Distributed Energy Storage White Paper

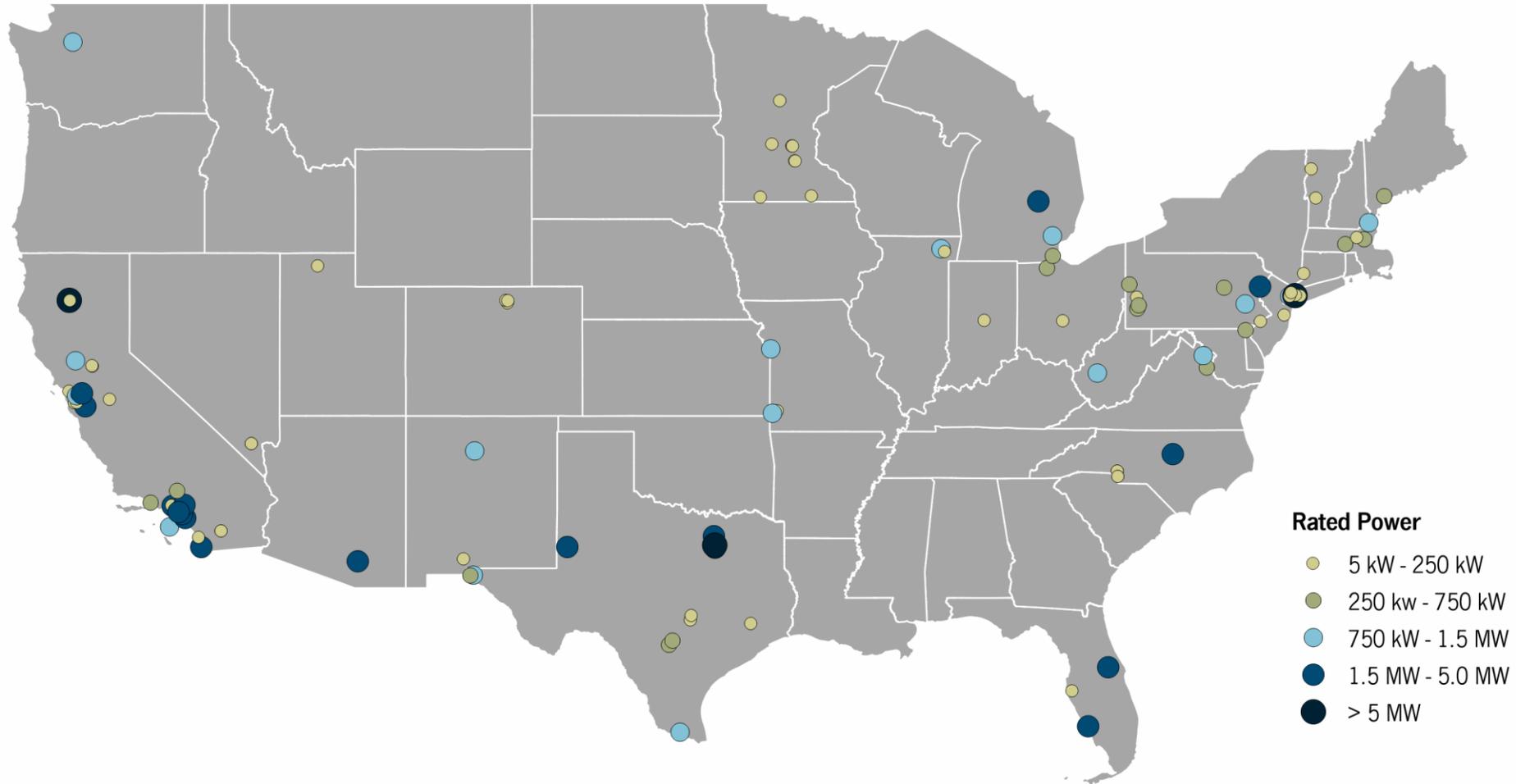# Smart Grid & Energy Storage Subcommittee's Joint Effort

Update

DES WP Update

- **Definition**
  - Energy Storage that is located at or down stream of Distribution Sub Stations
  - Includes Behind the Meter Applications
  - Thermal Energy Storage
  - Micro Grids
- **Scope**
  - Market
  - Regulatory & Interconnect
  - Technology & Applications
  - Benefits
  - Codes & Safety
  - DR Appendix
- **Purpose/Goal**
  - Identify Gaps & Provide Recommendations to DOE

Distributed Energy Storage (DES) Projects Map

Rated Power
- 5 kW - 250 kW
- 250 kw - 750 kW
- 750 kW - 1.5 MW
- 1.5 MW - 5.0 MW
- > 5 MW

DES Expert Interviews

DES Expert Interviewee	Affiliation	Interview Completion Date
Willem Fadrhonc	STEM	10/20/2014
Tom Weaver	AEP	11/10/2014
Melicia Charles	CPUC	10/23/2014
Tom Bialek	SDG&E	12/15/2014
Fred Fletcher	Burbank Water and Power	10/30/2014
Dan Ton	DOE	10/9/2014
Imre Gyuk	DOE	10/9/2014
Paul De Martini	Newport Consulting Group	10/9/2014
Erich Gunther	Enernex	10/6/2014
Barry Mather	NREL	10/9/2014
Bob Rudd	Solar City	11/14/2014
Jeff Anderson	CalCEF	1/12/2015

Topics Not Covered in Interviews: EV's & Thermal Storage

DES Expert Interview Observations/ Recommendations

- Market Developing/Evolving Quickly
- DES Market Models & New Market Mechanics
  - Rate Base and/or Open Market
- DES Physical Models
  - Advanced Power Electronics & Controls
- DR & DES Control Models & Advanced Control Development
  - Local vs Central (DES vs Bulk)
- DES Codes & Standards
  - Risk Based Codes & Standards
- DES Interconnect Standards/Open Access
  - Plug & Play for Behind the Meter
- Micro Grid Development/Advancement
  - Substation to Behind the Meter Micro Grids

DES WP Work Plan & Status

- WP Outline Draft

- DES Panel EAC June 2014 Meeting

- Expert Interviews (90% Complete)

- Begin Section Drafts

- Develop Gap Analysis & DOE Recommendations

- Target Completion Date – September 2015