



# POWER SYSTEM TRANSFORMATION: UTILITY PERSPECTIVE

JISEA Annual Meeting

March 13, 2019

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#### BACKGROUND: 21CPP OBJECTIVES:

#### POWER SYSTEM TRANSFORMATION



### Accelerating the transition to clean, efficient, reliable, and cost-effective power systems.

**Evolving Generation Portfolios** 

**Electric Vehicles** 

**Smart Grid, EE & Demand Response**  **Cross Cutting Issues:** 

Operations, Transmission, **Distributed Generation** Market Design

**Coordinated Power System** Planning, Policy, and Regulation









(co-lead)













**Finland** 

South Africa

Spain

#### BACKGROUND: FUNDERS AND SELECT TECHNICAL PARTNERS











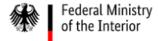




























































Denmark

Finland

Mexico (co-lead)

South Africa

Spain United States (co-lead, under review)

#### BACKGROUND: WORK STREAMS



- Annual Program of Work Includes:
- "Thought-Leadership" studies that focus on generic power system transformation topics across the world
- In-country technical assistance, often as part of a larger development assistance effort, focused on Coordinated Power System Planning & Operations, including technology innovation, policy, and regulation
  - High-resolution grid integration studies often highlight this work.
- Information exchange, capacity building, fellowship programs, and other exercises to share lessons-learned and knowledge transfer.











(co-lead)













ia Denmark

South Africa



- Set of case studies illustrating innovative offerings that utilities are providing to their distribution-side customers
- Diversity of global locations and sectors
  - Examples from 5 continents across 7 subsectors (information display, bulk purchasing of RE, energy efficiency, energy access, household monitoring for elderly residents, EV charging, etc.)
- Conducted with assistance from Edison Electric Institute
- To be released at the upcoming CEM 10 meetings in Vancouver (May)





















#### RATE THE FOLLOWING ISSUES ACCORDING TO IMMEDIATE IMPORTANCE

PERCENT OF RESPONDENTS WHO CALLED EACH ISSUE "IMPORTANT" OR "VERY IMPORTANT

| 85% | Physical and/or cyber grid security                       |
|-----|---|
| 70% | Bulk power system reliability                             |
| 66% | Aging grid infrastructure                                 |
| 56% | Rate design reform  |
| 53% | Stagnant/negative load growth                             |
| 49% | Generation retirements and/or stranded assets             |
| 48% | Compliance with state renewable and clean energy mandates |
| 47% | State regulatory model reform                             |
| 37% | Wholesale market reform                                   |
| 24% | Compliance with federal clean air standards               |



Source: State of the Electric Utility 2019

## Thank you

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