

The Western Rivers Run-of-River Hydro Bargain

Professor Philippa Webb

Hearing for the First Phase on the Merits Indus Waters Treaty Arbitration (Pakistan v. India) PCA Case No. 2023-01 10 July 2024, The Hague



Outline of submissions

- 1. Rule of 'let flow'/non-interference/no storage
- 2. Relationship between Article III and other provisions
 - Hydro-electric power
 - Other uses
 - Storage
- 3. Cooperation and reporting requirements
- 4. Question (b) in para. 35 of Procedural Order No. 6

Article III, IWT



Article III

PROVISIONS REGARDING WESTERN RIVERS

No. 6032

INDIA, PAKISTAN and INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

The Indus Waters Treaty 1960 (with annexes). Signed at Karachi, on 19 September 1960

Protocol to the above-mentioned Treaty. Signed on 27 November, 2 and 23 December 1960

Official text : English.

Registered by India on 16 January 1962.

INDE, PAKISTAN et BANQUE INTERNATIONALE POUR LA RECONSTRUCTION ET LE DÉVELOPPEMENT

- Traité de 1960 sur les eaux de l'Indus (avec annexes). Signé à Karachi, le 19 septembre 1960
- Protocole relatif au Traité susmentionné. Signé les 27 novembre, 2 et 23 décembre 1960

Texte officiel : anglais.

Enregistrés par l'Inde le 16 janvier 1962.

(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)¹ 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.²

(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 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,¹ India shall not store any water of, or construct any storage works on, the Western Rivers.



Three features of Article III(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)." Not an obligation of nonappropriation

Positive obligation

Applies to ALL the waters



"Being the lower riparian, Pakistan alone is vulnerable to interference by India. By introducing for the first time at this stage new uses on Western Rivers, e.g. [...] unrestricted right to develop hydro-electric power from those rivers, India has, while trying effectively to secure to herself the exclusive use and development of the Eastern Rivers, sought to deny the reciprocal independence to Pakistan which the Bank Proposal and the Aide Memoire promised to afford to each country."

Pakistan's acceptance of the Hydro exception to "let flow", Aug-Sept 1959



(2) India shall be entitled to generate hydro-electric power on the Western Rivers in accordance with the provisions of Annex "B".

ARTICLE III

Provisions Regarding Western Rivers

(1) Pakistan shall be entitled to 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) of this Article.

(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 Annexure C ()) in the case of each of the rivers Indus, Jhelum and Chenab to the drainage basin thereof:

- (a) Domestic Use, subject to the provisions of Article IV (10);
- (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.

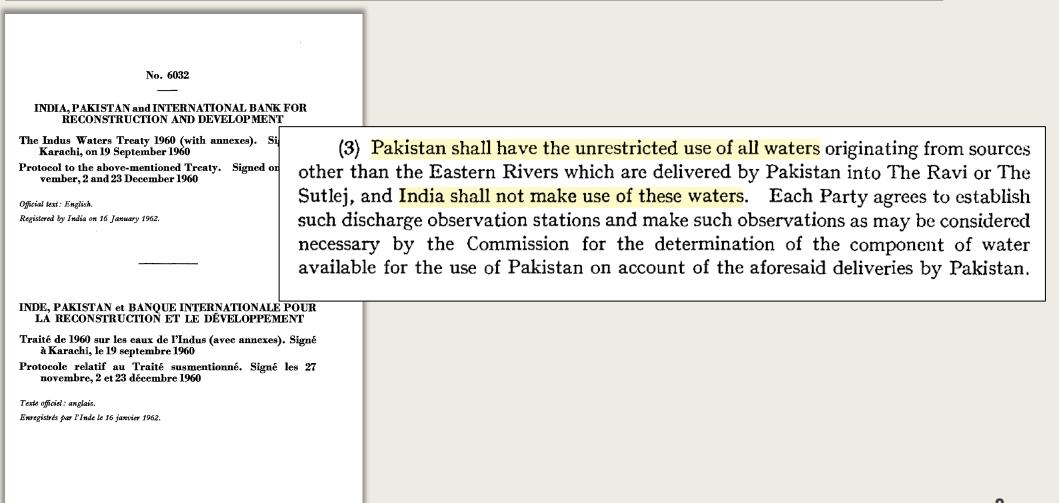


Article I(15) travaux

Treaty draft of 9 December 1959 (Exhibit P-0139), Article I(12)	Article I(15) of the Indus Waters Treaty
The term "interference with the waters" means any act of withdrawal therefrom or any man-made obstruction to their flow which causes a change in the volume of the daily flow of the waters.	The term "interference with the waters" means: (a) Any act of withdrawal therefrom; or (b) Any man-made obstruction to their flow which causes a change in the volume (within the practical range of measurement) of the daily flow of the waters: <u>Provided</u> <u>however that an obstruction which involves only an</u> <u>insignificant and incidental change in the volume of the</u> <u>daily flow, for example, fluctuations due to afflux</u> <u>caused by bridge piers or a temporary by-pass, etc.,</u> <u>shall not be deemed to be an interference with the</u> <u>waters</u> .

Article III(3), IWT





Article III(4), IWT



No. 6032 INDIA, PAKISTAN and INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT The Indus Waters Treaty 1960 (with annexes). Signed at Karachi, on 19 September 1960 Protocol to the above-mentioned Treaty. Signed on 27 No- vember, 2 and 23 December 1960	
Official text: English. Registered by India on 16 January 1962.	ept as provided in Annexures D and E, ¹ India shall not store any water
of, or constru	uct any storage works on, the Western Rivers.
INDE, PAKISTAN et BANQUE INTERNATIONALE POUR LA RECONSTRUCTION ET LE DÉVELOPPEMENT	
Traité de 1960 sur les eaux de l'Indus (avec annexes). Signé à Karachi, le 19 septembre 1960	
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Enregistrés par l'Inde le 16 janvier 1962.	
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Article III(4), Travaux préparatoires

Message from President Ayub of Pakistan to Mr. Black. Received from Mr. Mueenuddin on August 21st, 1959 1. A new crisis is facing London talks. India has made new demands on flow of Mestern Rivers far beyond the stipulation in Bank Proposal restricted to existing uses from Jhelum, the reservation made by India in her Earch 25th, 1954 letter accepting principles of Bank Proposal, and subsequent clarification in this regard given to us by Bank. The position was recognised that in return for Pakistan's surrendering her rights on Eastern Rivers, India will give up all rights she claims to waters of Jestern Rivers. To unhindered uses and development by Pakistan of natural flow of Mestern Divers, the only exception to which Pakistan was willing to agree under pressure from Bank was (a) existing uses within Jammu and Mashmir as in 1947, and (b) future irrigation through minor extensions from existing channels or use of insignificant amounts of water from small feeder streams. New channels and 2. India has now asked for no limit to uses from Indus, Jhelum above lake, and Chenab about RL 2000 covering Jammu and Mashmir, as well as Indian 3. This is a reversal of position that total flow of Western Rivers, excepting for insignificant uses in Jammu and Kashmir only, will be available to Pakistan. We have repeatedly requested Bank (last time in our meeting in May) to ensure that these uses remain truly insignificant and that Water Treaty should be so worded as not to prejudice Pakistan's position regarding L. Your intervention is necessary to ensure that untenable Indian demands are not allowed to hinder progress of negotiations.

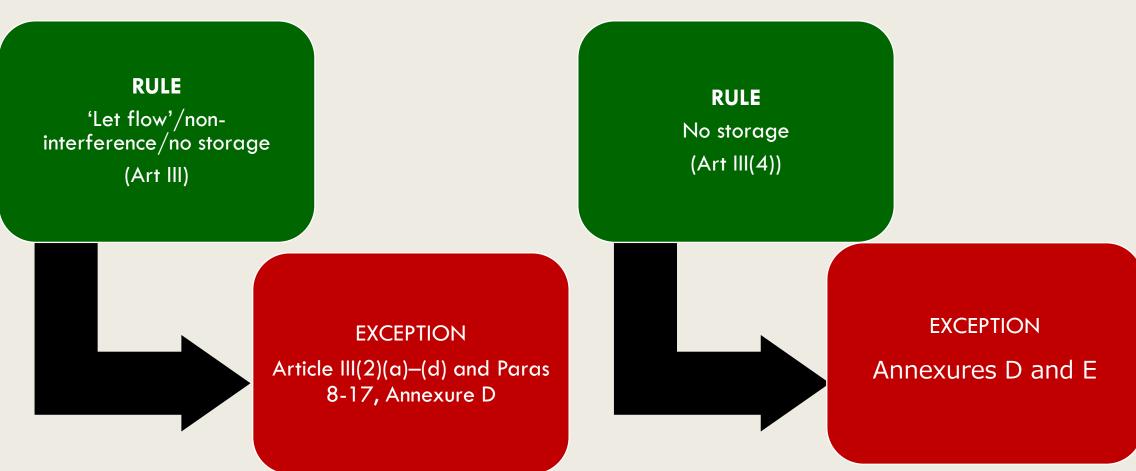
P-0468: P-0131

(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 Paragraph 6(d) 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.

Rule-Exception



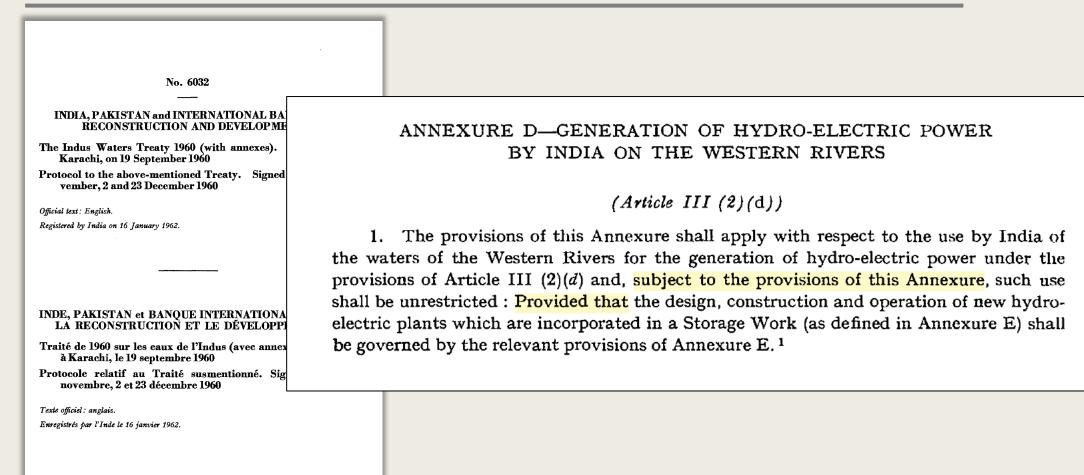


Article III(2), IWT



No. 6032 —— INDIA, PAKISTAN and INTERNATIONAL BANK F(RECONSTRUCTION AND DEVELOPMENT	OR
 The Indus Waters Treaty 1960 (with annexes). Sign Karachi, on 19 September 1960 Protocol to the above-mentioned Treaty. Signed on 2 vember, 2 and 23 December 1960 Official text: English. Registered by India on 16 January 1962. 	(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) ¹ in the case of each of the rivers, The Indus, The Jhelum and The Chenab, to the drainage basin thereof:
INDE, PAKISTAN et BANQUE INTERNATIONALE I LA RECONSTRUCTION ET LE DÉVELOPPEME Traité de 1960 sur les eaux de l'Indus (avec annexes). à Karachi, le 19 septembre 1960 Protocole relatif au Traité susmentionné. Signé l novembre, 2 et 23 décembre 1960	 (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.²
Texte officiel : anglais. Enregistrés par l'Inde le 16 janvier 1962.	12







Paragraph 2(g), Annexure D, IWT

No. 6032 —— INDIA, PAKISTAN and INTERNATION RECONSTRUCTION AND DEVEL The Indus Waters Treaty 1960 (with anne Karachi, on 19 September 1960	OPMENT	
Protocol to the above-mentioned Treaty. vember, 2 and 23 December 1960	Signed on 27 No-	
Official text : English. Registered by India on 16 January 1962.	· · · ·	F-River Plant" means a hydro-electric plant that develops power without corage as an integral part of the plant, except for Pondage and Surcharge
	Storage	• • • • • • •
INDE, PAKISTAN et BANQUE INTERNAT LA RECONSTRUCTION ET LE DÉVE	FIONALE POUR LOPPEMENT	
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Cross-section of HEP Annexure D reservoir

D.2(e), D.8(b) Full Pondage Level	Surcharge storage D.2(e), D.8(b)	Live Storage
D.2(d), D.8(c)	Operating Pool / Pondage D.2(f), D.2(c)	D.2(b)
Dead Storage Level D.2(a)		+
	Dead Storage D.2(a)	
River flow		

Paragraph 8, Annexure D, IWT

8. Except as provided in Paragraph 18, the design of any new Run-of-River Plant (hereinafter in this Part referred to as a Plant) shall conform to the following criteria :

- (a) 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.
- (b) The design of the works shall take due account of the requirements of Surcharge Storage and of Secondary Power.
- (c) The maximum Pondage in the Operating Pool shall not exceed twice the Pondage required for Firm Power.
- (d) 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.
- (e) 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.
- f) The intakes for the turbines shall be located at the highest level consistent with satisfactory and economical 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.
- (g) If any Plant is constructed on the Chenab Main at a site below Kotru (Longitude 74° -59' East and Latitude 33° - 09' North), a Regulating Basin shall be incorporated.





Kishenganga Partial Award

"In carrying out this evaluation, the Court emphasizes that it is not considering whether the development of hydro-electric power without recourse to drawdown flushing is preferable for India. It is not for the Court to apply "best practices" in resolving this dispute. India has quite understandably argued in these proceedings for a right to the optimal design and operation of its hydro-electric installations on the upstream stretches of the Western Rivers. However, any exercise of design involves consideration of a variety of factors—not all of them technical. Hydrologic, geologic, social, economic, environmental and regulatory considerations are all directly relevant. and the Court considers the Treaty restraints on the construction and operation by India of reservoirs to be such a regulatory factor. For the Court, the optimal design and operation of a hydro-electric plant is that which can practically be achieved within the constraints imposed by the Treaty."

Paragraph 8, Annexure D, IWT

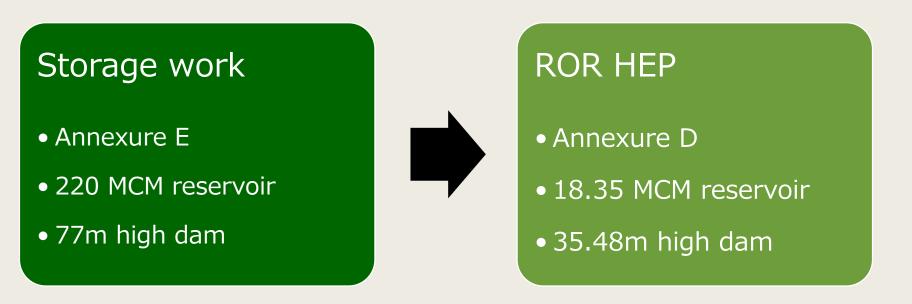
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- (a) The works themselves shall not be capable of raising artificially the water level in the Operating Pool above the Full Pondage Level specified in the design.
- (b) The design of the works shall take due account of the requirements of Surcharge Storage and of Secondary Power.
- (c) The maximum Pondage in the Operating Pool shall not exceed twice the Pondage required for Firm Power.
- (d) 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.
- (e) 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.
- (f) The intakes for the turbines shall be located at the highest level consistent with satisfactory and economical 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.
- (g) If any Plant is constructed on the Chenab Main at a site below Kotru (Longitude 74° -59' East and Latitude 33° - 09' North), a Regulating Basin shall be incorporated.



Kishenganga Plant





Paragraph 15, Annexure D, IWT



15. Subject to the provisions of Paragraph 17, the works connected with a Plant shall be so operated that (a) the volume of water received in the river upstream of the Plant, during any period of seven consecutive days, shall be delivered into the river below the Plant during the same seven-day period, and (b) in any one period of 24 hours within that seven-day period, the volume delivered into the river below the Plant shall be not less than 30%, and not more than 130%, of the volume received in the river above the Plant during the same 24-hour period : Provided however that :

- (i) where a Plant is located at a site on the Chenab Main below Ramban, the volume of water received in the river upstream of the Plant in any one period of 24 hours shall be delivered into the river below the Plant within the same period of 24 hours;
- (ii) where a Plant is located at a site on the Chenab Main above Ramban, the volume of water delivered into the river below the Plant in any one period of 24 hours shall not be less than 50% and not more than 130%, of the volume received above the Plant during the same 24-hour period; and
- iii) where a Plant is located on a Tributary of The Jhelum on which Pakistan has any Agricultural use or hydro-electric use, the water released below the Plant may be delivered, if necessary, into another Tributary but only to the extent that the then existing Agricultural Use or hydro-electric use by Pakistan on the former Tributary would not be adversely affected.

Domestic Use:

Articles III(2) and I(10), IWT



(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)¹ 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.²

(10) The term "Domestic Use" means the use of water for :

- (a) drinking, washing, bathing, recreation, sanitation (including the conveyance and dilution of sewage and of industrial and other wastes), stock and poultry, and other like purposes;
- (b) household and municipal purposes (including use for household gardens and public recreational gardens); and
- (c) industrial purposes (including mining, milling and other like purposes);

but the term does not include Agricultural Use or use for the generation of hydroelectric power.

Industrial Purposes:

Article IV(12) and (13), IWT



(12) The use of water for industrial purposes under Articles II (2), II (3) and III (2) shall not exceed :

- (a) in the case of an industrial process known on the Effective Date, such quantum of use as was customary in that process on the Effective Date;
- (b) in the case of an industrial process not known on the Effective Date :
 - (i) such quantum of use as was customary on the Effective Date in similar or in any way comparable industrial processes ; or
 - (ii) if there was no industrial process on the Effective Date similar or in any way comparable to the new process, such quantum of use as would not have a substantially adverse effect on the other Party.

(13) Such part of any water withdrawn for Domestic Use under the provisions of Articles II (3) and III (2) as is subsequently applied to Agricultural Use shall be accounted for as part of the Agricultural Use specified in Annexure B and Annexure C respectively; each Party will use its best endeavours to return to the same river (directly or through one of its Tributaries) all water withdrawn therefrom for industrial purposes and not consumed either in the industrial processes for which it was withdrawn or in some other Domestic Use.

Non-consumptive Use:

Articles I(11) and IV(2), IWT



(11) The term "Non-Consumptive Use" means any control or use of water for navigation, floating of timber or other property, flood protection or flood control, fishing or fish culture, wild life or other like beneficial purposes, provided that, exclusive of seepage and evaporation of water incidental to the control or use, the water (undiminished in volume within the practical range of measurement) remains in, or is returned to, the same river or its Tributaries ; but the term does not include Agricultural Use or use for the generation of hydro-electric power.

* *

(2) Each Party agrees that any Non-Consumptive Use made by it shall be so made as not to materially change, on account of such use, the flow in any channel to the prejudice of the uses on that channel by the other Party under the provisions of this Treaty. In executing any scheme of flood protection or flood control each Party will avoid, as far as practicable, any material damage to the other Party, and any such scheme carried out by India on the Western Rivers shall not involve any use of water or any storage in addition to that provided under Article III.

Agricultural Use:

Article I(9) and Annexure C, IWT



(9) The term "Agricultural Use" means the use of water for irrigation, except for irrigation of household gardens and public recreational gardens.

ANNEXURE C—AGRICULTURAL USE BY INDIA FROM THE WESTERN RIVERS

(Article III(2)(c))

Article III(4) and Annexure E, IWT



(4) Except as provided in Annexures D and E,¹ India shall not store any water of, or construct any storage works on, the Western Rivers.

ANNEXURE E—STORAGE OF WATERS BY INDIA ON THE WESTERN RIVERS



Paragraph 2(a), Annexure E, IWT

- 2. As used in this Annexure :
- (a) "Storage Work" means a work constructed for the purpose of impounding the waters of a stream ; but excludes
 - (i) a Small Tank,
 - (ii) the works specified in Paragraphs 3 and 4 of Annexure D, ¹ and
 - (iii) a new work constructed in accordance with the provisions of Annexure D.

Paragraph 7, Annexure E, IWT



7. The aggregate storage capacity of all Single-purpose and Multi-purpose Reservoirs which may be constructed by India after the Effective Date on each of the River Systems specified in Column (2) of the following table shall not exceed, for each of the categories shown in Columns (3), (4) and (5), the quantities specified therein :

		Conservation Storage Capacity	
River System	General Storage Capacity	Power Storage Capacity	Flood Storage Capacity
(1) (2)	(3)	(4)	(5)
	n	nillion acre-fe	et
(a) The Indus	0.25	0.15	Nil
(b) The Jhelum (excluding the Jhelum Main)	0.50	0.25	0.75
(c) The Jhelum Main	Nil	Nil	As provided in Paragraph 9
(d) The Chenab (excluding the Chenab Main)	0.50	0.60	Nil
(e) The Chenab Main	Nil	0.60	Nil

Paragraph 11, Annexure E, IWT



11. The design of any Storage Work (other than a Storage Work falling under Paragraph 3) shall conform to the following criteria :

- (a) The Storage Work shall not be capable of raising artificially the water level in the reservoir higher than the designed Full Reservoir Level except to the extent necessary for Flood Storage, if any, specified in the design.
- (b) The design of the works shall take due account of the requirements of Surcharge
- (c) The volume between the Full Reservoir Level and the Dead Storage Level of any reservoir shall not exceed the Conservation Storage Capacity specified in the design.
- (d) With respect to the Flood Storage mentioned in Paragraph 9, the design of the works on the Jhelum Main shall be such that no water can spill from the Jhelum Main into the off-channel storage except when the water level in the Jhelum Main rises above the low flood stage.
- (e) Outlets or other works of sufficient capacity shall be provided to deliver into the river downstream the flow of the river received upstream of the Storage Work, except during freshets or floods. These outlets or works shall be located at the highest level consistent with sound and economical design and with satisfactory operation of the Storage Work.
- (f) Any outlets below the Dead Storage Level necessary for sediment control or any other technical purpose shall be of the minimum size, and located at the highest level, consistent with sound and economical design and with satisfactory operation of the Storage Work.
- (g) If a power plant is incorporated in the Storage Work, the intakes for the turbines shall be located at the highest level consistent with satisfactory and economical construction and operation of the plant and with customary and accepted practice of design for the designated range of the plant's operation.



Kishenganga Partial Award

"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."



Article III(3), VI, VII, IWT

(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 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.

Article VI

Exchange of data

Article VII

FUTURE CO-OPERATION



Article VII(2), IWT

(2) If either Party plans to construct any engineering work which would cause interference with the waters of any of the Rivers and which, in its opinion, would affect the other Party materially, it shall notify the other Party of its plans and shall supply such data relating to the work as may be available other Party to inform itself of the nature, magnitude and effect of the work. If a work would cause interference with the waters of any of the Rivers but would not, in the opinion of the Party planning it, affect the other Party materially, nevertheless the Party planning the work shall, on request, supply the other Party with such data regarding the nature, magnitude and effect, if any, of the work as may be available.

Article VIII(4), IWT



(4) The purpose and functions of the Commission shall be to establish and maintain co-operative arrangements for the implementation of this Treaty, to promote co-operation between the Parties in the development of the waters of the Rivers and,

in particular,



Paragraph 9, Annexure D, IWT

9. To enable Pakistan to satisfy itself that the design of a Plant conforms to the criteria mentioned in Paragraph 8, India shall, at least six months in advance of the beginning of construction of river works connected with the Plant, communicate to Pakistan, in writing, the information specified in Appendix II¹ to this Annexure. If any such information is not available or is not pertinent to the design of the Plant or to the conditions at the site, it will be so stated.



10. Within three months of the receipt by Pakistan of the information specified in Paragraph 9, Pakistan shall communicate to India, in writing, any objection that it may have with regard to the proposed design on the ground that it does not conform to the criteria mentioned in Paragraph 8. If no objection is received by India from Pakistan within the specified period of three months, then Pakistan shall be deemed to have no objection.

11. If a question arises as to whether or not the design of a Plant conforms to the criteria set out in Paragraph 8, then either Party may proceed to have the question resolved in accordance with the provisions of Article IX(1) and (2).

12. (a) If any alteration proposed in the design of a Plant before it comes into operation would result in a material change in the information furnished to Pakistan under the provisions of Paragraph 9, India shall immediately communicate particulars of the change to Pakistan in writing and the provisions of Paragraphs 10 and 11 shall then apply, but the period of three months specified in Paragraph 10 shall be reduced to two months.

(b) If any alteration proposed in the design of a Plant after it comes into operation would result in a material change in the information furnished to Pakistan under the provisions of Paragraph 9, India shall, at least four months in advance of making the alteration, communicate particulars of the change to Pakistan in writing and the provisions of Paragraphs 10 and 11 shall then apply, but the period of three months specified in Paragraph 10 shall be reduced to two months.



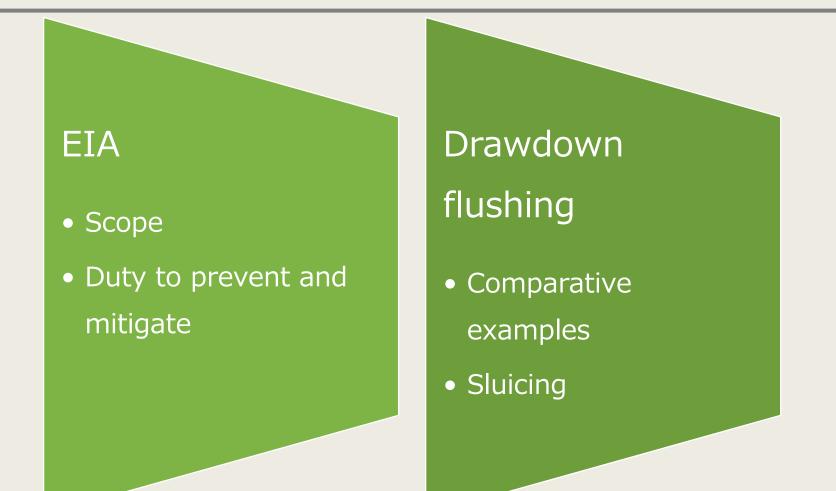
Procedural Order 6,¶ 35(b)

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-	(ł
THE REPUBLIC OF INDIA	n
	p te
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PROCEDURAL ORDER NO. 6	
(DECISION ON FURTHER PROCEEDINGS)	
COURT OF ARBITRATION:	
Professor Sean D. Murphy (Chairman) Professor Wouter Buytaert	
Mr. Jeffrey P. Minear Judge Awn Shawkat Al-Khasawneh Dr. Donald Blackmore	
SECRETARIAT:	
The Permanent Court of Arbitration	
6 July 2023	

(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?



Kishenganga Court of Arbitration



Rule-Exception



