



# Transient Security Assessment Tool (TSAT) Update

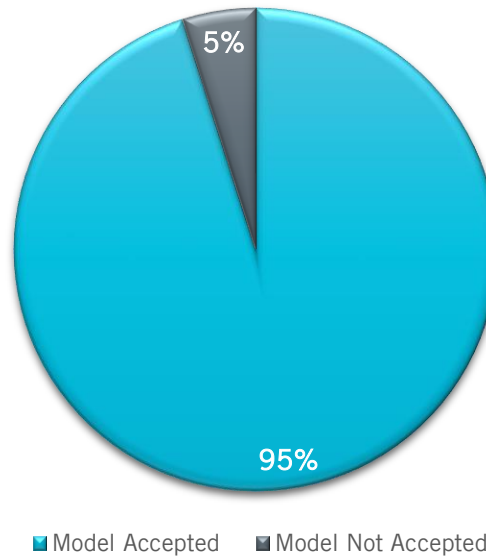
ERCOT Operation Stability Analysis

January 12, 2024  
IBRWG

# TSAT Model Submittal and Review Update

- 95% of transmission connected IBRs TSAT dynamic models have been accepted

Transmission Connected IBRs (Wind/Solar/Battery)  
Dynamic Model Accepted





# UDMs Summary and Update (as of Jan 2024)

No	Accepted model	OEM
1	CDVAR5U1	AMSC
2	GMD042101b	Gamesa
3	GMD042101	Gamesa
4	SGG0201CY	Gamesa
5	GMD042104B	Gamesa
6	SGG010100	Gamesa
7	GEWTG0705	GE
8	GELV5G06	GE
9	GELV5G1	GE
10	ING1BJ0	INGE
11	VS200461111	NOTFUOND
12	PEGEN_HM1008_1A	PowerElectronics
13	BESTESBL201_1	Tesla
14	CP212261106	Vestas
15	CP212270400	Vestas
16	CP220961105	Vestas
17	VC200460602	Vestas
18	VS170960603	Vestas
19	CP200660603	Vestas
20	VS200460603	Vestas
21	VS170961107	Vestas
22	VS200461107	Vestas
23	CP200660602	Vestas
24	VS200460604	Vestas
25	VS200460602	Vestas
26	FL200461105	Vestas
27	FL200461106	Vestas
28	VS170960602	Vestas

No	NOT Accepted model	OEM
1	GMD042103b	Gamesa
2	PEGEN_HM1008_1b	Power Electronics
3	SMASC	SMA
4	BESTES137_1	Tesla
5	VC200452101	Vestas
6	CP200660500	Vestas
7	VC18084901	Vestas
8	CP200660000	Vestas
9	VS170960501	Vestas
10	VS3102	Vestas
11	VS200460500	Vestas
12	CP200660501	Vestas
13	CP200653400	Vestas
14	CP200660400	Vestas
15	VC200453400	Vestas

# TSAT UDM Submittal Requirement Update

- ERCOT UDM Submittal Guideline has been updated in Dec. 2023 to include additional TSAT UDM requirement with the purpose of performing real-time TSAT simulation (base case & transfer) in the Operations horizon:  
[https://www.ercot.com/files/docs/2021/04/20/Model\\_Quality\\_Guide.zip](https://www.ercot.com/files/docs/2021/04/20/Model_Quality_Guide.zip)

→   [ercot.com/services/rq/integration](https://www.ercot.com/services/rq/integration)

## Model Quality Guide

Dec 15, 2023 - zip  
- 3.8 MB

Assists REs/IEs submit stability models per Planning Guide Section 6.2, including the new Model Quality Testing requirements. Also includes the UDM Model Guideline and PSCAD Model Guideline.

# Powertech TSAT MQT Case Preparation Tool

- The TSAT Model Quality Test (MQT) Case Preparation tool is available on request (contact [dsainfo@powertechlabs.com](mailto:dsainfo@powertechlabs.com)), free of charge for active licensed TSAT/PSAT users. This add-on module will allow for automated preparation of TSAT cases to streamline the evaluation of TSAT-compatible plant models in accordance with ERCOT Dynamic Model Submittal Guideline with additional customizations available (similar to DMVIEW).
- The TSAT MQT Prep add-on module will automatically prepare flat run, HVRT, LVRT, frequency variation, and variable SCR tests according to the configuration and input data provided, with support for both TSAT Equipment Name and Bus Number formats.
- Refer to <https://www.dsatools.com/news/> for the detailed announcement

# Status Update

#	Task	Notes	Progress and Tentative Schedule
1	TSAT Model Update and Availability	~95% of IBRs with accepted TSAT models	Ongoing
2	Offline TSAT Scenarios Set Up and Testing	16 GTCs including 7 GTCs that don't have accepted TSAT models for all the IBRs in the study area (within and close to the interface). TSAT model availability for these 7 GTCs: <ul style="list-style-type: none"> <li>• McCamey: 97%</li> <li>• Trdwel GTC: 0% (0/1)</li> <li>• Panhandle GTC: 94%</li> <li>• West Texas Export GTC: 95%</li> <li>• Valley Export GTC, Nelson Sharpe Rio Hondo GTC, and North Edinburg Lobo GTC: 95%</li> </ul>	Ongoing
3	EMS Testing Environment	Set up the TSAT scenarios for the potential GTCs and identify the adjustments/improvement needs	Ongoing
4	EMS Operational Environment		2024
5	Online TSAT		2024

- The schedule will be revised as needed, depends on the testing and finding at each stage
- May not have all the GTCs implemented initially