Guidehouse

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Distribution and Integrated Resource Planning: Support for and Examples from States

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- Energy, Sustainability & Infrastructure organization
- Crafts **grid modernization strategy** with electric utilities, public utility commissions, legislative bodies, and societal stakeholders.
- Expert in incorporating **non-wires alternatives** into transmission and distribution planning organizations.
- Has worked in many states helping utilities and stakeholders incorporate **NWA screening** into their processes.

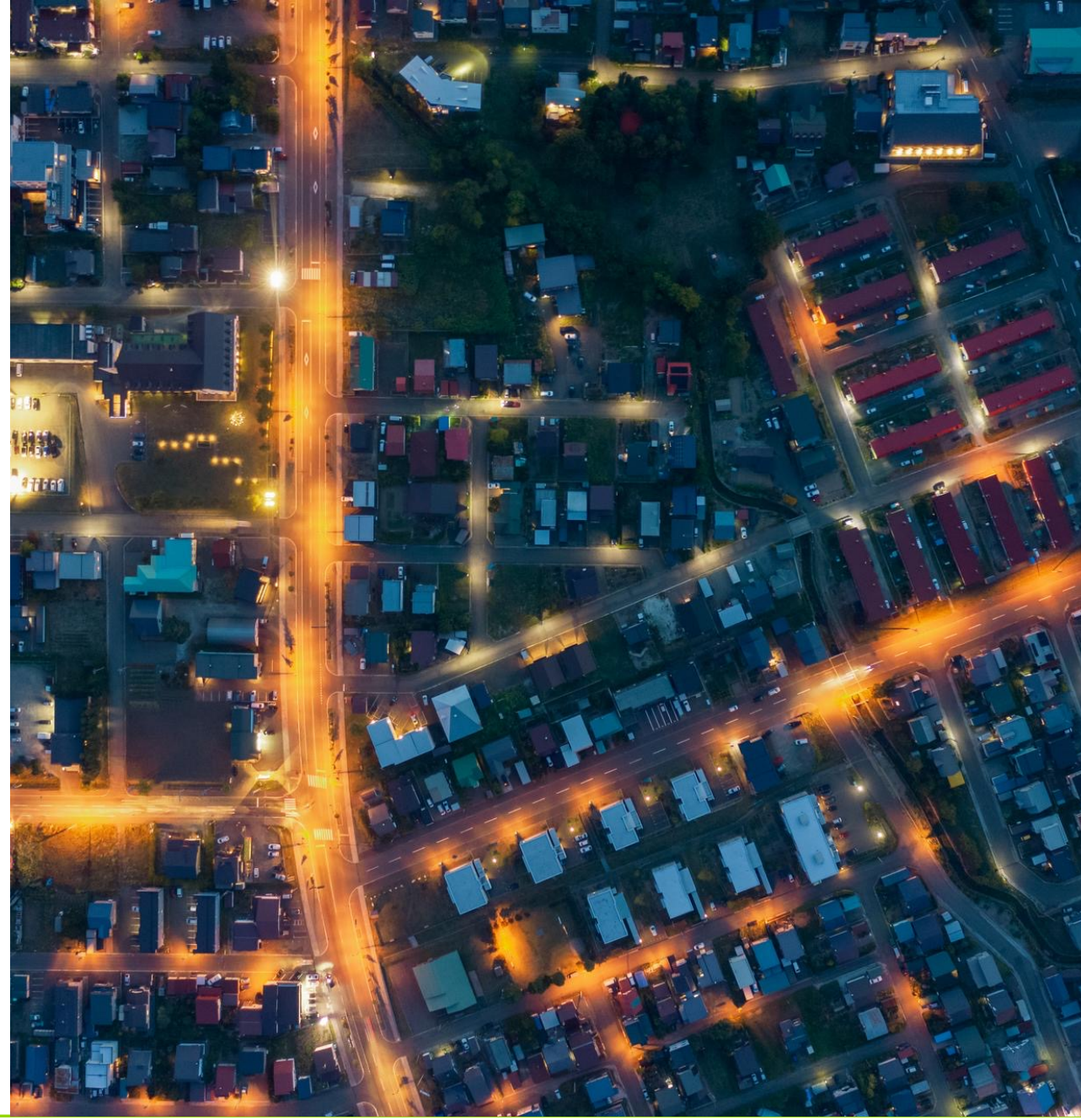
Non-Wires Alternatives (NWA)

Definition

An electricity grid investment or project that uses **non-traditional transmission and distribution (T&D) solutions**, such as:

- distributed energy resources (DER)
- energy storage
- energy efficiency (EE)
- demand response (DR)
- grid software and controls

to defer or replace the need for specific equipment upgrades, such as T&D lines or transformers, by reducing load at a substation or feeder level.



What Resources and Tech Are Included in NWA?

Most popular:

- Energy efficiency
- Demand response
- Storage (Utility and customer sided)

Developing:

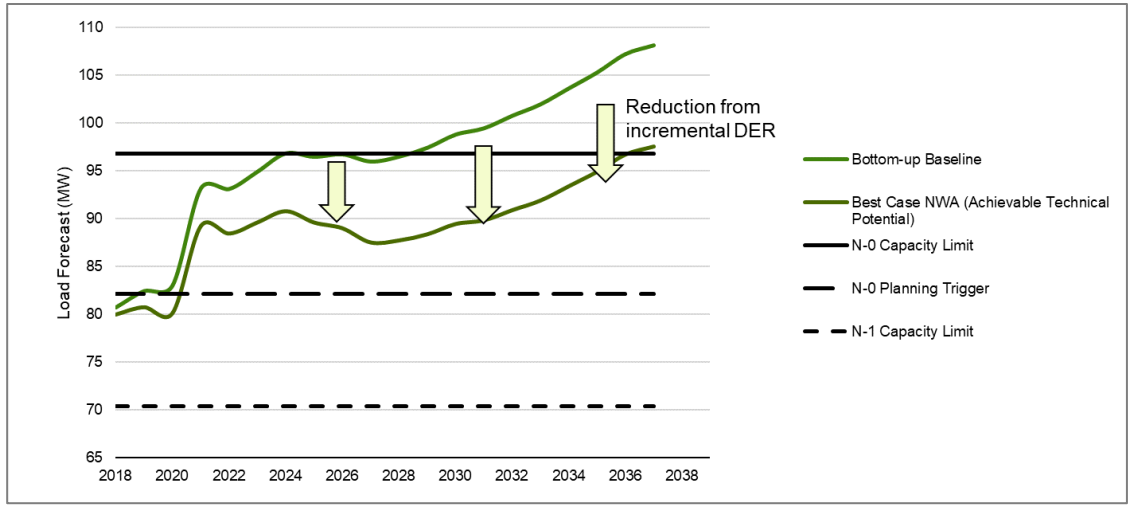
- Solar PV (distribution, sub-transmission, or transmission)
- Microgrids
- Geotargeted customer sided generation (CSG)

Up for Debate:

- Volt/VAR Optimization (conservation voltage reduction, IVVC, & Operational Voltage Reduction)
- Diesel generators

NWA Potential Load Reduction is Dependent on DER Selection

- Energy efficiency only → **1-3%** reduction
- Add in demand response → reach **5-10%** reduction
- Incorporate storage and CSG → up to **15%** reduction

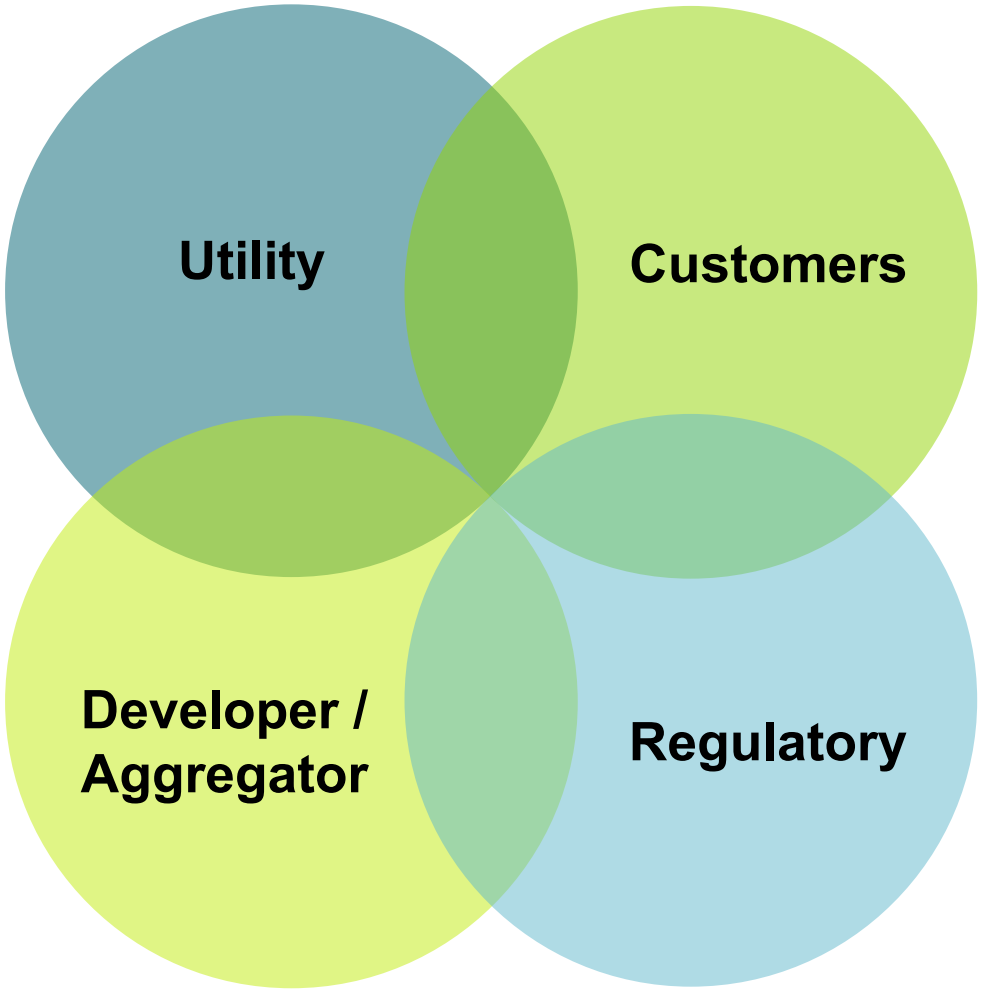


Example from Upper Midwest

Key Questions

1. **What are the drivers of non-wires alternatives?**
    - Internal drivers to “do more with less”
    - External mandates for NWA screening process

2. **What are the benefits and to whom do they flow?**
    - Avoided Generation Capacity
    - Avoided Cost of Energy
    - Deferred Distribution Upgrades
    - Deferred Transmission Upgrades
    - Reduced Line Losses
    - Reduced GHGs
    - Non-energy Benefits (e.g. water savings)
    - Reduced O&M Costs
    - Project Avoided Costs

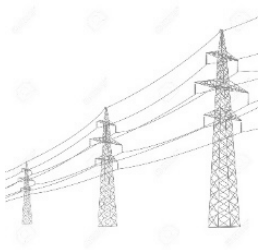


Key Questions continued

3. Where are NWA currently being used?

Example of NWA Suitability

NY Joint Utilities



Identify System Needs

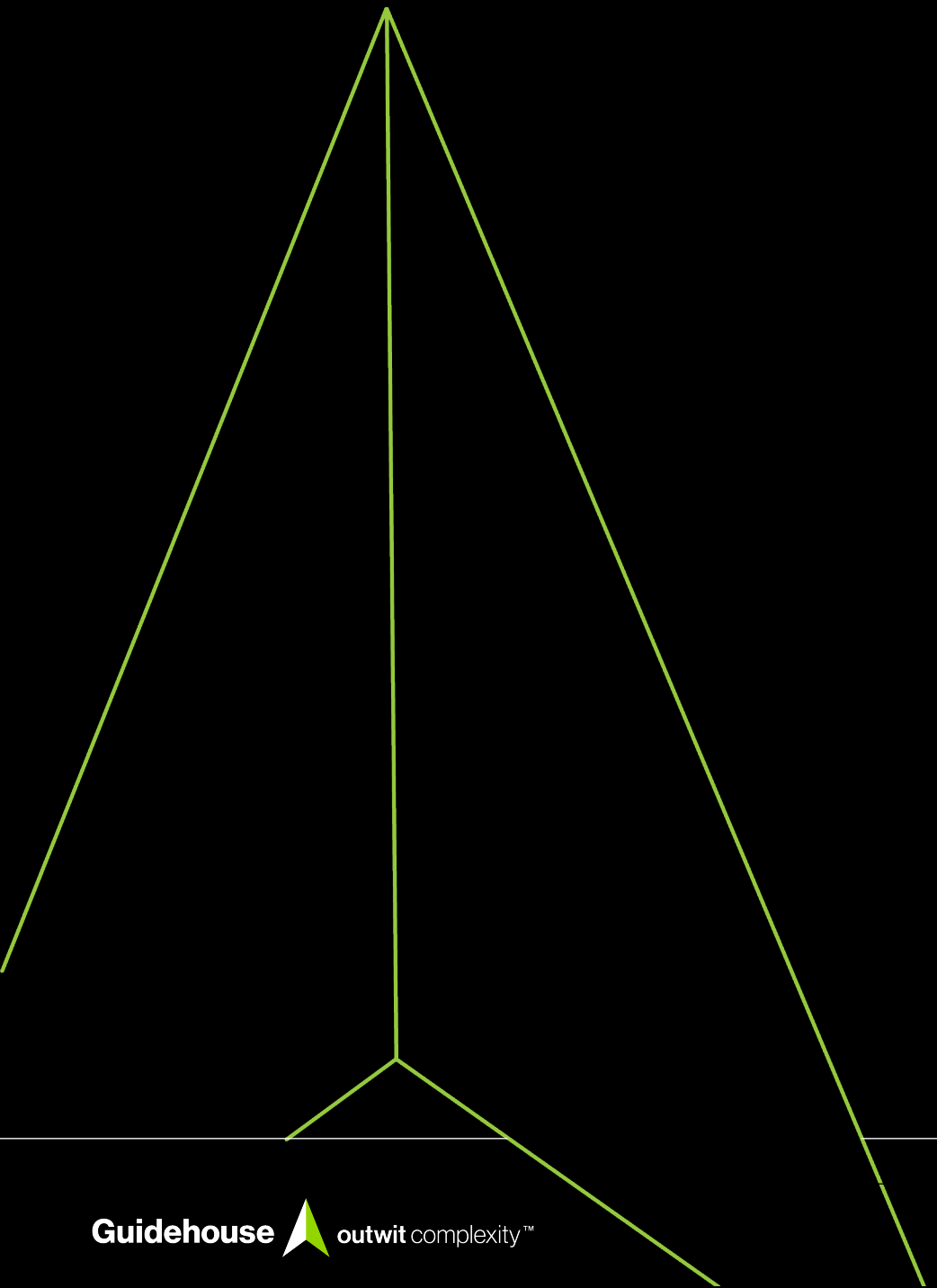
NWA Suitability

- Identify system needs suitable for NWA solutions
- Assess timing of need
- Assess cost and size of project
- Evolving criteria

Competitive Solicitation

BCA Evaluation & Procurement

Source: New York Joint Utilities (NY REV)



Thank You