hasti HEP Pondage proposed by India, and the Plant was built with an Operating Pool of 8Mm³. While the reason for this decision is not reflected in Pakistan's written records, Pakistan's assessment was that a single HEP with an Operating Pool of 8Mm³ would not have a sufficiently material impact on Pakistan's hydrology to warrant crystallising a disagreement and referring the matter to a Neutral Expert or Court of Arbitration. Whatever the motive behind that decision, however, it is clear that, from mid-1992, Pakistan disagreed with India's approach to the calculation of maximum Pondage as a matter of both principle and legal interpretation.

2.23. As for the Baglihar HEP, this was taken up in the Commission – although it was delayed by several years until the early 2000s. Nevertheless, by way of a 13 July 2002 letter, the PCIW reiterated Pakistan's concerns regarding the Baglihar HEP. This shows that the gravamen of Pakistan's complaint regarding maximum Pondage had remained relatively constant over the decade since the issue was first raised.²²

²⁰ Letter No WT(104)/(5304-A)/PCIW from the PCIW to the ICIW dated 14 September 1992, **Exhibit P-0649.0773**, ¶ 6.

²¹ Letter No WT(125)/(5350-A)/PCIW from the PCIW to the ICIW dated 24 May 1993, **Exhibit P-0649.0787**, Appendix, p. 3.

²² Letter No WT(172)/(6333-A)/PCIW from the PCIW to the ICIW dated 13 July 2002, **Exhibit P-0587**, ¶ 5. This letter is not quite as clear as its 12 August 1992 predecessor, and seems to conflate the issue of Pondage to an extent with the issue of freeboard. It makes clear, however, that Pakistan's principal concern was that Firm Power be linked to the definition in Paragraph 2(i) of Annexure D, and not some other definition.

2.24. Following some back-and-forth between the Parties in the Commission,²³ it was agreed that the 88th Meeting of the Commission would be devoted to the issue of the Baglihar HEP. This Meeting broke down, however, over the issue of whether Pakistan's criticisms of the Baglihar HEP constituted "questions" within the meaning of Article IX(1) of the Treaty.²⁴

2.25. Technical discussion concerning the Baglihar HEP did not occur until the 90th Meeting – by which time Pakistan's Commissioner, apprehensive of the Baglihar HEP's advancing construction, had begun the process of putting the HEP before a Neutral Expert.²⁵ At the 90th Meeting, however, it was confirmed that the disagreement between the Commissioners on Pondage and other issues exceeded the Baglihar HEP. The Minutes of the Meeting record India's Commissioner stating the following:

“[M]ost of the hydro-electric plants in the Himalayan Rivers have design provisions similar to that of the Baglihar Plant. The design has taken into account national and international practices for run-of-river developments and is in consonance with the obligations of the Treaty to follow sound and economical design and satisfactory construction and operation of the works.”²⁶

2.26. The position of Pakistan's Commissioner was as follows:

“Pakistan[’s] Commissioner state[s] that the Treaty has placed certain restrictions on the design and operation of run-of-river plants on the Western Rivers. Therefore, a standard design of other plants on the Himalayan River without consideration of the design criteria given in Paragraph 8 of Annexure D to the Treaty cannot be applied to new power plants under the Treaty.”²⁷

2.27. So far as Pondage was concerned, India's Commissioner reiterated the essence of India's Approach, noting that “Pondage is based on [MMD] in order to meet daily and weekly

²³ See, e.g., Record of the 84th Meeting of the Permanent Indus Commission, 29-30 March 2000, dated 30 March 2000, **Exhibit P-0647.82**, p. 3; Record of the 85th Meeting of the Permanent Indus Commission, 29 May-1 June 2000, dated 1 June 2000, **Exhibit P-0647.83**, p. 2; Record of the 86th Meeting of the Permanent Indus Commission, 29 May-1 June 2001, dated 1 June 2001, **Exhibit P-0647.84**, pp. 7–8; Record of the 87th Meeting of the Permanent Indus Commission, 28 May-1 June 2002 (**PK-25**), dated 31 May 2002, **Exhibit P-0647.85**, pp. 4–8.

²⁴ Record of the 88th Meeting of the Permanent Indus Commission, 4-6 February 2003, dated 6 February 2003, **Exhibit P-0649.86**, ¶¶ 3–18.

²⁵ Letter No WT(127)/(6410-A)/PCIW from the PCIW to the ICIW dated 8 May 2003, **Exhibit P-0228**. The statement of points of difference records the disagreement regarding maximum Pondage for the Baglihar HEP as to “[w]hether or not the maximum Pondage of 37.722MCM, as per information supplied by India for the Baglihar Plant, exceeds twice the Pondage required for Firm Power, and if it does exceed, is it not in contravention of criterion (c) specified in Paragraph 8 of Annexure D”. The Parties were formally approached by the PCIW for appointment of a Neutral Expert soon afterwards: Letter No WT(127)/(6420-21A)/PCIW (with enclosure) dated 20 June 2003, **Exhibit P-0229**.

²⁶ Record of the 90th Meeting of the Permanent Indus Commission, 15-19 January 2004, dated 19 January 2004, **Exhibit P-0544**, ¶ 6.2.3.

²⁷ *Id.*, ¶ 6.1.3.

fluctuations within the limitations as stipulated in Paragraph 15 of Annexure D to the Treaty”.²⁸ Pakistan's position is not recorded – with the conversation again apparently stymied by India's unwillingness to acknowledge that the discussion was occurring under Article IX(1) of the Treaty.²⁹ The matter was not taken up again in the Commission – by the time of the 91st Meeting, Pakistan's Commissioner had decided to refer the Baglihar HEP to a Neutral Expert, and refused to discuss it further unless India suspended construction, a proposal that India's Commissioner declined.³⁰

2.28. On 15 January 2005, Pakistan's Commissioner wrote to the World Bank formally to request appointment of a Neutral Expert concerning the Baglihar HEP. In the statement of Points of Difference, the PCIW rendered the question concerning maximum Pondage at the Baglihar HEP in simple terms:

“Pakistan is of the considered view that the pondage of 37.722MCM exceeds twice the pondage required for Firm Power in contravention of Paragraph 8(c) of Annexure D to the Treaty. The Indian side does not agree to Pakistan's position.”³¹

2.29. Against this background, the earliest elaborated statement of Pakistan's views appeared in its Memorial in the *Baglihar* Neutral Expert proceedings.³² This expanded on Pakistan's views in the PCIW's 12 August 1992 letter some 13 years earlier, adding to it further Treaty argumentation and the fine detail of calculation.

2. Pakistan's position on Pondage in the *Baglihar* proceedings

2.30. As Pakistan's *Baglihar* Memorial shows, the legal premises of its *Baglihar* Approach were very largely the same as those on which Pakistan's Revised Approach, advanced in the present proceedings, is now based.³³

²⁸ *Id.*, ¶ 6.2.4(ii). See also Letter No 3/1/84-IT/1115 from the ICIW to the PCIW dated 22 March 2004, **Exhibit P-0649.0986**.

²⁹ Record of the 90th Meeting of the Permanent Indus Commission, 15-19 January 2004, dated 19 January 2004, **Exhibit P-0544**, ¶¶ 6.1.4–6.1.8.

³⁰ Record of the 91st Meeting of the Permanent Indus Commission, 26-29 May 2004 (**PK-27**), dated 29 May 2004, **Exhibit P-0647.88**, p. 7. Similar statements were also made in earlier meetings: Record of the 89th Meeting of the Permanent Indus Commission, 28-30 May 2003 (**PK-26**), dated 30 May 2003, **Exhibit P-0647.87**, pp. 4–6.

³¹ Letter No WT(127)/(21)/PCIW dated 15 January 2005, **Exhibit P-0230**, enclosure (ii).

³² *Baglihar Hydroelectric Plant (Pakistan v India)*, Memorial of the Government of Pakistan dated 14 August 2005 (“*Baglihar Memorial*”), **Exhibit P-0547/BR-0007**, §H. Pakistan's subsequent pleadings on Pondage were largely given over to criticism of India's position: *Baglihar* Reply, **Exhibit P-0547/BR-0011**, §5.0.

³³ Save for the fact that Pakistan's Revised Approach adopts a four-part structure based on the need to calculate the minimum mean discharge as part of the Firm Power analysis: *COA Memorial*, ¶ 11.41. The *Baglihar* Approach

2.31. The *Baglihar* Approach took as its cornerstone Paragraph 8(c) of Annexure D, providing that “[t]he maximum Pondage in the Operating Pool shall not exceed twice the Pondage required for Firm Power”.³⁴ From this, Pakistan derived the following methodological steps:³⁵

- (a) **First**, the determination of Firm Power.
- (b) **Second**, the determination of the Pondage “required for Firm Power”.
- (c) **Third**, the determination of maximum Pondage.

2.32. In addition to these steps, the *Baglihar* Approach excluded as immediately relevant to the calculation methodology (i) the definition of Pondage, contained in Paragraph 2(c) of Annexure D, and (ii) the restrictions on HEP reservoir operations set out in Paragraph 15 of Annexure D.

2.33. From these premises, the *Baglihar* Approach started by calculating Firm Power in accordance with the formula set out at Paragraph 2(i) of Annexure D, under which Firm Power is “the hydro-electric power corresponding to the minimum mean discharge at the site of a plant”.³⁶

2.34. As Pakistan has explained elsewhere, the calculation of Firm Power for a given HEP is not contested between the Parties, and involves taking the MMD (the calculation of which is also not contested³⁷) at the HEP site and multiplying it by the generating head, the HEP’s mechanical efficiency, water density and gravity.³⁸

2.35. In the case of the HEP in issue in the *Baglihar* proceedings, this meant that the Chenab River’s MMD at the HEP site of 125.68m³/sec, together with the other relevant inputs, produced a Firm Power of approximately 130MW.³⁹

folded the minimum mean discharge calculation into the determination of minimum mean discharge into the Firm Power analysis, and did not treat it separately.

³⁴ Indus Waters Treaty, **PLA-0001**, Annexure D, Paragraph 8(c).

³⁵ *Baglihar* Memorial, **Exhibit P-0547/BR-0007**, §H (¶ 1).

³⁶ Indus Waters Treaty, **PLA-0001**, Annexure D, Paragraph 2(i).

³⁷ Save to the extent that the hydrological data underpinning the calculation is challenged as inaccurate or incomplete: *see*, e.g., Record of the 113th Meeting of the Permanent Indus Commission, 20-21 March 2017, dated 29 March 2018, **Exhibit P-0545**, ¶¶ 62–66 (concerning the Lower Kalnai HEP).

³⁸ *COA* Memorial, ¶¶ 11.45–11.53.

³⁹ *Baglihar* Memorial, **Exhibit P-0547/BR-0007**, §H (¶¶ 3–5).

2.36. With the Firm Power figure in hand, the *Baglihar* Approach then considered the question of the “twice the Pondage required for Firm Power” requirement in Paragraph 8(c) of Annexure D.

2.37. As the Court will recall, under Pakistan’s Revised Approach advanced in the present proceedings, Pakistan considers the “Pondage required for Firm Power” to be the amount of Pondage required to ensure that any inflow into the reservoir in a given 24-hour period can be discharged through the HEP’s turbines at the Firm Power rate (*i.e.*, MMD) for a number of hours depending on the flow available.⁴⁰ This concept, from Pakistan’s appreciation, is that Firm Power is a rate of production. It is **not** a fixed quantity of energy to be made available over a particular period of time,⁴¹ which would be ‘firm energy’, a concept not mentioned in the Treaty.

2.38. The *Baglihar* Approach adopted a different premise, reading the phrase “Pondage required for Firm Power” in Paragraph 8(c) of Annexure D as meaning the Pondage required for the **continuous production** of Firm Power.⁴² What this meant, in effect, was that the HEP in question had to have available sufficient Pondage to discharge water continuously through the HEP’s turbines at the MMD rate. Thus:

“The Treaty stipulates that pondage has to be calculated with reference to Firm Power which in turn has to be calculated on the basis of the [MMD]. However, so far as the [MMD] is concerned, it is evident that even when the water inflows over a seven day period average out to the [MMD], there will be significant variations in the daily inflows. On some days (within the seven day period), the inflow of water will be in excess of the [MMD] while on some days it will be less.

The continuous generation of Firm Power throughout a week will require the [MMD] to be passed through the turbines continuously. The requirement for pondage therefore arises from the need to regulate the inflow to ensure availability of the [MMD] throughout the week. Thus the pondage required for Firm Power in such circumstances will be that minimum quantity of storage which will allow the continuous production of Firm Power, so long as the average inflow at site is equivalent to the [MMD]. Twice that quantity of pondage is the Maximum Pondage as permitted by the Treaty.”⁴³

⁴⁰ COA Memorial, ¶ 11.71. In essence, this means that Pondage will only be required where the flow of the river drops below the MMD rate. In all other hydrological conditions (*i.e.*, at the MMD rate and above), the natural flow of the river will be sufficient to allow for the production of constant Firm Power or greater without the need for additional assistance from storage. For the full explanation, *see id.*, ¶¶ 11.54–11.63.

⁴¹ COA Memorial, ¶ 11.50. *See* further United States Army Corps of Engineers, “Engineer Manual 1110-2-1701”, *Hydropower*, 31 December 1985, **Exhibit P-0302 (resubmitted)**, p. 2-2.

⁴² *Baglihar* Memorial, **Exhibit P-0547/BR-0007**, §H (¶ 7).

⁴³ *Id.*, §H, ¶¶ 6–7.

2.39. The data required to determine the maximum Pondage under the *Baglihar* Approach was set out in an Appendix to Pakistan's Memorial in the *Baglihar* proceedings.⁴⁴ In layman's terms, however, the steps required in the *Baglihar* Approach to calculate "twice the Pondage required for Firm Power", as required by Paragraph 8(c) of Annexure D were as follows:

- (a) **First**, take the historic daily discharge data for the HEP site that India is required to provide to Pakistan when notifying a new HEP under Paragraph 9 of Annexure D.⁴⁵ Use this to compute the MMD and Firm Power pursuant to Paragraph 2(i) of Annexure D.
- (b) **Second**, taking the same daily discharge series, identify the week within the historical record where the average river flow over the week is closest to the MMD.
- (c) **Third**, up- or downscale the daily values within the identified week such that the average discharge over the week is equal to the MMD.
- (d) **Fourth**, model the scaled discharges to allow flow through the turbines consistently at the MMD rate, producing Firm Power for the entire week.
- (e) **Fifth**, determine the maximum variation in the final storage at the end of each day over the course of week, which is the "Pondage required for Firm Power".
- (f) **Sixth**, double the maximum variation to determine the maximum Pondage and fix the size of the HEP's Operating Pool.

2.40. In the case of the Baglihar HEP, Pakistan reported its results as follows:

"[Pakistan] has carefully sifted through the data provided by India and identified the week from the available flow data (4-10 February 1978) whose average inflow was closest to the [MMD] value of 125.68 cumecs. The daily inflows of this week were then upscaled to make their average equal to 125.68 cumecs. The pondage was then calculated as the storage necessary to allow the continuous production of Firm Power given these inflows. The resultant 'pondage required for Firm Power' is 3.11MCM and the Maximum Pondage is therefore 6.22MCM. It is also important to note that with this Maximum Pondage, the Dead Storage Level would be raised to el. 839.4m, thus

⁴⁴ *Id.*, Exhibit 9.

⁴⁵ Per the Indus Waters Treaty, **PLA-0001**, Annexure D, Appendix II, Paragraph 2(b), India is required to provide Pakistan with "[o]bserved or estimated daily river discharge data on which the design is based (observed data will be given for as long a period as available; estimated data will be given for as long a period as possible; in both cases data may be limited to the latest 25 years)".

reducing the range of the Operating Pool from 5m (as designed by [India]) to only 0.6m.”⁴⁶

2.41. In other words, Pakistan's application of the *Baglihar* Approach resulted in the week from 4-10 February 1978 being selected as the basis of maximum Pondage. Within that week, the largest amount of storage required to meet the objective of constant Firm Power when considering the day-to-day hydrology of the Chenab River was 3.11Mm³. When doubled, pursuant to Paragraph 8(c) of Annexure D, this produced a maximum Pondage of 6.22Mm³.⁴⁷

3. Pakistan's position on Pondage after *Baglihar*

2.42. In the *Baglihar* Determination, the Neutral Expert largely preferred India's approach to the calculation of maximum Pondage. He rejected Pakistan's approach and fixed the volume of the Operating Pool of the Baglihar HEP at 32.56Mm³.⁴⁸ Pakistan considered (and still considers) this determination to be incorrect and highly damaging to the fabric of the Treaty. Although the *Baglihar* Determination was (and remains) conclusive with respect to the Baglihar HEP, it has no wider application to other Indian HEP on the Western Rivers.⁴⁹ As a consequence, following the *Baglihar* Determination, Pakistan continued to pursue in the Commission the approach that it had advanced in the *Baglihar* proceedings – in particular, with respect to the Kishenganga and Ratle HEPs (respectively, the “**KHEP**” and the “**RHEP**”).

2.43. On 4 February 2008 (*i.e.*, 12 months after the *Baglihar* Neutral Expert Determination), Pakistan's Commissioner wrote to his Indian counterpart with respect to the design of the KHEP as follows:

“Paragraph 8(c) of Annexure D states clearly that ‘the maximum pondage in the Operating Pool shall not exceed twice the pondage required for Firm Power’. It therefore follows that, notwithstanding the definition of Pondage contained in paragraph 2(c) of Annexure D, the quantum of maximum Pondage is to be determined by doubling the quantum of Pondage necessary to ensure the continuous production of Firm Power during a week when the average inflow is equal to the [MMD]. Maximum Pondage determined in this manner [for the KHEP] comes to 1 mcm and the maximum

⁴⁶ *Baglihar* Memorial, **Exhibit P-0547/BR-0007**, §H (¶ 9).

⁴⁷ *Id.*, Exhibit 9. Pakistan also carried out a sufficiency analysis to support its position. Using the inflow from 4-10 February 1978, it carried out a hypothetical reservoir operation to determine whether the peaking requirements of the Baglihar HEP could be met (with a realistic loading pattern) while remaining within the maximum Operating Pool calculated by Pakistan, *i.e.*, 6.22Mm³: *id.*, **Exhibit P-0547/BR-0007**, Exhibit 10.

⁴⁸ *Baglihar* Determination, **PLA-0002**, §6.5 (¶ 3).

⁴⁹ See in this respect *Indus Waters Kishenganga Arbitration (Pakistan v India)*, Partial Award (2013) XXXI RIAA 55, **PLA-0003**, ¶ 470 (“*Kishenganga arbitration, Partial Award*”).

pondage provided by India of 7.5 mcm at the [KHEP] is therefore in violation of the Treaty.”⁵⁰

2.44. Suffice to say, India disagreed with this, and the question of the calculation of Pondage for the KHEP was one of the six issues identified by Pakistan's Commissioner for third party settlement under Annexures F and G of the Treaty.⁵¹ Further consideration of the matter was effectively stayed in the period 2009 to 2013, whilst the *Kishenganga* arbitration was underway.

2.45. During this interregnum, India notified Pakistan of its plans for the RHEP. Pakistan again argued that its *Baglihar* Approach, based on “continuous release of the [MMD]” through the RHEP's turbines, was the correct methodology for the calculation of maximum Pondage under the Treaty.⁵² India's response was to reaffirm its reliance on the *Baglihar* Neutral Expert determination, whilst at the same time arguing that “[t]he requirement of continuous release of [MMD], as proposed by you, is nowhere stated in the Treaty”.⁵³

2.46. On 25 March 2013, Pakistan's Commissioner wrote to India's Commissioner enclosing

⁵⁰ Letter No WT(132)/(6839-A)/PCIW from the PCIW to the ICIW dated 4 February 2008, **Exhibit P-0059**, ¶ 12. In the same letter, Pakistan's Commissioner also complained that the peaking schedule by which India had calculated its maximum Pondage under the methodology adopted by the *Baglihar* Neutral Expert was “entirely arbitrary” and bore “no resemblance to the peak load which would actually be expected on a reasonable or objective basis”. In particular, the PCIW noted that “the peaking schedule includes peaking on Monday from 20:51pm until 08:00am (that is, all night long) as well as peaking on Friday for a continuous period of 11 hours (from 09:00am til 20:20pm)”. He further noted that “[i]f the peaking schedule assumed is rationally determined, the maximum pondage which results is not more than 3 mcm”: *id.*, **Exhibit P-0059**, ¶ 13. The ICIW's only response to this was to claim that “[t]here is a considerable energy shortage in the Northern Region [of India]” and that the peaking schedule that India had used for the KHEP's Pondage calculation “could be one of the possibilities” for operating the HEP in due course: Record of the 100th Meeting of the Permanent Indus Commission, 31 May-4 June 2008, dated 4 June 2008, **Exhibit P-0060**, p. 13; *see also* Record of the 101st Meeting of the Permanent Indus Commission, 25-28 July 2008, dated 28 July 2008, **Exhibit P-0061**, p. 9.

⁵¹ Letter No WT(132)/(6891-A)/PCIW from the PCIW to the ICIW dated 11 March 2009, **Exhibit P-0063**, ¶ 4.iii.

⁵² Letter WT(150)(7314-A)/PCIW from the PCIW to the ICIW dated 26 November 2012, **Exhibit P-0078**, ¶ 4. *See also* Letter WT(150)/(7335-A)/PCIW from the PCIW to the ICIW dated 20 March 2013, **Exhibit P-0072**, ¶ 7:

“To check whether or not the maximum Pondage in the Operating Pool exceeds twice the Pondage required for Firm Power, there is no other way except to simulate the operation of the facility in a manner that power generation is restricted to the Firm Power [...] Such an operation would require passing of the [MMD] through the turbines while receiving the natural flow in the reservoir. The natural flow pattern in the rivers inherently exhibits variation within a day and the week. In order to maintain the sustained water supply to generate the Firm Power, a cushion is required to absorb the sudden impulses during the day and/or week i.e. flows greater than the MMD, and to supplement the discharge during the instances when the flow falls below the MMD. The volume of aforementioned cushion is thus technically adequate for the purposes of ensuring the generation of Firm Power. Given the uncertainty of natural flow patterns and to ensure meeting the fluctuations in the discharge of the turbines arising from variations in the daily and weekly loads of the plant [the] Treaty duly allows to make twice the Pondage required for Firm Power, which is known as maximum Pondage.”

⁵³ Letter 3/5/2007-IT/1974 from the ICIW to the PCIW dated 11 January 2013, **Exhibit P-0079**, ¶ 4.

Pakistan's calculations for maximum Pondage at the RHEP based on its *Baglihar* Approach.⁵⁴ This identified the week from 16 to 22 January 1973 as the portion of the hydrological record averaging a flow closest to the MMD – and fixed the maximum Pondage of the RHEP at 8.09Mm³.

2.47. In a letter from India's Commissioner dated 11 September 2013, India included a substantial criticism of Pakistan's approach. In addition to the familiar argument that Pakistan's approach was intended to produce constant Firm Power – a parameter not mentioned in the Treaty – India's Commissioner made some practical observations:

“You will see the consequences of your approach:

(a) If there are little or no fluctuations in the daily flow over the week in the river, the approach will yield no or very little Pondage. Thus Pondage as low as 0.2MCM can be worked out (e.g., 24-30 Jan 1998). Thus the Plant will be unable to have sufficient Live Storage (Pondage) necessary to meet the fluctuations in the discharge of the turbine arising out of daily or weekly loads of the Plant.

(b) There may be seven-day periods having mean inflow close to MMD, but not exactly equal to MMD. Since such seven-day periods will result in Pondages of varying magnitudes, you had informed during the 108th meeting that India can choose the week corresponding to the highest Pondage, though there is nothing specified in the Treaty to this effect. However, this adds to the ambiguities in your approach:

(i) In the absence of anything specific in the Treaty as to adopt your approach, one cannot rule out a successor Commissioner from insisting on a lowest value to be adopted.

(ii) In contrast to the example of low Pondage of 0.2 MCM during 24-30 January 1998 cited earlier, Pondages in excess of that provided by India can be obtained. The week of 19-25 February 1973 will give 15.6 MCM and another seven-day period in Feb[ruary] 1980 will give a value of 10.4 MCM. Certain seven-day period[s] in February/March 1988 gives as high as 20 MCM.

(c) The daily observed data at Premnagar cannot truly represent weekly flow fluctuations at the Ratle dam site. Moreover, there is no guarantee that flow will fluctuate in a similar manner in coming years.”⁵⁵

2.48. On this basis, India's essential criticism of Pakistan's approach boiled down to two

⁵⁴ Letter WT(51)/(7337-A)/PCIW from the PCIW to the ICIW dated 25 March 2013, **Exhibit P-0081**, p. 4. The letter also included calculations for the Miyar and Lower Kalnai HEPs: *id.*, pp. 7, 11.

⁵⁵ Letter 3/5//2007-IT/2043 from the ICIW to the PCIW dated 11 September 2013, **Exhibit P-0082**, ¶ 10 (emphasis original). The concession of the PCIW that the ICIW refers to does not appear in the minutes of the 108th meeting of the Permanent Indus Commission: Record of the 108th Meeting of the Permanent Indus Commission, 23-26 March 2013, dated 24 September 2013, **Exhibit P-0070**, ¶¶ 37, 41.

points. The first was the familiar legal point: the Treaty nowhere required maximum Pondage to be calculated on the basis of the production of constant Firm Power. The second was a more substantial engineering point. Given that Pakistan's *Baglihar* Approach derived maximum Pondage from a particular week in the hydrological record, the amount of storage it produced varied depending on which week was selected. To that end, Pakistan had selected for each HEP site the week in the applicable hydrological record with an average discharge closest to that site's MMD. Ultimately, said India, this was a subjective determination, and nothing stopped a future Pakistani Commissioner from insisting on a lower value, and therefore a smaller amount of Pondage.

2.49. Pakistan's response came in the 109th Meeting of the Commission in late September 2013. As to the legal point, the PCIW pointed out that India's approach was not even premised on the production of Firm Power, but peaking the HEP up to its installed capacity.⁵⁶ As to the engineering point, as developed in the ICIW's 11 September 2013 letter:

- (a) On the question of fluctuations in daily flow, the PCIW noted that "if such situation of no fluctuation is encountered it can be put aside as a freak event of non-representative character and another week with representative natural fluctuations may be chosen from the data".⁵⁷
- (b) On the potential for the *Baglihar* Approach to produce a range of possible values for maximum Pondage at each HEP, from which the value closest to the MMD would be selected, the PCIW noted that the MMD and most of the candidate values would arise in the period November to February, and that at this time "the variations in MMD are generally low and this is consistent with the overall orientation of Paragraph 8 of Annexure D which is oriented towards restricting the control over the storage". To that end, the PCIW also, again, suggested, that the record would be screened for unusually high or low fluctuations.⁵⁸
- (c) On the supposed insufficiency of the Premnagar data, the PCIW suggested that one issue was that India had supplied Pakistan with 10-day data of the RHEP

⁵⁶ Record of the 109th Meeting of the Permanent Indus Commission, 22-25 September 2013, dated 14 July 2014, **Exhibit P-0083**, ¶ 27.

⁵⁷ *Id.*, ¶ 28.

⁵⁸ *Id.*, ¶ 29.

site, and not daily data as required by the Treaty.⁵⁹ As to the question of whether these values would shift over time, the PCIW noted that “the flow fluctuations recorded are representative of the site and it was not expected that the flow fluctuations of the future would be much different from those already recorded”.⁶⁰

- (d) Finally, on the question of the subjectivity inherent in the *Baglihar* Approach, the PCIW noted that there is “the same or higher subjectivity [...] in the load patterns that are adopted by India for the computation of Pondage and the issue of subjectivity is common to both the methods”.⁶¹

2.50. What these exchanges reveal is Pakistan refining its Pondage calculation methodology in response to India's criticisms and concerns – in particular by removing extreme or unrepresentative values from consideration, and bringing its analysis to a single value or at least in a narrow representative range. Indeed, later in the process, in a bid to show further flexibility to India, Pakistan indicated that it would be willing to accept an Operating Pool of up to 12Mm³ for the RHEP.⁶²

2.51. Fundamentally, however, the gulf of legal principle between the two Parties remained too great for any compromise. Pakistan and India remained fixed in their positions throughout 2014 and 2015. Pakistan considered that the Treaty required maximum Pondage to be calculated on the basis of the Pondage required for the production of Firm Power pursuant to Paragraphs 8(c) and 2(i) of Annexure D. India considered that it was entitled to calculate Pondage to meet “variations in the daily and weekly loads of the plant” pursuant to Paragraph 2(c) of Annexure D, but subject to the operational limitations of Paragraph 15 of Annexure

⁵⁹ In order to convert these 10-day values into the daily figures that the *Baglihar* Approach required (and which India was obliged to provide under Appendix II of Annexure D), Pakistan calculated ratios of daily to 10-daily values for the Premnagar data. These same ratios were applied to the 10-day data of the RHEP to convert those into daily data, assuming that the ratios calculated for Premnagar station were applicable at RHEP site on the basis that both locations were so close to each other that there would be no significant changes in the catchment or climatic parameters that would cause significant discrepancies between the two. *Id.*, ¶ 30.

⁶⁰ Record of the 109th Meeting of the Permanent Indus Commission, 22-25 September 2013, dated 14 July 2014, **Exhibit P-0083**, ¶ 30.

⁶¹ *Id.*, ¶ 31.

⁶² See, e.g., Record of the 111th Meeting of the Permanent Indus Commission, 31 January-4 February 2015, dated 31 May 2015, **Exhibit P-0025**, ¶ 82.

D.⁶³

2.52. The Parties remained so divided as at 19 August 2016, when Pakistan filed its Request for Arbitration in these proceedings.⁶⁴

4. Pakistan's further attempts to refine its *Baglihar* Approach

2.53. Shortly prior to the filing of the Request for Arbitration, in an attempt to further refine its approach to the calculation of Pondage, and remove any subjectivity from the exercise, Pakistan introduced further nuance into its thinking. In response to India's concerns regarding the subjectivity of its *Baglihar* Approach, Pakistan undertook a 'sense check' of its approach to ensure that it would provide India with the capacity to generate constant Firm Power regardless of the hydrological conditions. By this, Pakistan hoped to convince India that its view of maximum Pondage was objectively fair and logical.

2.54. Like its *Baglihar* Approach, what is here referred to as Pakistan's Interim Approach sought to meet India's criticisms concerning the subjectivity of Pakistan's *Baglihar* Approach, adopting the following steps:

- (a) **First**, using the daily discharge data provided by India, calculating the MMD.
- (b) **Second**, using the same daily discharge series, computing a seven-day moving average of the river flow in m³/sec. This involved, for each year in the hydrographic record, creating a series of seven-day averages for river flow: from Days 1–7, 2–8, 3–9, 4–10 and so forth up to Days 359–365, at which point the next entry in the series would be Day 360–Day 1 of the following year. When projected out over 25 years of hydrological data, this will result in thousands of seven-day averages.
- (c) **Third**, once a complete series of seven-day averages had been computed, selecting and listing those periods in which the average discharge was $\pm 10\%$ of

⁶³ See, e.g., Record of the 110th Meeting of the Permanent Indus Commission, 23-27 August 2014, dated 1 February 2015, **Exhibit P-0024**, ¶¶ 9–12, 28–29, 45–48; Record of the 111th Meeting of the Permanent Indus Commission, 31 January-4 February 2015, dated 31 May 2015, **Exhibit P-0025**, ¶¶ 31–32, 67–70, 81–82.

⁶⁴ Request for Arbitration, ¶¶ 42–51, 58–59.

the MMD (“**the Shortlisted Periods**”).⁶⁵

(d) **Fourth**, using each Shortlisted Period to model a seven-day reservoir operation with the following parameters:

- Up- or downscale the daily values within each Shortlisted Period so that the average discharge over the Shortlisted Period is equal to the MMD.
- Model the resulting scaled daily discharges to flow through the turbines constantly at the MMD rate, producing constant Firm Power over the Shortlisted Period.
- Identify the maximum variation in the final storage at the end of each day over the course of the Shortlisted Period as the “Pondage required for Firm Power” for that Shortlisted Period.
- Double the resulting amount pursuant to Paragraph 8(c) of Annexure D to produce the maximum Pondage for that Shortlisted Period.

The end result of this process would be a range of maximum Pondage values for each of the Shortlisted Periods. The question would then be how to select a Shortlisted Period as the basis of maximum Pondage for the HEP in question.

(e) **Fifth**, the maximum Pondage for each Shortlisted Period would be plotted on a duration curve. The storage magnitude sufficient to meet the objective of constant Firm Power over a week in 90% of cases (*i.e.*, 10% exceedance) would then be selected as the maximum Pondage for the HEP. This would allow for the screening of extreme events and their removal from the analysis.

2.55. In short, unlike Pakistan's *Baglihar* Approach, which relied only on data of a subjectively selected week, while disregarding others, Pakistan's Interim Approach calculated every possible value of the Pondage required to produce Firm Power. It did this by analysing every seven-day period in the hydrological record supplied by India in which the average flow rate was within plus or minus 10% of the MMD. All of the possible values of Pondage were

⁶⁵ Thus, in the case of the RHEP (with an MMD of 106.5m³/sec), all seven-day periods with an average discharge ranging from 95.85 to 117.5m³/sec would have been shortlisted.

then deployed in a hypothetical reservoir operation to calculate the energy that the HEP would produce during the whole year, including the periods when the maximum Pondage would also be utilised either fully or partially. The annual energy corresponding to various values of Pondage were then plotted against each other to find such a value of Pondage beyond which the HEP's energy generation became independent of any further increase in Pondage.

2.56. When applied to the hydrographic record for the RHEP, the Interim Approach showed that the applicable maximum Pondage was 7.21Mm³, such that the 8.09Mm³ being offered by Pakistan under its *Baglihar* Approach was comparatively generous.

2.57. At this time, the question of maximum Pondage for the KHEP and the RHEP was formally in the hands of the Court of Arbitration – although it had yet to be empanelled owing to the World Bank's Pause. Pending a substantive determination of the proper calculation of Pondage under the Treaty by the Court, Pakistan continued to advocate in the Commission for its Interim Approach with respect to other Indian HEPs on the Western Rivers, beginning at the 113th Meeting of the Commission in March 2017. Pakistan also attempted to ameliorate India's concerns in economic terms – for example, by demonstrating that a "Pondage value greater than Pakistan's estimation provided no extra benefits in terms of total energy and revenue" insofar as HEP operation was concerned.⁶⁶

2.58. India rejected Pakistan's overtures, however, for the same reasons that it rejected Pakistan's *Baglihar* Approach – in India's view, the Treaty required Pondage to be calculated in such a way as to meet fluctuations in HEP load, whilst being restrained by the operational guidelines set out in Paragraph 15 of Annexure D.⁶⁷

5. Pakistan develops its Revised Approach

2.59. Pakistan persisted in advocating its Interim Approach until November 2022 – the point at which the World Bank empanelled the Court and appointed the Neutral Expert.

2.60. As part of the process of preparing its case in these proceedings, Pakistan – assisted by an external legal and engineering team – revisited its views on the proper meaning of the HEP design criteria in Paragraph 8 of Annexure D. This process included reassessment of both its

⁶⁶ Record of the 113th Meeting of the Permanent Indus Commission, 20-21 March 2017, dated 29 March 2018, **Exhibit P-0103**, ¶ 31.

⁶⁷ *Id.*, ¶¶ 32–34.

Baglihar and Interim Approaches to the calculation of maximum Pondage in light of India's criticisms and the determination of the Neutral Expert in *Baglihar*.

2.61. The first step taken by Pakistan in this review was to return to the Treaty and the provisions of Annexure D. From this, two key conclusions were reached:

- (a) **First**, the central and controlling premise of Paragraph 8(c) was that Pondage was to be calculated on the basis of what was “required for Firm Power” within the meaning of Paragraph 2(i), and not Secondary Power within the meaning of Paragraph 2(j). Given the process by which Firm Power was calculated, this linked the Pondage calculation inextricably to the concept of the MMD.
- (b) **Second**, ‘power’, within the concept of Firm Power as a term of art in the Treaty, could not be taken as a reference to a specified quantity of energy, or the guaranteed availability of power for a specified period, as measured in MW-hrs. That would confuse Firm Power under the Treaty with the different concept of ‘firm energy’ – a concept known to hydropower engineers at the time of the Treaty’s conclusion,⁶⁸ and which its drafters could easily have inserted into Paragraphs 8(c) and 2(i) had they wanted to do so. Rather, the term “Firm Power” was chosen, and defined, to refer to power in the sense in which it was understood in ordinary engineering terms: the output of a HEP at a particular moment – a rate at which work was done⁶⁹ – typically measured in MW.

2.62. The second step taken by Pakistan was to consider the language and objective of Paragraph 8(c) of Annexure D. From that Pakistan developed a series of benchmarks against which any methodology for the calculation of maximum Pondage could be tested – what Pakistan has referred to as “sufficiency criteria”.⁷⁰ It conceived of these as aspects of the obligation under Article 31(1) of the VCLT to interpret treaty terms in good faith, and in light of their context, object and purpose.⁷¹

⁶⁸ W. P. Creager and J. D. Justin (eds.), *Hydroelectric Handbook* (2nd Edition: John Wiley & Sons 1950), **Exhibit P-0309 (resubmitted)**, pp. 261–262. This text also refers to an “occasional” concept of “firm power capacity” but makes clear it is only applicable when “no pondage at all is available at the plant”: *id.*, p. 262.

⁶⁹ A similar unit of measurement, but for the internal combustion engine as opposed to a HEP, is horsepower.

⁷⁰ COA Memorial, ¶ 11.43.

⁷¹ See Transcript of Hearing for the First Phase on the Merits, Day 7 (16 July 2024), p. 71, line 12–p. 78, line 9 (Dr Miles).

2.63. To recall, these sufficiency criteria are:

- (a) The methodology must be capable of coming up with a unique and fixed volume of maximum Pondage for each HEP, derived from the MMD at the site of the HEP in question.
- (b) The methodology must be capable of generating a maximum Pondage figure using tools that would have been available at the time the Treaty was drafted, *i.e.*, manual or graphical computation, with relative ease.
- (c) The methodology should not require or warrant constant correction, or be rendered unfit for purpose by future developments.
- (d) The result that the methodology produces should not be overly sensitive to input data such that data errors or discrepancies would significantly affect the outcome, opening the door to further disagreement.
- (e) The methodology should be capable of resting on data expressly addressed in the Treaty, and, in particular, should not rely on information that India is not required to provide to Pakistan in the course of notifying Pakistan of a new HEP under Paragraph 9 of Annexure D.
- (f) The methodology should not be such that one Party would be capable of manipulating the result to suit its priorities, *e.g.*, by making it dependent on mechanisms that a Party can influence unilaterally.⁷²

2.64. At the Hearing, the Chairman asked whether any of these criteria are reflected in India's practice.⁷³ The answer is: yes. It will be recalled that the need to ensure that the calculation of Pondage rested on objective factors was precisely the reason given by the ICIW, in his letter of 11 September 2013, for criticising Pakistan's *Baglihar* Approach.⁷⁴ This was reiterated by the ICIW in the course of the 113th Meeting of the Commission. There, India's Commissioner observed in relation to the calculation of Pondage:

“It had earlier been brought out by [the] Indian side that the Pakistan[] approach is very subjective and yields pondage ranging from very trivial to more than what India has

⁷² *Id.*

⁷³ Transcript of Hearing for the First Phase on the Merits, Day 7 (16 July 2024), p. 78, lines 19–22 (The Chairman).

⁷⁴ Letter 3/5//2007-IT/2043 from the ICIW to the PCIW dated 11 September 2013, **Exhibit P-0082**, ¶ 10.

provided. *In the meticulously drafted Treaty, such subjectivity is beyond comprehension.*"⁷⁵

2.65. Further, in the 11 September 2013 letter, India's Commissioner also voiced a second criteria – namely, the need to avoid a methodology that comes up with a range of values, and instead prefer one that produces a single figure. And by his focus on the fact that the Pondage under Pakistan's *Baglihar* Approach would vary based on which week was selected as the subject of the reservoir operation, he may also have impliedly endorsed a third – that the methodology not be overly sensitive to input data.⁷⁶

2.66. Applying these two steps to Pakistan's earlier approaches, it became clear to Pakistan that, while its earlier approaches had been correct in some respects (and, in any event 'more correct' than those of India and the *Baglihar* Neutral Expert) as to the proper interpretation of Paragraph 8(c) of Annexure D, further refinement was warranted.

2.67. So far as the first step was concerned, while Pakistan's earlier approaches were correctly based on Paragraphs 8(c) and 2(i) of Annexure D, and the need for the HEP to produce Firm Power, India was right to say that they were premised on a need to provide constant Firm Power, a concept not contained within the Treaty.⁷⁷ However, by attempting to guarantee India a continuous supply of Firm Power, Pakistan had produced a methodology that supplied it with "firm energy" – exceeding the plain words of the Treaty.

2.68. Further, insofar as the sufficiency criteria are concerned, Pakistan's earlier approaches met some but not all of them.

- (a) Neither the *Baglihar* nor the Interim Approach produced a unique and fixed volume of Pondage for each HEP. While rooted firmly in the MMD, they both produced a range of possible figures on the basis of weekly or seven-daily periods identified across the hydrographic record. From these, a 'winner' had to be selected. The *Baglihar* Approach did this by picking the week with an average discharge closest to the MMD. The Interim Approach did this by

⁷⁵ Record of the 113th Meeting of the Permanent Indus Commission, 20-21 March 2017, dated 29 March 2018, **Exhibit P-0545**, ¶ 28 (emphasis added).

⁷⁶ Letter 3/5//2007-IT/2043 from the ICIW to the PCIW dated 11 September 2013, **Exhibit P-0082**, ¶ 10.

⁷⁷ See, e.g., Letter 3/5/2007-IT/1974 from the ICIW to the PCIW dated 11 January 2013, **Exhibit P-0079**, ¶ 4.

plotting all Shortlisted Periods on a duration curve and imposing a 10% exceedance.

- (b) While both approaches could be undertaken with calculation methodologies available at the time of the Treaty's drafting, this could not be done with ease – particularly the Interim Approach. Both approaches involved carefully sifting 25 years of daily hydrological data and calculating average discharges in each over weekly or seven-day periods – a process that, in the case of the *Baglihar* Approach, resulted in hundreds of possible entries, and, in the case of the Interim Approach, thousands. The data so produced needed thereafter to be manipulated and used as the basis of a model reservoir operation. While this kind of analysis is straightforward using desktop spreadsheet software and macros, it would have required considerable effort to do with pencil and paper, as was the case when the Treaty was concluded in 1960.
- (c) Both approaches, being based on the MMD alone, would not be warranted unfit by future developments, provided the Western Rivers continued to exhibit their historic flow pattern. The Interim Approach, confirmed to produce constant Firm Power in 90% of historical cases, was particularly robust in this respect. However, both the *Baglihar* and Interim Approaches required constant correction in their deployment, most notably in the up- and downscaling of daily values that was required to model the reservoir operation that formed the basis of the approaches, as well as in the screening of extreme events that Pakistan later introduced in response to India's criticisms.
- (d) The *Baglihar* Approach was sensitive to input data, in that if the daily flows in the week that was selected as the basis of the Pondage calculation were incorrect, this could have a considerable impact on the outcome. The Interim Approach was more robust, identifying all seven-day periods with an average discharge $\pm 10\%$ of the MMD, and then selecting the value that would allow the production of constant Firm Power in 90% of hydrological conditions.
- (e) Both the *Baglihar* and Interim Approaches relied on data that India was required to provide under Paragraph 9 of Annexure D, namely the historical daily hydrological data at the HEP site. To the extent that Pakistan tried to improve

the models through external material, however, for example, by introducing economic data to demonstrate to India that greater Pondage would yield few additional benefits⁷⁸ – they fell short of this criterion.

- (f) Finally, both models carried with them an inevitable degree of subjectivity – a point that India was quick to raise.⁷⁹ Both the *Baglihar* and Interim Approaches produced a range of candidate weeks or seven-day periods on which the reservoir operation that would eventually produce the maximum Pondage would be modelled. And in both cases, it was Pakistan that nominated the criterion that would be used to pick the ‘winner’: the period with the average discharge closest to the MMD in the case of the *Baglihar* Approach; and the 10% exceedance threshold in the case of the Interim Approach.

2.69. When all of the above was taken into account, it was apparent to Pakistan that its earlier approaches to the calculation of maximum Pondage did not reflect the proper construction of Paragraph 8(c) of Annexure D. Given this appreciation, Pakistan went back to the issue of the meaning of Paragraph 8(c). As its counsel put it at the Hearing:

“If I might be permitted to just to draw back the curtain a little bit for the Court. Pakistan developed these sufficiency criteria as part of a process of determining the correct approach to the calculation of [maximum] pondage. The process was to start with a blank piece of paper and develop the criteria, and then to test them against every approach its internal and external teams could think of, including Pakistan’s earlier approach [in both the *Baglihar* and the Interim Approaches] and India’s current approach. At the end of this process of elimination, only the [Revised Approach] that Pakistan presents was left standing.”⁸⁰

B. MISCELLANEOUS QUESTIONS ON PONDAGE ARISING AT THE HEARING

2.70. On reviewing the transcript of the Hearing, Pakistan has identified two additional, discrete items on Pondage that might assist the Court in its deliberations on this matter.

⁷⁸ Record of the 113th Meeting of the Permanent Indus Commission, 20-21 March 2017, dated 29 March 2018, **Exhibit P-0103**, ¶ 31.

⁷⁹ Letter 3/5//2007-IT/2043 from the ICIW to the PCIW dated 11 September 2013, **Exhibit P-0082**, ¶ 10(b).

⁸⁰ Transcript of Hearing for the First Phase on the Merits, Day 7 (16 July 2024), p. 73, lines 9–19 (Dr Miles).

- (a) **First**, concerning the treatment of pondage calculation in hydropower texts, and whether they proceed on the basis of calculations of pondage on a daily or weekly basis.
- (b) **Second**, concerning India's approach to Pondage calculation post-*Baglihar*, and the material it has put forward in the Commission in support of that calculation.

1. Pondage and hydropower texts

2.71. In the course of the Hearing, the Court asked about the treatment of pondage calculation in hydropower texts. In particular, the Chairman noted:

“[I]t strikes me that it's worth looking perhaps at the contemporary literature of the time, of the type you've been presenting to us – the Corps of Engineers and others – and perhaps assessing whether we think it would have been common to do a weekly analysis as opposed to a daily analysis.”⁸¹

2.72. Pakistan has gone through the library of hydropower texts that it has collated for this case. The results of that review are as follows:⁸²

- (a) As the Court is aware, Creager and Justin's *Hydro-Electric Handbook* from 1950 provides that:

“When storage reservoirs are not provided, pondage is necessary to regulate the natural flow to suit the variation in *daily or weekly* load demand.

Usually, the hourly demand is quite variable, and the average demand during a work day is often materially different from that of Saturdays and Sundays. [...] The duty required of pondage without storage is therefore *usually that of regulating the weekly flow* to suit the variation in load demand from the *average weekly demand*.”⁸³

- (b) Davis's *Handbook of Applied Hydraulics* from 1952, conversely, gives no clear indication as to the basis of pondage calculation, or even pondage at all –

⁸¹ Transcript of Hearing for the First Phase on the Merits, Day 5 (12 July 2024), p. 257, lines 12–17 (The Chairman).

⁸² Pakistan has placed the material chapters of the works quoted below on the record, appreciating that the remainder of these works are irrelevant to the question of Pondage before the Court. Should the Court wish to consult any other part of these texts, Pakistan is happy to provide them.

⁸³ W. P. Creager and J. D. Justin (eds.), *Hydroelectric Handbook* (2nd Edition: John Wiley & Sons 1950), **Exhibit P-0309 (resubmitted)**, p. 59 (emphasis added). The same passage appears in the first edition of 1927: W.P. Creager & J.P. Justin, *Hydro-Electric Handbook* (1st Edition: John Wiley & Sons 1927), **Exhibit P-0652**, p. 40.

possibly because it conceives of a HEP as being attached to a multipurpose storage reservoir where seasonal storage plays a major role in power production:

“Multipurpose reservoirs are designed for two or more uses. For example, a reservoir located on the tributary of a major river might be designed to protect the downstream rivers and town against disastrous floods, increase the dependable water supply, and generate hydroelectric energy. The principles of multipurpose reservoir planning may best be understood by referring to a [...] typical schedule of operations [for] a reservoir [...] located on the tributary of a river that is subject to severe flood between December and March. [...]

It would be permissible to fill, during the season of high flow, the space between the minimum and [flood surcharge] levels. This storage would be held for later release, during the low-water season, to increase the primary energy output of the hydroelectric plant at the dam and possibly the energy output of other plants located downstream. [...]

The minimum level would be governed by the operating requirements and by the economic balance between the value of the developed head at the site and the downstream plants. [...]”⁸⁴

- (c) Doland’s *Hydro Power Engineering* from 1954 provides that “[r]egulation of flow is also accompanied by artificial storage reservoirs for long-term regulation, and by pondage for the regulation of *hourly, daily, or weekly flow*”.⁸⁵ Perhaps tellingly, in a subsequent section setting out a methodology for the calculation of pondage, all the examples given are predicated on a daily – and, within that, hourly – cycle.⁸⁶

- (d) The US Army Corps of Engineers *Hydropower* manual from 1985 defines pondage is “[r]eservoir storage capacity of limited magnitude, that provides only *daily or weekly* regulation of streamflow”.⁸⁷ Elsewhere, in describing pondage projects, it notes that:

“Some projects have insufficient storage space for seasonal flow regulation. The storage can be used, however, to shape discharges to follow *the daily and, in some cases, weekly* load patterns. Daily/weekly storage is referred to as

⁸⁴ C.V. Davis, *Handbook of Applied Hydraulics* (2nd Edition: McGraw-Hill 1952), **Exhibit P-0653**, pp. 12–13.

⁸⁵ J.J. Doland, *Hydro Power Engineering: A Textbook for Civil Engineers* (Ronald Press 1954), **Exhibit P-0654**, p. 14 (emphasis added).

⁸⁶ *Id.*, pp. 53–57.

⁸⁷ United States Army Corps of Engineers, Engineer Manual 1110-2-1701, *Hydropower*, 31 December 1985, **Exhibit P-0302 (resubmitted)**, p. S-12 (emphasis added).

‘pondage’ and the use of pondage permits a project to serve intermediate and peaking loads.”⁸⁸

- (e) Finally, Gulliver and Arndt’s *Hydropower Engineering Handbook* of 1991 defines pondage as “[t]hat rate of storage in run-of river developments which can cover *daily peaks only*”.⁸⁹ Elsewhere, it provides that: “[t]he word ‘storage’ is used for long-term impounding of water to meet the seasonal fluctuation of water availability, whereas the word ‘pondage’ refers to the short term storage of water, *usually on a daily basis, to meet the diurnal variations in power demand*”.⁹⁰

2.73. What these texts show is that there is little consistency in the way in which pondage is (and was) conceptualised. All of the texts surveyed agree that pondage can be assessed on a daily basis, with most texts agreeing that a weekly basis is also possible. The most adamant proponent of the daily approach is the *Hydropower Engineering Handbook*, which only acknowledges a daily basis for calculation. The most adamant proponent of the weekly approach is the *Hydro-Electric Handbook* – although this is notable for acknowledging the possibility of daily calculation, and further providing that weekly calculation is only the “usual” foundation for determining pondage, admitting the potential suitability of other approaches. This approach is mirrored (in reverse) by the USACE *Hydropower* manual, objectively the most authoritative text, which sets daily pondage as the basis of the definition, and then allows that a weekly basis of calculation may be permitted “in some cases”.

2.74. Taken in the round, the picture presented by these texts – which span the entire second half of the 20th century – is unclear. This is in keeping with the notion that whether pondage is to be computed on a daily or weekly basis is a question of engineering taste. As Mr Rae put it at the Hearing:

“Picking up another point of discussion during the week, Creager and Justin do refer to weekly computations in some parts of their text. However, this is in line with a description of a range of possible alternatives, from run-of-river without pondage, run-of-river with varying amounts of pondage, and ultimately hydropower projects with

⁸⁸ *Id.*, p. 2–21 (emphasis added).

⁸⁹ J. S. Gulliver and R. E. A. Arndt (eds.), *Hydropower Engineering Handbook* (McGraw-Hill Book Co 1991), **Exhibit P-0477 (resubmitted)**, p. B-4 (emphasis added).

⁹⁰ *Id.*, p. 1.10 (emphasis added).

significant storage. The text [...] doesn't provide any specific requirement for pondage, except in the context of what the plant can contribute to the power system.”⁹¹

2.75. Ultimately, however, Pakistan's case is that these variations in the engineering commentaries do not matter as the issue is, in Pakistan's submission, sufficiently clearly resolved in the Treaty, and it is the terms of the Treaty that are controlling. The Treaty is a *sui generis* legal instrument that must be interpreted on its own terms. As Pakistan has explained in detail, by the term “Pondage required for Firm Power” in Paragraph 8(c) of Annexure D, the Treaty plainly has in contemplation a **daily** calculation. Recourse to industry hydropower texts does not improve the analysis, and is not required in order to make Pakistan's position work.⁹² More to the point, and as explained in detail below, Pakistan's Revised Approach to the calculation of maximum Pondage advanced in these proceedings can be conceptualised as both a daily **and** a weekly approach to the calculation of Pondage under the Treaty.⁹³ This is addressed further below.

2. India's Pondage calculations post-*Baglihar*

2.76. The Court will recall that, during the Hearing, it asked Pakistan to address India's Pondage calculations with respect to the testbed HEP that Pakistan had used to model its Revised Approach – the Kiru HEP.⁹⁴ Pakistan duly produced the document⁹⁵ – which invariably appears as an annexure to the documentation that India provides to Pakistan when notifying a new HEP under Paragraph 9 and Appendix II of Annexure D. It is a one-page document that simply contains a weekly storage and discharge schedule for the Kiru from which India calculates the storage required to meet that schedule – which storage, India says, must then be doubled to determine the maximum Pondage – plus some additional information.

2.77. Pakistan's counsel then presented the Kiru HEP calculations in the second round of the Hearing.⁹⁶ When plotted on a graph, the storage and discharge schedule presented as follows:

⁹¹ Transcript of Hearing for the First Phase on the Merits, Day 6 (15 July 2024), p. 71, lines 12–21 (Mr Rae).

⁹² COA Memorial, ¶¶ 11.54–11.69.

⁹³ See below Chapter II.C.2.

⁹⁴ Further Questions to be Addressed at the Hearing for the First Phase on the Merits, 13 July 2024, Question 29.

⁹⁵ Letter 3/6/2007-IT/2371 (with enclosure) from the ICIW to the PCIW dated 1 June 2021, **Exhibit P-0546 (resubmitted)**, Annexure VII.

⁹⁶ Transcript of Hearing for the First Phase on the Merits, Day 7 (16 July 2024), p. 90, line 15 – p. 99, line 16 (Dr Miles).

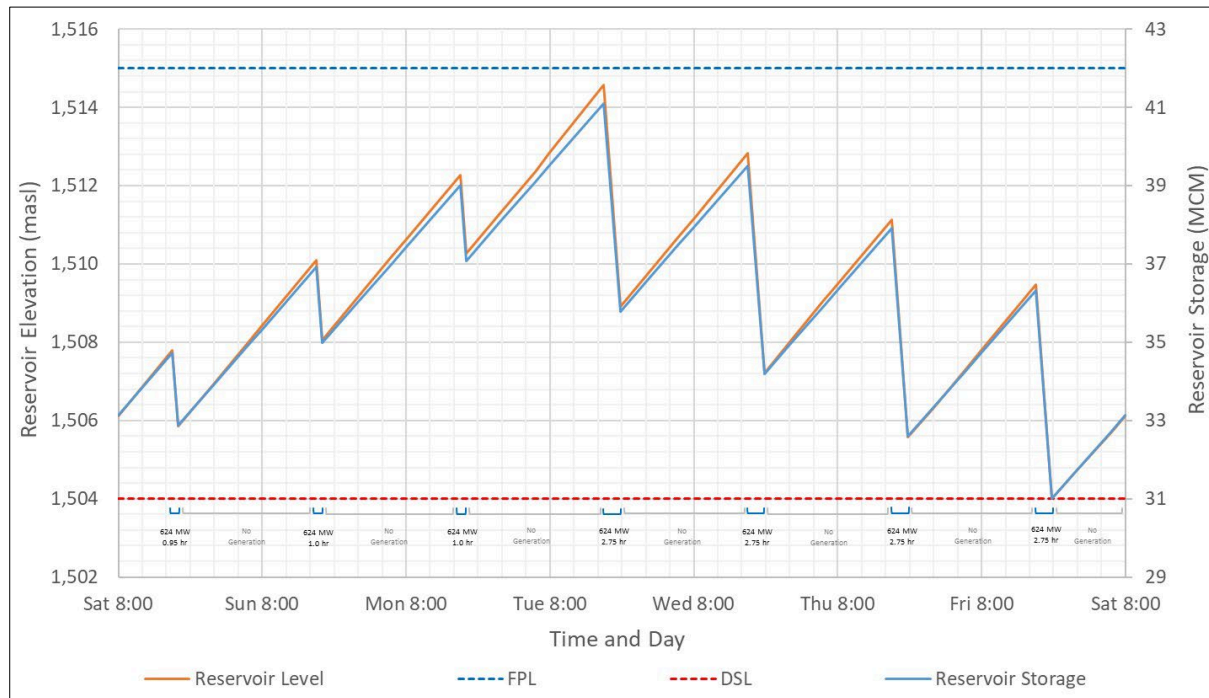


Figure 1 - Annexure VII of P-0546 (resubmitted) plotted on a graph⁹⁷

2.78. As counsel for Pakistan explained, once plotted, the Kiru HEP calculations showed precisely what India's approach was intended to achieve:

"[W]hen we plot this schedule on a graph, we can see why this document makes us so uncomfortable. [...] On the Y-axis, you'll see plotted the total storage; and then on the other Y-axis, the reservoir level. Those two obviously track. On the X-axis you'll see the time period [over the week], together with miniscule hours of production – the little blue 'U's down the bottom in each day – and long, long periods of storage."⁹⁸

2.79. Counsel continued:

"[T]his is a [schedule] that's driven, in Pakistan's submission, by one imperative and one imperative only – and that's the maximisation of storage. [...] What this shows is India storing the maximum amount of inflow it can [under Paragraph 15 of Annexure D], and then dumping it all through the turbines as quickly as possible – that is to say, at the [installed capacity] – in order to meet the requirements of Paragraph 15(ii), and then immediately start storing again. This is shown by the intense bursts of power production – kept as short as possible, a completely uneconomical form of plant operation – followed by long periods of further storage.

And another thing that's quite striking [...] is the fact that the HEP stores Pondage not only over the low-demand weekend, but it's also storing through the entirety of Monday

⁹⁷ Letter No. 3/6/2007-IT/2371 (with enclosure) from the ICIW to the PCIW dated 1 June 2021, **Exhibit P-0546 (resubmitted)**, Annexure VII.

⁹⁸ Transcript of Hearing for the First Phase on the Merits, Day 7 (16 July 2024), p. 95, lines 16–24 (Dr Miles).

and Tuesday morning, missing three whole periods of peak demand, where the plant could be producing useful energy under a peaking plan.

The Court has asked Pakistan to comment on India's current methodology as reflected in this diagram, and I suppose it's what I have to do. It's Baglihar off the rails."⁹⁹

2.80. In the wake of this, a member of the Court asked if there were other examples of India's approach post-*Baglihar* on the record to which the Court could refer.¹⁰⁰ In response, Pakistan has undertaken a review of all the post-*Baglihar* HEPs that India has notified in the Commission.

2.81. Since *Baglihar* concluded in February 2007, India has notified Pakistan of 56 Western Rivers HEPs. These are set out in the Appendix at the end of this chapter. Of these HEPs, 44 are small plants with little or no live storage, one is Pakul Dul, a storage work in respect of which India has not yet provided Pondage calculations, and one is Parnai HEP, which is less straightforward to model as it has two separate storages (the main reservoir and the forebay).

2.82. This leaves 10 HEPs with appreciable live storage. Once the Kiru HEP itself is removed, this leaves 9 HEPs: Nimo Bazgoo on the Indus Main; the KHEP on the Kishenganga, a tributary of the Jhelum; New Ganderbal on the Sind, a tributary of the Jhelum; Miyar on the Miyar Nullah, a tributary of the Chenab;¹⁰¹ Lower Kalnai on the Lower Kalnai Nullah, a tributary of the Chenab;¹⁰² and the RHEP, Ans-II and Kwar, all on the Chenab Main. For two of these – Kargil Hunderman and Ans-II – India has not (yet) provided Pondage calculations under Paragraph 9 of Annexure D. The final total is therefore seven HEPs – from which Pakistan, in keeping with its practice in these proceedings,¹⁰³ has further removed the KHEP and the RHEP, as they are presently before the Neutral Expert.

2.83. Pakistan has placed each of India's Annexure VII calculations for these five HEPs onto the record, and produced graphs similar to those it deployed with respect to the Kiru HEP.

2.84. What these HEPs show is a largely consistent approach by India to the question of Pondage calculation under its methodology. Of the plants examined, all but one displays a

⁹⁹ Transcript of Hearing for the First Phase on the Merits, Day 7 (16 July 2024), p. 95, line 25 – p. 96, line 24 (Dr Miles).

¹⁰⁰ Transcript of Hearing for the First Phase on the Merits, Day 7 (16 July 2024), p. 99, line 23 – p. 100, line 2 (Mr Minear).

¹⁰¹ Design withdrawn from the Commission by India.

¹⁰² Design withdrawn from the Commission by India.

¹⁰³ COA Memorial, ¶ 1.24; Transcript of Hearing for the First Phase on the Merits, Day 1 (8 July 2024), p. 63, line 12 – p. 64, line 6 (Sir Daniel Bethlehem KC).

pattern very similar to the Kiru HEP – especially when the HEP is located on the Chenab. For example, that of its partner upstream, the Kwar HEP, is nearly identical. Its Operating Pool has been designed on the basis of a storage and discharge schedule that has the plant producing power at its installed capacity – and only at its installed capacity – for a mere **14.28 hours** per week.

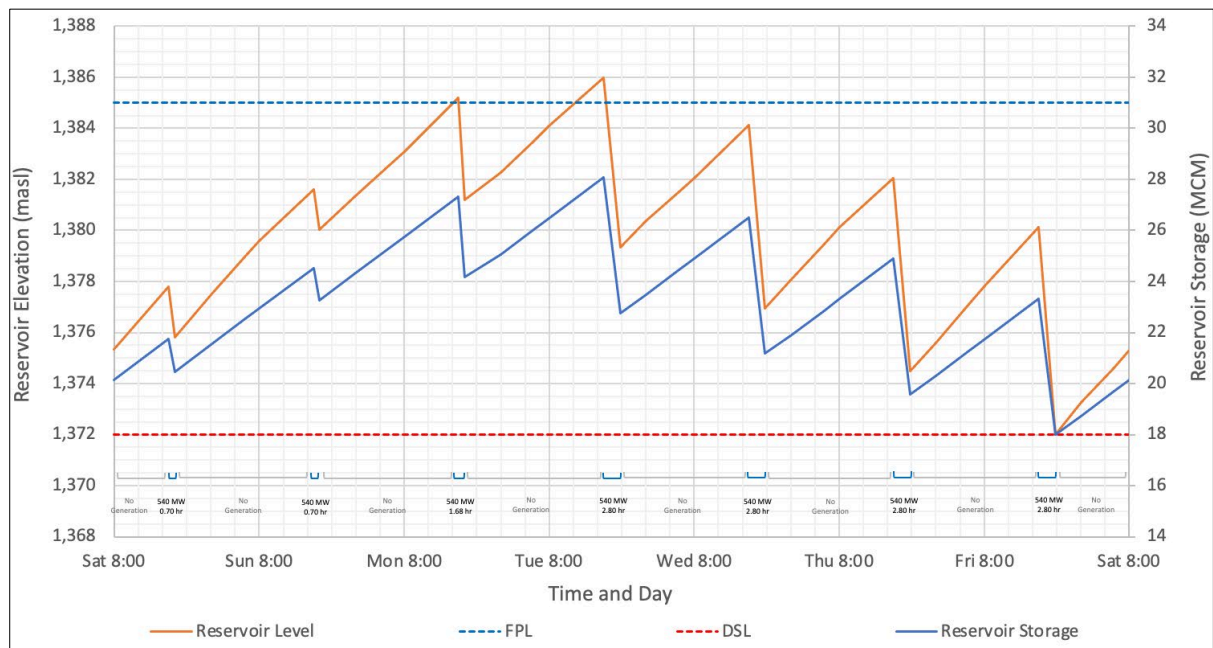


Figure 2 - Annexure VIII of India's supplied data for the Kwar HEP, replotted as a graph¹⁰⁴

2.85. As can be seen from the data provided by India, the same pattern repeats itself for some of the other candidate HEPs on the Chenab. Thus, Miyar HEP is designed on the premise that it is producing at its installed capacity for **17.53 hours** per week.

¹⁰⁴ Letter No. 3/7/2007-IT/ from the ICIW to the PCIW dated 20 June 2023, **Exhibit P-0649.1718**, Annexure VIII.

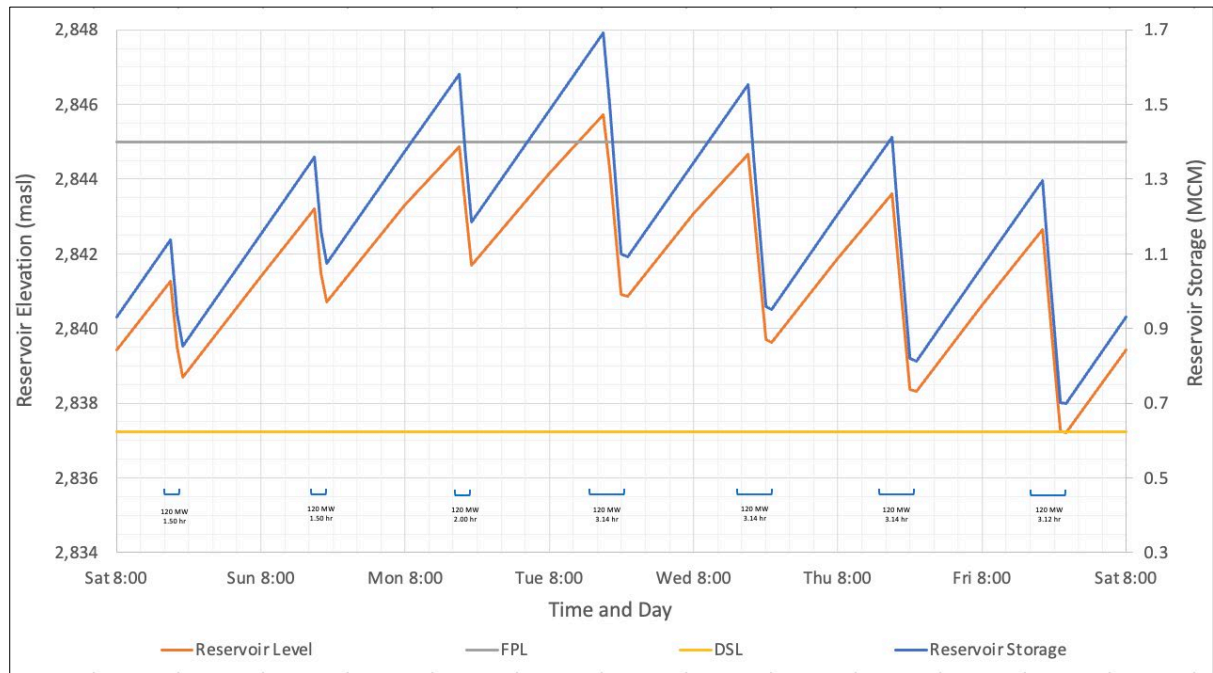


Figure 3 - Annexure VII of India's supplied data for the Miyar HEP, replotted as a graph¹⁰⁵

2.86. A sole exception in this respect is the Lower Kalnai HEP, which, if designed in accordance with India's conception, would produce power for **63.74 hours** per week. It is, however, very much an outlier within the wider scheme of India's plans.

¹⁰⁵ Letter No 3/2/2011-IT/1930 from the ICIW to the PCIW dated 27 April 2012, **Exhibit P-0649.1337**, Annexure VII.

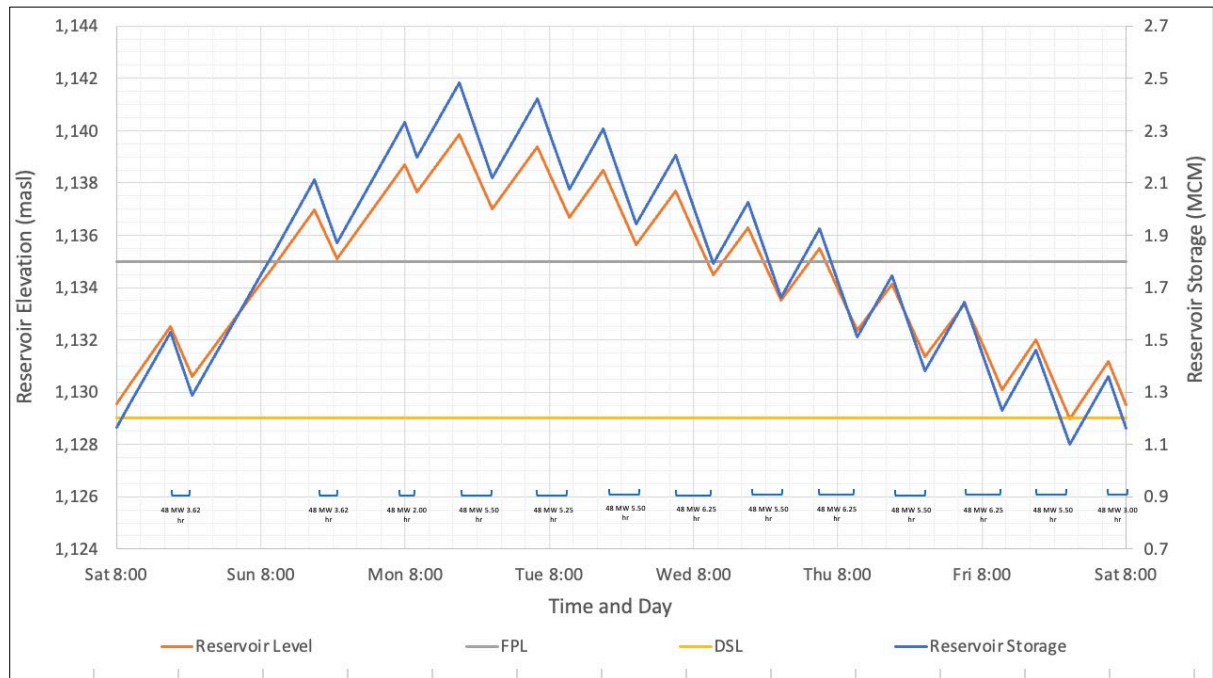


Figure 4 - Annexure VII of India's supplied data for the Lower Kalnai HEP, replotted as a graph¹⁰⁶

2.87. This paradigm is repeated for HEPs on the Jhelum and Indus. It will be recalled that under Paragraph 15 of Annexure D, these benefit from a more liberal storage and discharge schedule – they can store up to 70% of reservoir inflow per day, although they are kept to the same 130% daily inflow discharge limit.

2.88. This notwithstanding, the same animus is visible in the scheme of the New Ganderbal HEP on the Jhelum. Like India's Chenab HEPs, this HEP's operations are premised on producing power at its installed capacity for a mere **21.10 hours** per week.

¹⁰⁶ Letter No. 3/4/2009-IT/1939 from the ICIW to the PCIW dated 22 June 2012, **Exhibit P-0649.1340**, Annexure VII.

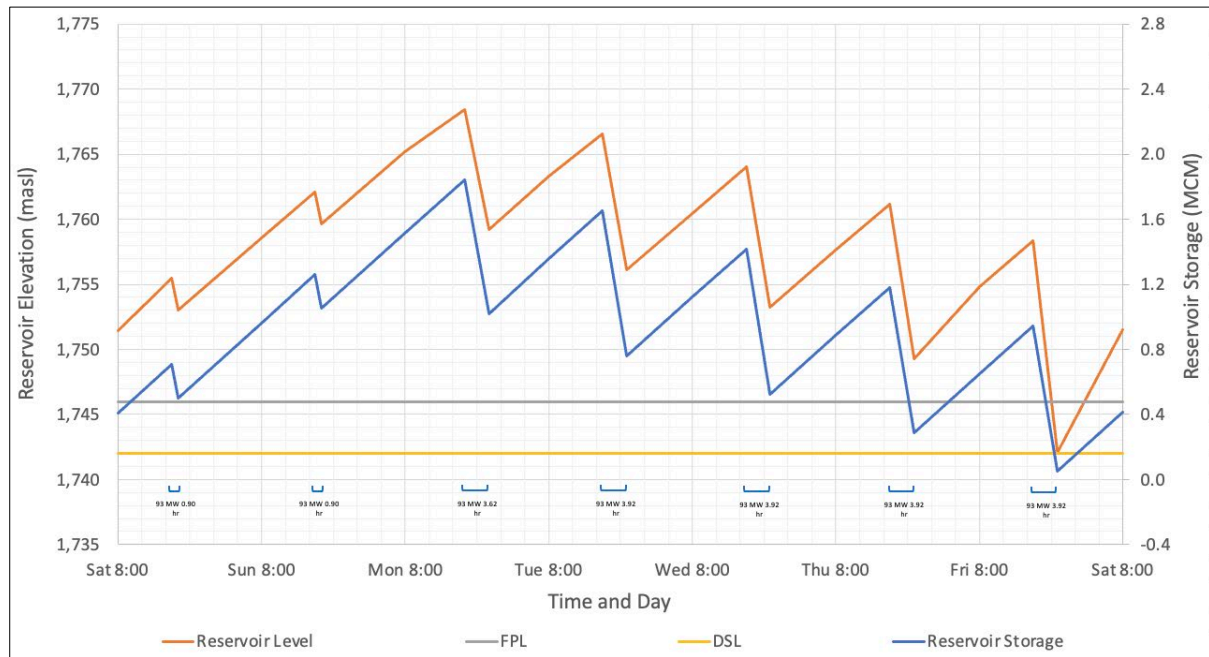


Figure 5 - Annexure VII of India's supplied data for the New Ganderbal HEP, replotted as a graph¹⁰⁷

2.89. A slightly different paradigm, however, is on show for the Nimo Bazgoo HEP on the Indus, shown in the graph below.

¹⁰⁷ Letter No 3/1/1990-IT/1984 from the ICIW to the PCIW dated 26 February 2013, **Exhibit P-0649.1372**, Annexure VII.

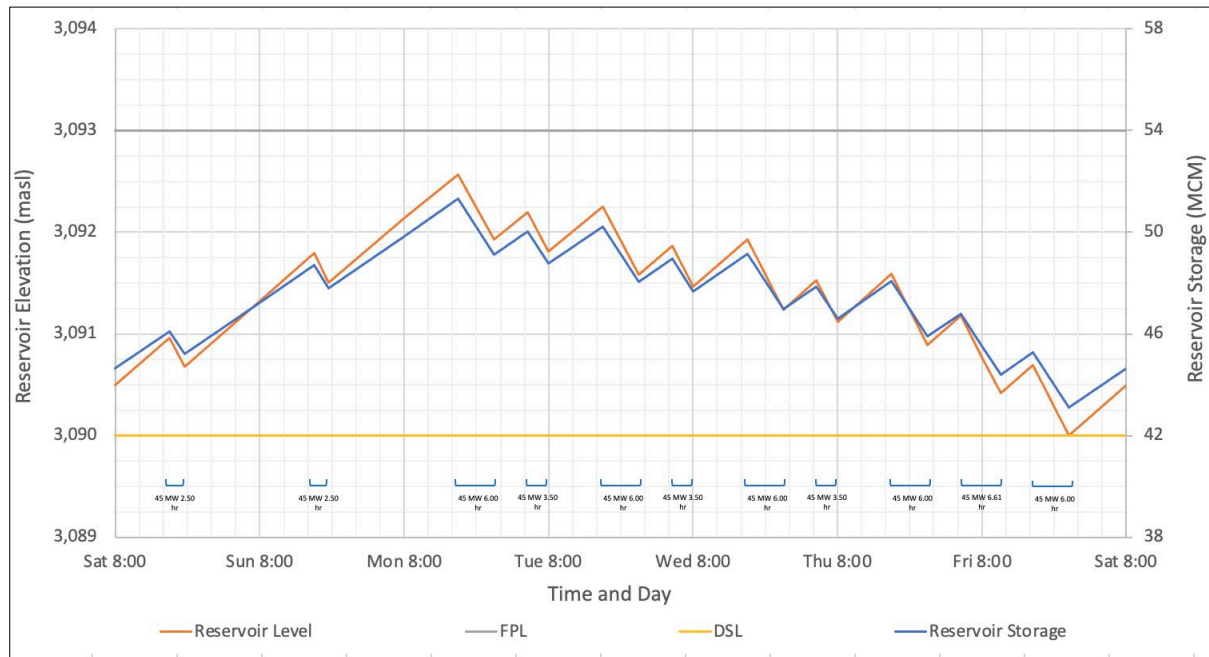


Figure 6 - Annexure VII of India's supplied data for the Nimo Bazgoo HEP, replotted as a graph¹⁰⁸

2.90. This scheme may appear more moderate. Properly understood, however, it shows that India is again trying to manipulate the system of the Treaty. At the start of an applicable seven-day period, India does almost nothing but store its maximum operational entitlement, relying on Paragraph 15(b) of Annexure D. For Saturday and Sunday, it will produce power for less than an hour a day. Thereafter, however, the HEP is in discharge mode in order to evacuate all storage by the end of the week, as required by Paragraph 15(a) of Annexure D.

2.91. More to the point, however, the need to meet the parameters of Paragraph 15 of Annexure D forces the Nimo Bazgoo HEP into bizarre operational contortions – most notably from Tuesday onwards. If India is to be believed, from Tuesday morning to Saturday, it intends to peak the HEP twice in every 24-hour period. This would be unexceptionable – except that the second of those peaks is predicted to commence at 4:30am, when the population that is supposedly using this electricity is fast asleep, and terminate at 8:00am, just when that power is needed the most.

2.92. Again, this implausible scheme of reservoir operation reveals that the true animus of India's Pondage calculations is not to meet the load on the HEP but is rather to maximise

¹⁰⁸ Letter No 3/1/2003-IT/1349 from the ICIW to the PCIW dated 27 December 2006, **Exhibit P-0649.1065**, Annexure VII.

India's capacity to store the waters of the Western Rivers.

2.93. The graphs above confirm a consistent theme by India under its approach. As the Chairman noted during the Hearing:

“I take your point, in part, in placing before us the graph that you have [for the Kiru HEP] is perhaps that even if one were to operate within the approach taken by the Baglihar Neutral Expert, it allows for a lot of play in the joints that India would take advantage of, that would then result in a friction between the two parties repeatedly in the Commission; and consequently, Pakistan's preferred approach to the Pondage calculation, which is far more definitive in nature, helps avoid these types of conflicts?”¹⁰⁹

2.94. At the Hearing, Pakistan's counsel agreed with this proposition.¹¹⁰ This position is now confirmed by Pakistan's wider survey of India's practice, and coupled with the observation that what is at stake is not merely the possibility of greater friction in the Commission – although that is, of course, bound to happen if India has its way. What is at stake, as Professor Briscoe pointed out, is Pakistan's hydrology during critical low flow season, and its rights under Article III of the Treaty proper.¹¹¹

C. RECALCULATING PAKISTAN'S REVISED APPROACH ON A SEVEN-DAY BASIS

2.95. Pakistan now turns to the Court's question of whether its Revised Approach, advanced in these proceedings – which is premised on the appreciation that “Pondage required for Firm Power” is to be assessed on a daily basis (so that Firm Power is reliably available on each day, and hence for each week) – can be extended to allow for a weekly calculation. Pakistan responds to this question in two parts:

- (a) **First**, Pakistan describes one way in which its Revised Approach can be extended to allow for a weekly calculation – but explains why that approach does **not** work as a matter of Treaty interpretation. In so doing, Pakistan addresses the source of the confusion – India's reliance on Paragraph 2(c) – and explains the proper role of that provision in the calculation of Pondage under Annexure D.

¹⁰⁹ Transcript of Hearing for the First Phase on the Merits, Day 7 (16 July 2024), p. 101, line 21 – p. 102, line 6 (The Chairman).

¹¹⁰ Transcript of Hearing for the First Phase on the Merits, Day 7 (16 July 2024), p. 102, line 7 (Dr Miles).

¹¹¹ J. Briscoe, “War or Peace on the Indus”, *The News International*, 3 April 2010, **Exhibit P-0325**, p. 2.

- (b) **Second**, Pakistan describes an alternative weekly conception of the Revised Approach that **does** work as a matter of Treaty interpretation – which is that its Revised Approach, properly analysed, and with an eye to the actual operation of a HEP, is in its present form both a daily and weekly methodology for the calculation of Pondage.

1. Extending Pakistan's Revised Approach to a weekly timestep does not work under the Treaty

2.96. As an initial matter, the Court's wish to see a weekly calculation by reference to Pakistan's Revised Approach seems straightforward.

- (a) The Revised Approach is premised on the idea that "Pondage required for Firm Power" is the storage sufficient to allow all inflow into the reservoir in **any 24-hour period** to pass through the HEP's turbines at the Firm Power rate (i.e. the MMD) within that same 24-hour period.
- (b) Extending this would merely require storage sufficient to allow all reservoir inflow in **any period of a week** to pass through the HEP's turbines at the Firm Power rate within that same week.

2.97. To paraphrase Pakistan's Memorial:

"The calculation thus becomes one of establishing the volume of Pondage to allow all of the [weekly] inflow to be passed through the turbines at the MMD flow rate, thereby allowing all the inflow to be used to produce Firm Power. To address this, Paragraph 8(c) requires a simple 'water balance' exercise that would have been well-understood by the dam engineers engaged in the Treaty drafting process. This exercise [...] can be applied as a standard formula for any HEP. It essentially involves the balancing of water flowing into a HEP's reservoir in any [weekly, *i.e.*, 168-hourly] period, against passing the entire inflow through the HEP's turbines at Firm Power. Thus, the amount of Pondage required for any given inflow will be that which maximises the number of hours that the plant can operate at Firm Power [over the week].

Knowing the MMD for a particular site, this calculation results in a single unique Pondage capacity which can be expressed in Mm^3 ."¹¹²

¹¹² COA Memorial, ¶¶ 11.72–11.73.

(a) Difficulties with converting the daily calculation into a weekly calculation

2.98. The Court's request is not, however, a straightforward matter.

2.99. The Court will recall that, under Pakistan's Revised Approach, in its daily configuration, the "Pondage required for Firm Power" is the equivalent of **12 hours** of inflow at 50% of the MMD. If that figure were directly transposed onto a week, then the Pondage required for Firm Power would be **84 hours** (3.5 days, or half a week) of inflow at 50% of the MMD.

2.100. In the case of the Kiru HEP, the resulting curve demonstrating the Pondage "required for Firm Power" would look like this:

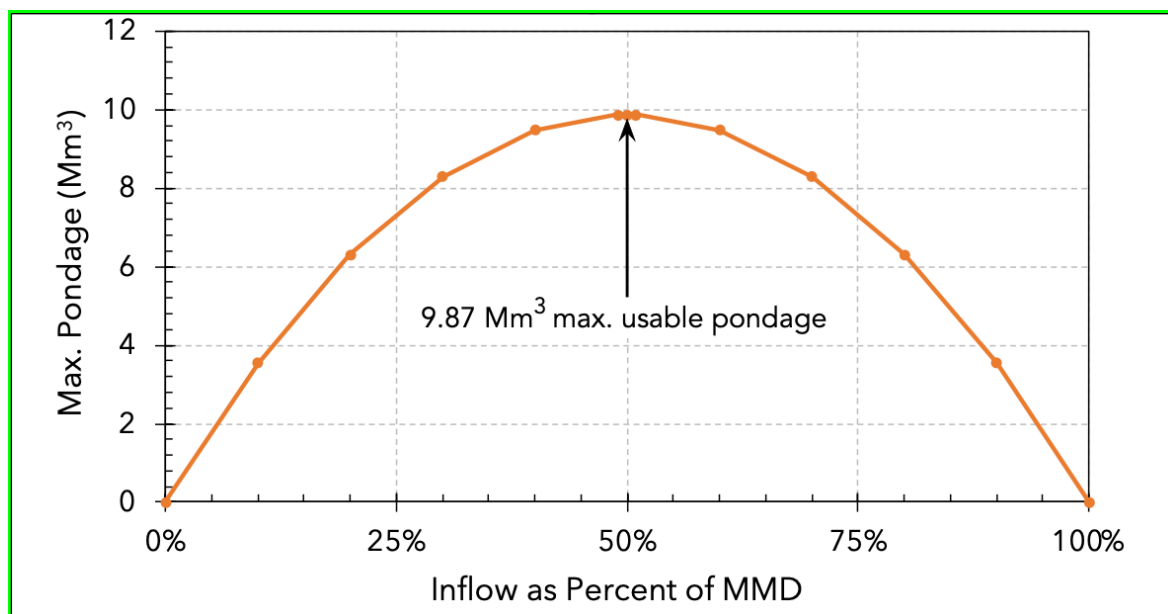


Figure 7 - Curve demonstrating maximum useable Pondage for Kiru HEP adapted for weekly inflow

2.101. It will be recalled that the Revised Approach, in its default daily configuration, produces a Pondage "required for Firm Power" figure of 1.41Mm^3 .¹¹³ Expanded to take account of total weekly inflow, it would result in a maximum useable Pondage of 9.78Mm^3 . When doubled, pursuant to Paragraph 8(c) of Annexure D, the outer limit of the Kiru HEP's Operating Pool would become **19.56Mm^3** .

2.102. This conversion gives rise, immediately and unavoidably, to multiple difficulties.

¹¹³ COA Memorial, Figure 11.4, *see also* ¶ 11.82.

2.103. The first difficulty is that no HEP would operate in such a way in the real world. Essentially, “Pondage required for Firm Power” in such a case would, if the river were flowing at 50% of the MMD, contemplate the HEP being **completely inactive** for the first half of the week and then operating as a baseload plant (producing continuous Firm Power) for the second half of the week. Operating the HEP in this way would be uneconomic, impractical and absurd.

2.104. The second difficulty is that the storage so calculated must then be **doubled**, pursuant to Paragraph 8(c), which would result in a hugely inflated Operating Pool for the HEP in question. In the case of the Baglihar HEP, with its MMD of 125.68m³/sec, the maximum Pondage under such an approach would be 38Mm³ – 5.5Mm³ larger than that determined by the Neutral Expert,¹¹⁴ and 0.5Mm³ more than the Pondage proposed by India in the *Baglihar* proceedings.¹¹⁵ An Operating Pool of this size would take 3.5 days to fill from empty when the Chenab was flowing at the MMD level, and would cut off all flow downstream of the Baglihar HEP for the time taken to fill it.

2.105. Such an approach cannot be correct and, indeed, would be entirely inconsistent with the *Kishenganga* Court’s conclusions (i) that “one of the primary objectives of the Treaty is to *limit* the storage of water by India on the Western Rivers”, and (ii) about the “careful balance” struck by the Treaty’s drafters, “allowing India hydro-electric use of the waters of the Western Rivers while protecting Pakistan against the possibility of water storage on the upstream reaches of those Rivers *having an unduly disruptive effect* on the flow of water to Pakistan”.¹¹⁶

2.106. Furthermore, while this approach for **one** HEP would be serious enough for Pakistan, applying this design criterion to scores of Western River HEPs, or to a cascade of HEPs on the same river, the consequences would be potentially catastrophic for Pakistan. As Professor Briscoe recognised in the wake of the *Baglihar* decision, a cascade would give rise to “a permanent threat which would be a consequence of substantial cumulative live storage which could store about one month’s worth of low-season flow on the Chenab”. He continued: “[i]f, God forbid, India so chose, it could use this cumulative live storage to impose major reductions

¹¹⁴ *Baglihar* Determination, **PLA-0002**, §6.5 (¶ 3).

¹¹⁵ *Id.*, §5.9.4.

¹¹⁶ *Kishenganga* arbitration, Partial Award, **PLA-0003**, ¶ 504 (emphasis added). To take the matter further still, one might ask why Pondage ought not be calculated by reference to the 10-day timestep that forms the basis of the MMD calculation in Annexure D, Paragraph 2(i). When applied to Pakistan’s Revised Approach, this would result after doubling in an Operating Pool that was the equivalent of five days of MMD inflow, or 54.3Mm³. That number is self-evidently absurd, but it demonstrates that expanding the Revised Approach beyond its present daily timestep would result in significant challenges.

on water availability in Pakistan during the critical planting season”.¹¹⁷

2.107. More to the point, the kind of operation that would be required to fill such an Operating Pool in the low-flow conditions (*i.e.*, sub-MMD), when it is needed the most, is prohibited under Paragraph 15 of Annexure D, which imposes operational constraints on all Indian HEPs on the Western Rivers based on their location. Such an Operating Pool would not reflect actual, useable Pondage.

2.108. Considering, for example, a HEP on the Jhelum, which is governed by the default schedule set out in the *chapeau* to Paragraph 15 of Annexure D:

- (a) Under Paragraph 15(a), India must pass all water received into the reservoir in the course of any seven-day period through the HEP within that same seven-day period, defined by Paragraph 16 as commencing at 8am every Saturday.
- (b) Under Paragraph 15(b), India is only entitled to store 70%, or discharge 130%, of reservoir inflow in any given 24-hour period, defined by Paragraph 16 as commencing at 8am every day.

2.109. Assuming a more or less constant inflow at the MMD level, this means that, even if India stores the maximum amount to which it is entitled (70% of daily reservoir inflow) under Paragraph 15(b) from 8am on Saturday, it would need to store this until approximately 8pm on Tuesday if the Operating Pool was to be filled. However, this amount of water could not possibly be evacuated from the reservoir by the following Saturday morning in a manner consistent with the *chapeau* of Paragraph 15, which imposes a discharge limit of 130% in a 24-hour period. The situation becomes progressively less functional the further the flow drops below the MMD.

2.110. To the extent that it might be argued – as India does in the context of its own approach¹¹⁸ – that this outcome can be ameliorated by designing each HEP's Operating Pool in light of the

¹¹⁷ J. Briscoe, “War or Peace on the Indus”, *The News International*, 3 April 2010, **Exhibit P-0325**, p. 2.

¹¹⁸ This has been a constant refrain of India's over the years, but *see*, e.g., Record of the 113th Meeting of the Permanent Indus Commission, 20-21 March 2017, dated 28 March 2018, **Exhibit P-0545**, ¶ 34 (emphasis added): “Indian side stated that moreover, there is nothing in the Treaty which says that load variations have to be stable throughout the lifetime of the Plant and the concept of load curve, too, is not explicitly provided in the Treaty. *The Treaty, however, fixes the limitation of India's control of water from the Western Rivers through Paragraph 15 of Annexure D. India is free to design the Pondage of its Plant within that limitation taking care of possible future scenarios.*”

applicable storage and discharge schedule of Paragraph 15, this is also wrong.

2.111. Such an interpretation does not accord with the scheme of the Treaty. As addressed above, Paragraph 15 of Annexure D sets out operational parameters for a HEP designed in accordance with the criteria in Paragraph 8. If the drafters of the Treaty had intended the operational constraints to be design criteria, they could easily have said as much.¹¹⁹ It is one thing to say, as the *Kishenganga* Court did, that considerations of “design, construction and operation [...] cannot be properly separated into watertight compartments”,¹²⁰ when confirming that Annexure D does not prohibit a Plant to be designed to accommodate an inter-tributary transfer on the Jhelum in circumstances where that possibility is admitted by the operational parameter of Paragraph 15(iii). It is quite another things to say, however, that the Paragraph 15 operating rules are to be read into the design criteria of Paragraph 8(c), to become one of them. To do so “would be equivalent, not to interpreting the treaty, but to reconstructing it”.¹²¹

2.112. In this regard, it is highly material that the provisions of Part 1 of Annexure F, addressing the competence of a Neutral Expert, clearly differentiate and separate the examination of HEP design and operational criteria. For example, pursuant to Paragraph 1 of Annexure F, a Neutral Expert’s competence in respect of questions concerning a HEP’s **design** (*inter alia*) under Paragraph 8 of Annexure D is located in Paragraph 1(11),¹²² whereas his or her competence to address questions concerning the **operation** of a HEP under Paragraphs 15, 16 and 17 of Annexure D is located in Paragraph 1(12) of Annexure F.¹²³ This separation reflects a deliberate drafting decision, informed by a clear and agreed appreciation that design

¹¹⁹ See *Case concerning the Aerial Incident of July 27th, 1955 (Israel v. Bulgaria)*, Preliminary Objections, Judgment of May 26th, 1959: I.C.J. Reports 1959, p. 127, Joint Dissenting Opinion by Judges Sir Hersch Lauterpacht, Wellington Koo and Sir Percy Spender, **PLA-0114**, p. 183 (“it is not within the province of interpretation to re-write a treaty, by inserting into it extraneous conditions, in reliance on realities which, it is asserted, the parties were fully cognizant and to which they were in a position to give effect by a form of words of utmost brevity”). See also Transcript of Hearing for the First Phase on the Merits, Day 7 (16 July 2024), p. 63, lines 22–25 (Dr Miles): “Paragraph 8(c) is a criterion of design. Paragraph 15 is an operational parameter. If the drafters of the Treaty had intended for Paragraph 15 to be a criterion of design, it or something like it would be in Paragraph 8(c)”.

¹²⁰ *Kishenganga* arbitration, Partial Award, **PLA-0003**, ¶ 407.

¹²¹ *Acquisition of Polish Nationality*, Advisory Opinion (1923) P.C.I.J. Series B No 7, **PLA-0115**, p. 20.

¹²² This refers to “[q]uestions arising under the provisions of Paragraph 7, Paragraph 11 or Paragraph 21 of Annexure D”: Indus Waters Treaty, **PLA-0001**, Annexure F, Paragraph 1(11). The second item listed refers to questions “as to whether or not the design of a Plant conforms to the criteria set out in Paragraph 8 [of Annexure D]”: *id.*, Annexure D, Paragraph 11.

¹²³ That is, concerning “[w]hether or not the operation by India of any plant constructed in accordance with the provisions of Part 3 of Annexure D conforms to the criteria set out in Paragraphs 15, 16 and 17 of that Annexure”: Indus Waters Treaty, **PLA-0001**, Annexure F, Paragraph 1(12).

and operational criteria, while both elements of a given HEP, are quite distinct and fall to be addressed as different components. This drafting decision must be given weight in the interpretative exercise.

2.113. Beyond this, as Pakistan has already highlighted,¹²⁴ the Treaty itself contains numerous and compelling references to a daily time period, on which Pakistan's Revised Approach is based.¹²⁵ By comparison, references to weekly time periods in the Treaty are few – and, so far as is material to this question, are always accompanied by a parallel reference to a daily time period as well.¹²⁶

2.114. To the extent that there remains any doubt about this matter, the question of whether a daily or weekly time period is to be preferred is resolved by reference to the rule of effectiveness in treaty interpretation (*ut res magis valeat quam pereat*), whereby in circumstances where two readings of a treaty are plausible, the reading that best coheres with the object and purpose of the Treaty is to be selected.¹²⁷ As Pakistan has explained, this tie-breaker (should it be required) compels the selection of a daily over a weekly methodology for the calculation of maximum Pondage.¹²⁸

2.115. From the above, is it clear that any attempt to convert Pakistan's Revised Approach from a daily into a weekly calculation would be fraught with difficulty, both interpretative and practical.

- (a) On the one hand, direct transposition of a weekly period into Pakistan's Revised Approach would result in a highly inflated Operating Pool that: (i) would be at odds with the core objectives of the Treaty concerning limitation of Indian storage on the Western Rivers; (ii) could never be legally filled when this would be needed the most, *i.e.*, in critical low-flow periods below the MMD; and (iii)

¹²⁴ COA Memorial, ¶¶ 11.62–11.68.

¹²⁵ Indus Waters Treaty, **PLA-0001**, Articles I(15), VI(1), Annexure D, Paragraphs 2(c), 15, 16, Appendix II, Paragraphs 2(b), 4(h).

¹²⁶ Indus Waters Treaty, **PLA-0001**, Annexure D, Appendix II, Paragraphs 2(b), 4(h). References to weekly time periods in Annexures F and G are plainly not relevant as they do not deal with questions of HEP design or hydrology.

¹²⁷ R. Gardiner, *Treaty Interpretation* (OUP, 2nd ed. (2015)) (“**Gardiner, 2015**”), **PLA-0017 (resubmitted)**, pp. 179–181.

¹²⁸ COA Memorial, ¶ 11.61.

when applied to multiple HEPs on the same river, would give rise to a perpetual threat to Pakistan's hydrology.

- (b) On the other hand, moderation of this direct transposition through the incorporation of Paragraph 15 of Annexure D into the analysis would be to impermissibly rewrite Paragraph 8(c) of Annexure D under the guise of Treaty interpretation, contrary to the terms of the Treaty itself, which plainly prefers a daily over a weekly time period for the calculation of maximum Pondage.

2.116. It follows from the preceding that reading a weekly timescale into Pakistan's Revised Approach would be virtually unworkable and inconsistent with both the systemic and the design criteria of the Treaty.

(b) The role of Paragraph 2(c) of Annexure D

2.117. Much of the confusion about whether a weekly Pondage calculation is required by the Treaty arises from India's insistence that the Annexure D, Paragraph 2(c) **definition** of Pondage, with its reference to "variations in the daily *and weekly* loads of the plant",¹²⁹ is in fact the touchstone for the calculation of maximum Pondage. Pakistan has already addressed why that position is incorrect,¹³⁰ and has further addressed how its interpretation of Annexure D gives Paragraph 2(c) an appropriate role in the determination of maximum Pondage. As its counsel explained at the Hearing:

"[O]n Pakistan's conception, [Paragraph] 2(c) does have a role to play in the general concept of pondage, and that's because it defines the operating concept of pondage. And that is entirely consistent with the principle of effectiveness, which is what the Court asked about in relation to Paragraph 2(c). And it clarifies [...] that the purpose of pondage is solely for power production, and not for any other purpose. Paragraph 2(c) confirms, for example, that India can't use its pondage for irrigation or regulation of downstream flows or for sediment management or any other purpose. It's just about power production."¹³¹

2.118. Beyond this Pakistan considers that Paragraph 2(c) also provides a touchstone to assess the workability of the maximum Pondage calculation undertaken pursuant to Paragraphs 8(c) and 2(i). In this way, Paragraph 2(c) operates in much the same manner as Paragraph 15, under

¹²⁹ Indus Waters Treaty, **PLA-0001**, Annexure D, Paragraph 2(c) (emphasis added).

¹³⁰ COA Memorial, ¶¶ 11.14–11.31, 11.99–11.105.

¹³¹ Transcript of Hearing for the First Phase on the Merits, Day 7 (16 July 2024), p. 62, line 20 – p. 63, line 7 (Dr Miles).

Pakistan's Revised Approach, *i.e.*, to test whether the maximum Pondage calculation under Paragraphs 8(c) and 2(i) are workable under the Treaty.

2.119. The role of Paragraph 2(c) in this respect was addressed by Pakistan's counsel at the Hearing:

“Properly interpreted, [Paragraph 2(c) is] not an enabling provision: it is another limitation. And the role of that limitation is plain when it's tied together with Paragraphs 8(c) and 2(i).

The basic rule, per Paragraphs 8(c) and 2(i), is that maximum pondage is twice that required for Firm Power. This sets a basic and objective parameter for the size of the Operating Pool. But within that parameter [Paragraph] 2(c) seems to be providing an additional limitation, which is that India is entitled to pondage of only sufficient magnitude to meet variations in turbine discharge. If this quantity is less than that required for Firm Power, India must reduce its pondage again to meet this limitation.”¹³²

2.120. This additional limitation on Pondage derived from Paragraph 2(c) is plain from the language of the provision itself: “Pondage means Live Storage *of only sufficient magnitude* to meet fluctuations in the discharge of the turbines arising from variations in the daily and weekly loads of the plant”.¹³³

2.121. When the highlighted language in Paragraph 2(c) is taken into account, it becomes plain that, although Paragraph 8(c) permits **the possibility** of an Operating Pool of “twice the Pondage required for Firm Power”, the Paragraph 2(c) definition of Pondage makes it clear that Live Storage that exceeds what is necessary (*i.e.*, has a magnitude greater than is necessary) to meet fluctuations in the discharge of the turbines arising in the daily and the weekly loads of the plant will not comply with the definition of “Pondage” under the Treaty and will therefore be *per se* impermissible. On this basis, Paragraph 2(c), while not concerned with the calculation of maximum Pondage under the Treaty, imposes an additional limitation on the size of the Operating Pool.

2.122. The potential importance of this role for Paragraph 2(c) when it comes to controlling the size of the Operating Pool is found in the *Kishenganga* Court's appreciation that “one of the primary objectives of the Treaty is to limit the storage of water by India on the Western

¹³² Transcript of Hearing for the First Phase on the Merits, Day 5 (12 July 2024), p. 121, lines 3–16 (Dr Miles).

¹³³ Indus Waters Treaty, **PLA-0001**, Annexure D, Paragraph 2(c) (emphasis added).

Rivers".¹³⁴

2.123. Addressing the potential importance of Paragraph 2(c) in this regard, Pakistan's counsel explained at the Hearing:

“[O]ne can see why [Paragraph 2(c)] would be a relatively useful limitation in a case where we have a HEP with a relatively small installed capacity, in an area with a relatively high MMD. [T]he Pondage required for Firm Power in such a case could be relatively large: more than would ordinarily be needed given the HEP's installed capacity and the load placed upon it by India. And so it would make sense, in light of the overall mission of Article III [of the Treaty], to limit India further by reference to what was only sufficient to meet turbine variations.”¹³⁵

2.124. Seen in this way, Paragraph 2(c) performs a further essential function with respect to limiting India's capacity to store the waters of the Western Rivers. It ensures that India cannot build micro-plants on the Indus, Jhelum and Chenab Mains with Operating Pools multiple times larger than required for these HEPs to operate at their installed capacity. In other words, India is not permitted to construct HEPs with Operating Pools that it cannot use.

2.125. Paragraph 2(c) of Annexure D provides a definition of “Pondage” that applies beyond the scope of new Run-of-River Plants the design of which is addressed in the criteria set out in Paragraph 8 of Annexure D. It applies to “Small Plants”, addressed in Paragraph 18 of Annexure D. It applies to new plants on irrigation channels, addressed in Paragraph 24 of Annexure D. It is relevant to the calculation of the aggregate storage capacity of single- and multi-purpose reservoirs under Paragraphs 7 and 8 of Annexure E. And it applies to HEPs incorporated in a Storage Work, under Paragraph 21 of Annexure E.

2.126. The definition of “Pondage” in Paragraph 2(c) of Annexure D is thus a definition of general application, not one that is specific to the new Run-of-River Plants constructed under Part III of Annexure D and not a provision that, whether by intent, formulation or placement, establishes a further design criterion in respect of such new HEPs that is additional to those in Paragraph 8 of Annexure D.

2.127. That this is the case is put beyond doubt by the express terms of Paragraph 2(d) of Annexure D, the provision that immediately follows the definition of Pondage, which defines

¹³⁴ *Kishenganga* arbitration, Partial Award, **PLA-0003**, ¶ 504.

¹³⁵ Transcript of Hearing for the First Phase on the Merits, Day 5 (12 July 2024), p. 121, line 20 – p. 122, line 5 (Dr Miles).

“Full Pondage Level” as “the level corresponding to the maximum Pondage provided *in the design in accordance with Paragraph 8(c)*”.¹³⁶ Had Paragraph 2(c) been intended to operate as an additional design criterion for the calculation of maximum Pondage, there can be no doubt that Paragraph 2(d) would not have been cast in the terms in which it is found.

2.128. Viewed in this light, the definition of Pondage in Paragraph 2(c) performs three functions. First, it provides a definition of the term “Pondage” that goes beyond the scope of the design criteria in Paragraph 8 of Annexure D. Second, by its definition, it excludes from the definition of Pondage the storage of water for non-power generation purposes, such as irrigation or the regulation of downstream flows or for sediment management or any other purpose. Third, by its definition, it precludes India from the construction of storage works, under the guise of Pondage, that go beyond, in terms of magnitude, the Live Storage necessary to meet fluctuations in the discharge of the turbines arising from variations in the daily and weekly loads of the plant.

2. Conceiving the Revised Approach as a weekly calculation of Pondage

2.129. Returning to Pakistan's Revised Approach, as explained above, direct transposition of the Revised Approach to a weekly rather than daily timestep would produce a vastly inflated Operating Pool: 38Mm³ in the case of the Baglihar HEP. Such a result is difficult to justify in view of (*inter alia*) the fact that:

- (a) **First**, the Treaty was intended to limit Indian storage of the waters of the Western Rivers, and not allow that storage that was permitted to prejudice Pakistan's hydrology.¹³⁷ An Operating Pool of that size, whether operated individually or cumulative with other HEPs designed on similar premises, would meet neither of these objectives.
- (b) **Second**, India could not fill such an Operating Pool in MMD or sub-MMD conditions, when Pondage is needed the most, without breaching the operational parameters of Paragraph 15 of Annexure D.

¹³⁶ Indus Waters Treaty, **PLA-0001**, Annexure D, Paragraph 2(d) (emphasis added).

¹³⁷ *Kishenganga* arbitration, Partial Award, **PLA-0003**, ¶ 504.

- (c) **Third**, the Treaty contains multiple indications that it favours a daily over a weekly timestep as a unit of analysis.
- (d) **Fourth**, as a tiebreaker, the principle of effectiveness in Treaty interpretation compels the selection of the daily over the weekly timestep.

2.130. In view of this, Pakistan considers that the words “Pondage required for Firm Power” can only refer to a daily timestep.

2.131. But even if that were not the case, the fact remains that any need (*quod non*) for a weekly calculation is already met by Pakistan's Revised Approach. As Mr Rae explained at the Hearing:

“[T]he Court has asked if this methodology could be extended to a seven-day period. And my response is that it does not have a direct extension to a seven day equivalent. The methodology provides Firm Power on each day as its foundational premise, and in our view, the current methodology works [on] both [a] daily and weekly basis already. India is provided with Firm Power every day, and the energy available is a function of the hydrology of the river at the site, which determines the duration of the Firm Power within each day. [...] *Once the Firm Power has been provided each day for seven days, we have met the weekly requirement that Firm Power is available for the week.*”¹³⁸

2.132. The utility of this understanding of how Paragraph 8(c) functions as a matter of **design** is enhanced when one considers the role that Paragraph 15 will play in India's use of Pondage as a matter of **operation**. By its terms, Paragraph 15 (save in the case of a Plant on the Chenab below Ramban) allows India to store water overnight, essentially allowing it to reschedule its seven daily allowances of “Pondage required for Firm Power” to meet weekly needs. This utility is increased further still by the fact that India is allowed, pursuant to Paragraph 8(c), **twice** the Pondage required for Firm Power – giving it even greater flexibility in storing and discharging the waters of the Western Rivers to meet the weekly need for Firm Power – or even Secondary Power, if that is what India desires.

¹³⁸ Transcript of Hearing for the First Phase on the Merits, Day 6 (15 July 2024), p. 90, line 25 – p. 91, line 12 (Mr Rae) (emphasis added).

2.133. To the extent that India complains that this methodology does not allow it to produce as much Secondary Power in low-flow conditions as it would like, this is a problem of its own making. As Pakistan's counsel noted during the Hearing, India cannot claim its poor design choices allow it to stretch the boundaries of what is permissible under the Treaty.¹³⁹

2.134. The Kiru HEP is a case in point. At a site with an MMD of 65.3m³/sec, India has proposed a HEP with a design capacity of 586 m³/s (equivalent to 624MW in four turbine units). During the dry season one of the units will frequently be offline for maintenance, in which case only 75% of the design capacity will be available for peaking.

2.135. Pakistan's Revised Approach would allow an Operating Pool of 2.82 Mm³ for the Kiru HEP site. At a dry-season river inflow equal to MMD, and by filling and emptying pondage to service two daily peaks, the entire daily inflow can be used for peaking. This would provide 3.6 hours of daily peaking at 75% of the plant's design capacity. Given that dry season inflow allows less than 4 hours of power production at 75% of design capacity, it is evident that the design capacity selected by India is based on taking advantage of wet-season flows rather than power peaking during the dry season.

2.136. In view of these considerations, Pakistan is confirmed in its view that its Revised Approach – as conceived, with a daily timestep – is the only approach under the Treaty that actually conforms with the letter and spirit of the Treaty. It has been reached as the consequence of a painstaking trial-and-error analysis by Pakistan, and properly understood, can be deployed on both a daily and weekly basis. All other options, including not only India's present approach, but the other approaches that the Parties have deployed from time-to-time, fall short in one way or another. Pakistan accordingly commends its Revised Approach to the Court and urges its adoption in the Court's eventual Award on the First Phase of the Merits, together with the additional submissions on Paragraph 2(c) set out above.

¹³⁹ Transcript of Hearing for the First Phase on the Merits, Day 4 (11 July 2024), p. 120, lines 4–16 (Professor Webb).

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Appendix

Information of HEPs shared by India post Baglihar

Sr. No.	Description	Status	Location	Type	Installed Capacity	Operational Storage	Gross Storage	Information Shared by India	Candidate Project
					MW	Acre-ft	Acre-ft		
A	Indus								
1	Nimo Bazgoo	Completed	On Indus River Main near Alchi Town	Run of river	45.00	7,880.00	2,814.00	27-Dec-2006	Yes
2	Chutak	Completed	On Suru River, a Tributary of Indus River	Run of river	44.00	-	477.00	02-Nov-2007	-
3	Dumkhar	Completed	On Dumkhar Nallah, a Tributary of Indus River	Run of river	0.50	-	-	30-Sep-2010	-
4	Marpachoo	Completed	On Sando Nallah, a Tributary of Indus River	Run of river	0.75	-	-	10-Nov-2010	-
5	Dah	Completed	On Dah Nallah, a Tributary of Indus River	Run of river	9.00	-	-	18-Jul-2011	-
6	Hanu	Completed	On Hanu Nallah, a Tributary of Indus River	Run of river	9.00	-	-	18-Jul-2011	-
7	Chulunkha	Under Construction	On Chulunkha Nallah, a Tributary of Indus River	Run of river	0.80	-	-	14-Dec-2012	-
8	Turtuk-I	Under Construction	On Turtuk Nallah, a Tributary of Indus River	Run of river	0.50	-	-	27-Dec-2012	-
9	Waris-III	Under Construction	On Waris Nallah, a Tributary of Indus River	Run of river	1.20	-	-	10-Jan-2013	-
10	Bogdang	Under Construction	On Bogdang Nallah, a Tributary of Indus River	Run of river	0.80	-	-	23-Jan-2013	-
11	Durbuk-II	Under Construction	On Changla Nallah, a Tributary of Indus River	Run of river	0.35	-	-	29-Jan-2013	-
12	Shayok	Under Construction	On Shayok Nallah, a Tributary of Indus River	Run of river	0.60	-	500.00	06-Feb-2013	-
13	Tsati	Under Construction	On Tsati Nallah, a Tributary of Indus River	Run of river	0.50	-	-	13-Mar-2013	-
14	Chamshen	Under Construction	On Chamshen Nallah, a Tributary of Indus River	Run of river	0.45	-	-	09-Apr-2013	-
15	Henache	Under Construction	On Henache Nallah, a Tributary of Indus River	Run of river	0.60	-	-	09-Apr-2013	-
16	Sumda-dho	Under Construction	On Sumda-dho Nallah, a Tributary of Indus River	Run of river	0.30	-	-	09-Apr-2013	-
17	Bairas	Under Construction	On Bairas Nallah, a Tributary of Indus River	Run of river	1.50	-	-	09-Jul-2013	-

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18	Chilong	Under Construction	On Chilong Nallah, a Tributary of Indus River	Run of river	1.00	-	-	09-Jul-2013	-
19	Raru	Under Construction	On Raru Nallah, a Tributary of Indus River	Run of river	2.00	-	-	09-Jul-2013	-
20	Umbulung	Under Construction	On Wakha (Umbulung) Nallah, a Tributary of Indus River	Run of river	1.00	-	-	09-Jul-2013	-
21	Zunkur	Under Construction	On Zunkur Nallah, a Tributary of Indus River	Run of river	2.50	-	-	09-Jul-2013	-
22	Thusgam Sankoo	Under Construction	On Phu Lungma Nallah, a Tributary of Indus River	Run of river	0.50	-	-	10-Jul-2013	-
23	Sangarh	Under Construction	On Sangarh Nallah, a Tributary of Indus River	Run of river	1.50	-	-	11-Jul-2013	-
24	Tambis	Under Construction	On Tambis Nallah, a Tributary of Indus River	Run of river	0.20	-	-	11-Jul-2013	-
25	Thusgam Drass	Under Construction	On Thsgam Nallah, a Tributary of Indus River	Run of river	0.50	-	-	11-Jul-2013	-
26	Khandi	Under Construction	On Khandi Nallah, a Tributary of Indus River	Run of river	1.50	-	-	16-Jul-2013	-
27	Matayeen	Under Construction	On Matayeen Nallah, a Tributary of Indus River	Run of river	1.00	-	-	16-Jul-2013	-
28	Tamasha	Under Construction	On Tamasha Nallah, a Sub-Tributary of Indus River	Run of river	12.00	-	-	04-Feb-2019	-
29	Durbuk Shyok	Under Construction	On Tangtse/Durbuk river, a Tributary of Shyok River	Run of river	19.00	-	202.00	24-Dec-2020	-
30	Nimu Chilling	Under Construction	On Zanskar River, a Tributary of Indus River	Run of river	24.00	-	697.00	24-Dec-2020	-
31	Kargil Hunderman	Under Construction	On Suru River, a Tributary of Indus River	Run of river	25.00	32.99	32.99	07-Jul-2021	Calculations not yet provided
32	Mangdum Sangra	Under Construction	On Suru River, a Tributary of Indus River	Run of river	19.00	-	932.00	09-Oct-2021	-
33	Sankoo	Under Construction	On Suru River, a Tributary of Indus River	Run of river	18.50	-	15.40	09-Oct-2021	-
B	Jhelum								
34	Uri-II	Completed	Near Village Uri on Jhelum River	Run of river	240.00	-	5,144.00	27-Dec-2005	-
35	Kishenganga	Completed	On Kishenganga River, a Tributary of Jhelum River	Run of river	330.00	6,123.00	14,881.00	19-Jun-2006	Before Neutral Expert
36	Athawatto	Completed	On Madhumatti Nallah, a Tributary of Jhelum River	Run of river	10.00	1.00	1.00	13-May-2009	-
37	Tangmarg	Completed	On Ferozepur Nallah, a Tributary of Jhelum River	Run of river	10.00	1.04	1.04	26-Aug-2009	-
38	Brenwar	Completed	On River Doodh-Ganga, a Tributary of Jhelum River	Run of river	7.50	0.60	0.60	01-Oct-2009	-

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39	Parnai	Under Construction	On Suran River, a Tributary of Poonch River in Jhelum basin	Run of river	37.50	54.80	70.20	15-Jan-1990	Dual storage difficult to model
40	Kehmil	Under Construction	On Kehmil Nallah, a Tributary of Jhelum River	Run of river	4.00	0.73	0.73	07-Mar-2011	-
41	Boniyar	Under Construction	On Hapat Khai Nallah a Tributary of Jhelum River	Run of river	8.00	1.20	1.20	21-Sep-2011	-
42	New Ganderbal	Under Construction	On Sind River, a Tributary of Jhelum River	Run of river	93.00	81.10	121.70	26-Feb-2013	Yes
43	Baltikulan	Under Construction	On Baltikulan Nallah, a Sub-Tributary of Jhelum River	Run of river	5.00	-	-	04-Feb-2019	-
44	Kalaroos-II	Under Construction	On Kalaroos Nallah, a Sub-Tributary of Jhelum River	Run of river	10.50	-	-	04-Feb-2019	-
45	Kulan Ramwari	Under Construction	On Sind Nallah, a Tributary of Jhelum River	Run of river	25.00	-	-	07-Jul-2021	-
46	Phagla	Under Construction	On Chang Nallah, a Tributary of Suran River in Jhelum River	Run of river	14.10	-	Not Estimated	07-Jul-2021	-
47	Mandi	Under Construction	On Mandi River, a Tributary of Poonch River in Jhelum basin	Run of river	15.00	1.79	2.65	10-Aug-2021	-
C	Chenab								
48	Ranja-Ala Dunadi	Completed	On river upper Kalnai Nullah, a Tributary of Chenab River	Run of river	15.00	1.70	1.70	31-May-2010	-
49	Miyar	Under Construction	On Miyar Nullah, a Tributary of Chenab River	Run of river	120.00	730.00	1,298.00	27-Apr-2012	Yes
50	Lower Kalnai	Under Construction	On River Lower Kalnai Nullah, a Tributary of Chenab River	Run of river	48.00	616.00	1,508.00	22-Jun-2012	Yes
51	Ratle	Under Construction	On Chenab River	Run of river	850.00	19,350.00	63,833.00	16-Aug-2012	Before Neutral Expert
52	Pakal Dul	Under Construction	On Marusadar River, a right bank Tributary of Chenab River	Storage	1,500.00	87,881.00	101,671.00	30-Nov-2012	Calculations not yet provided
53	Khari-I	Under Construction	On Mohu Mangat Nullah, a Tributary of Chenab River	Run of river	2.00	-	-	17-Aug-2015	-
54	Kiru	Under Construction	On Chenab River	Run of river	624.00	8,516.00	33,657.00	01-Jun-2021	Yes
55	Ans-II	Under Construction	On Ans River, a Tributary of Chenab River	Run of river	23.00	18.30	129.40	09-Oct-2021	Calculations not yet provided
56	Kwar	Under Construction	On Chenab River	Run of river	540.00	7,429.00	22,027.00	21-Jun-2023	Yes
D				Total	4,776.65	138,720.25	290,019.61		6

* * *

III. THE COURT'S QUESTION ON ANNEXURE E

3.1. By its third question in PO13, the Court asked Pakistan to address the following issue:

“The relevance of Annexure E when considering: (i) the object and purpose of the Indus Waters Treaty; (ii) the context when interpreting Article III and Annexure D, including the calculation of Pondage in Annexure E; and (iii) Pakistan’s concern as to the ‘weaponization’ of the Western Rivers through India’s ability to store and release water.”¹⁴⁰

3.2. In this Chapter, Pakistan will address the three aspects of the question as follows:

- a) **Section A** addresses the relevance of Annexure E to the object and purpose of the Treaty;
- b) **Section B** addresses the relevance of Annexure E when interpreting Article III and Annexure D, including the calculation of Pondage in Annexure E; and
- c) **Section C** considers the relevance of Annexure E to Pakistan’s concerns as to the “weaponization” of the Western Rivers.

3.3. Two preliminary points are warranted. The first is that, under the general rule of Treaty interpretation, it is axiomatic that a treaty must be interpreted holistically, *i.e.*, having regard to the entirety of the treaty, not just to the provisions in dispute. This interpretative injunction applies not simply to the operative provisions of a treaty but also to its preamble and annexes, a point expressly made in Article 31(2) of the Vienna Convention on the Law of Treaties (“VCLT”).¹⁴¹ The wider context of contested provisions of a treaty as well as a treaty’s object and purpose, both elements of the interpretative exercise, are essential to the construction of disputed terms. These issues were addressed at some length in Pakistan’s Memorial and oral submissions during the Hearing and need no further repetition.¹⁴²

3.4. It follows from this proposition that, simply as a methodological matter, the terms and scope of Annexure E are properly and potentially relevant to the interpretative exercise in

¹⁴⁰ PO13, ¶ 3.1.3.

¹⁴¹ VCLT, PLA-0005.

¹⁴² COA Memorial, ¶¶ 8.7–8.36; Transcript of Hearing for the First Phase on the Merits, Day 2 (9 July 2024), pp. 76–100 (Professor Webb).

which the Court is engaged in these proceedings. The question of whether and, if so, in what way and to what extent, the specific terms of Annexure E are relevant to the three elements of enquiry identified in the Court's question is addressed below.

3.5. Second, Pakistan recalls the scheme and purpose of Annexure E. As explained in Pakistan's Memorial,¹⁴³ Annexure E is concerned with the storage of water, and the construction and operation of "Storage Works", by India under the provisions of Article III(4). The term "Storage Work" is defined at Paragraph 2(a) of Annexure E, as "a work constructed for the purpose of impounding the waters of a stream". Excluded from the definition of "Storage Works" are: "(i) a Small Tank, (ii) the works specified in Paragraphs 3 and 4 of Annexure D, and (iii) a new work constructed in accordance with the provisions of Annexure D."¹⁴⁴

3.6. Annexure E therefore addresses three categories of storage works:

- (a) existing Storage Works which were already in operation on the Effective Date, the operation of which is subject to "no restriction" under the Treaty (Annexure E, Paragraph 3);
- (b) Small Tanks,¹⁴⁵ on which there is "no restriction" on their construction or operation (Annexure E, Paragraph 3); and
- (c) new Storage Works,¹⁴⁶ which will be permitted on the Western Rivers provided that their aggregate storage capacity does not exceed the capacity limits defined by Paragraph 7 of Annexure E.¹⁴⁷

3.7. In the early years of the Treaty's operation, the ICIW advanced an impermissibly expansive interpretation of "Storage Works" and "Small Tanks". Contrary to the ICIW's view

¹⁴³ COA Memorial, ¶¶ 6.25–6.27.

¹⁴⁴ Indus Waters Treaty, **PLA-0001**, Annexure E, Paragraph 2(a).

¹⁴⁵ Defined in Annexure E, Paragraph 2(n) as "a tank having Live Storage of less than 700 acre-feet and fed only from a non-perennial small stream: Provided that the Dead Storage does not exceed 50 acre-feet".

¹⁴⁶ Defined in Annexure E, Paragraph 2(a).

¹⁴⁷ By reference to each relevant river system (namely, the Indus, The Jhelum (excluding the Jhelum Main), The Jhelum Main, The Chenab (excluding the Chenab Main), and The Chenab Main), Paragraph 7 identifies the maximum storage capacity by reference to General Storage Capacity, Power Storage Capacity and Flood Storage Capacity (terms defined in Paragraph 2 of Annexure E).

that temporary bunds (embankments used to control the flow of water) in the river bed did not constitute a “Storage Work”,¹⁴⁸ the position of the PCIW was that “the Treaty does not differentiate between the so-called permanent and temporary works”.¹⁴⁹ Similarly, the PCIW considered that certain storage schemes (the Yusmarg storage scheme and the Arzan Garzan dam) were “Storage Works” not “Small Tanks” because they were located on a non-perennial stream.¹⁵⁰ These disagreements are not before the Court and are cited here only to provide context arising from the documents disclosed in accordance with Procedural Orders Nos. 11 and 13.

A. THE RELEVANCE OF ANNEXURE E TO THE OBJECT AND PURPOSE OF THE TREATY

3.8. Pakistan’s interpretation of the object and purpose of the Treaty is reinforced by the structure and content of Annexure E. There are two important dimensions to this: first, the three Bargains underlying the Treaty; second, the framework for cooperation and information exchange.

3.9. First, the Treaty is underpinned by the three Bargains (the Peace Bargain, the Treaty Bargain and the Western Run-of-River Hydro Bargain).¹⁵¹ The Treaty and Hydro Bargains, in particular, are relevant to the constraints that Annexure E places on India’s use of the Western Rivers. Under Article III of the Treaty, Pakistan has the right to the use of the waters of the Western Rivers (the Treaty Bargain) while recognising India’s need to utilise the Western Rivers for limited purposes – the generation of hydro-electric power in compliance with Annexure D (the Hydro Bargain) and the storage of water in accordance with Annexure E.

3.10. The *Kishenganga* Court described the object and purpose in relevant part as follows:

“The deliberate division and allocation of the six main watercourses of the Indus system of rivers between the Parties is a defining characteristic of the Treaty. The inevitable conclusion is that Pakistan is given priority in the use of the waters of the Western Rivers, just as India has priority in the use of the waters of the Eastern Rivers.

¹⁴⁸ Letter No. F.11(2)/69-IT from the ICIW to the PCIW dated 17 November 1970, **Exhibit P-0649.0181**.

¹⁴⁹ Letter No. WT(69)/(2645-A)/PCIW from the PCIW to the ICIW dated 20 April 1971, **Exhibit P-0649.0201**, cf. Letter No. F.11(2)/69-IT from the ICIW to the PCIW dated 17 November 1970, **Exhibit P-649.0181**.

¹⁵⁰ Letter No. WT(38/2)/(3649-A)/PCIW from the PCIW to the ICIW dated 18 January 1977, **Exhibit P-0649.0377**; Letter No. WT(38/2)/(3650-A)/PCIW from the PCIW to the ICIW dated 18 January 1977, **Exhibit P-0649.0378**.

¹⁵¹ *COA Memorial*, ¶¶ 1.10–1.11.

Pakistan's right to the Western Rivers is not absolute since it relates only to those waters of the Western Rivers 'which India is under an obligation to let flow under the provisions of [Article III(2) of the Treaty].' The right is subject to expressly enumerated Indian uses on the Western Rivers, including the generation of hydro-electric power to the extent permitted by the Treaty."¹⁵²

3.11. In the context of its decision on the permissibility under the Treaty of drawdown flushing, the *Kishenganga* Court specifically highlighted the role of limiting storage in achieving the Treaty's object and purpose:

“[O]ne of the primary objectives of the Treaty is to limit the storage of water by India on the Western Rivers (and, correspondingly, to prohibit entirely the storage of water by Pakistan on the upper reaches of the Eastern Rivers). [...] The outcome was significant in that it achieved a careful balance between the Parties' respective negotiating positions, allowing India hydro-electric use of the waters of the Western Rivers while protecting Pakistan against the possibility of water storage on the upstream reaches of those Rivers having an unduly disruptive effect on the flow of water to Pakistan.

[...] [I]n many instances the Treaty does not simply restrict the Parties from taking certain actions, but also constrains their entitlement to construct works that would enable such actions to be taken. *Thus, India is not only restricted in storing water on the Western Rivers; it is also prohibited from constructing Storage Works except within the limited capacity permitted by the Treaty.*"¹⁵³

3.12. The second aspect of how Annexure E relates to the Treaty's object and purpose is the obligations on the Parties to cooperate and share information. As the Preamble sets out, the Treaty was to be implemented “in a spirit of goodwill and friendship” and “in a cooperative spirit”. This is repeated in Article VII(1), which records that, “[t]he two Parties recognize that they have a common interest in the optimum development of the Rivers, and, to that end, they declare their intention to co-operate by mutual agreement, to the fullest possible extent”. Paragraphs 4 and 12 of Annexure E provide for sharing of information by India regarding Storage Works. Paragraph 15 concerns information to be provided if any alternation in design is proposed before the Storage Work comes into operation that would result in a “material change” in the information furnished under Paragraph 12.

3.13. The Appendix to Annexure E sets out the required data and other information. This does not take place in a vacuum. Paragraph 5(b) of Annexure E requires India to provide

¹⁵² *Kishenganga* arbitration, Partial Award, PLA-0003, ¶¶ 410–411, *see also* ¶ 509.

¹⁵³ *Id.*, ¶¶ 504 and 506 (emphasis added).

information of the impact of a Storage Work on the flow patterns in the Western Rivers: “Estimated effect of proposed Storage Work on the flow pattern of river supplies below the Storage Work or, if India has any other Storage Work or Run-of-River Plant (as defined in Annexure D) below the proposed Storage Work, then on the flow pattern below the last Storage Work or Plant.”

3.14. India’s design, construction and operation of Storage Works, as with Run-of-River HEPs, is subject to constant monitoring for compliance with the Treaty and its rule of unrestricted use/“let flow”/non-interference/no storage. To this end, India must measure a variety of inputs daily, and provide the data to Pakistan monthly (or even daily if requested). India must inform Pakistan of any planned works likely to affect Pakistan’s rights and interests and provide it with information on them. India is under a positive obligation to cooperate with Pakistan on river development, and to interact with it through the Commission. India must also give Pakistan’s Commissioner timely access to any facility it builds on Western Rivers on demand, such that its compliance with the Treaty may be assessed.¹⁵⁴

B. THE RELEVANCE OF ANNEXURE E TO THE INTERPRETATION OF ARTICLE III AND ANNEXURE D, INCLUDING THE CALCULATION OF PONDAGE IN ANNEXURE E

3.15. Annexure E is relevant to the other provisions of the Treaty as part of the context, which can be used to clarify particular terms of a treaty, for example, by comparison with those in other provisions that appear within it.¹⁵⁵ This approach is consistent with the broader interpretive principle of consistency with the object and purpose of a treaty.¹⁵⁶ When considering the permissibility of depletion below Dead Storage Level, the *Kishenganga* Court looked both to the “specific provisions in Annexure D (*and, through incorporation by*

¹⁵⁴ See, e.g., Letter No. WT(47)/(7874-A)/PCIW from the PCIW to the ICIW, 7 April 2021, **Exhibit P-0649.1560** (referring to the object and purpose of the Treaty being identified with the obligation to “let flow” and not to permit interference with the waters of the Western Rivers subject to specified exceptions. The obligation under Article III was described by the PCIW as of “fundamental importance”).

¹⁵⁵ COA Memorial, ¶ 8.13; Gardiner, 2015, **PLA-0017 (resubmitted)**, p. 204.

¹⁵⁶ COA Memorial, ¶¶ 8.13–8.20.

reference, Annexure E)” as well as the “context of the Treaty as a whole—in particular [...] the background of permissible uses and the allocation of rights on the Western Rivers”.¹⁵⁷

3.16. In this section, Pakistan addresses the relevance of Annexure E to

- (a) Article III of the Treaty;
- (b) Annexure D to the Treaty, which is illustrated in part by the change in the design of the KHEP from a Storage Work under Annexure E to a Run-of-River HEP under Annexure D;
- (c) The calculation of pondage.

1. The relevance of Annexure E to Article III

3.17. Article III is formed of four provisions that create the unrestricted use/”let flow”/non-interference/no storage rule in the Treaty:

- “(1) Pakistan shall receive for unrestricted use all those waters of the Western Rivers which India is under obligation to let flow under the provisions of Paragraph (2).
- (2) India shall be under an obligation to let flow all the waters of the Western Rivers, and shall not permit any interference with these waters, except for the following uses, restricted (except as provided in item (c)(ii) of Paragraph 5 of Annexure C) in the case of each of the rivers, The Indus, The Jhelum and The Chenab, to the drainage basin thereof:
 - (a) Domestic Use;
 - (b) Non-Consumptive Use;
 - (c) Agricultural Use, as set out in Annexure C; and
 - (d) Generation of hydro-electric power, as set out in Annexure D.
- (3) Pakistan shall have the unrestricted use of all waters originating from sources other than the Eastern Rivers which are delivered by Pakistan into The Ravi or The Sutlej, and India shall not make use of these waters. Each Party agrees to establish such discharge observation stations and make such observations as

¹⁵⁷ *Kishenganga* arbitration, Partial Award, **PLA-0003**, ¶ 503 (emphasis added). See also *Indus Waters Kishenganga Arbitration (Pakistan v. India)*, Decision on India’s Request for Clarification or Interpretation (2013) XXXI RIAA 295, 20 December 2013, **PLA-0021**, ¶¶ 30–32.

may be considered necessary by the Commission for the determination of the component of water available for the use of Pakistan on account of the aforesaid deliveries by Pakistan.

- (4) Except as provided in Annexures D and E, India shall not store any water of, or construct any storage works on, the Western Rivers.”

3.18. The only express reference to Annexure E in these provisions is in Article III(4) as part of the carve-out to the prohibition on India's storage of any water, or the construction of any Storage Works, on the Western Rivers. However, as addressed at the Hearing, and set out in the following sub-section, some of the provisions of Annexure E reflect similar principles to those in Annexure D and are therefore of relevance to the interpretation and application of Article III(1) and (2). And, overall, the scheme of the Treaty is (as Pakistan's counsel explained at the Hearing) that “whenever there is an entitlement based on an exception for India, that entitlement is very tightly defined, in a very extensive fashion”, whether set out in Annexures C, D or E.¹⁵⁸

3.19. Annexure E is to be read as providing a carefully limited exception to the primary rule of Article III, in particular Article III(4). As Pakistan noted in its Memorial, through its focus on storage *capacity* rather than water actually *stored*, Annexure E not only prevents India from storing water, but from building works which would *allow* it to store water, even if the capacity is never used.¹⁵⁹ This accords with the finding of the *Kishenganga* Court that “in many instances, the Treaty does not simply restrict the Parties from taking certain actions, but also constrains their entitlement to construct works that would enable such action to be taken”.¹⁶⁰

3.20. A “storage work” is defined as “a work constructed for the purpose of impounding the waters of a stream” (Paragraph 2(a) of Annexure E). This may be done by damming an existing watercourse or a natural lake, or through the construction of a man-made reservoir into which the Western Rivers can be diverted.¹⁶¹ Storage of water in general is not a defined term in

¹⁵⁸ Transcript of Hearing for the First Phase on the Merits, Day 7 (16 July 2024), p. 171, line 21 – p. 172, line 1 (Sir Daniel Bethlehem KC).

¹⁵⁹ COA Memorial, ¶ 9.69.

¹⁶⁰ *Kishenganga* arbitration, Partial Award, PLA-0003, ¶ 506.

¹⁶¹ COA Memorial, ¶ 9.62.

Annexure E, but it evidently concerns the intervention by a riparian in the natural flow of a watercourse with a view to retaining a portion of that water for a specific use.¹⁶²

3.21. Paragraph 2 of Annexure E defines several different types of storage, by reference to reservoir capacity and the corresponding volume of water. They each reflect a different aspect of water stored behind the dam of a Storage Work.¹⁶³ Taken together, they comprise the “Reservoir Capacity”, meaning the gross volume of water that can be stored in a reservoir per Paragraph 2(b) of Annexure E.¹⁶⁴

3.22. While India is allowed to continue to operate those Storage Works that existed prior to 1 April 1960, its ability to construct new Storage Works is capped by the provisions of Paragraph 7 of Annexure E, which sets out strict limits on the amount of storage capacity that India is allowed to build on the Western Rivers.¹⁶⁵ Any storage work constructed on a Tributary of the Jhelum on which Pakistan has any Agricultural or hydro-electric power use has to be designed and operated so “as not to adversely affect the then existing Agricultural Use or hydro-electric use on that Tributary” (Paragraph 10).

3.23. Consistent with the unrestricted use/“let flow”/non-interference/no storage rule, where the Storage Work contains a HEP, it must be operated in accordance with Paragraph 21 of Annexure E, which limits storage further. Paragraph 21(b) provides that, save for the period each year in which India is filling the Conservation Storage of a Storage Work under the strict parameters of Paragraph 18 of Annexure E (by default during the wet season, when water is plentiful¹⁶⁶), “the volume of water delivered into the river below the work [Storage Work] during any period of seven consecutive days shall not be less than the volume of water received in the river upstream of the work in that seven-day period”. This ensures a constant flow of

¹⁶² *Id.*, ¶ 9.63.

¹⁶³ Not every Storage Work will require every type of storage – Power Storage, for example, will only be required if the Storage Work incorporates a HEP, as anticipated by Paragraph 21 of Annexure E.

¹⁶⁴ *COA Memorial*, ¶ 9.64.

¹⁶⁵ Exclusive, *inter alia*, of Pondage for HEPs constructed under Annexure D and Paragraph 21(a) of Annexure E, and Surcharge Storage and Dead Storage allowed for under both Annexures: Annexure E, Paragraphs 8(d), (e), (f). *COA Memorial*, ¶ 9.66.

¹⁶⁶ India is entitled to fill its Conservation Storage annually, and its Dead Storage once only, at such time and in accordance with such rules as agreed between the Commissioners. In the absence of any agreement, India is entitled to fill its Conservation Storage and Dead Storage: (a) for the Indus, between 1 July and 20 August; (b) for the Jhelum, between 21 June and 20 August; and (c) for the Chenab, between 21 June and 31 August, but only at such a rate as not to reduce the flow of the main stream above Merala to less than 55,000 cusecs: Annexure E, Paragraph 18.

water to Pakistan (“let flow”) for the vast majority of the year, including during the entirety of the dry season.¹⁶⁷

3.24. The only form of storage capacity that is **not** regulated under Annexure E (or Annexure D) is Dead Storage Capacity, which, once filled initially in accordance with Paragraph 18 of Annexure E, cannot be depleted “except in an unforeseen emergency”, addressed in Paragraph 19 of Annexure E.¹⁶⁸ As the *Kishenganga* Court noted:

“Dead Storage is the only category of storage, under either Annexure D or E, that is unrestricted in volume. India may include Dead Storage in the design of any Run-of-River Plant or Storage Work and may provide for Dead Storage of any capacity. This fact is consistent with the other restrictions on storage on the Western Rivers only if Dead Storage is somehow qualitatively different and was understood to be truly ‘dead’—an area to be filled once, and not thereafter subject to manipulation. The absence of limits on the volume of Dead Storage cannot, of course, itself impose a restriction on how such storage may be used. But it is suggestive of the mindset of the Parties in providing for storage of this type.”¹⁶⁹

3.25. Pakistan and India have been at odds over the interpretation and application of Paragraph 18 of Annexure E over the years. There have been exchanges in writing and in the Commission recording Pakistan’s objection to India’s proposed “simultaneous filling” of Dead Storage on the Chenab Main during periods outside those specified in Paragraph 18(c) of Annexure E (*i.e.*, between 21 June and 31 August), leading to “fluctuations in the supplies delivered into the river below the site for a number of years”.¹⁷⁰ There was voluminous correspondence on the initial filling below Dead Storage Level of the Baglihar HEP.¹⁷¹

¹⁶⁷ COA Memorial, ¶ 9.67.

¹⁶⁸ Paragraph 14 of Annexure D, addressing new Run-of-River HEPs, provides that “[t]he filling of Dead Storage shall be carried out in accordance with the provisions of Paragraphs 18 and 19 of Annexure E”. On this aspect, therefore, the terms of Annexure E are directly relevant and controlling vis-à-vis the filling of Dead Storage in the case of Annexure D.3 HEPs.

¹⁶⁹ COA Memorial, ¶ 9.68; *Kishenganga* arbitration, Partial Award, **PLA-0003**, ¶ 505.

¹⁷⁰ Letter No. WT(86)/(3443-A)/PCIW from the PCIW to the ICIW dated 1 December 1975, **Exhibit P-0649.0327**; Letter No. WT(86)/(4776-A)/PCIW from the PCIW to the ICIW dated 25 April 1986, **Exhibit P-0649.0545**; Letter No. WT(86)/(4830-A)/PCIW from the PCIW to the ICIW dated 19 November 1986, **Exhibit P-0649.0573**; Record of the 42nd Meeting of the Permanent Indus Commission, 28 March-2 April 1976, dated 2 April 1976, **Exhibit P-0647.42**, ¶ 22.

¹⁷¹ See, e.g., Letter No. WT(127)/(6893-A)/PCIW from the PCIW to the ICIW dated 11 August 2008, **Exhibit P-0649.1140**; Letter No. WT(127)/(6895-A)/PCIW from the PCIW to the ICIW dated 15 August 2008, **Exhibit P-0649.1141**; Letter No. WT(127)/(6896-A)/PCIW from the PCIW to the ICIW dated 20 August 2008, **Exhibit P-0649.1144**; Letter No. 3/1/84-I.T/1727 from the ICIW to the PCIW dated 20 August 2008, **Exhibit P-0649.1142**; Letter No. 3/1/84-I.T/1728 from the ICIW to the PCIW dated 20 August 2008, **Exhibit P-0649.1143**; Letter No. WT(127)/(6897-A)/PCIW from the PCIW to the ICIW dated 21 August 2008, **Exhibit P-0649.1145**; Letter No. WT(127)/(6898-A)/PCIW from the PCIW to the ICIW dated 22 August 2008, **Exhibit P-0649.1147**; Letter No.

Pakistan's objections were discussed at the 102nd Meeting of the Commission.¹⁷² The PCIW stated that, despite Pakistan's repeated requests, India did not provide any schedule of initial filling of the Baglihar HEP. India had given assurances that the flows above Merala would not be reduced to less than the 55,000-cusecs "threshold prescribed by the Treaty".¹⁷³ However, the PCIW pointed out that recorded data indicated that the flows at Marala had been reduced to less than 55,000 cusecs.¹⁷⁴ The PCIW stated that this "must be compensated along with the consequential loss to Pakistan in the shape of water".¹⁷⁵ While this disagreement is not before the Court, it is indicative of a pattern of India not respecting the unrestricted use/"let flow"/non-interference/no storage rule in its activities on the Western Rivers.

2. The relevance of Annexure E to Annexure D

3.26. As explained by Pakistan's counsel during the Hearing, Annexures D and E have several elements in common:¹⁷⁶

- (a) Both are part of the Treaty Bargain;
- (b) Both address an exception to India's no-storage obligation in Article III(4);
- (c) Both impose tight constraints on India;
- (d) Both types of Plants may be used to generate hydroelectric power;
- (e) Both set out design and operation constraints;
- (f) Both use certain of the same terms.

WT(127)/(6901-A)/PCIW from the PCIW to the ICIW dated 27 August 2008, **Exhibit P-0649.1148**; Letter No. WT(127)/(6902-A)/PCIW from the PCIW to the ICIW dated 29 August 2008, **Exhibit P-0649.1149**; Letter No. WT(127)/(6903-A)/PCIW from the PCIW to the ICIW dated 30 August 2008, **Exhibit P-0649.1150**; Letter No. WT(127)/(6906-A)/PCIW from the PCIW to the ICIW dated 3 September 2008, **Exhibit P-0649.1153**; Letter No. 3/1/84-IT/1730 from the ICIW to the PCIW dated 16 September 2008, **Exhibit P-0649.1161**.

¹⁷² Record of the 102nd Meeting of the Permanent Indus Commission, 23-25 October 2008, dated 3 June 2009, **Exhibit P-0647.91**. See also Letter No. WT(51)/(6976-A)/PCIW from the PCIW to the ICIW dated 10 February 2009, **Exhibit P-0649.1187**, which contains the draft record of the 102nd Meeting of the Commission.

¹⁷³ Record of the 102nd Meeting of the Permanent Indus Commission, 23-25 October 2008, dated 3 June 2009, **Exhibit P-0647.91**, pp. 5, 12.

¹⁷⁴ *Id.*, p. 5.

¹⁷⁵ *Id.*, p. 10.

¹⁷⁶ Transcript of Hearing for the First Phase on the Merits, Day 7 (16 July 2024), p. 179, line 11 – p. 187, line 25, and p. 194, line 3 – p. 195, line 2 (Sir Daniel Bethlehem KC).

3.27. However, they also differ in other respects:

- (g) They address different types of Plant;
- (h) Many design and operation constraints differ, such as Annexure E's constraints as to location, aggregate storage, limitation on downstream effects, design, filling, power plant operation, and substitution in the case of sedimentation;¹⁷⁷
- (i) Even certain terms used in both Annexures differ in their formulation and meaning (as explained in the following sub-section with respect to the calculation of pondage).

3.28. Annexure E is relevant to the interpretation of Annexure D (and other provisions of the Treaty) as part of the context of the Treaty and informing its object and purpose. Further, as Pakistan's counsel observed during the Hearing, although Annexure C is not in contention in these proceedings, it also forms part of the context and contributes to the holistic interpretation of the Treaty by establishing "an express exception to Pakistan's right of unrestricted use for purposes of agricultural use by India of the Western Rivers".¹⁷⁸ Looking across Annexures C, D and E, "wherever there is an entitlement based on an exception for India, that entitlement is very tightly defined, in a very extensive fashion".¹⁷⁹

3.29. Returning to Annexure E, Pakistan does not consider that Annexure E informs the detailed interpretation of the criteria in Annexure D for Run-of-River HEPs.¹⁸⁰ In the past, for example, in the context of the Salal HEP, the PCIW compared Paragraph 8 of Annexure D with Paragraph 11(f) of Annexure E, highlighting the differences between the two provisions. While emergencies could arise in relation to Annexure D.3 HEPs and Annexure E Storage Work, the prohibition of outlets below the Dead Storage Level in Paragraph 8(d) of Annexure

¹⁷⁷ Transcript of Hearing for the First Phase on the Merits, Day 7 (16 July 2024), p. 196, lines 2–4 (Sir Daniel Bethlehem KC).

¹⁷⁸ Transcript of Hearing for the First Phase on the Merits, Day 7 (16 July 2024), p. 170, line 19 – p. 171, line 11 (Sir Daniel Bethlehem KC).

¹⁷⁹ Transcript of Hearing for the First Phase on the Merits, Day 7, (16 July 2024), p. 171, line 22 – p. 172, line 1 (Sir Daniel Bethlehem KC).

¹⁸⁰ Transcript of Hearing for the First Phase on the Merits, Day 7 (16 July 2024), p. 196, lines 2–4 (Sir Daniel Bethlehem KC).

D “existed in the case of new Run-of-River Plants only”.¹⁸¹ The PCIW emphasised that the design and construction of structures like the Salal HEP “had to be adopted keeping in view the Treaty constraints”.¹⁸²

3.30. Annexures D and E have to be read together when a HEP is incorporated in a storage work. Paragraph 1 of Annexure D provides that “the design, construction and operation of new hydro-electric plants which are incorporated in a Storage Work (as defined in Annexure E) shall be governed by the relevant provisions of Annexure E”. Paragraph 2(a) of Annexure E provides that a new work is one that “is constructed for the purpose of impounding the waters of a stream” and is **not** “constructed in accordance with the provisions of Annexure D”. Read with Paragraph 1 of Annexure E, this means that such a work will fall within the definition of a Storage Work and be regulated by Annexure E.

3.31. Conversely, Annexure D.1 and Annexure E.2(a)(iii) make it clear that Run-of-River HEPs are governed by Annexure D only. As Pakistan’s counsel explained:

“So whatever the overlap in purpose and scheme, and sometimes in their terms, Annexure E does not address run-of-river HEPs. Annexure E does contemplate the possibility of the incorporation of what is termed a ‘power plant’, as part of a storage work, but this is not a run-of-river HEP as is defined, expressly defined, in Annexure D. We say that this is highly material, both conceptually and for your deliberative and adjudicatory task. It is conceptually highly material because it reinforces the character of Annexure D.3 plants, that they are run-of-river plants. This is a definition that you find in Annexure D, paragraph 2(g): that’s where the definition is found. And it follows from this differentiation that the power plants addressed in Annexure E are not akin, formally speaking, to run-of-river HEPs in terms of their intended function and in other important respects.”¹⁸³

3.32. This is vividly illustrated by the change in the design of the KHEP. As the *Kishenganga* Court observed, the KHEP was “first conceived as a Storage Work” under Annexure E of the Treaty in 1971.¹⁸⁴ Under its original design, the KHEP was to store water during the high flow season in a 220.00 MCM reservoir behind a 77-metre high dam.¹⁸⁵ The stored water was to be

¹⁸¹ Record of the 43rd Meeting of the Permanent Indus Commission, 26-30 April 1976, dated 31 May 1984, **Exhibit P-0647.43**, p. 7.

¹⁸² *Id.*, p. 8.

¹⁸³ Transcript of Hearing for the First Phase on the Merits, Day 7 (16 July 2024), p. 188, lines 1–19 (Sir Daniel Bethlehem KC).

¹⁸⁴ *COA Memorial*, ¶ 9.48; *Kishenganga* arbitration, Partial Award, **PLA-0003**, ¶¶ 154 and 438.

¹⁸⁵ *Kishenganga* arbitration, Partial Award, **PLA-0003**, ¶ 154.

used for enhanced power generation during the winter.¹⁸⁶ Following Pakistan's objections,¹⁸⁷ India redesigned the KHEP in 2006 with a 35.48-metre high dam and a reservoir of 18.35 MCM.¹⁸⁸ In India's own words, "the revised Run-of-River design is largely the same as the earlier design".¹⁸⁹ To be clear, Pakistan considers the design and operation of KHEP to be inconsistent with the Treaty and "better characterized as an Annexure E Storage Work",¹⁹⁰ and has its disputes with India with respect to Pondage, intakes, sediment outlets, and spillways of the KHEP.¹⁹¹

3. The calculation of pondage

3.33. Pondage in Annexure E is defined by reference to the definition of "Pondage" in Annexure D, Paragraph 2(c), but it is calculated differently. This illustrates the limited relevance of Annexure E for interpreting terms in Annexure D, despite the common object and purpose behind the Annexures (namely, as narrow exceptions to the unrestricted use/"let flow"/non-interference/no storage rule).

3.34. In Annexure D, maximum Pondage is calculated by reference to Paragraph 8(c) and "Firm Power" in Paragraph 2(i). In Annexure E, Paragraph 21(a), the reference is to "firm power", using lower-case "f" and "p".¹⁹² The lower-case "firm power" refers to the firm power defined in conventional hydropower design practices, namely the dependable capacity of the generating units is determined as a function of the turbine discharge capacity, efficiency, and net generating head with the reservoir at the water level used to define the firm energy. The Treaty does not provide a specific computation method for the storage reservoir firm power because of the number of variables involved. The drafters of the Treaty would not have been

¹⁸⁶ *Id.*, ¶ 154.

¹⁸⁷ *Id.*, ¶ 440.

¹⁸⁸ *Id.*, ¶ 155.

¹⁸⁹ *Id.*, ¶ 236.

¹⁹⁰ *Id.*, ¶ 315.

¹⁹¹ Request for Arbitration, ¶ 7(k). The ICIW and PCIW have exchanged correspondence over the years about the permissibility of KHEP under Annexure E in the context of the supply of information under Paragraph 10 of Annexure E. *See, e.g.*, Letter No. 3(7)82-I.T./456 from the ICIW to the PCIW dated 7 September 1989, **Exhibit P-0649.0675**; Letter No. 3(7)/82-I.T./538 from the ICIW to the PCIW dated 21 February 1991, **Exhibit P-0649.0732**; Letter No. WT(128)/(5252-A)/PCIW from the PCIW to the ICIW dated [7] November 1991, **Exhibit P-0649.0759**. *See also* Letter No. WT(128)/(5074-A)/PCIW from the PCIW to the ICIW dated 21 August 1989, **Exhibit P-0649.0671**.

¹⁹² Transcript of Hearing for the First Phase on the Merits, Day 7 (16 July 2024), p. 194, lines 17–25 (Sir Daniel Bethlehem KC).

able to pre-select the specific characteristics of any given reservoir, which affect the firm power and firm energy. This is a key difference from Annexure D, where the Firm Power in Annexure D.3 HEP is determined only by the flow rate available at the Dead Storage Level with no effect of the storage. The conditions for an Annexure D.3 HEP can therefore be pre-determined as inputs to the Firm Power calculation

3.35. The question of Pondage under Annexures D and E arose in the context of the Pakal Dul Plant. The PCIW pointed out that, since a HEP had been “incorporated” in Pakal Dul Storage Work, India was required under Paragraph 21 of Annexure E to provide calculations of the Maximum Pondage, as defined in Annexure D of the Treaty. In the absence of such information, Pakistan could not determine “the overall effect of operation of the Storage Work on the flow patterns being entered into Pakistan in future”.¹⁹³ The ICIW disagreed, noting that “Pondage is governed by Paragraph 21 of Annexure E”, neither Paragraph 21 of Annexure E nor the Appendix to Annexure E require India to supply the calculations of the Maximum Pondage as defined in Annexure D.¹⁹⁴

C. THE RELEVANCE OF ANNEXURE E TO PAKISTAN'S CONCERNS AS TO THE “WEAPONISATION” OF THE WESTERN RIVERS

3.36. As Dr Morris explained during the Hearing, the term “weaponisation” refers to Pakistan’s three contemporary concerns regarding India’s control over the waters of the Western Rivers: the interruption of water supply for irrigation; opening of the gates to create flooding downstream; and the mass release of sediment impacting infrastructure downstream.¹⁹⁵ As Pakistan’s counsel emphasised during the Hearing, these concerns have a historical basis – most notably, the crisis of April 1948 in which India cut off Pakistan’s access to the waters of the Eastern Rivers and threatened its viability as a political and territorial entity. As the *travaux préparatoires* of the Treaty demonstrate, the incident of 1948 had lasting effects.¹⁹⁶

¹⁹³ Letter No. WT(140)/(7332-A)/PCIW from the PCIW to the ICIW dated 12 March 2013, **Exhibit P-0649.1374**, ¶ 6.

¹⁹⁴ Letter No. 3/1/2006-IT/2040 from the ICIW to the PCIW dated 4 September 2013, **Exhibit P-0649.1403**, ¶ 6.

¹⁹⁵ Transcript of Hearing for the First Phase on the Merits, Day 4 (11 July 2024), p. 73, lines 1–6 (Dr Morris).

¹⁹⁶ Transcript of Hearing for the First Phase on the Merits, Day 2 (9 July 2024), p. 25, lines 2–7 (Ms Rees-Evans). The framers of the Treaty were sensitive to the likely variation in the natural pattern of flows of the Western Rivers into Pakistan and took care to limit the Pondage of Annexure D.3 HEPs.

3.37. During the Hearing, Pakistan's Deputy Agent stated as follows:

“As the upper riparian, India has the ability to restrict the flow of water, to affect the flow – timing – of the release of stored water, and thereby to impact the lives of hundreds of millions of Pakistanis living downstream, and leading to the negative environmental impact in Pakistan.”¹⁹⁷

3.38. These concerns have risen to the level of the United Nations Security Council, including in recent years.¹⁹⁸ These concerns are amplified by the reality that India is designing for more than 5,000 large dams it has in the country, not just the 201 it has constructed or planned on the Western Rivers.¹⁹⁹

3.39. Pakistan's Deputy Agent acknowledged that “these proceedings are not directly about the weaponisation of water”, but he drew the link between weaponisation and Annexure D: “the interpretation and application of the technical design criteria for new run-of-river hydroelectric plants on the Western Rivers cannot be separated from the overall balance established by the Treaty”.²⁰⁰ A similar link can be drawn between weaponisation and the interpretation and application of the technical design criteria for Storage Works under Annexure E because India can manipulate storage works to restrict the timing and amount of downstream flows to millions of Pakistani citizens.

3.40. As Pakistan's counsel explained, the storage of water, including through Storage Works under Annexure E, gives the upper riparian the ability to control and manipulate the flow downstream:

“The storage of water, the time it takes to accumulate that stored water, has downstream consequences; in the agricultural [...] irrigation season, for example. The release of water and its volume and timing, particularly when you have a cascade of dams, has downstream consequences. The flushing of sediment, rather than sluicing or other

¹⁹⁷ Transcript of Hearing for the First Phase on the Merits, Day 1 (8 July 2024), p. 13, line 21 – p. 14, line 1 (Mr Akbar).

¹⁹⁸ Transcript of Hearing for the First Phase on the Merits, Day 1, p. 79, line 4 – p. 80, line 4 (Sir Daniel Bethlehem KC), citing Identical letters dated 19 February 2019 from the Permanent Representative of Pakistan to the United Nations addressed to the Secretary-General and the President of the Security Council Letter — A/73/752 - S/2019/152, 19 February 2019, **Exhibit P-0565**, and Letter dated 22 February 2019 from the Permanent Representative of Pakistan to the United Nations addressed to the President of the Security Council — S/2019/172, 22 February 2019, **Exhibit P-0566**.

¹⁹⁹ Transcript of Hearing for the First Phase on the Merits, Day 6 (15 July 2024), p. 42, lines 14–19 (Sir Daniel Bethlehem KC).

²⁰⁰ Transcript of Hearing for the First Phase on the Merits, Day 1 (8 July 2024), p. 14, lines 2–3, and 9–13 (Mr Akbar).

approaches to sediment management, has downstream consequences. And a coordinated approach across a cascade of upstream dams on relatively short stretches of river multiplies these potential downstream effects manifold.”²⁰¹

3.41. The concern about weaponisation is therefore linked to how India is interpreting the design, construction and operation elements of the Treaty – whether for Run-of-River HEPs in Annexure D or Storage Works in Annexure E. In particular, as Dr Morris explained, the key factor in the potential for weaponisation is the placement and capacity of the large orifice spillways.²⁰² The design criteria for outlets in Storage Works are provided in subparagraphs 11(e), (f) and (g) of Paragraph 11 of Annexure E.

3.42. In response to a question from the Chairman as to whether India can “manipulate the storage facilities to bring about the scenarios of weaponisation you’re referring to”, Dr Morris explained as follows:

“Yes. It doesn’t matter whether it’s labelled ‘storage’, or what label you put on it. The whole key to being able to control the large flow rates that are simulated here is the placement and size of low-level outlets. If you have a storage project that has a discharge at a low level which is limited, and then you have crest gates for handling the flood, that’s completely different than if you eliminate most of your crest gate capacity, you only keep a small gate to discharge floating debris, and put most of your gate capacity near the bottom of the dam. That’s the difference.”²⁰³

3.43. In short, “any storage could be used in an adverse manner”.²⁰⁴

3.44. During the Hearing, the Court expressed interest in the cumulative storage capacity under Annexure E, with particular reference to the table in Paragraph 7 of the Annexure. Dr Morris confirmed that in that table “General Storage Capacity” and “Power Storage Capacity” are cumulative values.²⁰⁵ India can therefore design Annexure E Works for the maximum capacities provided in the table for General Storage and Power Storage on the Indus, the Jhelum (excluding Jhelum Main), and the Chenab (excluding Chenab Main).

²⁰¹ Transcript of Hearing for the First Phase on the Merits, Day 1 (8 July 2024), p. 84, line 25 – p. 85, line 10 (Sir Daniel Bethlehem KC).

²⁰² Transcript of Hearing for the First Phase on the Merits, Day 4 (11 July 2024), p. 82, lines 13–21 (Dr Morris).

²⁰³ Transcript of Hearing for the First Phase on the Merits, Day 4 (11 July 2024), p. 83, lines 5–16 (Dr Morris).

²⁰⁴ Transcript of Hearing for the First Phase on the Merits, Day 4 (11 July 2024), p. 86, lines 9–10 (Dr Morris).

²⁰⁵ Transcript of Hearing for the First Phase on the Merits, Day 7 (16 July 2024), p. 40, lines 16–19 (Dr Morris). He noted that Power Storage is only for power production and Flood Control Storage is temporary only: *id.*, lines 4–15. The precise total is 3.52 BCM.

3.45. As the Chairman correctly calculated, the total General Storage and Power Storage capacities of Annexure E Works is in the order of “3.5 billion cubic metres”.²⁰⁶ In an exchange with Sir Daniel, the Chairman posed a question about the relationship between the massive potential storage of Annexure E Storage Works and Annexure D HEPs in a cascading arrangement:

“[I]f the Annexure D HEPs are downstream, with a relatively limited pondage of the type that Pakistan is advocating for, that in some respects it doesn’t quite matter how much storage is upstream in terms of the possibility of so-called ‘weaponisation’, in the sense that if you’re going to try to do this in a cascading effect, you must be able to pass that very large upstream storage through a downstream dam, and that that might be difficult if the dam is designed in accordance with Annexure D, in not allowing certain things such as low-level outlets. Would that be correct?”²⁰⁷

3.46. Pakistan takes the opportunity of this PHS to address this point:

- (a) **First**, the weaponisation may be mitigated because, under the terms of the Treaty, Storage Works are largely limited to the tributaries of the Western Rivers. Storage Works after the Effective Date may not be constructed on the Jhelum Main or the Chenab Main (Paragraph 7 of Annexure E). On the Indus, they are limited to a general storage capacity of 0.25 million acre-feet.²⁰⁸
- (b) **Second**, and along the same lines, the upstream Storage Works may be built to a large scale, but their capacity would be subject to the availability of inflow volume. Generally speaking, the inflow is proportional to the catchment area, so a Storage Work in an upstream location would have a limited volume to retain as compared to a downstream storage project that could be built close to Pakistan’s territory. In this way, the potential for weaponisation would be less in comparative terms.
- (c) A downstream Annexure D.3 HEP with Pondage calculated according to Pakistan’s approach would have the spillway/outflow capacity just in line with

²⁰⁶ Transcript of Hearing for the First Phase on the Merits, Day 7 (16 July 2024), p. 42, lines 23–25 (The Chairman).

²⁰⁷ Transcript of Hearing for the First Phase on the Merits, Day 7 (16 July 2024), p. 200, line 23 – p. 201, line 11 (The Chairman).

²⁰⁸ Paragraph 9 of Annexure E provides that India may construct on the Jhelum Main such works as it may consider necessary for flood control of the Jhelum Main, but storage is confined to off-channel storage.

the design flood at that site with less potential for volume manipulation. However, if the spillways of Annexure D.3 HEPs are placed deep in the reservoir in breach of Paragraph 8(e) of Annexure D, the water released from the Storage Works upstream of the Annexure D.3 HEPs could be increased. This would be done by releasing the water stored in the downstream Annexure D.3 HEPs through their low-level spillways; this would exacerbate the situation by generating heavy flooding downstream. Subsequently, filling of the reservoir capacity of Annexure D.3 HEPs would stop waters of the Western Rivers entering Pakistan for a certain duration.

- (d) Besides, India could weaponise upstream Annexure E Storage Works in conjunction with downstream Annexure D.3 HEPs by creating drought conditions for Pakistan through holding almost all the volume of Western Rivers for days when the inflows are naturally less, namely in the winter. Storage Works would therefore still pose the problem of storing water during the prime agricultural seasons and thereby extending the low flow or no flow passing down the river to Pakistan.²⁰⁹

3.47. Pakistan has found its concerns to be justified over the years. Although, as noted above, new Storage Works may not be constructed on the Jhelum Main, India has undertaken the construction of Wullar Barrage (Tulbul Navigation Project) on the Jhelum Main. The PCIW objected to the Project on the basis that the Treaty “does not permit India to undertake the construction of storage works on the Jhelum Main”.²¹⁰ He stated that the construction of the Wullar Barrage on the Jhelum Main was of “serious concern to Pakistan” because the construction of the barrage “would involve storage in the Jhelum Main (Wullar Lake)”, in violation of Annexure E.²¹¹ The ICIW contended that the Wullar Barrage did not violate the Treaty because it was designed as a “control mechanism for the purpose of improving the

²⁰⁹ Transcript of Hearing for the First Phase on the Merits, Day 7 (16 July 2024), p. 206, lines 6–19 (Dr Blackmore and Sir Daniel Bethlehem KC).

²¹⁰ Letter No. WT(69)/(4778-A)/PCIW from the PCIW to the ICIW dated 30 April 1986, **Exhibit P-0649.0547**, ¶ 3.

²¹¹ Letter No. WT(69)/(4664-A)/PCIW from the PCIW to the ICIW dated 14 March 1985, **Exhibit P-0649.0516**. See also Letter No. WT(69)/(4693-A)/PCIW from the PCIW to the ICIW dated 10 June 1985, **Exhibit P-0649.0520**.

navigation in the Jhelum river” and was “not intended” to impound the waters of the river.²¹² He stated that the proposed structure would “neither contribute to raising the water level in the Wular Lake nor would it involve any consumptive use of the waters”.²¹³ Accordingly, in the ICIW’s view, the Project was “not a Storage Work” and, as such, did not fall under the limits of Annexure E to the Treaty.²¹⁴

3.48. This recalls a disagreement early in the life of the Treaty, in 1962, in relation to a different barrage on the Jhelum Main. The ICIW argued that the proposed construction works were covered by Paragraph 8(h) of Annexure E, which allows India to build a barrage on the Jhelum Main for flood control “not exceeding 10,000 acre-feet”.²¹⁵ Pakistan objected on the grounds that India was “not entitled to construct the proposed barrage” under Paragraph 9 of Annexure E, reflecting the severe limits on new Storage Works on the Western Rivers.²¹⁶ The PCIW stated that Paragraph 8 “deals with the figures of storage capacity specified in Paragraph 7” of Annexure E. Paragraph 7 “does not provide for any flood storage capacity on the Jhelum Main but merely refers to Paragraph 9 [of Annexure E] thereof, thus making the latter paragraph the one to govern the construction of flood central works on the Jhelum Main”.²¹⁷ The ICIW argued that Paragraph 8 of Annexure E is an “independent” provision and “not a subsidiary paragraph to either Paragraph 7 or Paragraph 9” of Annexure E.²¹⁸ The PCIW maintained that a barrage for flood control of the Jhelum Main, which involves any storage in the Jhelum Main itself, cannot be constructed under Paragraph 9 of Annexure E.²¹⁹ In further correspondence, the PCIW noted that India had failed to supply the necessary details about the

²¹² Letter No. F.3(5)/81-I.T/247 from the ICIW to the PCIW dated 13 May 1986, **Exhibit P-0649.0552**, ¶ 2. *See* also Letter No. F.3(5)/81-I.T/249 from the ICIW to the PCIW dated 20 May 1986, **Exhibit P-0649.0555**; Letter No. 9(8)/86-I.T/271 from the ICIW to the PCIW dated 28 October 1986, **Exhibit P-0649.0568**.

²¹³ Letter No. 9(8)/86-I.T/271 from the ICIW to the PCIW dated 28 October 1986, **Exhibit P-0649.0568**.

²¹⁴ *Id.*.

²¹⁵ *See, e.g.*, Letter No. F.4(18)/62-IC from the ICIW to the PCIW dated 27 July 1962, **Exhibit P-0649.0023**, ¶ 3; Letter No. F.4(18)/62-IC from the ICIW to the PCIW dated 12 March 1963, **Exhibit P-0649.0031**, ¶ 2. *See* also Letter No. WT(38/1)/(352-A)/PCIW from the PCIW to the ICIW dated 18 May 1962, **Exhibit P-0649.0021**.

²¹⁶ Letter No. WT(38/1)/(352-A)/PCIW from the PCIW to the ICIW dated 18 May 1962, **Exhibit P-0649.0021**, ¶ 3.

²¹⁷ *Id.*.

²¹⁸ Letter No. F.4(18)/62-IC from the ICIW to the PCIW dated 27 July 1962, **Exhibit P-0649.0023**, ¶ 2.

²¹⁹ Letter No. WT(38/1)/(609-A)/PCIW from the PCIW to the ICIW dated 5 December 1962, **Exhibit P-0649.0028**. *See* also Letter No. WT(38/1)/(811-A)/PCIW from the PCIW to the ICIW dated 8 June 1963, **Exhibit P-0649.0034**, ¶ 2 (noting that “Paragraph 9 of Annexure E to the Indus Waters Treaty 1960, which deals with the works considered necessary for flood control of the Jhelum Main states in unambiguous terms that such works are not to ‘involve any storage in the Jhelum Main in itself’”).

proposed construction works.²²⁰ He emphasised that a “barrage having incidental storage of more than 10,000 Acre feet cannot be constructed on the Jhelum Main, for any purpose whatsoever”.²²¹

3.49. In short, India's approach has been to interpret Annexure E to reduce Treaty-based restrictions on location and storage capacity. This renders concerns about weaponisation far from fanciful.

* * *

²²⁰ Letter No. WT(69)/(1382-A)/PCIW from the PCIW to the ICIW dated 23 December 1964, **Exhibit P-0649.0072**, ¶ 3.

²²¹ *Id.*.

IV. THE COURT'S QUESTION ON PREVENTION OF HARM/ADVERSE EFFECTS

4.1. By its fourth question in PO13, the Court directed Pakistan to address the following issue:

“What role, if any, should the criterion of the prevention of harm/adverse effects play where there are existing Pakistani Agricultural Uses or hydro-electric uses of the Western Rivers (other than in relation to uses on the Tributaries of the Jhelum, for which the criterion is expressly applied per para. 15(iii) of Annexure D and para. 10 of Annexure E to the Treaty).”²²²

4.2. As the Court's question notes, Paragraph 15(iii) of Annexure D and Paragraph 10 of Annexure E of the Treaty *expressly* refer to the criterion of avoiding adverse effects. Pakistan's position is that this criterion informs obligations under the Treaty regarding Pakistan's existing Agricultural and hydro-electric uses of the Western Rivers, including when those obligations themselves make no express references to the prevention of harm/adverse effects. As the Court noted in its Award on the Competence of the Court (“**Competence Award**”), where “necessary for the Treaty's interpretation or application”, the Court may apply “international conventions and customary international law as indicated by Paragraph 29 [of Annexure G]”.²²³ Accordingly, under Paragraph 29 of Annexure G, a Court seised of a dispute concerning the interpretation or application of the Treaty may look beyond the terms of the Treaty, including to the customary principle of preventing and mitigating transboundary harm originating from territory under a State's control.

4.3. This Chapter proceeds in two parts:

- (a) **Section A** recalls the arguments in Pakistan's Memorial and during the Hearing, including the interpretative approach taken by the *Kishenganga* Court;
- (a) **Section B** locates the role of the prevention of harm/adverse effects principle in broader international law.

²²² PO13, ¶ 3.1.4.

²²³ Competence Award, ¶ 121; COA Memorial, ¶ 8.43.

A. PREVENTION OF HARM/ADVERSE EFFECTS IN PAKISTAN'S MEMORIAL AND DURING THE HEARING

4.4. In its Memorial, Pakistan addressed the correct approach of the *Kishenganga* Court to incorporating customary international law, including in the field of international environmental law, into the process of treaty interpretation. There was a development in the approach to the prevention of harm between the Partial Award and the Final Award.

4.5. In its Partial Award, the *Kishenganga* Court held in relation to the First Dispute, that, *inter alia*, India was under an “obligation to construct and operate [KHEP] in such a way as to maintain a minimum flow of water in the [...] River”.²²⁴ The Court considered that Pakistan retained the right to receive a minimum flow of water from India stemmed from two sources: Paragraph 15(iii) of Annexure D and customary international law. First, Paragraph 15(iii) provides for “India’s right to construct and operate hydro-electric projects involving inter-tributary transfers but obliges India to operate those projects in such a way as to avoid adversely affecting Pakistan’s ‘then existing’ agricultural and hydro-electric uses”.²²⁵ However, the requirement to avoid adverse effects on Pakistan’s specified uses “cannot [...] deprive India of its right to operate the KHEP” because:

“Both Parties’ entitlements under the Treaty must be made effective so far as possible: India’s right to divert water for the operation of the KHEP is tempered by Pakistan’s right to hydro-electric and agricultural uses of the waters of the Western Rivers, just as Pakistan’s right to these uses is tempered by India’s right to divert the waters for the KHEP’s operation. Any interpretation that disregards either of these rights would read the principles of Paragraph 15(iii) out of the Treaty, to one or the other Party’s injury.”²²⁶

4.6. This requirement of an interpretation that gives due regard to both Parties’ competing rights in order to avoid injury is also relevant to the concept of abuse of rights, discussed in the following section.

4.7. Second, India’s duty to ensure a minimum flow to Pakistan also stemmed from the Treaty’s interpretation in the light of customary international law in accordance with Paragraph

²²⁴ *Kishenganga* arbitration, Partial Award, **PLA-0003**, *dispositif* A.

²²⁵ *Id.*, ¶ 446.

²²⁶ *Id.*, ¶ 446.

29 of Annexure G.²²⁷ The Court found it to be “established that principles of international environmental law must be taken into account even when (unlike the present case) interpreting treaties concluded before the development of that body of law”.²²⁸ The Court, however, deferred its determination of the appropriate minimum flow to the Final Award, pending further written submissions.²²⁹

4.8. In its Final Award, the *Kishenganga* Court expressed a more circumspect view on the recourse to customary international law. This would not be permissible, it concluded, if the result would be to “negate rights expressly granted in the Treaty” as this would “no longer be ‘*interpretation or application*’ of the Treaty but the substitution of customary law *in place of* the Treaty”.²³⁰ The Court explained that:

“As the Court held in its *Partial Award*, ‘States have ‘a duty to prevent, or at least mitigate’ significant harm to the environment when pursuing large-scale construction activities.’ In light of this duty [of customary international law], the Court has no difficulty concluding that the requirement of an environmental flow (without prejudice to the level of such flow) is necessary in the application of the Treaty. At the same time, the Court does not consider it appropriate, and certainly not ‘necessary,’ for it to adopt a precautionary approach and assume the role of policymaker in determining the balance between acceptable environmental change and other priorities, or to permit environmental considerations to override the balance of other rights and obligations expressly identified in the Treaty—in particular the entitlement of India to divert the waters of a tributary of the Jhelum. The Court’s authority is more limited and extends only to mitigating significant harm. Beyond that point, prescription by the Court is not only unnecessary, it is prohibited by the Treaty. If customary international law were applied not to circumscribe, but to negate rights expressly granted in the Treaty, this would no longer be ‘*interpretation or application*’ of the Treaty but the substitution of customary law *in place of* the Treaty. Echoing the Court’s caution in the *Partial Award*, the prioritization of the environment above all other considerations would effectively ‘read the principles of Paragraph 15(iii) [of Annexure D] out of the Treaty.’ That Paragraph 29 does not permit.”²³¹

4.9. The *Kishenganga* Court therefore described its task in the Final Award as being:

“[T]o determine a minimum flow that will *mitigate adverse effects to Pakistan’s agricultural and hydro-electric uses* throughout the operation of the KHEP, while preserving India’s right to operate the KHEP and maintaining the priority it acquired

²²⁷ *Id.*, ¶ 447.

²²⁸ *Id.*, ¶ 452.

²²⁹ *Id.*, ¶ 456.

²³⁰ *Kishenganga* arbitration, Final Award, **PLA-0004**, ¶ 112 (citations omitted, emphasis original).

²³¹ *Id.*, ¶ 112 (citations omitted, emphasis original).

from having crystallized prior to the NJHEP²³². At the same time, in fixing this minimum flow, the Court must give due regard, in keeping with Paragraph 29 of Annexure G, to the *customary international law requirements of avoiding or mitigating trans-boundary harm* and of reconciling economic development with the protection of the environment.”²³³

4.10. The prevention of harm/adverse effects was therefore relevant to striking the right balance between the rights and obligations expressly stated in the Treaty, but not to import customary rules to “override the balance”. In practical terms, this meant that mitigation of significant harm was relevant to the interpretation of the Treaty, but a wholesale adoption of the precautionary approach was not.

4.11. Further, the criterion of the prevention of harm/adverse effects was also used as an illustration in Pakistan’s response to this Court’s question on the extent to which non-Treaty-based design and operational practices can be taken into account for purposes of interpreting the technical requirements set out in Annexure D, Paragraph 8. Pakistan’s Memorial gave the example of the role and scope of the environmental impact assessment (“EIA”) that India had to conduct to evaluate downstream effects.²³⁴ Pakistan explained that underlying the *Kishenganga* Court’s approach to this question was its legal appreciation of the Treaty’s requirement that India operate the KHEP to preserve downstream flows.²³⁵ That appreciation was informed by customary international law, including the requirement that States “take environmental protection into consideration when planning and developing projects that may cause injury to a bordering State”.²³⁶ The *Kishenganga* Court drew upon the analysis of the International Court of Justice (“ICJ”) in the 2010 *Pulp Mills* Judgment²³⁷ that an EIA must be undertaken “where there is a risk that the proposed industrial activity may have a significant adverse impact in a transboundary context, in particular, on a shared resource”.²³⁸ As Pakistan’s counsel explained during the Hearing,²³⁹ the *Kishenganga* Court also referred to the

²³² *I.e.*, Pakistan’s Neelum-Jhelum Hydro-Electric Project.

²³³ *Kishenganga* arbitration, Final Award, **PLA-0004**, ¶ 87 (emphasis added).

²³⁴ *COA* Memorial, ¶ 9.92.

²³⁵ *COA* Memorial, ¶ 9.92, citing *Kishenganga* arbitration, Partial Award, **PLA-0003**, ¶ 445.

²³⁶ *COA* Memorial, ¶ 9.92, citing *Kishenganga* arbitration, Partial Award, **PLA-0003**, ¶ 449.

²³⁷ *Pulp Mills on the River Uruguay (Argentina v. Uruguay)*, Judgment, *I.C.J. Reports* 2010, p. 14, **PLA-0116**.

²³⁸ *Kishenganga* arbitration, Partial Award, **PLA-0003**, ¶ 450, referring to *Pulp Mills* (*id.*), p. 83.

²³⁹ Transcript of Hearing for the First Phase on the Merits, Day 1 (8 July 2024), p. 77, line 17 – p. 78, line 2 (Sir Daniel Bethlehem KC); Transcript of Hearing for the First Phase on the Merits, Day 1 (8 July 2024), p. 81, lines 14–23 (Sir Daniel Bethlehem KC); Transcript of Hearing for the First Phase on the Merits, Day 3 (10 July 2024), pp. 214–216 (Professor Webb).

2007 *Iron Rhine* Arbitration²⁴⁰ in respect of the duty to prevent and mitigate significant environmental harm “when pursuing large-scale construction activities”.²⁴¹ These points were also flagged during the Hearing by Pakistan’s counsel.²⁴²

4.12. During the Hearing, Pakistan’s counsel also drew attention to how the information-sharing obligations under the Treaty are compatible with the approach to such obligations in general international law:

“I note that Pakistan’s reading of these information-sharing obligations under the Treaty also comports with the approach adopted to such obligations as a matter of general international law. You are guided and bound by the Treaty, but general international law -- particularly contemporary general international law -- says the same thing, notably with regard to situations concerning potential environmental harm. For example, the International Court of Justice, in a judgment handed down in 2010 in the Pulp Mills case between Argentina and Uruguay, addressed information-sharing obligations in the context of a treaty that addressed environmental issues in connection with the construction of pulp mills on the River Uruguay, and it did so in terms that are entirely consistent with Pakistan’s submission in respect of the information-sharing obligations under the Treaty.”²⁴³

B. THE ROLE OF PREVENTION OF HARM/ADVERSE EFFECTS IN BROADER INTERNATIONAL LAW

4.13. As noted in Pakistan’s written and oral pleadings cited above, the *Kishenganga* Court took account of the prevention of harm/adverse effects criterion in its reasoning. The Court considered that the principle of sustainable development was a “requirement under general international law to undertake an environmental impact assessment where there is a risk that the proposed industrial activity may have a *significant adverse impact in a transboundary context*”, which “must be taken into account even when (unlike the present case) interpreting

²⁴⁰ *Arbitration Regarding the Iron Rhine (“Ijzeren Rijn”) Railway between the Kingdom of Belgium and the Kingdom of the Netherlands*, Award, PCA Award Series (2007), **PLA-0117**, ¶ 59.

²⁴¹ *Kishenganga* arbitration, Partial Award, **PLA-0003**, ¶ 451.

²⁴² Transcript of Hearing for the First Phase on the Merits, Day 1 (8 July 2024), p. 77, line 17 – p. 78, line 2 (Sir Daniel Bethlehem KC); Transcript of Hearing for the First Phase on the Merits, Day 1 (8 July 2024), p. 81, lines 14–23 (Sir Daniel Bethlehem KC); Transcript of Hearing for the First Phase on the Merits, Day 3 (10 July 2024), p. 214, line 4 – p. 216, line 3 (Professor Webb).

²⁴³ Transcript of Hearing for the First Phase on the Merits, Day 6 (15 July 2024), p. 23, lines 6–23 (Sir Daniel Bethlehem KC).

treaties concluded before the development of that body of the law". The Court's reasoning bears repeating in full:²⁴⁴

"449. There is no doubt that States are required under contemporary customary international law to take environmental protection into consideration when planning and developing projects that may cause injury to a bordering State. Since the time of *Trail Smelter*, a series of international conventions,²⁴⁵ declarations²⁴⁶ and judicial and arbitral decisions have addressed the need to manage natural resources in a sustainable manner. In particular, the International Court of Justice expounded upon the principle of 'sustainable development' in *Gabčíkovo-Nagymaros*, referring to the 'need to reconcile economic development with protection of the environment.'²⁴⁷

450. Applied to large-scale construction projects, the principle of sustainable development translates, as the International Court of Justice recently put it in *Pulp Mills*, into 'a requirement under general international law to undertake an environmental impact assessment where there is a risk that the proposed industrial activity may have a significant adverse impact in a transboundary context, in particular, on a shared resource.' The International Court of Justice affirmed that 'due diligence, and the duty of vigilance and prevention which it implies, would not be considered to have been exercised, if a party planning works liable to affect the regime of the river or the quality of its waters did not undertake an environmental impact assessment on the potential effects of such works.'²⁴⁸ Finally, the International Court of Justice emphasized that such duties of due diligence, vigilance and prevention continue 'once operations have started and, where necessary, throughout the life of the project.'²⁴⁹

451. Similarly, this Court recalls the acknowledgement by the Tribunal in the *Iron Rhine* arbitration of the 'principle of general international law' that States have 'a duty to

²⁴⁴ *Kishenganga* arbitration, Partial Award, **PLA-0003**, ¶¶ 449–452.

²⁴⁵ See the International Convention for the Regulation of Whaling (signed on 2 December 1946) 161 U.N.T.S. 72, **PLA-0118**; the Convention on Fishing and Conservation of Living Resources of the High Seas (signed on 29 April 1958, entered into force on 20 March 1966) 559 U.N.T.S. 285, **PLA-0119**; the African Convention on the Conservation of Nature and Natural Resources (adopted on 15 September 1968, entered into force on 16 June 1969) 1001 U.N.T.S. 0, **PLA-0120**; the United Nations Convention on the Law of the Sea (signed on 10 December 1982, entered into force on 16 November 1994) 1833 U.N.T.S., **PLA-0121**; the ASEAN Agreement on the Conservation of Nature and Natural Resources (not in force, opened for signature 9 July 1985), **PLA-0122**. The preamble of the General Agreement on Tariffs and Trade (World Trade Organisation Agreement) (signed on 30 October 1947, entered into force on 1 January 1948) 1867 U.N.T.S. 187, **PLA-0123**, also makes reference to the objective of sustainable development.

²⁴⁶ The Stockholm Declaration as well as the subsequent Rio Declaration on Environment and Development provide that "environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it." Rio Declaration on Environment and Development, 1992, UN Doc. A/CONF.151/26/Rev.1 (Vol. I), **PLA-0124**. More recently, the Johannesburg Declaration on Sustainable Development reaffirmed these values and elaborated on the importance of "sustainable development." Report of the World Summit on Sustainable Development (Johannesburg, South Africa), 26 August–4 September 2002, UN Doc. A/CONF.199/20, **PLA-0125**.

²⁴⁷ *Gabčíkovo-Nagymaros Project (Hungary/Slovakia)*, Judgment, I.C.J. Reports 1997, p. 7, **PLA-0094**, p. 78.

²⁴⁸ *Pulp Mills on the River Uruguay (Argentina v. Uruguay)*, Judgment, I.C.J. Reports 2010, p. 14, **PLA-0116**, p. 83.

²⁴⁹ *Id.*, pp. 83–84.

prevent, or at least mitigate' significant harm to the environment when pursuing large-scale construction activities.²⁵⁰ As the *Iron Rhine* Tribunal determined, this principle 'applies not only in autonomous activities but also in activities undertaken in implementation of specific treaties,'²⁵¹ such as, it may be said, the present Treaty.

452. It is established that principles of international environmental law must be taken into account even when (unlike the present case) interpreting treaties concluded before the development of that body of law. The *Iron Rhine* Tribunal applied concepts of customary international environmental law to treaties dating back to the mid-nineteenth century, when principles of environmental protection were rarely if ever considered in international agreements and did not form any part of customary international law. Similarly, the International Court of Justice in *Gabčíkovo-Nagymaros* ruled that, whenever necessary for the application of a treaty, 'new norms have to be taken into consideration, and ... new standards given proper weight.'²⁵² It is therefore incumbent upon this Court to interpret and apply this 1960 Treaty in light of the customary international principles for the protection of the environment in force today."

4.14. The customary principles applying to prevent and mitigate harm in a transboundary context were confirmed and broadened by the ICJ in the *Costa Rica v. Nicaragua* Judgment in 2015. The Court confirmed the holding in *Pulp Mills* and clarified that even though requirement of an environmental impact assessment under "general international law" referred to industrial activities in *Pulp Mills*, "the underlying principle applies generally to proposed activities which may have a significant impact in a transboundary context".²⁵³

"104. As the Court has had occasion to emphasize in its Judgment in the case concerning *Pulp Mills on the River Uruguay (Argentina v. Uruguay)* :

'the principle of prevention, as a customary rule, has its origins in the due diligence that is required of a State in its territory. It is 'every State's obligation not to allow knowingly its territory to be used for acts contrary to the rights of other States' (*Corfu Channel (United Kingdom v. Albania)*, *Merits, Judgment*, *I.C.J. Reports 1949*, p. 22). A State is thus obliged to use all the means at its disposal in order to avoid activities which take place in its territory, or in any area under its jurisdiction, causing significant damage to the environment of another State.' (*Judgment, I.C.J. Reports 2010 (I)*, pp. 55–56, para. 101.)

Furthermore, the Court concluded in that case that 'it may now be considered a requirement under general international law to undertake an environmental impact

²⁵⁰ *Arbitration Regarding the Iron Rhine ("Ijzeren Rijn") Railway between the Kingdom of Belgium and the Kingdom of the Netherlands*, Award, PCA Award Series (2007), **PLA-0117**, ¶ 59.

²⁵¹ *Id.*

²⁵² *Gabčíkovo-Nagymaros Project (Hungary/Slovakia)*, Judgment, *I.C.J. Reports 1997*, p. 7, p. 78, **PLA-0094**.

²⁵³ *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v. Nicaragua) and Construction of a Road in Costa Rica along the San Juan River (Nicaragua v. Costa Rica)*, Judgment, *I.C.J. Reports 2015*, p. 665, **PLA-0126**, ¶ 104.

assessment where there is a risk that the proposed industrial activity may have a significant adverse impact in a transboundary context, in particular, on a shared resource' (*ibid.*, p. 83, para. 204). Although the Court's statement in the *Pulp Mills* case refers to industrial activities, the underlying principle applies generally to proposed activities which may have a significant adverse impact in a transboundary context. Thus, to fulfil its obligation to exercise due diligence in preventing significant transboundary environmental harm, a State must, before embarking on an activity having the potential adversely to affect the environment of another State, ascertain if there is a risk of significant transboundary harm, which would trigger the requirement to carry out an environmental impact assessment.

Determination of the content of the environmental impact assessment should be made in light of the specific circumstances of each case. As the Court held in the *Pulp Mills* case:

‘it is for each State to determine in its domestic legislation or in the authorization process for the project, the specific content of the environmental impact assessment required in each case, having regard to the nature and magnitude of the proposed development and its likely adverse impact on the environment as well as to the need to exercise due diligence in conducting such an assessment’ (*I.C.J. Reports 2010 (I)*, p. 83, para. 205).

If the environmental impact assessment confirms that there is a risk of significant transboundary harm, the State planning to undertake the activity is required, in conformity with its due diligence obligation, to notify and consult in good faith with the potentially affected State, where that is necessary to determine the appropriate measures to prevent or mitigate that risk.”

4.15. The prevention of harm/adverse effects principle has also recently been examined by the International Tribunal for the Law of the Sea (“**ITLOS**”) in its 2024 Advisory Opinion. In interpreting the “general obligation” in Article 192 of the UN Convention on the Law of the Sea (“**UNCLOS**”) (“States have the obligation to protect and preserve the marine environment”), the Tribunal recalled that it included both positive and negative obligations:

“This ‘general obligation’ extends both to ‘protection’ of the marine environment from future damage and ‘preservation’ in the sense of maintaining or improving its present condition. Article 192 thus entails the positive obligation to take active measures to protect and preserve the marine environment, and by logical implication, entails the negative obligation not to degrade the marine environment. (*The South China Sea Arbitration between the Republic of the Philippines and the People’s Republic of China, Award of 12 July 2016, RIAA, Vol. XXXIII*, p. 153, at p. 519, para. 941).”²⁵⁴

²⁵⁴ *Request for an Advisory Opinion Submitted by the Commission of Small Island States on Climate Change and International Law*, ITLOS Case No. 31, Advisory Opinion, **PLA-0127**, ¶ 387.

4.16. The Tribunal also discussed the concept of harm prevention in the course of interpreting the text of Article 194(2) of UNCLOS:

“States shall take all measures necessary to ensure that activities under their jurisdiction or control are so conducted as not to cause damage by pollution to other States and their environment, and that pollution arising from incidents or activities under their jurisdiction or control does not spread beyond the areas where they exercise sovereign rights in accordance with this Convention.”²⁵⁵

4.17. The Tribunal noted that the treaty obligation “bears a close resemblance to the well-established principle of harm prevention”:

“First developed through arbitral and judicial decisions, this principle was incorporated in Principle 21 of the Stockholm Declaration, which states that ‘States have ... the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction’ This principle was reaffirmed in Principle 2 of the Rio Declaration. The Tribunal notes in this regard that the ICJ stated in the *Legality of the Threat or Use of Nuclear Weapons*:

The existence of the general obligation of States to ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control is now part of the corpus of international law relating to the environment. (*Legality of the Threat or Use of Nuclear Weapons*, Advisory Opinion, I.C.J. Reports 1996 (I), p. 226, at p. 242, para. 29; see also Award in the *Arbitration regarding the Iron Rhine (‘Ijzeren Rijn’) Railway between the Kingdom of Belgium and the Kingdom of the Netherlands*, decision of 24 May 2005, RIAA, Vol. XXVII, p. 35, at pp.66–67, para. 59).²⁵⁶

4.18. The Tribunal clarified that, in interpreting the phrase “activities under their jurisdiction or control”, the concept of “jurisdiction or control” of a State “is a broad one, encompassing not only its territory but also areas in which the State can, in accordance with international law, exercise its competence or authority”.²⁵⁷

4.19. Applying these principles in order to answer the Court’s question: the prevention of harm/adverse effects is relevant to the interpretation of the provisions of the Indus Waters Treaty where there is a risk of transboundary harm arising from India’s activities on the Western Rivers, including hydro-electric power generation under Paragraph 8 of Annexure D.

²⁵⁵ *Id.*, ¶ 194.

²⁵⁶ *Id.*, ¶ 246.

²⁵⁷ *Id.*, ¶ 247.

The incorporation of the customary principle of prevention of harm/adverse effects is necessary to protect existing Pakistani Agricultural Uses or hydro-electric uses of the Western Rivers, but also for achieving the object and purpose of the Treaty reflected in the three Bargains (Treaty Bargain, Peace Bargain and Western Run-of-River Hydro Bargain).²⁵⁸ It has practical implications for India's conduct under the Treaty, including requiring timely and transparent information sharing, minimum environmental flows, and rigorous environmental impact assessments which duly take into account the potential impact of upstream development on the downstream areas. Applying these principles does not entail a broad adoption of the precautionary principle, and such principles must always be applied so as not to override the balance of rights and obligations in the Treaty. The overriding, negation or substitution of rights and obligations in the Treaty may constitute an abuse of rights, as developed in the next section.

* * *

²⁵⁸ COA Memorial, ¶¶ 1.10–1.11.

V. THE COURT'S QUESTION ON ABUSE OF RIGHTS AND GOOD FAITH

5.1. By its fifth question in PO13, the Court directed Pakistan to address the following question:

“Whether the concept of abuse of rights in international law is of any relevance to the principle of good faith, as raised by Pakistan in its Memorial (e.g., paras. 8.33–8.36) and during the Hearing, when interpreting or applying the Treaty.”²⁵⁹

5.2. “Abuse of rights” occurs when a State exercises a right “in a way which impedes the enjoyment by other States of their own rights or for an end different from that for which the right was created, to the injury of another State” (*neminem laedit qui suo jure utitur*).²⁶⁰ The concept manifests in at least three ways in an inter-State context:

- (a) **First**, if a State exercises its rights so that another State is hindered in the exercise of its own rights and, as a consequence, suffers injury.
- (b) **Second**, if a State intentionally exercises a right for an end which is different from that for which the right has been created, resulting in injury (also known as *détournement de pouvoir*).²⁶¹
- (c) **Third**, if a State arbitrarily exercises rights, causing injury to other States but without clearly violating their rights.²⁶² In this scenario, a State “avails itself of its right in an arbitrary manner in such a way as to inflict upon another State an injury which cannot be justified by a legitimate consideration of its own advantage”.²⁶³

5.3. The short answer to the Court’s question is that the concept of abuse of rights is relevant to the principle of good faith because it is inconsistent with good faith to invoke, interpret or apply a treaty for an ulterior purpose in order to injure or impede the rights of another party. As the ICJ stated in its recent Judgment on Preliminary Objections in *Ukraine v. Russia*:

²⁵⁹ PO13, ¶ 3.1.5.

²⁶⁰ A. Kiss, “Abuse of Rights”, *Max Plank Encyclopaedia of Public International Law* (Oxford University Press 2006), **PLA-0128**.

²⁶¹ *Id.*

²⁶² *Id.*

²⁶³ H. Lauterpacht, *Oppenheim’s International Law* (8th Edition: Longmans 1955), **PLA-0129**, p. 345.

“It is certainly not consistent with the principle of good faith to invoke a treaty abusively, by claiming that there is a specific situation falling within its scope when it is clearly not the case, or by deliberately interpreting the treaty incorrectly for the sole purpose of justifying a given action.”²⁶⁴

5.4. Against this background, Pakistan addresses the Court's question in two parts:

- a) **Section A** recalls the analysis of good faith and abuse of rights in Pakistan's Memorial and as elaborated upon during the Hearing;
- b) **Section B** explains how abuse of rights is the corollary to the principle of good faith in the light of case law and scholarship.

A. PAKISTAN'S SUBMISSIONS ON ABUSE OF RIGHTS AND GOOD FAITH IN ITS MEMORIAL AND DURING THE HEARING

5.5. In its Memorial, Pakistan highlighted four aspects of the principle of good faith in international law:²⁶⁵

- (a) **First**, in terms of treaty interpretation, Article 31(1) of the VCLT provides (*inter alia*) that “a treaty shall be interpreted in good faith”.²⁶⁶ The principle is to be applied to every aspect of the process of interpretation.²⁶⁷ It “obliges the Parties to apply [a treaty] in a reasonable way and in such a manner that its purpose can be realized”.²⁶⁸
- (b) **Second**, in terms of the implementation of treaties, Article 26 of the VCLT provides that “[e]very treaty in force is binding upon the parties to it and must be performed by them in good faith”. The *pacta sunt servanda* rule means that “a party may not unilaterally free itself from the engagements of a treaty, or modify the stipulations thereof, except by the consent of the contracting

²⁶⁴ *Allegations of Genocide under the Convention on the Prevention and Punishment of the Crime of Genocide (Ukraine v. Russian Federation)*, Judgment, Preliminary Objections (February 2024), **PLA-0130**, ¶143.

²⁶⁵ COA Memorial, ¶¶ 8.33–8.36.

²⁶⁶ VCLT, **PLA-0005**. See also the Preamble.

²⁶⁷ Gardiner, 2015, **PLA-0017**, pp. 171–172; H. Lauterpacht, “Restrictive Interpretation and the Principle of Effectiveness in the Interpretation of Treaties” (1949) XXVI BYBIL 48, **PLA-0131**, p. 56; O. Dörr & K. Schmalenbach (eds.), *Vienna Convention on the Law of Treaties: A Commentary* (Springer, 2nd ed. (2018)), **PLA-0019**, p. 587.

²⁶⁸ *Gabčíkovo-Nagymaros Project (Hungary/Slovakia)*, Judgment, I.C.J. Reports 1997, p. 7, **PLA-0094**, ¶ 142.

parties”.²⁶⁹ As long as a treaty remains in force, it must be “observed as it stands”; it is not for the treaty to “adapt itself to conditions”.²⁷⁰

- (c) **Third**, in the case of uncertainty or divergent interpretations, good faith requires the interpreter to “look to the proposal that led to the text [of the treaty] and the good faith of the parties in negotiating on that basis”.²⁷¹ This application of good faith calls for reference to the supplementary means of interpretation set out in Article 32 of the VCLT.²⁷²
- (d) **Fourth**, beyond the treaty context, the ICJ has recognised good faith as “[o]ne of the basic principles governing the [...] performance of legal obligations, whatever their source”.²⁷³

5.6. During the Hearing, Pakistan linked the concept of abuse of rights to good faith in a broad sense, and using specific examples.

5.7. In a broad sense, Pakistan’s counsel set out the Western Rivers Run-of-River Hydro Bargain, which underpins the Treaty:

“This bargain consists, on the one hand, that Pakistan ‘shall receive for unrestricted use all those waters’ on the Western Rivers, as a result of which India must ‘let flow’ those waters and ‘shall not permit any interference with [those] waters’. That’s on the one hand. The other side of the bargain is the tightly constrained exceptions, including the exception that the waters of the Western Rivers can be used for the generation of hydroelectric power in accordance with Annexure D.”²⁷⁴

5.8. By not implementing this bargain in good faith, India has abused the rights enshrined in the Treaty and disturbed the balance that was struck in 1960. As Pakistan’s Deputy Agent explained, “India, as upper riparian, has the power to use water as a leverage point against

²⁶⁹ B. Cheng, *General principles of law as applied by international courts and tribunals* (reissue: Cambridge University Press 2006), **PLA-0095**, p. 113.

²⁷⁰ *Id.*.

²⁷¹ Gardiner, 2015, **PLA-0017**, pp. 174–175.

²⁷² *Id.*, p. 174 (fn. 48), referring to *Auditing of Accounts between the Netherlands and France pursuant to the Additional Protocol of 25 September 1991 to the Convention on the Protection of the Rhine against Pollution by Chlorides of 3 December 1976 (Netherlands/France)*, Award (2014) 144 ILR 259, **PLA-0016**, ¶ 74.

²⁷³ *Nuclear Tests Case (Australia v. France)*, Judgment [1974] ICJ Rep 253, **PLA-0025**, ¶ 46.

²⁷⁴ Transcript of Hearing for the First Phase on the Merits, Day 3 (10 July 2024), p. 183, lines 1–11 (Professor Webb).

Pakistan. The flow of the Eastern Rivers has [been] almost completely cut off by India”.²⁷⁵ He linked this to the abuse of rights under the Treaty:

“While the flow of the waters of the Eastern Rivers is not before you in this dispute, the bargain that was struck between Pakistan and India in 1960, agreed in the Treaty, was a bargain pertaining to the rights and obligations over the waters of both the Western and Eastern Rivers. The Treaty provides the balance of rights and obligations in which India was given let-flow rights and right of use over the water of the Eastern Rivers; and Pakistan was given let-flow rights and right of use over the water of the Western Rivers. India has *both used and abused the rights* over the Eastern Rivers.”²⁷⁶

5.9. A more specific example is the question of how the Treaty’s provisions on cooperation are interpreted and applied in good faith. Article VII(2) concerns the notification of plans for the construction of any engineering work that “would cause interference with the waters of any of the Rivers” which, in the opinion of the Party seeking to construct, “would affect the other Party materially”. As Pakistan’s counsel explained, the words “which[, in its opinion,] would affect the other Party materially” have to be interpreted in good faith to avoid a potential abuse of rights.²⁷⁷ As he stated, “the siting of a HEP would undoubtedly cause an interference with the waters. So India cannot say to itself: well, Article VII(2) is not engaged because this siting of a HEP doesn't materially interfere with the waters. I mean, that would just be nonsensical.”²⁷⁸

5.10. Another specific example of the requirement of good faith avoiding an abuse of rights under the Treaty is the calculation of pondage. In Pakistan’s view, adopting an approach to the calculation of pondage that is not based on the flow of the river would lead to an abuse of rights by, among other things, the storage of substantial amounts of water that provide India with control over the flow of the Western Rivers. As Pakistan’s counsel explained:

“Our view is that the calculation of pondage is based solely on the hydrology of the river. And we don’t see how any other approach could work, because it would be completely open to abuse by India, completely unrealistic: my example of a 2,000 MW

²⁷⁵ Transcript of Hearing for the First Phase on the Merits, Day 1 (8 July 2024), p. 13, lines 6–9 (Mr Raja Naeem Akbar).

²⁷⁶ Transcript of Hearing for the First Phase on the Merits, Day 1 (8 July 2024), p. 12, lines 3–13 (Mr Raja Naeem Akbar) (emphasis added).

²⁷⁷ Transcript of Hearing for the First Phase on the Merits, Day 5 (12 July 2024), p. 225, line 24 – p. 226, line 2 (Sir Daniel Bethlehem KC).

²⁷⁸ Transcript of Hearing for the First Phase on the Merits, Day 5 (12 July 2024), p. 225, line 24 – p. 226, line 7 (Sir Daniel Bethlehem KC).

plant which bore no relationship to the flow of the river at all,^[279] and then saying, 'Well, we need to store this huge amount of water by way of pondage because we are hinging it on installed capacity, or we're hinging it on load, or we're hinging it on some hypothetical backroom cook-up of how much this particular plant is going to contribute to the Indian electricity grid'. It's not going to play."²⁸⁰

5.11. The good faith interpretation of the calculation of pondage draws upon the circumstances of the Treaty's negotiation and conclusion (the third point noted in paragraph 5.5 above). During the Hearing, Pakistan's counsel explained how this fed into criterion 2 for the calculation of pondage:

“Criterion 2: the methodology must be capable of generating a maximum pondage figure using tools that would be available at the time the Treaty was drafted, 1960. And this means that we are limited effectively to graphical computation. And the computation must be capable of being done in a straightforward manner. Now, plainly, any good faith interpretation of Paragraph 8 that wants to be reasonable cannot rely on means of computation that had not been invented in 1960.”²⁸¹

B. ABUSE OF RIGHTS AS THE COROLLARY OF THE PRINCIPLE OF GOOD FAITH

5.12. The concept of abuse of rights is closely related to the principle of good faith. Abuse of rights has been described as a “necessary corollary”²⁸² to the principle of good faith, and the prohibition of the abuse of rights can be seen as a “sub-rule” of the principle.²⁸³

5.13. Nearly a century ago, the Permanent Court of International Justice (“**PCIJ**”) recognised the concept of abuse of rights and linked it to a potential breach of a treaty:

“Germany undoubtedly retained until the actual transfer of sovereignty the right to dispose of her property, and only a misuse of this right could endow an act of alienation with the character of a breach of the Treaty [...]”²⁸⁴

²⁷⁹ Transcript of Hearing for the First Phase on the Merits, Day 5 (12 July 2024), p. 229, lines 3–25 (Sir Daniel Bethlehem KC).

²⁸⁰ Transcript of Hearing for the First Phase on the Merits, Day 5 (12 July 2024), p. 232, line 21 – p. 233, line 8 (Sir Daniel Bethlehem KC).

²⁸¹ Transcript of Hearing for the First Phase on the Merits, Day 7 (16 July 2024), p. 74, lines 11–19 (Dr Miles).

²⁸² *Immunities and Criminal Proceedings (Equatorial Guinea v. France)*, Judgment, *I.C.J. Reports* 2020, p. 300, Separate Opinion of Judge Sebutinde, **PLA-0132**, ¶ 34.

²⁸³ R. Kolb, ‘General Principles of Procedural Law’ in A Zimmermann, *The Statute of the International Court of Justice: A Commentary* (OUP 2019), **PLA-0133**, pp. 964–965.

²⁸⁴ *Certain German Interests in Polish Upper Silesia, Merits*, Judgment No. 7, 1926, *P.C.I.J., Series A, No. 7*, **PLA-0022**, p. 30.

5.14. The PCIJ reinforced the link between abuse of rights and an improper purpose in the *Free Zones* case a few years later: “France must not evade the obligation to maintain the zones by erecting a customs barrier under the guise of a control cordon”.²⁸⁵ Bin Cheng, in his seminal text on *General Principles of Law as Applied by International Courts and Tribunals* explained the notion of an improper purpose as follows: “[t]he reasonable and bona fide exercise of a right implies an exercise which is *genuinely in pursuit of those interests which the right is destined to protect* and which is not calculated to cause any unfair prejudice to the legitimate interests of another State, whether these interests be acquired by treaty or by general international law.”²⁸⁶

5.15. In *The Rights of Nationals of the United States of America in Morocco*, the PCIJ linked the abuse of rights with good faith under a treaty and specifically the way in which an abuse of rights may operate as a restriction on the exercise of a right or privilege contained in a treaty.²⁸⁷

5.16. The fettering of a right under a treaty (which can give rise to an abuse of rights) is to be contrasted with limiting the scope of jurisdiction *ratione personae* through a reservation to a treaty. In *Aerial Incident of 10 August 1999*, the ICJ did not accept that India’s reservation was a discriminatory act constituting an abuse of right:

“Nor can the Court accept Pakistan’s argument that India’s reservation was a discriminatory act constituting an abuse of right because the only purpose of this reservation was to prevent Pakistan from bringing an action against India before the Court. It notes in the first place that the reservation refers generally to States which are or have been members of the Commonwealth. It would add, as it recalled in paragraphs 36 to 39 above, that States are in any event free to limit the scope *ratione personae* which they wish to give to their acceptance of the compulsory jurisdiction of the Court.”²⁸⁸

²⁸⁵ *Free Zones of Upper Savoy and the District of Gex*, Judgment (1932) P.C.I.J. Series A/B No. 46, **PLA-0134**, p. 167.

²⁸⁶ B. Cheng, *General Principles of Law as Applied by International Courts and Tribunals* (1953), **PLA-0095 (resubmitted)**, pp. 131–132 (emphasis added).

²⁸⁷ See *Case concerning rights of nationals of the United States of America in Morocco*, Judgment of August 27th, 1952: I.C.J. Reports 1952, **PLA-0064**, p. 212.

²⁸⁸ *Aerial Incident of 10 August 1999 (Pakistan v. India)*, Jurisdiction of the Court, Judgment, I.C.J. Reports 2000, p. 12, **PLA-0135**, ¶ 40.

5.17. Improper purpose or fettering of rights may result from bad faith in treaty interpretation. As Linderfalk explains, “*mala fides* treaty interpretation is a special case of abuse of rights”.²⁸⁹ This links with the notion of purpose because to “exercise a discretionary power in good faith means to exercise it for a purpose”.²⁹⁰ Conversely, “to accept the unlimited exercise of a discretionary power is to accept that this power is sometimes exercised either unreasonably (i.e. for any purpose), or arbitrarily (i.e. for no purpose at all)”.²⁹¹ As Pakistan has made clear in its written and oral pleadings, the Indus Waters Treaty is manifestly not a treaty that accepts unlimited discretion. In particular, “[r]eflecting the three bargains at the heart of the Treaty, including Pakistan’s deep concern following the April 1948 crisis, that India would be able to use the storage capacity in a HEP’s reservoir to inflict harm upon it, Paragraphs 8(d), (e) and (f) impose stringent constraints in respect of the location and placement of outlets, gated spillways and power intakes, as well as a size constraint in respect of outlets situated below Dead Storage Level of an Annexure D.3 HEP”.²⁹²

5.18. An abuse of rights can also arise through the improper invocation of an exception, as the WTO Appellate Body explained:

“To permit one Member to abuse or misuse its right to invoke an exception would be effectively to allow that Member to degrade its own treaty obligations as well as to devalue the treaty rights of other Members. If the abuse or misuse is sufficiently grave or extensive, the Member, in effect, reduces its treaty obligation to a merely facultative one and dissolves its juridical character, and, in so doing, negates altogether the treaty rights of other Members.”²⁹³

5.19. Relevantly for the present case, an example given in the literature of an abuse of rights is “the inconsiderate use of a shared natural resource”.²⁹⁴ As Al Far explains:

“The principle may be applied to determine questions relating to the interference with, or diversion of, waters of rivers owing from one State to another. Thus, it is generally said that States should not abuse their rights in this regard, and that they have an

²⁸⁹ U. Linderfalk, ‘The Concept of Treaty Abuse – On the Exercise of Legal Discretion’ (2014), Final Draft Version, **PLA-0136**, p. 27 (emphasis omitted).

²⁹⁰ *Id.*, p. 9.

²⁹¹ *Id.*.

²⁹² *COA Memorial*, ¶ IV.2.

²⁹³ *United States — Import Prohibition of Certain Shrimp and Shrimp Products*, WT/DS58, AB-1998-4 - Report of the Appellate Body, **PLA-0137**, ¶ 156.

²⁹⁴ A. Kiss, “Abuse of Rights”, *Max Plank Encyclopaedia of Public International Law* (Oxford University Press 2006), **PLA-0128**, ¶ 4.

obligation to refrain from any unwarranted interference with the flow of a river to the detriment of another State.”²⁹⁵

5.20. As noted in the previous Section, the inconsiderate use of a shared natural resource was recognised as a risk by the *Kishenganga* Court. It held that India’s right to divert water for the operation of a HEP is tempered by Pakistan’s right to hydro-electric and Agricultural uses of the waters of the Western Rivers; and Pakistan’s right to such uses is tempered by India’s right to divert the waters for a HEP’s operation. An interpretation that disregards either of these Treaty rights would cause injury.²⁹⁶ It would therefore constitute an abuse of rights.

5.21. In sum, and returning to the terms of the Court’s Question 5, the concept of abuse of rights is relevant to the principle of good faith when interpreting or applying the Treaty. The Treaty is not a charter of one-sided rights and obligations. It is the outcome of three Bargains, expressed in finely balanced provisions on the division, allocation and use of the six principal rivers that are crucial to both Parties. The rights and obligations are not absolute; they are interrelated. Pakistan is given priority in the use of the waters of the Western Rivers, just as India has priority over the use of the waters of the Easter Rivers. The rule of unrestricted use/“let flow”/non-interference/no storage on the Western Rivers is subject to expressly permitted uses, including the generation of hydro-electric power.²⁹⁷ The generation of hydro-electric power, however, must be in accordance with the strict requirements of Annexure D, just as Storage Works must comply with Annexure E. The entire object and structure of the Treaty implicitly acknowledges that the exercise of an entitlement by one party cannot undermine the right of the other. The provisions must be read together, and interpreted and applied in good faith so that no right or obligation is negated resulting in an injury to one party.

5.22. Throughout these proceedings, and as the documents demonstrate, over many decades, Pakistan has objected to India’s lack of good faith compliance with the Treaty. This includes India replicating its Baglihar HEP design over and over again, without respecting the criteria for the design and operation of Annexure D.3 Run-of-River HEPs on the Western Rivers; India’s refusal to allow Pakistan access to Western River HEP sites by way of tours of

²⁹⁵ A. El Far, ‘Abuse of Rights in National Legal Systems and International Law’, in *Abuse of Rights in International Arbitration* (Oxford University Press 2020), **PLA-0138**, p. 53.

²⁹⁶ *Kishenganga* arbitration, Partial Award, **PLA-0003**, ¶ 446.

²⁹⁷ *Id.*, ¶¶ 410-412, *see also* ¶ 509.

inspection; India’s failure to fulfil its information-sharing obligations under the Treaty; and more. As Pakistan’s Secretary of Water Resources stated at the close of the Hearing, Pakistan hopes that the Court’s Award will “bring about a return to legality under the Treaty”,²⁹⁸ with both Parties respecting their obligations in good faith.

* * *

²⁹⁸ Transcript of Hearing for the First Phase on the Merits, Day 7 (16 July 2024), p. 227, line 25 (Mr Syed Ali Murtaza).

VI. CONCLUSION

6.1. This PHS is responsive to questions posed by the Court following Pakistan's written submissions and the Hearing on the First Phase on the Merits. No summary of the preceding is necessary. For completeness and the avoidance of doubt, Pakistan recalls and adopts its Final Submissions read formally into the record and submitted to the Court under signature of its Deputy Agent at the close of the Hearing. But for Pakistan's brief Supplementary Memorandum, due by 8 November 2024, addressing the documents submitted by Pakistan in response to the Court's directions in Procedural Orders Nos. 11 and 13, this PHS brings to a close Pakistan's submissions in this First Phase on the Merits of the dispute of which the Court is seised. Pakistan renews its appreciation to the Court for its careful attention to the issues and stands ready to assist the Court further, during the course of its deliberations, should any questions arise or further submissions on any point be warranted.

Respectfully submitted,



(RAJA NAEEM AKBAR)
Deputy Agent of Pakistan

Secretary,
Ministry Law & Justice, Pakistan

FACTUAL EXHIBITS

No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
Factual Exhibits submitted with Pakistan's Response on Competence - 24 March 2023			
P-0001	Letter No. Y-18012/1/2020-Indus enclosing an Explanatory Note (Enclosure 'A') (the " 21 December 2022 Letter ") and the " 21 December 2022 Explanatory Note ", respectively)	21 December 2022	India / World Bank
P-0002	Letter No. Y-18012/1/2020-Indus (the " 11 February 2023 Letter ")	11 February 2023	India / Neutral Expert
P-0003	Letter No. Y-18012/1/2020-Indus (the " 21 February 2023 Letter ")	21 February 2023	India / Neutral Expert
P-0004	Jammu and Kashmir State Power Development Corporation, "Projects Under Construction" Available at: http://www.jkspdc.nic.in/beta/projects_under_construction.html (last accessed 22 March 2023)		
P-0005	Moushumi Das Gupta, "Modi govt steps up work on project that will tap Pakistani waters, J&K's UT status helps", <i>The Print</i> Available at: https://theprint.in/india/modi-govt-steps-up-work-on-projects-that-will-tap-pakistani-waters-jks-ut-statushelps/283505/ (last accessed 22 March 2023)	29 August 2019	
P-0006	Moushumi Das Gupta, "Why India's unlikely to accept any interim arbitration decision on Indus Waters Treaty projects", <i>The Print</i> Available at: https://theprint.in/india/why-indias-unlikely-to-accept-any-interim-arbitration-decision-on-indus-waters-treaty-projects/1384918/ (last accessed 22 March 2023)	20 February 2023	

²⁹⁹ This column has been left blank for exhibits where the date has not been made publicly available or where there is no applicable date.

³⁰⁰ This column has been left blank for exhibits where the author or recipient is not applicable.

Pakistan's Post-Hearing Submission
1 November 2024

No.	Title	Date²⁹⁹	Author / Recipient (where applicable)³⁰⁰
P-0007	Dr Daniel Haines, "India and Pakistan Are Playing a Dangerous Game in the Indus Basin", <i>United States Institute of Peace</i> Available at: https://www.usip.org/publications/2023/02/india-and-pakistan-are-playing-dangerous-game-indus-basin (last accessed 22 March 2023)	23 February 2023	
P-0008	Letter from the World Bank to Pakistan	12 December 2016	World Bank / Pakistan
P-0009	Letter from the World Bank to the Parties	19 September 2022	World Bank / Parties
P-0010	Letter No. WT(132)/(7493-A)/PCIW (with enclosure)	3 July 2015	PCIW / ICIW
P-0011	Letter No. WT(132)/(7495-A)/PCIW	13 July 2015	PCIW / ICIW
P-0012	Letter No. Y-20014/1/2015-16/2152	16 July 2015	ICIW / PCIW
P-0013	Letter No. WT(132)/(7497-98-A)/PCIW (with enclosure)	24 July 2015	PCIW / Secretary, Ministry of Water and Power, Government of Pakistan and Secretary, Ministry of Water Resources, Government of India
P-0014	Letter No. WT(132)/(7496-A)/PCIW	24 July 2015	PCIW / ICIW
P-0015	Note Verbale No. ISL/112/1/2015	23 November 2015	India / Pakistan
P-0016	Letter No. Y-11017/2/2015-IT/2155	21 August 2015	ICIW / PCIW
P-0017	Letter No. Y-20017/2/2014-IT/2159	1 September 2015	ICIW / PCIW
P-0018	Letter No. WT(132)/(7505-A)/PCIW	11 September 2015	PCIW / ICIW
P-0019	Letter No. Y-11017/2/2015-IT/2162	13 October 2015	ICIW / PCIW

Pakistan's Post-Hearing Submission
1 November 2024

No.	Title	Date²⁹⁹	Author / Recipient (where applicable)³⁰⁰
P-0020	Letter No. WT(132)/(7513-A)/PCIW	4 November 2015	PCIW / ICIW
P-0021	Letter No. Y-11017/2/2015-IT/2169	27 November 2015	ICIW / PCIW
P-0022	Letter No. WT(132)/(7523-A)/PCIW	5 February 2016	PCIW / ICIW
P-0023	Letter No. WT(132)/(7531-A)/PCIW (with enclosure)	25 February 2016	PCIW / ICIW
P-0024	Record of the 110th Meeting of the Permanent Indus Commission, 23-27 August 2014	1 February 2015	
P-0025	Record of the 111th Meeting of the Permanent Indus Commission, 31 January-4 February 2015	31 May 2015	
P-0026	Letter No. WT(47)/(7464-A)/PCIW	30 January 2015	PCIW / ICIW
P-0027	Letter No. Y-11017/2/2015-IT/2181	14 March 2016	ICIW / PCIW
P-0028	Note Verbale No. KA(II)-2/11/16	29 March 2016	Pakistan / India
P-0029	Note Verbale No. ISL/112/1/2016	28 April 2016	India / Pakistan
P-0030	Note Verbale No. ISL/112/1/2016	28 June 2016	India / Pakistan
P-0031	Minutes of Secretary Level Meeting on Kishenganga and Ratle Hydroelectric Plants held in New Delhi, 14-15 July 2016	15 July 2016	
P-0032	Letter No. Y-11017/2/2015-IT/2202 (with enclosure)	11 August 2016	ICIW / PCIW
P-0033	Letter No. Y-11017/2/2015-IT/2203	12 August 2016	ICIW / PCIW
P-0034	Note Verbale No. KA(II)-2/11/2016 (without enclosures) [serving Pakistan's Request for Arbitration on India]	19 August 2016	Pakistan / India
P-0035	Letter No. WT(132)/(7563-A)/PCIW	22 August 2016	PCIW / ICIW
P-0036	Note Verbale No. ISL/112/1/2016	30 August 2016	India / Pakistan
P-0037	Letter No. Y-11017/2/2015-IT/2206	6 September 2016	ICIW / PCIW

Pakistan's Post-Hearing Submission
1 November 2024

No.	Title	Date²⁹⁹	Author / Recipient (where applicable)³⁰⁰
P-0038	Letter from the World Bank to the Parties	18 October 2016	World Bank / Parties
P-0039	Neutral Expert First Meeting (<i>Indus Waters</i>), 27-28 February 2023, Pakistan's Hearing Bundle (Index only) [amended to include cross-references to exhibit numbers]	27-28 February 2023	
P-0040	(Draft) Transcript, Neutral Expert First Meeting (<i>Indus Waters</i>), Day 1	27 February 2023	
P-0040(C)	(Corrected) Transcript, Neutral Expert First Meeting (<i>Indus Waters</i>), Day 1	27 February 2023	
P-0041	(Draft) Transcript, Neutral Expert First Meeting (<i>Indus Waters</i>), Day 2	28 February 2023	
P-0041(C)	(Corrected) Transcript, Neutral Expert First Meeting (<i>Indus Waters</i>), Day 2	28 February 2023	
P-0042	"Kishenganga and Ratle HEP Matters", Presentation by Shri AK Pal, Commissioner (Indus), Department of Water Resources, River Development & Ganja Rejuvenation, at the Neutral Expert First Meeting (<i>Indus Waters</i>)	27 February 2023	
P-0043	"Kishenganga Hydroelectric Project", Presentation by Mr Kushvinder Vohra, Chairman, Central Water Commission, at the Neutral Expert First Meeting (<i>Indus Waters</i>)	27 February 2023	
P-0044	"Ratle Hydroelectric Project", Presentation by Mr Kushvinder Vohra, Chairman, Central Water Commission, at the Neutral Expert First Meeting (<i>Indus Waters</i>)	27 February 2023	
P-0045	Letter from Pakistan to the Neutral Expert	1 December 2022	Pakistan / Neutral Expert
P-0046	Letter from Pakistan to the Neutral Expert	10 January 2023	Pakistan / Neutral Expert
P-0047	Letter No. 3(7)/82-IT/708 (with enclosures)	2 June 1994	ICIW / PCIW

Pakistan's Post-Hearing Submission
1 November 2024

No.	Title	Date²⁹⁹	Author / Recipient (where applicable)³⁰⁰
P-0048	Letter No. WT(132)/(5446-A)/PCIW	8 September 1994	PCIW / ICIW
P-0049	Letter No. WT(132)/(6023-A)/PCIW	11 October 1997	PCIW / ICIW
P-0050	Letter No. 9(3)/98-IT/909	21 May 1999	ICIW / PCIW
P-0051	Record of the 92nd Meeting of the Permanent Indus Commission, 27-29 November 2004	29 November 2004	
P-0052	Letter No. WT(132)/(6662-A)/PCIW	7 February 2006	PCIW / ICIW
P-0053	Letter No. WT(132)/(6665-A)/PCIW (with enclosure)	26 March 2006	PCIW / ICIW
P-0054	Letter No. 3/7/82-IT/1216	20 April 2006	ICIW / PCIW
P-0055	Letter No. 3/7/82-IT/1228 (with enclosures)	19 June 2006	ICIW / PCIW
P-0056	Letter No. WT(132)/(6713-A)/PCIW (with enclosures)	24 August 2006	PCIW / ICIW
P-0057	Letter No. 3/7/82-IT/1369 (with enclosure)	25 May 2007	ICIW / PCIW
P-0058	Record of the 99th Meeting of the Permanent Indus Commission, 30 May-4 June 2007	4 June 2007	
P-0059	Letter No. WT(132)/(6839-A)/PCIW	4 February 2008	PCIW / ICIW
P-0060	Record of the 100th Meeting of the Permanent Indus Commission, 31 May-4 June 2008	4 June 2008	
P-0061	Record of the 101st Meeting of the Permanent Indus Commission, 25-28 July 2008	28 July 2008	
P-0062	Letter No. WT(132)/(412/413)/PCIW (with enclosure)	11 March 2009	PCIW / Secretary, Ministry of Water and Power, Government of Pakistan and Secretary, Ministry of Water Resources, Government of India

Pakistan's Post-Hearing Submission
1 November 2024

No.	Title	Date²⁹⁹	Author / Recipient (where applicable)³⁰⁰
P-0063	Letter No. WT(132)/(6981-A)/PCIW (with enclosures)	11 March 2009	PCIW / ICIW
P-0064	Letter No. WT(132)/(7002-7003-A) (with enclosure)	11 May 2009	PCIW /Secretary, Ministry of Water and Power, Government of Pakistan and Secretary, Ministry of Water Resources, Government of India
P-0065	Note Verbale No. J/112/3/2008	19 May 2009	India / Pakistan
P-0066	Record of the 103rd Meeting of the Permanent Indus Commission, 31 May-5 June 2009	5 June 2009	
P-0067	Note Verbale No. Dir (India)-1/7/2009	10 July 2009	Pakistan / India
P-0068	Note Verbale No. J/112/03/2009	20 August 2009	India / Pakistan
P-0069	Letter No. WT(132)/(7330-A)/PCIW	6 March 2013	PCIW / ICIW
P-0070	Record of the 108th Meeting of the Permanent Indus Commission, 24-25 March 2013 <i>[Note: the meeting was held on 24-25 March 2013 as stated on p. 2 of the Record. The dates shown in the title of the Record – 23- 26 March 2013 – include the date on which the Parties travelled to the meeting.]</i>	24 September 2013	
P-0071	Letter No. 3/7/82-IT/1999	15 April 2013	ICIW / PCIW
P-0072	Letter No. WT(150)/(7335-A)/PCIW	20 March 2013	PCIW / ICIW
P-0073	Letter No. WT(51)/(7394-A)/PCIW	10 January 2014	PCIW / ICIW
P-0074	Letter No. WT(132)/(7411-A)/PCIW (with enclosure)	31 March 2014	PCIW / ICIW
P-0075	Letter No. 9/7/2013-IT/2061	6 February 2014	ICIW / PCIW

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No.	Title	Date²⁹⁹	Author / Recipient (where applicable)³⁰⁰
P-0076	Record of the 112th Meeting of the Permanent Indus Commission, 30-31 May 2015	31 May 2015	
P-0077	Letter No. 3/5/2007-IT/1947 (with enclosures)	16 August 2012	ICIW / PCIW
P-0078	Letter No. WT(150)/(7314-A)/PCIW (with enclosure)	26 November 2012	PCIW / ICIW
P-0079	Letter No. 3/5/2007-IT/1974 (with enclosure)	11 January 2013	ICIW / PCIW
P-0080	Letter No. 9/3/2013-IT/1994	22 March 2013	ICIW / PCIW
P-0081	Letter No. WT(51)/(7337-A)/PCIW (with enclosures)	25 March 2013	PCIW / ICIW
P-0082	Letter No. 3/5/1007-IT/2043 (with enclosures)	11 September 2013	ICIW / PCIW
P-0083	Record of the 109th Meeting of the Permanent Indus Commission, 22-25 September 2013	14 July 2014	
P-0084	Letter No. WT(51)/(7388-A)/PCIW	5 December 2013	PCIW / ICIW
P-0085	Letter No. WT(9)/(7438-A)/PCIW	12 August 2014	PCIW / ICIW
P-0086	Letter No. WT(9)/(7446-A)/PCIW	3 October 2014	PCIW / ICIW
P-0087	Letter No. WT(9)/(7511-A)/PCIW	20 October 2015	PCIW / ICIW
P-0088	Letter No. Y-20016/1/2014-IT/2129	20 March 2015	ICIW / PCIW
P-0089	Letter No. Y-20014/1/2015-IT/2140	13 May 2015	ICIW / PCIW
P-0090	Letter No. WT(51)/(7480-A)/PCIW	13 May 2015	PCIW / ICIW
P-0091	Letter No. Y-20014/1/2015-IT/2142	15 May 2015	ICIW / PCIW
P-0092	Letter No. WT(51)/(7482-A)/PCIW	18 May 2015	PCIW / ICIW
P-0093	Note Verbale No. KA(II)-2/11/2015	12 November 2015	Pakistan / India
P-0094	Note Verbale No. ISL/112/1/2015	2 December 2015	India / Pakistan
P-0095	Letter No. Y-11017/2/2015-IT/2177	1 March 2016	ICIW / PCIW

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
P-0096	Letter No. Y-11017/2/2015-IT/2178	8 March 2016	ICIW / PCIW
P-0097	Letter No. WT(132)/(7535-A)/PCIW	11 March 2016	PCIW / ICIW
P-0098	Note Verbale No. KA (II)-2/11/2015	4 March 2016	Pakistan / India
P-0099	Note Verbale No. ISL/112/1/2016	21 March 2016	India / Pakistan
P-0100	Note Verbale No. KA (II)-2/11/2016	19 May 2016	Pakistan / India
P-0101	Note Verbale No. ISL/112/1/2016	8 June 2016	India / Pakistan
P-0102	Note Verbale No. KA (II)-2/11/2016	1 July 2016	Pakistan / India
P-0103	Record of the 113th Meeting of the Permanent Indus Commission, 20-21 March 2017	29 March 2018	
P-0104	K. Bhattacharjee, "Pakistan to take river dispute back to court", <i>The Hindu</i> , 17 July 2016 Available at: http://www.thehindu.com/news/national/pakistan-to-take-river-dispute-back-to-court/article8860799.ece (last accessed 22 March 2023)	17 July 2016	
P-0105	Letter Y-11017/2/2015-IT/2209 (with enclosure)	6 September 2016	ICIW / Secretary, Ministry of Water Resources, Government of India and Secretary, Ministry of Water and Power, Government of Pakistan
P-0106	Letter from the World Bank to the Parties	31 August 2016	World Bank / Parties
P-0107	Letter from the World Bank to the Parties	3 November 2016	World Bank / Parties

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No.	Title	Date²⁹⁹	Author / Recipient (where applicable)³⁰⁰
P-0108	Letter from the World Bank to the Parties	10 November 2016	World Bank / Parties
P-0109	Letter from the World Bank to the Parties (with Annexes)	11 November 2016	World Bank / Parties
P-0110	Letter from the World Bank to the Parties	22 November 2016	World Bank / Parties
P-0111	Letter from Pakistan to the World Bank	22 November 2016	Pakistan / World Bank
P-0112	First Letter from Pakistan to the World Bank	28 November 2016	Pakistan / World Bank
P-0113	Second Letter from Pakistan to the World Bank	28 November 2016	Pakistan / World Bank
P-0114	Letter from the World Bank to the Parties	5 December 2016	World Bank / Parties
P-0115	Letter from Pakistan to the World Bank	9 December 2016	Pakistan / World Bank
P-0116	Letter from Pakistan to the World Bank	23 December 2016	Pakistan / World Bank
P-0117	Letter from Pakistan to the World Bank	27 December 2016	Pakistan / World Bank
P-0118	Letter from Pakistan to the World Bank	17 April 2017	Pakistan / World Bank
P-0119	Letter from Pakistan to the World Bank	13 July 2017	Pakistan / World Bank
P-0120	Letter from the World Bank to the Parties (with Annex)	31 March 2022	World Bank / Parties

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
P-0121	World Bank Group Archives, Indus Basin Negotiations Inventory List Available at: https://thedocs.worldbank.org/en/doc/30b6e86fe9d76caf7085ec8cd168bf52-0240022021/original/Archives-mediation-exhibit-Indus-folder-list-with-hyperlinks.pdf (last accessed 22 March 2023)		
P-0122	Pakistan's Memorial (<i>Kishenganga</i> arbitration)	27 May 2011	
P-0123	India's Counter-Memorial (<i>Kishenganga</i> arbitration)	23 November 2011	
P-0124	Pakistan's Reply (<i>Kishenganga</i> arbitration)	21 February 2012	
P-0125	Transcript, Hearing on the Merits (<i>Kishenganga</i> arbitration), Day 3	22 August 2012	
P-0126	Transcript, Hearing on the Merits (<i>Kishenganga</i> arbitration), Day 4	23 August 2012	
P-0127	Transcript, Hearing on the Merits (<i>Kishenganga</i> arbitration), Day 8	29 August 2012	
P-0128	Transcript, Hearing on the Merits (<i>Kishenganga</i> arbitration), Day 9	30 August 2012	
P-0129	Transcript, Hearing on the Merits (<i>Kishenganga</i> arbitration), Day 10	31 August 2012	
P-0130	Proposal by the International Bank Representative for a Plan for the Development and Use of the Indus Basin Waters (the " 1954 Proposal ") [IWT-02615] ³⁰¹	5 February 1954	
P-0131	International Bank for Reconstruction and Development, Aide Memoire of 21 May 1956 (the " 1956 Aide Memoire ") [IWT-03923]	21 May 1956	

³⁰¹ References to IWT-##### are to the documents as sourced from the World Bank archives (see Appendix C to the Response of Pakistan).

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
P-0132	Preliminary Tentative Draft (Indian) [IWT-00306]	10 August 1959	
P-0133	Rough Draft (Pakistan) [IWT-00312]	10 August 1959	
P-0134	Letter from Mr Mueenuddin to Mr W. A. Sheikh [Annex PK-11] ³⁰²	15 September 1959	G. Mueenuddin (Office of the High Commissioner for Pakistan) / W.A. Sheikh (Secretary to the Government of Pakistan (Ministry of Works, Irrigation & Power))
P-0135	Indus Waters, Heads of Agreement for an International Water Treaty: Memorandum by the Bank Representative [IWT-04914]	15 September 1959	
P-0136	Indus Waters, Heads of Agreement (“ Heads of Agreement 1959 ”) [IWT-04917, IWT-04918, IWT-04932, IWT-04934 and IWT-04938]	15 September 1959	
P-0137	Indus Waters Treaty draft (for circulation within the working group only) [without Annexures] (“ November 1959 draft ”) [IWT-00236]	24 November 1959	
P-0138	World Bank – list of riders proposed by India and Pakistan respectively for inclusion in the draft treaty text dated 24 November 1959 [IWT-00224]	24 November 1959	

³⁰² References to “Annex PK-XX” are to exhibits provided as part of Volume 4 to Pakistan’s Memorial, *Kishenganga* arbitration.

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
P-0139	Indus Waters Treaty 1960 draft of 9 December 1959 [without Annexures] (“ December 1959 draft ”) [IWT-00121]	9 December 1959	
P-0140	Letter from Mr Mueenuddin to Mr W.A. Shaikh [Annex PK-13]	15 December 1959	G. Mueenuddin / W.A. Shaikh
P-0141	Comparative Table of Provisions of the Heads of Agreement of 15 September 1959 and the Draft Indus Waters Treaty of 9 December 1959 (originally enclosed with the letter from G. Mueenuddin to W.A. Shaikh (Secretary to the Government of Pakistan (Ministry of Works, Irrigation & Power)) of 15 December 1959) (“ Comparative Table of Provisions, 15 December 1959 ”) [Annex PK-14]	15 December 1959	
P-0142	Decisions of the Cabinet Committee on the Draft of the Indus Waters Treaty, Meeting of 15 February 1960 (“ Cabinet Committee Decisions, 15 February 1960 ”) [Annex PK-17]	15 February 1960	
P-0143	Indus Waters Treaty 1960 draft of 20 April 1960 [without Annexures] (“ April 1960 draft ”) [IWT-00144]	20 April 1960	
P-0144	Indus Waters Treaty 1960 (Draft of December 9, 1959): List of Amendments dated April 20, 1960 [IWT-00199]	20 April 1960	
P-0145	Annexure G – Settlement of Differences by a Neutral Expert (Article IX(2)), Draft [IWT-00188]	22 April 1960	

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No.	Title	Date²⁹⁹	Author / Recipient (where applicable)³⁰⁰
P-0146	Annexure H – Court of Arbitration (Article IX(5)), Draft [IWT-00191]	22 April 1960	
P-0147	Indus Waters Treaty 1960 – Annexure F, Neutral Expert (Article IX(2)), Draft [IWT-00101]	6 June 1960	
P-0148	Indus Waters Treaty 1960 – Annexure G, Court of Arbitration (Article IX(5)), Draft [IWT-00109]	6 June 1960	
P-0149	Indus Waters Treaty 1960 – Annexure F (Draft dated 6 th June, 1960) – Amendments proposed by Pakistan [IWT-00044]	[Undated]	
P-0150	Indus Waters Treaty 1960 – Annexure F (Draft dated 6 th June, 1960) – Amendments proposed by India [IWT-00055]	[Undated]	
P-0151	Indus Waters Treaty 1960, Draft of 8 th June 1960 [without Annexures] (“ June 1960 draft ”) [IWT-00014]	8 June 1960	
P-0152	Annexures C-F – Second list of amendments proposed by India [IWT-00008]	25 August 1960	
P-0153	Indus Waters Treaty – President’s Report and Recommendations [IWT-05173]	6 September 1960	

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
P-0154	World Bank Press Release no. 650 (confirming the signature of the Indus Waters Treaty 1960) (“World Bank Press Release, 19 September 1960”) Available at: https://documents1.worldbank.org/curated/ar/127721589378651773/pdf/Announcement-of-Indus-Water-Treaty-Signed-on-September-19-1960.pdf (last accessed 22 March 2023)	19 September 1960	
P-0155	Email from the Neutral Expert to the World Bank (regarding India's comments on the summary of the hand-over meeting with the Neutral Expert held on 21 November 2022)	31 January 2023	Neutral Expert / World Bank
P-0156	India's Request for the Appointment of a Neutral Expert (“Neutral Expert Request”)	4 October 2016	
Factual Exhibits submitted by Pakistan on 9 May 2023 in advance of the Hearing on Competence			
P-0157	Letter No. Y-20014/1/2014-IT/2110	9 October 2014	ICIW / PCIW
P-0158	Letter No. WT(51)/(7450-A)/PCIW	29 October 2014	PCIW / ICIW
P-0159	Letter No. Y-20017/2/2014-IT/2115	14 November 2014	ICIW / PCIW
P-0160	Letter No. Y-20017/2/2014-IT/2117	24 November 2014	ICIW / PCIW
P-0161	Letter No. WT(9)/(7467-A)/PCIW	13 March 2015	PCIW / ICIW
P-0162	Letter No. WT(9)/(7471-A)/PCIW	7 April 2015	PCIW / ICIW
P-0163	Letter No. Y-20017/2/2014-IT/2131	9 April 2015	ICIW / PCIW
P-0164	Letter No. Y-20017/2/2014-IT/2137	6 May 2015	ICIW / PCIW
P-0165	Letter No. WT(9)/(7479-A)/PCIW	13 May 2015	PCIW / ICIW
P-0166	Letter No. WT(9)/7487-A/PCIW	16 June 2015	PCIW / ICIW
P-0167	Letter No. Y-20017/2/2014-IT/2148	26 June 2015	ICIW / PCIW
P-0168	Letter No. WT(9)/(7501-A)/PCIW	11 August 2015	PCIW / ICIW

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No.	Title	Date²⁹⁹	Author / Recipient (where applicable)³⁰⁰
P-0169	Letter No. WT(9)/(7506-A)/PCIW	21 September 2015	PCIW / ICIW
P-0170	Letter No. Y-20017/2/2014-IT/2166	3 November 2015	ICIW / PCIW
P-0171	Note Verbale No. KA(II)-2/11/2015	16 November 2015	Pakistan / India
P-0172	Letter No. WT(132)/(7526-A)/PCIW	9 February 2016	PCIW / ICIW
P-0173	Letter No. WT(9)/(7541-A)/PCIW	8 April 2016	PCIW / ICIW
P-0174	Letter No. WT(9)/(7569-A)/PCIW	19 October 2016	PCIW / ICIW
P-0175	Letter No. WT(9)/(7622-A)/PCIW	8 September 2017	PCIW / ICIW
P-0176	Letter No. WT(9)/(7648-A)/PCIW	19 February 2018	PCIW / ICIW
P-0177	Letter No. WT(51)/(7653-A)/PCIW	19 March 2018	PCIW / ICIW
P-0178	Letter No. Y-20017/1/2018-IT/2261	20 March 2018	ICIW / PCIW
P-0179	Letter No. Y-20017/1/2018-IT/2263	23 March 2018	ICIW / PCIW
P-0180	Record of the 114th Meeting of the Permanent Indus Commission, 29-30 March 2018	31 March 2018	
P-0181	Letter No. WT(9)/(7658-A)/PCIW	9 April 2018	PCIW / ICIW
P-0182	Letter No. WT(51)/(7662-A)/PCIW	28 April 2018	PCIW / ICIW
P-0183	Letter No. Y-20017/2/2018-IT/2267	11 May 2018	ICIW / PCIW
P-0184	Letter No. WT(51)/(7666-A)/PCIW	5 June 2018	PCIW / ICIW
P-0185	Letter No. WT(51)/(7669-A)/PCIW	9 July 2018	PCIW / ICIW
P-0186	Letter No. Y-20017/2/2018-IT/2275	31 July 2018	ICIW / PCIW
P-0187	Letter No. WT(51)/(7675-A)/PCIW	8 August 2018	PCIW / ICIW
P-0188	Record of the 115th Meeting of the Permanent Indus Commission, 29-30 August 2018	30 August 2018	
P-0189	Letter No. Y-20017/3/2018-IT/2282	7 September 2018	ICIW / PCIW
P-0190	Letter No. Y-20017/3/2018-IT/2285	20 September 2018	ICIW / PCIW

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No.	Title	Date²⁹⁹	Author / Recipient (where applicable)³⁰⁰
P-0191	Letter No. WT(9)/(7683-A)/PCIW	28 September 2018	PCIW / ICIW
P-0192	Letter No. WT(45)/(7682-A)/PCIW	28 September 2018	PCIW / ICIW
P-0193	Letter No. Y-20017/3/2018-IT/2287	16 October 2018	ICIW / PCIW
P-0194	Letter No. WT(45)/(7694-A)/PCIW	24 November 2018	PCIW / ICIW
P-0195	Letter No. WT(45)/(7698-A)/PCIW	24 December 2018	PCIW / ICIW
P-0196	Letter No. Y-20017/3/2018-IT/2295	9 January 2019	ICIW / PCIW
P-0197	Letter No. WT(9)/(7701-A)/PCIW	12 January 2019	PCIW / ICIW
P-0198	Letter No. Y-20017/3/2018-IT/2298	16 January 2019	ICIW / PCIW
P-0199	Letter No. WT(9)/(7702-A)/PCIW	17 January 2019	PCIW / ICIW
P-0200	Letter No. Y-20017/3/2018-IT/2299	22 January 2019	ICIW / PCIW
P-0201	Record of the 119th General Tour of Inspection by the Permanent Indus Commission, 27 January–1 February 2019	1 February 2019	
P-0202	Letter No. WT(9)/(7722-A)/PCIW	30 May 2019	PCIW / ICIW
P-0203	Letter No. WT(9)/(7729-A)/PCIW	23 July 2019	PCIW / ICIW
P-0204	Letter No. WT(51)/(7750-A)/PCIW	8 October 2019	PCIW / ICIW
P-0205	Letter No. WT(51)/(7753-A)/PCIW	25 October 2019	PCIW / ICIW
P-0206	Letter No. WT(51)/(7764-A)/PCIW	4 December 2019	PCIW / ICIW
P-0207	Letter No. WT(51)/(7767-A)/PCIW	27 December 2019	PCIW / ICIW
P-0208	Letter No. WT(9)/(7788-A)/PCIW	12 June 2020	PCIW / ICIW
P-0209	Letter No. WT(9)/(7860-A)/PCIW	18 March 2021	PCIW / ICIW
P-0210	Letter No. WT(9)/(7898-A)/PCIW	10 June 2021	PCIW / ICIW
P-0211	Letter No. WT(9)/(7917-A)/PCIW	6 July 2021	PCIW / ICIW
P-0212	Letter No. WT(9)/(7946-A)/PCIW	12 August 2021	PCIW / ICIW

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No.	Title	Date²⁹⁹	Author / Recipient (where applicable)³⁰⁰
P-0213	Letter No. WT(9)/(7977-A)/PCIW	29 September 2021	PCIW / ICIW
P-0214	Letter No. WT(9)/(8045-A)/PCIW	22 February 2022	PCIW / ICIW
P-0215	Record of the 116th Meeting of the Permanent Indus Commission, 23–24 March 2021	3 March 2022	
P-0216	Record of the 117th Meeting of the Permanent Indus Commission, 1–3 March 2022	3 March 2022	
P-0217	Letter No. WT(132)/(8086-A)/PCIW (with enclosures)	17 June 2022	PCIW / ICIW
P-0218	Letter No. WT(51)/(8094-A)/PCIW	27 July 2022	PCIW / ICIW
P-0219	Letter No. WT(51)/(8099-A)/PCIW	8 September 2022	PCIW / ICIW
P-0220	Letter No. WT(51)/(8110-A)/PCIW	18 November 2022	PCIW / ICIW
P-0221	Letter No. Y-20017/3/2007-IT/2423	25 January 2023	ICIW / PCIW
P-0222	Letter No. WT(150)/(8121-A)/PCIW	8 February 2023	PCIW / ICIW
P-0223	Letter No. WT(150)/(8124-A)/PCIW	24 February 2023	PCIW / ICIW
P-0224	Letter No. WT(150)/(8126(A)-A)/PCIW	24 March 2023	PCIW / ICIW
P-0225	Letter No. WT(132)/(6997-A)/PCIW	29 April 2009	PCIW / ICIW
P-0226	Note Verbale No. KA (II)-2/2/2010	9 April 2010	Pakistan / India
P-0227	India's Rejoinder (<i>Kishenganga</i> arbitration)	21 May 2012	
Factual Exhibits submitted by Pakistan on 13 May 2023 at the Hearing on Competence			
P-0228	Letter No. WT(127)/(6410-A)/PCIW (with enclosure)	8 May 2003	PCIW / ICIW

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
P-0229	Letter No. WT(127)/(6420-21 A)/PCIW (with enclosure)	20 June 2003	PCIW to Secretary, Ministry of Water and Power, Government of Pakistan and Secretary, Ministry of Water Resources, Government of India
P-0230	Letter No. WT(127)/(21)/PCIW	15 January 2005	PCIW / World Bank
P-0231	Letter No. 16/4/2004-FB.II	21 April 2005	India / World Bank
Factual Exhibits submitted with Pakistan's Memorial on the Merits dated 22 March 2024			
P-0232	Tennessee Valley Authority, "Our History" Available at: https://www.tva.com/about-tva/our-history (last accessed 18 March 2024)		
P-0233	D. E. Lilienthal, "Another 'Korea' in the Making?", <i>Collier's Magazine</i> ("Lilienthal, 1951") [IWT-01645]	4 August 1951	
P-0234	A. A. Michel, <i>The Indus Rivers: A Study of the Effects of Partition</i> (Yale University Press) ("Michel, 1967") [Extracts, pp. 195-267]	1967	
P-0235	Embassy of Pakistan (Washington, D.C.), Press Release No. 34 "India's Stoppage of Canal Water Leads to Mass Evacuation From Affected Areas. Millions of Acres Turned Desert visited by Journalists"	14 June 1958	

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
P-0236	Embassy of Pakistan (Washington, D.C.), Press Release No. 35 “Stoppage of Canal Waters New Threat to Pakistan’s Lifelines” [IWT-03436]	18 June 1958	
P-0237	Letter from Prime Minister Nehru to Prime Minister Khan Noon [IWT-04404]	10 June 1958	India / Pakistan
P-0238	Letter from Mr Sivasankar, Embassy of India to the United States, to Mr Iliff, enclosing Letter from Prime Minister Khan Noon to Prime Minister Nehru, 16 June 1958 [IWT-04453]	20 June 1958	India / World Bank
P-0239	Letter from Mr Iliff to Mr Shoaib [IWT-05046]	5 February 1960	World Bank / Pakistan
P-0240	Letter from Mr Iliff to Mr Mueenuddin [IWT-05096]	2 April 1960	World Bank / Pakistan
P-0241	<i>Indus Waters Kishenganga Arbitration (Pakistan v India)</i> , Pakistan’s Request for Arbitration (“ Kishenganga arbitration, Pakistan’s Request for Arbitration ”)	17 May 2010	
P-0242	Ministry of External Affairs, Government of India, “Matters pertaining to the Indus Waters Treaty” Available at: https://www.mea.gov.in/press-releases.htm?dtl/36761/Matters+pertaining+to+the+Indus+Waters+Treaty (last accessed 18 March 2024)	6 July 2023	
P-0243	Ministry of External Affairs, Government of India, “Meeting of Neutral Expert proceedings on the Indus Waters Treaty” Available at: https://www.mea.gov.in/press-releases.htm?dtl/37133/Meeting+of+Neutral+Expert+proceedings+on+the+Indus+Waters+Treaty#:~:text=Ministry%20of%20External%20Affairs%2	21 September 2023	

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
	0Government%20of%20India&text=The%20meeting%20was%20convened%20by,representatives%20of%20India%20and%20Pakistan. (last accessed 18 March 2024)		
P-0244	A. Khan and M. H. Idrees, “The Impact of Climate Change on the Indus Basin: Challenges and Constraints” in M. Ahmad (ed.), <i>Water Policy in Pakistan</i> (Springer) (“ Khan and Idrees, 2023 ”)	2023	
P-0245 (resubmitted)	U. Z. Alam, “Water Rationality: Mediating the Indus Waters Treaty”, Ph.D. Thesis, Geography Department, University of Durham (“ Alam 1998 ”) [Extracts, pp. 28-38, 123-143, 174-182]	September 1998	
P-0246	A. B. Soofi, “Filling the Missing Gaps in the Indus Water Treaty”, <i>Institute of Strategic Studies Islamabad</i>	April 2016	
P-0247	K. Frenken (ed.), “Irrigation in Southern and Eastern Asia in figures”, AQUASTAT Survey – 2011, FAO Water Reports (37) [Extracts, pp. 264-272, 376-387]	2011	
P-0248	L. Lytton and others, “Groundwater in Pakistan’s Indus Basin: Present and Future Prospects”, Water Global Practice, World Bank Group, Washington DC [Extracts, pp. xiii-xiv, 1-30] Available at: https://documents1.worldbank.org/curated/en/501941611237298661/pdf/Groundwater-in-Pakistan-s-Indus-Basin-Present-and-Future-Prospects.pdf (last accessed 18 March 2024)	2021	
P-0249	W. J. Young and others, “Pakistan: Getting More from Water”, (2019) Water Security Diagnostic, World Bank Group, Washington DC [Extract, pp. 1-11] Available at: https://openknowledge.worldbank.org/entities/publication/0a0d81f4-614e-531c-8023-15a9e8db5a13 (last accessed 18 March 2024)	1 January 2019	

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
P-0250	USAID Sustainable Water Partnership, Country Profile – India (2021) Available at: https://www.globalwaters.org/resources/assets/india-water-resources-profile (last accessed 18 March 2024)	10 August 2021	
P-0251	Ministry of Water Resources, Government of India, “River Basin Atlas of India” (2012) Available at: www.indiawris.gov.in/wris/#/atlas (last accessed 18 March 2024)		
P-0252	World Bank, “Average precipitation in depth (mm per year) – Pakistan, India” (<i>World Bank</i>) Available at: https://data.worldbank.org/indicator/AG.LND.PRCP.MM?end=2020&locations=PK-IN&most_recent_value_desc=true&start=1961&view=chart (last accessed 18 March 2024)	2021	
P-0253	T. Bolch and others, “The State and Fate of Himalayan Glaciers” (2012) (336) <i>Science</i> Available at: http://www.cryoscience.net/pub/pdf/2012science_bolch.pdf (last accessed 18 March 2024)	2012	
P-0254	Pakistan Meteorological Department's Normal Annual Rainfall Map of Pakistan	1981-2010	
P-0255	India-Water Resource Information System (WRIS) Average Annual Rainfall Map Available at: https://indiawris.gov.in/downloads/Average%20Annual%20Rainfall.pdf (last accessed 18 March 2024)	1971-2005	
P-0256	A. N. Laghari and others, “The Indus basin in the framework of current and future water resources management” (2012) 16(4) <i>Hydrology and Earth System Sciences</i>	2 April 2012	

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
	Available at: https://hess.copernicus.org/articles/16/1063/2012/hess-16-1063-2012.pdf (last accessed 18 March 2024)		
P-0257	Ministry of Home & Kashmir Affairs, Government of Pakistan, "Census of Pakistan Population 1961 – Volume 1" [Extract, pp. II-1-II-21]	1961	
P-0258	Pakistan Bureau of Statistics, Government of Pakistan "7 th Population & Housing Census 2023" Available at: https://www.pbs.gov.pk/content/announcement-results-7th-population-and-housing-census-2023-digital-census (see https://www.pbs.gov.pk/sites/default/files/population/2023/Pakistan.pdf) (last accessed 18 March 2024)	2023	
P-0259	United Nations Population Fund – Pakistan, "State of World Population Report provides infinite possibilities for Pakistan", United Nations Population Fund Available at: https://pakistan.unfpa.org/en/news/state-world-population-report-provides-infinite-possibilities-pakistan (last accessed 18 March 2024)	23 May 2023	
P-0260	World Population Review, "India" Available at: https://worldpopulationreview.com/countries/india-population (last accessed 18 March 2024)		
P-0261	M. Paul and N. Venkatesan, "On top of the world: India most populous", <i>Mint</i> (Delhi) Available at: https://www.livemint.com/news/india/india-overtakes-china-as-world-s-most-populous-nation-for-the-first-time-demographic-advantage-could-drive-economic-growth-but-job-creation-remains-	19 April 2023	

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
	a-challenge-11681928316885.html (last accessed 18 March 2024)		
P-0262	<p>“50% population will be living in urban areas by 2050”, <i>The Express Tribune</i> (Karachi)</p> <p>Available at: https://tribune.com.pk/story/2381334/50-population-will-be-living-in-urban-areas-by-2050 (last accessed 18 March 2024)</p>	13 October 2022	
P-0263	<p>M. J. M. Cheema and M. U. Qamar, “Transboundary Indus River Basin: Potential Threats to Its Integrity” in S. I. Khan and T. E. Adams III (eds.) <i>Indus River Basin: Water Security and Sustainability</i> (Elsevier 2019) (“Cheema and Qamar, 2019”)</p>	2019	
P-0264	<p>D. Michel and others, “Connecting the Drops: An Indus Basin Roadmap for Cross-Border Water Research, Data Sharing, and Policy Coordination”, (2013) Observer Research Foundation, Stimson Center, and Sustainable Development Policy Institute (“Michel and others, 2013”) [Extracts, pp. 12-14, 44-48]</p>	2013	
P-0265	<p>A. Giese and others, “Indus River Basin Glacier Melt at the Subbasin Scale” (2022) (10) <i>Frontiers in Earth Science</i></p>	27 June 2022	
P-0266	<p>“What are atmospheric rivers?”, U. S. National Oceanographic and Atmospheric Administration (NOAA)</p> <p>Available at: https://www.noaa.gov/stories/what-are-atmospheric-rivers (last accessed 18 March 2024)</p>	31 March 2023	
P-0267	<p>J. S. Nanditha and others, “The Pakistan Flood of August 2022: Causes and Implications” (2023) (11(3)) <i>Earth's Future</i></p>	2023	
P-0268	<p>M. A. Rasheed and D. Ahmad, “Storage and Hydropower” in M. Ahmad (ed.), <i>Water Policy in Pakistan</i> (Springer 2023)</p>	2023	

Pakistan's Post-Hearing Submission
1 November 2024

No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
P-0269	Mott Macdonald and HR Wallingford, "Sediment Management Study of Tarbela Reservoir" [Extracts, pp. 50 and 54]	July 2013	
P-0270	T. Nozaki, "Estimation of Repair Cycle of Turbine Due to Abrasion Caused by Suspended Sand and Determination of Desilting Basin Capacity" (1990)	1990	
P-0271	F. J. Fowler, "Some Problems of Water Distribution between East and West Punjab" (1950) 4 <i>Geo Rev</i> 583	October 1950	
P-0272	P. Spens, "The Arbitral Tribunal in India 1947–48" (1950) 36 <i>TGS</i> 61	1950	
P-0273	J. G. Laylin, "Principles of Law Governing the Uses of International Rivers: Contributions from the Indus Basin" (1957) 51 <i>ASIL Proc</i> 20 ("Laylin, 1957")	1957	
P-0274	C. M. Ali, <i>The Emergence of Pakistan</i> (Columbia University Press 1967) [Extract, pp. 269-281 and 301-326]	1967	
P-0275	Inflation Calculator Tool, Bank of England: https://www.bankofengland.co.uk/monetary-policy/inflation/inflation-calculator (last accessed 18 March 2024)		
P-0276	UK Pound Sterling/US Dollar FX Spot Rate, <i>Financial Times</i> Available at: https://markets.ft.com/data/currencies/tearsheet/summary?s=GBPUSD (last accessed 18 March 2024)		
P-0277	World Bank, "Indus Waters Settlement Plan" Available at: https://documents1.worldbank.org/curated/zh/855531468078531004/pdf/multi0page.pdf (last accessed 18 March 2024)	18 April 1960	

Pakistan's Post-Hearing Submission
1 November 2024

No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
P-0278	M. D. Ahmad and others, “Bringing transparency and consistency to Pakistan’s seasonal water planning decisions: 1991 Inter-Provincial Water Apportionment Accord (WAA) Tool User Guide and Reference Manual, Second Edition”, (2022), Commonwealth Scientific and Industrial Research Organisation, Canberra [Extract, p. 4]	2022	
P-0279	L. Lytton and B. Saeed, “Managing Groundwater Resources in Pakistan’s Indus Basin” (<i>World Bank</i>)	25 March 2021	
P-0280	Government of Pakistan, “Pakistan’s First Biennial Update Report (BUR-1) to the United Nations Framework Convention on Climate Change (UNFCCC)”, April 2022 [Extract, p. 6] Available at: https://unfccc.int/sites/default/files/resource/Pakistan%E2%80%99s%20First%20Biennial%20Update%20Report%20%28BUR-1%29%20-%202022.pdf (last accessed 18 March 2024)	April 2022	
P-0281	Ministry of Finance, Government of Pakistan “Pakistan Economic Survey 2022-23 – Chapter 2: Agriculture” [Extract, pp. 19-40] Available at: https://www.finance.gov.pk/survey/chapters_23/Economic_Survey_2022_23.pdf (last accessed 18 March 2024)		
P-0282	“FAO in Pakistan – Pakistan at a Glance” (<i>Food and Agriculture Organization of the United Nations</i>) Available at: www.fao.org/pakistan/our-office/pakistan-at-a-glance/en/ (last accessed 18 March 2024)		
P-0283	H. Biemans and others, “Mountain Waters Crucial for Irrigated Agriculture in the Indus, Less so in the Ganges and Brahmaputra Basins”, (2018), Himalayan Adaptation, Water and Resilience (HI-AWARE) Research	2018	

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
	Available at: https://web.archive.org/web/20231202020437/https://hi-aware.org/wp-content/uploads/2018/10/KM5.pdf (last accessed 18 March 2024)		
P-0284	Z. Bhutta, "Water shortage looms over Kharif crops" <i>The Express Tribune</i> (Karachi) Available at: https://tribune.com.pk/story/2413506/water-shortage-looms-over-kharif-crops (last accessed 18 March 2024)	25 April 2023	
P-0285	"India has only developed 29% of its hydroelectric potential" (<i>Hydro Review</i>)	27 March 2023	
P-0286	Private Power and Infrastructure Board, Ministry of Energy (Power Division), Government of Pakistan, "Hydropower Resources of Pakistan" [Extract, p. 9]	July 2022	
P-0287	J. Thakur, "Exploring the Hydropower Potential in India's Northeast", (March 2020) <i>ORF Issue Brief</i> , Issue No. 341	March 2020	
P-0288	"Abysmally low water storage capacity in country" <i>DAWN</i> (Karachi) Available at: https://www.dawn.com/news/1523069 (last accessed 18 March 2024)	19 December 2019	
P-0289	"Signing Ceremony of Contract Agreement of Construction of DiamerBasha Dam Project" (<i>Ministry of Water Resources - Government of Pakistan</i>)	13 May 2020	
P-0290	S. Jamal, "Pakistan Begins Construction of Diamer Bhasha Dam" <i>Gulf News</i> (Dubai)	15 July 2020	
P-0291	"Flooding in Pakistan: the latest news" (<i>British Red Cross</i>)	30 August 2023	

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
P-0292	D. Eckstein and others, “Global Climate Risk Index 2021”, Germanwatch	January 2021	
P-0293	S. Bhattacharya, “Report at COP27: India Records Highest Emission Increase Among Top Global Contributors” <i>Outlook India</i> (New Delhi) Available at: https://www.outlookindia.com/international/report-at-cop27-india-records-highest-emission-increase-among-top-global-contributors-news-236452 (last accessed 18 March 2024)	11 November 2022	
P-0294	R. R. Wijngaard and others, “Future changes in hydro-climatic extremes in the Upper Indus, Ganges, and Brahmaputra River basins” (2017) (12(2)) <i>PLoS ONE</i> Available at: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0190224 (last accessed 18 March 2024)	29 December 2017	
P-0295	A. B. Shrestha and others, “A Review on the Projected Changes in Climate Over the Indus Basin” in S. I. Khan and T. E. Adams III, <i>Indus River Basin: Water Security and Sustainability</i> (Elsevier)	2019	
P-0296	M. Jackson and others, “Consequences of climate change for the cryosphere in the Hindu Kush Himalaya” in R. Chettri and others (eds.), <i>Water, ice, society, and ecosystems in the Hindu Kush Himalaya: An outlook</i> (ICIMOD 2023) [Extract, pp. 39-40]	20 June 2023	
P-0297	S. Nepal and others, “Consequences of cryospheric change for water resources and hazards in the Hindu Kush Himalaya” in R. Chettri and others (eds.), <i>Water, ice, society, and ecosystems in the Hindu Kush Himalaya: An outlook</i> (ICIMOD 2023) [Extract, pp. 73-89]		

Pakistan's Post-Hearing Submission
1 November 2024

No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
P-0298	Q. Chaudhry, “Climate Change Profile of Pakistan” (2017), Asian Development Bank [Extract, pp. 28-31]	2017	
P-0299	“Climate-Smart Agriculture in Pakistan” (2017), World Bank, Washington DC	2017	
P-0300	Dr M. Ashraf, “Water Scarcity in Pakistan: Issues and Options” (May 2018) <i>Hilal</i>	May 2018	
P-0301	Ministry of Jal Shakti and Ministry of Rural Development, Government of India, “Composite Water Management Index” (August 2019) [Extract, p. 27]	August 2019	
P-0302 (resubmitted)	United States Army Corps of Engineers, “Engineer Manual 1110-2-1701”, <i>Hydropower</i>	31 December 1985	
P-0303	United States Army Corps of Engineers, “Engineer Manual 1110-2-1603”, <i>Hydraulic Design of Spillways</i>	16 January 1990; errata 31 August 1992	
P-0304	United States Army Corps of Engineers, “Engineer Manual 1110-2-1602”, <i>Hydraulic Design of Reservoir Outlet Works</i>	15 October 1980	
P-0305	United States Army Corps of Engineers, “Engineer Manual 1110-2-2200”, <i>Gravity Dam Design</i>	30 June 1995	
P-0306	United States Army Corps of Engineers, “Engineer Manual 1110-2-2300”, <i>General Design and Construction Considerations for Earth and Rock-Fill Dam</i>	30 July 2004	
P-0307	ASCE Hydropower Committee, <i>Civil Engineering Guidelines for Planning and Designing Hydroelectric Developments</i> , Volume 2	1989	
P-0308	ASCE Committee on Hydropower Intakes, <i>Guidelines for Design of Intakes for Hydroelectric Plants</i>	1995	

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
P-0309 (resubmitted)	W. P. Creager and J. D. Justin (<i>eds.</i>), <i>Hydro-Electric Handbook</i> (2 nd Edition: John Wiley & Sons)	1950	
P-0310	K. Walker, <i>Intake Vortex Formation and Suppression at Hydropower Facilities</i> (U.S. Bureau of Reclamation; Denver, Colorado) [Extract, pp. 1-3]	September 2016	
P-0311	J. S. Gulliver et al., “Guidelines for Intake Design Without Free Surface Vortices”, <i>Waterpower</i> (III)	18-21 September 1983	
P-0312	J. L. Gordon, “Vortices at Intakes”, <i>Water Power</i> (4(137))	April 1970	
P-0313	ICOLD, “Bulletin 99 (Update)”, <i>Statistical Analysis of Dam Failures</i> (Final Draft)	December 2019	
P-0314	ICOLD, “Bulletin 58”, <i>Spillways for Dams</i>	1987	
P-0315	Y. Wang and others, “Theory and Practice of Water and Sediment Regulation in Flood Season of Yellow River in 2018”, MATEC Web of Conferences 246 Available at: https://www.iahr.org/library/infor?pid=20298 (last accessed 18 March 2024)	2018	
P-0316	S. T. P. Hsu, “Conversion of Diversion Tunnels to Bottom Outlets at Xiaolangdi Dam on Yellow River”, 2 nd International Workshop on Sediment Bypass Tunnels, Kyoto, Japan Available at: https://repository.kulib.kyoto-u.ac.jp/dspace/bitstream/2433/245488/1/2017SBT_FP4.pdf (last accessed 18 March 2024)	2017	
P-0317	ICOLD, “Bulletin 59”, <i>Dam Safety Guidelines</i>	1987	
P-0318	ICOLD, “Bulletin 167”, <i>Regulation of Dam Safety: An Overview of Current Practice World Wide</i>	2023 (Preprint)	

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
P-0319	G. L. Morris, "Classification of Management Alternatives to Combat Reservoir Sedimentation", <i>Water</i> (12(3))	19 March 2020	
P-0320	"India's Grand Plan for Kashmir Dams", <i>The Diplomat</i> Available at: https://thediplomat.com/2022/10/indias-grand-plan-for-kashmir-dams/ (last accessed 18 March 2024)	15 October 2022	
P-0321	"India hastens hydropower projects in Jammu and Kashmir", <i>The Third Pole</i> Available at: https://www.thethirdpole.net/en/energy/india-hastens-hydropower-projects-in-jammu-and-kashmir/ (last accessed 18 March 2024)	24 July 2017	
P-0322	"India fast-tracks Kashmir hydro projects that could affect Pakistan water supplies", <i>The Guardian</i> Available at: https://www.theguardian.com/world/2017/mar/16/india-fast-tracks-kashmir-hydro-projects-that-could-affect-pakistan-water-supplies (last accessed 18 March 2024)	16 March 2017	
P-0323	"Kishtwar in J-K set to become major power generation hub of north India", <i>Economic Times</i> Available at: https://energy.economictimes.indiatimes.com/news/power/kishtwar-in-j-k-set-to-become-major-power-generation-hub-of-north-india/93764939 (last accessed 18 March 2024)	25 August 2022	
P-0324	"J&K's Kishtwar will become north India's major 'power hub': Jitendra Singh", <i>Business Standard</i> Available at: https://www.business-standard.com/india-news/j-k-s-kishtwar-will-become-north-india-s-major-power-hub-says-union-minister-jitendra-singh-	3 June 2023	

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
	123060300718_1.html (last accessed 18 March 2024)		
P-0325	J. Briscoe, "War or peace on the Indus?", <i>The News International</i> Available at: https://johnbriscoe.seas.harvard.edu/files/johnbriscoe/files/108._john_briscoe_war_or_peace_on_the_indus_201004.pdf (last accessed 18 March 2024)	3 April 2010	
P-0326	J. Briscoe, "Troubled Waters: Can a Bridge be Built over the Indus?" (2010) 45(50) Economic and Political Weekly 28	11 December 2010	
P-0327	Indian Independence Act, 1947 (" 1947 Independence Act ")	18 July 1947	
P-0328	Letter No. WT(51)/(8130-A)/PCIW	17 May 2023	PCIW / ICIW
P-0329	Letter No. WT(51)/(8155-A)/PCIW	20 February 2024	PCIW / ICIW
P-0330	Record of the 104th Meeting of the Permanent Indus Commission, 27-31 March 2010	31 May 2010	
P-0331	Record of the 72nd Meeting of the Permanent Indus Commission, 19-22 May 1989 with Annexure (1989 Agreement (on the communication of information about flood flows))	22 May 1989	
P-0332	Letter No. WT (61)/(7717-A)/PCIW	3 May 2019	PCIW / ICIW
P-0333	Letter No. WT(61)/(7726-A)/PCIW	1 July 2019	PCIW / ICIW
P-0334	Letter No. WT(61)/(7730-A)/PCIW	25 July 2019	PCIW / ICIW
P-0335	Letter No. WT(61)(7785-A)/PCIW	2 June 2020	PCIW / ICIW
P-0336	Letter No. WT(61)/(7886-A)/PCIW (with enclosure)	7 June 2021	PCIW / ICIW
P-0337	Letter No. WT(61)/(7913-A)/PCIW (with enclosure)	1 July 2021	PCIW / ICIW

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P-0338	Letter No. WT(61)/(8091-A)/PCIW	1 July 2022	PCIW /ICIW
P-0339	Letter No. WT(61)/(8134-A)/PCIW	7 June 2023	PCIW /ICIW
P-0340	Letter No. WT(61)/(8139-A)/PCIW	6 July 2023	PCIW / ICIW
P-0341	Letter No. WT(61)(8141-A)/PCIW	17 July 2023	PCIW / ICIW
P-0342	Letter No. Y-20014/1/2018-IT/2317	26 July 2019	ICIW / PCIW
P-0343	Letter No. Y-20014/1/2018-IT/2319	20 August 2019	ICIW / PCIW
P-0344	Letter No. WT(61)/(7739-A)/PCIW	1 August 2019	PCIW / ICIW
P-0345	Record of the 118th Meeting of the Permanent Indus Commission, 30-31 May 2022	31 May 2022	
P-0346	Letter No. WT(61)/(7797-A)/PCIW	3 July 2020	PCIW / ICIW
P-0347	D. Gilmartin, <i>Blood and Water: The Indus River Basin in Modern History</i> (University of California Press) [Extract, pp. 144-181]	2020	
P-0348	R. B. Buckley, <i>The Irrigation Works of India and Their Financial Results, being a Brief History and Description of the Irrigation Works of India, and of the Profits and Losses Which They Have Caused the State</i> (WH Allen) [Extract, pp. 129-171]	1880	
P-0349	Draft Agreement between the Punjab and Sind regarding the Sharing of the Waters of the Indus and Five Punjab Rivers (“ 1945 Draft Agreement ”) [Extract, draft agreement without accompanying tables]	28 September 1945	
P-0350	Government of Pakistan, “The Indus Basin Irrigation Water Dispute” [IWT-00897]	8 December 1952	
P-0351	D. Haines, <i>Rivers Divided: Indus Basin Waters and the Making of India and Pakistan</i> (Hurst) [Extracts, pp. 40-59, 106-109]	2017	

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
P-0352	K. Reitzler, “Fluid Boundaries in the Divisible College: The International Law Association and the Indus Waters Dispute in the 1950s”, in M. M. Payk and K. C. Priemel (<i>eds.</i>), <i>Crafting the International Order</i> (OUP, 2021) [Extract, pp. 224-228]	2021	
P-0353	D. Haines, “(Inter)Nationalist rivers?: cooperative development in David Lilienthal’s plan for the Indus Basin, 1951”, 6 <i>Water Hist</i> 133	2014	
P-0354	Letter from Mr Black to Prime Minister Khan [IWT-00572]	6 September 1951	World Bank / Pakistan
P-0355	Letter from Mr Black to Prime Minister Nehru [IWT-00577]	6 September 1951	World Bank / India
P-0356	Letter from Mr Black to Prime Minister Nazimuddin [IWT-00409]	8 November 1951	World Bank / Pakistan
P-0357	Letter from Mr Black to Prime Minister Nehru [IWT-00406]	8 November 1951	World Bank / India
P-0358	Letter from Mr Lilienthal to Dr Khosla [IWT-01015]	13 December 1951	Lilienthal / India
P-0359	World Bank, Notes for Mr Black’s Party, “India-Pakistan Water Rights” [IWT-01044]	23 January 1952	
P-0360	Letter from Mr Black to Prime Minister Nazimuddin [IWT-00414]	13 March 1952	World Bank / Pakistan
P-0361	Letter from Mr Black to Prime Minister Mohammed Ali [Annex PK-3]	8 February 1954	World Bank / Pakistan
P-0362	Letter from Mr Iliff to Mr Mueenuddin (with enclosure) (Annex setting out some suggestions for	13 May 1957	World Bank / Pakistan

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	'Heads of Agreement' ("May 1957 Heads of Agreement")) [IWT-04094]		
P-0363	Pakistan's Memorandum [Annex PK-6]	14 June 1957	
P-0364	Letter from Mr Gulhati to Mr Iliff (with enclosure) [Annex PK-7]	25 July 1957	India / World Bank
P-0365	Letter from Mr Mueenuddin to Mr W. A. Sheikh (with enclosures)	17 August 1959	Pakistan / Pakistan
P-0366	Letter from Mr Ahmad, Embassy of Pakistan to the United States, to Mr Laylin (with enclosure) [Annex PK-9]	27 August 1959	Pakistan / Pakistan's external legal counsel
P-0367	Letter from Mr Iliff to Finance Minister Shoaib	6 February 1960	World Bank / Pakistan
P-0368	"India completely stops Ravi river water flow to Pakistan. Historical context and significance", <i>The Economic Times</i> (Mumbai) Available at: https://economictimes.indiatimes.com/news/india/india-completely-stops-ravi-river-water-flow-to-pakistan-historical-context-and-significance/articleshow/107980936.cms (last accessed 18 March 2024)	26 February 2024	
P-0369	"Flow of Ravi water to Pakistan fully stopped: Report", <i>The Times of India</i> (Mumbai) Available at: https://timesofindia.indiatimes.com/india/flow-of-ravi-water-to-pakistan-fully-stopped-report/articleshow/107970921.cms (last accessed 18 Mach 2024)	26 February 2024	
P-0370	Register of the Raymond Albert Wheeler papers, 1898-1977, Collection Number 78062, Hoover		

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
	Institution Library and Archives (annotated by counsel for Pakistan)		
P-0371	“Gen. Raymond Wheeler Dead; Led Army Corps of Engineers”, <i>The New York Times</i>	10 February 1974	
P-0372	M. R. Patterson, “Raymond Albert Wheeler – Lieutenant General, United States Army”, <i>Arlington National Cemetery</i> Available at: https://www.arlingtoncemetery.net/rawheel.htm (last accessed 18 March 2024)	18 December 2023	
P-0373	Note from Neil Bass to Files, “Indus Basin Conference” [IWT-03706-03714]	7 May 1952	
P-0374	World Bank Press Release No. 289 [IWT-03717]	1 May 1952	
P-0375	“The Indus Basin Waters Dispute, A Report by the Bank Representatives and Associates” [Wheeler, Box 52, Folder 1, pp. 107-161]	8 February 1954	
P-0376	“The Development and Use of the Indus River and Tributaries in India and Pakistan, A Report by the Bank Representative and Associates” [IWT-00345 up to and including IWT-00416]	26 February 1954	
P-0377	Letter from Dr Khosla to Gen. R. A. Wheeler [IWT-01878]	25 March 1954	Pakistan / World Bank
P-0378	Letter from Mr Iliff to Mr Black (with enclosures) [IWT-04949, IWT-04950 and IWT-04951]	24 August 1959	World Bank / World Bank
P-0379	Indus Waters Treaty 1960, Annexure D (Draft dated 6 th June, 1960), Amendments proposed by India [IWT-00048]		

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P-0380	Indus Waters Treaty 1960, Annexure D (Draft dated 6 th June, 1960), Amendments proposed by Pakistan [IWT-00041]		
P-0381	General Wheeler, Memorandum to Files [IWT-00487]	3 February 1954	
P-0382	Letter No. F. 24/54/60 from Prime Minister Mohammed Ali to Mr Black [IWT-01924 to 01926]	14 May 1954	Pakistan / World Bank
P-0383	Letter from Foreign Minister Zafrulla Khan to Mr Black [IWT-01940]	28 July 1954	Pakistan / World Bank
P-0384	Letter from Mr Garner to Prime Minister Nehru [IWT-01939 and IWT-01940]	28 July 1954	World Bank / India
P-0385	Letter from Mr Black to Prime Minister Nehru (with enclosures) [IWT-01878]	13 August 1954	World Bank / India
P-0386	Letter from Prime Minister Nehru to Mr Black [IWT-01878]	19 August 1954	India / World Bank
P-0387	Letter from Foreign Minister of Pakistan to Mr Black [IWT-01878]	24 August 1954	Pakistan / World Bank
P-0388	Letter from Malik Feroz Khan Noon to the Minister of Interior of Pakistan [IWT-04599]	20 October 1954	Pakistan / Pakistan
P-0389	World Bank, Record of a Meeting at the World Bank, Washington, D.C. [IWT-03836]	13 March 1956	
P-0390	Memorandum from Mr Iliff to Files	21 May 1956	

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No.	Title	Date²⁹⁹	Author / Recipient (where applicable)³⁰⁰
	[IWT-03922]		
P-0391	World Bank, Proceedings at Meeting of Executive Directors on June 6, 1956, "Indus Waters Question" [IWT-03818]	6 June 1956	
P-0392	Letters from Mr Iliff to Mr Gulhati and Mr Mueenuddin [IWT-04060 and IWT-04061]	30 July 1956	World Bank / India and Pakistan
P-0393	Response from Mr Mueenuddin to Mr Iliff [IWT-04066]	10 September 1956	Pakistan / World Bank
P-0394	Response from Mr Gulhati to Mr Iliff [IWT-04070]	15 September 1956	India / World Bank
P-0395	World Bank, Minutes of the Meeting [IWT-01125]	19 September 1956	
P-0396	World Bank, Minutes of the Meeting (Pakistan Delegation) [IWT-01135]	22 October 1956	
P-0397	World Bank, Minutes of the Meeting (Indian representatives) [IWT-01128]	28 September 1956	
P-0398	World Bank, Minutes of Meetings (Indian Delegation) [IWT-01132]	10, 12 and 16 October 1956	
P-0399	World Bank, Minutes of the Meeting (Bank only) [IWT-01133]	11 October 1956	
P-0400	Tipton and Kalmbach, Inc., "Report on Irrigation Water Requirements for West Pakistan" [IWT-02524]	30 April 1957	

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
P-0401	Letter from Mr Black to Prime Minister Suhrawardy [IWT-04072]	11 April 1957	World Bank / Pakistan
P-0402	Data on annual inflow volumes into Pakistan of the Indus, Jhelum, Chenab, Ravi, and Sutlej Rivers		
P-0403	Letter from Prime Minister Suhrawardy to Mr Black [IWT-04080]	20 April 1957	Pakistan / World Bank
P-0404	Letter from Prime Minister of India to Mr Black [IWT-04077-IWT-04078]	24 April 1957	India / World Bank
P-0405	World Bank Press Release [IWT-04085]	6 May 1957	
P-0406	Letter from Mr Mueenuddin to Mr Iliff [IWT-04110]	20 May 1957	Pakistan / World Bank
P-0407	Letter from Mr Iliff to Mr Gulhati (enclosure omitted) [IWT-04092]	13 May 1957	World Bank / India
P-0408	Telegram from Mr Black to President Ayub [IWT-04943]	30 August 1959	World Bank / Pakistan
P-0409	Central Board of Irrigation, <i>Hydro-Electric development in India</i> (Leaflet No. 5, Second Edition) [IWT-02799]	September 1950	
P-0410	Preliminary notes and queries regarding the Annex to Mr Iliff's letter of 13 May 1957 (Pak Comments) [IWT-04102]		
P-0411	Mr Iliff, "Memorandum of Discussion on May 27 with Mr Gulhati and Dr Berber"	27 May 1957	

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
	[IWT-04105]		
P-0412	Summary Report of Mr Iliff's Talk with the Representatives of the Government of Pakistan – Lahore [IWT-04122]	11-14 June 1957	
P-0413	Letter from Mr Iliff to Mr Mueenuddin [IWT-04150 and IWT-04151]	24 June 1957	World Bank / Pakistan
P-0414	Letter from Mr Iliff to Mr Gulhati [IWT-04152 and IWT-04153]	24 June 1957	World Bank / India
P-0415	Letter from Mr Black to Prime Minister Nehru [IWT-04073]	11 April 1957	World Bank / India
P-0416	Letter from Mr Mueenuddin to Mr Iliff [IWT-04158]	13 July 1957	Pakistan / World Bank
P-0417	Letter from Mr Mueenuddin to Mr Iliff (with enclosure) [IWT-02672 and IWT-02675]	25 July 1957	Pakistan / World Bank
P-0418	<i>Shorter Oxford English Dictionary</i> , (5 th Edition: OUP 2003), Volume 2 [Extracts, pp. 2005, 2279, 2674, 2930 and 3197]	2003	
P-0419	Letter from Mr Mueenuddin to Mr Iliff [IWT-04252 and IWT-04253]	16 August 1957	Pakistan / World Bank
P-0420	Letter from Mr Mueenuddin to Mr Iliff (with enclosure) [IWT-04280-IWT-04285 and IWT-04286]	10 September 1957	Pakistan / World Bank
P-0421	Letter from Mr M. S. Shaikh to Mr Sommers [IWT-04407]	31 March 1958	Pakistan / World Bank
P-0422	Letter from Mr Sommers to Mr Iliff [IWT-04374]	31 March 1958	World Bank / World Bank

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No.	Title	Date²⁹⁹	Author / Recipient (where applicable)³⁰⁰
P-0423	Letter from H.E. M. Ali to Mr Sommers [IWT-04363]	3 April 1958	Pakistan / World Bank
P-0424	Letter from Mr Gulhati to Mr Bengston, enclosing “Extract from the Minister’s speech” (the text of a speech given in the Lok Sabha by the Honorable Mr Patil, then Minister for Irrigation and Power, 26 March 1958) [IWT-04352 and IWT-04353]	7 April 1958	India / World Bank
P-0425	Letter from Mr Black to Prime Minister Nehru [IWT-04336]	14 May 1958	World Bank / India
P-0426	Letter from Prime Minister Nehru to Mr Black (with enclosure) [IWT-04311]	5 June 1958	India / World Bank
P-0427	Letter from H.E. M. Ali to Mr Black [IWT-04327]	4 June 1958	Pakistan / World Bank
P-0428	Embassy of Pakistan (Washington, D.C.), Press Release No. 31 “India’s Withholding of Pakistan’s Share of Irrigation Water Breach of International Agreement” [IWT-03466]	7 June 1958	
P-0429	Inward Telegram to Commonwealth Relations Office from UK High Commission in Pakistan [IWT-04425]	10 June 1958	UK High Commission in Pakistan / Commonwealth Relations Office
P-0430	Embassy of Pakistan (Washington, D.C.), Press Release No. 34, “This Undeclared War” (<i>DAWN</i> of Karachi, 9 June 1958) [IWT-03450]	16 June 1958	
P-0431	Letter from Mr Moynihan, Lahore to Mr Fowler, Karachi titled “Canal Waters” (with enclosure) [IWT-04190]	12 June 1958	Mr Moynihan / Mr Fowler

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No.	Title	Date²⁹⁹	Author / Recipient (where applicable)³⁰⁰
P-0432	Daily Report – Foreign Radio Broadcasts: Pakistan and Afghanistan, “Canal Closure Act of Aggression—Khuro” [IWT-03445]	17 June 1958	
P-0433	Daily Report, Foreign Radio Broadcasts: India, Ceylon, and Nepal, “Statement denies overuse of water” [IWT-03464]	13 June 1958	
P-0434	Letter from Mr Bengston to Mr Mueenuddin (with enclosure) [IWT-03448]	17 June 1958	World Bank / Pakistan
P-0435	U.P.I, Karachi, Pakistan [IWT-04426]	18 June 1958	
P-0436	Letter from Mr Gulhati to Mr Bengston [IWT-04492]	24 June 1958	India / World Bank
P-0437	World Bank, “Early Kharif 1958 Complaint, Summary and Conclusions” [IWT-03417 and IWT-03419]	(undated) 1958	
P-0438	Note to Files from Mr Iliff [IWT-04388]	10 March 1958	
P-0439	World Bank Memorandum, “Indus Waters” [IWT-04769]	26 March 1959	
P-0440	Office Memorandum, Mr Iliff to Files, “Indus Basin” [IWT-04763]	2 May 1959	
P-0441	Record of meeting between representatives of the Government of India and of the World Bank [IWT-04751]	13 May 1959	
P-0442	Embassy of Pakistan (Washington, D.C.), Press Release No. 16, “Pakistan Government Conveys	25 May 1959	

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No.	Title	Date²⁹⁹	Author / Recipient (where applicable)³⁰⁰
	Willingness to go forward on the basis of World Bank Plan” [IWT-04729]		
P-0443	World Bank, “Statement made by Chairman at Meeting of Executive Directors on May 26, 1959 regarding the Indus Waters Dispute” [IWT-04561]	26 May 1959	
P-0444	Government of Pakistan, Press Information Department, “Press Statement by the World Bank”, Karachi [IWT-04747]	18 May 1959	
P-0445	World Bank Memorandum, “Indus Waters” [IWT-04804 to IWT-04814]	13 July 1959	
P-0446	Indus Waters Treaty, Proposed Heads of Agreement (Draft) (Secret) [IWT-00327]	26 April 1959	
P-0447	Indus Waters Treaty, Proposed Heads of Agreement (Draft) (Secret) [IWT-04764]	1 May 1959	
P-0448	Secret Telegram from Mr Iliff to Mr Gulhati (enclosed with Letter from Mr Iliff to the Ambassador of India to the US) [IWT-04724, IWT-04722 and IWT-04725]	27 May 1959	World Bank / India
P-0449	Letter from President Ayub to Mr Black and Mr Iliff [IWT-04568]	18 May 1959	Pakistan / World Bank
P-0450	Letter from Mr Iliff to Mr Mueenuddin (with enclosure) [IWT-04837 and IWT-04839]	26 June 1959	World Bank / Pakistan
P-0451	World Bank Office Memorandum from Mr Iliff to General Wheeler (without enclosure)	20 July 1959	World Bank / World Bank

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No.	Title	Date²⁹⁹	Author / Recipient (where applicable)³⁰⁰
	[IWT-04887]		
P-0452	Letter from Mr Iliff to Mr Gulhati [IWT-04681]	16 June 1959	World Bank / India
P-0453	Letter from Mr J. B. Drisko (TAMS) to Mr Iliff [IWT-04789]	13 July 1959	Mr J. B. Drisko (TAMS) / World Bank
P-0454	World Bank, Minutes of Meeting [IWT-01232]	5 August 1959	
P-0455	World Bank, Minutes of Meeting [IWT-01225]	10 August 1959	
P-0456	World Bank, Minutes of Meeting (Indian representatives) [IWT-01222]	13 August 1959	
P-0457	World Bank, Minutes of Meeting (Pakistan representatives) [IWT-01218]	14 August 1959	
P-0458	World Bank, Minutes of Meeting (Pakistan representatives) [IWT-01217]	15 August 1959	
P-0459	World Bank, Minutes of Meeting (Indian representatives) [IWT-01215]	20 August 1959	
P-0460	World Bank, Minutes of Meeting (Pakistan representatives) [IWT-01214]	20 August 1959	
P-0461	World Bank, Minutes of Meeting (Indian representatives) [IWT-01207]	21 August 1959	

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
P-0462	World Bank, Minutes of Meeting (Pakistan representatives) [IWT-01209]	21 August 1959	
P-0463	World Bank, Minutes of Meeting (Indian representatives) <i>[Note: the Minutes record a meeting on Saturday 21 August, but the Saturday was 22 August]</i> [IWT-01210]	22 August 1959	
P-0464	World Bank, Minutes of Meeting (Pakistan representatives) [IWT-01206]	23 August 1959	
P-0465	World Bank, Minutes of Meeting (Indian representatives) [IWT-01205]	23 August 1959	
P-0466	World Bank, Minutes of Meeting (Indian representatives) [IWT-01204]	24 August 1959	
P-0467	World Bank, Minutes of Meeting (Indian representatives) [IWT-01203]	25 August 1959	
P-0468	Message from President Ayub to Mr Black [IWT-04952]	21 August 1959	Pakistan / World Bank
P-0469	World Bank, Minutes of Meeting [IWT-01201]	25 August 1959	
P-0470	World Bank, Minutes of Meeting [IWT-01200]	27 August 1959	
P-0471	World Bank, Minutes of Meeting, 10am [IWT-01199]	2 September 1959	

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
P-0472	World Bank, Minutes of Meeting, 3pm [IWT-01198]	2 September 1959	
P-0473	World Bank, Minutes of Meeting (Pakistan representatives) [IWT-01197]	3 September 1959	
P-0474	World Bank, Minutes of Meeting [IWT-01195]	8 September 1959	
P-0475	Letter from Mr Mueenuddin to Mr W. A. Sheikh	10 September 1959	Pakistan / Pakistan
P-0476	Annexure D, Generation of Hydro-Electric Power by India on the Western Rivers, draft of 23 April 1960 (“ April 1960 draft of Annexure D ”) [IWT-00171, IWT-00176, IWT-00177 and IWT-00179]	23 April 1960	
P-0477 (resubmitted)	J. S. Gulliver and R. E. A. Arndt (<i>eds.</i>), <i>Hydropower Engineering Handbook</i> (McGraw-Hill Book Co 1991)	1991	
P-0478	Indus Waters Treaty 1960, Annexure D: Generation of Hydro-Electric Power by India on the Western Rivers (Article III(2)(d)), draft of 6 th June 1960 (“ June 1960 draft of Annexure D ”) [IWT-00074]	6 June 1960	
P-0479	Cable from Mr Iliff to Sir Kenelm Guinness (for Mr Mueenuddin) [IWT-04912]	23 September 1959	World Bank / Pakistan
P-0480	Indus Basin Water Treaty, draft dated 10th November 1959 (with additions and changes suggested by the Pakistan Delegation) (secret)	10 November 1959	
P-0481	Letter from Mr Iliff to Mr Mueenuddin, enclosing Memorandum by Bank Representative dated 11 December 1959	14 December 1959	World Bank / Pakistan

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
P-0482	Letter from Finance Minister Shoaib to Mr Iliff	11 January 1960	World Bank / Pakistan
P-0483	Memorandum from Mr Iliff to Files (with enclosure) [IWT-05099 and IWT-05017]	13 April 1960	
P-0484	Cable from Ambassador Aziz Ahmed to Finance Minister Shoaib (with enclosure [incomplete])	14 April 1960	Pakistan / Pakistan
P-0485	World Bank records, Message received from Pakistan Ambassador at 12:15 pm [IWT-05103]	15 April 1960	Pakistan / World Bank
P-0486	Office Memorandum from Mr Iliff to Files [IWT-05104]	16 April 1960	
P-0487	Office Memorandum from Mr Iliff to Files [IWT-05108]	19 April 1960	
P-0488	Transcript, Hearing on the Merits (<i>Kishenganga</i> arbitration), Day 7	28 August 2012	
P-0489	Annexure E, Construction of Storage Works by India on the Western Rivers, draft of 23 April 1960 [IWT-00180 and IWT-00185]	23 April 1960	
P-0490	Bureau of Reclamation, <i>Design Standards No 14: Appurtenant Structures for Dams (Spillway and Outlet Works) Design Standards</i> (US Department of Interior)	October 2011	
P-0491	Indus Waters Treaty 1960, Annexure E: Construction of Storage Works by India on the Western Rivers (Article III(4)) (Draft dated 6 th June, 1960) [IWT-00088]	6 June 1960	

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
P-0492	G. L. Morris and J. Fan, <i>Reservoir Sedimentation Handbook</i> (McGraw Hill 1998), [Extract, pp. 2.0-2.28]		
P-0493	Indus Waters Treaty 1960, Annexure E (Draft dated 6 th June, 1960), Amendments proposed by India [IWT-00052]		
P-0494	World Bank, “Report and Recommendations of the President to the Executive Directors on a Proposed Loan to Pakistan for the Indus Basin Project” [Wheeler archives – Box 35, Folder 2]	18 April 1960	
P-0495	Bank Note [IWT-05113]	27 June 1960	
P-0496	Message for Prime Minister Nehru from Mr Black [IWT-05131]	8 July 1960	World Bank / India
P-0497	World Bank, Minutes of Meeting [IWT-01241]	23 November 1959	
P-0498	World Bank, Minutes of Meeting (Indian representatives) [IWT-01243]	8 December 1959	
P-0499	World Bank, Minutes of Meeting (Indian representatives) [IWT-01245]	22 December 1959	
P-0500	World Bank, Minutes of Meeting (Indian representatives) [IWT-01246]	29 December 1959	
P-0501	Office Memorandum from Mr Iliff to Files, “Indus Waters” enclosing “Notes from which Black spoke to Gulhati”, 30 June 1960	5 July 1960	

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No.	Title	Date²⁹⁹	Author / Recipient (where applicable)³⁰⁰
	[IWT-05122]		
P-0502	Office Memorandum from Mr Iliff to Files, "Indus" [IWT-05124]	5 July 1960	
P-0503	Letter from Mr Iliff to H. E. Currim Chagla, Ambassador of India to the United States, (enclosing message for Prime Minister Nehru from Mr Black) [IWT-05130 and IWT-05131]	7 July 1960	World Bank / India
P-0504	World Bank Press Release No. 626, "Indus Waters" [IWT-05074]	1 March 1959	
P-0505	Office Memorandum from Mr Iliff to Files, "Indus Waters" [IWT-05127]	6 July 1960	
P-0506	Note for President Ayub from Mr Black [IWT-05132]	7 July 1960	World Bank / Pakistan
P-0507	Embassy of Pakistan, Washington D.C., Message received from President of Pakistan for Mr Black [IWT-05011]	11 July 1960	Pakistan / World Bank
P-0508	Office Memorandum from Mr Iliff to Files, "Indus Negotiations" [IWT-05144]	25 July 1960	
P-0509	Message from Mr Iliff to Mr Black [IWT-05205]	11 August 1960	World Bank / World Bank
P-0510	Letter from Mr Black to Prime Minister Nehru [IWT-05147]	5 August 1960	World Bank / India
P-0511	Mr Iliff, Note of Conversation with the [Indian] Prime Minister [IWT-05154]	11 August 1960	

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No.	Title	Date²⁹⁹	Author / Recipient (where applicable)³⁰⁰
P-0512	Sir Kenelm Guinness, Note of Meeting on Transitional Arrangements [IWT-05158]	15 August 1960	
P-0513	Message for Mr Black from Mr Iliff [IWT-05207]	15 August 1960	World Bank / World Bank
P-0514	Indus Waters Treaty 1960, Second List of Amendments Proposed by India [IWT-00006]	25 August 1960	
P-0515	Letter from Mr Iliff to Sir Olaf Caroe [IWT-03026]	3 March 1961	Mr Iliff / Sir Olaf Caroe
P-0516	Redline of April 1960 draft as against December 1959 draft <i>(Created by Counsel for Pakistan for the purposes of this Memorial)</i>		
P-0517	Redline of June 1960 draft as against April 1960 draft <i>(Created by Counsel for Pakistan for the purposes of this Memorial)</i>		
P-0518	Redline of Indus Waters Treaty [main body] as against June 1960 draft <i>(Created by Counsel for Pakistan for the purposes of this Memorial)</i>		
P-0519	Redline of June 1960 draft of Annexure D as against April 1960 draft of Annexure D <i>(Created by Counsel for Pakistan for the purposes of this Memorial)</i>		
P-0520	Redline of Annexure D of the Indus Waters Treaty as against June 1960 draft of Annexure D <i>(Created by Counsel for Pakistan for the purposes of this Memorial)</i>		

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
P-0521	Redline of Indus Waters Treaty [main body] as against December 1959 draft <i>(Created by Counsel for Pakistan for the purposes of this Memorial)</i>		
P-0522	Redline of Annexure D of the Indus Waters Treaty as against April 1960 draft of Annexure D <i>(Created by Counsel for Pakistan for the purposes of this Memorial)</i>		
P-0523	D. Felix and others, “Hydro-abrasive erosion of hydraulic turbines caused by sediment - a century of research and development” (2016) (49(12)) <i>IOP Conference Series: Earth and Environmental Science</i>	2016	
P-0524	G. L. Morris, “Sediment Management Techniques”, in G. W. Annandale and others (eds.), <i>Extending the Life of Reservoirs: Sustainable Sediment Management for Dams and Run-of-River Hydropower</i> (World Bank 2016)	2016	
P-0525	G. L. Morris and others, “Reservoir Sedimentation”, in M. H. García (ed.), <i>Sedimentation Engineering: Processes, Measurements, Modeling, and Practice</i> (ASCE 2007)	2007	
P-0526	“Technical”, <i>Merriam-Webster</i> Available at: https://www.merriam-webster.com/dictionary/technical (last accessed 18 March 2024)		
P-0527	<i>Shorter Oxford English Dictionary</i> (5 th Edition: Oxford University Press 2002), Volume 1 [Extracts, pp. 653, 789]	2002	
P-0528	W. E. Hager and others, <i>Hydraulic Engineering of Dams</i> (CRC Press 2021) [Extracts, pp. 516-521]	2021	
P-0529	ICOLD, “Bulletin 178”, <i>Operation of Hydraulic Structures of Dams</i>	2021	

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
P-0530	ICOLD, “Bulletin 115”, <i>Dealing with Reservoir Sedimentation</i>	1999	
P-0531	<i>Hydroelectric Power</i> , July 2005 (U.S. Bureau of Reclamation: Denver, Colorado)	July 2005	
P-0532	Federal Energy Regulatory Commission, <i>Engineering Guidelines on Selecting and Accommodating Inflow Design Floods for Dams</i> Available at: https://www.ferc.gov/industries-data/hydropower/dam-safety-and-inspections/eng-guidelines (Chapter 2) (last accessed 18 March 2024)	August 2015	
P-0533	United States Army Corps of Engineers, “Engineer Regulation 1110-8-2(FR)”, <i>Inflow Design Floods for Dams and Reservoirs</i>	1 March 1991	
P-0534	Canadian Dam Association, <i>Dam Safety Guidelines</i> 2007 (Revised Edition 2013)	2013	
P-0535	Assistant Commissioner - Engineering and Research, “ACER Technical Memorandum No. 2” – Freeboard Criteria and Guidelines for Computing Freeboard Allowances for Storage Dams” (Revised Edition), U.S. Department of the Interior	1992	
P-0536	ICOLD, “Bulletin 82”, <i>Selection of Design Flood: Current Methods</i>	1992	
P-0537 (resubmitted)	United States Army Corps of Engineers, “Engineer Manual 1110-2-1101”, <i>Coastal Engineering Manual – Part II</i>	30 April 2002	
P-0538	Design Standard 13, <i>Embankment Dams – Chapter 6: Freeboard</i> (US Department of the Interior 2012)	2012	
P-0539	P. C. F. Erbsti, <i>Design of Hydraulic Gates</i> (2 nd Edition: CRC Press) [Extract, pp. 25-29]	29 May 2014	

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
P-0540	Record of the 105th Meeting of the Permanent Indus Commission, 29 May-2 June 2010	2 June 2010	
P-0541	Cable No. 82 from Mr W. A. Sheikh (Foreign Rawalpindi) to Mr Mueenuddin (Pakistan Representative Washington) [Annex PK-15]	26 January 1960	Pakistan / Pakistan
P-0542	C. J. Werleman, "The human cost of India's Baglihar dam in disputed Kashmir", <i>TRT World</i> Available at: https://www.trtworld.com/opinion/the-human-cost-of-india-s-baglihar-dam-in-disputed-kashmir-38796 (last accessed 18 March 2024)	11 August 2020	
P-0543	A. Ayoob and M. Naik, "Multiple hydropower projects on the Chenab river ring alarm bells", <i>Mongabay</i> Available at: https://india.mongabay.com/2022/07/multiple-hydropower-projects-on-the-chenab-river-ring-alarm-bells/ (last accessed 18 March 2024)	7 July 2022	
P-0544	Record of the 90th Meeting of the Permanent Indus Commission, 15-19 January 2004	19 January 2004	
P-0545	Record of the 113th Meeting of the Permanent Indus Commission, 20-21 March 2017	29 March 2018	
P-0546 (resubmitted)	Letter No. 3/6/2007-IT/2371 (with enclosure)	1 June 2021	ICIW / PCIW
Factual exhibits submitted by Pakistan on 1 July 2024 pursuant to paragraphs 1.2 and 1.3 of PO11			
P-0547 (resubmitted)	Records of the Neutral Expert Proceedings concerning the <i>Baglihar Hydroelectric Plant</i> (composite archive, including index of BR-#### exhibits)		

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
P-0548	Records of the <i>Indus Waters Kishenganga Arbitration</i> (composite archive, including index of KR-#### exhibits)		
Factual exhibits submitted by Pakistan on 7 July 2024 prior to the Hearing on the First Phase on the Merits			
P-0549	Neutral Expert (<i>Indus Waters</i>) Supplemental Rules of Procedure	1 June 2023	
P-0550	Neutral Expert (<i>Indus Waters</i>) Revised Work Programme	4 June 2024	
P-0551	M. Hussain, "Why Is World Bank Neutral Expert Flying to Jammu and Kashmir For 11 Days?", <i>Kashmir Life</i> Available at: https://kashmirlife.net/why-is-world bankneutral-expert-flying-to-jammu-andkashmir-for-11-days-357782/	15 June 2024	
P-0552	"IWT Delegation with Indo-Pak Members Reaches Kishtwar", <i>Kashmir Reader</i> Available at: https://kashmirreader.com/2024/06/25/iwt-delegation-with-indo-pak-members-reaches-kishtwar/	25 June 2024	
P-0553	Video, "Pakistani Delegation Arrives in Jammu for Indus Water Treaty Talks", <i>Republic Word</i> Available at: https://www.youtube.com/watch?v=iCF2uwOIQrQ&ab_channel=RepublicWorld	24 June 2024	
P-0554	Video, "Pak Delegation Reaches Ratle Hydroelectric Project Site in J&K", <i>ANI News India</i> Available at: https://www.youtube.com/shorts/PBjaodztWhQ	25 June 2024	

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
P-0555	Video, "Indus Water Treaty: Pakistan Delegation Visits India First Time Post Abrogation of Article 370", <i>Republic World</i> Available at: https://www.youtube.com/watch?v=lesmBp2demY	24 June 2024	
P-0556	Video, "India vs Pakistan news पाक का \$ितिनिधमंडल 850 रैटल पावर \$ोजे4 म5 Jammu Kashmir", <i>Hindi News</i> Available at: https://www.youtube.com/watch?v=KGjtxvFyBps	24 June 2024	
P-0557	"'Water Terrorism': Pak media on India completely stopping flow of Ravi river into Pakistan", <i>Economic Times</i> Available at: https://economictimes.indiatimes.com/news/india/water-terrorism-pak-media-on-india-completely-stopping-flow-of-ravi-river-into-pakistan/articleshow/108030562.cms?from=mdr	29 June 2024	
P-0558	"Flow of Ravi water to Pakistan fully stopped: Report", <i>Times of India</i> Available at: https://timesofindia.indiatimes.com/india/flow-of-ravi-water-to-pakistan-fully-stoppedreport/articleshow/107970921.cms	26 February 2024	
P-0559	"India Stops Ravi Water Flow to Pakistan With A Dam In Punjab: Explained", <i>NDTV</i> Available at: https://www.ndtv.com/india-news/indiastops-ravi-water-flow-to-pakistan-with-adam-in-punjab-explained-5126724	26 February 2024	
P-0560	"Water terrorism intensifies as India stops Ravi River water to Pakistan", <i>Pakistan Today</i>	25 February 2024	

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
	Available at: https://www.pakistantoday.com.pk/2024/02/25/india-fully-stops-water-flow-to-pakistan-with-shahpur-kandi-barrage-on-ravi-river/		
P-0561	“Explained: Why India has stopped flow of Ravi water to Pakistan”, <i>First Post</i> Available at: https://www.firstpost.com/explainers/explained-why-india-has-stopped-flow-of-ravi-water-to-pakistan-13742068.html	26 February 2024	
P-0562	R. R. Bhate, “Recent Challenges in Design of Spillway – an Indian Scenario”	26 October 2022	
P-0563	“Press Release – Indus Waters Treaty 1960: Present Status of Development in India”, Ministry of Water Resources, River Development and Ganga Rejuvenation, Government of India Available at: https://pib.gov.in/PressReleasePage.aspx?PRID=1565906	22 February 2019	
P-0564	“Will stop flow of India’s share of river water to Pakistan: Nitin Gadkari”, <i>Times of India</i> Available at: https://timesofindia.indiatimes.com/india/india-to-stop-sharing-river-waters-withpakistan-nitingadkari/articleshow/68098430.cms	21 February 2019	
P-0565	Identical letters dated 19 February 2019 from the Permanent Representative of Pakistan to the United Nations addressed to the Secretary-General and the President of the Security Council Letter — A/73/752 - S/2019/152	19 February 2019	
P-0566	Letter dated 22 February 2019 from the Permanent Representative of Pakistan to the United Nations addressed to the President of the Security Council — S/2019/172	22 February 2019	

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
P-0567	Letter No. WT(61)/(7602-A)/PCIW from the PCIW to the ICIW	31 May 2017	PCIW / ICIW
P-0568	Letter No. WT(48)/(8166-A)/PCIW from the PCIW to the ICIW, attaching the draft Annual Report	29 May 2024	PCIW / ICIW
P-0569	Letter No. Y-Y-17011/1/2018-IT/2445 from the ICIW to the PCIW	31 May 2024	ICIW / PCIW
P-0570	“India, Pakistan may hold Indus talks this month”, <i>Times of India</i> Available at: https://timesofindia.indiatimes.com/india/india-pak-may-hold-indus-talks-thismonth/articleshow/110854226.cms	10 June 2024	
P-0571	Letter No. WT(32)/(7847-A)/PCIW (with enclosure) from the PCIW to the ICIW	11 March 2021	PCIW / ICIW
P-0572	Letter No. WT(32-A)/(7899-A)/PCIW from the PCIW to the ICIW	11 June 2021	PCIW / ICIW
P-0573	Letter No. WT(32-A)/(7948-A)/PCIW (with enclosure) from the PCIW to the ICIW	16 August 2021	PCIW / ICIW
P-0574	Letter No. WT(32-A)/(8061-A)/PCIW (with enclosure) from the PCIW to the ICIW	17 March 2022	PCIW / ICIW
P-0575	Video, “Salal Power Station appeals people to stay away from Chenab River”, <i>JKupdate</i> Available at: https://www.youtube.com/watch?v=96SoNpLUK2w&ab_channel=Jkupdate	28 May 2024	
P-0576	Letter No. WT(86)/(8165-A)/PCIW from the PCIW to the ICIW	28 May 2024	PCIW / ICIW
P-0577	“Indus Basin”, Ministry of Water Resources, Government of India (extract) Available at:	March 2014	

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
	https://indiawris.gov.in/downloads/Indus%20Basin.pdf		
P-0578	A. N. Mohammed and M. Mishra, "Indus Water Treaty & hydropower development on Ravi River", <i>Northeast Now</i> Available at: https://nenow.in/article/indus-water-treaty-hydropower-development-ravi-river.html	24 October 2022	
P-0579	Review of Performance of Hydro Power Stations 2022-23", Central Electrical Authority, Ministry of Power, Government of India (extract) Available at: https://cea.nic.in/hydro-reviewreport/?lang=en	August 2023	
P-0580	S. Dutta, "Teesta Dam Breach: Disregard for Green Norms, Irregularities in Focus", <i>IndiaSpend</i> Available at: https://www.indiaspend.com/investigations/teesta-dam-breach-disregard-for-green-norms-irregularities-in-focus-882600	22 November 2023	
P-0581	C. Bhushan, "GLOF's Sikkim shocker: Much before the flooding, local and green groups had flagged risks", <i>Times of India</i> Available at: https://timesofindia.indiatimes.com/blogs/toi-edit-page/glofs-sikkim-shocker-much-before-the-flooding-local-green-groups-had-flagged-risks-but-mitigation-strategies-werent-a-priority-in-project-planning-goi-must-get-the-message-from/	13 October 2023	
P-0582	Photo of the Aldeadavila Dam, Spain		
P-0583	Indian straight type intake: Bureau of Indian Standards. 1995. Hydraulic Intakes - Criteria for Hydraulic Design (First Revision), IS 9781: 1995 (reaffirmed 2000)		

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
P-0584	Table on total controllable volume for Baglihar, KHEP and RHEP (produced by Dr Umar Farooq, NESPAK)		
P-0585	Letter No. 3/1/84-I.T/597 from PCIW to ICIW	20 May 1992	PCIW / ICIW
P-0586	Letter No. WT(127)/(5283-A)/PCIW from PCIW to ICIW	12 August 1992	PCIW / ICIW
P-0587	Letter No. WT(172)/(6333-A)/PCIW from PCIW to ICIW	13 July 2002	PCIW / ICIW
P-0588	H. Ritchie, "How have the world's energy sources changed over the last two centuries", <i>Our World in Data</i> Available at: https://ourworldindata.org/global-energy-200-years	1 December 2021	
P-0589	Pinto et al. (2022), 'World electricity generation since 1900', <i>Boston University Institute for Global Sustainability</i>	31 July 2023	
P-0590	"Growth of Electricity Sector in India from 1947 – 2020", Central Electrical Authority, Government of India	October 2020	
P-0591	"Overview of renewable power generation", Central Electrical Authority, Government of India		
P-0592	"Status of Pumped Storage Development in India", Central Electrical Authority, Government of India	31 May 2023	
P-0593	"Power Sector at a Glance, All India", Central Electrical Authority, Government of India		
P-0594	"Location wise regional summary of all of India installed capacity", National Power Portal	31 October 2023	
P-0595	"Published Reports", National Power Portal	31 October 2023	

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No.	Title	Date²⁹⁹	Author / Recipient (where applicable)³⁰⁰
P-0596	“Location wise Northern region state-wise installed capacity”, National Power Portal	31 October 2023	
P-0597	“Location wise Eastern region state-wise installed capacity”, National Power Portal	31 October 2023	
P-0598	“Location wise Western region state-wise installed capacity”, National Power Portal	31 October 2023	
P-0599	“Location wise Southern region state-wise installed capacity”, National Power Portal	31 October 2023	
P-0600	“Location wise North Eastern region state-wise installed capacity”, National Power Portal	31 October 2023	
P-0601	International Atomic Energy Agency, “Expansion Planning for Electrical Generating Systems, A Guidebook”, Technical Reports Series No 241, 1984, Figure 2.1	1984	
P-0602	World Bank, Volume 1: Guidelines for Economic Analysis of Power Sector Projects, Version 1: Renewable Energy Projects	September 2015	
P-0603	“PJM’s Evolving Resource Mix and System Reliability”, PJM Interconnection	30 March 2017	
P-0604	ASME, “The Guide to Hydropower Mechanical Design”, Prepared by the ASME Hydro Power Technical Committee, HCI Publications, 1996, (Extract, Figure 3-19 and Figure 4-1)		
P-0605	Power System Operation Corporation Ltd, “Electricity Demand Pattern Analysis”, POSOCO 2016. (Extract, Figures 1, 7 and Section 16.3.3)		
P-0606	Global Solar Atlas Available at: https://globalsolaratlas.info/map?c=11.609193,8.4375,3		
P-0607	California Independent System Operator, Grid Status.IO		

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P-0608	Photo of NJHEP freeboard		
P-0609	Photo of NJHEP spillway		
P-0610	Photo of ungated spillway		
P-0611	International Renewable Energy Agency, “Renewable Power Generation Costs in 2022”, IRENA 2023		
Factual exhibits submitted by Pakistan on 9 July 2024 in the course of the Hearing on the First Phase on the Merits			
P-0612	United States Army Corps of Engineers, “Regulatory Guidance Letter”, <i>Guidance on the Discharge of Sediments From or Through a Dam and the Breaching of Dams, for Purposes of Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899</i>	19 August 2005	
P-0613	Neutral Expert (<i>Indus Waters</i>) Protocol Concerning the First Site Visit	14 May 2024	
P-0614	Permanent Court of Arbitration Press Release “Neutral Expert Conducts First Site Visit of Hydroelectric Plants on the Kishenganga/Neelum and Chenab Rivers”	8 July 2024	
P-0615	Letter No. 4(7)/2015-IT/2407 (enclosing Gauge and Discharge Data)	24 June 2022	ICIW / PCIW
P-0616	Agreement on the Resolution of the Disputes Concerning Article IX(1) of the IWT (India-Pakistan)	22 January 1976	
P-0617	G. Morris, “Management of Sediments in the Kali Gandaki Reservoir”, ICOLD <i>Sediment Management in Reservoirs: National Regulations and Case Studies</i> (2019) (Paris) [Extract, pp. 155–162]	December 2019	
P-0618	S. Ren and others, (2021) (199) “Sedimentation and its response to management strategies of the	April 2021	

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
	Three Gorges Reservoir, Yangtze River, China” <i>CATENA</i> Available at: https://www.sciencedirect.com/science/article/pii/S0341816220306469		
Factual exhibits submitted by Pakistan on 12 July 2024 in the course of the Hearing on the First Phase on the Merits			
P-0619	Letter No. 3/1/84-IT/1820 (with enclosure)	30 September 2010	ICIW / PCIW
Factual exhibits submitted by Pakistan on 15 July 2024 in the course of the Hearing on the First Phase on the Merits			
P-0620	Letter No. WT(51)/(7713-A)/PCIW	9 April 2019	PCIW / ICIW
P-0621	Letter No. WT(51)/(7718-A)/PCIW	6 May 2019	PCIW / ICIW
P-0622	Letter No. WT(51)/(7738-A)/PCIW	1 August 2019	PCIW / ICIW
P-0623	Letter No. WT(51)/(7740-A)/PCIW	8 August 2019	PCIW / ICIW
P-0624	Letter No. WT(51)/(7742-A)/PCIW	23 August 2019	PCIW / ICIW
P-0625	Letter No. WT(51)/(7744-A)/PCIW	13 September 2019	PCIW / ICIW
P-0626	Letter No. WT(51)/(7768-A)/PCIW	27 December 2019	PCIW / ICIW
P-0627	Letter No. Y-20017/4/2018-IT/2342	13 February 2020	ICIW / PCIW
P-0628	Letter No. WT(51)(7776-A)/PCIW	12 March 2020	PCIW / ICIW
P-0629	Letter No. Y-20017/4/2018-IT/2344	13 March 2020	ICIW / PCIW
P-0630	Letter No. (51)/(7778-A)/PCIW	27 March 2020	PCIW / ICIW
P-0631	Letter No. Y-20017/4/2018-IT/2351	3 July 2020	ICIW / PCIW
P-0632	Letter No. WT(51)/(7799-A)/PCIW	20 July 2020	PCIW / ICIW
P-0633	Letter No. Y-200141/1/2018-IT/2353	4 August 2020	ICIW / PCIW

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No.	Title	Date ²⁹⁹	Author / Recipient (where applicable) ³⁰⁰
P-0634	Letter No. WT(51)/(7815-A)/PCIW	21 January 2021	PCIW / ICIW
P-0635	Letter No. Y-200141/1/2018-IT/2362	27 January 2021	ICIW / PCIW
P-0636	Letter No. Y-20014/1/2018/IT/2364	1 February 2021	ICIW / PCIW
P-0637	Letter No. WT(51)/(7822-A)/PCIW	8 February 2021	PCIW / ICIW
P-0638	Letter No. WT(51)/(7829-A)/PCIW	23 February 2021	PCIW / ICIW
P-0639	Letter No. Y-20014/1/2018-IT/2366	4 March 2021	ICIW / PCIW
P-0640	Email regarding the 116 th Meeting of the Permanent Indus Commission, 23-24 March 2021	11 March 2021	ICIW / PCIW
P-0641	Letter No. WT(51)/(7848-A)/PCIW	11 March 2021	PCIW / ICIW
P-0642	Letter No. Y-20014/1/2018-IT/2413	7 October 2022	ICIW / PCIW
P-0643	Letter No. WT(132)/(8111-A)/PCIW	18 November 2022	PCIW / ICIW
P-0644	Inflow data responding to the Court's written question no. 6	15 July 2024	
Factual exhibits submitted by Pakistan on 16 July 2024 in the course of the Hearing on the First Phase on the Merits			
P-0645	Record of the 93rd Meeting of the Permanent Indus Commission, 9 to 13 February 2005	13 February 2005	
P-0646	Image of dam with fuse gates installed Available at: https://www.geotech.net.au/capabilities/dams/fuse-gates.html		

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No.	Title	Date ³⁰³	Author / Recipient (where applicable) ³⁰⁴
Factual exhibits submitted by Pakistan on 30 September 2024 pursuant to paragraphs 1.4, 1.5 and 1.6 of PO11³⁰⁵			
1.4 Records of the Permanent Indus Commission			
P-0647	Records of meetings of the Permanent Indus Commission pursuant to 1.4.1 of PO11 (in which individual documents are identified with a distinct P-0647.## number) ³⁰⁶		
P-0648	Records of tours of inspection by the Permanent Indus Commission that address matters at issue before the Court in the First Phase on the Merits pursuant to 1.4.2 of PO11 Merits (in which individual documents are identified with a distinct P-0648.## number) ³⁰⁷		
1.5 Correspondence between the Commissioners for Indus Waters that addresses matters at issue before the Court in the First Phase on the Merits			
P-0649	Records of correspondence between the Commissioners for Indus Waters (or their subordinates) that address matters at issue before the Court in the First Phase on the Merits pursuant to 1.5 of PO11 (in which individual documents are identified with a distinct P-0649.#### number) ³⁰⁸		
1.6 Communications between the Governments of India and Pakistan			
P-0650	Records of inter-governmental meetings that address matters at issue before the Court in the First Phase on the Merits pursuant to 1.6.1 of		

³⁰³ This column has been left blank for exhibits where the date has not been made publicly available or where there is no applicable date.

³⁰⁴ This column has been left blank for exhibits where the author or recipient is not applicable.

³⁰⁵ The documents produced in response to paragraphs 1.2 and 1.3 of PO11 were produced prior to 30 September 2024 as P-0547 and P-0548.

³⁰⁶ For the purposes of Request 1.4.1 of PO11, Pakistan has included all records of meetings of the Permanent Indus Commission.

³⁰⁷ For the purposes of Request 1.4.2 of PO11, Pakistan has included records of the tours of inspection by the Permanent Indus Commission that relate to any of the issues outlined in Pakistan's Explanatory Memorandum.

³⁰⁸ For the purposes of Request 1.5 of PO11, Pakistan has included correspondence between the Commissioners that relates to any of the issues outlined in Pakistan's Explanatory Memorandum.

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	PO11 (in which individual documents are identified with a distinct P-0650.# number) ³⁰⁹		
P-0651	Records of inter-governmental correspondence that addresses matters at issue before the Court in the First Phase on the Merits pursuant to 1.6.2 of PO11 (in which individual documents are identified with a distinct P-0651.## number) ³¹⁰		
Factual Exhibits submitted with Pakistan's Post-Hearing Submission dated 1 November 2024			
P-0652	W.P. Creager & J.P. Justin, <i>Hydro-Electric Handbook</i> (1 st Edition: John Wiley & Sons) [Extracts, pp. 33-41, 89-110]	1927	
P-0653	C.V. Davis, <i>Handbook of Applied Hydraulics</i> (2 nd Edition: McGraw-Hill) [Extract, pp. 1-21]	1952	
P-0654	J.J. Doland, <i>Hydro Power Engineering: A Textbook for Civil Engineers</i> (Ronald Press) [Extract, pp. 12-57]	1954	
P-0655	J. Nyamgyal, 'Power Development in Ladakh: An Over-View', in H Osmaston & N Tsering (eds), <i>Recent Research on Ladakh 6: Proceedings of the Sixth International Colloquium on Ladakh</i>	1997	

³⁰⁹ For the purposes of Request 1.6.1 of PO11, Pakistan has included correspondence between the Governments of Pakistan and India that relate to any of the issues outlined in Pakistan's Explanatory Memorandum.

³¹⁰ For the purposes of Request 1.6.2 of PO11, Pakistan has included correspondence between the Governments of Pakistan and India that relate to any of the issues outlined in Pakistan's Explanatory Memorandum.

LEGAL AUTHORITIES

No.	Title	Date
Legal Authorities submitted with Pakistan's Response on Competence - 24 March 2023		
PLA-0001	The Indus Waters Treaty 1960 between the Government of India, the Government of Pakistan and the International Bank for Reconstruction and Development 19 September 1960, 419 UNTS 125 (" Indus Waters Treaty 1960 ")	1960
PLA-0002	<i>Baglihar Hydroelectric Plant (Pakistan v India)</i> , Indus Waters Treaty Annexure F, Neutral Expert Determination (" Baglihar Determination ")	12 February 2007
PLA-0003	<i>Indus Waters Kishenganga Arbitration (Pakistan v India)</i> , Partial Award (2013) XXXI RIAA 55 (" Kishenganga arbitration, Partial Award ")	18 February 2013
PLA-0004	<i>Indus Waters Kishenganga Arbitration (Pakistan v India)</i> , Final Award (2013) XXXI RIAA 309 (" Kishenganga arbitration, Final Award ")	20 December 2013
PLA-0005	Vienna Convention on the Law of Treaties (adopted on 22 May 1969 and opened for signature on 23 May 1969, entered into force 27 January 1980) 1155 UNTS 331 (" VCLT ")	23 May 1969
PLA-0006	<i>Lake Lanoux Arbitration (France v Spain)</i> , Award (1957) XII RIAA 281 [Extract, pp. 306-307]; 24 ILR 101 [Extract, pp. 127-128]	16 November 1957
PLA-0007	<i>Certain Questions of Mutual Assistance in Criminal Matters (Djibouti v France)</i> , Judgment [2008] ICJ Rep 177 [Extract, pp. 219-230] Available at: https://www.icj-cij.org/sites/default/files/case-related/136/136-20080604-JUD-01-00-EN.pdf (last accessed 22 March 2023)	4 June 2008

No.	Title	Date
PLA-0008	<i>Immunities and Criminal Proceedings (Equatorial Guinea v France)</i> , Judgment [2020] ICJ Rep 300 [Extract, pp. 319-324] Available at: https://www.icj-cij.org/sites/default/files/case-related/163/163-20201211-JUD-01-00-EN.pdf (last accessed 22 March 2023)	11 December 2020
PLA-0009	<i>Shorter Oxford English Dictionary on Historical Principles</i> , vol. 1 (OUP, 5 th ed. (2002)) [Extract, p. 609]	2002
PLA-0010	<i>Garner's Dictionary of Legal Usage</i> (OUP, 3 rd ed. (2011)) [Extract, p. 247]	2011
PLA-0011	<i>Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Bosnia & Herzegovina v Yugoslavia)</i> , Preliminary Objections, Judgment [1996] ICJ Rep 595 Available at: https://www.icj-cij.org/sites/default/files/case-related/91/091-19960711-JUD-01-00-EN.pdf (last accessed 22 March 2023)	11 July 1996
PLA-0012	<i>Questions of Interpretation and Application of the 1971 Montreal Convention arising from the Aerial Incident at Lockerbie (Libyan Arab Jamahiriya v United Kingdom)</i> , Preliminary Objections, Judgment [1998] ICJ Rep 9 Available at: https://www.icj-cij.org/sites/default/files/case-related/88/088-19980227-JUD-01-00-EN.pdf (last accessed 22 March 2023)	27 February 1998
PLA-0013	<i>Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Croatia v Serbia)</i> , Preliminary Objections, Judgment [2008] ICJ Rep 412 Available at: https://www.icj-cij.org/sites/default/files/case-related/118/118-20081118-JUD-01-00-EN.pdf (last accessed 22 March 2023)	18 November 2008
PLA-0014	<i>Border and Transborder Armed Actions (Nicaragua v Honduras)</i> , Jurisdiction and Admissibility, Judgment [1988] ICJ Rep 69 [Extract, pp. 94-95] Available at: https://www.icj-cij.org/sites/default/files/case-related/74/074-19881220-JUD-01-00-EN.pdf (last accessed 22 March 2023)	20 December 1988

No.	Title	Date
PLA-0015	JG Merrills, “Two Approaches to Treaty Interpretation” (1968-1969) 4 Australian Yearbook of International Law 55	1971
PLA-0016 (re-submitted)	<i>Auditing of Accounts between the Netherlands and France pursuant to the Additional Protocol of 25 September 1991 to the Convention on the Protection of the Rhine against Pollution by Chlorides of 3 December 1976 (Netherlands/France)</i> , Award (2014) 144 ILR 259 Also available at: https://pca-cpa.org/en/cases/31/ (last accessed 22 March 2023)	12 March 2014
PLA-0017 (re-submitted)	R. Gardiner, <i>Treaty Interpretation</i> (OUP, 2 nd ed. (2015)) (“ Gardiner, 2015 ”), [Extracts, pp. 44-47, 166-181, 196-219, 340-343, 356-361, 408-409]	2015
PLA-0018	<i>Military and Paramilitary Activities in and against Nicaragua (Nicaragua v United States of America)</i> , Merits, Judgment [1986] ICJ Rep 14 [Extract, pp. 23-25] Available at: https://www.icj-cij.org/public/files/case-related/70/070-19860627-JUD-01-00-EN.pdf (last accessed 22 March 2023)	27 June 1986
PLA-0019 (re-submitted)	O. Dörr & K. Schmalenbach (eds.), <i>Vienna Convention on the Law of Treaties: A Commentary</i> (Springer, 2 nd ed. (2018)) [Extract, Part III, Section 3 (Interpretation of Treaties), “Article 31” and “Article 32”, pp. 559--633]	2018
PLA-0020	<i>Baglihar Hydroelectric Plant (Pakistan v. India)</i> , Indus Waters Treaty Annexure F, Neutral Expert Determination, Executive Summary	12 February 2007
PLA-0021	<i>Indus Waters Kishenganga Arbitration (Pakistan v. India)</i> , Decision on India’s Request for Clarification or Interpretation (2013) XXXI RIAA 295 (“ Kishenganga arbitration, Decision on India’s Request for Clarification or Interpretation ”)	20 December 2013

No.	Title	Date
PLA-0022	<i>Certain German Interests in Polish Upper Silesia (Germany v. Poland)</i> , Judgment (1926) PCIJ Ser A No 7 [Extract, pp. 29-31] Available at: https://icj-cij.org/sites/default/files/permanent-court-of-international-justice/serie_A/A_07/17_Interets_allemands_en_Haute_Silesie_polonaise_Fond_Arret.pdf (last accessed 9 May 2023)	25 May 1926
PLA-0023	<i>Interpretation of Peace Treaties with Bulgaria, Hungary and Romania (Second Phase)</i> , Advisory Opinion [1950] ICJ Rep 221 [Extract, pp. 226-230] Available at: https://www.icj-cij.org/sites/default/files/case-related/8/008-19500718-ADV-01-00-EN.pdf (last accessed 9 May 2023)	18 July 1950
PLA-0024	<i>Nottebohm (Liechtenstein v. Guatemala)</i> , Preliminary Objections [1953] ICJ Rep 111 Available at: https://www.icj-cij.org/sites/default/files/case-related/18/018-19531118-JUD-01-00-EN.pdf (last accessed 9 May 2023)	18 November 1953
PLA-0025	<i>Nuclear Tests (Australia v. France)</i> , Judgment [1974] ICJ Rep 253 [Extract, pp. 267-268] Available at: https://www.icj-cij.org/sites/default/files/case-related/58/058-19741220-JUD-01-00-EN.pdf (last accessed 9 May 2023)	20 December 1974
PLA-0026	<i>Interpretation of the Agreement of 25 March 1951 between the WHO and Egypt</i> , Advisory Opinion [1980] ICJ Rep 73 [Extract, pp. 94-96] Available at: https://www.icj-cij.org/sites/default/files/case-related/65/065-19801220-ADV-01-00-EN.pdf (last accessed 9 May 2023)	20 December 1980
PLA-0027	<i>Ceskoslovenska Obchodni Banka as v. Slovak Republic</i> , ICSID Case No. ARB/97/4, Decision of the Tribunal on Objections to Jurisdiction [Extract, pp. 261-263]	24 May 1999

No.	Title	Date
PLA-0028	<i>Arrest Warrant of 11 April 2000 (Democratic Republic of the Congo v. Belgium)</i> , Judgment [2002] ICJ Rep 3 [Extract, pp. 11-14] Available at: https://www.icj-cij.org/sites/default/files/case-related/121/121-20020214-JUD-01-00-EN.pdf (last accessed 9 May 2023)	14 February 2002
PLA-0029	<i>Sovereignty over Pulau Ligitan and Pulau Sipadan (Indonesia/Malaysia)</i> , Judgment [2002] ICJ Rep 265 [Extract, pp. 646-648] Available at: https://www.icj-cij.org/sites/default/files/case-related/102/102-20021217-JUD-01-00-EN.pdf (last accessed 9 May 2023)	17 December 2002
PLA-0030	<i>Compañía de Aguas del Aconquija SA (formerly Aguas del Aconquija) and Vivendi Universal SA (formerly Compagnie Générale des Eaux) v. Argentine Republic (I)</i> , ICSID Case No. ARB/97/3, Decision on Jurisdiction [Extract, pp. 16-23]	14 November 2005
PLA-0031	<i>Application of the International Convention on the Elimination of All Forms of Racial Discrimination (Georgia v. Russian Federation)</i> , Preliminary Objections [2011] ICJ Rep 70 [Extract, pp. 120-140] Available at: https://www.icj-cij.org/sites/default/files/case-related/140/140-20110401-JUD-01-00-EN.pdf (last accessed 9 May 2023)	1 April 2011
PLA-0032	<i>Questions Relating to the Obligation to Prosecute or Extradite (Belgium v. Senegal)</i> , Judgment [2012] ICJ Rep 422 [Extract, pp. 440-441; 445-448] Available at: https://www.icj-cij.org/sites/default/files/case-related/144/144-20120720-JUD-01-00-EN.pdf (last accessed 9 May 2023)	20 July 2012
PLA-0033	<i>Teinver S.A., Transportes de Cercanías S.A. and Autobuses Urbanos del Sur S.A. v. Argentine Republic</i> , ICSID Case No. ARB/09/1, Decision on Jurisdiction [Extract, pp. 55-61]	21 December 2012
PLA-0034	<i>Tenaris SA and Talta - Trading e Marketing Sociedade Unipessoal Lda v. Bolivarian Republic of Venezuela (II)</i> , ICSID Case No. ARB/12/23, Award [Extract, pp. 38-44]	12 December 2016

No.	Title	Date
PLA-0035	<i>Valores Mundiales SL and Consorcio Andino SL v. Bolivarian Republic of Venezuela</i> , ICSID Case No ARB/13/11, Award, English translation [Extract, pp. 35-40]	25 July 2017
PLA-0036	R. Kolb, <i>Good Faith in International Law</i> (Hart 2017) [Extract, pp. 218-222]	2017
PLA-0037	<i>Immunities and Criminal Proceedings (Equatorial Guinea v. France)</i> , Preliminary Objections, Judgment [2018] ICJ Rep 292 [Extract, pp. 334-337] Available at: https://www.icj-cij.org/sites/default/files/case-related/163/163-20180606-JUD-01-00-EN.pdf (last accessed 9 May 2023)	6 June 2018
PLA-0038	<i>Application of the International Convention for the Suppression of the Financing of Terrorism and of the International Convention on the Elimination of All Forms of Racial Discrimination (Ukraine v. Russian Federation)</i> , Preliminary Objections [2019] ICJ Rep 558 [Extract, pp. 586-589; 600-603] Available at: https://www.icj-cij.org/sites/default/files/case-related/166/166-20191108-JUD-01-00-EN.pdf (last accessed 9 May 2023)	8 November 2019
PLA-0039	<i>Appeal Relating to the Jurisdiction of the ICAO Council Under Article II, Section 2, of the 1944 International Services Transit Agreement (Bahrain, Egypt and United Arab Emirates v. Qatar)</i> , Judgment [2020] ICJ Rep 172 [Extract, pp. 196-204] Available at: https://www.icj-cij.org/sites/default/files/case-related/174/174-20200714-JUD-01-00-EN.pdf (last accessed 9 May 2023)	14 July 2020
PLA-0040	S. Schill, L. Malintoppi, A. Reinisch, C. Schreuer, A. Sinclair, <i>Schreuer's Commentary on the ICSID Convention</i> (Cambridge University Press, 3 rd ed. (2022)) [Extract, pp. 112-116]	2022

No.	Title	Date
PLA-0041	<p><i>Certain Iranian Assets (Islamic Republic of Iran v. United States of America)</i>, ICJ General List No. 164, Judgment [Extract, pp. 35-36]</p> <p>Available at: https://www.icj-cij.org/sites/default/files/case-related/164/164-20230330-JUD-01-00-EN.pdf (last accessed 9 May 2023)</p>	30 March 2023
Legal Authorities submitted with Pakistan's Memorial on the Merits - 22 March 2024		
PLA-0042	<p><i>Indus Waters Kishenganga Arbitration (Pakistan v India)</i>, Order on the Interim Measures Application of Pakistan dated June 6, 2011 (2013) XXXXI RIAA 6 ("Kishenganga arbitration, Order on Interim Measures")</p> <p>Available at: https://pcacases.com/web/sendAttach/1682 (last accessed 18 March 2024)</p>	23 September 2011
PLA-0043	<p>Indus Basin Development Fund Agreement between the Governments of the Commonwealth of Australia, Canada, The Federal Republic of Germany, New Zealand, Pakistan, the United Kingdom of Great Britain and Northern Ireland and the United States of America and the International Bank for Reconstruction and Development, (signed on 19 September 1960) 444 UNTS 259 ("IDBF Agreement")</p> <p>Available at: https://documents1.worldbank.org/curated/en/239781468100481033/pdf/Loan-0266-Pakistan-Indus-Basin-Project-Development-Fund-Agreement.pdf (last accessed 18 March 2024)</p>	19 September 1960
PLA-0044	<p>Inter-Dominion Agreement between the Government of India and the Government of Pakistan on the Canal Water Dispute between East and West Punjab, (entered into force on 4 May 1948) 54 UNTS 45 ("Inter-Dominion Water Agreement")</p> <p>Available at: http://www.commonlii.org/in/other/treaties/INTSer/1948/3.html (last accessed 18 March 2024)</p>	4 May 1948

No.	Title	Date
PLA-0045	International Law Association, "Resolution on the Use on the Waters of International Rivers" from Report to the 48 th Conference held in New York, 1–7 September 1958 Available at: https://www.internationalwaterlaw.org/documents/intldocs/ILA/ILA-Resolution_or_New_York1958.pdf (last accessed 18 March 2024)	1959
PLA-0046	Convention on the Law of the Non-Navigational Uses of International Watercourses, (adopted on 21 May 1997, entered into force on 17 August 2014) 2999 UNTS 1 Available at: https://legal.un.org/ilc/texts/instruments/english/conventions/8_3_1997.pdf (last accessed 18 March 2024)	21 May 1997
PLA-0047	<i>SS Wimbledon (Great Britain & Ors v Germany; Poland intervening)</i> (Judgment) P.C.I.J. Series A No. 1 Available at: https://www.icj-cij.org/sites/default/files/permanent-court-of-international-justice/serie_A/A_01/03_Wimbledon_Arret_08_1923.pdf (last accessed 18 March 2024)	1923
PLA-0048	Indus Basin Development Fund (Supplemental) Agreement, 31 March and 6 April 1964, (entered into force on 6 April 1964) 503 UNTS 388 Available at: https://treaties.un.org/doc/Publication/UNTS/Volume%20503/volume-503-I-6371-English.pdf (last accessed 18 March 2024)	1964
PLA-0049	<i>Oil Platforms (Islamic Republic of Iran v. United States of America)</i> , <i>Preliminary Objection, Judgment</i> , I.C.J. Reports 1996, p. 803 Available at: https://www.icj-cij.org/sites/default/files/case-related/90/090-19961212-JUD-01-00-EN.pdf (last accessed 18 March 2024)	1996
PLA-0050	<i>HICEE B.V. v. the Slovak Republic</i> , PCA Case No. 2009-11, Partial Award Available at: https://www.italaw.com/sites/default/files/case-documents/ita0404_0.pdf (last accessed 18 March 2024)	23 May 2011

No.	Title	Date
PLA-0051	UN Treaty Collection website, Chapter XXIII: Law of Treaties Available at: https://treaties.un.org/doc/Publication/MTDSG/Volume%20II/Chapter%20XXIII/XXIII-1.en.pdf (last accessed 18 March 2024)	23 May 1969
PLA-0052	ILC, "Report of the Commission to the General Assembly on the work of its seventieth session" (2018) Vol. II(2), <i>Yearbook of the International Law Commission</i> Available at: https://www.un-ilibrary.org/content/books/9789210014151 (last accessed 18 March 2024)	2018
PLA-0053	Agreement Between the Government of the Islamic Republic of Pakistan and the Government of the Republic of India Regarding the Design of the Salal Hydro-Electric Plant on the Chenab River Main Available at: http://www.commonlii.org/in/other/treaties/INTSer/1978/18.pdf (last accessed 18 March 2024)	14 April 1978
PLA-0054	A. Aust, <i>Handbook of International Law</i> (2 nd Edition: Cambridge University Press) [Extract, pp. 87-90]	2010
PLA-0055	UNGA, <i>Yearbook of the International Law Commission</i> (Vol. II. 1966) Available at: https://legal.un.org/ilc/publications/yearbooks/english/ilc_1966_v2.pdf (last accessed 18 March 2024)	1966
PLA-0056	<i>Arbitral Award of 3 October 1899 (Guyana v. Venezuela), Jurisdiction of the Court, Judgment, I.C.J. Reports 2020</i> , p. 455 Available at: https://www.icj-cij.org/sites/default/files/case-related/171/171-20230406-JUD-01-00-EN.pdf (last accessed 18 March 2024)	18 December 2020

No.	Title	Date
PLA-0057	<p><i>Maritime Delimitation in the Indian Ocean (Somalia v. Kenya), Preliminary Objections, Judgment, I.C.J. Reports 2017</i>, p. 3</p> <p>Available at: https://www.icj-cij.org/sites/default/files/case-related/161/161-20170202-JUD-01-00-EN.pdf (last accessed 18 March 2024)</p>	2 February 2017
PLA-0058	<p><i>Application of the International Convention on the Elimination of All Forms of Racial Discrimination (Qatar v. United Arab Emirates), Preliminary Objections, Judgment, I.C.J. Reports 2021</i>, p. 71</p> <p>Available at: https://www.icj-cij.org/sites/default/files/case-related/172/172-20210204-JUD-01-00-EN.pdf (last accessed 18 March 2024)</p>	4 February 2021
PLA-0059	<p><i>Territorial Dispute (Libyan Arab Jamahiriya/Chad), Judgment, I.C.J. Reports 1994</i>, p. 6</p> <p>Available at: https://www.icj-cij.org/sites/default/files/case-related/83/083-19940203-JUD-01-00-EN.pdf (last accessed 18 March 2024)</p>	3 February 1994
PLA-0060	<p><i>Polish Postal Service in Danzig (Advisory Opinion) P.C.I.J. Series B No. 11</i></p> <p>Available at: https://www.icj-cij.org/sites/default/files/permanent-court-of-international-justice/serie_B/B_11/01_Service_postal_polonais_a_Danzig_Avis_consultatif.pdf (last accessed 18 March 2024)</p>	16 May 1925
PLA-0061	<p><i>Arbitral Award of 31 July 1989, Judgment, I.C.J. Reports 1991</i>, p. 53</p> <p>Available at: https://www.icj-cij.org/sites/default/files/case-related/82/082-19911112-JUD-01-00-EN.pdf (last accessed 18 March 2024)</p>	12 November 1991
PLA-0062	<p><i>Competence of Assembly regarding admission to the United Nations, Advisory Opinion: I.C.J. Reports 1950</i>, p. 4</p> <p>Available at: https://www.icj-cij.org/sites/default/files/case-related/9/009-19500303-ADV-01-00-EN.pdf (last accessed 18 March 2024)</p>	3 March 1950

No.	Title	Date
PLA-0063	G. Fitzmaurice, "The Law and Procedure of the International Court of Justice 1951-4: Treaty Interpretation and Other Treaty Points" (1957) 33 Brit YB Int'l L 203	1957
PLA-0064	<i>Case concerning rights of nationals of the United States of America in Morocco, Judgment of August 27th 1952: I.C.J. Reports 1952</i> , p. 176 Available at: https://www.icj-cij.org/sites/default/files/case-related/11/011-19520827-JUD-01-00-EN.pdf (last accessed 18 March 2024)	27 August 1952
PLA-0065	<i>South West Africa, Second Phase, Judgment, I.C.J. Reports 1966</i> , p. 6 Available at: https://www.icj-cij.org/sites/default/files/case-related/46/046-19660718-JUD-01-00-EN.pdf (last accessed 18 March 2024)	18 July 1966
PLA-0066	<i>Delimitation of Maritime Boundary between Guinea-Bissau and Senegal (Guinea-Bissau/Senegal)</i> , Award (1989) XX RIAA 119 Available at: https://legal.un.org/riaa/cases/vol_XX/119-213.pdf (last accessed 18 March 2024)	31 July 1989
PLA-0067	<i>Boundary dispute between Argentina and Chile concerning the frontier line between boundary post 62 and Mount Fitzroy (Argentina/Chile)</i> , Decision (1994) XXII RIAA 3 Available at: https://legal.un.org/riaa/cases/vol_XXII/3-149.pdf (last accessed 18 March 2024)	21 October 1994
PLA-0068	<i>Wintershall Aktiengesellschaft v. Argentine Republic</i> , ICSID Case No. ARB/04/14, Award Available at: https://www.italaw.com/sites/default/files/case-documents/ita0907.pdf (last accessed 18 March 2024)	8 December 2008
PLA-0069	<i>İçkale İnşaat Limited Şirketi v. Turkmenistan</i> , ICSID Case No. ARB/10/24, Partially Dissenting Opinion of Carolyn B. Lamm Available at: https://www.italaw.com/sites/default/files/case-documents/italaw7166.pdf (last accessed 18 March 2024)	23 February 2016

No.	Title	Date
PLA-0070	<i>Daniel W. Kappes and Kappes, Cassidy & Associates v. Republic of Guatemala</i> , ICSID Case No. ARB/18/43, Decision on Respondent's Preliminary Objections [Extract, pp. 41-50] Available at: https://www.italaw.com/sites/default/files/case-documents/italaw11389.pdf (last accessed 18 March 2024)	13 March 2020
PLA-0071	<i>Alleged Violations of Sovereign Rights and Maritime Spaces in the Caribbean Sea (Nicaragua v. Colombia)</i> , Preliminary Objections, Judgment, I.C.J. Reports 2016, p. 3 Available at: https://www.icj-cij.org/sites/default/files/case-related/155/155-20160317-JUD-01-00-EN.pdf (last accessed 18 March 2024)	17 March 2016
PLA-0072	<i>Corfu Channel case</i> , Judgment of December 15th, 1949: I.C.J. Reports 1949, p. 244 Available at: https://www.icj-cij.org/sites/default/files/case-related/1/001-19491215-JUD-01-00-EN.pdf (last accessed 18 March 2024)	9 April 1949
PLA-0073	<i>Case concerning Sovereignty over certain Frontier Land</i> , Judgment of 20 June 1959: I.C.J. Reports 1959, p. 209 Available at: https://www.icj-cij.org/sites/default/files/case-related/38/038-19590620-JUD-01-00-EN.pdf (last accessed 18 March 2024)	20 June 1959
PLA-0074	<i>Dispute between Argentina and Chile concerning the Beagle Channel</i> , Report and Decision of the Court of Arbitration (1977) XXI RIAA 53 [Extracts, pp. 55, 88-91] Available at: https://legal.un.org/riaa/cases/vol_XXI/53-264.pdf (last accessed 18 March 2024)	18 February 1977
PLA-0075	<i>Certain Iranian Assets (Islamic Republic of Iran v. United States of America)</i> , Preliminary Objections, Judgment, I.C.J. Reports 2019, p. 7 Available at: https://www.icj-cij.org/sites/default/files/case-related/164/164-20190213-JUD-01-00-EN.pdf (last accessed 18 March 2024)	13 February 2019

No.	Title	Date
PLA-0076	<i>Federal Reserve Bank of New York v Bank Markazi</i> , Case A 28 (2000), 36 Iran-US Claims Tribunal Reports 5 Available at: https://iusct.com/wp-content/uploads/2021/06/A28-doc-105.pdf (last accessed 18 March 2024)	19 December 200
PLA-0077	<i>Dispute Concerning Coastal State Rights in the Black Sea, Sea of Azov, and Kerch Strait (Ukraine v. the Russian Federation)</i> , PCA Case No. 2017-06, Award Concerning the Preliminary Objections of the Russian Federation [Extract, pp. 95-99] Available at: https://pcacases.com/web/sendAttach/9272 (last accessed 18 March 2024)	21 February 2020
PLA-0078	<i>The South China Sea Arbitration (The Republic of Philippines v. The People's Republic of China)</i> , PCA Case No. 2013-19, Award [Extract, pp. 452-456] Available at: https://pcacases.com/web/sendAttach/2086 (last accessed 18 March 2024)	12 July 2016
PLA-0079	<i>Case concerning the detention of three Ukrainian naval vessels (Ukraine v. Russian Federation)</i> , Provisional Measures, ITLOS Case No. 26, Order Available at: https://www.itlos.org/fileadmin/itlos/documents/cases/26/C26_Order_25.05.pdf (last accessed 18 March 2024)	25 May 2019
PLA-0080	<i>The Arctic Sunrise Arbitration (Netherlands v. Russia)</i> , PCA Case No. 2014-02, Award on Jurisdiction Available at: https://pcacases.com/web/sendAttach/1325 (last accessed 18 March 2024)	26 November 2014
PLA-0081	<i>Aegean Sea Continental Shelf (Greece v. Turkey)</i> , Interim Protection, Order of 11 September 1976, I.C.J. Reports 1976, p. 3, Dissenting opinion of Judge Stassinopoulos (translation) Available at: https://www.icj-cij.org/sites/default/files/case-related/62/062-19760911-ORD-01-09-EN.pdf (last accessed 18 March 2024)	11 September 1976

No.	Title	Date
PLA-0082	<i>Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory, Advisory Opinion, I.C.J. Reports 2004</i> , p. 136, Separate opinion of Judge Elaraby Available at: https://www.icj-cij.org/sites/default/files/case-related/131/131-20040709-ADV-01-06-EN.pdf (last accessed 18 March 2024)	9 July 2004
PLA-0083	<i>Canfor Corporation, Terminal Forest Products Ltd., Tembec et al. v. United States of America (Consolidated)</i> , Decision on Preliminary Question [Extract, pp. 87-92] Available at: https://www.italaw.com/sites/default/files/case-documents/ita0122.pdf (last accessed 18 March 2024)	6 June 2006
PLA-0084	<i>Nationality Decrees Issued in Tunis and Morocco</i> (Advisory Opinion), P.C.I.J. Series B No. 4 Available at: https://www.icj-cij.org/sites/default/files/permanent-court-of-international-justice/serie_B/B_04/Decrets_de_nationalite_promulgues_en_Tunisie_et_au_Maroc_Avis_consultatif_1.pdf (last accessed 18 March 2024)	7 February 1923
PLA-0085	<i>Klass and others v. Germany</i> (Application no. 5029/71), Judgment Available at: https://hudoc.echr.coe.int/eng?i=001-57510 (last accessed 18 March 2024)	6 September 1978
PLA-0086	<i>Funke v. France</i> (Application no. 10828/84), Judgment Available at: https://hudoc.echr.coe.int/eng?i=001-57809 (last accessed 18 March 2024)	25 February 1993
PLA-0087	<i>Litwa v Poland</i> (Application no. 26629/95), Judgment Available at: https://hudoc.echr.coe.int/?i=001-58537 (last accessed 18 March 2024)	4 April 2000
PLA-0088	<i>Rotaru v. Romania</i> (Application no. 28341/95), Judgment Available at: https://hudoc.echr.coe.int/eng?i=001-58586 (last accessed 18 March 2024)	4 May 2000
PLA-0089	R. Jennings and A. Watts (eds.), <i>Oppenheim's International Law</i> (9 th Edition: OUP 1996) [Extract, p. 1279]	July 1996

No.	Title	Date
PLA-0090	<p>Official Records of the United Nations Conference on the Law of Treaties, Second session, Vienna, 9 Apr.–22 May 1969 (Summary records of the plenary meetings and of the meetings of the Committee of the Whole) UN Doc. A/CONF.39/11/Add.1</p> <p>Available at: https://digitallibrary.un.org/record/683272?ln=en#record-files-collapse-header (last accessed 18 March 2024)</p>	1969
PLA-0091	<p><i>Whaling in the Antarctic (Australia v. Japan: New Zealand intervening)</i>, Judgment, <i>I.C.J. Reports</i> 2014, p. 226 [Extract, pp. 251-252]</p> <p>Available at: https://www.icj-cij.org/sites/default/files/case-related/148/148-20140331-JUD-01-00-EN.pdf (last accessed 18 March 2024)</p>	31 March 2014
PLA-0092	<p><i>Enron Creditors Recovery Corporation (formerly Enron Corporation) & Ponderosa Assets LP v Argentine</i> [Extract, pp. 99-109]</p> <p><i>Republic</i>, ICSID Case No. ARB/01/3, Award,</p> <p>Available at: https://www.italaw.com/sites/default/files/case-documents/ita0293.pdf (last accessed 18 March 2024)</p>	22 May 2007
PLA-0093	<p>Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin, 5 April 1995, 34 ILM 864</p> <p>Available at: https://www.mrcmekong.org/assets/Publications/policies/agreement-Apr95.pdf (last accessed 18 March 2024)</p>	1995
PLA-0094	<p><i>Gabčíkovo-Nagymaros Project (Hungary/Slovakia)</i>, Judgment, <i>I.C.J. Reports</i> 1997, p. 7 [Extract, pp. 76-80]</p> <p>Available at: https://www.icj-cij.org/sites/default/files/case-related/92/092-19970925-JUD-01-00-EN.pdf (last accessed 18 March 2024)</p>	25 September 1997
PLA-0095 1.11. (resubmitted)	<p>B. Cheng, <i>General principles of law as applied by international courts and tribunals</i> (reissue: Cambridge University Press 2006) [Extracts, pp. 112-115, 128-133, 336-339]</p>	2006

No.	Title	Date
PLA-0096	<i>Churchill Mining plc v Indonesia</i> , ICSID Case No. ARB/12/14, Decision on Jurisdiction [Extract, pp. 54-55] Available at: https://www.italaw.com/sites/default/files/case-documents/italaw3103.pdf (last accessed 18 March 2024)	24 February 2014
PLA-0097	<i>Territorial and Maritime Dispute (Nicaragua v. Colombia)</i> , Preliminary Objections, Judgment, I.C.J. Reports 2007, p. 832 Available at: https://www.icj-cij.org/sites/default/files/case-related/124/124-20071213-JUD-01-00-EN.pdf (last accessed 18 March 2024)	13 December 2007
PLA-0098	<i>Maritime Delimitation and Territorial Questions between Qatar and Bahrain (Qatar v. Bahrain)</i> , Jurisdiction and Admissibility, Judgment, I.C.J. Reports 1995, p. 6 Available at: https://www.icj-cij.org/sites/default/files/case-related/87/087-19950215-JUD-01-00-EN.pdf (last accessed 18 March 2024)	15 February 1995
PLA-0099	E. Bjorge, <i>The Evolutionary Interpretation of Treaties</i> (Oxford University Press 2014) [Extract, pp. 125-138]	2014
PLA-0100	Treaty relating to Cooperative Development of the Water Resources of the Columbia River Basin, 59 AJIL Supp 989 Available at: https://faolex.fao.org/docs/pdf/bi-145062.pdf (last accessed 18 March 2024)	17 January 1961
PLA-0101	<i>Case concerning the Temple of Preah Vihear (Cambodia v. Thailand)</i> , Merits, Judgment, I.C.J. Reports 1962, p. 6 Available at: https://www.icj-cij.org/sites/default/files/case-related/45/045-19620615-JUD-01-00-EN.pdf (last accessed 18 March 2024)	15 June 1962
PLA-0102	<i>The Bay of Bengal Maritime Boundary Arbitration between the People's Republic of Bangladesh and the Republic of India</i> , Award, RIAA, Vol. XXXII [Extract, pp. 72-76] Available at: https://pcacases.com/web/sendAttach/383 (last accessed 18 March 2024)	7 July 2014

No.	Title	Date
PLA-0103	<i>Jan de Nul N.V. and Dredging International N.V. v. Arab Republic of Egypt</i> , ICSID Case No. ARB/04/13, Award Available at: https://www.italaw.com/sites/default/files/case-documents/ita0440.pdf (last accessed 18 March 2024)	6 November 2008
PLA-0104	Treaty on the Lesotho Highlands Water Project Between the Government of the Kingdom of Lesotho and the Government of the Republic of South Africa Available at: https://faolex.fao.org/docs/pdf/bi-15909.pdf (last accessed 18 March 2024)	24 October 1986
PLA-0105	<i>Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Croatia v. Serbia)</i> , Judgment, I.C.J. Reports, p. 3 [Extract, pp. 115-118] Available at: https://www.icj-cij.org/sites/default/files/case-related/118/118-20150203-JUD-01-00-EN.pdf (last accessed 18 March 2024)	3 February 2015
PLA-0106	<i>RREEF Infrastructure (G.P.) Limited and RREEF Pan-European Infrastructure Two Lux S.à r.l. v. Kingdom of Spain</i> , ICSID Case No. ARB/13/30, Decision on Responsibility and on the Principles of Quantum Available at: https://www.italaw.com/sites/default/files/case-documents/italaw10455_0.pdf (last accessed 18 March 2024)	30 November 2018
PLA-0107	<i>Sistem Mühendislik İnşaat Sanayi ve Ticaret A.Ş. v. Kyrgyz Republic</i> , ICSID Case No. ARB(AF)/06/1, Decision on Jurisdiction Available at: https://www.italaw.com/sites/default/files/case-documents/italaw11245.pdf (last accessed 18 March 2024)	13 September 2007
PLA-0108	<i>Question of the Delimitation of the Continental Shelf between Nicaragua and Colombia beyond 200 Nautical Miles from the Nicaraguan Coast (Nicaragua v. Colombia)</i> , Preliminary Objections, Judgment, I.C.J. Reports 2016, p. 100 Available at: https://www.icj-cij.org/sites/default/files/case-related/154/154-20160317-JUD-01-00-EN.pdf (last accessed 18 March 2024)	17 March 2016

No.	Title	Date
PLA-0109	<i>Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Bosnia and Herzegovina v. Serbia and Montenegro), Judgment, I.C.J. Reports 2007, p. 43</i> Available at: https://www.icj-cij.org/sites/default/files/case-related/91/091-20070226-JUD-01-00-EN.pdf (last accessed 18 March 2024)	26 February 2007
PLA-0110	<i>Trail Smelter Arbitration (USA/Canada), III RIAA 1905</i> Available at: https://legal.un.org/riaa/cases/vol_III/1905-1982.pdf (last accessed 18 March 2024)	16 April 1938 and 11 March 1941
PLA-0111	<i>Request for Interpretation of the Judgment of 11 June 1998 in the Case concerning the Land and Maritime Boundary between Cameroon and Nigeria (Cameroon v. Nigeria), Preliminary Objections (Nigeria v. Cameroon), Judgment, I.C.J. Reports 1999, p. 31</i> Available at: https://www.icj-cij.org/sites/default/files/case-related/101/101-19990325-JUD-01-00-EN.pdf (last accessed 18 March 2024)	25 March 1999
PLA-0112	<i>Waste Management v. United Mexican States (II), ICSID Case No. ARB(AF)/00/3, Decision of the Tribunal on Mexico's Preliminary Objection concerning the Previous Proceedings</i> Available at: https://www.italaw.com/sites/default/files/case-documents/ita0898.pdf (last accessed 18 March 2024)	26 June 2002
PLA-0113	<i>Landesbank Baden-Württemberg, HSH Nordbank AG, Landesbank Hessen-Thüringen Girozentrale and Norddeutsche Landesbank-Girozentrale v. Kingdom of Spain, ICSID Case No. ARB/15/45, Decision on the Respondent's Application for Reconsideration of the Tribunal's Decision of 25 February 2019 Regarding the "Intra-EU" Jurisdictional Objection</i>	11 November 2021

No.	Title	Date
Legal Authorities submitted with Pakistan's Post-Hearing Submission – 1 November 2024		
PLA-0114	<p><i>Case concerning the Aerial Incident of July 27th, 1955 (Israel v. Bulgaria), Preliminary Objections, Judgment of May 26th, 1959: I.C.J. Reports 1959, p. 127, Joint Dissenting Opinion by Judges Sir Hersch Lauterpacht, Wellington Koo and Sir Percy Spender</i></p> <p>Available at: https://www.icj-cij.org/sites/default/files/case-related/35/035-19590526-JUD-01-03-EN.pdf (last accessed 1 November 2024)</p>	26 May 1959
PLA-0115	<p><i>Acquisition of Polish Nationality, Advisory Opinion (1923) P.C.I.J. Series B No 7</i></p> <p>Available at: https://www.icj-cij.org/sites/default/files/permanent-court-of-international-justice/serie_B/B_07/01_Acquisition_de_la_nationalite_polonaise_Avis_consultatif.pdf (last accessed 1 November 2024)</p>	15 September 1959
PLA-0116	<p><i>Pulp Mills on the River Uruguay (Argentina v. Uruguay), Judgment, I.C.J. Reports 2010, p. 14</i></p> <p>Available at: https://www.icj-cij.org/sites/default/files/case-related/135/135-20100420-JUD-01-00-EN.pdf (last accessed 1 November 2024)</p>	20 April 2010
PLA-0117	<p><i>Arbitration Regarding the Iron Rhine ("Ijzeren Rijn") Railway between the Kingdom of Belgium and the Kingdom of the Netherlands, Award, PCA Award Series (2007)</i></p> <p>Available at: https://legal.un.org/riaa/cases/vol_XXVII/35-125.pdf (last accessed 1 November 2024)</p>	24 May 2005
PLA-0118	<p>International Convention for the Regulation of Whaling (signed on 2 December 1946) 161 U.N.T.S. 72</p> <p>Available at: https://treaties.un.org/doc/Publication/UNTS/Volume%20161/v161.pdf (last accessed 1 November 2024)</p>	2 December 1946

PLA-0119	<p>Convention on Fishing and Conservation of Living Resources of the High Seas (signed on 29 April 1958, entered into force on 20 March 1966) 559 U.N.T.S. 285</p> <p>Available at: https://treaties.un.org/doc/Treaties/1966/03/19660320%2002-16%20AM/Ch_XXI_01_2_3_4_5p.pdf (last accessed 1 November 2024)</p>	29 April 1958
PLA-0120	<p>African Convention on the Conservation of Nature and Natural Resources (adopted on 15 September 1968, entered into force on 16 June 1969) 1001 U.N.T.S. 0</p> <p>Available at: https://treaties.un.org/doc/Publication/UNTS/Volume%201001/volume-1001-I-14689-English.pdf (last accessed 1 November 2024)</p>	15 September 1968
PLA-0121	<p>United Nations Convention on the Law of the Sea (signed on 10 December 1982, entered into force on 16 November 1994) 1833 U.N.T.S.</p> <p>Available at: https://treaties.un.org/doc/Treaties/1994/11/19941116%2005-26%20AM/Ch_XXI_06p.pdf (last accessed 1 November 2024)</p>	10 December 1982
PLA-0122	<p>ASEAN Agreement on the Conservation of Nature and Natural Resources (not in force, opened for signature on 9 July 1985)</p> <p>Available at: https://agreement.asean.org/media/download/20161129035620.pdf (last accessed 1 November 2024)</p>	9 July 1985
PLA-0123	<p>General Agreement on Tariffs and Trade (World Trade Organisation Agreement) (signed on 30 October 1947, entered into force on 1 January 1948) 1867 U.N.T.S. 187</p> <p>Available at: https://www.wto.org/english/docs_e/legal_e/gatt47_01_e.htm (last accessed 1 November 2024)</p>	30 October 1947
PLA-0124	<p>Rio Declaration on Environment and Development, 1992, UN Doc. A/CONF.151/26/Rev.1 (Vol. I)</p> <p>Available at: https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_CONF.151_26_Vol.I_Declaration.pdf (last accessed 1 November 2024)</p>	12 August 1992

PLA-0125	Report of the World Summit on Sustainable Development (Johannesburg, South Africa), 26 August-4 September 2002, UN Doc. A/CONF.199/20 Available at: https://digitallibrary.un.org/record/478154?ln=en&v=pdf (last accessed 1 November 2024)	2002
PLA-0126	<i>Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v. Nicaragua) and Construction of a Road in Costa Rica along the San Juan River (Nicaragua v. Costa Rica)</i> , Judgment, I.C.J. Reports 2015, p. 665 Available at: https://www.icj-cij.org/sites/default/files/case-related/150/150-20151216-JUD-01-00-EN.pdf (last accessed 1 November 2024)	16 December 2015
PLA-0127	<i>Request for an Advisory Opinion Submitted by the Commission of Small Island States on Climate Change and International Law</i> , ITLOS Case No. 31, Advisory Opinion Available at: https://www.itlos.org/fileadmin/itlos/documents/cases/31/Advisory_Opinion/C31_Adv_Op_21.05.2024_orig.pdf (last accessed 1 November 2024)	21 May 2024
PLA-0128	A. Kiss, "Abuse of Rights", <i>Max Plank Encyclopaedia of Public International Law</i> (Oxford University Press 2006)	December 2006
PLA-0129	H. Lauterpacht, <i>Oppenheim's International Law</i> (8 th Edition: Longmans 1955) [Extract, pp. 345-347]	1970
PLA-0130	<i>Allegations of Genocide under the Convention on the Prevention and Punishment of the Crime of Genocide (Ukraine v. Russian Federation)</i> , Judgment, Preliminary Objections Available at: https://www.icj-cij.org/sites/default/files/case-related/182/182-20240202-jud-01-00-en.pdf (last accessed 1 November 2024)	2 February 2024
PLA-0131	H. Lauterpacht, "Restrictive Interpretation and the Principle of Effectiveness in the Interpretation of Treaties" (1949) XXVI BYBIL 48	1949

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PLA-0132	<i>Immunities and Criminal Proceedings (Equatorial Guinea v. France)</i> , Judgment, I.C.J. Reports 2020, p. 300, Separate Opinion of Judge Sebutinde Available at: https://www.icj-cij.org/sites/default/files/case-related/163/163-20201211-JUD-01-04-EN.pdf (last accessed 1 November 2024)	11 December 2020
PLA-0133	R. Kolb, 'General Principles of Procedural Law' in A Zimmermann, <i>The Statute of the International Court of Justice: A Commentary</i> (Oxford University Press 2019)	March 2019
PLA-0134	<i>Free Zones of Upper Savoy and the District of Gex</i> , Judgment (1932) P.C.I.J. Series A/B No. 46	7 June 1932
PLA-0135	<i>Aerial Incident of 10 August 1999 (Pakistan v. India)</i> , Jurisdiction of the Court, Judgment, I.C.J. Reports 2000, p. 12 Available at: https://www.icj-cij.org/sites/default/files/case-related/119/119-20000621-JUD-01-00-EN.pdf (last accessed 1 November 2024)	21 June 2000
PLA-0136	U. Linderfalk, 'The Concept of Treaty Abuse – On the Exercise of Legal Discretion', Final Draft Version	17 November 2014
PLA-0137	<i>United States — Import Prohibition of Certain Shrimp and Shrimp Products</i> , WT/DS58, AB-1998-4 - Report of the Appellate Body	12 October 1998
PLA-0138	A. El Far, 'Abuse of Rights in National Legal Systems and International Law', in <i>Abuse of Rights in International Arbitration</i> (Oxford University Press 2020)	2020