Governors’ Advisors Energy Policy Institute
August 20 - 25, 2020

National Governors Association Center for Best Practices
Welcome & Day 2 Recap

Jessica Rackley, Program Director, National Governors Association
Upcoming Opportunity: Planning for the Future Workshop

• NGA will be hosting a virtual workshop on strategies to help governor’s meet their energy goals on October 27-29th

• This Workshop will provide states with policy and regulatory solutions to help meet their state energy goals, address areas for regional collaboration, and allow time for small group discussions

• Topics covered during this workshop include:
  • Enhancing energy procurement targets to meet clean energy and related goals,
  • Integrating high volumes of new technologies such as renewables on the grid, and
  • Leveraging new technologies to improve system resilience, reliability, and affordability.

• Please contact Emma, ecimino@nga.org
Keynote: The Future of U.S. Carbon Pricing

Speaker:
Robert N. Stavins, Harvard Kennedy School of Government

Moderated by:
Jessica Rackley, Program Director, National Governors Association
Trivia!

• Which state once had 3 governors during the same day?
Answer:

Colorado – March 16, 1905
The Future of the Energy Workforce

Speakers:
Reice Haase, Senior Policy Advisor, Office of North Dakota Governor Doug Burgum
Randi Tveitaraas Jack, Manager of International Development, Kansas Department of Commerce

Moderated by:
Timothy Schoonhoven, Policy Analyst, National Governors Association
NORTH DAKOTA’S GEOLOGIC JACKPOT LED TO AN ALL-OF-THE-ABOVE ENERGY POLICY

- 800-year supply of lignite
- Over 26 billion barrels of technically recoverable oil
- Over 38 trillion cubic feet of natural gas
- Abundant wind resources
- 189 million bushels annually converted to biofuels
DIVERSE GENERATION PORTFOLIO ENSURES GRID RELIABILITY

**North Dakota Electricity Production**

- **Baseload:**
  - 4,046 MW of Lignite (Mine to mouth)
  - 583 MW of Hydro

- **Intermittent:**
  - 3,501 MW of Wind
  - 506 MW of Natural Gas (Peaking)
  - ~100 KW Solar (Growing interest)

Sources: U.S. Energy Information Administration, North Dakota State Energy Profile
CHALLENGES (AND OPPORTUNITIES) TO BE ADDRESSED BY FUTURE ENERGY WORKFORCE

1. COVID Pandemic Demand-shock
2. Market Demand for Environmental, Social and Governance Sustainability
3. Maintaining Diverse Workforce to Ensure Grid Reliability
BAKKEN RESTART TASK FORCE FORMED TO ADDRESS COVID DEMAND-SHOCK

• Three Focus Areas:
  • Regulatory Relief
    • In-person requirements waived
    • Inspection flexibility
  • Economic
    • $66m from CARES Act for Orphan Well Plugging and Reclamation
  • Long-term Capital Access
    • State Investment Board authority for private equity investments
    • ESG Scores
POLICY OF “INNOVATION, NOT REGULATION”, LEVERAGING OPPORTUNITIES FROM SHIFTING MARKETS

• $45 trillion in capital contingent on meeting ESG goals
• Over $100m in Oil and Gas/Lignite taxes re-invested in research and development
  • Value-added (rare earth minerals, fly ash re-use, co-located ethanol plants)
  • Carbon Capture, Utilization and Storage:
    • ND first state with Class VI UIC primacy
    • $15m invested in Project Tundra to capture and market CO2 from Lignite Power Plant
    • Co-located greenhouses
    • Native grasses on range lands
• iPipe Program funds emerging technologies for detecting and preventing pipeline leaks
IPIPE’S FIRST SELECTION: REMOTE SATELLITE MONITORING BY SATELYTICS
LEVERAGING AUTOMATICALLY-COLLECTED DATA TO RE-PRIORITIZE WORKFORCE RESOURCES
MAINTAINING DIVERSE ENERGY WORKFORCE IS KEY TO ENSURE GRID RELIABILITY

• MISO Renewable Integration Impact Assessment:
  • Increased complexity once grid reaches 40% from non-dispatchable energy sources
  • Baseload retirements as fleet ages
  • Meeting peak demand with intermittent sources
  • Meeting demand in non-summer months

• Diversity of technologies and geography improves ability to meet demand growth
  • Ensure baseload survival
  • Hybrid approach to ensure resource adequacy

• Level playing-field to attract investment in all sources
The Future of the Energy Workforce
NGA Energy Policy Institute

PRESENTED BY RANDI TVEITARAAS JACK
AUGUST 24, 2020
Kansas Electricity Generation by Source

2019
- Wind 41.45%
- Coal 33.3%
- Nuclear 17.83%
- Natural Gas 7.01%
- Other
  - Oil 0.13%
  - Biomass 0.12%
  - Solar 0.04%
  - Hydro 0.04%

2010
- Coal 67.8%
- Nuclear 19.9%
- Other Renewables 7.2%
- Natural Gas 4.8%
- Petroleum 0.2%
- Hydro 0.0%
North American Wind Corridor: Central Location
Kansas:
Wind Industry Growth

Kansas Wind Industry

<table>
<thead>
<tr>
<th>Year</th>
<th>Thousand MWh</th>
</tr>
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<tbody>
<tr>
<td>2001</td>
<td>2000</td>
</tr>
<tr>
<td>2002</td>
<td>3000</td>
</tr>
<tr>
<td>2003</td>
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<td>2015</td>
<td>16000</td>
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<td>2016</td>
<td>17000</td>
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<tr>
<td>2017</td>
<td>18000</td>
</tr>
<tr>
<td>2018</td>
<td>19000</td>
</tr>
<tr>
<td>2019</td>
<td>20000</td>
</tr>
</tbody>
</table>
Kansas: Wind Energy Leader

- 1st – Wind as % of total electricity sales
- 2nd – Wind as % of total generation
- 3rd – Corporate wind purchases
- 4th – Wind power installations
- $11+ billion investment
- 6500 MW installed/operating
- 5000 – 6000 jobs
Kansas:

Workforce Resources

• Career Technical Education
  • Cloud County Community College
    • Wind Technician, Blade Repair
    • Solar Technician
    • UAS
  • Colby Community College – Wind & Solar Certificate
  • Hutchinson Community College – Manufacturing Technology

• University Engineering Initiative
  • Kansas State University – Wind & Solar Engineering
  • Wichita State University – Sustainable Energy Technology
  • University of Kansas - Bioenergy

• Industry Engagement / Future Pipeline
  • KidWind
  • Wind for Schools
  • Collegiate Wind Competition
Energy Workforce

Future Opportunities

• Wind Energy – Energy Storage/Hybrid Development

• Solar Energy – Commercial Development

• Biofuels/Biomass – New Technology, Renewable Natural Gas

<table>
<thead>
<tr>
<th>Description</th>
<th>2020 - 2030 % Change</th>
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<tbody>
<tr>
<td>Crude Petroleum Extraction</td>
<td>(14%)</td>
</tr>
<tr>
<td>Natural Gas Extraction</td>
<td>(10%)</td>
</tr>
<tr>
<td>Drilling Oil and Gas Wells</td>
<td>(20%)</td>
</tr>
<tr>
<td>Support Activities for Oil and Gas Operations</td>
<td>(16%)</td>
</tr>
<tr>
<td>Fossil Fuel Electric Power Generation</td>
<td>11%</td>
</tr>
<tr>
<td>Nuclear Electric Power Generation</td>
<td>(17%)</td>
</tr>
<tr>
<td>Solar Electric Power Generation</td>
<td>0%</td>
</tr>
<tr>
<td>Wind Electric Power Generation</td>
<td>29%</td>
</tr>
<tr>
<td>Geothermal Electric Power Generation</td>
<td>0%</td>
</tr>
<tr>
<td>Biomass Electric Power Generation</td>
<td>0%</td>
</tr>
<tr>
<td>Electric Bulk Power Transmission and Control</td>
<td>19%</td>
</tr>
<tr>
<td>Electric Power Distribution</td>
<td>(11%)</td>
</tr>
</tbody>
</table>
Thank You!

Randi Tveitaraas Jack
Deputy Director, International Division
Kansas Department of Commerce
(785) 296-7868
Randi.TveitaraasJack@ks.gov
Kansascommerce.gov
Trivia!

• Which state was the first to declare Christmas a legal holiday?
Answer:

Utility Disconnection Moratoriums: Supporting Financially Strained Consumers While Addressing Financial Constraints on Utilities

Speakers:
Commissioner Brandon Presley, Mississippi Public Service Commission
Josh Howat, Senior Energy Analyst, National Consumer Law Center

Moderated by:
Emma Cimino, Senior Policy Analyst, National Governors Association
Utility Disconnection Moratoriums: Supporting Financially Strained Consumers While Addressing Financial Constraints on Utilities

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Utility Disconnection Moratoriums: Supporting Financially Strained Consumers While Addressing Financial Constraints on Utilities

Commissioner Brandon Presley, Mississippi Public Service Commission
The Utility Customer Financial Impact of COVID-19:

*The Need For Flexibility and Reform in Utility Billing, Credit and Collections*

NGA Energy Policy Institute
August 24, 2020
John Howat – jhowat@nclc.org
Energy Security

- Uninterrupted, affordable access to basic residential home energy services without
  - Disconnection notices
  - Involuntary disconnection of service
  - Foregoing other necessities to retain service
  - Maintaining unhealthy indoor temperature
Utility Service a Basic Necessity

- Consequences of energy insecurity include (but are not limited to):
  - Threats to health and safety
    - Illness, hospitalization
    - House fires
    - Loss of life
  - Inflated Covid-19 risk
  - Spoiled food
  - Eviction
  - Reduced academic and worker performance
Median 2015 Home Energy Burdens by Income Category and Census Region
Loss of Heat in the Past Year Due to Unaffordable Utility Service, Fuel or Heating System Repair by Race: 2015 - U.S.
## Electricity Disconnected Inability to Pay * Race of Householder * Region: U.S. Household at or Below 150% Poverty in 2009

<table>
<thead>
<tr>
<th>Race and Latino Descent of Householder</th>
<th>White</th>
<th>African-American</th>
<th>Latino</th>
<th>2 or More Races</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>3803830</td>
<td>197145</td>
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### Northeast

<table>
<thead>
<tr>
<th></th>
<th>Count</th>
<th>%</th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>No</td>
<td>264406</td>
<td>95.2%</td>
<td>725791</td>
<td>1094894</td>
<td>61542</td>
</tr>
<tr>
<td>Yes</td>
<td>108494</td>
<td>4.8%</td>
<td>45005</td>
<td>61541</td>
<td>19410</td>
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</tbody>
</table>

### Midwest

<table>
<thead>
<tr>
<th></th>
<th>Count</th>
<th>%</th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>No</td>
<td>3419706</td>
<td>93.1%</td>
<td>1341659</td>
<td>638667</td>
<td>104388</td>
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<tr>
<td>Yes</td>
<td>253091</td>
<td>6.9%</td>
<td>107983</td>
<td>27431</td>
<td>23451</td>
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### South

<table>
<thead>
<tr>
<th></th>
<th>Count</th>
<th>%</th>
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<th></th>
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<tr>
<td>No</td>
<td>7077186</td>
<td>93.4%</td>
<td>2183720</td>
<td>1840937</td>
<td>14125</td>
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<tr>
<td>Yes</td>
<td>503159</td>
<td>6.6%</td>
<td>418555</td>
<td>152349</td>
<td>0</td>
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### West

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<tr>
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<th>Count</th>
<th>%</th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>4035675</td>
<td>96.3%</td>
<td>388463</td>
<td>2310679</td>
<td>78936</td>
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<tr>
<td>Yes</td>
<td>144626</td>
<td>3.5%</td>
<td>18047</td>
<td>66223</td>
<td>14047</td>
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### Total

<table>
<thead>
<tr>
<th></th>
<th>Count</th>
<th>%</th>
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</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>1717683</td>
<td>94.3%</td>
<td>4639633</td>
<td>5885177</td>
<td>258991</td>
</tr>
<tr>
<td>Yes</td>
<td>1009370</td>
<td>5.5%</td>
<td>589590</td>
<td>307544</td>
<td>56908</td>
</tr>
<tr>
<td>Total Employment and Percent of Total for Each Risk Group</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>--------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Total Employment</strong></td>
<td>144,731,220</td>
<td></td>
<td></td>
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<tr>
<td><strong>Share of Total Employment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>All Occupations</td>
<td>144,731,220</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed in Occupations at “Low Risk” of Layoff</td>
<td>77,944,910</td>
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<td></td>
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<tr>
<td>Employed in “Essential” Occupations</td>
<td>24,840,280</td>
<td></td>
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<tr>
<td>Employed in Occupations Possible to Work from Home</td>
<td>48,204,920</td>
<td></td>
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<tr>
<td>Employed in Other Salaried Occupations</td>
<td>4,899,710</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed in Occupations at “High Risk” of Layoff</td>
<td>66,786,310</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food Preparation and Serving-Related Occupations</td>
<td>13,374,170</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Sales and Related Occupations</td>
<td>10,443,460</td>
<td></td>
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<td></td>
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<tr>
<td>Production Occupations</td>
<td>8,313,750</td>
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<tr>
<td>Installation, Maintenance and Repair Occupations</td>
<td>5,628,890</td>
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<tr>
<td>All Other “High-Risk” Occupations</td>
<td>29,026,040</td>
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</table>

## Economic Conditions of Workers by Occupational Risk

<table>
<thead>
<tr>
<th></th>
<th>At Risk</th>
<th>Lower Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median earnings</td>
<td>$23,141</td>
<td>$41,535</td>
</tr>
<tr>
<td>Median share of household earnings</td>
<td>50%</td>
<td>59%</td>
</tr>
<tr>
<td>Working fewer than 35 hours/week</td>
<td>30%</td>
<td>17%</td>
</tr>
<tr>
<td>No health insurance</td>
<td>19%</td>
<td>7%</td>
</tr>
<tr>
<td>Income below the poverty line</td>
<td>11%</td>
<td>5%</td>
</tr>
<tr>
<td>Housing cost burdened</td>
<td>28%</td>
<td>18%</td>
</tr>
</tbody>
</table>

Sources: Authors’ calculations using American Community Survey One-Year Public Use Microdata Sample (2017), USDOL/ETA Occupational Information Network (O*NET) (24.2 database), and BLS Occupational Employment Statistics (May 2018).
Covid-19 Residential Utility Customer Credit and Collections Impacts Remain Uncertain

- The need for comprehensive monthly reporting of credit and collections data
- Data reporting lag
- Credit, collections and energy security outcomes to be determined by
  - Public health and economic crisis scenarios
  - Assistance and consumer protection funding
  - Credit and collection reforms
Post-moratorium Energy Security Programs and Policies

- During public health crisis, restore access to service for any utility customer whose service has been cut off without requiring a down payment.
- WAive late payment fees and security deposit.
- For past-due bills, provide extended deferred payment plan options that are affordable based on a household’s actual income and expenses (12 – 18 mo).
- For households with low incomes, use debt forgiveness programs that avoid adding to current monthly bills.
- Expand bill payment programs that reduce monthly bills to an affordable level.
- As weatherization crews safely return to work, expand access to comprehensive whole-house energy efficiency and retrofit opportunities.
- Require more comprehensive utility tracking and reporting of data on residential customer overdue bills, disconnections, and repayment efforts.
- Utility cost recovery over time in return for non-punitive credit and collections practices and reductions in involuntary disconnections.
What Data Do We Need?

- Number of residential accounts
- Total billed and received amounts
- Number and dollar value of late payment fees
- Number and dollar value of unpaid accounts by vintage (30-60, 60-90, 90+)
- Number and duration of new payment agreements
- Number of accounts sent notice of disconnection for non-payment
- Number of disconnections for non-payment
- Number of service restorations after disconnection for non-payment
- Number & percent of customers completing an extended payment plan
- Average duration of service disconnection for restored accounts
- Number and dollar value of accounts written off as uncollectible
- Many of these should be reported by zip code
Illinois a leader

- Docket ICC 20-0309, June 10 settlement
- Terminated customers get restored.
- Moratorium continues until “30 days after the Stipulated Moratorium Period ends,” or Aug. 1 (now, later date)
- Payment plans 18 mos., or 24 mos. for financially struggling (no down payments for those).
- Debt forgiveness for LIHEAP customers, $300-$500.
- No adverse credit reporting, and no low-income deposits for 6 months.
- Stakeholder discussions to improve affordability.
- Zip-code level data reporting.
- Agreement on cost-recovery for companies (lost late fees, increased uncollectibles, COVID expenses.)
Some NCLC Tools

- Residential Electric Utility Arrearage Scenarios

- Data Collection

- Program Design Template
Since 1969, the nonprofit National Consumer Law Center® (NCLC®) has worked for consumer justice and economic security for low-income and other disadvantaged people, including older adults, in the U.S. through its expertise in policy analysis and advocacy, publications, litigation, expert witness services, and training. www.nclc.org
Day 3 Recap of Key Ideas and Insights

1. What did you hear today that resonated?
2. What remaining questions do you have?
3. How can NGA provide assistance on these topics?