

# Distribution Resource Integration and Value Estimation (DRIVE) Tool User Group



## Background, Objectives, and New Learnings

The “hosting capacity” of a distribution feeder is the amount of distributed energy resources (DER), or load, that can be accommodated without adversely impacting power quality or reliability under existing feeder design and control configurations. Experience has shown that hosting capacity can vary across feeders, along a single distribution feeder, or based on impact criteria the utility considers. Hosting capacity will also change over time as devices are added to the system or system infrastructure and operations change. To properly assess these impacts, the industry needed a method for determining feeder hosting capacity, system-wide, that considers the full impact of these devices on the performance of the distribution system based on technology type, size and location, and considering the full range of additional impact factors.

To meet this need, EPRI developed the Distribution Resource Integration and Value Estimation (DRIVE) tool to enable distribution engineers with new planning methods that assess the full impact of DER on the grid. The primary focus of DRIVE is to evaluate quickly the physical and economic impacts of new distributed resources on an entire distribution system without compromising accuracy.

The DRIVE tool is built on hosting capacity analytics to identify constraints and cost-effective solutions to better integrate DER and load into distribution operations and planning. This includes evaluating both the technical impacts as well as identifying the locational value and cost of integrating DER.

The key values of the User Group are:

- Enhancements and improvements of the DRIVE tool and interface
- Updates to the DRIVE tool
- Training and support for using DRIVE
- Successful application of DRIVE through meetings, webcasts, and software support

To achieve full integration and value estimation capability, future functionality must include: DER scenario analysis; DER forecasts and load growth; grid operational changes like reconfiguration, voltage control changes and setpoints; and DER-side integration solutions like smart inverter control and storage. DRIVE is intended to provide a method for integrating future distribution resources into the overall utility assessment process, including those used in interconnection and planning decisions.

The objective of this user group is to facilitate user input and improvements to the development of functionality in DRIVE. The user group will bring together utility planners and planning tool vendors with the end goal to fully commercialize new and effective DRIVE analytics to improve the overall integration of new and advanced resources (photovoltaics, storage, var control) with the grid.

DRIVE analytics occur on feeder model data extracted from distribution planning tools. To extract this data and enable DRIVE to be used for analysis, interface scripts will be provided for distribution planning tools (e.g., CYME, Synergi, Milsoft, PowerFactory, OpenDSS, DEW, etc).

## Benefits

The user group has four key values:

1. Guide enhancement and improvement of the DRIVE tool and interface.
2. Provide updates to the DRIVE tool.

3. Provide training and support for using DRIVE.
4. Provide a forum to help utilities successfully apply the tools.

### **Project Approach and Summary**

User group interaction will be facilitated through webcasts, face-to-face meetings, and training events. Events include:

- One annual User Group Meeting to provide updates on tool functionality, facilitate information and experience sharing among users, and solicit input for new functionality and updated versions
- One annual new-user training meeting in conjunction with User Group Meeting
- One annual utility-specific webcast for new users

These forums will be an ideal setting for:

- Discussion and feedback from users to guide the maintenance of DRIVE and future versions of the tool with updated features, bug-fixes, etc.
- Share experience of various users with tool
- Providing training sessions for users (by EPRI at the annual meeting)
- A forum for discussion and mutual learning among group members

### **Deliverables**

User group members will gain access to the latest version of DRIVE, including any scripts or new releases that occur during each funding year. Group members will also have access to EPRI staff for support. The annual face-to-face meeting, annual training, and several webcasts also provide forums for learning.

### **Price of Project**

The price to participate is \$10,000 per year. A three-year commitment is required for a total of \$30,000. There is no prorating for those who join late in the 3-year user group cycle. The software tool can only be licensed by joining the group. The project qualifies for Self-Directed and Tailored Collaboration funds.

Commercial use of the software (i.e., entities wanting to license the tool and use it for consulting and service work) is available, but licensing for such use will be determined on a case-by-case basis and will require purchasing licensing rights for providing services.

### **Project Status and Schedule**

The DRIVE user group will run for three years from January 2021—December 2023. At the end of 2023, we will determine the need and support for continuing the group for another three-year cycle.

### **Who Should Join**

Utilities that are currently interconnecting DER into distribution, forming distribution resource plans, or evaluating future programs for DER.

### **Contact Information**

For more information, contact the EPRI Customer Assistance Center at 800.313.3774 ([askepri@epri.com](mailto:askepri@epri.com)).

### **Technical Contact**

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