

**PRESS RELEASE****The Indus Waters Western Rivers Arbitration
(Islamic Republic of Pakistan v. Republic of India)**

THE HAGUE, 11 AUGUST 2025

The Court of Arbitration Renders an Award on Issues of General Interpretation of the Indus Waters Treaty

On 8 August 2025, the Court of Arbitration (“**Court**”) empaneled in 2022 in accordance with the Indus Waters Treaty of 1960 (“**Treaty**”) rendered an Award on Issues of General Interpretation of the Indus Waters Treaty (“**Award**”) in an arbitration initiated by the Islamic Republic of Pakistan against the Republic of India pursuant to Article IX and Annexure G to the Treaty.

This arbitration concerns the interpretation and application of the Indus Waters Treaty to certain design elements of the run-of-river hydro-electric plants that India is permitted by the Treaty to construct on the tributaries of the Indus, Jhelum, and Chenab Rivers (the “**Western Rivers**”).

To date, India has not participated in the arbitration proceedings and has repeatedly objected to the competence of the Court. In an earlier phase of the proceedings, the Court carefully considered these objections and, by an Award on the Competence of the Court dated 6 July 2023, unanimously determined that the Court was properly constituted and is competent to resolve the disputes set forth in Pakistan’s Request for Arbitration. Further, the Court unanimously determined that India’s non-appearance in these proceedings does not deprive the Court of its competence. On 27 June 2025, the Court rendered a Supplemental Award on the Competence of the Court, in which it found that India’s position, announced in April 2025, that the Treaty “will be held in abeyance with immediate effect” did not limit the competence of the Court.

Throughout these proceedings, the Court has ensured that India is fully informed in respect of the proceedings and that the opportunity to participate remains open to it. Notwithstanding this, the Court has endeavored to ascertain, understand, and consider India’s views, drawing on available materials, including the records of the Commission, correspondence between the Parties, and/or submissions by India in previous dispute resolution proceedings under the Treaty. The Court also has taken steps to test the accuracy of Pakistan’s claims, including by requesting further written submissions from Pakistan, by questioning Pakistan both prior to and during the hearing on the merits, by requesting that Pakistan produce historical evidence concerning the operation of the Indus Waters Treaty and the Permanent Indus Commission, and by considering publicly-available materials and jurisprudence not presented by Pakistan.

The Award of 8 August 2025 addresses certain questions concerning the overall interpretation and application of the Treaty, including in relation to Article III (which concerns the Western Rivers) and Paragraph 8 of Annexure D (which concerns new run-of-river hydro-electric plants that India may construct on the Western Rivers). The Award also addresses a related question on the legal effect of decisions issued by dispute resolution bodies under the Treaty (namely, courts of arbitration and neutral experts).

The Award is binding on the Parties and without appeal. In the Award, the Court found, among other things, that:

- (1) **Legal Effect of Awards of a Court of Arbitration:** Awards of a court of arbitration are final and binding on the Parties (India and Pakistan), and have a controlling legal effect on subsequent neutral experts, subsequent courts of arbitration, and the court that issued the Award. Further, to

the extent that a court of arbitration and a neutral expert are operating at the same time on related matters, it is incumbent on both to pay attention to decisions of the other that have a binding or otherwise controlling effect.

- (2) ***Legal Effect of Neutral Expert Decisions:*** Decisions of a neutral expert on matters within his or her competence are final and binding on the Parties and any court of arbitration, in respect of the particular matter (and plant) on which the decision is made. However, a decision on a matter that is determined not to be within the competence of a neutral expert has no final or binding effect.
- (3) ***Object and Purpose of the Treaty:*** Due to the vulnerability of Pakistan as the downstream riparian of a critical but shared nature resource, and the potential for serious conflict between India and Pakistan in this regard, the object and purpose of the Treaty, as it relates to the Western Rivers, is to delimit the two States' respective rights and obligations, in conjunction with mutual cooperation and effective dispute resolution procedures for whenever questions as to the interpretation and application of these rights and obligations arise.
- (4) ***Overall Approach to the Interpretation of Article III and Part 3 of Annexure D:*** The general rule is that India shall "let flow" the waters of the Western Rivers for Pakistan's unrestricted use. There are certain specified exceptions to this rule, including in relation to the generation of hydroelectric power, but these exceptions must be strictly construed: the design and operation of run-of-river hydroelectric plants must hew strictly to the requirements in the Treaty, rather than to what India might consider an "ideal" or "best practices" approach. In furtherance of the Treaty's object and its obligations of mutual cooperation, questions relating to the balance between the Parties' respective rights and obligations in this regard are to be identified and addressed through the Treaty's procedures for notification, objection, and dispute resolution.
- (5) ***Overall Approach to Paragraphs 8(d), 8(e), and 8(f) of Annexure D:*** Paragraphs 8(d), 8(e), and 8(f), on low-level outlets, gated spillways, and intakes for the turbines respectively, contain specific directions as to their existence, size, and/or location (addressed below), which may depart from engineering best practices that seek to maximize efficiency or power output. These limitations were of central significance in the Treaty negotiations for addressing Pakistan's concerns as to India's ability to release virtually all the water in dam reservoirs, along with sediment, and to withhold a large volume of water when refilling the reservoirs.
- (6) ***Low-Level Outlets (Paragraph 8(d) of Annexure D):*** Paragraph 8(d) applies to openings in the dam that are located partially or entirely below Dead Storage Level (including orifice spillways), but does not apply to crest-gated spillways or intakes for the turbines. As a starting point, India must endeavor to design plants without low-level outlets. If there is no other effective method (or methods) to address sediment or the technical purpose for the outlet, India must identify reasonable options based on the standards in Paragraph 8(d) and, among those options, select the outlet that is of the minimum size and at the highest level in the dam.
- (7) ***Gated Spillways (Paragraph 8(e) of Annexure D):*** Paragraph 8(e) applies to crest-gated spillways (spillways at the crest of the dam structure). As a starting point, India must endeavor to design plants without gated spillways, such as by use of an ungated spillway. If there is no other effective method (or methods) to address floods or sediment, India must identify reasonable options based on the standards in Paragraph 8(e) and, among those options, select the spillway for which the bottom level of the gates in normal closed position is located at the highest level of the dam.
- (8) ***Intakes for the Turbines (Paragraph 8(f) of Annexure D):*** Paragraph 8(f) applies to intakes for the turbines, wherever located in the dam. As a starting point, India must endeavor to design plants with intakes at the highest possible level (that is, with the lowest point of the intake just

below Dead Storage Level). If the customary and accepted practice of design calls for a lower intake, India must identify reasonable options based on the standards in Paragraph 8(f) and, among those options, select the intake that is at the highest level in the dam.

- (9) **Maximum Pondage (Paragraph 8(c) of Annexure D):** The pondage required for firm power is to be calculated based on the water accumulated over a seven-day period at the minimum mean discharge (a historically low flow rate), taking into account the daily and weekly downstream release requirements set out in Paragraph 15 of Annexure D and a realistic, well-founded, and defensible projection of the plant's installed capacity and anticipated load. Maximum pondage is no more than twice this amount.
- (10) **Freeboard (Paragraph 8(a) of Annexure D):** When designing a run-of-river plant, India is only entitled to freeboard (the vertical distance in the dam wall from the full supply level to the top of the dam) of a height necessary to address the safety of the dam as a whole from overtopping, with reference to internationally-recognized standards.
- (11) **Cooperation of the Parties.** For each of the components of dam design indicated above, the Parties must cooperate from an early stage of planning by India for a new hydro-electric plant ("HEP") on the Western Rivers, such that India's designs can be modified as necessary in light of valid concerns raised by Pakistan in relation to these components. Ultimately, India bears the burden of establishing that its designs are Treaty-compliant.

An expanded summary of the Court's decisions is set out below.

In the Award, the Court did not address the application of its findings to the specific circumstances of the Kishenganga Hydro-Electric Plant ("KHEP") or Ratle Hydro-Electric Plant ("RHEP"), two Indian projects presented in Pakistan's Request for Arbitration. The Court remains seized of issues raised in the Request for Arbitration and not yet decided, and will determine the next steps in the proceedings after seeking the views of the Parties.

The Court of Arbitration is chaired by Professor Sean D. Murphy of the United States. The other members are Professor Wouter Buytaert of Belgium, Professor Jeffrey P. Minear of the United States, Judge Awn Shawkat Al-Khasawneh of Jordan, and Dr. Donald Blackmore of Australia. Pursuant to a decision by the Court, the PCA acts as the secretariat for the proceedings.

The Court's Award was unanimous in all respects save for Part XI (and the related finding at Paragraph 811(O)) regarding maximum Pondage, in which the decision was made by majority (4-1). Professor Minear appends a concurring opinion to the Award; Judge Al-Khasawneh appends a partial dissent to the Award.

Background on the Permanent Court of Arbitration

The Permanent Court of Arbitration is an intergovernmental organisation established by the 1899 Hague Convention on the Pacific Settlement of International Disputes. The PCA has 125 Contracting Parties. Headquartered at the Peace Palace in The Hague, the Netherlands, the PCA facilitates arbitration, conciliation, fact-finding, and other dispute resolution proceedings among various combinations of States, State entities, intergovernmental organisations, and private parties. The PCA's International Bureau is currently administering 7 inter-state arbitrations, 1 other inter-state proceeding, 90 arbitrations arising under bilateral or multilateral investment treaties or national investment laws, 93 cases arising under contracts involving a State or other public entity, and 2 other proceedings. More information about the PCA can be found at www.pca-cpa.org.

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**SUMMARY OF THE PROCEEDINGS AND OF THE AWARD ON
ISSUES OF GENERAL INTERPRETATION OF THE INDUS WATERS TREATY**

A. The Commencement of Proceedings

By way of a Request for Arbitration dated 19 August 2016, Pakistan initiated the present arbitral proceedings before the Court of Arbitration (an arbitral panel consisting of highly-qualified lawyers and engineers) under Article IX and Annexure G to the Indus Waters Treaty.

Subsequently, on 4 October 2016, India requested that the World Bank appoint a neutral expert (a highly-qualified engineer) under Article IX and Annexure F to the Treaty (“**Neutral Expert**”), to address certain design and operation questions that are essentially identical to some of the questions presented by Pakistan in its Request for Arbitration.

In December 2016, the World Bank, which has a special but essentially ministerial role under the Treaty, decided to “pause” the process of appointing the Chairman of the Court of Arbitration and the Neutral Expert. This pause was lifted in 2022, following which the Court of Arbitration was empaneled and the Neutral Expert was appointed.

B. The First Phase on the Merits

On 6 July 2023, the Court issued its Award on the Competence of the Court, in which the Court carefully considered objections to the competence of the Court raised by India (by way of correspondence to the World Bank). In a unanimous decision, the Court rejected each of the objections raised by India and determined that the Court is competent to consider and determine the disputes set forth in Pakistan’s Request for Arbitration. On 27 June 2025, the Court rendered a Supplemental Award on the Competence of the Court, in which it found that India’s position, announced in April 2025, that the Treaty “will be held in abeyance with immediate effect” did not limit the competence of the Court.

In Procedural Order No. 6 of 6 July 2023, the Court set out the scope of questions to be addressed in the first phase on the merits of the proceedings (“**First Phase on the Merits**”), namely:

- (a) To what extent and on what basis are the decisions of past dispute resolution bodies established pursuant to Article IX of the Treaty concerning (i) competence, (ii) matters of fact, (iii) the interpretation of the Treaty, or (iv) the application of the Treaty in particular factual circumstances, binding or otherwise controlling with respect to (a) the Parties, (b) the present proceedings before the Court, (c) the present proceedings before the Neutral Expert, and (d) future proceedings before a court of arbitration or a neutral expert? Insofar as such decisions are binding or otherwise controlling, what—if any—exceptions or limitations may limit their binding/controlling effect?
- (b) To what extent can non-Treaty-based design and operational practices be taken into account for purposes of interpreting the technical requirements set out in Annexure D, paragraph 8?
- (c) With respect to Annexure D, paragraph 8(a), what is to be taken into account for the purposes of designing the freeboard for a plant and what is to be excluded?
- (d) With respect to Annexure D, paragraph 8(c), what is to be taken into account for the purposes of calculating maximum pondage for a plant and what is to be excluded?
- (e) With respect to Annexure D, paragraph 8(d), what is to be taken into account for the purposes of designing low-level sediment outlets for a plant and what is to be excluded?
- (f) With respect to Annexure D, paragraph 8(e), what is to be taken into account for the purposes of designing gated spillways for flood control for a plant and what is to be excluded?
- (g) With respect to Annexure D, paragraph 8(f), what is to be taken into account for the purposes of designing submerged power intakes for a plant and what is to be excluded?

After seeking the views of the Parties, the Court established a procedural schedule for written submissions on the questions to be addressed in the First Phase on the Merits. In accordance with the procedural schedule, Pakistan submitted a Memorial for the First Phase on the Merits on 22 March 2024. India did not indicate an intention to file a Counter-Memorial within the prescribed deadline or subsequently.

From 23 April 2024 to 29 April 2024, the Court completed a site visit of the Neelum-Jhelum Hydro-Electric Plant, located in the Kashmir and Jammu region administered by Pakistan, to familiarize the Court with general aspects of the design and operation of run-of-river hydro-electric plants along the Indus system of rivers. India did not appear and declined to participate in the site visit.

On 27 May 2024, in order to ensure that the Court had available to it a comprehensive record of the views and positions of the Parties on the matters at issue before the Court in the First Phase on the Merits, the Court issued Procedural Order No. 11, in which it directed Pakistan to produce a number of categories of documents (including records of the Permanent Indus Commission (“**Commission**”), correspondence, and other communications) to the extent that they had not already been entered into the record.¹

From 8 July 2024 to 12 July 2024, and from 15 July 2024 to 16 July 2024, the Court held a Hearing for the First Phase on the Merits, in which Pakistan appeared and participated, but India did not appear.

On 1 November 2024, Pakistan filed a post-Hearing written submission, in accordance with the Court’s directions.

On 6 December 2024, the Court invited the Parties to provide comments on certain matters that had come to the attention of the Court following the Hearing. Pakistan filed its preliminary and final comments on 25 January 2025 and 25 February 2025 respectively. No comments were received from India.

While India did not participate in this phase of the proceedings by way of filing written submissions or presenting oral submissions at the Hearing, as set out in Part IV.C of the Award, the Court has endeavored to ascertain, understand, and consider India’s views with respect to each of the issues in dispute to the extent they are known or can be gleaned from the available materials, including the records of the Commission, correspondence between the Parties, and/or submissions by India in previous dispute resolution proceedings under the Treaty.

C. Award on Issues of General Interpretation of the Indus Waters Treaty

In the Award, the Court considered each of the questions to be addressed in the First Phase on the Merits. Before turning to substance of the issues for determination, the Court recalled the procedural history (Part II of the Award) and relevant factual background (Part III), as well as a number of preliminary matters (Part IV).

1. Preliminary Matters (Award - Part IV)

The Court addressed three preliminary matters, namely, the parallel proceedings before the Neutral Expert, the continuing competence of the Court, and the legal and practical consequences of India’s non-participation.

¹ On 30 September 2024, Pakistan filed an explanatory memorandum explaining the document production exercise that Pakistan had undertaken. On 8 November 2024, Pakistan filed a brief supplementary written submission addressing the content of the produced documents.

In relation to the parallel proceedings before the Neutral Expert, the Court outlined the procedural history of those proceedings, so far as was relevant for the disputes before the Court, including the Neutral Expert's competence decision of 7 January 2025.¹

In relation to the continuing competence of the Court, the Court recalled the developments leading to its Award on Competence of 6 July 2023 and to its Supplemental Award on the Competence of the Court of 27 June 2025. The Court recognized that India had not, to date, accepted the Court's findings in its Award on Competence and had continued to express objections on the same bases previously advanced. The Court considered that these objections had already been addressed in the Award on Competence. The Court concluded by observing that nothing in the developments between the Parties or in the parallel proceedings had changed matters with respect to the Court's competence, and the Court reaffirmed its holding in that regard.

In relation to the legal and practical consequences of India's non-participation, the Court recalled its finding that India's non-appearance had no effect on the competence of the Court or on the legal effect of its decisions, as is reflected in the Treaty and international law more generally. The Court noted that, given that India remains bound by the Court's decisions notwithstanding its non-participation, the Court had taken measures to ensure procedural fairness to both Parties, including measures to preserve India's procedural rights. Further, the Court recalled the need to satisfy itself that Pakistan's claims were well founded in fact and law. The Court outlined the steps it had taken to that end, that is, to probe Pakistan's positions and to ensure that the facts, views, and positions advanced by both Parties on the matters before the Court were properly considered.

2. *Issues for Determination (Award - Part V)*

The Court then recalled the questions for the First Phase on the Merits, as set out in Procedural Order No. 6 (extracted above), as well as Pakistan's Final Submissions presented at the Hearing, and made two inter-related observations.

The Court observed that issues concerning the design, construction, and operation of the KHEP and RHEP *specifically* were not a matter for this phase of the proceedings, but remained within the Court's competence. The approach to further phases of the proceedings would be determined as necessary in due course, after seeking the views of the Parties (and mindful of the general duty of mutual respect and comity owed between dispute resolution bodies, including the Neutral Expert).

The Court further noted that the issues for determination in this Phase were not strictly limited to the verbatim text of the questions set out in Procedural Order No. 6. Rather, the Court's mandate and jurisdiction were defined by the disputes of which it was seized, as defined in Pakistan's Request for Arbitration. That said, the Court noted it was not limited to considering in a vacuum the Treaty provisions identified by Pakistan and that its interpretative task would inevitably require an examination of the Treaty as a whole.

3. *Law to be Applied by a Court of Arbitration (Award - Part VI)*

In relation to the law to be applied by the Court, the Court observed that the Treaty is the primary source of law for the Court to interpret and apply (absent Party agreement otherwise), but that the Court may also apply international conventions and customary international law when necessary for the purpose of interpreting or applying the Treaty.

¹ See <https://pca-cpa.org/en/cases/297/>.

In particular, the Court noted that it could be expected to rely on customary international law rules on the method of treaty interpretation, as reflected in Articles 31 and 32 of the 1969 Vienna Convention on the Law of Treaties (“VCLT”), given that the Treaty itself does not provide such rules. These rules establish various elements of treaty interpretation, including the ordinary meaning of the terms of the Treaty, the context of the terms, the object and purpose of the Treaty, subsequent practice of the Parties, and the Treaty’s preparatory works.

4. *Binding or Otherwise Controlling Effect of Dispute Settlement Decisions (Award - Part VII)*

The Court observed that the question at issue in this Part concerned the extent to which decisions issued by dispute resolution bodies established pursuant to Article IX of the Treaty (namely, awards of a court of arbitration and decisions of a neutral expert) are binding or otherwise controlling on the Parties and subsequent dispute resolution bodies.

The Court recalled that, further to Paragraph 23 of Annexure G and Paragraph 11 of Annexure F of the Treaty, these decisions are “final and binding on the Parties”. As such, the Parties must comply with the decision and are precluded from re-litigating decided issues in subsequent proceedings. This binding effect on the Parties also produces an “otherwise controlling effect” on subsequent dispute resolution bodies, which are obliged to apply the international law in force between the Parties.

The Court observed that this effect, which exists not only in international law, but also in national legal systems, contributes to the stability of legal relations between the Parties. As a prior court of arbitration empaneled under the Treaty recognized, such stability is of particular importance in the context of the present Treaty, to ensure the effective utilization of rights accorded to each Party by the Treaty.

Turning specifically to awards rendered by a court of arbitration, the Court addressed various issues as to the binding or otherwise controlling effect of such awards, finding, among other things, that: (i) the court rendering the award must have been established in a manner consistent with the Treaty (a matter for the Court itself to determine); (ii) awards may be rendered by a court of arbitration even where a difference has not been addressed first by a neutral expert; (iii) awards must be rendered in the manner prescribed by the Treaty; (iv) the binding or otherwise controlling effect attaches to various types of awards dealing with different aspects of the dispute at issue (e.g. competence, matters of fact, interpretation of the Treaty); (v) the binding effect of an award extends beyond the decision or *dispositif* (the final part of the award) to include the reasoning that underlies the decision; and (vi) a court of arbitration is capable of issuing awards that have a systemic effect (for example, applying to all new Indian hydro-electric plants on the Western Rivers and not just the plants in dispute), subject to certain qualifications.

As to the effect of awards of a court of arbitration on various actors, the Court concluded that awards have a binding or otherwise controlling effect on the Parties, on the neutral expert (including the present Neutral Expert), on the court that issued the award, and on subsequent courts of arbitration.

Turning to decisions by a neutral expert, the Court addressed various issues as to the binding or otherwise controlling effect of such decisions, finding, among other things, that: (i) the neutral expert must have been appointed in a manner consistent with the Treaty; (ii) the decision must be on matters within the neutral expert’s competence, which is question-specific (i.e. limited to the questions listed in Part 1 of Annexure F), plant-specific (i.e. limited to the specific plant (or plants) that are the subject of the difference), and difference-specific (i.e. limited to the difference(s) placed before him or her): decisions beyond such competence have no binding or controlling effect; and (iii) decisions are not guidelines or authoritative precedent for plants other than the specific plant addressed in the decision.

As to the effect of a neutral expert's decisions on various actors, the Court concluded that such decisions are final and binding on the Parties with respect to the specific plant at issue (subject to any challenge that a decision fell outside the expert's competence). Such decisions are also binding or otherwise controlling on a subsequent court of arbitration (though the effect is limited to the questions in Annexure F, the plant at issue, and the difference before the expert), as well as a subsequent neutral expert (with the same proviso, noting that such a scenario is unlikely).

5. Overall Approach when Interpreting Article III and Annexure D, Part 3 of the Treaty (Award - Part VIII)

Before turning to the interpretation of the specific provisions found in Paragraph 8 of Annexure D to the Treaty, the Court considered it appropriate to assess the overall approach to be taken when interpreting Article III and Annexure D, Part 3 of the Treaty, in light of the object and purpose of the Treaty as it relates to the Western Rivers.

The Court reviewed the circumstances that led to the adoption of the Treaty, including the April 1948 dispute (in which East Punjab discontinued the flow of water to canals in West Punjab), as well as the Preamble of the Treaty and the broad substantive elements of the Treaty's articles and annexures. From these elements, the Court discerned that, due to the vulnerability of Pakistan as the downstream riparian of a critical but shared natural resource, and the potential for serious conflict between India and Pakistan in that regard, the Treaty as a whole seeks to attain the most complete and satisfactory utilization of the waters of the Indus system of rivers and, to that end, to delimit the two States' respective rights and obligations, in conjunction with effective dispute resolution procedures for whenever questions as to these rights and obligations arise.

The Court highlighted that it was *not* the object and purpose of the Treaty to provide for the maximum development of resources by one Party or the other, given that neither Party has unilateral or exclusive rights to use or develop the Indus system of rivers. Further, the Court also recalled that the object and purpose of the Treaty was *not* to address questions of sovereignty over the territory of Jammu and Kashmir, through which some of the rivers transit.

Turning to the general approach for interpreting Article III and Annexure D, Part 3 of the Treaty, in light of the Treaty's object and purpose, the Court noted that there was a tension between, on the one hand, India's obligation to "let flow" the waters of the Western Rivers and Pakistan's right to receive those waters "for unrestricted use", and on the other hand, the provisions that allow India to use such waters for certain purposes. To resolve this tension, the Court examined the text and structure of the relevant provisions, the negotiating history of the Treaty, and the broader Treaty context in which Article III and Annexure D, Part 3 are situated.

The Court summarized its findings on the approach, as follows:

In sum, the overall approach to be taken when interpreting Article III and Annexure D, Part 3, in light of the object and purpose of the Treaty as it relates to the Western Rivers, is to acknowledge: (1) a general rule that India shall "let flow" the waters of the Western Rivers for Pakistan's unrestricted use; (2) there are certain specified exceptions to the general rule, one of which allows India to use the Western Rivers to generate hydro-electric power; (3) that exception is to be strictly construed, in the sense that it does not permit India to generate hydro-electric power on the Western Rivers based on what might be the ideal or best practices approach for engineering a run-of-river HEP but, rather, only allows the design and operation of Run-of-River HEPs that hew strictly to the requirements set forth in Article III and Annexure D, Part 3; (4) yet those requirements cannot be so strictly construed as to deny to India the capacity to generate electricity from HEPs on the Western Rivers provided they are built in conformity with Treaty; and (5) in furtherance of the Treaty's objective and obligations of mutual cooperation, any questions concerning the balance of these rights

and obligations are to be identified through the Treaty's procedures for notification and objection, and addressed through the Treaty's procedures for resolving such questions.

6. *Engineering Concepts and Terminology Relevant to Run-of-River Hydro-Electric Plants (Award - Part IX)*

Given that the questions before the Court required an understanding of hydro-electric engineering concepts and terminology, the Court outlined these concepts and terminology as they are understood outside of the Treaty context, including in relation to: (i) categories of hydro-electric plants; (ii) how a run-of-river hydro-electric plant uses river flow to meet power demand; (iii) the different components of a run-of-river hydro-electric plant (including reservoir storage, outlets, spillways, power intakes and freeboard); and (iv) the issue of sedimentation and sediment control.

The Court then briefly addressed areas of alignment between these conventional usages and their usage in the Treaty, as well as areas where the Treaty departed from these conventional usages and took an approach unique to the Treaty.

7. *General Interpretation of Annexure D, Paragraph 8(d)–(f) on Low-Level Outlets, Gated Spillways, and Power Intakes (Award - Part X)*

In Part X of the Award, the Court addressed what is to be taken into account, and what is to be excluded, for the purposes of including a low-level outlet or gated spillway in the design of a new run-of-river hydro-electric plant subject to Annexure D, Part 3 of the Treaty ("**Annexure D, Part 3 HEP**"), as well as for the purpose of designing the intakes for the turbines of such a HEP. This analysis excludes "Small Plants" that are not at issue in these proceedings.

Before addressing the individual Treaty provisions on these components, the Court considered a number of general points.

First, all three components (outlets, spillways, and intakes) are means by which a dam operator can potentially control large amounts of water stored in the reservoir (in essence, all water above the level of the lowest component). As such, the Treaty's restrictions on these components, which aim to minimize the amount of controllable storage, are critical in addressing Pakistan's vulnerability as the downstream riparian, and are comparatively far more important than the limitations on pondage and freeboard (at the upper levels of the dam), addressed in Parts XI and XII of the Award.

Second, the Court addressed what is meant by the terms "outlet", "spillway", and "intake" under the Treaty, and the relationship between the different restrictions on these components. With reference to the text of the Treaty, the ordinary meaning of these terms at the time the Treaty was drafted, the context of these terms, and the negotiating history, the Court concluded that:

a) Paragraph 8(d) on low-level "outlets" refers to openings that are located partially or entirely below Dead Storage Level, including outlets that might be colloquially referred to today as orifice spillways; it does not refer to crest-gated spillways or intakes for the turbines;

(b) Paragraph 8(e) on "a gated spillway" refers to crest-gated spillways, (i.e., spillways located at the crest of the dam structure); and

(c) Paragraph 8(f) on "intakes for the turbines" refers to such intakes wherever located.

Third, the Court considered the relationship between the restrictions in Paragraphs 8(d)-(f) of Annexure D and engineering best practices as they have evolved since the Treaty's conclusion. The Court observed that the Treaty restrictions contain specific directions as to the existence, size, and/or location of these components, which may depart from best practices. As such, when designing an

Annexure D, Part 3 HEP, India must focus on the restrictions expressed and then, only *within* those restrictions, consider prevailing engineering best practices of an international character. These restrictions must also play a role in guiding India's decision as to the location of the dam.

Fourth, the Court observed that the restrictions in Paragraphs 8(d)-(f), while separate, sometimes use terms in common (indicating the same meaning) and sometimes use variations (indicating a difference in meaning).

(a) Low-Level Outlets (Paragraph 8(d) of Annexure D)

Paragraph 8(d) of Annexure D to the Treaty provides:

There shall be no outlets below the Dead Storage Level, unless necessary for sediment control or any other technical purpose; any such outlet shall be of the minimum size, and located at the highest level, consistent with sound and economical design and with satisfactory operation of the works.

At the outset of its consideration of Paragraph 8(d), the Court highlighted that the provision sets a prohibition on low-level outlets as the default position or starting point, which reflects the significant impact of low-level outlets on the amount of water that may be stored and controlled by India. While the provision contains an exception with respect to outlets necessary for sediment control or other technical purposes, that exception must be strictly construed, in accordance with the overall approach for interpreting Annexure D (discussed above).

The Court examined different ways in which low-level outlets could be used for sediment control (noting that drawdown flushing was prohibited by the Treaty). However, the Court observed that there were a number of ways of preventing or managing sediment accumulation without using a low-level outlet (for example, sluicing by a crest-gated spillway), such that it will often not be "necessary" to incorporate a low-level outlet for sediment control in an Annexure D, Part 3 HEP.

The Court also addressed low-level outlets for "other technical purposes" (purposes related to the operation of the HEP). Using the example of an outlet for the purpose of passing the design flood, the Court observed that low-level outlets may not be "necessary" where openings higher in the dam (including ungated and crest-gated spillways) are sufficient.

The Court noted that if an outlet is objectively "necessary", then the starting point is that the outlet must be of the minimum size and at the highest level in the dam. As such, India is not to apply engineering best practices that may otherwise lead to a large outlet or an outlet deep in the dam. Paragraph 8(d)'s indication that the size and location of any necessary low-level outlet are to be "consistent with sound and economical design and with satisfactory operation of the works" is not meant to undo the overall prohibition or to diminish the "minimum size" or "highest level" requirements.

The Court concluded by summarizing the steps that India is obliged to pursue to ensure compliance with Paragraph 8(d), including in relation to the notification requirements set out in the Treaty. The Court observed that if a difference emerges between the Parties as to compliance with the Treaty requirements, it is for India, as the proponent of the dam, to establish that the relevant outlet satisfies the requirements of Paragraph 8(d), bearing in mind any Pakistani position that a more-Treaty-compliant alternative exists.

(b) Gated Spillways (Paragraph 8(e) of Annexure E)

Paragraph 8(e) of Annexure D to the Treaty provides:

If the conditions at the site of a Plant make a gated spillway necessary, the bottom level of the gates in normal closed position shall be located at the highest level consistent with sound and economical design and satisfactory construction and operation of the works.

At the outset of its consideration of Paragraph 8(e), the Court highlighted that the provision indicates a default position or starting point, which is that an *ungated* spillway should be used unless conditions at the site (such as the width of the valley) make it “necessary” for a gated spillway. The Court recalled that the lower the spillway gates extend below Dead Storage Level, the greater the control India possesses in releasing water from the dam (and in holding water back when filling up the dam).

The Court noted that, according to prevailing engineering best practices, the two purposes for which a crest-gated spillway may be necessary are to pass flood waters and to manage sediment. The Court highlighted that it is only the *site conditions* that may make a gated spillway necessary – other factors, such as higher construction costs, are not relevant to the “necessity” analysis.

Where a gated spillway is objectively “necessary”, the starting point is that the bottom level of the gates must be located at the highest level. As such, a wide crest-gated spillway is normally to be preferred over a narrow crest-gated spillway with deeper gates.

The Court noted that the application of the standards of “sound and economical design” and “satisfactory construction and operation of the works” in specific circumstances will require the judgment of highly-experienced engineers, taking into account prevailing international practices. Nevertheless, these practices are to be employed with the aim of ensuring the highest level for the gated spillway.

As with respect to low-level outlets, the Court concluded by summarizing the steps India is obliged to pursue to ensure compliance with Paragraph 8(e), including in relation to notification requirements. As with Paragraph 8(d), it is for India to establish that any gated spillway satisfies the requirements of Paragraph 8(e).

(c) Power Intakes (Paragraph 8(f) of Annexure E)

Paragraph 8(f) of Annexure D to the Treaty provides:

[I]ntakes for the turbines shall be located at the highest level consistent with satisfactory and economic construction and operation of the Plant as a Run-of-River Plant, and with customary and accepted practice of design for the designated range of the Plant’s operation..

At the outset, the Court recalled that there was no dispute that intakes for the turbines (a necessary component for any HEP) would extend at least partially below Dead Storage Level, so as to take full advantage of the active storage for generating hydro-electric power.

Nevertheless, the starting point is that the intakes shall be located at the highest level in the dam – the starting point is not to apply traditional engineering best practices that might otherwise favor a power intake lower in the dam. As such, to the extent that design features can be incorporated that raise the height of the intake (for example, a skimming wall), Paragraph 8(f) favors the inclusion of such features.

After reflecting on the differences between the approach in Paragraph 8(f) and in Paragraphs 8(d)-(e) of Annexure D, and the reasons for those differences, the Court found that India should give preference to a shallow intake unless it would be unsuitable or wasteful of resources for the HEP’s construction and operation, and provided it is consistent with contemporary international engineering best practices. Again, these practices are to be employed with the aim of ensuring the highest level for the power intake in the dam.

The Court concluded by summarizing the steps India is obliged to pursue to ensure compliance with Paragraph 8(f), including in relation to notification requirements. Further, it is for India to establish that the level of any power intake satisfies the requirements of Paragraph 8(f).

8. *General Interpretation of Annexure D, Paragraph 8(c) on Maximum Pondage (Award - Part XI)*

In Part XI of the Award, the Court addressed what is to be taken into account, and what is to be excluded, for the purposes of calculating maximum Pondage for an Annexure D, Part 3 HEP, in light of Paragraph 8(c) of Annexure D to the Treaty.

Paragraph 8(c) of Annexure D provides:

The maximum Pondage in the Operating Pool shall not exceed twice the Pondage required for Firm Power.

Further, Paragraph 2 of Annexure D 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 the weekly loads of the plant”, and “Firm Power” as “the hydro-electric power corresponding to the minimum mean discharge at the site of a plant [measured according to a detailed formula]”.

At the outset of its analysis, the Court considered the fundamental differences between the approaches to the calculation of pondage advanced by Pakistan and India. In particular, the Court noted that while Pakistan’s approach restricted pondage based *solely* on the hydrology of the river at the plant site, India’s approach also took into account the downstream water delivery requirements and the HEP’s installed capacity and anticipated load. The Court highlighted that *both* approaches involved significant restrictions on pondage (including by incorporating the minimum mean discharge (“MMD”), a historically low flow rate, into the calculations). However, as a general matter, Pakistan’s approach would result in smaller pondage than India’s approach.

After recalling the range of different elements the Court would need to consider as part of its interpretative process (consistent with the approach set out in the VCLT), the Court proceeded to examine each of the relevant elements.

(a) Ordinary Meaning

The Court first proceeded to examine the ordinary meaning of the three key terms appearing in Paragraph 8(c) – “Pondage”, “Operating Pool”, and “Firm Power”. While the three terms were relatively straightforward, especially when read in conjunction with certain definitions, the Court noted that, on an initial reading, Paragraph 8(c) did not clearly indicate the meaning of the phrase “Pondage required for Firm Power”.

However, consideration of the ordinary meaning of that phrase in the context of hydro-engineering at the time of the Treaty (and today) provided coherence to the meaning of paragraph 8(c). The Court noted that the drafters of the Treaty were both lawyers and engineers, and that the terms of the Treaty could not be sensibly read apart from their engineering origins. After examining dam engineering practices at the time of the Treaty, the Court concluded that Paragraph 8(c) reflected the customary understanding that a HEP maintains pondage to supply water to meet the HEP’s power demand during a “critical period”, at times when the flow in the river is insufficient for the HEP to run at full capacity. To that end, the Treaty’s definition of “Pondage” identifies the relevant critical period (that is, a day or a week), and the Treaty’s definition of “Firm Power” prescribes the measure of power that will be available for this purpose (that is, using a historically low flow rate, the MMD, as a limiting factor).

The Court then examined each of Pakistan’s textual arguments contrary to this position, but ultimately found these arguments unpersuasive. The Court concluded by noting that its textual interpretation, based on the ordinary meaning of Paragraph 8(c) read in light of engineering terms and practices, indicated that the Treaty’s method for calculating pondage included consideration of not just the MMD but also the HEP’s installed capacity and anticipated load, but that the other elements of treaty interpretation should also be considered.

(b) Relevant Context

The Court next considered the ordinary meaning of Paragraph 8(c) in light of three aspects of its context, namely: (i) the water delivery requirements in Paragraph 15 of Annexure D; (ii) the notification requirements in Paragraph 9 and Appendix II to Annexure D; and (iii) Annexure E (on Storage of Water on the Western Rivers).

First, the Court observed that the basic operational constraints in Paragraph 15 play a crucial role in ensuring that India complies with its “let flow” obligation under Article III. These constraints include the obligation to ensure the same volume received in the river upstream of the dam in a week is released downstream in the same week, and to ensure the volume of water released on any given day is (with some exceptions) no less than 30 percent and no more than 130 percent of the volume received upstream in the same 24-hour period.

The Court noted that if Pakistan’s highly restricted approach to pondage were to be adopted, the constraints of Paragraph 15 would only very rarely be capable of being breached, and in those instances, only by a small margin. With reference to the interpretative principle of *effet utile* (or effectiveness), the Court found that the existence of Paragraph 15 weighed against Pakistan’s approach to Paragraph 8(c), given that the Paragraph 15 constraints would be rendered redundant or ineffective if that approach were to be adopted.

Second, the Court examined the data the Treaty requires India to provide Pakistan to allow the latter to assess whether a proposed dam complies with the Treaty. These data include “the calculations for the Operating Pool”, “Discharge proposed to be passed through the Plant...and expected variations in the discharge on account of the daily and weekly load fluctuations”, and “Maximum aggregate capacity of power units...for Firm Power”. The Court found that the requirement to provide this information was consistent with a method for calculating pondage that included installed capacity and anticipated load as elements.

Third, the Court examined Annexure E of the Treaty, which permits India to collect water in “Storage Works” (including large multi-purpose reservoirs). The Court observed that Paragraph 21 of Annexure E defined maximum pondage in a similar way to Paragraph 8(c) of Annexure D, with the exception that “firm power” did not have a specially defined meaning. The Court noted that the use of these same terms in both places indicated that the Treaty drafters recognized prevailing engineering practices and captured those practices using these terms. The Court found that the distinction between “firm power” (undefined, in Annexure E), and “Firm Power” (defined by reference to the MMD, in Annexure D) was due to the need to link the concept of firm power in Annexure D to a low flow rate (to ensure relatively minimal controllable storage), a need that did not exist for Annexure E Storage Works (which were envisaged to have large reservoirs of controllable storage).

(c) Object and Purpose of the Treaty

The Court then considered the ordinary meaning of Paragraph 8(c) in light of the object and purpose of the Treaty, and found that including the installed capacity and anticipated load as elements in the calculation of pondage would be consistent with that object and purpose. The Court stressed that the

choice between the two approaches was not a choice between restrictions and no restrictions – both approaches involved significant limitations by linking firm power to the MMD (a historically low flow rate) and by virtue of the water delivery requirements in Paragraph 15. The Court noted that while Pakistan’s approach had the advantage of providing a unique formula and reducing discretion (essentially that maximum Pondage, expressed in million cubic meters, equals 0.0432 times MMD, expressed in cubic meters per second), the general approach of the Treaty was not to reduce all design elements to unique formulas. Rather, the Treaty set standards that the Parties were obliged to implement in good faith, as with respect to the use and position of low-level outlets, crest-gated spillways, power intakes (discussed above), and freeboard (discussed below).

(d) Subsequent Practice of the Parties

The Court then scrutinized the practice of the Parties since the Treaty was concluded, including seven Annexure D, Part 3 HEPs notified by India from 1968 to 1990 (prior to the Parties’ first dispute before a neutral expert with respect to the Baglihar HEP). Examining the correspondence in relation to the first two dams (first notified in September 1968), the Court noted that India used installed capacity and anticipated load in calculating the pondage for those HEPs but, while Pakistan’s Commissioner raised detailed objections on various aspects of the dams, he did not object to the use of load curves for calculating pondage (and indeed expressly maintained that pondage needed to be determined by reference to the “actual load curve”). In that regard, the Court considered it significant that Pakistan’s Commissioner at that time had served as part of Pakistan’s delegation in the final stages of the negotiations of the Treaty.

The Court then proceeded to examine the exchanges with respect to the five subsequently notified plants, which were consistent in that Pakistan raised extensive objections to the design of the plants, but did not object to the use of installed capacity and anticipated loads in the calculation of pondage. By contrast, at no point in this period did either Party suggest or adopt the approach now advanced by Pakistan, whereby pondage is calculated based solely on the hydrology of the river. The Court noted that, while this practice of the Parties may not have risen to the level of an “agreement” as to the interpretation of Paragraph 8(c), it nevertheless confirmed the ordinary meaning of the that paragraph as calling for the inclusion of installed capacity and anticipated load in the calculation of maximum Pondage.

(e) Travaux Préparatoires (Preparatory Works of the Treaty)

The Court stated that it had carefully reviewed the Treaty’s preparatory works and agreed with Pakistan that such works were of limited assistance for the interpretation of Paragraph 8(c), with one exception. The Court noted that an initial “Heads of Agreement” had included pondage provisions for both regular HEPs and for “Small Plants”, which calculated pondage for both by reference to daily and weekly load fluctuations. These provisions were later consolidated into what became Paragraph 2(c) (the definition of “Pondage”), with that definition serving as a basis for the calculation of Pondage for Small Plants and, it would appear, for regular HEPs as well. The Court noted that if the Parties had intended to make a significant change as to the calculation of pondage for regular HEPs by the movement of the text, in a way that departed from the common practices at the time, one might expect to see some explanation or even acknowledgment of that in the preparatory works. For the Court, the absence of such explanation or acknowledgment weighed against Pakistan’s approach and confirmed the ordinary meaning of Paragraph 8(c).

(f) Overall Assessment

The Court recalled its analysis of each of the elements of interpretation. Considering these elements as a whole, the Court concluded that the calculation of “maximum Pondage” in Paragraph 8(c) requires consideration of the proposed HEP’s installed capacity and anticipated load, amongst other elements.

The Court concluded by summarizing the steps India is obliged to pursue to ensure compliance with Paragraph 8(c), including in relation to notification requirements. Further, it is for India to establish that the proposed maximum Pondage satisfies the requirements of Paragraph 8(c). As the Parties had not briefed the Court on how installed capacity and anticipated load were to be determined, the Court indicated that it would not address the matter in detail, but highlighted that the Parties could raise the issue in a further phase of the proceedings if they so wished. The Court noted that as a general matter, installed capacity and anticipated load would need to be based on a realistic, well-founded, and defensible projection that reflected how the plant would actually be operated (and not hypothesized in a manner that could serve to inflate the maximum Pondage).

9. *General Interpretation of Annexure D, Paragraph 8(a) on the Artificial Raising of the Water Level Above Full Pondage Level (including the use of Freeboard) (Award – Part XII)*

In Part XII of the Award, the Court addressed what is to be taken into account, and what is to be excluded, when designing an Annexure D, Part 3 HEP that make the works, including the freeboard, capable of raising artificially the water level, in light of Paragraph 8(a) of Annexure D. “Freeboard” is not an expression used in the Treaty, but connotes the vertical distance between the Full Pondage Level and the top of the dam.

Paragraph 8(a) of Annexure D to the Treaty provides:

The works themselves shall not be capable of raising artificially the water level in the Operating Pool above the Full Pondage Level specified in the design.

The Court noted that Paragraph 8(a) was not limited to addressing freeboard. However, the Court’s analysis would focus on freeboard, as the principal concern raised by Pakistan. The Court observed that it found that the ordinary meaning of the provision to be straight-forward as it related to the design of freeboard, though its exact contours are informed by reference to the provision’s context and the object and purpose of the Treaty.

The Court recalled that the Parties agreed that some amount of freeboard was not prohibited by the Treaty. To that end, the Court found that some freeboard would be necessary to ensure the safety of the dam as a whole (including to prevent overtopping of the dam from wave action) and for surcharge storage (uncontrollable temporary storage for floodwaters that cannot pass through the dam quickly enough). However, the Court found that any additional freeboard beyond what was necessary for those purposes was prohibited, even if a best practices approach or ancillary considerations, such as the protection of structures on top of the dam, favored additional freeboard.

The Court found that, absent the agreement of the Parties, international standards would determine what is necessary to ensure the safety of the dam as a whole, rather than standards developed by only one Party. The Court further clarified that the prohibition in Paragraph 8(a), concerning the “capability” of the works, is not directed at how the works are intended to be operated immediately after construction or even normally – rather, the works should not be designed to readily allow for the artificial raising of the water level at whatever point in the future. The Court concluded by summarizing the steps India is obliged to pursue to ensure compliance with Paragraph 8(a), including in relation to notification requirements. Further, it is for India to establish that the proposed works satisfy the requirements of Paragraph 8(a).

10. *Cooperation and Information Sharing under the Treaty (Award - Part XIII)*

The Court recalled the critical linkage between the technical aspects of HEP design (discussed above) and the process by which these aspects are notified by India to Pakistan through the Commission, and

resolved through exchanges, objections, and, if necessary, third-party dispute resolution. On that basis, the Court found that it was not only appropriate but essential to address the Treaty's cooperation and information sharing provisions in general terms.

The Court surveyed the various Treaty provisions addressing cooperation, information sharing, monitoring, and notification as between India and Pakistan, including an overarching duty of cooperation on both Parties, specific information sharing obligations, and the institutionalization of cooperation through the Commission.

According to the Court, these provisions confirmed the centrality of cooperation to the operation of the Treaty, including to the balance established for the Parties' respective rights and obligations under Article III and Annexure D, Part 3. The Court observed that, in order for the design restrictions reflected in these provisions to operate as intended, cooperation cannot be limited to a mechanical exercise of notifying a decision already taken; rather, dialogue between the Parties is required from the outset of the design process, well before design choices are complete and contract tenders are prepared for issuance.

11. Decision (Award - Part XIV)

After recalling the Court's previous Award on Competence and Supplemental Award on Competence, and reaffirming its determination that it is competent to consider and determine the disputes set forth in Pakistan's Request for Arbitration, the Court concluded the Award with its findings on each of the matters to be addressed in the First Phase on the Merits (briefly summarized above).

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