

Sl. No.	Clause No.	Proposed Amendment	Our Proposal	Rationale/Remarks
1	5.2	The utilisation and transfer of Connectivity shall be governed in accordance with Clause 8A of the Connectivity Regulations.	We would request the Commission to amend Clause 8A of the Connectivity Regulations by adding the following clause: A company to whom the Connectivity is granted shall not be allowed to transfer its shareholding upto 51%/transfer the controlling shareholding, till one year after achieving commercial operation of Renewable Energy generating station(s):	<p>The Commission while restricting transfer of connectivity, in the past, had allowed the Connectivity to be used by 100% subsidiaries of the company holding the connectivity, upto 1 year after COD, post which the connectivity could be transferred to such subsidiary. The restriction on usage of connectivity by only 100% subsidiaries was primarily to restrict trading of connectivity.</p> <p>While this has proved effective, it has still left a loophole in the process. Post this ruling, equipment manufacturers / project developers, who are not the final owners of the project, have applied for connectivity directly through their 100% owned SPVs under Clause 9.2.2 of the Procedure rather than through their holding companies. Post grant of connectivity and part development, they have offered these SPVs to be taken over by IPPs just before the bid process/after the bid process. The primary resource being traded in such transactions is the connectivity, which being a national resource, should not be allowed to be traded.</p> <p>The proposed change would prevent connectivity being traded. The shareholding restriction upto 51%/controlling shareholding till one year after achieving COD is similar to the restrictions on shareholding under the bid process and thus would be in line with the bid conditions also.</p>
2	9.2.1 (b)	(b) An entity implementing the Renewable Hybrid Generating Station(s)including Round the Clock Hybrid Project, shall be eligible to apply for separate Stage-II Connectivity for each location based on the same LOA or PPA, for the capacity of the project not exceeding the quantum of power for which LOA has been awarded or PPA has been signed. For this purpose, the locations and capacity at each such location, duly certified by the Renewable Energy Implementing Agency or the distribution licensee, as the case may be, shall be submitted along with the Connectivity applications. Illustration:- a) Suppose a bidder is awarded LOA for 500 MW to supply round the clock and it has Renewable hybrid	(b) An entity implementing the Renewable Hybrid Generating Station(s)including Round the Clock Hybrid Project, shall be eligible to apply for separate Stage-II Connectivity for each location based on the same LOA or PPA , for the capacity of the project not exceeding the quantum of power for which LOA has been awarded or PPA has been signed. For this purpose, the locations and capacity at each such location, duly certified by the Renewable Energy Implementing Agency or the distribution licensee, as the case may be, shall be submitted along with the Connectivity applications. Illustration:- a) Suppose a bidder is awarded LOA for 500 MW to supply round the clock and it has Renewable hybrid generation project with installed capacity of 500 MW Wind, 500 MW Solar and 200 MW storage at single location (for injection at same interconnection point). Such project shall be eligible for Stage-II Connectivity under Clause 9.2.1, for the capacity of the project not exceeding the quantum of LOA (500 MW in the	<p>The Commission would appreciate that currently there is a waiver of interstate charges and losses for power being sold from renewable energy projects. Recently, MoP has extended the waiver till June 2023 and has made it applicable for all renewable energy projects selling power without any requirement of power being procured under a competitive bid and without the same being used for compliance of RPO. Given this waiver, there is currently no requirement on a generator to limit/optimize the extent of connectivity it applies for. Thus, a standalone solar project of 100MW capacity with an estimated 28% CUF (on AC capacity of the Plant), would have no reason to limit its connectivity below the full DC capacity (which could be 150 MW) if regulations allow the same. Currently, the regulations restrict the connectivity for a solar or a wind project to the extent of the LOA. If the regulations tomorrow allow the solar generator to take connectivity upto 150 MW, then the generator will take it given that there are no additional charges and it will benefit from 5% additional energy(which can be sold under the same PPA) which was getting curtailed earlier by restricting its evacuation to 100MW. The same would reduce the utilization of the transmission infrastructure further to around 19-20%.</p> <p>Once the waiver goes away, a 100MW solar plant (150 DC) with a 28% CUF (on AC Capacity of the Plant) would need to pay around Rs 2.28/unit as a transmission charge if it takes 100MW connectivity (based upon POC/HVDC/ Charges of Q2 FY21).</p>

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generation project with installed capacity of 500 MW Wind, 500 MW Solar and 200 MW storage at single location (for injection at same interconnection point). Such project shall be eligible for Stage-II Connectivity under Clause 9.2.1, for the capacity of the project not exceeding the quantum of LOA (500 MW in the instant case). If the said project intends to sell surplus power over and above LOA, it shall be required to apply for additional Connectivity under Clause 9.2.2.

b) Suppose a bidder is awarded LOA for 500 MW under Round the Clock Hybrid Scheme with projects at multiple locations - 500 MW(Solar) in State „A“ and 700 MW(Wind) in State „B“. Such project shall be eligible for Stage-II Connectivity under Clause 9.2.1, for the capacity of the project not exceeding the quantum of LOA (500 MW in the instant case) at each location on the basis of same LOA. If the said project intends to sell surplus power over and above the quantum for which Stage-II Connectivity has been granted under Clause 9.2.1, it shall be required to apply for additional Connectivity under Clause 9.2.2.

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b) Suppose a bidder is awarded LOA for 500 MW under Round the Clock Hybrid Scheme with projects at multiple locations - 500 MW(Solar) in State „A“ and 700 MW(Wind) in State „B“. Such project shall be eligible for Stage-II Connectivity under Clause 9.2.1, for the capacity of the project not exceeding the quantum of LOA (500 MW in the instant case). The bidder is free to decide the connectivity at each location however the cumulative connectivity granted to the bidder shall not exceed the quantum of LOA. ~~at each location on the basis of same LOA. If the said project intends to sell surplus power over and above the quantum for which Stage II Connectivity has been granted under Clause 9.2.1, it shall be required to apply for additional Connectivity under Clause 9.2.2.~~

However, if it takes connectivity of 150MW, the energy may increase by just 5% but the transmission charges would increase by 50%. In such a case the generator would like to optimize the connectivity it takes and may even take connectivity less than the 100MW AC capacity of the plant based upon the extent of energy loss as compared to the decrease in transmission charges. Thus, once the waiver goes away, there would be real economic competition between pure solar or wind projects having lower CUFs as against hybrid projects with higher CUFs. . (Sample calculation is attached in Table-I below)

It may be noted that Hybrid Projects as such do not have higher CUFs (based on installed capacity). A hybrid project is able to produce a higher CUF by reducing the extent of connectivity it requires to produce the same amount of energy by utilizing the connectivity throughout the day. When it is mentioned that a hybrid project has a higher CUF, the CUF is calculated based upon the connectivity as the denominator and not the installed capacity. Please see an illustration below:

Project Type	Installed AC Capacity (MW)	CUF (on installed capacity)	Case-I		Case-II	
			Connectivity Taken (MW)	CUF (based upon connectivity as denominator)	Connectivity Taken (MW)	CUF (based upon connectivity as denominator)
Wind Project	750	38%	750	38%	750	38%
Solar Project	500	28%	500	28%	500	28%
Hybrid Project	1250 (500 Solar+750 Wind)	34%	1250	34%	450	80%*

** it is assumed that there is 15% curtailment of power when a 1250MW hybrid project operates with maximum 450MW connectivity*

Given that with the current waiver, there were no economic reasons for the generator/procurer for optimizing the utilization of the transmission infrastructure, MNRE came out with a National Wind Solar Hybrid Policy, the clear aim of which was optimal and efficient utilization of transmission infrastructure and land, reducing the variability in renewable power generation and achieving better grid stability. Accordingly, there are minimum CUF requirements under the hybrid bidding guidelines, which are based upon connectivity, so as to optimize the utilization of the transmission infrastructure. If the proposed amendments are allowed, then the entire aim of the hybrid policy would be defeated.

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				<p>Further, hybrid plants at multiple locations and not co-located are not in conformity to the National Wind Solar Hybrid Policy since they do not serve the purpose of the Hybrid Policy.</p> <p>The recent RTC tender concluded by SECI was initially structured to provide the following benefits over plain wind/solar bids:</p> <ul style="list-style-type: none"> (i) Guaranteed Availability of RE power round the clock as per the procurer's requirement; (ii) increased utilization of transmission infrastructure through higher CUFs. <p>During the bid process, clauses pertaining to guaranteed availability of power have been removed and the only requirement is a minimum CUF of 80%. Thus, in a way, the current RTC tender is basically a hybrid project with a min CUF requirement of 80%. Thus, the only benefit of an RTC project under the current scheme is optimum utilization of transmission infrastructure to the extent of 80%. If the Bidder is allowed connectivity above the quantity of the LOA either through 9.2.1 or 9.2.2, then it would also take away the benefit of optimum utilization of the transmission infrastructure. In the illustration mentioned above, the generator will take 1250MW connectivity and the CUF would be 34% (not 80%). The bidder would be utilizing connectivity upto 450MW @ 80% and the balance 800MW @ 8.13%.</p> <table border="1" data-bbox="1220 746 2033 949"> <tr> <td>Total Energy Produced (1)</td> <td>3,723</td> <td>MU</td> </tr> <tr> <td>Power scheduled under the 450MW tender (2)</td> <td>3,154</td> <td>@ 80% CUF</td> </tr> <tr> <td>Balance power scheduled under the extra connectivity granted (1)-(2)</td> <td>569</td> <td></td> </tr> <tr> <td>CUF/Utilization of extra 800MW connectivity</td> <td>8.13%</td> <td></td> </tr> </table> <p>It may also be noted that the levelized tariff over 25 years discovered under the said bid is INR 3.50/unit. This is much higher than the solar tariff of INR 2.50 or wind tariff of INR 3 per unit. Our understanding for this being higher is that the bidders have already taken curtailment into account while calculating this tariff. (Sample calculation is attached in Table-I below)</p> <p>On the other hand, given that the project does not provide firm power to the Procurer, we do not foresee any reason for a Procurer to buy such expensive power given that it can easily club plain vanilla solar and wind PPAs to get a tariff much below INR 3/unit. The real benefits of hybrid projects over wind/solar projects would only be visible once waiver is removed. (Sample calculation is attached in Table-I below)</p>	Total Energy Produced (1)	3,723	MU	Power scheduled under the 450MW tender (2)	3,154	@ 80% CUF	Balance power scheduled under the extra connectivity granted (1)-(2)	569		CUF/Utilization of extra 800MW connectivity	8.13%	
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				<p>To conclude, we believe that given the current subsidy, the value of a critical resource i.e connectivity/transmission infrastructure has been artificially reduced to zero. In such a case, the regulator has to restrict utilization of the resource so that the same is not wasted. Accordingly, connectivity over and above the LOA shall not be allowed, neither under 9.2.1 nor 9.2.2. If this is allowed, we foresee distortion of the entire market and severe under-utilization of transmission infrastructure. It would defeat the purpose of the National Wind Solar Hybrid Policy and lead to significant increase in transmission charges, which would ultimately be borne by the consumers. Once the subsidy (waiver of charges) goes away, the proposed amendment can be allowed since then the value for the additional connectivity is being paid by the generator.</p>
3	9.2.2 & 9.3.2 A		<p>Deletion of Clause 9.2.2 or Restricting it only for Open Access Projects / Projects being developed outside a bid process. Accordingly, Clause 9.3.2 A to be modified as follows: (i) A grantee of Stage-II Connectivity covered under Clause 9.2.2 shall not be allowed to convert it to connectivity granted under Clause 9.2.1</p>	<p>Currently this Clause 9.2.2 is primarily being used with the intention to temporarily hoard connectivity and convert it under Clause 9.2.1 later. Clause 9.3.2A as worded currently enables this.</p> <p>We urge the Commission to check on the progress of projects for which connectivity has been granted under Clause 9.2.2 in the last 2 years. Most of the Connectivity grantees under Clause 9.2.2 have not even applied for LTAs since that involves a significant long-term financial obligation. Post receipt of Connectivity-II under Clause 9.2.2, either the Connectivity Grantee (if it is an IPP) waits for winning a bid before applying for LTA and start work on the project after that or the Connectivity Grantee (if it is a developer) waits for the project to be sold to one of the IPPs participating in the bidding process.</p> <p>This temporary hoarding of connectivity, apart from the direct loss it causes, can also have significant unintended negative impacts. An example in this case is the PGCIL owned Bhuj Substation wherein 3 bays were blocked for a significant period by a developer by gaining Connectivity under 9.2.2. The connectivity eventually got rescinded but during the period the bays were blocked, IPPs which won projects under bids conducted by SECI/NTPC had to move to Bhuj-II. With Gujarat govt's current restriction on allotting land for the CTU projects, it is now envisaged that the entire capacity at Bhuj-II may not be utilized but given that it is already under development, its execution cannot be stopped. Bhuj-II may not have come up if the IPPs which won bids were able to get connectivity at Bhuj itself. A similar case is expected in Jam Khambaliya (being developed as a 2000MW system), wherein a significant capacity under Connectivity-II has been granted under Clause 9.2.2, however LTA has been taken for only 50 MW.</p> <p>While in future, there may be enabling market conditions for sale of renewable energy on the exchange/open access and thus retention of Clause 9.2.2 may be required, but at the same time it should be ensured that that such a clause is then used for its desired purpose and accordingly migration of 9.2.2. to 9.2.1 should not be allowed.</p>

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				The above measures would upfront restrict blocking/hoarding of bays/connectivity.
4	9.2.2 (i)	Ownership or lease rights or land use rights for 50% of the land required for the capacity of Stage-II Connectivity;	Ownership or registered leasehold rights for minimum 25 years or land use rights for 50% of the land required for the capacity of Stage-II Connectivity. The Connectivity grantee shall submit an affidavit after commissioning of the project that the project has been built upon the land parcels on which the initial connectivity has been granted	1) There is no concept of land use rights. Projects are developed either on owned or leased land. Lease period shall be for a minimum period of project life which is expected to be 25 years. Lease greater than 1 year need to be compulsorily registered. We would request the Commission to include the requirement for an affidavit that the land submitted at the time of gaining connectivity is eventually used by the Connectivity grantee. While some shifting of land locations does happen for wind/solar projects during project execution and thus the Commission may allow some concession to the tune of 10%, however it should be made sure that the land being originally used for gaining connectivity is the one that is ultimately being used for the Project. If this is not ensured, this clause is likely to be misused.
5	9.2.2.(ii)	Financial closure, of the project (with copy of sanction letter)	Financial Closure, of the project (with copy of unconditional sanction letter and loan agreement and certificate by the lender that the Pre-disbursement Conditions have been complied under the Loan Agreement)	The Commission would appreciate that lenders are not likely to fund a project which does not have a PPA. In such a case, conditional sanction letters/ bridge facilities for a group as a whole rather than for the Project can be used as compliance for such a condition. Under Bidding Documents, Financial Closure implies signing of loan agreement as well as compliance of pre-disbursement conditions under the loan agreement.
6	9.2.2(ii)	Release of at least 10% funds towards generation project execution of the project cost including the land acquisition cost through equity, duly supported by Auditor's certificate. regarding release of such funds through equity.	Release of at least 10% funds towards generation project execution of the project cost including the land acquisition cost through equity, duly supported by Auditor's certificate. regarding release of such funds through equity. Auditor to certify that such expenditure has been released to a third party and not to a related party and none of this expenditure is under a refundable advance	This clause has a significant chance of being misused, wherein the Connectivity Grantee may give advance to a related party entity under an EPC contract or give a refundable advance to a contractor.
7			Restriction on Trading of Connectivity: A company to whom the Connectivity is granted shall not be allowed to transfer its shareholding upto 51%/transfer the controlling shareholding, till one year after achieving commercial operation of Renewable Energy generating station(s):	By adding the proposed clause, we wish to prevent connectivity being traded. The shareholding restriction upto 51%/controlling shareholding till one year after achieving COD is similar to the restrictions on shareholding under the bid process and thus would be in line with the bid conditions also.
8	10.10	Conn-BG-1 Amount at Rs 50 lakh	Conn-BG-1 Amount at Rs 5 crore	Conn-BG-I is a deterrent to hoarding of connectivity/bays which was the issue faced initially by CTU. Apart from Conn-BG-I, there is no financial obligation on a Connectivity grantee. The Commission would appreciate that Clauses like 9.2.2 (i), (ii) have a significant chance of being misused thus a significant financial deterrent is necessary to avoid hording of bays/connectivity. The Commission may also take note

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that Bid Bonds under the Bids have also been continuously reduced thus there is no significant financial deterrence for a developer to not to abandon a project.

Table-I

	Installed AC Capacity (MW)	CUF (on installed capacity)	Cost of Electricity (INR/Kwh)	Connectivity Taken (MW)	CUF (based upon connectivity)	Cost of Electricity (per unit)	Transmission Cost (per unit)	Total Cost Of Electricity (per unit)	Connectivity Taken (MW)	CUF (based upon connectivity)	Cost of Electricity (per unit)	Transmission Cost (per unit)	Total Cost Of Electricity (per unit)
Wind Project	750	38%	3.00	700	38%	3.00	1.68	4.68	700	38%	3.00	1.68	4.68
Solar Project	500	28%	2.50	500	28%	2.50	2.28	4.78	500	28%	2.50	2.28	4.78
Hybrid Project	1250 (500 Solar+750 Wind)	34%	2.84	1250	34%	2.84	1.88	4.71	450	80%*	3.34**	0.79	4.13

* it is assumed that there is 15% curtailment of power when a 1250MW hybrid project operates with max 450MW connectivity. Thus CUF would be 80% $(34% * (1-15%) * 1250/450)$

**Assuming 15% curtailment, cost of electricity at generator end would increase by 17.6% $(1/0.85)$ due to the energy lost due to curtailment. Cost would be INR 3.34/unit $(2.24/(1-15%))$



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