Anticipated growth in distributed energy resource (DER) integration is significant, with projections indicating that DERs could account for 30-50% of the overall generation capacity.

Microgrids and virtual power plants (VPPs) play a crucial role in the transition to a distributed electricity model, offering benefits such as cost reduction, lower emissions, and enhanced resilience of the electricity system. These systems utilize distributed energy resources (DER) to generate power near or on-site, reducing reliance on the centralized power grid. Microgrids can operate independently or connect to the traditional grid, while VPPs are strictly grid-tied systems.

As the U.S. moves towards greater electrification and faces the challenges of grid resiliency, microgrids and VPPs are becoming increasingly vital for enhancing the resilience and dependability of the energy Delivery System (EDS) and supporting essential services. They serve as a central hub, orchestrating various distributed energy resources, providing a control point for larger power systems, and facilitating resource sharing with neighboring microgrids and VPPs. Organizations can leverage the enx ei360 energy platform to implement and optimize microgrids and VPPs, thereby empowering their business models and contributing to community resilience.

The enx ei360 Integrated Distribution Resource Planning (IDRP) tool can empower organizations seeking microgrid and virtual power plant business models by:

- Allowing for the integration and optimization of microgrids and VPPs to enhance the resilience and dependability of the Energy Delivery System (EDS) and support essential services under various environmental conditions.
- Providing a central hub for orchestrating distributed energy resources, enabling control over larger power systems, and facilitating resource sharing with neighboring microgrids and VPPs.
- Enabling organizations to leverage distributed energy resources (DER) for on-site power generation, reducing reliance on the centralized power grid and contributing to cost reduction, lower emissions, and enhanced resilience of the electricity system.

Empower Locally, Connect Globally.

A microgrid brings together energy production and usage in one location. This contrasts with the conventional utility grid, where power is generated at a central plant and transmitted over extensive networks. Microgrids generate power right where it's needed, often employing a mix of DERs.

Distributed Energy

- **The enx IDRP Tool/Model enables a new cost-benefit framework for valuing DER.**
- Investments that are treated the same as traditional distribution investments
- DER investments demonstrated for multiple purposes and value (Demand Flexibility and Grid Services)

Smart City Infrastructure

- **The enx IDRP Tool/Model enables a new cost-benefit framework for valuing smart city infrastructure**
- Smart City infrastructure investments that are treated the same as traditional distribution investments.
- Locational smart city technologies that support smart city infrastructure and investment - demonstrated for multiple purposes and value.

C&I Smart Buildings

- **The enx IDRP Tool/Model enables a new cost-benefit framework for valuing C&I loads and Microgrids.**
- Investments that are treated the same as traditional distribution investments (C&I Prosumers)
- C&I locational Microgrids investments demonstrated for multiple purposes and value (Demand Response, Grid Services)

EV Charging

- **The enx IDRP Tool/Model enables a new cost-benefit framework for valuing EV Charging stations.**
- Investments that are treated the same as traditional distribution investments.
- Locational Microgrids investments that support EV Charging and demonstrated for multiple purposes and value.

Smart Lighting

- **The enx IDRP Tool/Model enables a new cost-benefit framework for valuing smart street lighting.**
- Investments that are treated the same as traditional distribution investments
- Smart Street Lighting investments demonstrated for multiple purposes and value (Grid Security, EV Charging, etc.)