# EPRI DRIVE™ Module

## Take advantage of the synergy of CYME and EPRI for hosting capacity analysis

The EPRI DRIVE™ software determines the maximum amount of DER each distribution feeder can accommodate in its current state before unacceptable reliability, power quality, protection and thermal issues start to emerge.

Transparently integrated into the CYME Software graphical user interface, the EPRI DRIVE™ engine unfolds as a native analysis module that combines the sophistication of EPRI's engineering with the refinement of the CYME's distribution system modeling and analysis capabilities.

As the distribution system landscape evolves with a global trend for cleaner power, supported by the arrival of new technologies such as solar and wind farms as well as affordable rooftop photovoltaic panels, electric distribution utilities are challenged to accelerate DER deployment and process interconnection requests in a timely manner.

Through its Distribution Resource Integration and Value Estimation – DRIVE – initiative, the Electric Power Research Institute, Inc. (EPRI) has leveraged many years of detailed system impact study expertise and developed a streamline calculation method to assist distribution utilities in performing a rapid yet precise assessment of their system's DER hosting capacity.

The calculation method provides aggregate and granular hosting capacity results for each distribution feeder and considers numerous circuit-specific attributes, such as topology, equipment nameplate data, device settings as well as peak and minimum loading conditions. Thanks to its various analysis parameters, it also allows nuancing between different DER technologies, considering the particular impacts of each of the following resource types:

- Photovoltaic
- Wind Energy Conversion Systems
- Battery energy storage systems
- Fuel cells
- Microturbines
- Synchronous generators

Seamlessly integrated into the CYME Software graphical user interface, the EPRI DRIVE™ Module combines the engineering effort of the EPRI DRIVE™ engine with CYME's detailed distribution system model to return hosting capacity calculation results within a familiar environment. Forget about cumbersome scripting-based integration and unleash the full power of CYME and EPRI offered by the EPRI DRIVE module for your hosting capacity analysis.

**F·T·N**
*Powering Business Worldwide*

# EPRI DRIVE™ Module

## Take advantage of the synergy of CYME and EPRI for hosting capacity analysis

## Features

The main highlights of EPRI's hosting capacity method are:

- Streamlined method based on heuristics

- Results available for three-phase large DER hosting capacity scenarios (centralized and distributed) and single-phase small DER scenarios (distributed)

- Thorough analysis based on multiple, diverse criteria covering thermal loading, power quality, protection and reliability

| Power System Criteria | | | |
|---|---|---|---|
| Thermal | Power Quality / Voltage | Protection | Reliability / Safety |
| Substation transformer | Sudden (fast) voltage change | Relay reduction of reach | Unintentional islanding |
| Primary conductor | Steady-state voltage | Sympathetic tripping | Operational flexibility |
| | Voltage regulator impact | Element fault current | |
| | Load tap changer impact | Reverse power flow | |

**Distribution impacts evaluated in streamlined hosting capacity method (as implemented in the CYME module)**
*Reference: EPRI white paper, Integration of Hosting Capacity Analysis into Distribution Planning tools, January 2016, 3002005793.*

## Results

The hosting capacity results are provided under several formats within the CYME software graphical user interface. Typical for this type of analysis, heat maps and one-line diagram color-coding layers are available for each aspect of the method:

- Node-level maximum and by-criterion hosting capacity

- Feeder-level maximum and minimum hosting capacity for each scenario (large centralized and distributed DER, small distributed DER) and criterion
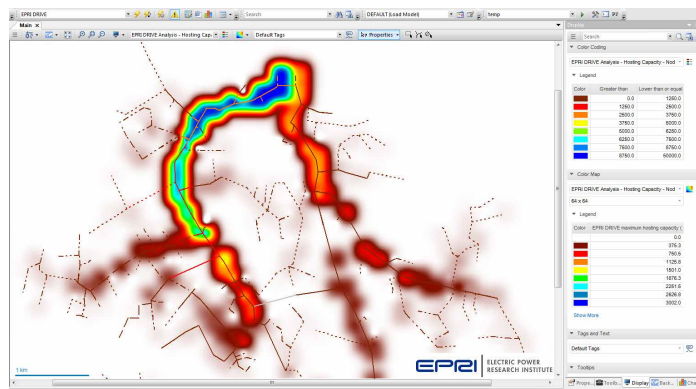
A tooltip is also available on each node of the one-line diagram to consult node-level results (maximum and by-criterion hosting capacity) directly from the distribution system model.

A summary and a spreadsheet report complete the output of the analysis. While the former provides feeder-level results, the latter tabulates the node-level results. Both allow an exhaustive understanding of the distribution system capability to host distributed energy resources.

Follow us on social media to get the latest product and support information.

**EATON**
Powering Business Worldwide