

PROVEN EXPERTISE IN POWER SYSTEM ANALYSIS



About Us

Pterra is an independent electric power system consulting firm providing advanced technical analysis, modeling, and automation solutions to utilities, developers, system operators, regulators, and research institutions.

Founded in 2004, Pterra has built a strong reputation for delivering high-quality studies that combine engineering rigor with innovation and efficiency. Our consultants are recognized for their expertise in renewable integration, model validation, and interconnection studies for projects across the United States and internationally.

Our Mission

To deliver engineering excellence and innovative technology solutions that help shape a reliable, sustainable, and modern electric grid.

Our Commitment

At Pterra, we bring decades of cumulative experience to every engagement. From rapid-turnaround analyses to large-scale planning studies, our commitment is to provide technically sound, efficient, and transparent results with time and budget in mind.

Why Pterra?

- **Technical Depth**

Deep domain expertise in ISO/RTO requirements and inverter modeling.

- **Extensive Experience**

Thousands of DER and large-scale renewable projects across the U.S.

- **Automation Advantage**

dqBOT and custom scripts that improve efficiency and model consistency.

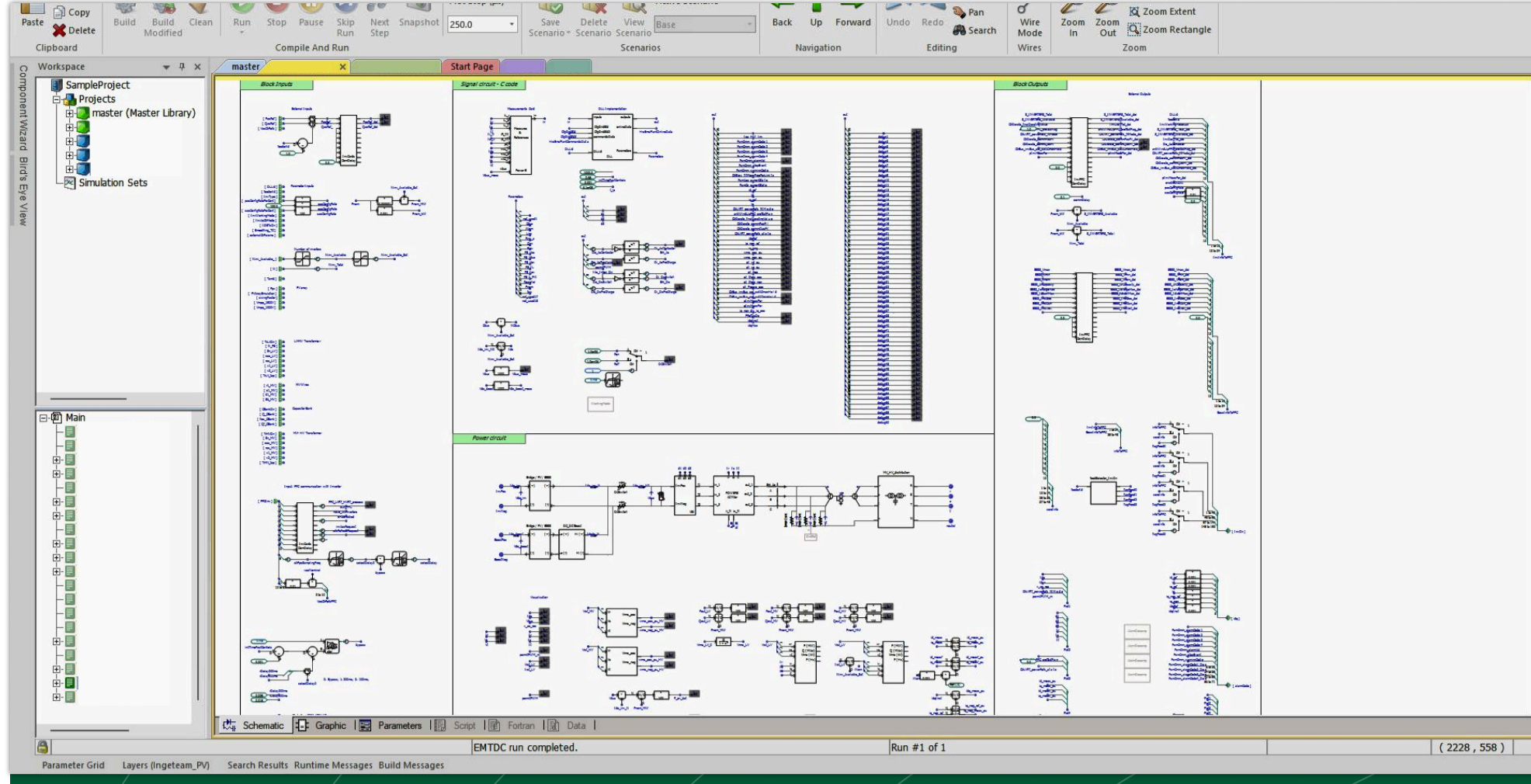
- **Independent and Trusted**

No affiliation with manufacturers or developers.



Transmission

- Voltage Control and Reactive Power Planning
- ISO/RTO deliverability assessments
- Generation interconnection studies
- Feasibility and impact studies
- Power system dynamics
- Transmission Planning
- Capacity screening



Model Development

- Models for conventional or inverter-based resources in various ISO/RTO
- Model Quality Tests (MQT) using ISO-suggested tools and/or dqBOT¹
- IEEE 2800 and NERC MOD/PRC Compliance
- PSS®E/PSCAD Benchmarking studies



Engineering and Special Studies

- Quasi Steady-State (QSS) and Time-Series Simulation Studies
- Protection and Grounding Bank Applications
- TOV and Breaker TRV Studies
- Electromagnetic transients
- Insulation Coordination
- Harmonics and Flicker
- Energization Studies



Distribution

- Distributed Energy Resources (DER) interconnection evaluation
- Ground-fault overvoltage mitigation techniques
- Load interconnection and engineering studies
- Risk of Islanding (ROI) assessment
- Hosting capacity and screening
- Distribution system planning
- Voltage regulation



Training & Capacity Building

- Electromagnetic Transient (EMT) Fundamentals and Simulation
- Power system analysis and applications
- Voltage/reactive power control
- DER interconnections



Regulatory and Expert Services

- Support for development banks and energy agencies
- Interconnection Technical Working Group (ITWG)
- Expert testimony (FERC, PSC)
- Research and development

¹dqBOT is a proprietary automation tool developed by Pterra which automates IBR model validation across EMT (e.g., PSCAD™) and positive-sequence platforms (e.g., PSS®E) in compliance with FERC Order 2023 and ISO/RTO requirements. This tool is actively used in utility-scale BESS, wind, and solar projects to ensure high-fidelity modeling of plant controls, supporting faster and more reliable approvals.

Our Tools & Software Expertise

We combine in-house automation with industry-leading tools:

PSS®E, PSLF™, TARA, ASPEN OneLiner™, E-TRAN, PSCAD™, CYME, ETAP, SKM, SynerGEE™, OpenDSS, dqBOT, and Python-based automation suites.

Contact Us

🏠 4 Automation Lane
Suite 225

Albany, NY 12205

🌐 www.pterra.com

✉ info@pterra.us