

# Integrated Distribution Planning (IDP) – A Path Forward

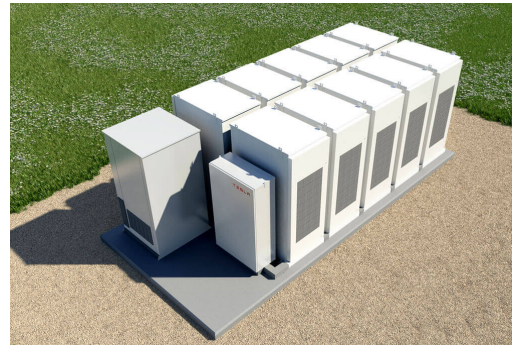
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# DER Growth



- Increased complexity of distribution system planning and operations
- New opportunities for customers and third parties to provide ***Local Distribution Grid Services***, reducing the need for ratepayer-funded capital investments
  - Distribution capacity or load reduction
  - Voltage support
  - Reliability/resilience

# Local Distribution Grid Services

Imagine individual customers providing and receiving compensation for **Local Distribution Grid Services** to reduce costs for all customers ...



# Local Distribution Grid Services

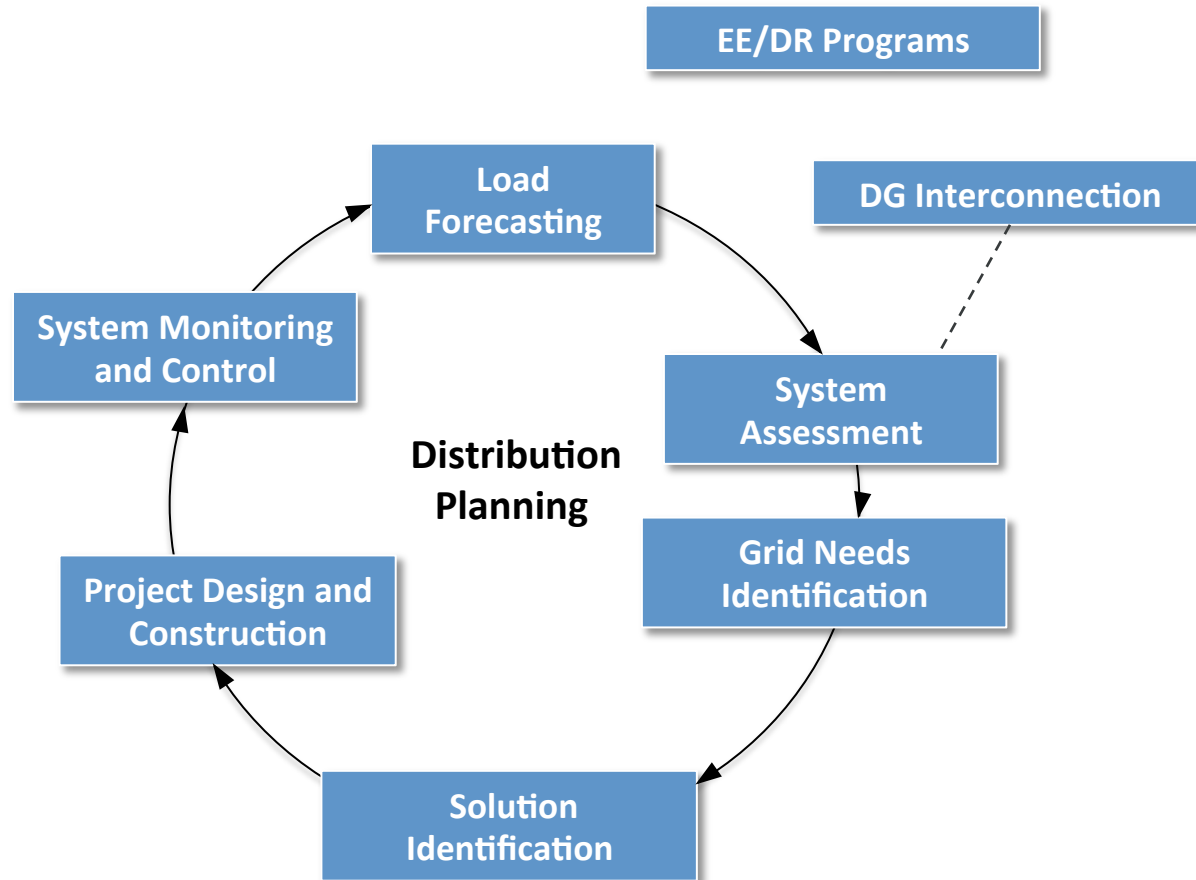
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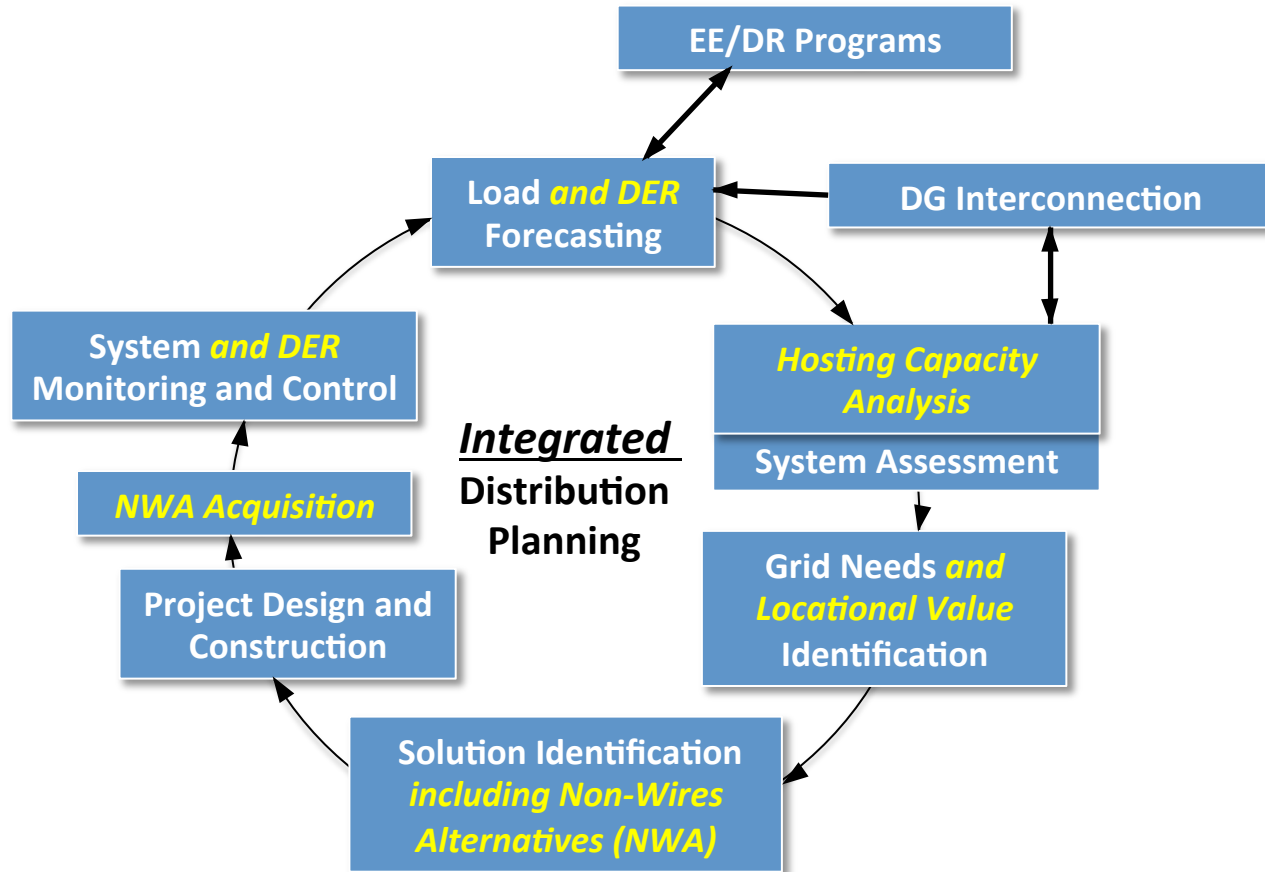
Huntington Center CHP system – Toledo, OH

*To what extent will you establish an open, competitive market for customers and third parties to provide **Local Distribution Grid Services**?*

# From today's Distribution Planning ...



# ... to Integrated Distribution Planning

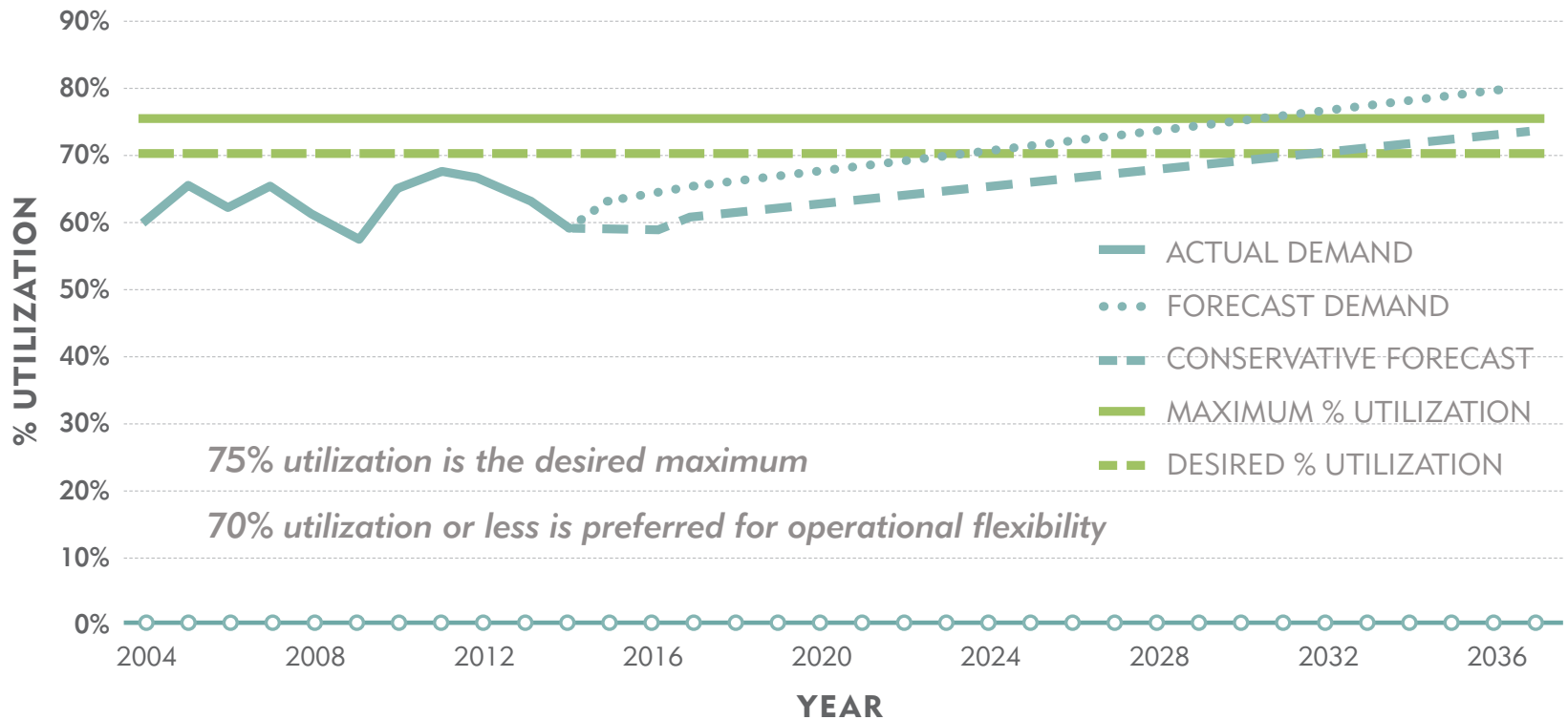




# New IDP Capabilities

| Capability   | Description   |
|--|---|
| <b>1) Advanced Forecasting and System Modeling</b> | Probabilistic planning and DER adoption scenario analyses; more granular load and power flow modeling; enhanced modeling of new smart inverter capabilities; and the ability to monitor, manage and optimize DER connected to the system. |

# Load Forecasting Today

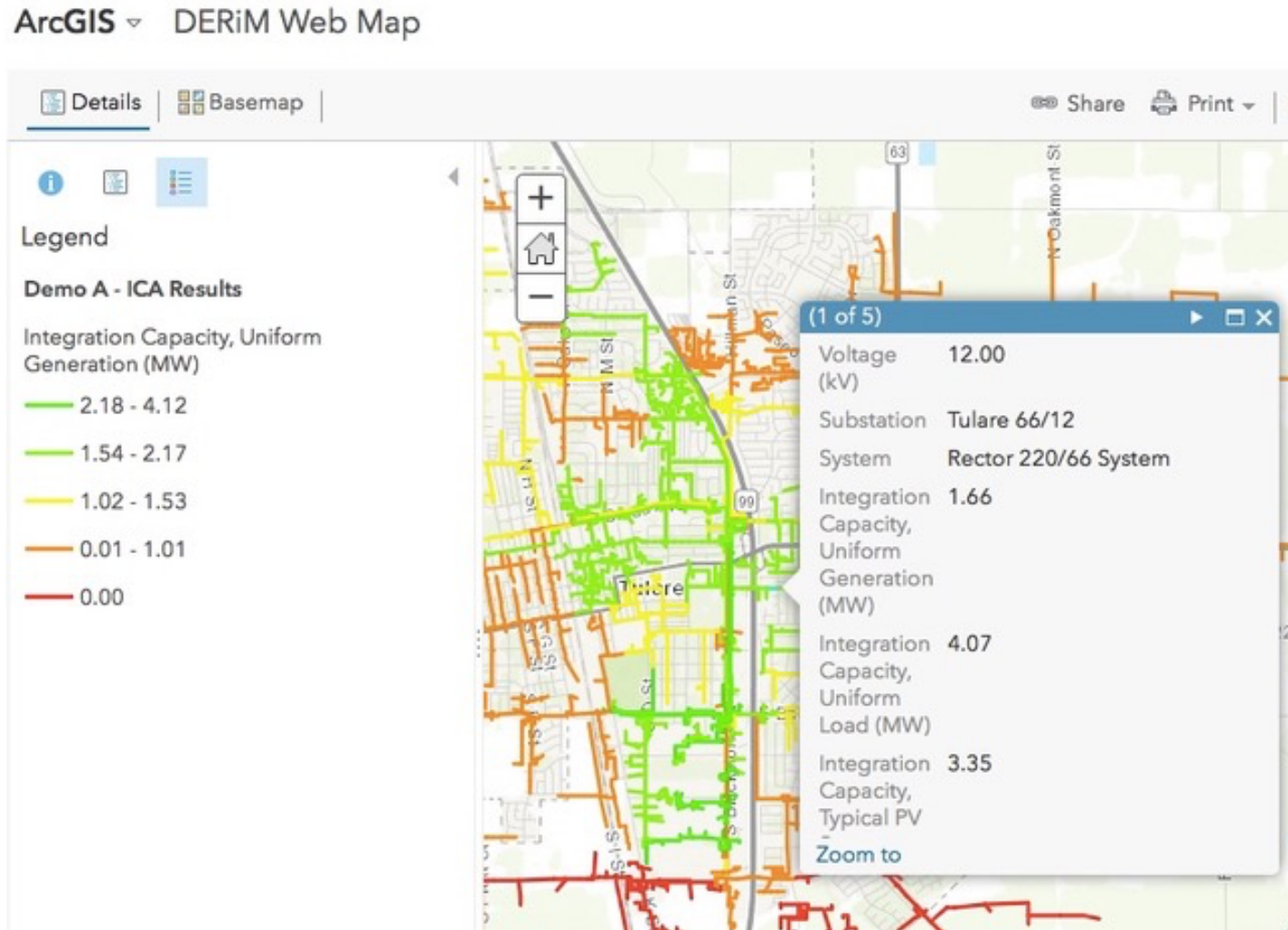


**FIGURE 3. Typical Distribution Load Forecasting Results**

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| 2) <b>Hosting Capacity Analysis</b>                | Determining how much additional DER each distribution circuit can accommodate without requiring upgrades.   |

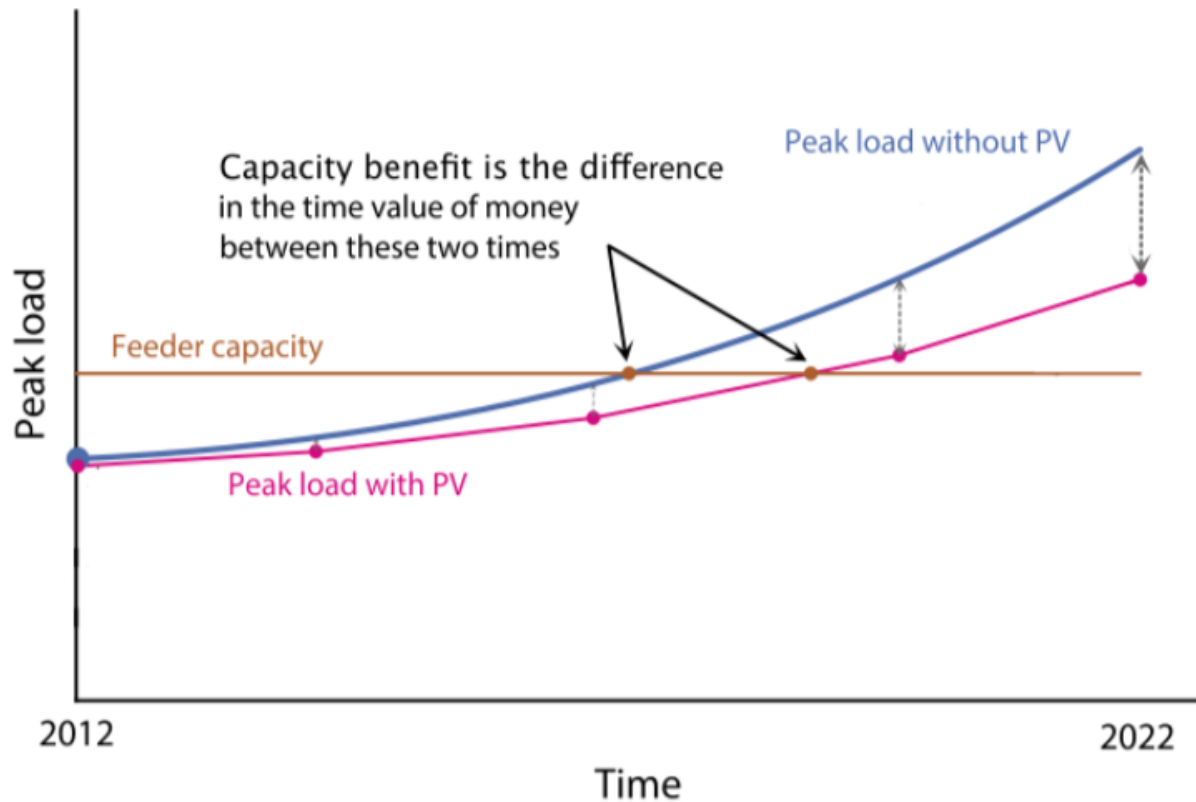
# Hosting Capacity Results



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| 3) <b>Disclosure of Grid Needs and Locational Value</b> | Identification and publication of opportunities for DER to provide grid services as non-wires alternatives (NWA); identification and publication of locations on each circuit where DER deployment can provide grid benefits.             |

# Deferral Value



From “Planning for a Distributed Disruption: Innovative Practices for Incorporating Distributed Solar into Utility Planning”, LBNL and NREL, 2016.

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| 5) <b>Meaningful Stakeholder Engagement</b>             | Establishing processes for open dialogue, transparent information sharing, collaboration, and consensus building among stakeholders.  |



- Establish clear objectives and guiding principles
- Require utility reports
  - Planning methods and tools; proposed HCA use cases, NWA suitability criteria, NWA pilots
- Establish IDP Technical Working Group
  - DER adoption and growth scenarios; smart inverter functions and settings; NWA suitability criteria and process for pilots; HCA use cases, methodology, timeline for implementation; development of data sharing portals

# Thank you!

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