

# DOE-OE Distribution Grid Transformation Program

Paul De Martini  
Newport Consulting

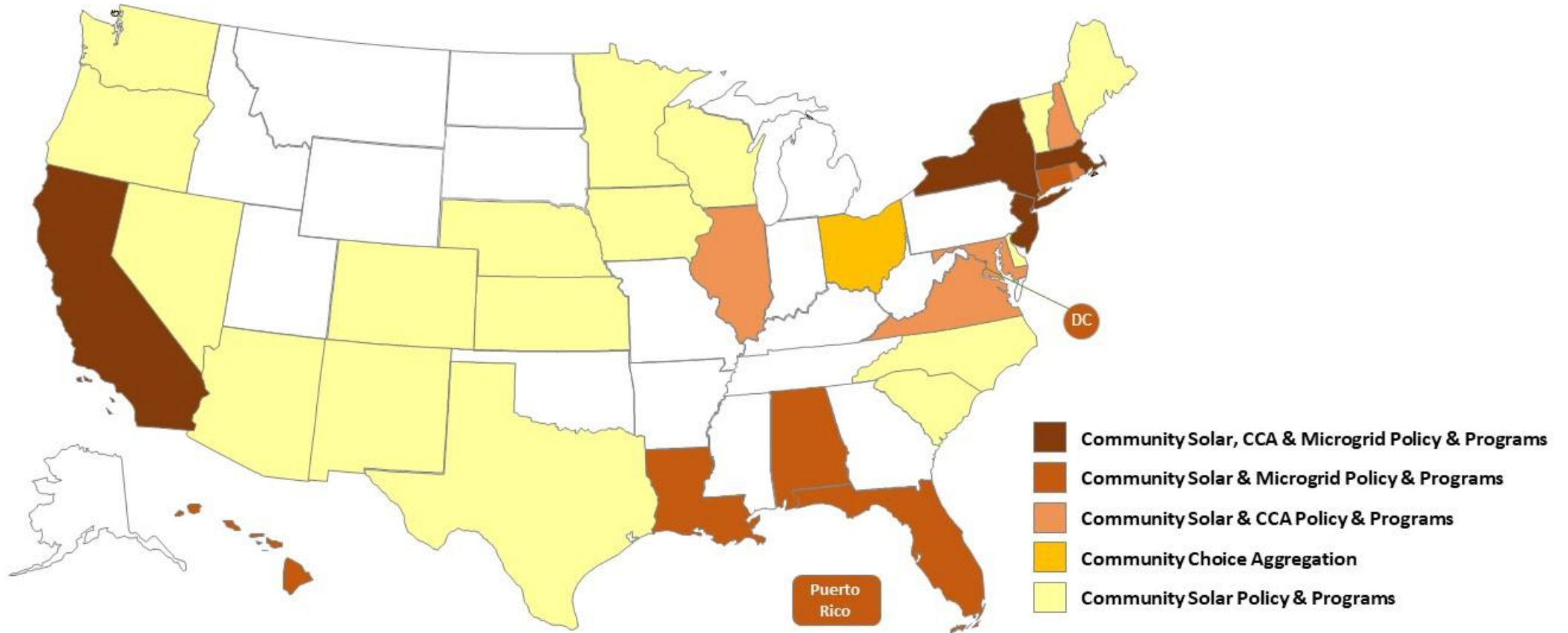
Presented to DOE-OE Staff

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# Evolution of Distribution Grids

Continued expansion of distribution energy systems, microgrids and use of DER services for distribution

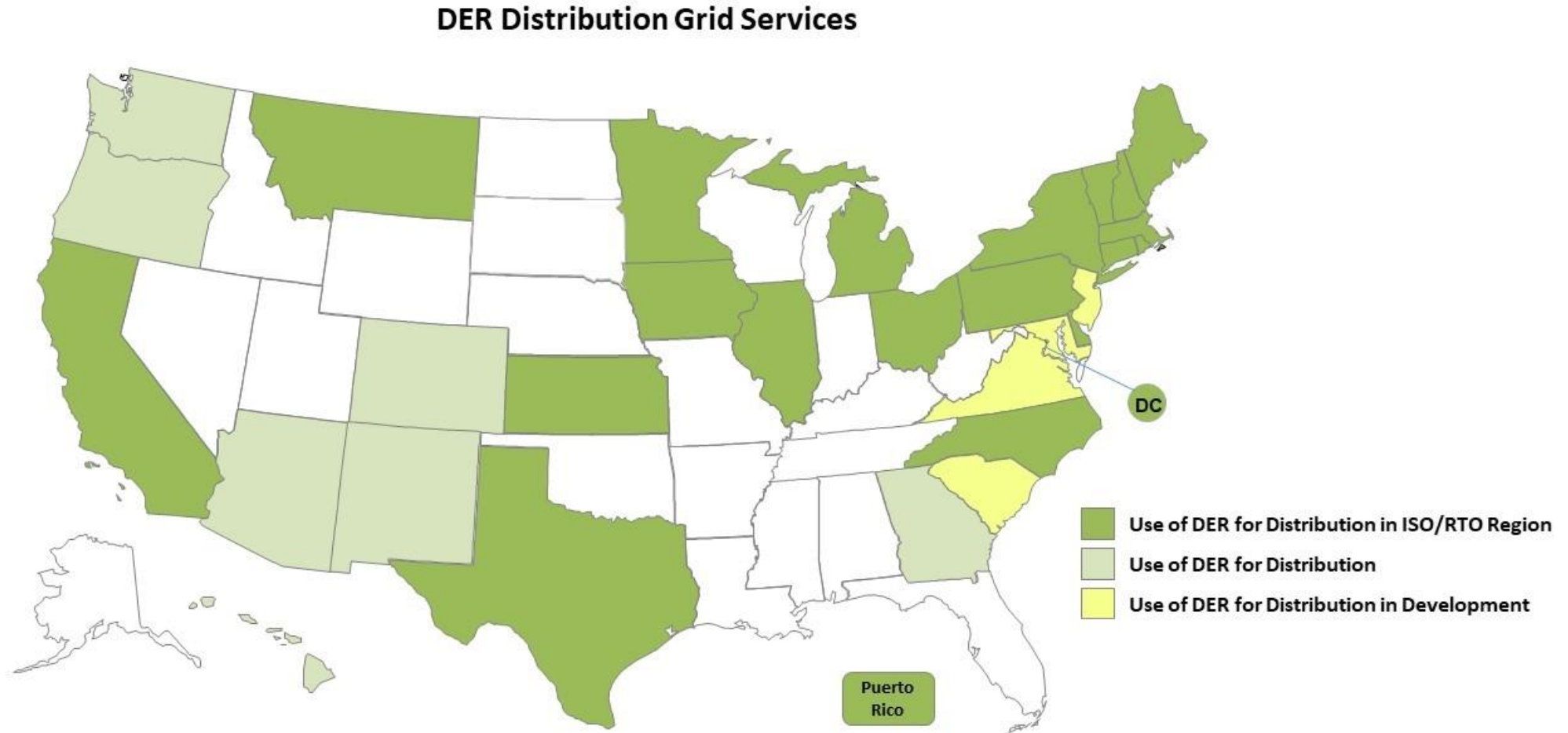
## Community Energy Activity



Sources: NREL Sharing the Sun Program, North Carolina DSIRE Program, EPA, and Newport Consulting research

# Evolution of Distribution Grids

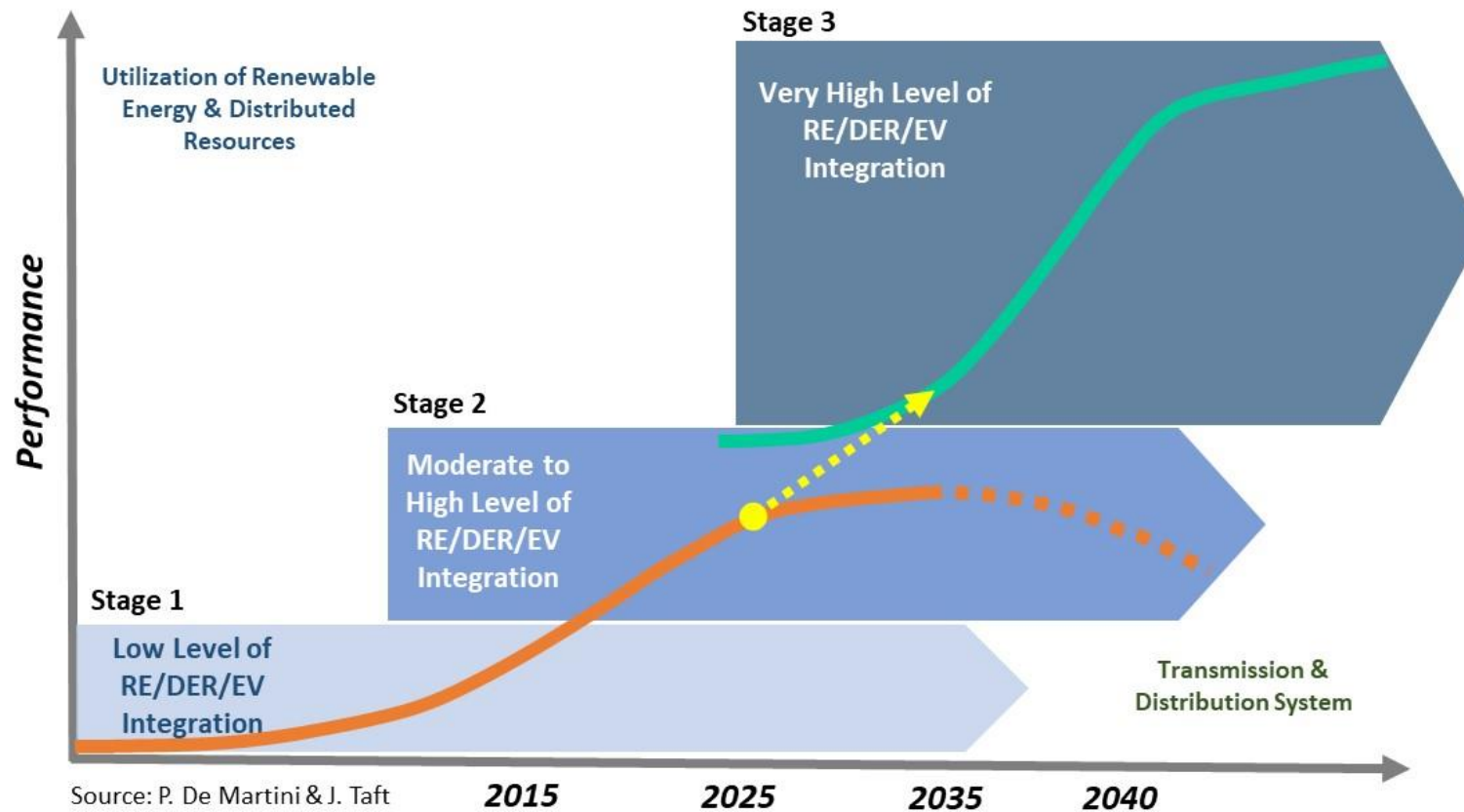
Continued expansion of distribution energy systems, microgrids and use of DER services for distribution



DER Services include 3<sup>rd</sup> party providers and utility owned or operated DER (e.g., demand response and batteries)

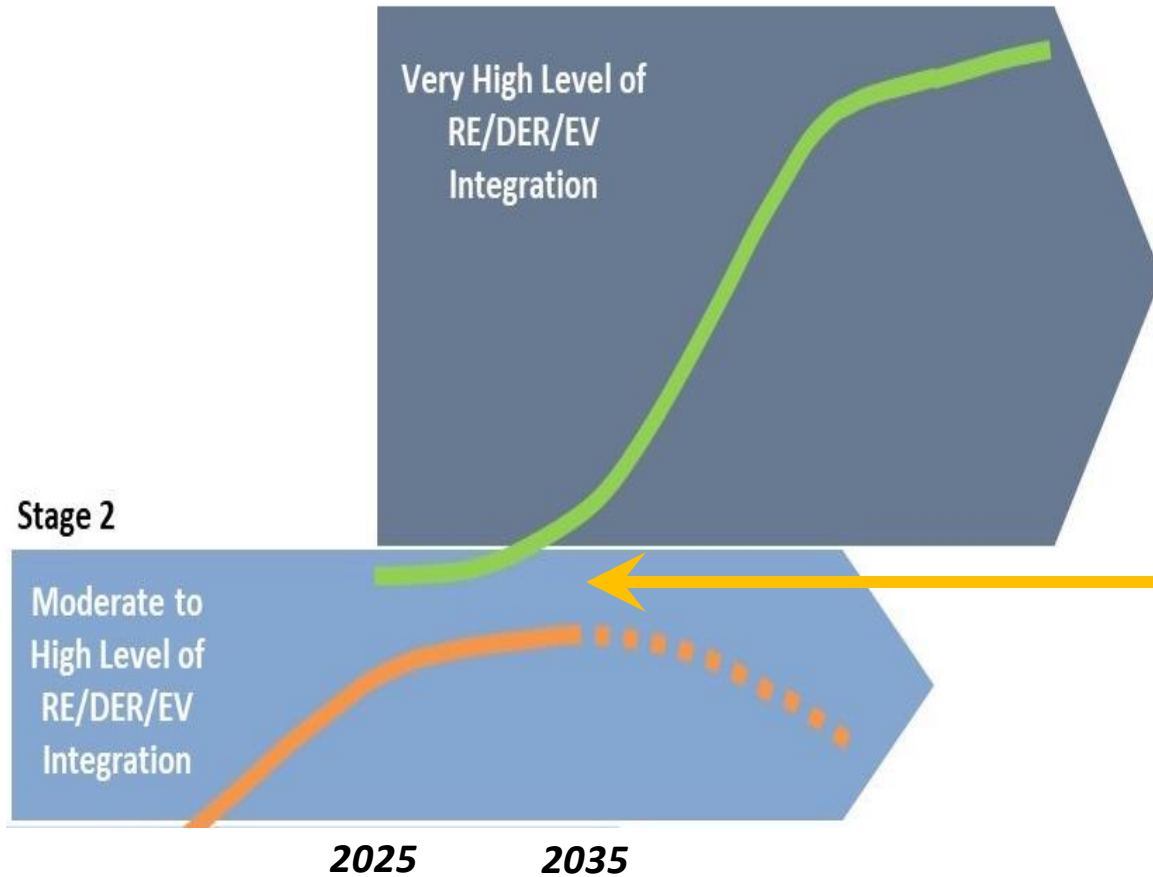
# Distribution Grid Transformation

Advancements in industry policy, regulation, business processes, DER service provision, and grid structure and capabilities are required to get from Stage 2 to a Stage 3 that may include a **40% load increase** and **upwards of 40% DER adoption**



# Distribution Grid Transformation

Significant gap exists between current distribution structure and capabilities and growing “40-40” needs



## Distribution Grid Transformation Use Cases

- Dynamic Multi-Directional Energy Transport
- Resilient Flexible Distribution Grid Structures
- DER Orchestration for Distribution and Consumers



# FY2025 Distribution Grid Transformation Topics

**Objective:** Provide guidance on key issues to support the transition over the next 5-10 years toward a future distribution grid that may need to integrate upwards of 40% DER adoption and a 40% load increase.

