

SIEMENS

Gridscale X PSS E

Service Offerings



Index

Intro 3

Model & Data Management

Dynamic Asset Model Development 4

Transient Asset Model Development 5

Network Model Development 6

Grid Model Management Assessment 7

Automated Model Validation and Cleanup 8

Gridscale X PSS E Workflow Automation 9

Model Migration: Legacy Tools to Gridscale X PSS E 10

System Integration

Gridscale X PSS E Cloud and Virtual Machine Deployment 11

Gridscale X PSS E RMS-to-EMT Model Synchronization 12

Gridscale X PSS E to PSS SINCAL 13

Planning & Operational Studies

Grid Expert Support (Framework Agreement) 14

Black Start Recovery Planning for Modern Grids 15

Custom Training & Education

Custom Service Options & Grid Software University 16

Turning Grid Complexity into **Business Value**

As power systems grow more complex, utilities, infrastructure operators, and industrial energy users are under pressure to do more with fewer resources while maintaining reliability, efficiency, and resilience. Gridscale X PSS E combined with Professional Services provide the industry-leading capabilities required to meet these challenges.



"The energy transition is creating unprecedented challenges for utilities, from renewable Integration and grid modernization to increasing system complexity. As the grid evolves, success requires more than technology alone. With Gridscale X PSS E and Siemens' deep industry expertise, we empower our customers to make faster, more confident planning decisions and build the resilient grids of the future.

Kristin Bell,
Global Head of Services and Success



"Power systems worldwide are undergoing their most profound transformation, ever.

Fluctuating generation, new types of loads, both in unprecedented magnitudes and often driven by new players, lead to exploding complexity and enormous stress on the networks. Critical decisions require trusted advisors who understand both the physics of power systems and the realities of transformation. Siemens PTI brings the expertise and experience required to make critical decisions with confidence.

Dr. Michael Schwan,
Global Head of Siemens PTI Consulting

Maximize the Value of **Gridscale X PSS E**

Premium software delivers value to the grid when it is fully adopted, integrated into daily operations, and used to support business goals.

Siemens combines industry-leading software with decades of expertise in power system planning, operations, and digital transformation to help customers improve productivity, increase engineering efficiency, strengthen model quality, and accelerate the adoption of new technologies.

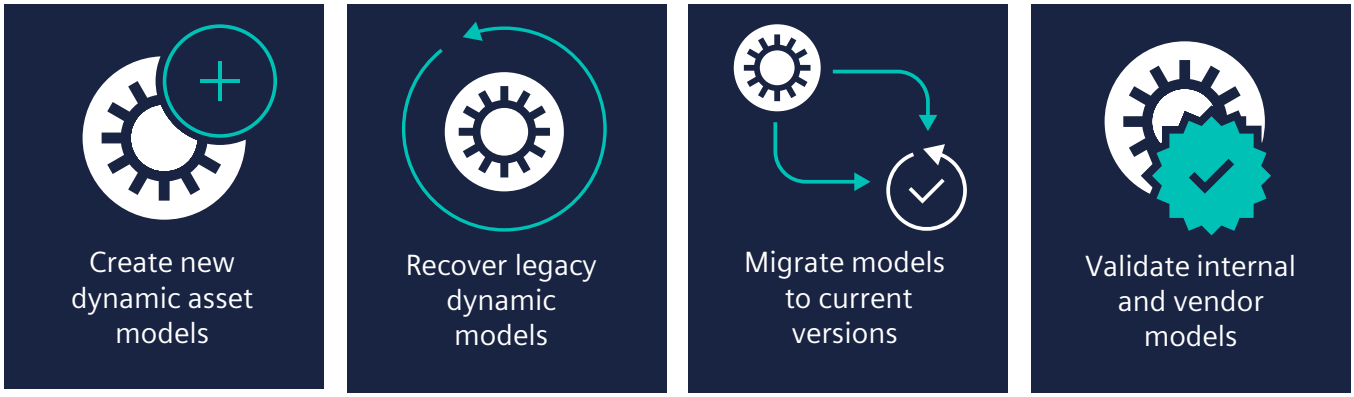
Our Grid Software Professional Services experts help customers maximize the value of Gridscale X PSS E through model quality and complex power system analyses, workflow automation, AI-enabled engineering, and tailored training.

Model and Data Management

Dynamic Asset Model Development

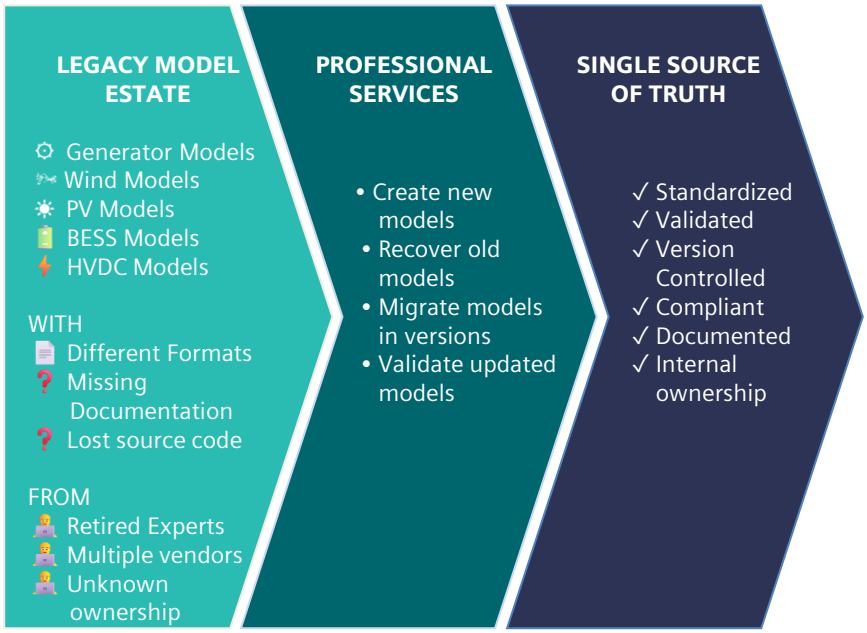
Accurate dynamic asset models for reliable power system studies

A dynamic model that runs is not necessarily a model the business can trust. Missing source code, obsolete formats, unclear ownership and unvalidated vendor behavior create compliance and interconnection risk – especially when the expert who understood the model has left or the platform must be upgraded.



The go-to service for building dynamic asset models for rotating or inverter-based assets

Create a single source of truth for dynamic asset models by standardizing and validating their behavior. Preserve knowledge through version control and documentation, strengthen compliance and interconnection studies with grid-code-ready models, and assign clear ownership so models can be maintained and reused reliably throughout their lifecycle.



Recommended for:

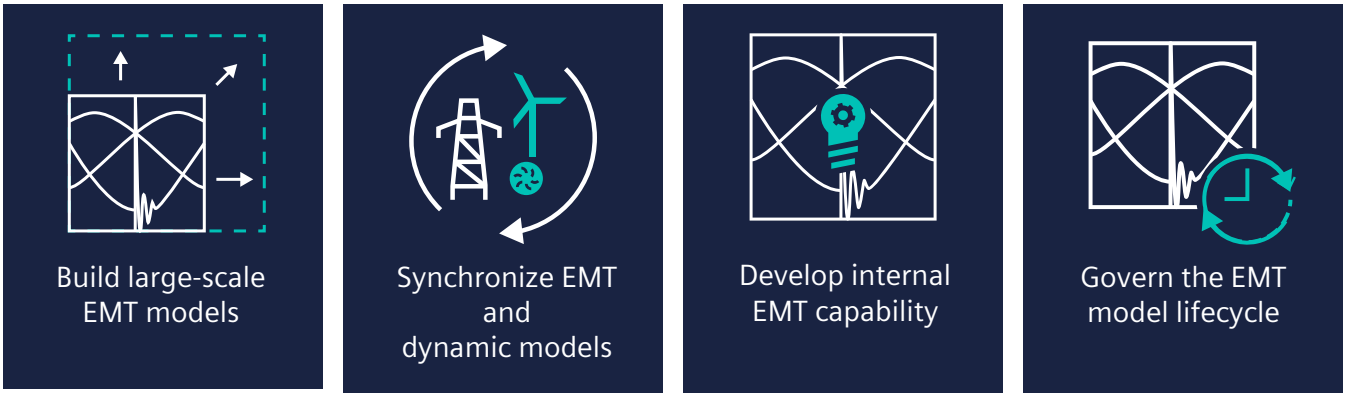
- Planning teams developing custom dynamic models to meet grid code requirements
- Development and recovery of generator, wind, PV, BESS, and HVDC models (esp. with missing documentation or source code)
- RAW-to-RAWX format migrations and dynamic-model upgrades for Gridscale X PSS E version 35 and up

Model and Data Management

Transient Asset Model Development

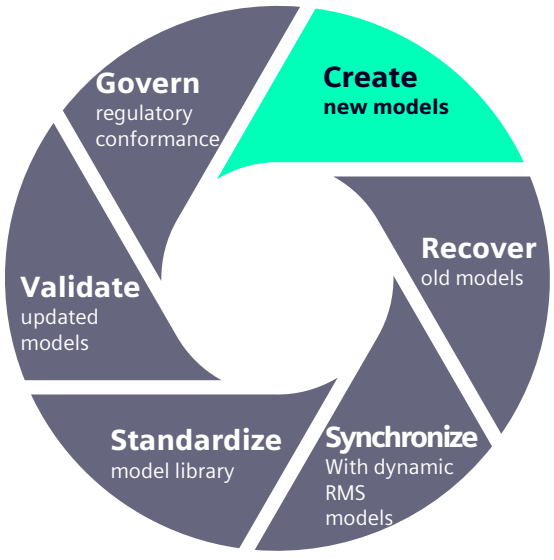
Large-scale EMT asset models for secure planning of inverter-rich grids

Grid integration projects face delays, operating restrictions or costly redesign because inverter-control interactions are not adequately assessed before commissioning. Traditional dynamic RMS models do not capture all phenomena. We establish trusted EMT capabilities that reduce project risk and improve decision confidence.



The go-to service for building and governing large-scale EMT models for IBR-rich grids

Build a trusted EMT capability around a credible large-scale model for grids with high inverter penetration. Reveal critical control interactions and stability risks through validated multi-vendor content, standardize repeatable study processes for consistent grid decisions, and establish training and lifecycle governance for sustainable internal ownership.



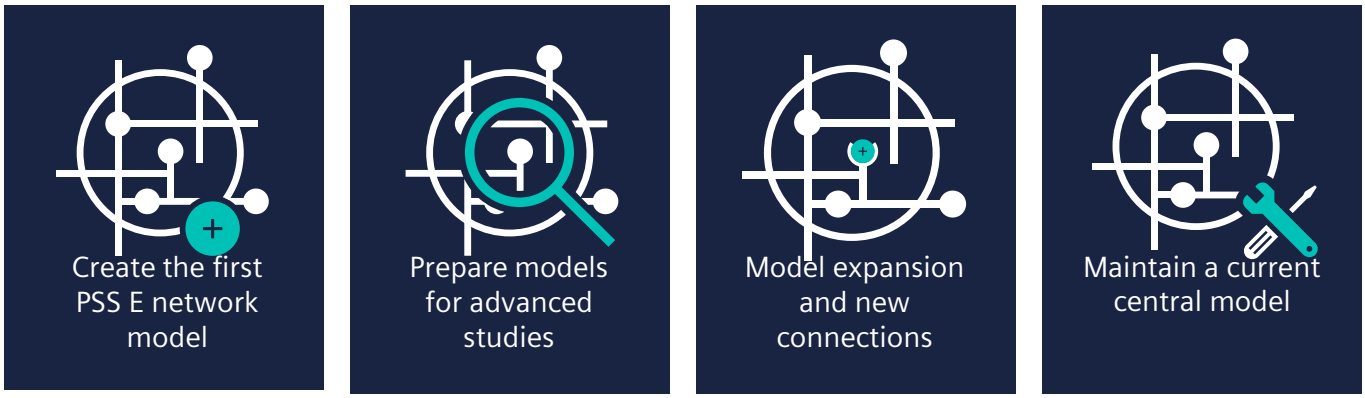
Recommended for:

- TSOs managing inverter-rich transmission networks.
- Organizations requiring detailed assessments of fast system dynamics.
- Large-scale EMT models, stability analysis and model governance.

Network Model Development

Trusted Gridscale X PSS E network models for advanced studies and grid planning

Outdated planning models that do not represent evolving grid connections can lead to misdirected investments. Grid expansion, renewable integration and new connections increase model complexity. We create trusted network models that support confident planning and investment decisions.



The go-to service for creating and maintaining trusted, study-ready Gridscale X PSS E network models

Create a study-ready network model with trusted topology, parameters and documented quality checks. Establish a credible simulation baseline that accelerates planning, interconnection and advanced studies, represent new assets and grid changes in a controlled way, and maintain the central model so it remains current and ready for confident decisions.

> As we transition to a resilient, low-carbon power grid future, this is vital as it provides actionable results for them to **unlock the grid capacity** by mitigating risks, reducing curtailments and planning more renewable resources assets.
>
> **Marc Borrett**, CEO, Reactive Technologies

Recommended for:

- Utilities, developers and industrial grid operators.
- Organizations lacking trusted or up-to-date network models.
- Grid expansion, renewables, BESS, data centers and advanced studies.

Grid **Model Management** Assessment

Trusted grid data foundations for digital twins and model governance

Digitalization programs frequently fail because grid data, ownership and governance are not aligned before implementation begins. Fragmented information and disconnected processes limit transparency and reuse. We identify governance gaps and define a roadmap for sustainable digitalization and digital twin initiatives.



The go-to service for assessing grid data and establishing lasting governance

Create a transparent, actionable grid-data foundation by clarifying gaps, ownership and cross-functional responsibilities. Build realistic effort estimates for digital twin investments, prioritize remediation to increase planning-to-operations re-use, and establish CIM-oriented governance that sustains data quality as models and business needs evolve.

> Lay the groundwork for a scalable **digital twin**



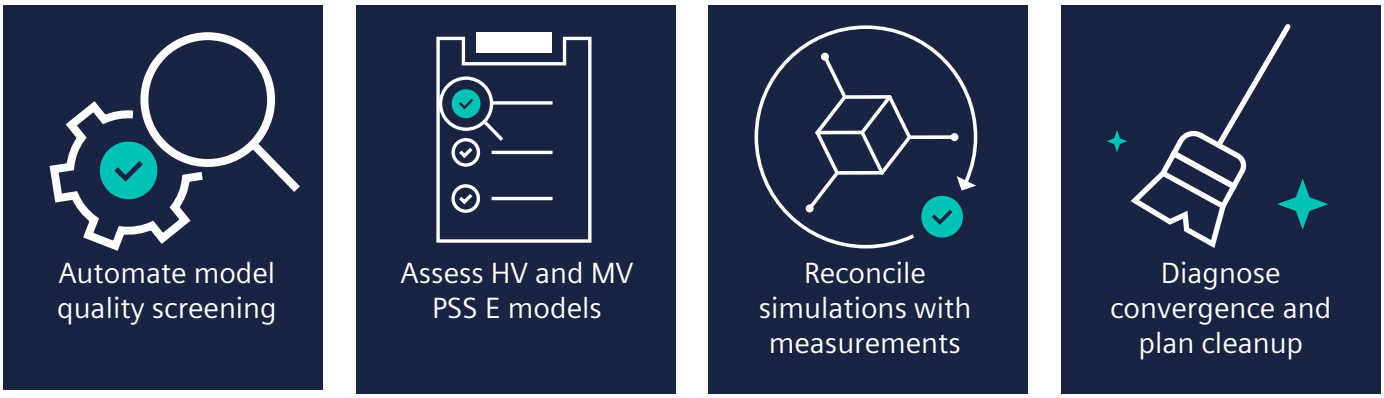
Recommended for:

- Utilities, TSOs and DSOs pursuing digital twin and model governance.
- Organizations with fragmented grid data or unclear ownership.
- Data readiness, CIM initiatives and planning-to-operations integration.

Automated Model Validation and Cleanup

Automated Gridscale X PSS E model validation for reliable studies and migration

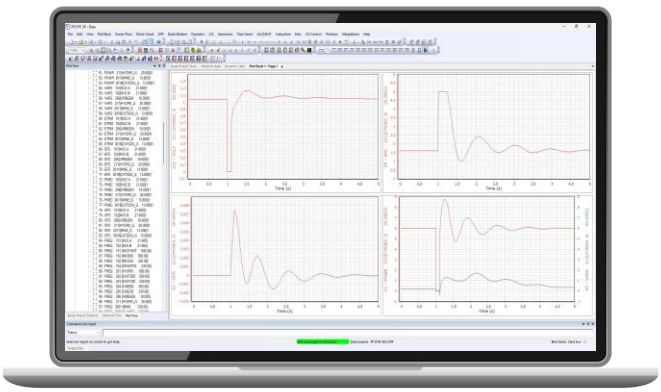
Planning-to-operations integration, CIM programs and digital twin initiatives frequently experience severe delays because underlying planning models contain hidden quality issues that limit trust and reusability. We systematically identify and remediate model defects, creating a trusted foundation for digitalization.



The go-to service for automated validation and targeted cleanup of HV and MV Gridscale X PSS E models

Build a trusted quality baseline for high and medium voltage Gridscale X PSS E models through scalable automated screening. Expose hidden and systematic defects, reconcile simulations with available measurements, diagnose convergence risks, and prioritize traceable corrections that improve confidence in studies, migrations and long-term digital twin transformations.

> Turn hidden model risks into **planning confidence**



Recommended for:

- Utilities and planning teams operating HV and MV Gridscale X PSS E models.
- Organizations facing quality issues, deviations or convergence problems.
- Model validation, migration readiness and digital-twin preparation.

Gridscale X PSS E Workflow **Automation**

Faster, repeatable Gridscale X PSS E studies through robust Python automation

Engineering organizations struggle to scale study execution because critical expertise remains trapped in manual and repetitive workflows. Growing study volumes increase workload, inconsistency and cycle times. We automate recurring engineering processes to improve productivity, standardization and organizational scalability.



The go-to service for automating Gridscale X PSS E studies, reporting and legacy Python workflows

Transform recurring Gridscale X PSS E studies into a repeatable automated workflow that reduces manual effort, copy-paste errors and repetitive specialist work. Accelerate batch, contingency and RMS studies, strengthen outputs with plausibility checks and standardized reports, and preserve know-how in maintainable code that supports future upgrades.

50% Accelerate grid connection studies by up to 50% with intelligent automation and streamlined workflow

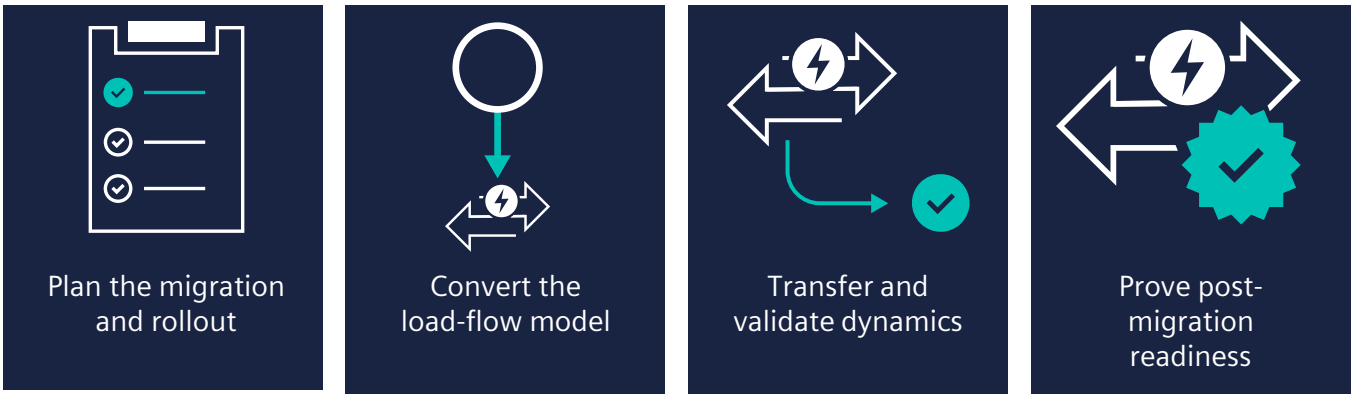
Recommended for:

- Utilities, consultants and study teams using Gridscale X PSS E at scale.
- Organizations burdened by repetitive engineering workflows.
- Scenario automation, RMS studies, reporting and script modernization.

Model **Migration**: Legacy Tools to Gridscale X PSS E

Control Gridscale X PSS E migration with validated models and study continuity

Planning tool migrations can underdeliver if transferred models cannot reproduce trusted study results. Differences in load-flow behavior, dynamic performance and engineering workflows create uncertainty and slow adoption. We provide evidence-based migration and acceptance to protect study continuity.



The go-to service for controlled migration of legacy models and workflows into Gridscale X PSS E

Move to Gridscale X PSS E through a controlled, evidence-based migration with a clear scope, roadmap and understanding of transfer risks. Preserve study continuity with validated load-flow and dynamic models, use documented deviations to focus remediation before go-live, and build benchmark evidence for confident acceptance and operational adoption.

> Preserve what works and **modernize what matters**



Recommended for:

- Utilities and planning organizations migrating to or upgrading Gridscale X PSS E.
- Organizations requiring controlled model and workflow transition.
- Load-flow validation, dynamics transfer and migration acceptance.

System Integration

Gridscale X PSS E **Cloud and Virtual Machine** Deployment

Secure, scalable Gridscale X PSS E deployments for cloud and virtual environments

Utilities risk directing investments to the wrong parts of the network when planning models do not reflect evolving grid conditions. Grid expansion, renewable integration and new connections increase model complexity requiring trusted network models that support confident planning and investment.



The go-to service for deploying secure, licensed Gridscale X PSS E environments in cloud or on virtual machines.

Establish a secure, accessible and correctly licensed Gridscale X PSS E environment that is ready for productive use. Standardize configuration to reduce deployment errors and operating disruption, document access and onboarding to accelerate adoption, and create a scalable baseline that supports additional users, instances and future cloud growth with less IT effort.

83% of utility executives cite improved scalability and flexibility as a top driver for cloud adoption

Recommended for:

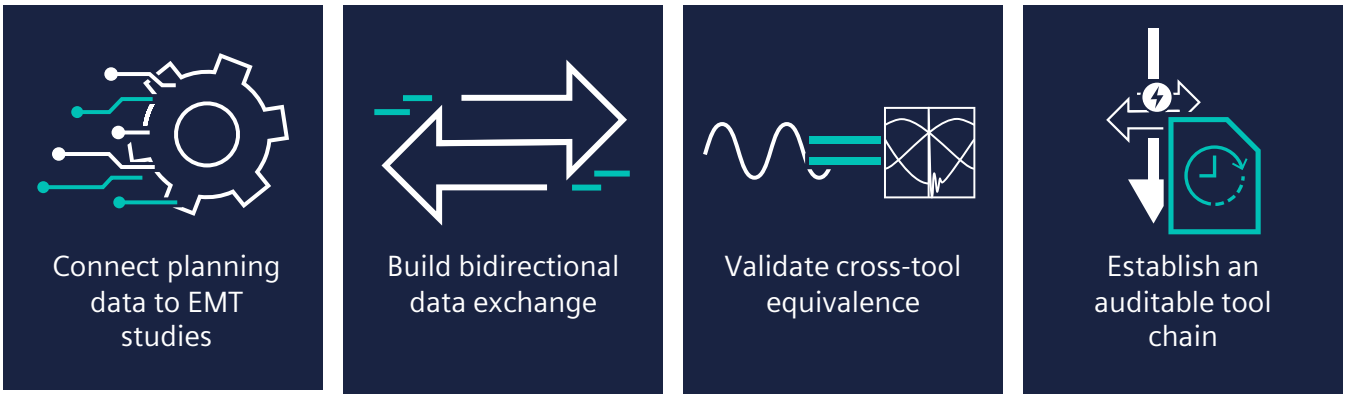
- Utilities, TSOs and DSOs deploying Gridscale X PSS E on cloud or virtual infrastructure.
- Organizations with limited IT capacity or cloud deployment experience..
- Cloud migration, secure access, licensing and scalable user onboarding.

System Integration

Gridscale X PSS E **RMS-to-EMT** Model Synchronization

Extend the value of your planning models with easy Gridscale X PSS E integration

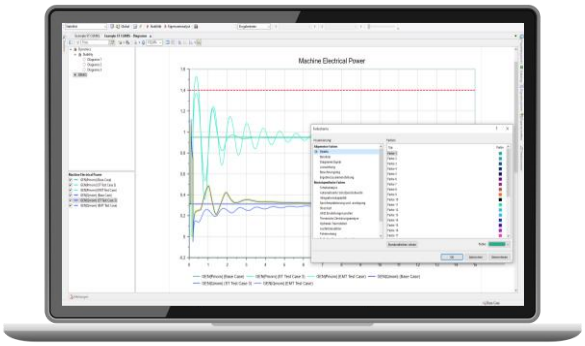
Engineering teams lose productivity and confidence in study results when RMS and EMT models evolve independently across multiple toolchains. Separate model maintenance creates duplication and reconciliation effort. We establish synchronized workflows that improve traceability, consistency and engineering efficiency.



The go-to service for synchronizing Gridscale X PSS E planning models with RMS and EMT toolchains

Connect engineering tools through a consistent, auditable workflow that reuses topology, parameters and control data. Reduce manual model recreation and prevent drift, confirm transferred-model equivalence through numerical benchmarks, and maintain traceable mappings and versions that provide a reliable basis for repeated cross-tool studies.

> Seamless connectivity for a **smarter digital grid**



Recommended for:

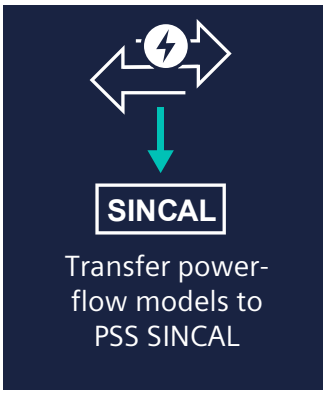
- Utilities, TSOs and consultants using RMS and EMT toolchains.
- Organizations struggling with inconsistent models across tools.
- RMS-EMT synchronization, data exchange and validation workflows.

System Integration

Gridscale X PSS E Model Migration to **PSS SINCAL**

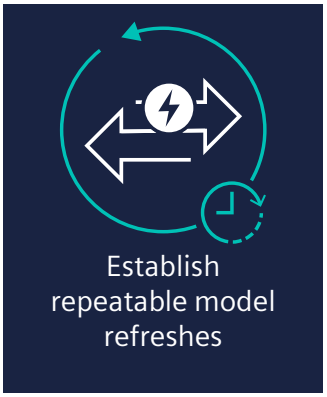
Reliable Gridscale X PSS E model and study transfer into PSS SINCAL workflows

Utilities lose the value of previous modelling investments because one-time model conversions cannot be maintained as networks evolve. Tool specific adaptations reduce consistency and increase maintenance effort. We create managed transfer processes that preserve engineering knowledge and maximize cross-tool synergies.





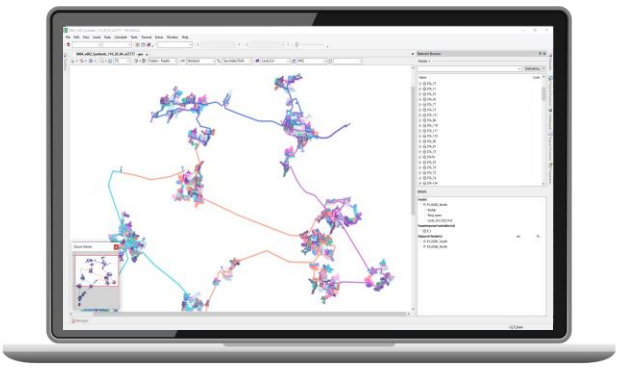




The go-to service for transferring Gridscale X PSS E models and study results reliably to PSS SINCAL

Turn existing Gridscale X PSS E models and results into a reusable cross-tool asset in PSS SINCAL. Preserve prior model and study investments, enable credible reassessment with validated power-flow and stability content, resolve uncertainty around UDM compatibility, and apply repeatable refresh rules that keep both tool environments aligned as networks change.

> Bridge **TSO and DSO** planning environments with **confidence and consistency**



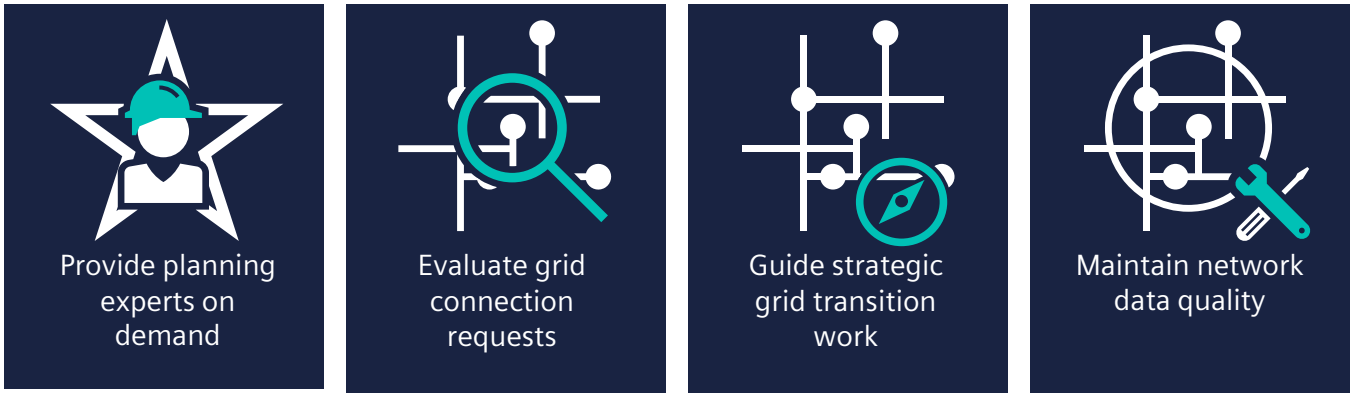
Recommended for:

- Utilities using both Gridscale X PSS E and PSS SINCAL environments
- Organizations seeking to preserve prior modelling investments.
- Model transfer, stability studies and repeatable refresh processes.

Grid Expert **Support** (Framework Agreement)

Flexible grid expertise for faster planning and reliable model data

Energy transition programs slow down when specialist expertise cannot be scaled at the same pace as workload growth. Resource constraints delay customer connections, infrastructure investments and critical decisions. We provide flexible access to experienced experts who strengthen execution capacity and responsiveness.



The go-to service for expert support across grid planning, studies and data quality

Secure flexible, continuous expert support that expands specialist capacity without permanent headcount. Accelerate connection planning and transition decisions through consistent advice, preserve continuity across changing assignments with a dedicated contact, and maintain tested network data that supports reliable recurring studies as demand changes.

On-demand experts with on-time decisions



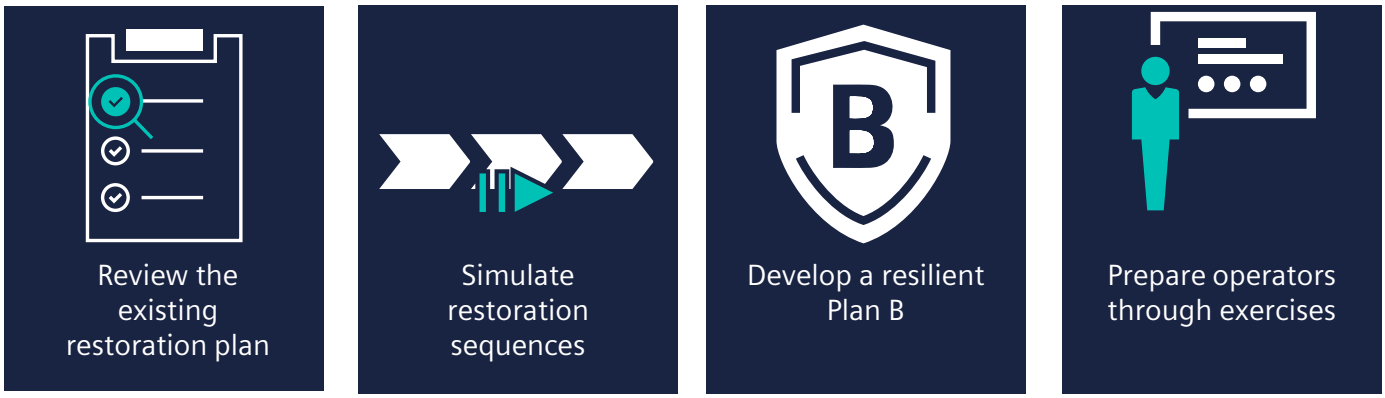
Recommended for:

- DSOs, TSOs and utilities requiring flexible specialist support.
- Organizations facing capacity bottlenecks or workload peaks.
- Connection studies, grid transition projects and model management.

Black Start Recovery Planning for Modern Grids

Simulation-backed black start plans for resilient grid restoration

Grid resilience strategies become increasingly difficult to validate as inverter-based resources change system behavior and restoration assumptions. Traditional recovery concepts no longer reflect operational reality. We modernize black-start strategies through simulation-backed validation and operator readiness programs.



The go-to service for modernizing black start plans with simulation and operator exercises

Strengthen restoration readiness with a simulation-backed strategy aligned to a DER-rich, low-inertia grid. Test sequences and timing to expose critical risks before an event, establish an actionable fallback pathway when the primary plan fails, and use exercise evidence to improve operator preparedness and support defensible resilience decisions.

> Power system restoration following a partial or complete blackout is a critical function, with the goals to **minimize restoration time** and maintain overall system reliability.
>
> **The Electric Power Research Institute (EPRI)**

Recommended for:

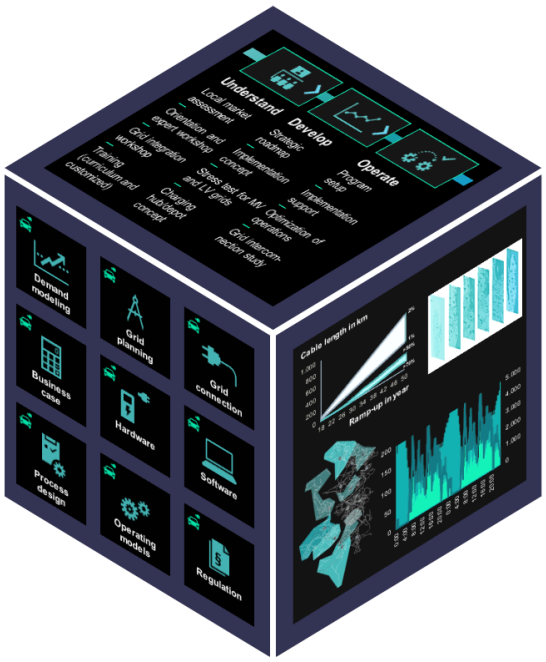
- Utilities, TSOs and authorities responsible for restoration planning.
- Organizations adapting to DER growth and reduced system inertia.
- Black-start analysis, resilience planning and operator exercises.

Expertise, Stability, and Responsiveness **When You Need Us**

The Gridscale X PSS E Professional Service Team is dedicated to supporting utilities, transmission operators, consultants, and grid model management teams with the expertise needed to maintain accurate, reliable, and actionable power system models. Whether you require support for one of the services highlighted in this brochure or need assistance with a unique challenge, our team becomes an active partner in your success.

From implementation and model development to ongoing maintenance, training, and technical support, we help your organization get the most value from its Gridscale X PSS E investment. Our professionals are known throughout the industry for their deep technical knowledge, real-word experience, and commitment to responsive customer support.

No matter where you are in your planning, operations, or grid modernization journey, we're here to help. Our professional service team is ready to answer your questions and develop solutions tailored to your organization's needs.



Educational Training: Grid Software University

Expand your Gridscale X PSS E expertise with Grid Software University (GSW-U) training. Our instructor-led and self-paced courses help users develop practical skills in power system modeling, planning studies, dynamic simulations, and advanced Gridscale X PSS E applications, enabling more effective and confident power system analysis.

Visit the Grid Software University training portal to explore course offerings, view schedules, and register for upcoming classes. Learn more

Contact: gridsoftware-training@siemens.com

> I appreciate the detailed explanation to my questions during the course on the **"why's" and "how's" about power systems.** We continue to gain a better understanding of what we think we know!

Quote by course participant of Advanced Model Writing using Gridscale X PSS E

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