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| PGRR Number | [077](http://www.ercot.com/mktrules/issues/PGRR077) | PGRR Title | DC Tie Planning Assumptions |

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| Date | January 24, 2020 |

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| Market Segment | Independent Power Marketer (IPM) |

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| Comments |

Rainbow Energy Marketing Corporation (REMC) submits these comments to Planning Guide Revision Request (PGRR) 077, DC Tie Planning Assumptions, to propose an appropriate policy for modeling Direct Current Ties (DC Ties) in ERCOT transmission planning studies. ERCOT’s stated reason for the submission of this PGRR is to describe the current treatment of DC Ties in the planning process with the objective of letting Market Participants decide on the appropriate policy for treating DC Ties in the planning process.

ERCOT’s treatment of DC Tie schedules in the planning process changed with the approval of Nodal Protocol Revision Request (NPRR) 818, Allow Curtailment of Certain DC Tie Load Prior to Declaring Emergency Conditions. That NPRR was an urgent fix to minimize the inefficient and unnecessary curtailment of exports by ERCOT Operations and consequent harm to Market Participants. Power Operations Bulletin #755 issued on 9/28/16 drastically changed ERCOT's operation of the DC Ties. ERCOT at that point would not commit Resources using the Reliability Unit Commitment (RUC) process to facilitate exports and wanted a new NPRR to clarify what was already in the Nodal Protocols – that is to treat DC Tie Load like Load which includes RUC, Constraint Management Plan (CMP), and Remedial Action Scheme (RAS), to protect DC Tie Load. Since such a new NPRR would take time to work through the NPRR approval process, NPRR818 was pursued on an urgent basis to stop inefficient and unnecessary export curtailments.

NPRR818 was quickly followed up by NPRR825, Require ERCOT to Issue a DC Tie Curtailment Notice Prior to Curtailing any DC Tie Load. NPRR825 eliminated the temporary provisions of NPRR818 and reinforced treatment of DC Tie Load like Load which includes RUC, CMP and RAS to protect DC Tie Load and was initially drafted to revert back to ERCOT having to declare an Emergency Condition to curtail DC Tie Load. REMC accommodated ERCOT’s request of issuing a DC Tie Curtailment Notice instead of having to declare an Emergency Condition with the understanding (as clearly stated in the Business Case of the Board-approved NPRR825) that “Apart from when a DC Tie experiences an Outage or a system operator in a non-ERCOT Control Area requests curtailment, ERCOT would use the same processes prior to curtailing DC Tie Load by issuing a DC Tie Curtailment Notice as they would if required to declare an Emergency Condition”. ERCOT Planning and Operations plan and operate the system to avoid having to enter into an Emergency Condition. According to current planning treatment of DC Tie schedules as reflected in this PGRR as filed, by not planning for any transmission to accommodate DC Tie schedules even under base case or N-1 conditions, ERCOT is essentially ensuring that ERCOT Operations would have to issue a DC Tie Curtailment Notice (equivalent to an Emergency) to maintain reliability – an unacceptable practice inconsistent with treatment of DC Tie schedules in planning prior to NPRR818.

Even more egregious is that a flat (8760-hour) DC Tie Load pays 1.67 times the transmission cost paid by similar other flat Load and, unlike other Load avoiding 4-CP charges, DC Tie Load cannot avoid paying this transmission charge since it’s charged in all hours as $/MWh. Thus, DC Tie Load pays more than other Load in transmission cost and yet, according to current ERCOT Planning practice, **no** transmission upgrade or even slight modifications of planned transmission upgrades would be considered to accommodate DC Tie Load.

The Nodal Protocols have consistently made clear, starting with NPRR405, Clarification of DC Tie Load into Operational Systems and Processes, that DC Tie Load should be treated like other Load except that, in Real-Time Emergency Conditions, DC Tie Load can be curtailed prior to curtailing other Load. Thus, for ERCOT Planning purposes, DC Tie Load should be treated exactly the same as other Load and DC Tie imports should be treated as other Generation Resources. REMC’s comments clarify this treatment of DC Tie schedules.

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| Revised Cover Page Language |

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| Revision Description | This Planning Guide Revision Request (PGRR) clarifies that assumed Direct Current Tie (DC Tie) imports will be curtailed in ERCOT’s transmission planning analysis when doing so is necessary to meet reliability criteria in reliability planning studies and DC Tie Load will be treated as Load in all planning studies. |

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| Revised Proposed Guide Language |

4.1.1.1 Planning Assumptions

(1) A contingency loss of an element includes the loss of an element with or without a single line-to-ground or three-phase fault.

(2) A common tower outage is the contingency loss of a double-circuit transmission line consisting of two circuits sharing a tower for 0.5 miles or greater.

(3) Unavailability of a single generating unit includes an entire Combined Cycle Train, if no part of the train can operate with one of the units Off-Line as provided in the Resource Registration data.

(4) The contingency loss of a single generating unit shall include the loss of an entire Combined Cycle Train, if that is the expected consequence.

(5) The following assumptions may be applied to the SSWG base cases for use in planning studies:

(a) Reasonable variations of Load forecast;

(b) Reasonable variations of generation commitment and dispatch applicable to transmission planning analyses on a case-by-case basis may include, but are not limited to, the following methods:

(i) Production cost model simulation, security constrained optimal power flow, or similar modeling tools that analyze the ERCOT System using hourly generation dispatch assumptions;

(ii) Modeling of high levels of intermittent generation conditions; or

(iii) Modeling of low levels of or no intermittent generation conditions.

(6) Direct Current Tie (DC Tie) imports as modeled in the SSWG base cases will be curtailed as necessary to meet reliability criteria in reliability planning studies. DC Tie Load as modeled in the SSWG base case will be treated as Load in planning studies.