NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

# LMWG Work Plan Review

## RSTC Work Plan Summit 2025

Rob O'Keefe, Chair
January 22, 2025

# Data Center Load Modeling

- Work Plan item detailed description: Data Center Load Modeling
  - Develop new approaches to model data centers
  - Refine existing approaches to model data centers
  - Develop potential approaches to differentiate between different types of computational facilities (Crypto mines and data centers)
  - Scheduled completion date: Q2-2026
- Applicability to address:
  - Grid Transformation
  - Model Fidelity
- Priority (H/M/L):H
- Deliverables: Technical Reference

# Load Modeling Technical Reference Update

- Work Plan item detailed description: Load Modeling Technical Reference Update and Refinement
  - Evaluate if the published technical reference last updated in 2016 reflects the current state of the art
  - Update identified existing sections and add new sections where necessary
  - Scheduled completion date: Q4-2025
- Applicability to address:
  - Grid Transformation
  - Model Fidelity
- Priority (H/M/L):M
- Deliverables: Updated Technical Reference (if necessary)

# Load Modeling Training Resource Development

- This work plan item addresses concerns identified by ERAG with the load model submissions
  - Develop the resources to address the identified gaps
  - Publish and communicate the developed resources
  - Scheduled completion date: Q4-2025
- Applicability to address:
  - Grid Transformation
  - Model Fidelity
- Priority (H/M/L):M
- Deliverables: Training resources for load modeling with the NERC LMDT Tool

# Electric Vehicle Load Modeling

- Work Plan item detailed description: Electric Vehicle Load Modeling
  - Refine existing approaches to Electric Vehicles load modeling
  - Enhance approach by integrating EV Load shapes
  - Scheduled completion date: Q4-2026
- Applicability to address:
  - Grid Transformation
  - Model Fidelity
- Priority (H/M/L):L
- Deliverables: Update to EV Modeling Technical Reference

# Benchmarking Performance of the Single-Phase Induction Motor Model

- Work Plan item detailed description:  Verification of the performance of the single-phase induction motor **phasor** model in main software platforms
  - Compare performance between the phasor model and the **performance** model (algebraic formulation)
- Scheduled completion date: Q4-2026
- Applicability to address:
  - Grid Transformation
  - Model Fidelity
- Priority (H/M/L):L

# Heat Pump Models

- Work Plan item detailed description: Heat Pump Model
  - Include the gas pressure model in a single-phase induction motor model and test performance
  - Scheduled completion date: Q4-2026
- Applicability to address:
  - Grid Transformation
  - Model Fidelity
- Priority (H/M/L):L

# Adjustable Speed Drive (ASD)

- Work Plan item detailed description: Adjustable Speed Drive Model
  - EPRI and BPA tested several ASDs. EPRI has in the past developed a model for ASD anticipated to be sufficient for large-scale simulations. EPRI is considering a more detailed model for ASD.
  - Scheduled completion date: Q4-2026
- Applicability to address:
  - Grid Transformation
  - Model Fidelity
- Priority (H/M/L):L

# Questions and Answers