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| NOGRR Number | [245](https://www.ercot.com/mktrules/issues/NOGRR245) | NOGRR Title | Inverter-Based Resource (IBR) Ride-Through Requirements |

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| Date | May 1, 2023 |

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| Market Segment | Independent Generator |

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| Comments |

Invenergy submits these comments to urge ERCOT to reconsider both the retroactive application of the proposed Revision Request requirements and the implementation schedule that would require all Inverter-Based Resources (IBRs) to comply with these new standards by the end of next year barring the grant of temporary exemptions from ERCOT.

The proposed voltage and frequency ride through requirements are based on the Institute of Electrical and Electronics Engineers (IEEE) 2800 standards; however, it is important to note that in developing these voluntary standards, IEEE contemplated grandfathering or exempting plants already in existence due to the difficulty of retrofitting older turbine or inverter models. Clause 1.4 of the standard concerning “General Remarks and Limitations” explicitly states that "The application of this standard may be limited to IBR plants for which an interconnection request is submitted after the date by which this standard is enforced by the responsible authority governing interconnection requirements (AGIR); **this standard may not apply to IBR plants that are either already interconnected or for which an interconnection request had been submitted prior to the standard’s enforcement date (grandfathering)** [emphasis added]. Any substantial changes in an existing IBR plant, e.g., the “repowering” of a wind power plant, may require retrofitting that IBR plant to meet all of the requirements of this standard.[[1]](#footnote-2)"

Retroactive application of the proposed voltage and frequency ride through standards are complicated by the inability of many of the IBRs in existence to meet the standards, largely because the required equipment may not yet be in existence and it is unclear whether that equipment could even be developed by the original equipment manufacturers (“OEMs”), and if it can, over what timeframe, and at what cost. ERCOT has heard from OEMs and generators alike that common models of wind turbines operating in ERCOT today either cannot be retrofitted at all or, in some cases, may only be able to be retrofitted in the longer term after the OEMs have been able to design, prototype, model, study, test, manufacture, transport, and install equipment designed for that purpose. Any implementation schedule for retrofits must account for real world supply chain and installation constraints, recognizing that ERCOT’s sudden mandate itself would create significant demand and potential bottlenecks when hardware needs to be deployed at tens of thousands of individual IBRs across the ERCOT market. Lastly, these issues are not limited to turbine and inverter OEMs, as the ride through requirements are defined in reference to the Point of Interconnection Bus (POIB). Consequently, the balance of plant will also need to be evaluated as it may become the most limiting factor for complying with any new standard for some IBRs. To require the entire fleet of IBRs in ERCOT to reach compliance with the NOGRR as currently drafted by the end of next year (or the following year if granted a temporary exemption) is an impossible feat.

Invenergy appreciates that ERCOT’s ultimate goal in implementing this rule is to ensure, and maintain, the reliability of the system. However, Invenergy would respectfully stress that the retroactive application of this rule, combined with a non-viable compliance timeline, will threaten reliability and resource adequacy in the footprint by forcing a substantial portion of the renewables fleet off ERCOT’s system for the foreseeable future and chilling future investment in all generating technology types. Market participants cannot make investments in multi-million dollar facilities with this level of regulatory risk and uncertainty.

As an alternative approach to implementing this NOGRR, Invenergy suggests:

* Exempt all resources with an Standard Generation Interconnection Agreement (SGIA) date before 1/1/2023 and create a good cause exception process for extenuating circumstances for other resources. Historically ERCOT has recognized the value of keeping existing resources online by exempting them from compliance with changes to the voltage ride through requirements. It is important that ERCOT find a way to achieve the stability needed without forcing these resources out of the market.
* Establish a staged implementation process for the new standards to allow OEMs the time they need to design, prototype, model, study, test, manufacture, transport, and install any necessary equipment.
* Deployment of alternative methods of addressing this reliability issue such as grid forming inverters, or transmission improvements or upgrades.

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| **Revised Cover Page Language** |

None

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| **Revised Proposed Guide Language** |

None

1. *See* *IEEE Standard for Interconnection and Interoperability of Inverter-Based Resources (IBRs) Interconnecting With Associated Transmission Electric Power Systems* at p. 19 (Section 1.4 “General Remarks and Limitations”).  [↑](#footnote-ref-2)