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

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| Date | June 16, 2023 |

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| Market Segment |  Independent Generator  |

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| Comments |

AES Clean Energy Development, LLC (“AES CE”) appreciates the opportunity to provide feedback on NOGRR245. AES CE owns and operates a portfolio of more than 4.4 GW of operating renewable energy projects including more than 400 utility-scale and community solar, wind, energy storage and hybrid projects in the U.S. AES CE has an additional 4.8 GW in development in the U.S. In Texas, AES CE owns and operates three wind generators in operation since 2006, 2007, and 2008. AES CE anticipates developing an additional 6,000 MW of renewable generation resources in ERCOT. AES CE shares ERCOT’s concern with the reliability of the grid and submits these comments in an effort to work collaboratively on solutions to the challenges being addressed by NOGRR245.

**Applicability of NOGRR 245**

AES CE recommends that the basic concepts of NOGRR245 be applied only to new generation with a Standard Generation Interconnection Agreement (SGIA) executed on or after the effective date of this NOGRR, and that a separate Revision Request be filed to address the specific concerns and issues associated with applying new standards to the older projects. Projects with SGIAs signed in 2009 or earlier should be grandfathered from these new requirements. Retrofitting or replacing inverters in older projects to meet these requirements is not always possible and it is costly. Retroactive requirements could also create financial risks that undermine the business certainty necessary to develop and finance Inverter-based Resource (IBR) repower projects. Such market signals could delay IBR project interconnections, stop new project development, or even cause operating projects to be removed from the grid, causing further damage to the ERCOT System and reliability.

AES CE is committed to compliance with the new requirements for new generating facilities and respectfully requests that ERCOT work with the applicable original equipment manufacturers (“OEMs”) to develop a realistic implementation timeline for the older projects.

**OEM Feedback**

AES CE has received informal feedback from two OEMs in an attempt to understand the feasibility of retroactively applying NOGRR245 requirements to currently operating projects, and planned repowers/retrofits of operating wind projects. The OEMs do not have clarity on if they will be able to produce components to modify installed equipment that is compatible with the requirements. One manufacturer indicated to AES CE that they are unsure of the feasibility or timeline to manufacture the compatible type of wind turbines associated with AES CE’s wind generation units. In addition, it is not clear whether the current turbines available for purchase today are compatible without any needed retrofits. The manufacturer has not provided any solutions or feedback for their older units on whether they will be compliant or whether they have a timeline for retrofit implementation.

Consistent with other comments submitted to ERCOT in this matter, OEMs have not been able to provide site specific assessments or timelines for retrofits required for the existing generation. This makes it difficult to pursue a retrofit in time for compliance. AES CE has been unable to find a manufacturer that can assure compliance within the timeline proposed in NOGRR 245. The OEMs indicate they need enough lead time to execute supply agreements, develop, and receive the compatible units prior to an anticipated repower. These limitations make it difficult to determine whether a partial or full repower is even a viable solution.

**Demonstrating compliance**

It is unclear from the proposed Revision Request what testing, and evidence will be required to demonstrate compliance for IBRs. Ostensibly, ERCOT will require owners to submit updated turbine models and other technical data which will take time to assemble, working with the OEMs. Further clarification is needed as to which ERCOT studies will then be required to demonstrate compliance (e.g., Full Interconnection Study (FIS), Material Modification Assessment, etc.) and on what timeline those studies will occur given the volume of compliance submissions ERCOT would be expecting.

Specifically, compliance with the proposed IBR requirements requires assessing the turbines for wind facilities as well as conducting a study to ensure that the plant rides through at the reference point of applicability (“RPA”) as defined by the Transmission Service Provider (TSP). This is generally the high side of the main transformer/point of measurement and means that the impedances and everything in between will have to be considered as well as the TSP’s operating voltage. AES CE suggests ERCOT should determine which IBR units pose a reliability risk and work to develop alternative solutions to retrofitting inverters to reduce the risk to the grid.

1. **Conclusions and recommendations**

AES CE fully supports efforts at the North American Electric Reliability Corporation (NERC) and Institute of Electrical and Electronic Engineers (IEEE) and appreciates ERCOT’s focus on reliability. AES CE is dedicated to a reliable grid in Texas and echoes the comments of other entities including RWE Clean Energy[[1]](#footnote-2), Invenergy[[2]](#footnote-3), Southern Power Company[[3]](#footnote-4), EDF Renewables,[[4]](#footnote-5) Clearway[[5]](#footnote-6) and Pattern Energy[[6]](#footnote-7) by encouraging ERCOT to divide this Revision Request into one for future projects and a separate one for the older legacy plants. This will allow the new requirements to be put in place for new projects and will also allow time for the industry to develop a reasonable solution and timeline for the older projects. Giving clear guidance to the developers and generation owners will send a strong signal to investors and continue to allow for reliable renewable energy development in Texas.

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| Revised Cover Page Language |

None

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| Revised Proposed Guide Language |

None

1. <https://www.ercot.com/files/docs/2023/04/26/245NOGRR-10%20RWE%20Comments%20042623.doc> [↑](#footnote-ref-2)
2. <https://www.ercot.com/files/docs/2023/05/01/245NOGRR-11%20Invenergy%20Comments%20050123.docx> [↑](#footnote-ref-3)
3. <https://www.ercot.com/files/docs/2023/05/01/245NOGRR-12%20Southern%20Power%20Comments%20050123.docx> [↑](#footnote-ref-4)
4. <https://www.ercot.com/files/docs/2023/05/02/245NOGRR-13%20EDFR%20Comments%20050223_1.doc> [↑](#footnote-ref-5)
5. <https://www.ercot.com/files/docs/2023/05/03/245NOGRR-16%20Clearway%20Renew%20Comments%20050323.docx> [↑](#footnote-ref-6)
6. <https://www.ercot.com/files/docs/2023/05/03/245NOGRR-17%20Pattern%20Energy%20Comments%20050323_1.doc> [↑](#footnote-ref-7)