

**Matrix of Amendments**

**National Electric Power Regulatory Authority  
(NEPRA)**

**Notice for Seeking Comments of Stakeholders in the Matter of Proposed Amendments in the Interconnection for Renewable Generation Facilities Regulations**

In order to streamline the process of power purchase/procurement and interconnection with renewable energy projects, NEPRA notified the NEPRA (Interconnection for Renewable Generation Facilities) Regulations, 2015. The Authority has now determined that 33kV or 66kV interconnections may be allowed in cases where Simulation Studies suggest such voltages to be the cost-effective and feasible.

In this regard, NEPRA has elected to consult the public at large on the following amendment(s) to the NEPRA (Interconnection for Renewable Generation Facilities) Regulations, 2015.

It is further pertinent to specify that the matrix of amendments advertised on the Authority's website, as of 16-08-2017, contained inadvertent clerical errors and the following amendments are now advertised as correction. Accordingly, the amendments advertised earlier may be disregarded. Any person/stakeholder interested may give comments in the matter within 7 days.

Existing Law	Proposed Amendment														
<p><b>1. Short Title and Commencement:</b> - (3) These regulations shall apply only to the new projects whose Simulation Studies have not already been approved by a distribution company or any company holding a transmission license.</p>	<p><b>1. Short Title and Commencement:</b> - (3) These regulations shall apply to new and existing renewable energy projects.</p>														
	<p><b>2. Definitions – “Minimum Transmission Voltage”</b> means thirty-three kilovolts at which electrical facilities are operated when used to deliver electric power in bulk from a renewable energy project under these regulations;</p>														
	<p><b>2. Definitions – “Special Purpose Transmission”</b> means license obtained under Section 19 of the Act;</p>														
	<p><b>2. Definitions – “Transmission Licensee”</b> means a transmission licensee in terms of Section 17 of the Act and shall include Karachi Electric Limited;</p>														
	<p><b>2A. Approval of Simulation Studies</b> – Every renewable energy project which intends to connect to the network of Host DISCO and Transmission Licensee is required to get the approval of Simulation Studies from the Host DISCO or/and Transmission Licensee:</p> <p>Provided that any existing renewable energy project connected with the network of Host DISCO or a Transmission Licensee who intends to enhance its capacity and/or intends to revise its terms of operation with the concerned DISCO and/or Transmission Licensee and is not already in possession of approved simulation studies is required to get the approval of concerned DISCO or/and Transmission Licensee for Simulation Studies.</p>														
	<p><b>3A. Exception – (1)</b> Notwithstanding anything contained in Regulation 3 and any Applicable Document, the Authority may allow interconnection at 33kV or 66kV where the Simulation Study recommends one of these as the most feasible and cost-effective option for interconnection:</p> <p>Provided that the renewable energy project shall construct, own, maintain and operate the aforementioned transmission line and shall obtain a Special Purpose Transmission license.</p> <p>(2) Interconnection at 33kV and 66kV shall be in the manner as provided in the Schedule III set out as annexure.</p>														
<p align="center"><b>Schedule II</b></p> <p align="center">[See regulation 3(3)(b)]</p> <table border="1"> <thead> <tr> <th>Connection Voltage Level (kV)</th> <th>Approximate Generator Size (MW)</th> </tr> </thead> <tbody> <tr> <td align="center">11</td> <td align="center">1 – 15</td> </tr> <tr> <td align="center">66</td> <td align="center">&gt; 15 – 40</td> </tr> <tr> <td align="center">132</td> <td align="center">&gt; 40 - 150</td> </tr> </tbody> </table> <p>Connections at 66kV level will be allowed considering the overall policy of host DISCO for dismantling and/or upgrading the respective grid. Where interconnection at 66kV is ruled out, 132kV will be considered. For interconnection voltages above 132kV, Grid Code shall be followed.</p>	Connection Voltage Level (kV)	Approximate Generator Size (MW)	11	1 – 15	66	> 15 – 40	132	> 40 - 150	<p align="center"><b>Schedule II</b></p> <p align="center">[See regulation 3(3)(b)]</p> <table border="1"> <thead> <tr> <th>Connection Voltage Level (kV)</th> <th>Approximate Generator Size (MW)</th> </tr> </thead> <tbody> <tr> <td align="center">11</td> <td align="center">1 – 15</td> </tr> <tr> <td align="center">132</td> <td align="center">&gt; 15 - 150</td> </tr> </tbody> </table> <p>For intervening voltage levels, regulation 3A shall be applicable</p>	Connection Voltage Level (kV)	Approximate Generator Size (MW)	11	1 – 15	132	> 15 - 150
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**Schedule III**

[See regulation 3A(2)]

**Interconnection at 33kV**

- a) The length of interconnection transmission lines shall be limited as follows:
- i. For generation facility located in an Urban Area, the energy loss at connection point shall not exceed 1.20%, when generation facility is operating at full load. Whereas the voltage drop at the receiving end shall not be more than 3%.
  - ii. For generation facility located in a Rural Area, the energy loss at connection point shall not exceed 1.75%, when generation facility is operating at full load. Whereas the voltage drop at the receiving end shall not be more than 5%.

**Interconnection at 66kV**

- b) The length of interconnection transmission lines shall be limited as follows:
- i. For generation facility located in an Urban Area, the energy loss at connection point shall not exceed 1.12%, when generation facility is operating at full load. Whereas the voltage drop at the receiving end shall not be more than 3%.
  - ii. For generation facility located in a Rural Area, the energy loss at connection point shall not exceed 1.67%, when generation facility is operating at full load. Whereas the voltage drop at the receiving end shall not be more than 5%.

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