ENELYTIX®

powered by PSO

Redefining the Business of Energy Market Modeling and Analytics

Efficient – Quick – Accurate – Transparent

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ENELYTIX is a comprehensive simulation and optimization environment used to model energy systems and power markets. It supports needs of planners, system operators and market participants in a single platform.

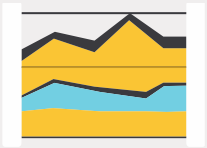
ENELYTIX applications include:

- System Expansion Planning
- Transmission Studies
- Regional Policy Analysis
- Market Design
- Renewable Integration Studies
- Ancillary Services (A/S) Policies
- Nodal and Zonal Market Simulations
- Gas-Electric Interaction
- Asset Valuations
- Portfolio Operation and Profitability
- Energy Trading Support
- Transmission Rights

ENELYTIX provides a unique level of transparency, speed and accuracy not attainable with competing tools.

ENELYTIX TECHNOLOGY SUITE

Maximize Productivity
Accomplish more with simulation ready data and automatic scenario generation



Self-Service Analytics
Conveniently explore simulation results dynamically and generate custom reports

Scalable and Adaptable
Secure cloud services enable a virtually unlimited number of parallel simulations

PSO: Advanced Engine
Unique modeling with non-heuristic MIP-based algorithms provides the competitive edge

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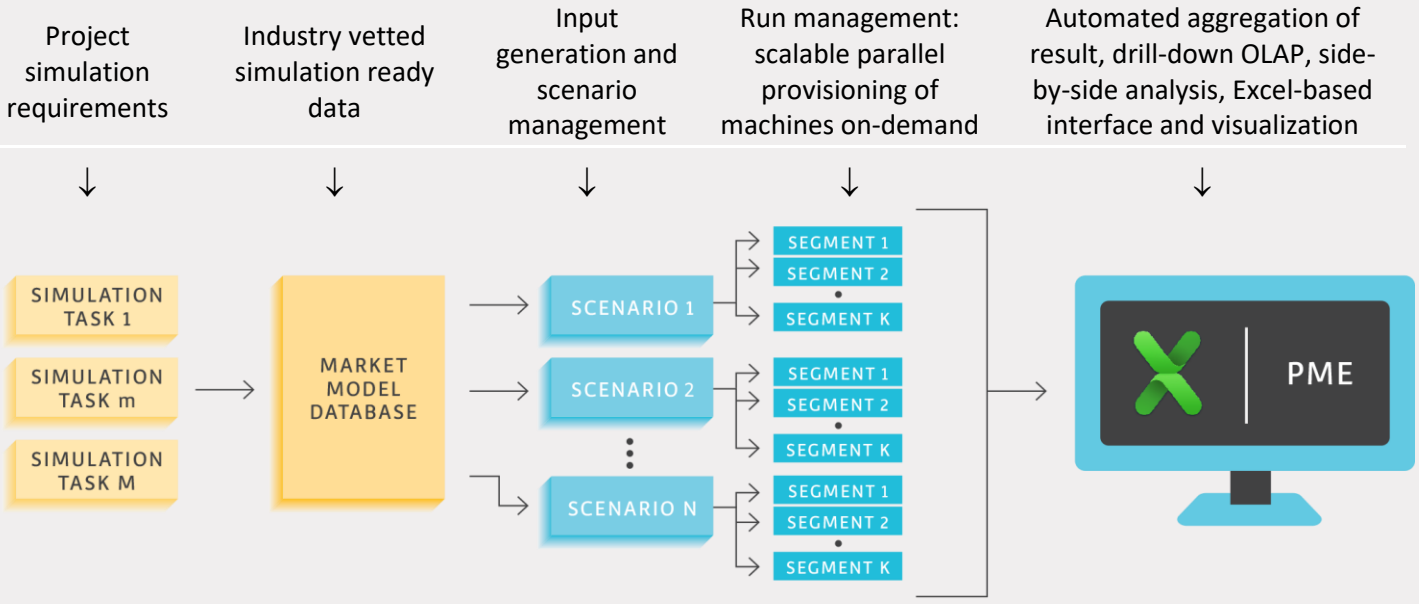
ENELYTX SaaS

Organized as a Software as a Service (SaaS), ENELYTIX is:

- A streamlined business service that facilitates power system modeling, market analysis, and large-scale simultaneous studies.
- Deployed with online security to protect proprietary data including, user authentication, usage tracking, storage, and archiving.

ENELYTIX services support all aspects needed to evaluate energy projects and perform power-system planning studies.

ENELYTIX Offers An Automated "One-Click" User Experience and Self-Service Business Intelligence



Scalability and Usage Based Pricing. **ENELYTIX is designed to perform an unlimited number of studies by exploiting the underlying parallelizable structure of power system simulations and through the use of intelligent partitioning. ENELYTIX offers scalability through usage-based pricing; i.e. pay for the compute time used: no individual licenses or computer fees.**

Simulator Ready Data. **ENELYTIX provides "simulator ready" input data that is assembled from publicly available sources and commercial vendors. Data is verified by industry power system modeling and analysis experts and tested against production models.**

Self-Service Business Analytics. **ENELYTIX includes Power Market Explorer™ (PME), an easy to use Excel-based analytics service that gives a comprehensive view of market/operations simulation results. PME allows users to dynamically explore simulation results at an unparalleled level of detail. Detailed summaries range from yearly to sub-hourly performance metrics.**

ENELYTIX System Security. **ENELYTIX provides a dedicated private cloud environment controlled by the customer. Amazon's cloud infrastructure passes high security standards necessary for working with Critical Energy Infrastructure Information (CEII).**

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The ENELYTIX Engine: Power Systems Optimizer

Power Systems Optimizer (PSO) is an advanced production-cost simulator that accurately captures the impact of uncertainty and dynamics on operations and planning decisions and their impact on the physics and economics of power systems.

KEY COMPONENTS OF PSO

INPUTS

- Demand forecasts
- Generation mix
- Wind & solar forecasts
- Transmission topology changes
- Ancillary Service (A/S) policies
- Install & retire dates generation & transmission
- Fuel prices & constraints
- Emission allowance prices
- Specialized unit models (HTC, CHP)

MODELS

- Loads & demand response
- Transmission: constraints, contingencies
- Generation: storage, variable generation, installed & retired
- Combined-cycle plant modeling
- User defined decision cycles
- Market seams coordination
- Virtual bids, point-to-point bids, extended LMPs

ALGORITHMS

- SCUC/SCED; contingency analysis; energy, co-optimized A/S & network topology
- Capacity market modeling
- Maintenance scheduling
- Capacity expansion
- Emissions policy
- Renewable portfolio requirements
- Fuel constraints & gas – electric co-optimization
- Frequency simulation

OUTPUTS

Operation Decisions
- Generation & reserves schedules
- Load response
- Transmission ops

Planning Decisions
- Generation Install & Retire
- Transmission Install

Metrics
- Prices & Revenues
- System & Resource Costs
- Congestion
- Fuel use
- Emissions
- Curtailments

The PSO structure provides users the versatility and flexibility to accurately replicate the rules and operations of both structured power markets and vertically integrated power systems, combining physical and financial models of energy resources.

PSO algorithms are non-heuristic MIP-based. The algorithms support security constrained unit commitment/economic dispatch (SCUC/SCED), generalized ancillary-services models, co-optimization, and integrated stochastic formulations.

Contact us for more information

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