



Planning for a 100% Renewable New Mexico

Coalition for Clean Affordable Energy

September 19, 2017

Hilton Santa Fe Historic Plaza

100 Sandoval Street

Santa Fe, New Mexico 87501

RESOURCES

We have compiled some additional resources about each of the topics we will be discussing at the event and afterwards. This list is by no means exhaustive and we welcome your input about other useful resources to share. We will provide additional materials and summaries after the event as well.

100 PERCENT RENEWABLE NEW MEXICO

- Resources addressing the ways in which we reach high penetrations of renewable energy.
 - National Renewable Energy Laboratory (NREL), *Renewable Electricity Futures Study*
https://www.nrel.gov/analysis/re_futures/
 - Clean Energy Vision Project
<http://www.cleanenergyvision.org/reports/>
 - The Solutions Project
<http://thesolutionsproject.org/resource-library/>
 - Rocky Mountain Institute, Positive Disruption Limiting Global Temperature Rise to Well Below 2 C°
https://www.rmi.org/wp-content/uploads/2017/08/RMI_Report_Positive_Disruption_2017.pdf
 - Environment America, *Renewables on the Rise*
http://environmentamerica.org/sites/environment/files/reports/AME%20Renewables%20on%20the%20Rise%20July%202017.pdf?_ga=2.6450554.976540121.1505622619-123558489.1505622619
 - Hawaiian Electric Companies, *Power Supply Improvement Plan*
<https://www.hawaiielectric.com/clean-energy-hawaii>

- California Legislative Information, *SB-100 California Renewables Portfolio Standard Program: emissions of greenhouse gases*
https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB100
- Agora Energiewende, *The Energiewende in a Nutshell*
<https://www.agora-energiewende.de/en/topics/-agothem-/Produkt/produkt/382/The+Energiewende+in+a+nutshell/>

FLEXIBILITY: HOW TO FACILITATE A TRANSITION TO A RENEWABLE-BASED SYSTEM. WHAT ARE THE KEY STRATEGIES AND POLICIES THAT ARE NEEDED?

- Resources about measures needed to increase flexibility to the system.

General/Overview:

- Regulatory Assistance Project, *Teaching the Duck to Fly – Second Edition*
<http://www.raonline.org/knowledge-center/teaching-the-duck-to-fly-second-edition/>
- America's Power Plan
<http://americaspowerplan.com>
- Climate Policy Initiative, *Flexibility The Path to low-carbon, low-cost electricity grids*
<https://climatepolicyinitiative.org/wp-content/uploads/2017/04/CPI-Flexibility-the-path-to-low-carbon-low-cost-grids-April-2017.pdf>

Energy Imbalance Market (EIM)/Regional System Operators (RSOs)/Regional Transmission Operators (RTOs)

- Western Energy Imbalance Market
<https://www.westerneim.com/>
- Regulatory Assistance Project, *Western US Regional Market and the Emergence of EIM*
http://www.raonline.org/knowledge-center/western-us-regional-market-emergence-eim/?_sft_topic=power-markets-and-reliability
- Regulatory Assistance Project, *The ABCs of RTOs*
<https://www.raonline.org/event/the-abcs-of-rtos-webinar/>
- Western Clean Energy Advocates, *Grid Forward: Modernizing and strengthening the Western electric system*
<http://westerngrid.net/wcea/rso/>
- goodgrid Clean Energy, *gridgeeks Podcast Episode 3: Western Markets and Regionalization: Why Should We Care?*
<http://www.goodgrid.net/blog/>
- California Independent System Operator (CAISO), *Exploring a regional independent system operator (ISO)*

- <https://www.caiso.com/informed/Pages/RegionalEnergyMarket.aspx>
- Western Area Power Administration, *Mountain West Transmission Group Initiative*
<https://www.wapa.gov/About/keytopics/Pages/Mountain-West-Transmission-Group.aspx>

Energy Efficiency and Demand-Side Management

- Southwest Energy Efficiency Project, *Time-Sensitive Valuation of Electricity Savings in the Southwest*
<http://www.swenergy.org/data/sites/1/media/documents/publications/documents/Valuation%20of%20EE%20in%20Southwest%208-8-17%20FINAL.pdf>
- Southwest Energy Efficiency Project, *Leading Rural Electric Cooperative Energy Efficiency Programs*
http://www.swenergy.org/data/sites/1/media/documents/publications/documents/Leading_REC_Energy_Efficiency_Programs_Jan_2016.pdf
- Regulatory Assistance Project, *The Next Quantum Leap in Efficiency: 30 Percent Electric Savings in Ten Years*
http://www.raonline.org/knowledge-center/the-next-quantum-leap-in-efficiency-30-percent-electric-savings-in-ten-years/?sf_action=get_results&sf_s=quantum+leap
<http://www.raonline.org/wp-content/uploads/2016/01/rap-efg-neme-grevatt-30percentefficiency-2016-feb-1.pdf.pdf>
- Regulatory Assistance Project, *Recognizing the Full Value of Energy Efficiency*
<http://www.raonline.org/knowledge-center/recognizing-the-full-value-of-energy-efficiency/>
<http://www.raonline.org/wp-content/uploads/2016/05/rap-lazarcolburn-layercakepaper-2013-sept-9.pdf>
- Rocky Mountain Institute, *The Economics of Demand Flexibility*
<https://www.rmi.org/insights/reports/economics-demand-flexibility/>

Transmission and Distribution

- Regulatory Assistance Project, *Electricity Transmission A Primer*
<http://www.raonline.org/wp-content/uploads/2016/05/ncsl-brown-electricitytransmissionprimer-2004-06.pdf>
- Department of Energy, *Modern Distribution Grid*
<https://doe-dsp.org/sample-page/modern-distribution-grid-report/>
- Governor Richardson's Task Force on Statewide Electricity Transmission Planning, *New Mexico Electricity Transmission Planning Report*
<http://www.emnrd.state.nm.us/main/documents/NMElectricityTransmissionReport.pdf>
- More Than Smart, *Coordination of Transmission and Distribution Operations in A High Distributed Energy Resource Electric Grid*

http://morethansmart.org/wp-content/uploads/2017/06/MTS_CoordinationTransmissionReport.pdf

- Natural Resources Defense Council, *Small Power, Big Grid (blog series)*
<https://www.nrdc.org/experts/allison-clements/small-power-big-grid-part-1>

Reliability

- Analysis Group, *Electricity Markets, Reliability and the Evolving U.S. Power System*
<https://info.aee.net/electricity-markets-reliability-and-the-evolving-us-power-system-report>
- The Brattle Group for NRDC, *Advancing Past “Baseload” to a Flexible Grid How Grid Planners and Power Markets Are Better Defining System Needs to Achieve a Cost-Effective and Reliable Supply Mix*
http://www.brattle.com/system/publications/pdfs/000/005/456/original/Advancing_Past_Baseload_to_a_Flexible_Grid.pdf?1498482432
- American Wind Energy Association (AWEA), *Renewable Energy Builds a More Reliable and Resilient Electricity Mix*
<http://awea.files.cms-plus.com/FileDownloads/pdfs/AWEA%20Renewable%20Energy%20Builds%20a%20More%20Reliable%20and%20Resilient%20Electricity%20Mix.pdf>
- North American Electric Reliability Corporation (NERC), *Distributed Energy Resources Connection Modeling and Reliability Considerations*
http://www.nerc.com/comm/Other/essntlrlbltysrvkstskfrcdL/Distributed_Energy_Resources_Report.pdf

Storage

- Energy Storage Association, *Including Advanced Energy Storage in Integrated Resource Planning: Cost Inputs and Modeling Approaches*
http://energystorage.org/system/files/attachments/irp_primer_002_0.pdf
- SunPower, Everything you need to know about commercial solar battery storage in 1,000 words and 3 pictures)
<http://businessfeed.sunpower.com/articles/introduction-to-commercial-solar-battery-storage>

ECONOMICS: WHAT DOES AN INCREASE IN RENEWABLE ENERGY IN NEW MEXICO LOOK LIKE ON-THE-GROUND?

- Resources about the economics of transition away from fossil fuels, including case studies from other areas facing similar challenges.
- Northwest New Mexico Council of Governments, *Regional Economic Assessment & Strategy for the Coal-Impacted Four Corners Region Final Report*
<http://www.nwnmcog.com/power-grant.html>
http://www.nwnmcog.com/uploads/1/2/8/7/12873976/final_highland_economics_report_2017.pdf
- Navajo Hopi Land Commission Office, U.S. Department of Energy Tribal Energy Program, *Feasibility Study for Paragon-Bisti Solar Ranch on the Navajo Nation in New Mexico*
http://www.navajonationcouncil.org/pressReleases/2015/Sept/Feasibility_Study_for_Paragon-Bisti_Solar_Ranch.pdf
- goodgrid Clean Energy, *gridgeeks Podcast Episode 5: A Coal Retirement Case Study: The Navajo Generating Station*
<http://www.goodgrid.net/blog/>
- Headwaters Economics, *Planning for Montana's Energy Transition*
<https://headwaterseconomics.org/wp-content/uploads/report-montanas-energy-transition.pdf>
- Agora Energiewende, *Eleven Principles for a Consensus on Coal*
<https://www.agora-energiewende.de/en/topics/-agothem-/Produkt/produkt/270/Eleven+Principles+for+a+Consensus+on+Coal/>

POLITICS AND IMPLEMENTING POLICIES

- Resources about where we are now and resources for moving forward.
- New Mexico Public Regulation Commission, *Utility Renewable Energy*
<http://www.nmprc.state.nm.us/utilities/renewable-energy.html> [Somewhat outdated, but compilation of some basics]
- New Mexico Public Regulation Commission, *Case Lookup EDocket*
<http://164.64.85.108>
- PNM, *2017-2036 Integrated Resource Plan*
<https://www.pnm.com/irp>
<https://www.pnm.com/documents/396023/396193/PNM+2017+IRP+Final.pdf/eae4efd7-3de5-47b4-b686-1ab37641b4ed>
- El Paso Electric, *Integrated Resource Plan*
<https://www.epelectric.com/community/new-mexico-integrated-resource-plan>
- Southwestern Public Service Company (SPS), *2016-2035 Integrated Resource Plan*
https://www.xcelenergy.com/company/rates_and_regulations/resource_plans/sps_2016-2035_integrated_resource_plan

- Lawrence Berkeley National Laboratory, *U.S. Renewables Portfolio Standards: 2017 Annual Status Report*
<https://emp.lbl.gov/publications/us-renewables-portfolio-standards-0>
<https://emp.lbl.gov/sites/default/files/2017-annual-rps-summary-report.pdf>
- Regulatory Assistance Project, *Electricity Regulation in the US: A Guide (Second Edition)*
http://www.raonline.org/knowledge-center/electricity-regulation-in-the-us-a-guide-2/?sf_action=get_results&sf_s=electricity+regulation+in+the+u.s.
- Regulatory Assistance Project, *Next-Generation Performance-Based Regulation: Emphasizing Utility Performance to Unleash Power Sector Innovation*
<http://www.raonline.org/knowledge-center/next-generation-performance-based-regulation-emphasizing-utility-performance-unleash-power-sector-innovation/>
- Regulatory Assistance Project, *Smart Rate Design for a Smart Future*
<http://www.raonline.org/knowledge-center/smart-rate-design-for-a-smart-future/>
- Regulatory Assistance Project, *Revenue Regulation and Decoupling: A Guide to Theory and Application (incl. Case Studies)*
<http://www.raonline.org/knowledge-center/revenue-regulation-and-decoupling-a-guide-to-theory-and-application-incl-case-studies/>