POWER SYSTEM TRANSFORMATION: 
UTILITY PERSPECTIVE

JISEA Annual Meeting

March 13, 2019

Jeffrey Logan
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
BACKGROUND: FUNDERS AND SELECT TECHNICAL PARTNERS

- Children’s Investment Fund Foundation
- Hewlett Foundation
- U.S. Department of Energy
- Danish Energy Agency
- IRENA
- International Renewable Energy Agency
- China National Renewable Energy Center (CNREC)
- Eskom
- Edison Electric Institute
- The Nature Conservancy
- The World Bank
- RAP
- Berkeley Lab
- World Resources Institute
- Brazil
- China
- India (co-lead)
- 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.
2019 Thought-Leadership Report

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

Source: State of the Electric Utility 2019
Thank you