

Interconnection Standards for Distributed Generation

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Policy and market mechanisms affecting distributed generation (DG)

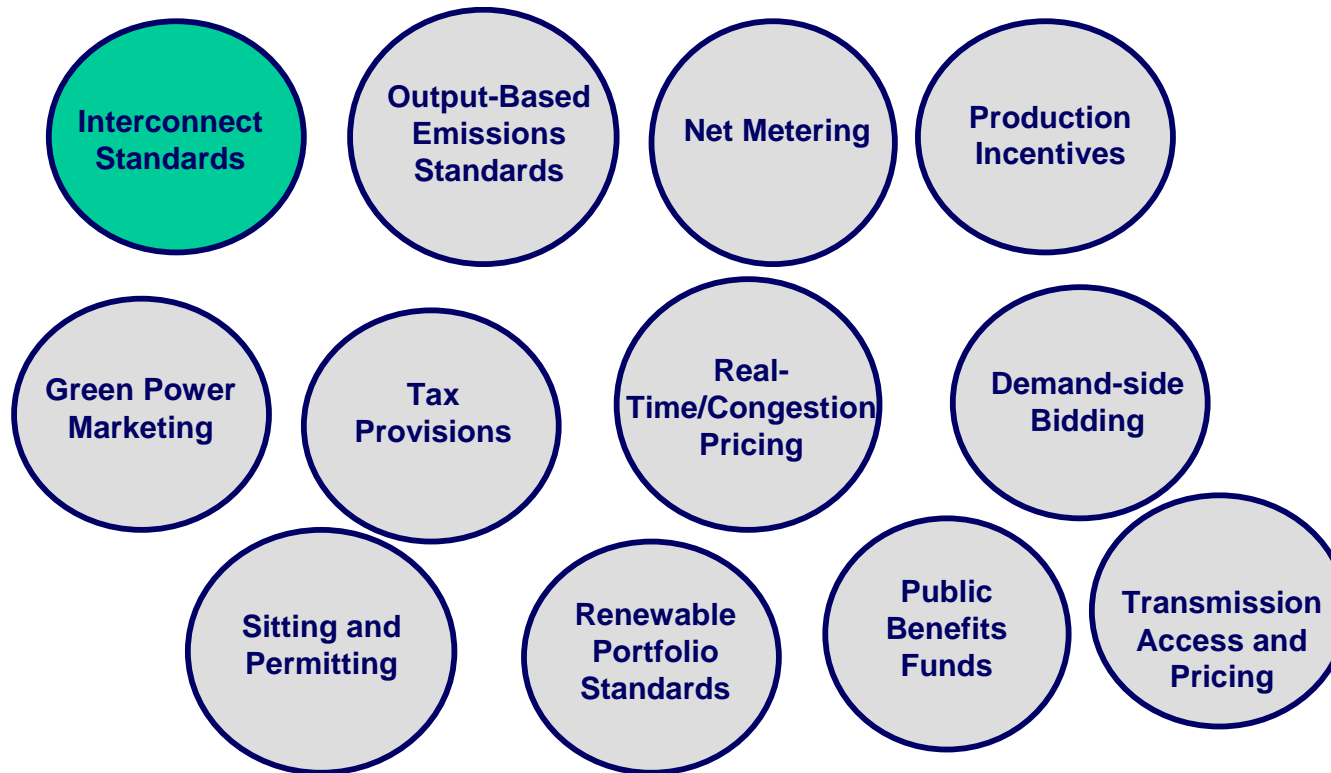


Diagram from Dick DeBlasio, NREL (2004)

Interconnection Basics

- Interconnection = the physical connection between the customer-sited generator and the utility grid.
- Interconnection agreements negotiated between customer and utility or customer and regional transmission organization.

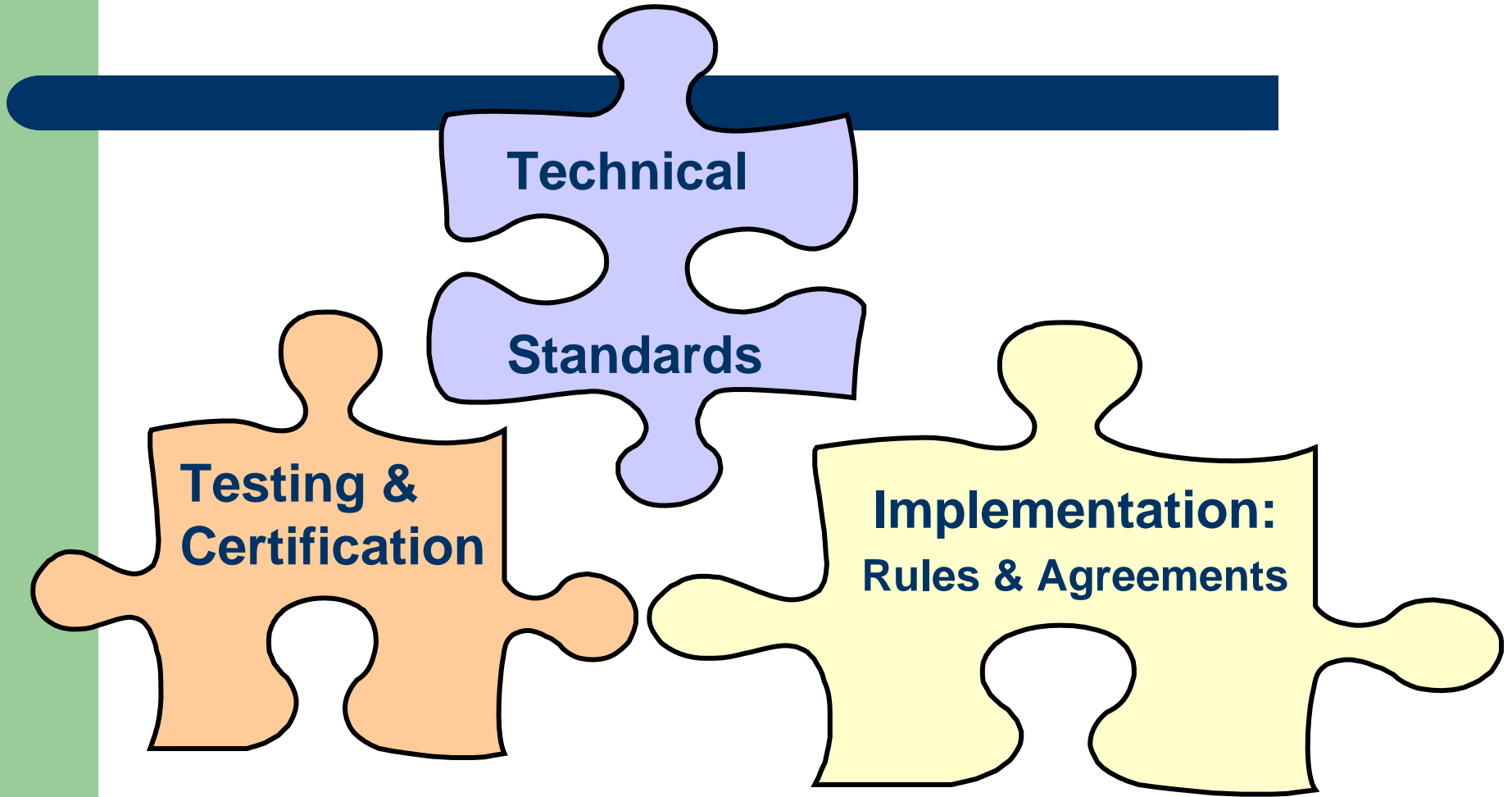
Interconnection barriers

- Interconnection one of the “principal obstacles” to effective adoption of DG (NREL, 2000).
- “Technical” barriers
 - Redundant or unnecessary equipment testing and approval requirements
 - system upgrades
- “Business practice” barriers
 - Application and study fees
 - Delays
 - Insurance requirements

Standardized Interconnection Rules

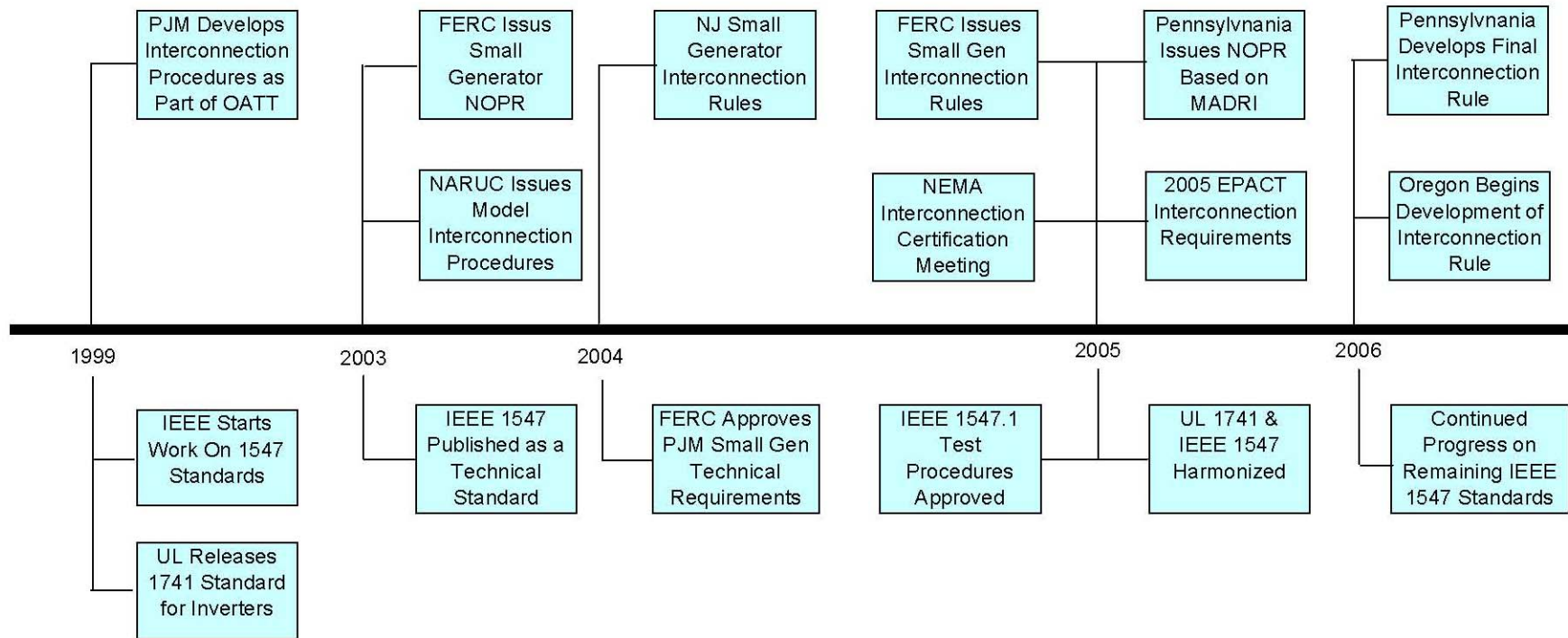
- Establish clear and uniform technical requirements & approval procedures
- Federal / RTO Rules
 - Generally apply to transmission level interconnections
 - FERC Small Generator Interconnection Procedures (Orders 2006 a & b)
- State rules
 - Generally apply to distribution level interconnections
 - Usually administered by state utility commission

Interconnection: **Putting the Pieces Together**



A Brief History of Interconnection Standards/Procedures Development

Interconnection Procedures



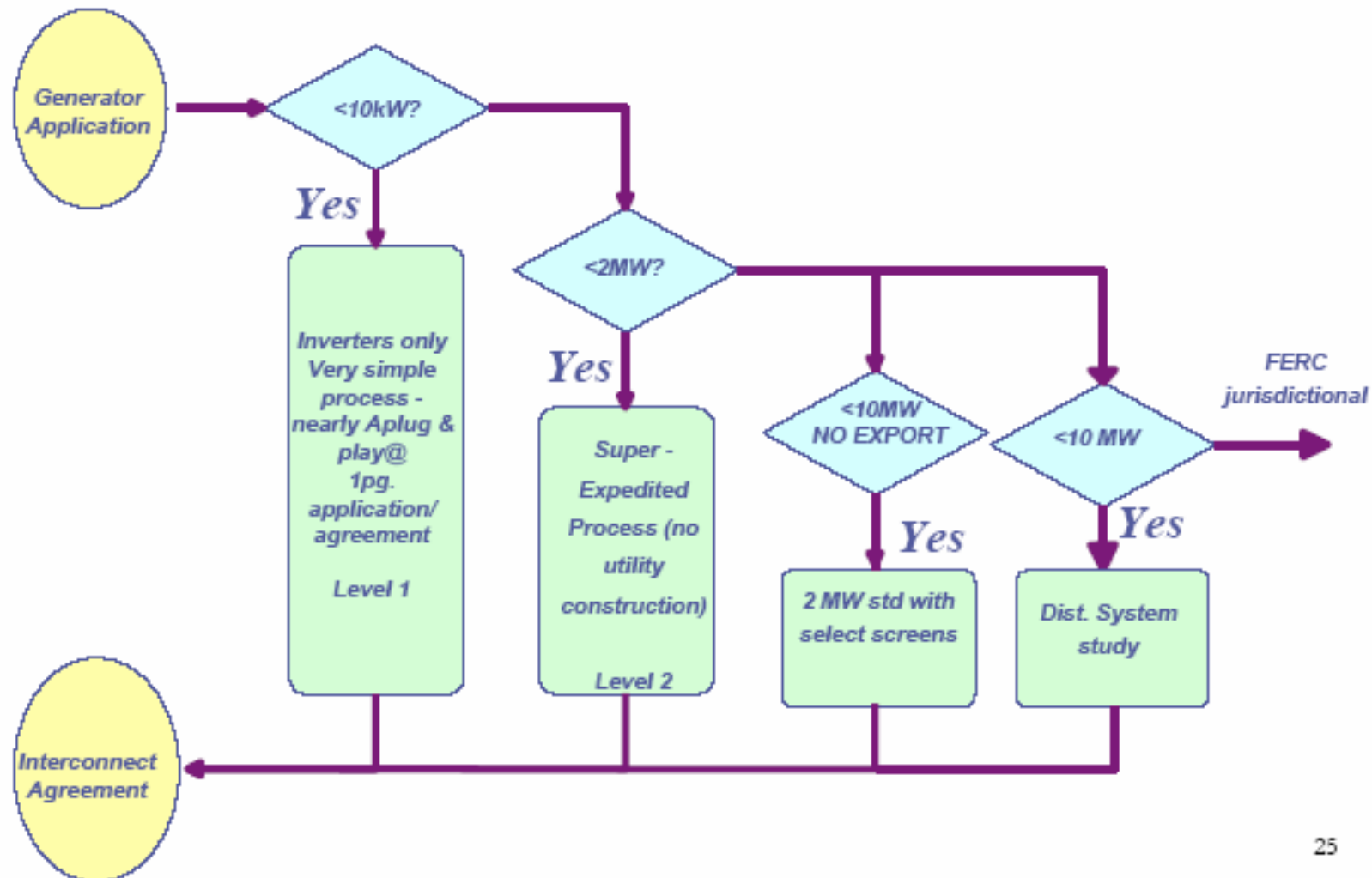
Interconnection Technical Standards

Source: Brad Johnson, ACN Energy Ventures

Interconnection Rules – important elements

- “Tiered” review pathways
- Clear fees and timelines
- Standardized application forms and interconnection agreements
- Dispute resolution

Interconnection Processes -- States



EXAMPLES

- **Iowa** -- Iowa Utilities Board Docket NOI-06-4
 - Draft rule issued in April 2007
 - Current draft does not include expedited tier for non-export
- **Illinois** -- Illinois Commerce Commission Docket 06-0525
 - Workshops over past year
 - Close to implementation?
- **Missouri**
 - 2007 legislation (SB 54) requires interconnection procedures by 10/01/08
 - Co-ops also required to develop procedures
- **South Dakota** -- SD Public Utilities Commission Docket EL06-018
 - Draft rule expected in early 2008

Resources

- IREC: www.irecusa.org
 - Tracking state “consideration” of EPAAct standards
 - Model net metering and interconnection rules
 - State-by-state tables of state rules & policies
- DSIRE: Database of State Incentives for Renewables and Efficiency – www.dsireusa.org

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