

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 627/MP/2020

Coram:

**Shri Jishnu Barua, Chairperson
Shri Ramesh Babu V, Member
Shri Harish Dudani, Member**

Date of Order: 27.01.2026

In the matter of:

Petition under Section 79(1)(c) and (d) of the Electricity Act, 2003 read with Regulations 11(4) and other regulations of the Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2010 as amended by the third amendment effective from 1.4.2016 and orders, for direction in regard to the levy and collection of charges and losses from the Petitioners for the 500 kV Bipole Mundra-Mohindergarh HVDC Transmission Line along with its associated facilities.

And in the matter of:

- 1. Haryana Power Purchase Centre**
Shakti Bhawan, Sector -6, Panchkula (Haryana)
- 2. Uttar Haryana Bijli Vitaran Nigam Limited**
Vidyut Sadan,
Plot No. C-16, Sector 6
Panchkula, Haryana- 134112
- 3. Dakshin Haryana Bijli Vitran Nigam Ltd,**
Vidyut Nagar, Vidyut Sadan,
Hissar, Haryana- 125
- 4. Haryana Vidyut Prasaran Nigam Limited**
Shakti Bhawan, Sector -6, Panchkula (Haryana)

.....Petitioners

Versus

- 1. National Load Despatch Centre**
Power System Operation Corporation Limited
B-9 (1st Floor), Qutab Institutional Area, Katwaria Sarai,
New Delhi 110016
- 2. Central Transmission Utility**
Power Grid Corporation of India Limited
"Saudamini" Plot No: 2, Sector -29,
Gurgaon – 122 001, Haryana



3. Power Grid Corporation of India Limited

“Saudamini” Plot No: 2, Sector -29,
Gurgaon – 122 001, Haryana

4. Northern Regional Load Dispatch Centre

18-A, Shaheed Jeet Singh Sansal Marg,
Katwaria Sarai, New Delhi-110 016

5. Northern Regional Power Committee

18-A, Qutab Institutional Area, Shaheed Jeet Singh Marg,
Katwaria Sarai, New Delhi-110 016

6. Adani Power (Mundra) Limited

9th Floor, Shikhar, Mithakali Six Roads,
Navrangpura Ahmedabad, Gujarat - 380 009.

.....Respondents

Parties Present: Shri Shubham Arya, Advocate, HPPC
Ms. Reeha Singh, Advocate, HPPC
Ms. Priyansi Jadia, CTUIL
Shri Swapnil Verma, CTUIL
Shri Gajendra Singh, NLDC

ORDER

The present petition has been filed by Haryana Power Purchase Centre (HPPC), Uttar Haryana Bijli Vitran Nigam Limited (UHBVN), Dakshin Haryana Bijli Vitran Nigam (DHBVN) and Haryana Vidyut Prasaran Nigam Limited (HVPNL) (hereinafter collectively referred to as ‘Petitioners’) for their claims against sharing of the transmission charges and losses related to ± 500 KV Bipole Mundra-Mohindergarh HVDC Transmission Line (hereinafter referred as “Mundra-Mohindergarh HVDC Line”) connected to the generating units of the Mundra Power Project of Adani Power (Mundra) Limited (hereinafter referred as “APML”) under Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations 2010 (hereinafter referred to as ‘the 2010 Sharing Regulations’) read with orders of the Commission. The Petitioner has made the following prayers:

(a) *Admit the present petition;*

(b) *Declare that the Petitioners are not liable to pay any POC charges or make any adjustment for losses in regard to the transmission of power from Mundra generating stations in Kutch Gujarat to Mohindergarh in Haryana through the 500 kV HVDC line of Adani Power including for injection of 1 MW for the purpose of intervening AC network as claimed by the Respondents 1 to 5 or on account of socialization of cost accounted with 500 KV DC line otherwise;*



- (c) *Direct Respondents 1 to 5 to take immediate steps to re-compute and render accounting of the loss/charges and give refund to the Petitioner of the amount collected from the Petitioners with interest;*
- (d) *Alternatively hold Adani Power (Mundra)Limited to pay the amount collected by Respondents No. 1 to 5 towards transmission charges and Compensation for the losses adjusted both with interest.*
- (e) *Award cost of the present petition; and*
- (f) *Clarify that the POC regulations notified on 04.05.2020 will be implemented considering the exemption made for Haryana subject to which transmission licence was granted under Hon'ble Commission's orders dated 08.06.2013 and 29.07.2013.*
- (g) *Pass such further order or orders as may be deemed just and proper to give justice to the Petitioners.*

Submissions of the Petitioner:

2. The Petitioners have mainly submitted as follows:

- (a) HPPC is responsible for all power purchases, long term as well as short term, from within and outside the State of Haryana, including trading of power for the two distribution companies UHBVN and DHBVN. UHBVN and DHBVN are collectively referred to as 'the Haryana Utilities'.
- (b) Pursuant to a competitive bid for the procurement of power for consumers in the State of Haryana, APML was selected as the successful bidder based on the tariff quoted for the delivery of power at the nearest STU sub-station in Haryana. Haryana Utilities entered into Power Purchase Agreements (PPAs) both dated 07.08.2008 with APML where APML has agreed to undertake generation and supply of electricity of the contracted capacity aggregating to 1424 MW from Unit 7, Unit 8 and Unit 9 of the Mundra Power Project located at Kutch District in the State of Gujarat and for delivery of electricity at the delivery point at State periphery of Haryana through a dedicated transmission system to be established by APML entirely at its own cost, expense and risk.
- (c) APML was selected as the successful bidder based on the tariff quoted for the delivery of power at the nearest STU substation in Haryana, for injection of power in the State Grid/Network of Haryana. The obligation for delivering electricity in the State of Haryana being of APML, the Haryana Utilities were not concerned with the arrangement for the use of any inter-State transmission system or otherwise any transmission line or system of any other person or licensee for effecting such delivery, and the same were entirely at the cost, responsibility and risk assumed by APML.

- (d) The bid given by APML under the competitive bid was clearly based on the fact that there would be no direct or indirect costs related to the transmission system till the nearest STU sub-station, associated with the purchase of power from APML, to be borne by the Haryana Utilities.
- (e) The Haryana Utilities have factored the quantum as well as the tariff at which the quantum of power shall be available for the Haryana Utilities at the Haryana periphery for long term power purchase planning and procurement without there being any additional charges to be paid for inter-state or intra-state transmission from Mundra to Haryana Periphery at STU substation at Dhanoda.
- (f) For wheeling of electricity from the generating facility of APML at Mundra to Haryana periphery, i.e. STU sub-station at Dhanonda, a dedicated HVDC line (Mundra-Mohindergarh HVDC Line) was constructed by APML in lieu of its offer/bid. The Mundra-Mohindergarh HVDC Line was constructed with the vision of maintaining a reliability margin in case one circuit is unavailable. The HVDC Line has a total capacity of carrying 2500 MW of electricity if both bipoles of the HVDC line are in regular operation and are fully available, i.e. each bipole of the HVDC Line is capable of evacuating and carrying 1250 MW. If one of the bipoles is backed down or otherwise not in operation for any reason, including scheduled maintenance and forced outages, etc., the capacity that could be evacuated from the other pole would be only 1250 MW. Accordingly, on the basis of the optimum capacity requirement for evacuation of 1424 MW from the Mundra Power Station to Mohindergarh in Haryana, both poles of the HVDC Line are required to be available in a dedicated manner at all times, and for the above quantum, there is no extra or redundant capacity available for carrying any other power on a long term committed basis.
- (g) The ± 500 KV Bipole Mundra- Mohindergarh HVDC transmission line from Unit 7,8&9 of Mundra power project to Mohindergarh of Adani Power did not meet the contingency outage planning criteria of Grid Code since with the tripping of one pole, the available pole having capacity of 1250 MW was not able to carry 1424 MW of power without load shedding or rescheduling of generation during Steady State Operation, as per requirement of PPAs.
- (h) The HVDC Line was envisaged to be developed as a dedicated transmission line primarily for evacuation and supply of power to Haryana Utilities at the delivery point at

nearest STU sub-station or in common parlance of electricity terminology, it was an extended bus of the generating units and such use of the transmission line having dedicated nature for evacuation and delivery of 1424 MW needs to be given an absolute priority without any reservation. The consideration of setting up the dedicated line while quoting tariff was a suitable and beneficial proposition at relevant point of time to APML on the premise of avoidance cost towards transmission charges of Western Region, Northern Region and WR-NR Inter-regional link and transmission losses of Western Region and Northern Region under the then prevailing Postage Stamp Transmission Pricing in order to edge out other competing bidders and the same was clearly provided by APML in the letter dated 10.04.2008.

- (i) Despite the above, APML filed Petition No. 44/TL/2012 before the Commission under Section 15 of the Electricity Act, 2003, for the grant of an inter-State transmission licence for the said HVDC Line. The Haryana Utilities opposed the grant of a licence for such a transmission line. The Commission, considering the submissions of the parties, vide orders dated 08.06.2013 and dated 14.06.2013, had inter-alia granted in-principle approval for transmission licence for 400 kV DC Mundra-Dehgam Transmission Line and the HVDC Line, including associated 400 kV lines.
- (j) By order dated 29.07.2013, passed in Petition No. 44/TL/2012, this Commission decided on the grant of an inter-state transmission line to Adani Power for the above 500 KV Bipole Mundra – Mohindergarh HVDC Transmission Line along with its associated facilities.
- (k) On 1.4.2015, the Commission notified the Third Amendment to the 2010 Sharing Regulations whereby the said HVDC transmission system was covered vide Clause (4)(3)(iii) of Regulation 11 of the 2010 Sharing Regulations.
- (l) The Commission in its orders dated 08.06.2013 and 29.07.2013 had, inter alia, secured the interest of Haryana Utilities considering the Regulations in vogue. In paragraph 60 of the order dated 08.06.2013, the Commission had categorically observed that under the circumstances, the question of any additional liability, direct or indirect, on Haryana Utilities cannot arise.
- (m) Further, in terms of paragraph 45.22 of the Statement of Reasons dated 26.10.2015, Haryana Utilities, as drawl DIC, were not required to pay the transmission charges or bear the transmission losses in regard to the said HVDC Line. The actual drawl by

Haryana Utilities has been from the Dhanonda 400 kV sub-station of the HVPNL, which is connected to the Mohindergarh sub-station of APML.

- (n) Despite the above clear provisions, the Respondent, NLDC proceeded to compute the POC (point of connection) charges and losses as the liability to/ account for by Haryana Utilities purported to be based on the maximum withdrawal, involving the HVDC Line approved by the Validation Committee by increasing the demand in each node by 1 MW and thereby assuming the usage of the said transmission system by Haryana Utilities.
- (o) In the above circumstances, by letter dated 11.06.2018, HVPNL approached the Chairman of the Validation Committee for redressal of the dispute regarding payment of the transmission charges and for meeting the losses in regard to the said 500 kV HVDC Line. In the said letter, HVPNL also specifically placed on record that the amount being collected by NLDC constitutes a double payment, as Haryana Utilities are already paying the tariff to APML, inclusive of admissible transmission charges and adjustment for losses, in terms of the PPAs; therefore, NLDC should stop the recovery.
- (p) In the meeting of the Validation Committee held on 20.06.2018, wherein the issues raised by HVPNL were discussed, after due deliberations, it was conveyed that the Validation Committee is not the right forum to seek such relief. The Validation Committee advised approaching the Commission on the matter.
- (q) A meeting was scheduled with the officers of the Commission on 20.08.2018, in which concerns of Haryana Utilities on double billing under POC mechanism in lieu of 1424 MW power through the HVDC Line were deliberated, and it was decided that Haryana Utilities needs to substantiate their argument with the system studies, for which options may be as follows:
 - i) Treat 1424 MW flow on the HVDC Line as an internal generator at Mohindergarh (STU side) - HVDC set point to be reduced by 1424 MW and APL generation to be reduced by 1424 MW.
 - ii) Reduce 1424 MW demand from Haryana and equivalent reduction at APML HVDC generation side, and reduce the set point of HVDC accordingly.
- (r) In pursuance of the above, a study was undertaken by NLDC, and the result of the study was communicated to the Validation Committee. Upon receiving the study report, by letter dated 29.05.2019, HVPNL approached the Chief (Engineering) of CERC, who was

Chairman of the Validation Committee, for necessary modifications in the computation of POC charges and losses qua the said HVDC Line.

- (s) Despite the above, the Petitioners' grievance has not been redressed, and the Petitioners are being subjected to double charging as set out in the said letters dated 11.06.2018 and dated 29.05.2019 to the serious prejudice of the Petitioners. The Petitioners, through HPPC vide its letter dated 06.03.2020, requested the Chief (Engineering) of CERC for appropriate amendments and revisions to ensure that conversion of the HVDC Line to ISTS has no direct or indirect financial impact on Haryana.
- (t) There is no cause or justification for imposing the liability of POC charges and losses under the 2010 Sharing Regulations effective from 01.04.2015 on Haryana Utilities on the assumption of marginal participation of Haryana Utilities on account of increasing the load on intervening AC network and for the said purpose increasing the generation at Mundra by one MW particularly, when the load meant for Haryana and flow of the quantum of power to Haryana Utilities with delivery point at Haryana remains constant. The usage of one MW power for the intervening AC network cannot lead to fastening of the liability to pay any transmission charges or losses on the Haryana Utilities contrary to the entire scheme considered in the 2010 Sharing Regulations and the third amendment to the 2010 Sharing Regulations, etc. dealing specifically with the HVDC Line, in the light of conditions subject to which the transmission licence itself was granted by the Commission.
- (u) In terms of the study conducted by NLDC on behalf/ direction of CERC, the loss computed for the quarter of July 2018 to Sept 2018 is as under:

	<i>Allocated cost share (Rs)</i>	<i>LTA (MW)</i>	<i>Cost for usage of AC network (Rs)</i>	<i>Difference Compared to original case (Rs)</i>
<i>Original Case</i>	<i>421436</i>	<i>3665.3719</i>	<i>1544719672</i>	<i>-</i>
<i>Generator at Mohindergarh</i>	<i>333135</i>	<i>3665.3719</i>	<i>1221064325</i>	<i>323655347</i>
<i>Load Reduction of Haryana</i>	<i>333023</i>	<i>3665.3719</i>	<i>1220651732</i>	<i>324067940</i>

- (v) The above study report has been sent to the Commission vide Letter dated 29.05.2019. A similar study would have to be conducted for the entire period from 01.10.2013. In this

regard, the NLDC/RLDC may be directed to conduct a study and render an accounting of loss/double payment by Haryana Utilities.

- (w) The study conducted on behalf of CERC is based on the scientific methodology. The study indicated that the methodologies adopted for allocating transmission charges are detrimental to Haryana's interests and have resulted in charging twice to Haryana, as claimed by HVPNL.
- (x) The Petitioners are entitled to refund of amount paid towards double payment and losses on account of 1424 MW power from the HVDC Line since 01.10.2013 (date of deemed CoD), attributed to POC mechanism along with interest and further monetary compensation with interest for the losses adjusted either by appropriate adjustments by Respondents 1 to 3 in the pool account or in the alternative recover the same from APML.
- (y) Besides the above, the Petitioner is required to share the cost of 1005 MW indirectly, as the cost of this part is included in the POC calculations by scaling up the Yearly Transmission Charges of AC lines on an all-India basis. Considering the fact that the total cost of the HVDC Line constructed to supply power to the State of Haryana under the PPA has already been factored into the tariff quoted by APML, any recovery for the remaining capacity of 1005 MW is impacting the Haryana Utilities adversely. The Haryana Utilities are required to bear the socialised charges on account of 1005 MW in lieu of the POC mechanism in vogue.
- (z) The Commission vide Notification dated 04.05.2020, has specified the Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2020. However, despite submissions from Haryana, the interest of Haryana as per the Commission orders dated 08.06.2013 and dated 29.07.2013 has not been secured, and the situation is more or less the same in the revised POC regime, whereby Haryana will be impacted indirectly with the inclusion of the HVDC Line as ISTS.

Hearing dated 20.04.2021:

- 3. The matter was heard on 20.04.2021 through video conferencing. During the course of the hearing, the senior counsel for the Petitioners reiterated the submissions made in the Petition. In response to the Commission's specific query regarding nature of the reliefs

sought, the senior counsel submitted that the Petitioners have, inter-alia, sought a declaratory relief under Sections 79(1)(c) and 79(1)(d) of the Act on account of being aggrieved by NLDC's wrong interpretation of the provisions of the 2010 Sharing Regulations and the Commission's order dated 08.06.2013 in Petition No. 44/TL/2012. It was further submitted that the Petitioners are neither contesting the provisions of the 2010 Sharing Regulations nor that the present Petition contains any dispute under the PPAs dated 07.08.2008. After hearing the senior counsel for the Petitioners, the Commission reserved the order on the admissibility of the matter.

Interim Order dated 24.01.2022:

4. The relevant extract of the order dated 24.01.2022 is as under:

“Maintainability of the Petition

5. We have considered the submissions of the Petitioners. The Petitioners have mainly argued on liability of transmission charges and losses on Haryana Utilities due to grant of license to APML for the HVDC Line as part of ISTS. The Petitioners have submitted that the HVDC Line was developed by APML as dedicated transmission line for evacuation and supply of 1424 MW power to Haryana Utilities under Power Purchase Agreements (PPAs) dated 07.08.2008 and that the Commission, while granting in-principle approval for grant of transmission license in respect of the HVDC Line (whereby it became part of ISTS), vide its orders dated 08.06.2013 and dated 29.07.2013 in Petition No. 44/TL/2012, had observed that APML shall have the obligation to supply power to Haryana Utilities in accordance with the terms and conditions of the PPAs, without any extra burden of transmission charges on them.

6. The Petitioners have contended that despite the fact that the Commission in its orders dated 08.06.2013 and 29.07.2013 had secured the interest of Haryana Utilities considering the Regulations in vogue, NLDC computed the POC charges and losses involving the HVDC Line as approved by the Validation Committee and thereby assuming the usage of the HVDC Line by Haryana Utilities.

7. In view thereof, the Petitioners have claimed that despite clear decision of the Commission vide orders dated 08.06.2013 and 29.07.2013, the Haryana Utilities are being billed and charged transmission charges for the HVDC Line twice – one, as part of the PPAs with APML (wherein it has been agreed that no direct or indirect cost would be levied on the Haryana Utilities) and the other, being charged through the PoC mechanism. The Petitioners have contended that they are entitled for refund of amount paid since 01.10.2013 (date of deemed CoD of the HVDC Line) towards double payment on account of 1424 MW power from the HVDC Line, along with interest.

8. The Petitioners have also submitted that the Haryana Utilities are also required to share the cost of 1005 MW indirectly as the cost of this part is included in the PoC calculation by scaling up Yearly Transmission Charges of AC lines on all-India basis. Considering the fact that the total cost of the HVDC Line constructed for supplying power to the State of Haryana against the PPAs has already been factored in tariff quoted by APML, any recovery for the remaining capacity of 1005 MW is adversely impacting the Haryana Utilities.

9. The issue for our consideration at this stage is whether the present Petition is maintainable in the present form.



10. The Petitioners have placed reliance on the order of the Commission dated 08.06.2013 in Petition No. 44/TL/2012 while according in-principle approval granting transmission license to APML for the HVDC Line. We note that the Commission had considered the concerns of Haryana Utilities and, inter alia, observed as under:

“60. One specific concern of Haryana is regarding levy of transmission charges. The petitioner has already accepted that its delivery point for the contracted power is STU, Haryana and it will bear all the open access charges for the power to be delivered up to the delivery point. Therefore, once the dedicated transmission lines are converted into licensed lines, the petitioner shall be treated as a long-term customer for the quantum to be supplied under PPAs with UHBVNL/DHBVNL. It is made clear that the petitioner shall have the obligation to supply power to UHBVNL/DHBVNL in accordance with the terms and conditions of PPAs, without any extra burden on them for the mere fact that the petitioner has been granted transmission licence for Mundra–Mohindergarh HVDC bi pole transmission line. Therefore, under the circumstances, the question of any additional liability, direct or indirect, on UHBVNL/DHBVNL cannot arise”

.....

14. From the above-mentioned submissions of the Petitioners, we note that the Petitioners are contesting alleged double billing and charging on account of granting the HVDC Line a status of ISTS which was initially envisaged as a dedicated line. They have placed reliance on the orders of the Commission dated 08.06.2013 and 29.07.2013 in Petition No. 44/TL/2012 and submitted that in those orders, the Commission had specifically held that no additional charges would be levied on account of the HVDC Line becoming part of ISTS.

15. Therefore, we are of the view that the petition to the extent that there is alleged double billing or charging of transmission charges in the calculations done by NLDC allegedly in contravention to the provisions of the 2010 Sharing Regulations and in violation of orders dated 08.06.2013 and 29.07.2013 in Petition No. 44/TL/2012, is maintainable.

16. We note that the 2010 Sharing Regulations has since been repealed and the 2020 Sharing Regulations has come into effect from 01.11.2020. Relevant provision of Regulation 3 of the 2020 Sharing Regulations provides as follows:

“(3) National Component-HVDC shall comprise of the following:

.

(c) Yearly Transmission Charges of Mundra–Mohindergarh 2500 MW HVDC transmission system corresponding to 1005 MW capacity:

Provided that Yearly Transmission Charges corresponding to 1495 MW for the said transmission system shall be borne by M/s Adani Power (Mundra) Limited or its successor company; and

...”

17. We note from above-quoted extract that proviso to Regulation 3(c) of the 2020 Sharing Regulations provides that the liability for payment of transmission charges for 1495 MW capacity of the HVDC Line is with APML while transmission charges corresponding to 1005 MW is part of the National Component-HVDC.

18. It is also observed that the Statement of Reasons dated 10.08.2020 for the 2020 Sharing Regulations mentions as follows:

“73.2.1 HVPN has suggested that the 2010 Sharing Regulations mentions the treatment of HVDC lines as under: “Treatment of HVDC: Flow of HVDC systems is regulated by power order and remains constant for marginal change in load or generation. Hence

marginal participation (MP) of HVDC systems is zero". This results in increase of PoC charges of Haryana as Haryana is receiving power from M/s Adani through a dedicated HVDC Mundra- Mohindergarh HVDC transmission line. Under Marginal Participation method, an increase in 1 MW of load in Haryana has to be compensated by a corresponding increase in generation at the slack buses at Mundra end, but as stated above, HVDC line doesn't respond in the marginal participation. Hence, power flows through alternate AC transmission lines which results in increase in the PoC charges for the State of Haryana. However, the Draft 2019 Sharing Regulations are silent about treatment of HVDC transmission line.

73.3 Analysis and Decision

73.3.1 Marginal participation of HVDC system is zero since its flow is regulated by power order. The Statement of Reasons for the 3rd amendment to the 2010 Sharing Regulations had clearly recognised this, when it was noted that "As tariff of HVDC links cannot be allocated with marginal participation method, a separate treatment is unavoidable." The treatment of HVDC system is provided for in the Regulations under NC-HVDC and RC components."

19. In the present petition, the Petitioners have also submitted that in the 2020 Sharing Regulations, despite submissions from Haryana, the interest of Haryana as per the Commission orders dated 08.06.2013 and dated 29.07.2013 have not been secured. Any contention of the Petitioner that it is aggrieved with any of the provisions of the 2020 Sharing Regulations cannot be entertained or dealt with in this petition. Any amendment of the Regulations in the garb of rectification in the computation of transmission charges is not maintainable.

20. In light of the foregoing discussions, we find that the present petition is maintainable to the limited extent for examining whether the transmission charges as calculated by NLDC are in contravention to the provisions of the 2010 Sharing Regulations and in violation of the Commission's order dated 08.06.2013 and 29.07.2013 in Petition No. 44/TL/2012 and consequently, there is any double billing and charging of transmission charges, as alleged by the Petitioner."

As per above, the Commission vide order dated 24.01.2022 held that the present petition is maintainable to the limited extent for examining whether the transmission charges as calculated by NLDC are in contravention to the provisions of the 2010 Sharing Regulations and in violation of the Commission's order dated 08.06.2013 and 29.07.2013 in Petition No. 44/TL/2012 and consequently, whether there is any double billing and charging of transmission charges, as alleged by the Petitioner.

Hearing dated 24.04.2023:

5. The Commission directed the Petitioner to submit a copy of the PPA with Adani Power (Mundra) Limited, as well as directed the Respondents, including NLDC, to file their reply in the matter.

Reply by National Load Despatch Centre (NLDC):

6. The Respondent, NLDC vide affidavit dated 09.05.2023 in its reply has mainly submitted



as follows:

- (a) As per the CERC orders dated 08.06.2013 and 29.07.2013 in petition no. 44/TL/2012, the transmission licensee shall bear the transmission charges corresponding to 1424 MW under the PPA dated 07.08.2008 with Haryana Utilities. Accordingly, the transmission charges for ± 500 KV Bipole Mundra- Mohindergarh HVDC Transmission Line corresponding to 1424 MW had been excluded from recovery under the PoC mechanism. The Transmission charges corresponding to the capacity of 1424 MW had been billed to Adani Power Limited.
- (b) The similar aspect had been covered under clause 11(4)(3)(iii) of CERC (Sharing of Inter State Transmission Charges and Losses) (Third Amendment) Regulations, 2015 where transmission charges for any HVDC system are to be partly borne by a DIC (injecting DIC or withdrawal DIC, as the case may be) under a PPA or any other arrangement, transmission charges in proportion to the share of capacity in accordance with the PPA or other arrangement is to be borne by such DIC. The charges for balance capacity are to be borne by the remaining DICs by scaling up the MTC of the AC system included in the PoC mechanism.
- (c) In the SoR of CERC (Sharing of Inter State Transmission Charges and Losses) (Third Amendment) Regulations, 2015 dated 26.10.2015, sharing of transmission charges of the Mundra-Mohindergarh HVDC system had been elaborated. Accordingly, 1495/2500 part of transmission charges for the Mundra-Mohindergarh HVDC system had been excluded from recovery under the PoC mechanism and billed to M/s Adani Power Limited.
- (d) Since the transmission charges of the Mundra-Mohindergarh HVDC system corresponding to 1495MW capacity had been excluded from the recovery under the PoC mechanism and no cost of HVDC was considered in the base case, Haryana uses the HVDC system at zero cost for receiving power from Mundra TPS, as per the PPA. There is no double-billing or charging of transmission charges corresponding to 1424 MW, as alleged by the Petitioner.

Rejoinder by the Petitioners to the Reply filed by NLDC:

7. The Petitioners vide affidavit dated 23.05.2023 have submitted as follows:

- (a) The NLDC, by way of its reply, has denied the levy of double billing (direct/indirect) and



has not dealt with the specific submissions made by the Petitioners and the Study dated 09.04.2019 conducted by NLDC itself in pursuance of the directions given by the Office of this Commission.

- (b) The submission of NLDC is contrary to the decisions of this Commission, the Sharing Regulations, 2010 as amended vide the third amendment Regulations, the Statement of reasons given in support of the third amendment regulations, the specific exceptions recognized in the Orders dated 08.06.2013 and 29.07.2013 in Petition No. 44/TL/2012 and instruments in regard to 500 kV bipolar HVDC line from Mundra to Mohindergarh right from the time of grant of inter-state transmission license by converting the dedicated transmission line to licensed transmission.
- (c) The provisions of 2.7 of Annexure 1 to the Sharing Regulations, 2010 and para 4.16 (ii), Para 45 etc., clearly shows that the Petitioners had not participated in the use of said 500 kV bipolar HVDC line from Mundra to Mohindergarh and that the marginal participation by the Petitioners is Zero (0) and that the Petitioners should not be considered for the liability to pay the transmission charges or bear the losses.
- (d) It is reiterated that on account of the incorrect methodology undertaken by NLDC as against the two scenarios for transmission cost allocation considered in the Study Report dated 09.04.2019, there is a difference in the slab rate, which leads to a reduction by Rs. 30-40 Crores per quarter in the transmission network usage cost. The Study Report dated 09.04.2019 makes it evident that the slab position of Haryana is reduced by two slabs, and Haryana is positioned at the third slab, as against the positioning of Haryana in the event that the current scenario is considered.
- (e) It is incorrect to impose the liability of PoC charges and losses on the basis of marginal participation of the Petitioners on account of increasing the load on intervening AC network and for the said purpose increasing the generation at Mundra by one (1) MW particularly when the load meant for Haryana and flow of the quantum of power to the Petitioners with delivery point at Haryana remains constant. The usage of one (1) MW power for the intervening AC network cannot lead to fastening of the liability to pay any transmission charges or losses upon the Petitioners, contrary to the entire scheme considered in the Sharing Regulations, the third amendment to the Sharing Regulations, etc. dealing specifically with the 500kV bipolar HVDC line from Mundra to Mohindergarh, in the light of the conditions subject to which the transmission licence itself was granted

by this Commission as detailed in the Petition.

- (f) The Petitioners cannot in any manner be considered to be participating in the use of the interstate transmission system from Mundra Thermal Station to Mohindergarh for any purpose, either for consideration for any such marginal value to be applied or otherwise. All such incidences should necessarily be attributed to Adani Power. Accordingly, it is not open to NLDC to involve both Adani Power and the Petitioners in any implication of the said line; and considering Adani Power being responsible and at the same time considering the same line for computation of Petitioner for any charge, i.e., by applying any margin, constitutes charging both the Petitioners and Adani Power.
- (g) In any event, if any such liability is to be recovered, then in terms of the decisions of this Commission, as a condition of the grant of an inter-state transmission license for the said 500 kV bipolar HVDC line, Adani Power is required to bear all such costs and charges and hold the Petitioners, indemnified and harmless.
- (h) The study was conducted only for the period from July 2018 to September 2019. A similar study would have to be conducted for the entire period from 01.10.2013 onwards, including transmission losses. In this regard, the NLDC/RLDC may be directed to conduct the study and render an accounting of loss/double payment by the Petitioners.
- (i) In terms of the Order dated 24.01.2022 passed by this Commission, as at present and without prejudice to the rights of the Petitioners, are seeking the following:
- i) re-computation of the PoC charges and losses erroneously levied by NLDC upon HPPC up to 31.10.2020 (i.e., prior to the enforcement of the Sharing Regulations, 2020 on 01.11.2020), and
 - ii) for the period after 01.11.2020, in terms of the orders dated 08.06.2013, 29.07.2013, 18.12.2013, 18.03.2016 passed by this Commission and specific statements and admissions of Adani Power, the amounts collected by the Respondent Nos. 1 to 5 towards transmission charges and compensation for the losses adjusted along with interest should be recovered from Adani Power.

Submissions by the Petitioners:

8. The Petitioners, vide affidavit dated 24.05.2023, have submitted a copy of the Power Purchase Agreement ('PPA') entered into between the Petitioners and Adani Power.

Hearing dated 25.05.2023:

9. During the hearing on 25.05.2023, the learned senior counsel for the Petitioners submitted that the Haryana utilities have paid more transmission charges than what is required to be paid as per the Regulations, and in support of its contentions, it referred to the system study carried out by it in association with NLDC. He further requested the Commission to direct NLDC/RLDC to conduct a study for the entire period from 1.10.2013 and render an accounting of losses/double payments made by the Petitioners, including transmission losses. The representative of NLDC submitted that transmission charges have been levied on the Haryana Utilities in accordance with the Regulations.
10. The Commission observed that the Haryana Utilities have claimed that they are being billed and charged transmission charges for the HVDC Line twice – once, as part of the PPAs with APML and the second time through the common pool. Accordingly, the Commission directed the CTUIL to submit the details of bills raised by Haryana Utilities with respect to the Mundra-Mohindergarh HVDC Line as per the Sharing Regulations. The Commission also directed NLDC to submit the methodology it had followed to calculate the transmission charges in respect of Petitioners for the Mundra – Mohindergarh HVDC line and to explain how the alternatives suggested by the Petitioner differ from NLDC's methodology. Additionally, the NLDC was permitted to submit its views on the impact of the alternatives on the Petitioner's transmission charges, and the matter was reserved for Order.

Submissions of NLDC in compliance with the RoP for hearing dated 25.05.2023:

11. The NLDC vide affidavit dated 26.06.2023 has submitted as follows:
- (a) Vide final order dated 18.03.2016 passed in the Petition No. 184/TT/2013, the Commission determined the final tariff and inter alia held that the petitioner has an agreement with Haryana Utilities for 1424 MW and after considering the losses, it will be 1495 MW, and the petitioner will pay the proportionate transmission charges for this capacity.
- (b) The transmission charges computed with the Hybrid Method (Average Participation and Marginal Participation) for Haryana did not contain the cost of the Mundra-Mohindergarh HVDC system corresponding to 1495 MW capacity.

(c) Methodology for computation of sharing of transmission charges for the period



Jul 2011 to Oct 2020:

- i) Under the Sharing Regulations, 2010 and amendments thereof (up to October 2020), the Implementing Agency (NLDC) had computed the expected demand of Haryana for an application period (quarter of a financial year) based on the last three years' demand met during the same period. The internal generation of Haryana has been considered based on the last three years of generation data and on expected generation to be commissioned before the commencement of the application period (quarter). After that, the Validation Committee, comprising all DISCOMs (including Haryana DISCOMs), RPCs, CTU, and SLDCs, had finalised the demand and generation for Haryana for consideration during the said application period (quarter). The Validation Committee had also finalised the set points for HVDCs in line with the provisions of the Sharing Regulations, 2010 and amendments thereof.
 - ii) Accordingly, the Implementing Agency (NLDC) had prepared the all-India basic network considering the demand and generation of all states (including Haryana and the set points of HVDCs, including Mundra-Mohindergarh HVDC) as finalised by the Validation Committee.
 - iii) After finalization of all India basic network and monthly transmission charges to be recovered under PoC mechanism (excluding the transmission charges of HVDC Mundra-Mohindergarh corresponding to 1495 MW capacity), the Implementing Agency (NLDC) had computed transmission charges for all Designated ISTS Customers (DICs), including Haryana as per the methodology specified in the Sharing Regulations, 2010 and amendments thereof.
- (d) A meeting was held on the computation of Point of Connection (PoC) Charges for power drawn from Adani Power Limited, Mundra-Mohindergarh by Haryana under the PoC Mechanism on 20.08.2018 with the staff of Commission, HPPC, POWERGRID, NLDC and HVPNL. At the said meeting, Haryana was requested to conduct studies with NLDC on the various alternatives.
- (e) The CERC Sharing of Transmission Charges and Losses regulation 2010 were amended a number of times, with a major amendment done in 2015. Accordingly, the methodology for computing PoC charges was changed in the WebNetUse software in 2015. Due to this reason, no study of PoC charges on the methodology prior to the 2015 amendment could be conducted. Therefore, the study was conducted from July 2018 to September 2018.

- (f) Additional studies were carried out for the period from January 2019 to March 2019 (Q4 of 2018-19)

i) Scenario A

a. Assumptions:

- Reduction of 1000 MW set point at the Mundra-Mohindergarh HVDC transmission line to zero.
- Reduction of the generation of 1000 MW at the APL Mundra generating station.
- Equivalent generation of 1000 MW modelled at Mohindergarh (STU side).
- Demand of Haryana has been considered as 6333 MW.

b. The HVDC set point of the Mundra-Mohindergarh HVDC transmission line, and the Demand of Haryana in the study have been considered as 1000 MW and 6333 MW respectively as finalised by the Validation Committee during the computation of sharing of transmission charges for January 2019 to March 2019.

c. Results:

Description	Original Case	1000 MW generator at Mohindergarh
Allocated cost share of AC transmission lines for Haryana state (Rs)	112,16,94,173	99,11,14,550
Aggregate PoC rates, prior to slabbing (Rs/MW)	3,05,837	2,70,234
Slab rates allocated (Rs/MW)	2,87,242	2,87,952
Scaled Slab rates for 100% recovery of all India ISTS charges (Rs/MW)	2,92,682	2,94,701
Slab Position	Fourth	Fourth

ii) Scenario B

a. Assumptions:

- Reduction of 1000 MW set point at the Mundra- Mohindergarh HVDC transmission line to zero.
- Reduction of generation of 1000 MW at the APL Mundra generating station.
- Equivalent reduction of demand for Haryana of 1000 MW.
- Demand of Haryana has been considered as 5333 MW (6333 less 1000 MW).

b. The HVDC set point of the Mundra-Mohindergarh HVDC transmission line, and the Demand of Haryana was considered as 1000 MW and 6333 MW, respectively,

as finalised by the Validation Committee during the computation of sharing of transmission charges for January 2019 to March 2019.

c. Results:

Description	Original Case	Reduction of 1000 MW in Haryana demand
Allocated cost share of AC transmission lines for Haryana state (Rs)	112,16,94,173	86,88,68,302
Aggregate PoC rates, prior to slabbing (Rs/MW)	3,05,837	2,36,903
Slab rates allocated (Rs/MW)	2,87,242	2,38,100
Scaled Slab rates for 100% recovery of all India ISTS charges (Rs/MW)	2,92,682	2,43,446
Slab Position	Fourth	Fifth

(g) Conclusions from the study result:

- i) It is observed that for one scenario, there is no change in slab rate, and for another scenario, the slab rate has changed to the fifth slab from the fourth slab.
 - ii) In view of the reduction in transmission charges for Haryana with the above study scenarios, transmission charges for other DICs in the country will increase due to the scaling of transmission charges for complete recovery of the total monthly transmission charges.
- (h) Path of power flow (contract path) envisaged as per the terms and conditions of the Power Purchase Agreement signed between the two parties may not be the same as the actual electrical path, which follows the laws of physics. In a meshed network, power flows depend on factors such as load and generation in a control area, load and generation in nearby control areas, availability of transmission lines, etc. All these factors may vary for different scenarios considered for the computation of transmission charges.
- (i) The Commission in petition no. 44/TL/2012 had already given relief to Haryana from the payment of transmission charges for the quantum of 1424 MW from APL Mundra. If the exemption would be given to Haryana as per the study done by NLDC on request of Haryana, then it will be an additional benefit to be passed for the same capacity of 1495 MW, once exemption from payment of transmission charges of the Mundra-Mohindergarh HVDC line corresponding to the capacity of 1495 MW and again reducing the ISTS drawal (demand) of Haryana by 1495 MW.

- (j) The computation of PoC charges was carried out by the implementing Agency (NLDC) as per the extant Sharing of Transmission Charges and Losses regulation, 2010 and amendment thereof. There was no provision in the said regulation, nor was it discussed in the Validation Committee meetings, to compute the charges of the states as proposed by Haryana in the study.
- (k) If the proposition of Haryana is considered, then other DICs in the country will be affected due to an increase in transmission charges, for the terms and conditions of the agreement signed between the two parties. In view of the actual network configuration and realistic power flow, if any transmission charges arise other than those that were envisaged at the time of signing the agreement, they should be shared among the parties who had signed such an agreement and not with the other DICs in the country.
- (l) In view of numerous petitions filed for past periods, to reconsider the transmission charges for the provisions which were not present in the regulations, the Commission may set a definitive timeline or a sunset clause by which all stakeholders will have to align with the cut-off/timeline set by CERC regarding post-facto adjustments in transmission bills settled in the past. The application of sunset clauses could be a positive and overarching change that should be made in the regulation to tackle uncertainty in future and make the discipline in the electricity sector. Further, the sunset provision can also be used to head off potentially combative legal situations down the line.

Reply by the Petitioners to the submissions of NLDC:

12. The Petitioners, vide affidavit dated 07.07.2023, in their common reply, have submitted as follows:

- (a) In terms of the orders passed by this Commission, the Sharing Regulations, 2010 as amended vide the third amendment Regulations, the Statement of reasons given in support of the third amendment regulations, the marginal participation of HVDC line is Zero (0) and therefore, 1424MW/1495MW power of Haryana from Adani Power's HVDC network does not participate while determination of PoC charges and losses. However, the PoC Charges & losses being calculated by NLDC for Haryana are based on the maximum withdrawal from Haryana, including power received from Adani Power, which is contrary to the Regulations and orders passed by this Commission.

- (b) It is reiterated that as per the recomputation done by NLDC, which is based on the same base case through Web-net software by considering the two scenarios for transmission cost allocation considered in the Study Report dated 09.04.2019 conducted by NLDC, there is a difference in the slab rate which leads to a reduction by Rs. 30-40 Crores per month in the transmission network usage cost. The re-calculation made vide the Report dated 09.04.2019 for Quarter 2 of FY 2018-19 made it evident that the slab position of Haryana reduces by two or three slabs, and Haryana is positioned at the third-fourth slab, as against the positioning of Haryana in the event the current scenario is considered.
- (c) In Scenario A, by modelling 1000 MW generation at Mohindergarh bus, the allocated cost has been reduced by Rs. 13,05,79,623/-, i.e. 11.64 % less than the overall allocated cost of the AC network. While in Scenario B, by equivalent reduction of demand of Haryana of 1000 MW & demand of Haryana has been considered as 5333 MW (6333 less 1000 MW), the allocated cost has been reduced by Rs. 25,28,25,871/-, i.e., 22.53 % less than the overall allocated cost of the AC network. It is hereby submitted that in both scenarios, the overall allocated cost is reduced in the range of 11.64 % to 22.53 %, and the rest of the impact is due to scaled & slab rates.
- (d) The computation of transmission charges in the original case done by NLDC is detrimental to Haryana's interest and has resulted in double charging to Haryana, as was being claimed by HVPNL vide its letter dated 11.06.2018.
- (e) The availability of Webnet software, while it may facilitate quicker computation, it cannot be the case that NLDC cannot possibly recompute the aspect within the period prior to July 2015. In fact, NLDC has not made a specific averment that it is impossible to compute for the period before 2015. Admittedly, an amount has been allocated to the Haryana Utilities for the period prior to July 2015 which is not in accordance with law and the extent of adjustment is required for the same is clear from the re-computation made for the Quarter 2 and Quarter 4 of FY 2018-19 and further the representation made by NLDC that it is possible to compute for the period commencing from 2015 onwards.
- (f) NLDC is deliberately raising aspects in order to avoid the re-computation effectively when the NLDC is in possession of all the necessary data and details of allocation of charges to various participants, the proportion of such allocation and the consequence

of the wrong allocation to be corrected, namely, to allocate the mistaken quantum qua Haryana Utilities amongst other beneficiaries in an appropriate proportionate manner. More importantly, the quantum to be adjusted in favour of the Petitioner is the reduction in the slab rate, which is not difficult to give effect to and the consequential effect being considered in the sharing by all the other beneficiaries.

- (g) The Petitioners are being subjected to payment of the transmission charges and adjustment for transmission losses under the hybrid methodology adopted for computation by NLDC despite the fact that the obligation to deliver the power contracted at the tariff specified in the PPAs is at Dhanonda sub-station within the State of Haryana and Adani Power is required to make available the quantum of Power at the said delivery point in Haryana. There cannot be any further or other liability on the Petitioners. The above necessarily implies that the Petitioners cannot in any manner be considered to have participated in the use of the interstate AC transmission system from Mundra Thermal Station to Haryana withdrawal nodes for any purpose, either for consideration of any such marginal value to be applied or otherwise.
- (h) NLDC has, in fact, acted contrary to the intent of the orders and the Regulations specifying that there cannot be any direct or indirect impact on Haryana on account of the Mundra-Mohindergarh line being declared as an Inter-State Transmission line.
- (i) The Mundra-Mohindergarh line was granted an inter-state transmission license by this Commission on an application filed by Adani Power with a clear stipulation that the Petitioners will not bear any direct/indirect loss on account of the grant of such inter-state transmission license.
- (j) NLDC's claim of imposing a sunset clause for the wrong done by NLDC or any other authority or agency depriving the redressal to the party which is wronged is patently arbitrary and is liable to be rejected in limine.

Hearing dated 18.03.2024 and 17.09.2024:

13. The matter was re-listed for hearing due to a change in the coram. The counsel for the Petitioner submitted that the pleadings in the matter have been completed and that the arguments have also been heard. Learned counsel further submitted that no further oral hearing is required and the Commission may accordingly pass orders. Accordingly, the Commission reserved the order in the matter.



Analysis and decision:

14. The Petitioners in the instant petition have submitted that Haryana Discoms (UHBVN and DHBVN) have entered into Power Purchase Agreements (PPAs) dated 07.08.2008 with APML for 1424 MW from its Mundra Power Project located in the State of Gujarat. For wheeling of electricity from its Mundra Power Project to Haryana's State Periphery, i.e. STU sub-station at Dhanonda, the HVDC Line with a total capacity of 2500 MW was constructed by APML. APML filed Petition No. 44/TL/2012 before this Commission for the grant of an inter-State transmission licence for the HVDC Line, and Commission vide Order dated 08.06.2013 granted in-principle approval for the transmission licence, observing that the question of any additional liability, direct or indirect, on UHBVNL/DHBVNL cannot arise.

15. Petitioners have disputed the methodology of calculation of PoC charges and losses carried out by NLDC. Petitioners submitted that it is incorrect to impose the liability of PoC charges and losses on the basis of marginal participation of the Petitioners on account of increasing the load on intervening AC network and for the said purpose increasing the generation at Mundra by one (1) MW particularly when the load is meant for Haryana and the flow of power quantum to the Petitioners with delivery point at Haryana remains constant. Petitioner had conducted a study by NLDC during 2018-19 under the following options, where the slab rates for Haryana changed subsequent to the exercise:

- (a) Treat 1424 MW flow on the HVDC Line as an internal generator at Mohindergarh (STU side) - HVDC set point to be reduced by 1424 MW and APL generation to be reduced by 1424 MW.
- (b) Reduce 1424 MW demand from Haryana and equivalent reduction at APML HVDC generation side, and reduce the set point of HVDC accordingly.

16. Respondent NLDC has submitted that vide the directions issued by the Commission in its Order in Petition No. 44/TL/2012 dated 08.06.2013 and 29.07.2013, the transmission charges corresponding to the capacity of 1424 MW had been billed to Adani Power Limited in terms of the PPA dated 07.08.2008 with Haryana Utilities. Accordingly, the transmission charges for ± 500 KV Bipole Mundra- Mohindergarh HVDC Transmission Line corresponding to 1424 MW had been excluded from recovery under the PoC mechanism. Since the transmission charges of the Mundra-Mohindergarh HVDC system corresponding to 1495MW capacity had been excluded from the recovery under the PoC

mechanism, there is no double billing and charging of transmission charges corresponding to 1424 MW, as alleged by the Petitioner.

17. In light of the submissions, the following issues arise for our consideration:

Issue No.1 : Whether the Implementing Agency, NLDC, was carrying out calculations under the 2010 Sharing Regulations and the 2020 Sharing Regulations in contravention of the provisions of the said Regulations and various Orders issued by the Commission? Whether any directions required to be issued to Respondents 1 to 5 to recompute POC charges? Consequently whether Petitioners are entitled to any refund with interest?

Issue No2 : Whether any directions are required to be issued to hold APML to pay the amount collected by Respondents No. 1 to 5 towards transmission charges and compensation for the losses adjusted both with interest;

18. The issues are dealt with together in subsequent paragraphs.

19. Petitioners have submitted that the 500 KV Bipole Mundra - Mohindergarh HVDC transmission line was developed by APL as a dedicated transmission line for the evacuation and supply of 1424/1495 MW power to Haryana Utilities under Power Purchase Agreements (PPAs) dated 7.8.2008. The tariff quoted under the said PPAs was after factoring in the cost of the said HVDC line. Subsequently, APL filed a Petition bearing No.44/TL/2012 for the grant of an inter-State transmission licence for the aforesaid HVDC line, which was not opposed by the Haryana Utilities. However, the Commission, while granting in-principle approval for grant of transmission licence, in its order dated 8.6.2013, inter-alia, observed that APL shall have the obligation to supply power to Haryana Utilities in accordance with the terms and conditions of the PPAs, without any extra burden on them and that the question of any additional liability, direct or indirect, on Haryana Utilities cannot arise.

20. Petitioner has mainly challenged the POC calculations carried out by NLDC stating that Dispatch Centre (NLDC) proceeded to compute the POC (point of connection) charges and losses as the liability to/ account for by Haryana Utilities purported to be based on the maximum withdrawal, involving the HVDC Line by increasing the demand in each node by 1 MW and thereby assuming the usage of the said transmission system by Haryana Utilities.

21. Petitioners have got sample studies done by NLDC for Q2 of 2018-19 i.e. July 2018 to September 2018 under two scenarios (i) Treat 1424 MW flow on the HVDC Line as internal generator at Mohindergarh (STU side) - HVDC set point to be reduced by 1424

MW and APL generation to be reduced by 1424 MW, (ii) Reduce 1424 MW demand from Haryana and equivalent reduction at APML HVDC generation side and reduce set point of HVDC accordingly. Under the sample studies, the slab rate for Haryana was reduced. On account of the incorrect methodology adopted by NLDC, as opposed to the two scenarios for transmission cost allocation considered in the Study Report dated 09.04.2019, there is a difference in the slab rate, leading to a reduction of Rs. 30-40 Crores per quarter in the transmission network usage cost.

- 22.** Petitioners have prayed that they are entitled for refund of amount paid towards double payment and losses on account of 1424 MW power from the HVDC Line since 01.10.2013 (date of deemed CoD), attributed to POC mechanism along with interest and further monetary compensation with interest for the losses adjusted either by appropriate adjustments by Respondents 1 to 3 in the pool account or in the alternative recover the same from Adani Power.
- 23.** Respondent NLDC has submitted that transmission charges of the Mundra-Mohindergarh HVDC system corresponding to 1495 MW capacity had been excluded from the recovery under the PoC mechanism, and no cost of HVDC is considered in the base case. Haryana uses the HVDC system at no cost to receive power from Mundra TPS, as per the PPA. There is no double-billing or charging of transmission charges corresponding to 1424 MW, as alleged by the Petitioner. The computation of PoC charges was carried out by the NLDC as per the extant 2010 Sharing Regulations and amendments thereof. There was no provision in the said regulation, nor was it discussed in the Validation Committee meetings, to compute the charges of the states as proposed by Haryana in the study.
- 24.** Respondent NLDC has further submitted that the path of power flow (contract path) envisaged as per the terms and conditions of the Power Purchase Agreement signed between the two parties may not be the same as the actual electrical path, which follows the laws of physics. In a meshed network, power flows depend on factors such as load and generation in a control area, load and generation in nearby control areas, availability of transmission lines, etc. All these factors may vary for different scenarios considered for the computation of transmission charges.
- 25.** NLDC had also conducted additional studies for the period from January 2019 to March 2019 (Q4 of 2018-19), where the following assumptions were taken:

“Scenario A



a. Assumptions:

- Reduction of 1000 MW set point at Mundra-Mohindergarh HVDC transmission line to zero.
- Reduction of generation of 1000 MW at APL Mundra generating station.
- Equivalent generation of 1000 MW modelled at Mohindergarh (STU side).
- Demand of Haryana has been considered as 6333 MW.

b. The HVDC set point of Mundra-Mohindergarh HVDC transmission line and Demand of Haryana in the study have been considered as 1000 MW and 6333 MW respectively as finalized by the Validation Committee during the computation of sharing of transmission charges for January 2019 to March 2019.

Scenario B

a. Assumptions:

- Reduction of 1000 MW set point at Mundra- Mohindergarh HVDC transmission line to zero.
- Reduction of generation of 1000 MW at APL Mundra generating station.
- Equivalent reduction of demand for Haryana of 1000 MW.
- Demand of Haryana has been considered as 5333 MW (6333 less 1000 MW).

b. The HVDC set point of Mundra-Mohindergarh HVDC transmission line and Demand of Haryana was considered as 1000 MW and 6333 MW respectively as finalized by the Validation Committee during the computation of sharing of transmission charges for January 2019 to March 2019.”

In one scenario, there is no change in slab rate, and in another scenario, the slab rate has changed from the fifth slab from the fourth slab.

26. NLDC has submitted that in view of the reduction in transmission charges for Haryana with the above study scenarios, transmission charges for other DICs in the country will increase due to scaling of transmission charges for complete recovery of the total monthly transmission charges.

27. We have considered the submissions of Petitioners and Respondents. Commission vide Interim Order dated 24.01.2022 in the instant Petition observed as follows:

“20. In light of the foregoing discussions, we find that the present petition is maintainable to the limited extent for examining whether the transmission charges as calculated by NLDC are in contravention to the provisions of the 2010 Sharing Regulations and in violation of the Commission’s order dated 08.06.2013 and 29.07.2013 in Petition No. 44/TL/2012 and consequently, there is any double billing and charging of transmission charges, as alleged by the Petitioner.”

As per the above, the instant Petition was held maintainable to the extent of examining whether the transmission charges, as calculated by NLDC are in contravention of the provisions of the 2010 Sharing Regulations and Orders of the Commission.

28. Let us peruse the methodology of calculation of PoC charges to determine if NLDC was calculating PoC charges in contravention of the 2010 Sharing Regulations and 2020 Sharing Regulations. We observe that Petitioner has alleged that the calculation needs to be revised from 1.10.2013, when the said HVDC line was included in PoC. Petitioner has also referred to the 2020 Sharing Regulations, praying for a revision in the methodology for calculating PoC Charges.
29. Petitioner has mainly challenged the POC calculations with respect to the methodology of increasing the demand in each node by 1 MW and thereby assuming the usage of the said transmission system by Haryana Utilities. Petitioner is suggesting an alternative methodology for which it had the NLDC conduct sample studies as (a) Treat 1424 MW flow on the HVDC Line as internal generator at Mohindergarh (STU side) - HVDC set point to be reduced by 1424 MW and APL generation to be reduced by 1424 MW, (b) Reduce 1424 MW demand from Haryana and equivalent reduction at APML HVDC generation side and reduce set point of HVDC accordingly.
30. In light of this, the methodology needs to be analysed for the 2010 Sharing Regulations and the 2020 Sharing Regulations. We have perused relevant provisions of the 2010 Sharing Regulations quoted as under:

“2.1.1 NODAL GENERATION AND DEMAND INFORMATION

Data Required for Annual process of determination of transmission charges based on Hybrid Methodology:

The DICs will provide forecast injection/withdrawal information {MW and MVAR (or an assumption about the power factor to be used)} at all the nodes or a group of nodes in a zone (identified a-priori by the Implementing Agency (IA) in the Network. “Typical” injection/withdrawal data based on maximum injection/withdrawal as defined in these regulations shall be provided to the Implementing Agency by the DICs for each of the application period.

DICs shall also provide injection and withdrawal data for the corresponding quarter of last three years. The data provided by the DICs shall be as per the formats prepared by the IA and duly approved by the Commission under the relevant provisions of these Regulations.

Information provided by the DICs shall be vetted by the Implementing Agency as per the provisions of the Regulations and Detailed procedure notified by Implementing Agency.

Methodology for calculation of forecasted maximum generation/withdrawal of DICs for vetting by Implementing Agency

For Demand data:

The projected maximum withdrawal figures provided by DICs will be vetted by Implementing Agency based on the following:

- a. Monthly peak demand met for each State/UT in the last 3 years for the period corresponding to the Application Period shall be considered.*
- b. The average of monthly peak demand met for each State/UT in each of the last 3 years for the period corresponding to the Application Period shall be calculated.*
- c. The average peak demand met for each State/UT for the Application Period shall be projected based on last 3 year's average of monthly peak demand met figures.*

d. Similarly All India peak demand met in last 3 years shall be averaged for the period corresponding to the Application Period. This shall be projected for the ensuing Application Period. The projected peak demand of each State/UT thus arrived shall be normalized with the projected All-India peak demand met of the Application Period under consideration for the current year.

.....

2.4 Computation: Hybrid Method for the determination of transmission charges

Any usage based methodology attempts to identify how much of power that flows through each of the lines in the system is due to the existence of a certain network user, in order to charge it according to the adopted measure of utilization. To do so, the Hybrid Method analyzes how the flows in the grid are modified when minor changes are introduced in the production (or consumption) of agent i , and it assumes that the relationship of the flow through line j with the behaviour of the agent i can be considered to be linear. For each of the considered blocks of months and, the procedure can be described as follows:

1. Marginal participation sensitivities are obtained that represents how much the flow through each network branch j increases when the injection/ withdrawal in a bus is increased by 1 MW. Flow variation in each network branch j incurred by 1 MW injection / withdrawal at each bus is computed for each scenario.
2. Due to the Kirchoff's laws, any 1 MW increase in generation (or load) at node i has to be compensated by a corresponding increase in load (or generation) at some other node or nodes (after adjusting for incremental system losses). Thus the calculation of how much an injection (or withdrawal) at a certain bus affects the flows in the network depends on the decision of which is the node that responds, and the answer that is demanded from the method is heavily conditioned by an assumption that it needs as an input. The methodology used for the selection of the distributed slack buses is explained above.
3. Once the flow variation in each line incurred by each agent is obtained, it is possible to compute a usage index for each network user. This index is computed according to equation given below. It can be seen that only positive increments in the direction of the power flow in the base case are considered. This implies that increments which reduce burden on lines are neither given any credit nor charged for use of the system. This is essentially because of practical reasons where it could be difficult to pay grid connected entities for being connected to the grid. Further, there could be times (with strictly positive chance) when these entities need to use certain network branches along the direction of the main flow, though such times may not be the times which coincide with [maximum injection/ maximum withdrawal]¹ considered in the load flow studies. This is also a standard international practice followed in countries where such pricing mechanisms are used.

The $[]^2$ index (for each block of months) is computed as:

$$U_{e,i,l} = (|F_{le}^i| - |F_{le}|) \cdot P_{ie} \cdot \begin{cases} 1 & \text{if } |F_{le}^i| - |F_{le}| > 0, \text{Sign}(F_{le}^i) \text{ is same as Sign}(F_{le}) \\ 0 & \text{otherwise} \end{cases}$$

Where,

$U_{e,i,l}$ is the seasonal usage index in line l due to injection / withdrawal at node i

F_{le} is the flow in line l under scenario e under base case

F_{le}^i is the flow in line l under scenario e due to injection / withdrawal of 1 MW at node

P_{ie} is power dispatch / demand at bus i under scenario e under base case

¹ Substituted vide Third Amendment Regulations, 2015 w.e.f. 01.05.2015.

4. The revenue requirement of each line is allocated pro-rata to the different agents according to their total participation in the corresponding line.

$$\text{Cost Allocated}_{eil} = \frac{U_{eil}}{\sum_i U_{eil}} \times C_l$$

Where,

C_l is the Transmission Charge of the line – computed by attributing the Yearly Transmission Charge for the ISTS licensee to each line owned by it and to the block of month under consideration

$\frac{U_{eil}}{\sum_i U_{eil}}$ is the marginal participation factor

The above mechanism is also commonly referred to as the “Point tariff” and has been considered by the CERC in the past as a potential alternative to the regional postage stamp method.

....

2.5 Computation: Determination of Sharing of YTC and Transmission Losses

The simulations will be carried out by the IA by using a software duly approved by the CERC.

The following steps shall be followed:

“1. Converged AC Load Flow data for the all India Grid shall be used directly for the implementation of the Hybrid Methodology.”

2. Treatment of HVDC: Flow on HVDC systems is regulated by power order and remains constant for marginal change in load or generation. Hence, marginal participation (MP) of HVDC systems is zero. Since the HVDC systems were specifically set up for transfer of bulk power to specific Region, the DICs of the Region shall share the cost of HVDC systems. HVDC system also helps in controlling voltages and power flow in inter-regional lines and some benefits accrue to all DICs by virtue of HVDC system. Accordingly, 10 % of the MTC of these systems be recovered through Reliability Support Charges. The balance amount shall be payable by Withdrawal DICs of the Region in proportion to their Approved Withdrawal. In case of Injection DICs having Long Term Access to target region, it shall be payable in proportion to their Approved Injection.

Where transmission charges for any HVDC system line are to be partly borne by a DIC (injecting DIC or withdrawal DIC, as the case may be) under a PPA or any other arrangement, transmission charges in proportion to the share of capacity in accordance with PPA or other arrangement shall be borne by such DIC and the charges for balance capacity shall be borne by the remaining DICs by scaling up of YTC of the AC system included in the PoC.”

As per the above, it is observed that the entire methodology of calculation of PoC charges has been provided in detail in the Regulations . As per the above methodology, forecasted withdrawal data is to be furnished only by DICs. Further marginal participation is calculated by imposing a 1 MW variation in injection and drawal for each network branch at each node as per above. HVDCs charges have been covered under Paragraph 2.5 which clearly provides that “Where transmission charges for any HVDC system line are to be partly borne by a DIC (injecting DIC or withdrawal DIC, as the case may be) under a PPA or any other arrangement, transmission charges in proportion to the share of capacity in accordance with PPA or other arrangement shall be borne by such DIC”.

31. NLDC has submitted that the Path of power flow (contract path) envisaged as per the terms and conditions of the Power Purchase Agreement signed between the two parties may not be the same as the actual electrical path, which follows the laws of physics. In a meshed network, power flows depend on factors such as load and generation within a control area, load and generation in nearby control areas, and the availability of transmission lines, etc. All these factors may vary for different scenarios considered for the computation of transmission charges. Further, NLDC has confirmed that transmission charges for 1495 MW are being billed directly to APML, as per the directions of Order 44/TL/2012 and the provisions of the 2010/2020 Sharing Regulations.

32. We note that sample studies were carried out by Petitioners with NLDC, where the basic network was modified to either treat 1424 MW as an internal generator at Mohindergarh or to reduce 1424 MW demand from Haryana and modify the HVDC set point. We have carefully considered the submissions of Petitioner and NLDC as well as the provisions of the 2010 Sharing Regulations. We note that NLDC has carried out calculations of POC charges strictly in accordance with the 2010 Sharing Regulations. The prayer of Petitioner to modify the base case of POC and consequent POC calculations, which have been carried out in terms of the 2010 Sharing Regulations in a way to reduce its slab rates, is not acceptable. We note that, since the transmission charges for 1495 MW are being billed directly to APML, the Petitioners' contention that it is being billed double charges does not hold water. We note that the options proposed by Petitioners to modify the base case are not at all provided for in the 2010 Sharing Regulations.

33. We have perused the provisions of the 2020 Sharing regulations quoted as under:

“5.Components and sharing of National Component (NC)

....

(c)Yearly Transmission Charges of Mundra–Mohindergarh 2500 MW HVDC transmission system corresponding to 1005 MW capacity:

Provided that Yearly Transmission Charges corresponding to 1495 MW for the said transmission system shall be borne by M/s Adani Power (Mundra) Limited or its successor company; and..”

...

Annexure-I



5. Steps to be followed under Hybrid Methodology

5.1 Following steps are involved in the Hybrid Methodology

- (A) Data acquisition;
- (B) Computation of load flows on the Basic Network;
- (C) Identification of slack node(s);
- (D) Determination of transmission charges; and
- (E) Determination of sharing of transmission charges

(A) DATA ACQUISITION: INPUTS TO THE MODEL

5.2 The transmission pricing model requires a set of inputs for peak block of the month as follows:

- Generation information at nodes;
- Demand information at nodes;
- Transmission circuits between these nodes and their electrical characteristics required for load flow analysis, the associated lengths of these transmission lines and their capacity and Yearly Transmission Charges (YTC) of each transmission line; and
- Identification of reference node(s).

5.3 The DICs will provide actual generation and actual drawal {MW and MVAR at each node in the Basic Network. The data provided by the DICs shall be as per the formats stipulated by the Implementing Agency. All drawee DICs shall also submit generation from their own generating stations for the peak block during the billing period to the Implementing Agency to prepare the Base Case for load-generation balance.

5.4 Information provided by the DICs shall be verified by the Implementing Agency as per the detailed procedure stipulated by the Implementing Agency.

5.5 Inter-State transmission licensees, intra-State transmission licensees whose transmission system are included in Yearly Transmission Charges, and the DICs shall supply network data for the existing network, in the format stipulated by the Implementing Agency.

5.6 The Basic Network shall contain all the power system elements including generating station and transmission line at 110 kV and above. Power flow into a lower voltage system from the voltage levels indicated in the definition of the Basic Network shall be considered as load at that sub-station. Power flow from a lower voltage system into the electricity systems at the voltage levels shall be considered as generation at that sub-station.

..

(D) DETERMINATION OF TRANSMISSION CHARGES

5.15 Hybrid Methodology analyzes the modifications in power flows in the grid when minor changes are introduced in the production (or consumption) of agent i , and it assumes that the relationship of the flow through line j with the behaviour of the agent i can be considered to be linear. The procedure is as under:

5.15.1 Marginal participation sensitivities are obtained that represent the increase in power flow through each network branch j when the injection or drawal in a bus is increased by 1 MW. Flow variation in each network branch j incurred by 1 MW injection or drawal at each bus is computed for each scenario, e .

5.15.2 As already stated at Clause 5.14 of this Annexure, due to the Kirchoff's laws, any 1 MW increase in generation (or load) at node i has to be compensated by a corresponding increase in load (or generation) at some other node(s) (after adjusting for incremental system losses). Thus, the calculation of quantum of injection (or drawal) at a certain bus affecting the power flows in the Basic Network depends on

the choice of the node(s) that responds. The methodology used to identify such node shall be distributed slack buses as explained above at Clause 5 (C).

5.15.3 Once the power flow variation in each transmission line incurred by each agent is obtained, it is possible to compute a usage index for each network user. This index is computed according to equation given below. Only positive increments in the direction of the power flow in the base case are considered while increments which reduce burden on transmission lines are neither given any credit nor charged for use of the system.

5.15.4 The index (for each block of months) is computed as:

$$U_{e,i,l} = (|F_{le}^i| - |F_{le}|) \cdot P_{ie} \cdot \begin{cases} 1 & |F_{le}^i| - |F_{le}| > 0, \text{Sign}(F_{le}^i) \text{ is same as Sign}(F_{le}) \\ 0 & \text{otherwise} \end{cases}$$

Where,

U_{eil} is the monthly usage index in line l due to injection or drawal at node i

F_{le} is the flow in line l under scenario e under base case

F_{le}^i is the flow in line l under scenario e due to injection or drawal of 1 MW at node i

P_{ie} is power dispatch or demand at bus i under scenario e under base case

5.15.5 The line-wise usage-based transmission charge of each transmission line is allocated pro-rata to the different agents according to their total participation in the corresponding transmission line.

$$\text{Cost Allocated}_{eil} = \frac{U_{eil}}{\sum_i U_{eil}} \times C_l$$

Where,

C_l is the transmission line-wise usage-based transmission charge obtained in accordance with Clause (6) of Regulation 9 of these regulations.

$$\frac{U_{eil}}{\sum_i U_{eil}} \text{ is the marginal participation factor"}$$

As per the above, the load and generation data are collected by the Implementing Agency, which vets the data before preparing the base case and determines usage-based charges based on the hybrid methodology. Further, the charges for 1495 MW are to be borne by APML or its successor company.

34. We note that the calculations of transmission charges for HVDC and AC systems have been carried out by NLC strictly in terms of the Sharing Regulations and Orders of the Commission. Any modification to the base case file, such as the creation of artificial generation at Mohindergarh, reducing load at the Haryana end, or modifying HVDC set

points, proposed by Petitioners, is not in accordance with the Sharing Regulations. The methodology of the Sharing Regulations 2020 caters to the recovery of ISTS charges for all DICs in the country, with the base case file made by NLDC for the billing period after the month is over, using actual injection and drawal data for the Peak block. The usage-based component (AC-UBC), utilising the marginal participation method, is one of the components within the AC component, the National Component, the Regional component, and the transformer component. The methodology of the said Regulations cannot be modified in any particular manner to reduce Petitioners' transmission charges.

35. Considering the above discussions, we are of the view that there is no double billing on the Petitioners and that the NLDC was carrying out calculations under 2010 Sharing Regulations and 2020 Sharing Regulations as per provisions of the said Regulations and various Orders issued by the Commission and hence no directions are required to be issued to Respondents 1 to 5 to recompute POC charges. All the prayers of the Petitioners are accordingly declined.

36. The petition No. 627/MP/2020 is disposed of in terms of the above.

Sd/-
(Harish Dudani)
Member

sd/-
(Ramesh Babu V)
Member

sd/-
(Jishnu Barua)
Chairperson