

adding just a few PV generators for the ERCOT system, adding the PV generators slightly improves stability of the system. For the system-level high renewables penetration scenarios developed in this hypothetical ERCOT system, when adding considerable amounts of renewables the stability may hold steady up to approximately 39% PV with 15% wind, after which the CCT drops considerably or the case does not converge which is indicated as zero CCT. These results reveal the highly nonlinearity of the impact of PV generation on transient stability.

In the future, the cause of divergence and instability will be investigated, to better assess how to determine the point of instability for other systems or under different operating conditions.

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