



NEW MEXICO ENERGY EQUITY

Building Energy Equity Into the Grid

EDITED BY THERESA CARDENAS



NEW MEXICO ENERGY EQUITY

Building energy equity into the grid

AUGUST 8 AND 9, 2023

EDITED BY THERESA CARDENAS

This project about energy equity is building on the expertise and current efforts of many frontline communities and community-based organizations who have contributed a significant amount of work to this area. We would also like to acknowledge the many individuals and organizations who participated in the state-wide community conversations and town hall and for their continued efforts to implement the recommendations.

We also acknowledge that our knowledge about energy equity is a growing topic, and a collaborative process. We invite feedback from anyone. You can visit our website at www.nmenergyequity.org

An e-book version of this publication is available on the website.

Copyright © 2023 Theresa Cardenas, NMEnergyEquity.org

All rights reserved. No part of this book may be reproduced or used in any manner without the prior written permission of the copyright owner, except for the use of brief quotations in a book review. To request permissions, contact the publisher at tc@theresacardenas.com

Edited by Theresa Cardenas.

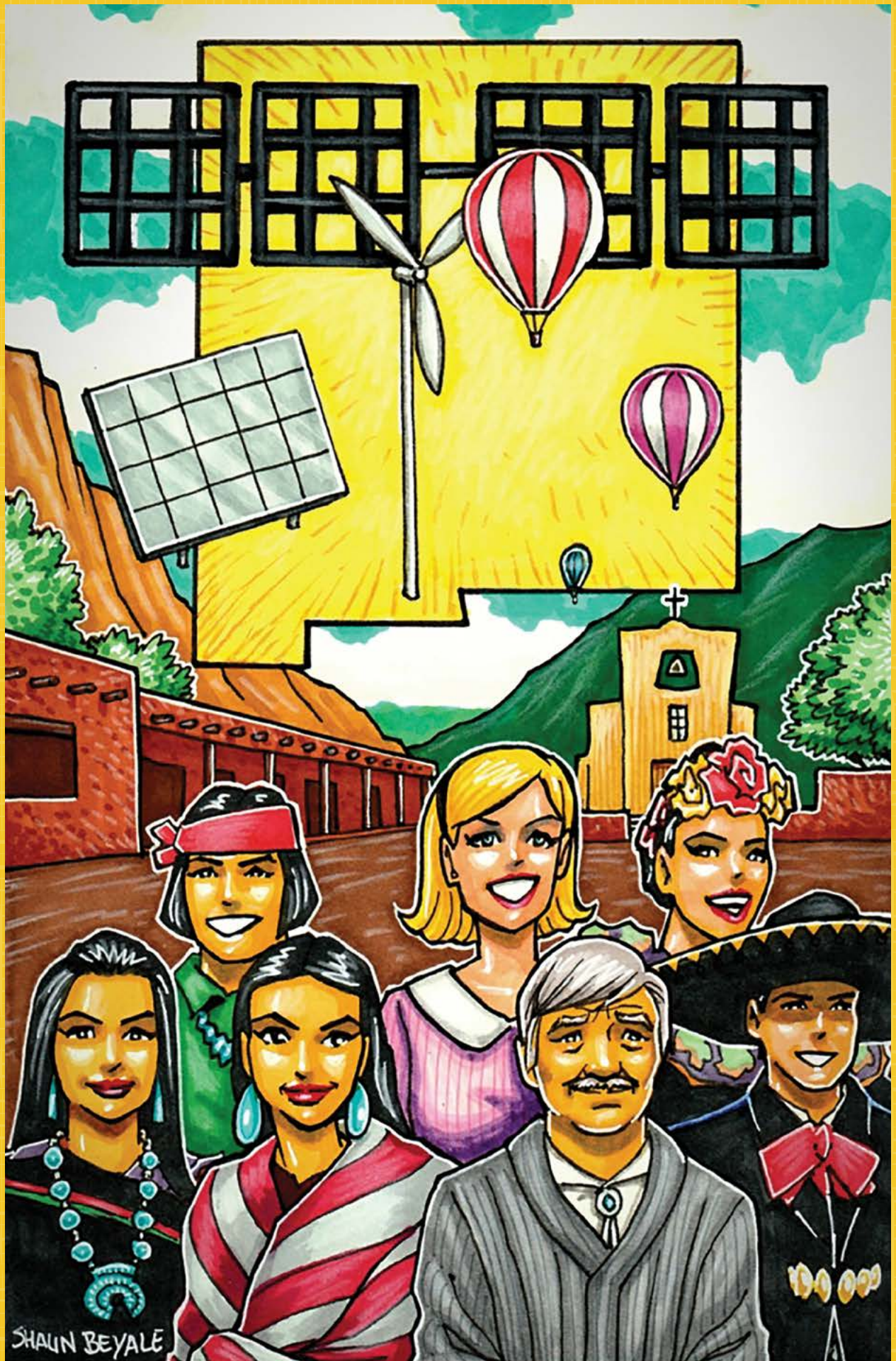
Cover art by Shaun Beyale.

Layout by Gozosa.

Photographs by Brittney Van Der Werff.

CONTENTS

INTRODUCTION	5
WHITE PAPER	8
“Empowering New Mexico: New Mexico’s Energy Transition Through an Equity Lens” by Asa Stone	8
TOWN HALL	11
Purpose of the Town Hall	13
Participants	13
Design and Agenda	14
Preparation	16
Survey Findings	17
Town Hall Presentations	18
“EPSCoR and Smart-Grid Solutions: Training the Next Generation” by Selena Connealy, PhD & Ganesh Balakrishnan	19
“Engaging NM Communities in Equity and Energy Transition” by Magdalena Avila, PhD	21
“Addressing Equity in The Energy Transition” moderated by Selena Connealy, PhD	24
“Historical Perspectives on the Energy Transition: When we know our past, we can better understand our present and build our future” by Leila Flores Duenas, PhD & Carol Vigil.....	31
“Empowering New Mexico Communities” by Bobby Jeffers	34
“Micro Grids and Superheroes” by Shaun Beyale.....	39
Town Hall Theme Groups	41
Regulation: NM Energy Transition Act, Community Solar, & Data.....	42
Energy Sovereignty & Self-Determination.....	45
Rural Capacity Building & Workforce Development	48
Education and Public Awareness & Technical Assistance to Communities.....	52
Recommendations	55
COMMUNITY CONVERSATIONS	57
Structure & Guiding Questions.....	59
Farmington, NM	61
Las Vegas, NM	69
Silver City, NM	75
Gallup, NM	81
Carlsbad, NM	87
New Mexico Coalition of Sustainable Communities	91
Tribes, Pueblos and Nations.....	97
ACKNOWLEDGMENTS	104
Sponsors.....	104
Team	105



Addressing energy equity is at the heart of this collaborative project. A mission worth pressing forward. As we navigate the ever-evolving transition to 100% clean affordable energy, we must never lose sight of the voices that represent underserved communities who value energy equity. Their life experiences, challenges, and collective wisdom hold power to shape policies and programs to ensure a hopeful equitable clean energy future can prevail.

Energy equity should not be an afterthought, as the state's roadmap moves forward to achieve full compliance with the 2019 Energy Transitional Act (ETA). New Mexico citizens view energy affordability, safety, access to renewables, energy sovereignty and resources to build capacity as critical components in energy planning to ensure the electric grid serves all New Mexicans. These are the key findings and hopeful wishes participants validated who participated in state-wide community conversations and a state-wide Town Hall conducted on August 8th and 9th, 2023 in Albuquerque. This journal is a reprint and companion to the EPSCoR report; *"Empowering New Mexico: New Mexico's Energy Transition Through an Equity Lens"*.

Through an authentic civic engagement framework, in the development of policies and programs, the Town Hall highlighted and elevated diverse New Mexican voices who have ideas, perspectives, and creative ways to approach energy equity. The Town Hall framework incorporated the social, economic, and environmental dimensions of the energy transition. A consensus building approach was used aimed to empower historically marginalized communities through democratic deliberation and decision-making processes. These voices are the decision-makers. Fully embracing and implementing their 11 recommendations and other notable ideas bring energy equity into sharp focus.

100% renewable energy by 2045 and billions of federal dollars coming to New Mexico sound promising. To aid in the transition and address numerous inequities, a diverse variety of federal initiatives (Infrastructure Investment and Jobs Act; IIJA or BIL) are currently underway which potentially will have a positive impact on New Mexico's goals and on communities who need them the most. But, only if legislators, regulators, and state agencies prioritize these initiatives for vulnerable communities, New Mexico will have a chance to address energy inequities. By delivering affordable clean energy programs, increasing energy efficiency measures, building community capacity to help reshape economies can help advance environmental justice for all New Mexicans for generations.

As the state prioritizes economic benefits such as exporting renewable energy to western states, communities without access to renewable energy must not be left behind. Investments in transmission networks and associated investments in clean, renewable energy generation has the potential to generate significant economic benefits for the state's economy. According to a 2022 NM Renewable Energy Transmission and Storage Study, by 2050, cumulative Gross State Product (GSP) gain for New Mexico's economy would exceed \$21 Billion.

The Town Hall recommendations outlined in this journal are not a big ask for energy burdened households. 39% of NM's low-income population spend an average of \$1,645 annually on energy-related costs, or 16% of household income compared to a state average of \$1,768 or 3% of household income (<https://maps.nrel.gov/slope/stories/nm>). This cost is an energy burden spent on electricity and natural gas bills, and other costs associated with propane as well as wood and pellet burning stoves, common in rural areas. This cost does not include transportation. Burdens can also be defined by not having access to energy efficiency programs, clean energy programs, jobs, and investments.

The distribution of energy burden across the state correlates with poverty levels. Higher energy burdens and slow economic growth in many regions can exacerbate economic challenges for families. Energy efficiency measures and other ideas in this journal can help these families spend less money on energy costs and reduce this energy burden, having more income to spend on food, health, education, housing, and wellbeing.

Bring energy equity into sharp focus. It's not much to ask legislators, regulators, and state agencies to fully embrace implementing these 11 recommendations and other creative ideas that are community driven solutions.

Theresa Cardenas

CEO, Noble Renewables Group of the West

TOWN HALL RECOMMENDATIONS

Regulations: NM Energy Transition Act, Community Solar, & Data

- 1.1** Ask the NM State Legislature to fund a statewide working group to write legislation to incorporate equity within utility rate design for all energy utilities, including co-ops. Working group members should include industry partners, community groups, economists, national and state technical, environmental, and legal experts.
- 1.2** Ask the NM State Legislature to create and fund the Energy Data Act to be administered by NM EMNRD, addressing use, demand, source, level of need, resilience, energy burden, etc., in order to make energy data available and easy to analyze for all interested parties—regulators, Tribes/Pueblos/Nations in state level work groups, local government and special districts, researchers, businesses, and community-based organizations.
- 1.3** Ask the NM State Legislature to extend the Community Energy Efficiency Development Block Grant Act by \$10M a year for the next decade in order to begin to address the needs of limited income homes and encourage energy efficiency business development.

Energy Sovereignty & Self Determination

- 2.1** Create a task force that includes state agencies, federal agencies, NGOs, local governments, Tribal Nations, and community members to establish communication channels, relationships, and trust to advance sovereign renewable energy development through partnerships and collaboration.
- 2.2** Direct state, federal and private foundations to provide more adaptable and equitable grant funding opportunities for Tribal Nations to fund financial and technical assistance, home-grown grant writers, and reporting assistance.
- 2.3** Create state and federal laws around Free Prior, and Informed Consent (FPIC) to include strict enforcement and penalties and make mandatory for city, council, state, and federal governments.

Rural Capacity Building & Workforce Development

- 3.1** Pilot regional resilience/learning hubs in local government or Tribal entity in rural/frontier communities with funding for equipment, operations, outreach, broadband access, paid learning opportunities, promotion of entrepreneurship and wrap-around supports (community college, industry, labor, K-12).
- 3.2** Add pre-K-12 renewable energy literacy and project-based learning as part of the state educational standards to support workforce development.
- 3.3** Appropriate \$7M for the NM Association of Councils of Government for local capacity building for renewable energy planning, implementation, and coordination with the Rural Ombuds Program.

Public Education and Awareness & Technical Assistance to Communities

- 4.1** Ask the NM State Legislature to develop a NM Center for Energy Equity that prioritizes community engagement, public awareness, and resource dissemination. The Center will support seven regional offices to ensure local priorities are identified and addressed.
- 4.2** Ask the NM State Legislature to provide paid professional development incentives and STEAM support materials on energy efficiency and sustainability to public K-12 educators and administrators.

WHITE PAPER

EMPOWERING NEW MEXICO: NEW MEXICO'S ENERGY TRANSITION THROUGH AN EQUITY LENS

By **Asa Stone, PhD**, July 2023

Aim of the White Paper

The objective of this report is to provide an impartial presentation of existing efforts and policies in the realm of just energy transition. It seeks to avoid making subjective judgments regarding their effectiveness or adequacy, focusing instead on providing a comprehensive overview of the current landscape.

Report Authors

This Town Hall report was prepared by Dr. Asa Stone (Research Assistant Professor of Geography and Environmental Studies, University of New Mexico) as lead author in collaboration with the University of New Mexico Just Transition Grand Challenge team: co-convenors Gabriel Pacyniak (Associate Professor of the School of Law; Co-supervisor, Natural Resources and Environmental Law Clinic) and Dr. Shannon Sanchez-Youngman (Assistant Professor of Population Health, Associate Director for Participatory Research and Evaluation at the Center for Participatory Research; and Doctoral Fellowship Director for the Center for Social Policy at UNM), and Dr. Robert DelCampo (Professor of Anderson School of Management; Executive Director of UNM's Innovation Academy; and Senior Executive Director of Corporate & Community Engagement), Dr. Gabriel Sanchez (Professor of Political Science; RWJF Endowed Chair in Health

Policy; Executive Director of UNM Center for Social Policy), and Dr. Mark Stone (Professor of Civil, Construction, and Environmental Engineering; Director of the UNM Resilience Institute).

Executive Summary

This report highlights the importance of a just energy transition and presents existing efforts in the state of New Mexico. The report is divided into three main dimensions that are essential for a successful transition: (1) social political equity and community wellbeing; (2) economic empowerment and workforce development; and (3) environmental justice and climate resilience.

The report starts by discussing the concept of a just energy transition and its relevance to New Mexico, highlighting the importance of equitable and inclusive changes in the energy sector. It also recognizes the need for a just transition to address the historical disparities borne by marginalized communities, and it underscores the potential benefits that could be reaped through initiatives like the Justice 40 and the Energy Transition Act (ETA).

The first section on 'Social Political Equity and Community Wellbeing' explores key aspects such as energy equity, community empowerment, government support, and the

intersection of health and energy transition. It outlines the challenges of energy access disparities, the role of community participation, the importance of supportive policy frameworks, and the public health implications of the energy transition.

The second section on ‘Economic Empowerment and Workforce Development’ delves into the creation of inclusive economic opportunities, the development of workforce resilience, and the importance of capacity building for a robust transition. This section emphasizes the need to harness renewable energy, stimulate the energy industry, develop a resilient workforce, and invest in education and capacity building to foster economic growth and resilience.

The third section on ‘Environmental Justice and Climate Resilience’ discusses the necessity of addressing environmental pollution disparities, managing natural resources effectively, and implementing climate resilience strategies. The report underscores the importance of centering environmental justice in the transition, advocating for sustainable practices, and prioritizing resilience in climate policies and actions.

In conclusion, the report highlights the complexity and multifaceted nature of the energy transition in New Mexico. It emphasizes the need for comprehensive planning, prioritizing equity and inclusion, supporting economic diversification, developing supportive policy frameworks, fostering collaboration, enhancing education, and tracking progress. The report reiterates that just energy transition is a journey requiring continuous collaboration, community engagement, and a firm commitment to justice and equity.

Conclusion

The journey towards an energy transition in New Mexico encompasses both tremendous promise and inherent challenges as the state grapples with climate change and endeavors to construct a sustainable future. A just energy transition necessitates an unwavering commitment to the principles of equity and justice. This commitment ensures

that both the benefits and costs of the transition are distributed equitably.

The pursuit of social equity in this energy transition demands action in a broad range of areas. This includes guaranteeing access to affordable energy for all, fostering community well-being, and uplifting historically marginalized communities. However, achieving these goals necessitates profound societal, behavioral, and systemic changes, complemented by enduring investments.

Economic empowerment within this transition requires comprehensive efforts: nurturing an inclusive and diverse economic environment, promoting workforce resilience, and enhancing the capacity of communities through targeted education and development initiatives. These aims extend beyond the scope of short-term actions; they call for long-term strategic investments and an unwavering commitment to transforming economic structures, labor market trends, and educational systems to be more inclusive and equitable.

In committing to environmental justice and climate resilience, the energy transition requires targeted efforts in several domains: redressing environmental inequities, advocating for sustainable resource management, and enacting robust climate resilience strategies. The successful realization of these goals requires a paradigm shift, demanding immediate action, long-term strategic planning, and a sustained commitment to realigning policies, practices, and societal attitudes with the principles of environmental justice, sustainability, and resilience.

Inclusive policy frameworks that promote equitable decision-making and environmental justice are pivotal to this transition. They provide an avenue to rectify historical disparities and equip historically marginalized communities with opportunities to actively participate in and benefit from climate solutions. By incorporating these principles into the energy transition, New Mexico can embark on a challenging but indispensable journey towards a sustainable and equitable future. Drawing on its strengths and confronting the complex tasks ahead, New

Mexico stands on the threshold of a pivotal moment in its energy transition journey.

To translate these challenges into opportunities for a just energy future, the state must:

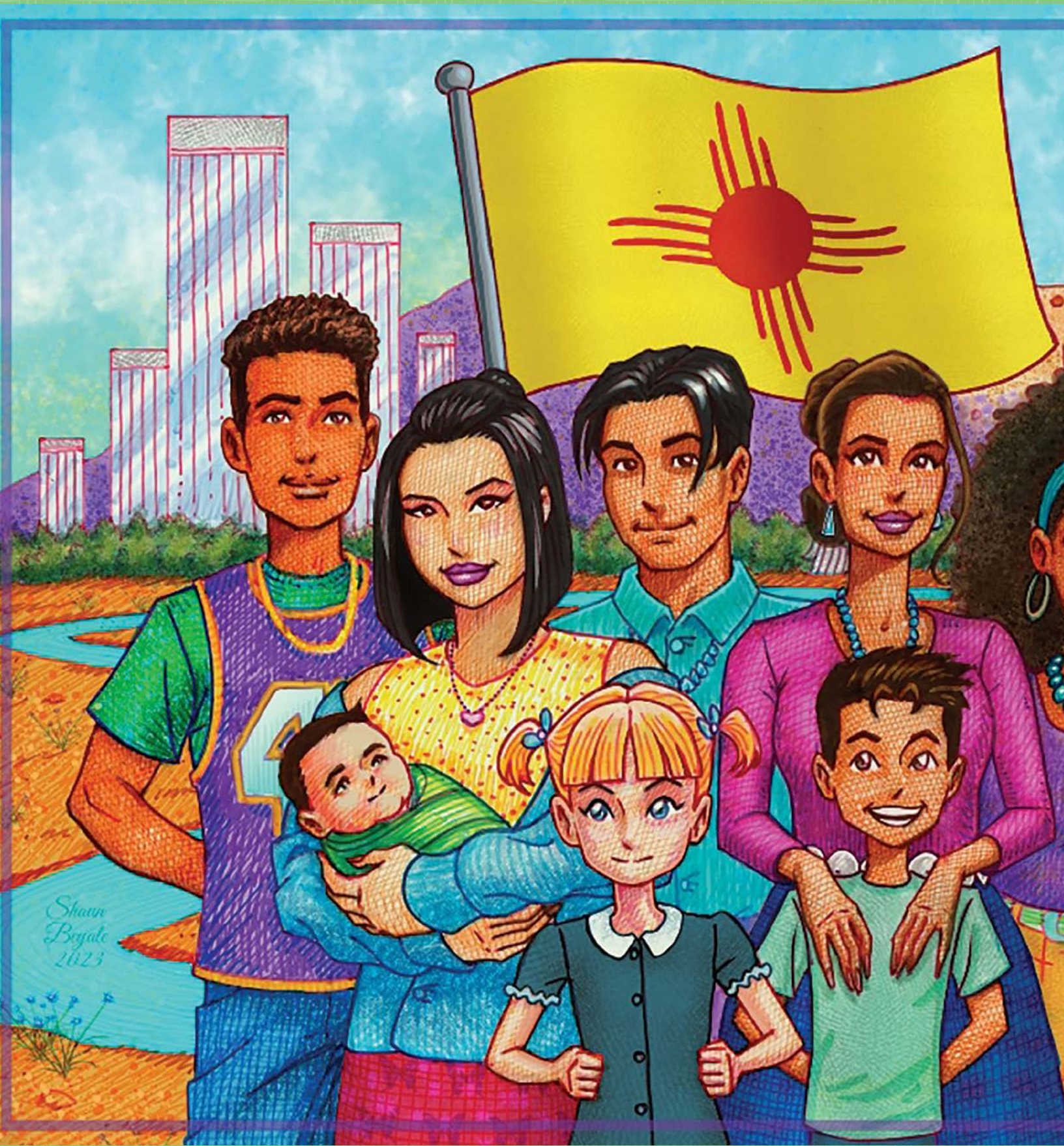
- **Design a Comprehensive Energy Transition Plan:** Address social, economic, political, and environmental dimensions of the transition while considering the state's unique needs and opportunities. Inclusive planning processes are key to integrating diverse perspectives towards sustainable and equitable outcomes.
- **Establish Supportive Policy Frameworks:** Develop proactive and progressive policies and regulations to facilitate the energy transition. These should encourage the shift towards clean energy, promote renewable energy deployment, and assure an equitable distribution of benefits.
- **Prioritize Equity and Inclusion:** Uphold principles of equity and inclusion. Encourage participatory, transparent, and inclusive decision-making processes to ensure diverse voices, especially from marginalized communities. Contribute meaningfully to shaping the energy landscape.
- **Advocate for Health and Wellbeing:** Understand and mitigate the direct and indirect impacts of climate change and environmental factors on public health. Strive for equal access to health services for all communities and consider the health implications of environmental decisions in policymaking.
- **Encourage Economic Diversification:** Promote economic diversification in alignment with the clean energy sector. Invest in workforce development and training initiatives to encourage a diverse economic landscape that create job opportunities in sustainable industries.
- **Foster Research and Innovation:** Cultivate a conducive environment for research and technological innovation. Encourage collaboration among different entities to enhance our understanding of energy transition dynamics and develop innovative, efficient,

and equitable energy solutions.

- **Redress Historical and Ongoing Injustices:** Acknowledge and implement strategies to rectify historical and ongoing environmental injustices. This includes prioritizing investments in communities that have been disproportionately affected by pollution and industrial impacts, with the goal of advancing their social, economic, and environmental wellbeing in the process of energy transition.
- **Implement Climate Resilience and Adaptation Strategies:** Integrate strategies of resilience and adaptation into the energy transition plan, taking into account potential future climate scenarios and their impact on energy supply, demand, and infrastructure stability.
- **Enhance Education and Awareness:** Increase public understanding of clean energy benefits, environmental sustainability, and the importance of a just transition. Engage in education and outreach to enhance energy literacy and foster informed decision-making and advocacy.
- **Monitor and Evaluate Progress:** Implement robust mechanisms to track and evaluate the energy transitions progress. Regular evaluations ensure that the transition fulfills its promise of fairness and inclusivity, providing opportunities for course correction and continual improvement.

The energy transition in New Mexico is not a one-size-fits-all process. It demands continuous collaboration, community engagement, and a firm commitment to justice and equity. By prioritizing the wellbeing of communities and ecosystems, New Mexico can strive towards an inclusive energy system. The state's path towards a sustainable future where clean energy is tightly intertwined with equity and justice requires collaboration, innovation, and thoughtful policy design and implementation.

A full copy of the report can be found at <https://nmenergyequity.org/>





TOWN HALL

The Town Hall was a capstone event for NM EPSCoR's project—NM SMART Grid Center— a five-year, \$24 million, NSF-funded project focused on research and workforce training for next-generation electric power production and delivery. Significant energy policy change and investment at the state and federal level, as well as the ongoing climate crisis, provide a compelling backdrop for considering the impacts on New Mexico's citizens. Federal policy includes provisions in the 2022 Inflation Reduction Act and the Justice40 Initiative which directs 40% of the overall benefits of certain Federal Investments flow to disadvantaged communities that are marginalized, underserved, and overburdened by pollution. In New Mexico, the Energy Transition Act (2019) and Community Solar Act (2021) provide a foundation for the energy transition, but much remains to be done in order to ensure that all New Mexicans benefit from a transition to sustainable energy systems.



Purpose of the Town Hall

This Town Hall explored the equity and justice elements of New Mexico’s transition from fossil fuel-dependent electricity systems to renewable-source energy production. The Town Hall framework incorporated the social, economic, and environmental dimensions of the transition. Town Hall leaders acknowledged that some communities have borne disproportionate burdens from energy extraction and production and aimed to empower marginalized communities through democratic deliberation and decision-making processes.

Participants

With almost 80 registrants, the two-day event included people from all regions of the state. Participants came from urban, rural, and tribal communities and they included grass roots community groups, businesspeople, government employees, advocates, academics, educators, public health experts, and policy experts. Registration was free for all participants; some participants were provided assistance with travel and lodging expenses.

TOWN HALL DESIGN & AGENDA

Using the World Café style, a proven consensus-building process, the two-day Town Hall asked participants to review the issues, explore possibilities, find common ground, and share their best ideas to address energy inequities. Prior to the Town Hall, statewide community conversations were held to help inform the Town Hall topics of concern.

The Town Hall included guest speakers: Magdalena Avila, D.PH, MPH, MSW, UNM Associate Professor Emeritus, Senior Research Consultant, Transdisciplinary Research Center for Equity and Engagement, who addressed energy equity; and Bobby Jeffers, PhD, NREL Energy and Resilience Center who spoke about federal energy policy and capacity building in the Inflation Reduction Act of 2022. A panel of energy and community experts addressed equity in the energy transition:

- **Arcelia Isais-Gastelum**, Policy and Partnership Manager, ReNew Mexico
- **Jim Des Jardins**, Executive Director, REIA
- **Priscilla Lucero**, Executive Director, Southwest New Mexico Council of Government
- **Gabe Pacyniak, JD**, Professor, UNM Law School
- **Daren Zigich, PE**, EMNRD, Energy Conservation & Management Division
- **Selena Connealy, PhD**, Associate Director, NM EPSCoR (moderator)

The arts and humanities were incorporated across the two-day program. Musicians Leila Flores Duenas PhD and Carol Vigil of Las Flores Del Valle presented the history of energy in New Mexico and a look to the future using song and archival photographs. Navajo visual artist Shaun Beyale illustrated three images to capture a hopeful essence of the energy transition. Peter Feather Redheart, a Lakota Flute and Storyteller, presented during the breaks.

Participants chose to participate in one of four breakout groups—Regulations: NM Energy Transition Act, Community Solar, & Data; Energy Sovereignty & Self Determination; Rural Capacity Building & Workforce Development; Public Education and Awareness & Technical Assistance to Communities. Facilitators led the breakout groups to assess New Mexico's greatest opportunities, threats, challenges, and urgent needs, and helped them to develop policy or systems change solutions. Participants prioritized and refined their three top priorities into recommendations which were presented to the full group in the final plenary session where each recommendation was reviewed, refined, and voted on by participants. All the recommendations achieved 90% support or higher and are listed below by topic, not by priority.

STATEWIDE ENERGY EQUITY TOWN HALL AGENDA

National Hispanic Cultural Center, Albuquerque, NM

AUGUST 8

8:00am

Registration and Coffee

Performing Arts Lobby

8:30am

Welcome and Introductory Remarks

Wells Fargo Theater

Selena Connealy,
NM EPSCoR

Ganesh Balakrishnan,
NM EPSCoR

Facilitation Leaders

Theresa Cardenas,
Noble Renewables Group

Lilly Irvin-Vitela,

Community Connections Consulting

9:00am

Educate and Engage on Equity

Wells Fargo Theater

Magdalena Avila, D.PH, MPH, MSW,
Associate Professor Emeritus, Senior
Research Consultant, Transdisciplinary
Research Center for Equity and
Engagement, UNM

9:15am

Panel Discussion: Equity in Energy Transition

Wells Fargo Theater

Arcelia Isais-Gastelum,
Policy and Partnership Manager,
ReNew Mexico

Jim Des Jardins,
Executive Director, REIA

Priscilla Lucero,
Executive Director, Southwest New
Mexico Council of Governments

Gabe Pacyniak, JD,
Professor, UNM Law School

Daren Zigich, PE,
EMNRD, Energy Conservation &
Management Division

10:15am

Community Outreach and World Café Topics

Wells Fargo Theater

Theresa Cardenas & Lilly Irvin-Vitela

Energy Sovereignty & Local Choice Energy

Krystal Curley

Rural Capacity Building & Workforce Development

Lilly Irvin-Vitela

Public Education and Awareness & Technical Assistance to Communities

Leila Flores Duenas

Data Access & Accountability

Melissa Toledo Ontiveros

Regulations: ETA & Community Solar

Danielle Garcia & Theresa Cardenas

11:00am

World Café Round 1

Education Building

11:45am

Lunch

Performing Arts Lobby

Harvest: Collective Learning

1:00pm

World Café Round 2

Education Building

1:50pm

Break

Performing Arts Lobby

Harvest: Collective Learning

2:30pm

World Café Round 3

Education Building

3:30pm

Presentation of Ideas from Café Rounds

Wells Fargo Theater

4:00pm

Adjourn

AUGUST 9

8:00

Registration & Coffee

Performing Arts Lobby

8:45am

Welcome

Wells Fargo Theater

Selena Connealy,
NM EPSCoR

9:00am

Setting the Stage: Day 2

Wells Fargo Theater

Las Flores Del Valle:

Leila Flores Duenas & Carol Vigil

9:10am

Educate and Engage on Energy

Wells Fargo Theater

Bobby Jeffers, PhD,
NREL Energy and Resilience Center

9:45am

Develop and Refine Recommendations

Education Building

11:15am

Presentation of Recommendations

Wells Fargo Theater

12:00pm

Celebration Lunch

Performing Arts Lobby

THROUGHOUT THE EVENT

Visual and Performing Artists

Shaun Beyale,
Navajo Visual Artist

Las Flores Del Valle,
Leila Flores Duenas & Carol Vigil

Peter Feather Redheart,
Lakota Flute and Storyteller

Outreach and Workforce Partner Tables

Facilities Management Program,
Santa Fe Community College

Energy Outreach Activities,
Explora Science Center



TOWN HALL PREPARATION

In preparation for the Town Hall, facilitators reached out to five rural communities (Farmington, Gallup, Las Vegas, Carlsbad, and Silver City), conducted a call with the Coalition for Sustainable Communities and held a convening at the Indian Pueblo Cultural Center for Tribes, Pueblos and Nations to gather community input. A white paper was prepared by Asa Stone, PhD, Research Assistant Professor of Geography and Environmental Studies, UNM, in collaboration with the UNM Just Transition Grand Challenge team, *Empowering New Mexico: New Mexico's Energy Transition Through an Equity Lens* available at <https://doi.org/10.5281/zenodo.8339279>.

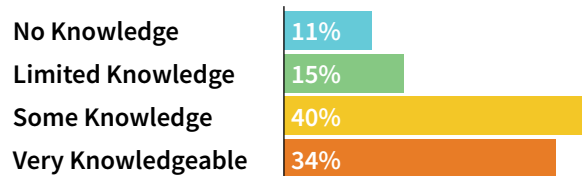
A survey was administered to potential Town Hall participants to gauge knowledge of the energy transition, renewable energy options, technological innovations such as microgrids, and access to affordable energy. Survey participants identified threats to New Mexico's energy future, opportunities to create an equitable energy future, and their concerns about access to renewable energy options.

Four topics emerged from pre-Town Hall preparation—Regulations: NM Energy Transition Act, Community Solar, & Data; Energy Sovereignty & Self Determination; Rural Capacity Building & Workforce Development; Public Education and Awareness & Technical Assistance to Communities.

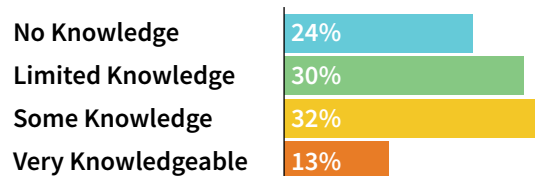
SURVEY FINDINGS

Using both qualitative and quantitative methods, a survey was conducted during community conversations and at the Town Hall on August 8th and 9th. 53 participants responded.

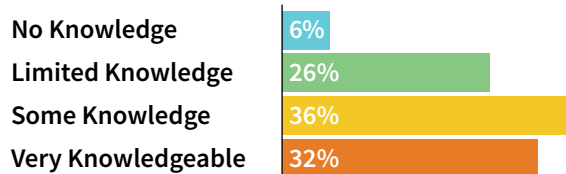
How would you describe your knowledge of how energy transitions are working in NM?



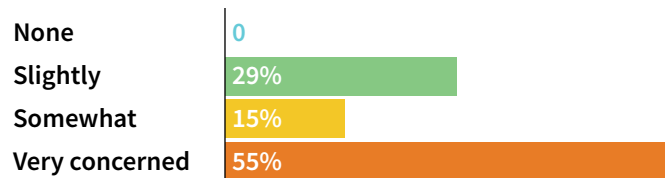
How would you describe your knowledge of how microgrids might impact New Mexico access to affordable energy?



How would you describe your knowledge of renewable energy options for New Mexico?



How concerned are you about access to renewable energy?



Please identify the three biggest threats to New Mexico’s energy future.

- 1 NM’s dependency on fossil fuel revenue to balance the budget.
- 2 Climate change impacts such as wildfires and drought.
- 3 Electric grid vulnerability and lack of grid investments.

Please identify the three biggest opportunities to create an equitable energy future in New Mexico.

- 1 Investments in solar, wind and grid improvements.
- 2 Taking advantage of the Inflation Reduction Act, and State funding for underserved communities throughout New Mexico.
- 3 Public education investments, internships, and outreach.

TOWN HALL PRESENTATIONS



The Town Hall included guest speakers who addressed energy equity, federal energy policy and capacity building, and equity in the energy transition. The arts and humanities were also incorporated across the two-day program.

Peter Feather Redheart, right, is a Lakota Flute and Storyteller. He presented during the breakout time and at the closing of the Town Hall. Hailing from Crow Creek, S.D., Redheart now lives in New Mexico. His mother is from the Crazy Horse Clan and his father from the Black Hills Clan.



EPSCOR AND SMART-GRID SOLUTIONS: TRAINING THE NEXT GENERATION

By **Selena Connealy, PhD**, Associate Director, NM EPSCoR and **Ganesh Balakrishnan**, State Director for New Mexico EPSCoR

Ganesh Balakrishnan:

Ganesh is an electrical engineer at the Department of Electrical and Computer Engineering at UNM, and he's also the Director since 2022 of the New Mexico EPSCoR program and the New Mexico Smart Grid Center.

We are in the fifth year of the Smart Grid Center which is funded by the National Science Foundation. The idea behind these centers is that states that don't receive as much funding from the National Science Foundation should be allowed to create centers that reflect the needs of the people and the technological needs that exist in these states. In 2018, our state chose the topic of smart grids as something that they wanted to push forward.

The Smart Grid has a vision to modernize, secure and have a sustainable electric grid that's supported by a diverse work force. And the idea is to empower people, conduct state of the art research, work with national labs, grow capacity and do something that's uniquely New Mexican and not apply a formula that's from somewhere else. The mission is to investigate the fundamental challenges to transitioning existing transmission and distributed energy to something that's much smarter, and to develop knowledge of national talent and inform the public. This holistic approach is needed for these types of projects. Often times you have researchers working in the corner, industry working in another corner and people not knowing how all of this comes together. We need to get together and develop the approach we have taken with the center.

The reason we chose this topic, we felt the key aspect of the energy picture that was missing was the grid. We started to recognize there was a revolution in energy starting to happen. Some of this has to do with people's

ability to create their own little grids for their communities regardless of where you are in the state and then link to a larger infrastructure dynamically. So, the concept of microgrid emerged and we felt that this was a topic that warranted a five-year, \$24 million investment. And that's where we are right now. The other aspect of things is that the grid is evolving very rapidly. You have a lot of electric vehicles coming on board. You have massive amounts of renewable being implemented across the state. And we need to pay attention to the grid aspect of things. We need to modernize it, make it resilient to attacks. It's very much a software meets electrical engineering type problem that we are dealing with. There's immense talent in the state. There's three PhD granting institutions, and there are multiple outstanding institutions, four-year, two-year programs across the state.

The Smart Grid Center brings everyone together. We have 50 faculty members from across the state. We've had nine postdocs that we've trained. A lot of them are going to be in the state working for the national labs and for the grid companies. We have 117 graduate students, 79 undergraduate students, and 35 staff members. This is on the scale of engineering research centers which are the top-notch programs that the National Science Foundation has.

We are incredibly proud of what we've done in the past five years. In fact, the joke is that it feels like we've done all the hard work to get people together and we want to do something, and the program is ending in a few months. We are working with the legislature to keep this going because having had so much momentum we need to keep pushing this forward. These are some of the participants in the state; the three big universities: New Mexico State, New Mexico Tech and UNM. We have Santa Fe Community College

who've been an amazing partner. Both national labs have been outstanding partners helping us in many ways. Amazing museums such as Explora in Albuquerque. Ever since I took the job at UNM I've always been doing something with Explora. We have a state committee that represents a diversity of organizations. And together we've been moving the center forward.



Some of the legacy aspects of this program are going to be its microgrid test facilities that we've set up over the past five years. The UNM Mesa del Sol facility is one very close to the Netflix studios in Albuquerque and it's a great model for training students in the field where they get to implement real world scenarios rather than something that's done in classrooms. Likewise, NMSU has built up a fantastic smart grid as well and it's a complex smart grid with multiple renewable energy assets. A lot of computational experiments go on--use artificial intelligence and machine learning to predict faults, to predict and mitigate failures. Cybersecurity experiments are run. It's a very robust set of activities. Santa Fe Community College likewise has a microgrid too. And I think these microgrids will last way after the program ends and will be instrumental in training students well into the future.

The other aspect of all of this, and as an engineer, and for someone who owns a hammer, every problem looks like a nail. We oftentimes overlook the human aspect of it. I think in this particular center, you'll find that there's a lot of social aspects that goes on, and a lot of it is thanks to the state office that does an incredible job.

Selena Connealy, PhD:

Selena is the Associate Director for the NM EPSCoR State Office and the co-Principal Investigator for the NSF-funded NM SMART Grid Center.

Santa Fe Community College has several grids on campus. They have two microgrids, one that powers their

greenhouse and then one that is campus wide. It's a real-life testbed, not just a laboratory testbed. But in addition to the equipment that's been installed at Santa Fe Community College, they are working on workforce development and considering people who are entering the workforce or who want to reskill and train in these new technologies. They have an Associates of Applied Science called Facilities Technologies degree, and they've developed four new certificates to support that degree, such as automation and controls, distributed energy technology technician, grid modernization, and IT support for smart and microgrids.

I think five years ago that felt very forward thinking, and now I think it is just the time when our workforce is looking for these kinds of credentials. In addition, Santa Fe Community College convened three distributed energy summits in 2020, 2021, and 2022 to bring together the two- and four-year colleges and our public and private partners about the kinds of work that's happening at Santa Fe Community College, and that can be stood up across the state. Our other partner is Explora, and they're located here in Albuquerque, and I do encourage you to go see it. They've done a lot of things over the past year with families, with teachers, at large public events and with libraries. Very exciting for Explora is the opening of X Studio, which happened in February of 2023. The Smart Grid Center has a small exhibit in that space, as well as an augmented reality game where people are able to build their cities and think about how they might power them using both renewable and non-renewable resources. And its super fun and engaging.

ENGAGING NM COMMUNITIES IN EQUITY AND ENERGY TRANSITION

HOW YOU FRAME, SHAPE, AND UNDERSTAND COMMUNITY-ENGAGED PARTICIPATORY ACTION, POLICY, AND RESEARCH

By **Magdalena Avila , D.PH, MPH, MSW**, UNM Associate Professor Emeritus, Senior Research Consultant, Transdisciplinary Research Center for Equity and Engagement , University of New Mexico Health Sciences

I am a public health qualitative researcher and expert in working with communities, community engagement, looking at community based participatory research. I am affiliated with the Transdisciplinary Research Center for Equity and Engagement at UNM, and we do just exactly what I am going to be talking about.

It's important to look at community engaged sustainability. There's been such a tremendous growth in this field, particularly in the past 10 to 15 years.

How do you tell the growth on something? One of the ways to measure growth is by publications; how much writing is going on, how much of that dialogue is happening in community-based newspapers and in meetings within the community. These are all important elements of gauging and measuring what I call the community discourse, societal discourse, and on equity. It has really jumped very, very high in so many fields, but it's my understanding that in looking at sustainability, energy transition, it still needs to incorporate more of the equity building into the steps that you're taking today.

The academic field attributes growth to the increase of awareness and publications, as I mentioned, community engagement still needs to go so much further. Today, looking at the town hall meetings, I think that's a great opportunity to talk on regarding New Mexico's energy transition in developing equitable policy and systems change recommendations. And I think that has been so beautifully framed this morning with all the presentations, the artists, and the music. It's weaving in the unique landscape of New Mexico. New Mexico is so unique in that I don't even take that for granted.

We're not just slabs of concrete. There's the Acequias, all the different tribes, the Pueblos, everything that makes New Mexico so unique. Its a cultural challenge when we're thinking about equity and equality. How do we make this come together? And what is energy transition even in looking at that?

What is equity from a community-based perspective?

Two things, sustainability, and equity, each have a different meaning. All of us carry a different meaning in ways of how we define it and the role that it has in our lives.

Equality means each individual or group of people are given the same resources or opportunities. However, equity recognizes that each person has different circumstances and allocates the exact resources and opportunities needed to reach an equal outcome. Sometimes we don't have those resources to reach an equal outcome. We all get an education, but we cannot say there's equity in education and the education we receive. We don't have the same teachers, we don't have the same curriculum, we don't have the same school system that I think is deficient overall in recognizing all the different languages in the state of New Mexico that weave the beautiful artistry of the people and culture who are so much a part of this. These are some of the challenges and scenarios that is going to encounter the advancement that this community makes in trying to make the energy transition here in the state of New Mexico.

How we create a transitory process is the challenge. Today you're talking about building a collaborative foundation and joining a forum across professionals and professional areas

and community professionals across the state of New Mexico. We have rural, urban communities, tribal communities, academic, all sorts of different communities that require strategies. Each one has their own strategy because there's different ways of understanding things and how we weave it to our mindset and then we take on the meaning.

Because first, we must establish that understanding before we can do the meaning making. How is it gonna make sense to us and once it makes sense to us how are we really going to integrate that into our life in terms of improving our environment.

What are the different pools of knowledge that are needed to create a multifaceted energy sustainable transition here in New Mexico?

It might seem it's not such an elite concept, but it is a meaningful one. It must be a meaningful one. I think this is the real challenge today that you as town hall experts coming together to dialogue can move it from some of the elite anchors that energy and transition has from the very corporate community, scientific community, bureaucratic community and make it an everyday ownership for all of us, not just for a few. It must make sense to all of us. Yes, you can look at the professional literature which I was doing in preparation for this as well within energy and sustainability. There's no stopping, it goes and goes. We're looking again at the climate crisis. We must look at the recent fire at a plastics plant in Albuquerque's south valley. You had to shut down your air conditioning because then you were breathing very toxic air. Another example: the fires in the north that killed away a community of people that had their homes 50 to 100 years. They had their ranches and now they don't have anything. They migrated to Albuquerque because they lost their land. They lost their homes. They lost their center meaning, their way of life for everyone. We must think about this as we're thinking about energy. In looking at the people and its cultural landscape of New Mexico and how it's weaved in and out with the way of life that we live, what it is that we rely on, what resources that we have. It really does require unique thinking to advance this concept.

In terms of the town hall, there's six topic areas that have been created as part of the collaboration. In looking at developing what I call an equitable policy and systems change, it's breaking down the whole into different parts, into the different sum of its parts. You will be looking at some of the topics, taking this huge rock and piecing it into different pieces so that it can make sense. You're going to map out the steps to the strategies, meaning how do we understand it, how do we make meaning from it, how do we create policy around it, and then what recommendations are needed to create a leading statewide model to address equity?

How do we keep what makes New Mexico so unique, so beautiful, and brings us together, as well as some of it that keeps us apart? How do we work with that?

That's a huge challenge in terms of how do we do the intellectual herding, the community -based herding, to keep all these communities working together?

One concept that works very well in developing what I call "La Conciencia". How do we create that critical consciousness? I see that being one of your roles today. What are the critical questions that are going to come up, whether you are from any of the tribes, whether you are from any of the Chicano, Mexicano villages, or any of the urban cities? What are the critical questions that are important to you, based on the lifestyle you lead, based on the resources you have, traditional and otherwise, and based on also the opportunities that you might have, given the limited or more resources that you have?

How do we lead a campaign in our state to do multi-education? What does that mean if we're looking at the critical consciousness of the state? Where do we begin? Am I really looking to understand installing solar or am I looking at, how do I cool my house down, make my home more energy efficient. The understanding of reality, the lived reality every single day. I'm not even walking out of my door yet because the heat is so extensive, we know how many people such as the disabled are really hurting. Its not just thinking

about advancing a society, it's about saving lives. How do we do that in a community in a way that is honorable, that brings dignity, and does not misalign our values? We must keep the core values of our communities and we have to recognize that.

Environmental justice is a huge part of addressing what I call the misalignments.

In public health, there's a term that we use repeatedly and that's a social determinant of health and their adverse impact on New Mexican communities. Opportunities for an education, opportunities for jobs, opportunities for skill building or lack of, also in terms of lack of medical care, lack of Medicaid coverage that has just been reduced for many, many people across the state and we have the highest uses of Medicaid in the U.S. How can you tell somebody to be concerned about sustainability if you're concerned about where you're gonna get your next healthcare or meal? Granted that the homes that we live in, where we live, and our quality of life is impacting us daily... the cumulative impacts of our lives. What does it mean when you build wind turbines in your neighborhood? Might be good for some but not all. When we're looking at creating consciousness, it's very political because you can push people to the point of disagreement.

We must listen.

What are they saying? What can we do? We're looking at how do we create and plant seeds of consciousness that are class-related, culture-related, language related throughout New Mexico? When we look at New Mexican families, I ask each of you this question. Who maintains their cohesion? How does a family keep that sustainability? Who, of all people manages the affairs in the home? For many, it's the moms. Mom does this and mom does that. Think about who are the key persons who create the minimum of sustainability within the different rooted cultures here in New Mexico.

Don't be surprised if you're not trusted when you go into a community when talking about solar opportunities. Transferring concepts isn't an overnight thing. It's a major cultural, educational, every type of challenge and aspect. There's also addressing a lot of the racial categories, some of the racism that people have. It's always professionals talking to them, and they don't see their own face, they don't see

their own communities reflected in that expert translation and opinion. Keep that in mind that this is about energy transition in New Mexico. We must leave the egos behind, the professional ego behind and really support our communities in terms of their expertise and what they represent.

How do we work with and partner with communities to engage in sustainable energy and transition research to better understand it?

It's a science of how people believe, it's a science of how people understand knowledge and how people translate that knowledge into operational daily life and activities. Working to produce shared knowledge then is what I see as part of the challenge of coming together.

How do you advance the knowledge together versus just one group versus another?

It involves a student understanding of the foundations and the expertise of communities to also advance and further the knowledge. We have so many pods of knowledge, so many ways to pull information from. How do we create that element of meaning?

When I talk about alignment and misalignment, the misalignment is a total miss. You go in and you're trying to push something and it's just not working. You're not aligned, you're not understanding community values, the principles, the needs, the practices, and all of that is crucial to the building blocks. We talk about the building blocks of life, but these are the building blocks within communities to get them on board, to get them to participate and be a part of the action rather to be marginalized and just included here or there, but not accounted for 100%. They're 100%, if not 200% of the partnership. Otherwise, nothing's going to advance the way that it should. A key operating principle should be that working under the collective principle of a "we". We must create not just an I. Alignment and misalignment regarding your roles and your task today is essential to the success of what you'll encounter in putting together the policy agenda and the research agenda for the particular task at hand.

ADDRESSING EQUITY IN THE ENERGY TRANSITION

Moderator: **Selena Connealy, PhD**, Associate Director, NM EPSCoR

Five panelists who have expertise across different energy systems and different stakeholders:

Arcelia Isais-Gastelum

Policy and Partnership Manager, ReNew Mexico

Jim Des Jardins

Executive Director, REIA

Priscilla Lucero

Executive Director, Southwest New Mexico Council of Governments

Gabe Pacyniak, JD

Professor, UNM Law School

Daren Zigich, PE

EMNRD, Energy Conservation & Management Division

What does energy equity mean in the context of your work?

Arcelia:

I'm the Policy and Partnership Manager with Renew Mexico, a statewide coalition consisting of various stakeholders including; economic developers, environmental advocates, faith leaders, advocates, anyone who is interested and committed to working toward a sustainable energy future here in NM, including just everyday residents not part of any particular groups.

Energy equity is really centered around improving our infrastructure to assure there's access to not just renewable energy but having energy security across the whole state, including in rural areas, where it's already been mentioned that it could be improved.

Daren:

I'm an engineer with the New Mexico Energy Minerals and Natural Resources Department, Energy Conservation Management Division. We serve as the state energy office funded by the US Department of Energy and the State Energy Program. We apply for grants and then serve as a funnel point for a lot of the other things we want to talk about today like the IRA and the infrastructure law that came a year before that.

For me, as an engineer at the department, my role in equity is just making sure people have the information they need to make informed decisions.

I like the presentations earlier today because it talked about the visual and the audio parts of our learning. As a father with an adult son with severe autism, I know that pairing instructions with a picture are vitally important to his understanding. And, I'm not saying that everybody needs that level of support. But, I think we all when we're talking about energy we don't normally talk about on a day-to-day basis, people do need pictures and other forms of information to get their point across.

Priscilla:

I'm the director of the Southwest New Mexico Council of Governments in the Catron and Grant counties. I'm also the chair for the State Association of COGS. I'm involved in making sure that I understand all the needs in the state of New Mexico and then some. My stakeholders and my region encompass; city governments, county governments, mutual domestic water consumers, associations, hospitals, head starts, and everything in between. Whatever is a need in my community is something that I take full passion in working on.

What energy equity means to me is about taking advantage of our natural resources. Most importantly, how do we do that in the most rural frontier communities? And, understanding what that really means in frontier communities because rural is one aspect, but Frontier is a totally different aspect.

Gabe:

I'm a professor at the University of New Mexico School of Law. I co-supervisor, natural resources, and the environmental law clinic, where we, in our students, represent all kinds of underserved community groups and residents including energy issues. I also write and teach about energy including a focus on energy equity. For me energy equity has two components that I'm really concerned about. One, we should be working towards universal access of affordable energy services. Unfortunately, we live in a state and a country where we've got lots of folks who pay 15%, 20% up to 30% in some counties of their income towards their electricity and natural gas. A lot of us don't even think about our electricity bills. There's a variety of tools that we can use to try to make sure that everybody has access to affordable energy. And arguably that's an emerging human right across the world.

In the second part that I would identify as an important component of energy access as we transition to a zero-carbon world—that the benefits of the transition are distributed co-equitably to everybody. It's not just folks like university professors who have a stand-alone house and who can afford rooftop solar panels. My electricity bills are around eight dollars a month as opposed to somebody who is paying 20% of their income for electricity and does not have access to the benefits of these federal subsidies that help purchase rooftop solar.

Jim:

I'm the executive director of the Renewable Energy Industries Association of New Mexico. We were founded in 2004 before there was a solar industry. We've now grown to about 60-plus companies such as; solar developers, solar installers, financial institutions, and universities. Our mission is to support, promote, and advance the transition to renewable energy in New Mexico. We do that at the Public Regulation

Commission and at the State Legislature. We work with various jurisdictions and permitting issues.

For me, equity means fairness. We all share in the good and the bad. I think that the transition to a zero-carbon economy offers a great opportunity for us to share and to share in a good and fair way.

What needs to be done to ensure federal funding achieves the intended result in New Mexico, and includes equity at every step of the implementation?

Daren:

The IRA and, its predecessor, the Build Back Better Act, the Bipartisan Infrastructure Law (BIL) that was passed the year before, I bring those up because they do really merge. They blend quite closely together. We're working on grants that cover both of those funding sources out of the US Department of Energy. Equity is built in. Just from the standpoint of where the money needs to go, according to the Justice 40, and the other targets. This latest grant opportunity that came out to us, the one that a lot of people have been calling the governor's office on. Our office will manage the whole rebate program. The formula right now shows that we need to put 51% of that towards low income. That's anybody 80% below the area of median income in your county. We were just looking at those numbers, just hearing it's vastly different across the state. If you're in Los Alamos, county, the area median income is very high. If you're in another county, it's much different. We still have to work out those details of how they're going to assess that area median income. Equity is kind of built in as far as where the funding goes. But again, the outreach. How do you reach those people to say, this is a good deal for you? If I knock on the door and say, I'm from the government, I'm here to help. The door will slam and that will be the end of that story.

We're working closely with a state program that we're ready to launch, called the "Community Energy Efficiency Development Grant Program", that is going to be asking communities to send in grants to our office. And then

hopefully we can take some of that federal money and supercharge that program. These would be small communities throughout the state or can be large. But would take care of disadvantaged community members in those communities. For example, Clayton, New Mexico identifies 20 homes needing help. It's not a poor person program, it's a poor housing program. We're fixing homes so that when the unknowns of the energy transition happen, like solar and wind, the individual will be ready.

Wind and solar are cheap sources of energy but how do you shore that up to make it a reliable source? We don't know what the end cost is going to be. The first step is to make all of our lives more efficient, so that we don't rely on what could happen in the cost of energy in the future, because nobody has a crystal ball. We must make sure everybody is ready for that transition, so they are as efficient as possible today to be ready for tomorrow. On the other side of that, there's a big push for electrification. But in certain areas, like in the northern part of the state, you start changing your heating to electricity—suddenly, it's expensive. We have state tax credits that are very well suited for low-income individuals because they're fully refundable and they're double the amount. There's a lot of things you can do in your home right now through these tax credits that are available. But going back to the kind of the “do-no harm mentality” of don't electrify someone's home that already is getting heating assistance, it's going to end up raising their bills. That is just a non-starter. We don't want to go there. There are ways to debate that but first you must button up that home so that it's more efficient. Then you can start talking about electrification. But to do it backwards is a bad idea and that doesn't work well for equity or any other purposes that we're trying to move towards.

Priscilla:

I think this is a fabulous question because I've dedicated my 36-year career to do exactly that. I want to just go back to what these individuals talked about this morning. You cannot build trust if you don't know about your community character and understanding the history. Because I can tell you as a person, I've worked my career in working with

border communities in colonial areas. They have minimal infrastructure. What it must feel like to live that life and not have those amenities to now, living that life for you to have those amenities. Those are the amenities that you appreciate the most because you never had them. When I talk about that, I think we need to build trust with those communities as a first step. How do we do that? I'm a person that was born and raised in my community. In my career, I want to tell you it took me about a good 10 years to build trust in all the county and unincorporated areas that I work in. And it was very eye-opening for me because I thought I automatically had that trust. And that's not the reality. How do you build that trust? Number one, by understanding the community character. What is it that makes the community thrive? What is it that's personal to them? How I build trust is by sitting at their kitchen table having a cup of coffee. And talk about what those things are important to them. That's how you start.

I want to also emphasize, none of this can be done if we don't build capacity at the local level. You cannot build capacity from 250 miles away. I'm a couple of hours away and make every attempt to build capacity in the way that I can. But what we're seeing in some of these most rural and frontier communities is a large amount of turnover in the workforce that doesn't allow to build that continuity over time so, we will have that consistency. People laugh at me when I talk about my projects. Because I have that continuity and consistency, I can tell you what year that project was done, how many linear feet and how much money was awarded. We have to focus on the capacity building at the local level. And what goes along with it is hand holding. We cannot give people a piece of paper and say here it is figure out how to do it. That's not how it works. We need to mentor them. We need to show them. We need the visual because everybody learns differently. Educate, educate, educate. If I can go back to my dad from Mexico who came to the states illegally said, “the one thing you can do is learn everything you can learn”. And I've done that. I've done everything from working on wastewater systems to working on recreation facilities in my career. We have to educate people about what those things are. When you come from our frontier community, you only know what's in front of you. You don't really know what's

going around you. As we look at those opportunities, we need to look at how we get people to training programs, or we get the training to the people. In some cases where we have a university, that's an easy fix, but in rural communities and companies we have to take the training to them. That's what we're doing in our area as well.

Lastly, I think that one of the successes that I want to talk about in my region is how we pilot projects so that people can see the successes. I have programs in my organization now that started out in one county spreading to 33 counties. And that just came from a pilot now providing literacy for children across the state of New Mexico. So those are a few of my ideas. I could share a million more. But obviously that is an indication of my passion in helping the most rural and frontier communities.

Gabe:

The Inflation Reduction Act and the Bipartisan Infrastructure Law are huge opportunities. There's \$450 billion just for climate and energy projects. As Darren said, equity is baked in because 10 years ago, young people started fighting for the Green New Deal together with some champions in Congress. Those principles changed the climate movement in a way that when I started my career just wasn't there. It was thanks to their work that the Inflation Reduction Act focuses on equity in almost every single climate and energy piece. There's specific language that deals with equity with low-income folks with ensuring that these benefits get spread widely. But it's not self-executing. There are some things like tax credits for heat pumps that are automatic. Many credits, grants, and others you have to go after. Daren and our colleagues in state government are doing that. They've already submitted notice. They're going after some of these big funds like the Climate Pollution Reduction Fund and the Solar For All program. There's also lots of money for non-profits. The Environment and Climate Justice Block Grant Act has over \$5 billion just for non-profits to focus on energy justice. Unfortunately, they want to see big projects, big visions.

The real challenge is this money is going to go out the door and be committed quickly. Like the next year and a half. I can tell you that it is a real challenge for the non-profits that we

work with to try to even figure out which buckets of money are out there. How do they align their objectives with this money? Do they really want to put in for a federal grant that might subject them to congressional oversight? These are huge questions. There are some models out there. There are states like Minnesota for example, just recently passed the law that provides up to \$30,000 dollars for any non-profit that says, we're going to apply for one of these federal grants and that \$30,000 dollars goes to grant writing consulting. There are some models out there, but the real challenge is how do we build that capacity in a durable way in our state to be able to go after this money and use it and to have that big vision so that we're not just going after low-hanging fruit but that we're trying to take advantage of billions of dollars so that we can envision someplace where every low-income person has an energy efficiency house. A home that doesn't have indoor air pollution and has the benefits of rooftop solar. Those are the kinds of big ideas the federal funders are looking for. It can be a real challenge to get there. There are some models out there that we can look to.

Jim:

A thank you to the Biden administration for being aggressive and going after that for a long time. That was a heavy lift. And they got it done. We are an affiliate of CIA, Solar Energy Industry Association in Washington, D.C. They were a big part of that. We are also appreciative of our congressional delegation.

I would like to mention a couple things on the Inflation Reduction Act. The direct pay option, I think, is huge. The direct pay option enables a non-for-profit or a place of worship to receive a payment equal to the full value of tax credits for building qualified clean energy projects. That's huge, because I can't tell you, over the years, when I used to be in the actual solar business, how many non-for-profits wanted solar but couldn't take advantage of it as the tax credit. They couldn't get. There are some important adores for the tax credits and those adores include 10% for domestic content. That means it's going to help bring back manufacturing. Not all of it, but some to the United States. The largest solar manufacturing plant that was announced since the inflation reduction act is in Dalton, Georgia.

Where the San Juan generating station is but now shut down, I believe they would qualify. Qualified low-income building. These would be subsidized housing 20% atter. Low-income communities 10% atter.

These are things that I think are going to help to drive equity and basically help to also bring more jobs and by the way with a 10-year runway. That gives a lot of certainty. I think we are going to take off. If I was a young person, I would be looking at getting in on this, whether it's on the trade, project management or engineering. This is going to be a whole lot of opportunity for everyone.

Arcelia:

I think this is a very important question and something very much what we try to do here in our organization. Because it's not about just making sure that there's a fact sheet or a notice somewhere, right? It's about putting in the work to make sure that it's made accessible to the larger population and all pockets of our communities here in New Mexico. The central piece from a lens of justice and equity is making sure that accessibility is central because sometimes certain groups of people that are in the community are assigned to distribute these resources, not always, but sometimes these groups are not always indicative of what the larger population is represented. Sometimes the larger population could be a bigger immigrant population, be whatever the case is. They're not reflected in the people

holding the power and the ones that have the resources to distribute out and receive that information as well. Some of what we do is go out to communities especially in rural areas. We partner with different organizations and grassroots groups and even residents themselves to make sure that when there is an opportunity to speak on behalf of something that's being proposed, in our case its utilities and renewable projects. We let people know about it, keep them informed. But then if people don't have the capacity or the resources to get involved, we'll have that existing relationship that was talked about. We can understand and help of that leg of the work. We can help draft policy for example or if it's a comment period. People who don't have the time to make it before the deadline can send in comments. We can come in and say, we know this group is concerned about water conservation and the water crisis. We understand it's about time. Could be about having housing security, about having job security, wherever these groups are coming from, whatever the priorities are from these individual areas, we can come in and fill that gap. It takes a lot of the work and burden off of having the individuals needing to put in that work who want to be good citizens who don't have time, have jobs and concern about just survival. Making space and creating pathways for people to be able to get involved is really going to be important. As we're looking to distribute very important resources, making sure that they're being allocated properly and mindful of making sure that it's not going to a



demographic of people more privileged, having resources, connections, means to receive this information, they speak the language so they can understand the information. Making sure it's made accessible at every step of the way to the people that needed it and was intended for and not being allocated in other ways away from people that would benefit from it.

I'm going to let you all choose which question you'd like to answer. One, tell us about what you've noticed that seems promising in the energy transition space in New Mexico? Two, is there some issue or a question that you've been pondering?

Arcelia:

I do have a question that I would love to hear from our panelists. When we're looking about bringing people to the table and making things inclusive, oftentimes you want to be reaching out to communities that have lower resources. In what ways can we be working collaboratively across communities, stakeholders, decision makers, etc. and continue improving and moving towards a place of justice and equity and equality without burdening historically marginalized communities along the way?

Priscilla:

I'm going to tackle the question about what seems promising in the energy transition space. When I look at my region, I see everything from geothermal, solar, wind, and many other amenities. My four counties have been in the top five of the highest unemployment rates. I think about what it can do from that perspective in creating jobs. That's one piece. I also want to look at it from a little different perspective such as infrastructure. If we could reduce the cost of utility rates for individuals and families such as water rates, wastewater rates, whatever is impacting the utility sector, for some people, it would make a significant difference. We know it would make a really big difference for seniors who are living on social security. What we see in those fields is the continuous

increase of rates. Here in New Mexico, we're privileged that are rates are much lower than in many other states. It's something I think about from that perspective.

Gabe:

I'll also talk about some things that are positive foundations to start from. They represent some hard-fought victories for people who have been working on energy equity on the ground. Daren already mentioned the Community Energy Efficiency Development Block Grant Act. The idea here is that energy efficiency is such an important policy. Reduce energy bills, reduce demand on the grid and therefore reduce climate pollution. I'll give a shout out to Ona Porter, Founder of Prosperity Works who really invented this model because of the work that her organization did in partnership with groups on the ground who already know specific communities that have high, high poverty and that have high energy burdens. They worked with those folks who didn't necessarily know a whole lot about energy but did know the community members who lived there and were able to knock on those doors and ask, could you use a more efficient refrigerator? Because that's one of the ways that we increase energy efficiency. We have a model that can take some more of this federal money and can allow communities to work with local governments and the NGOs who already know the areas that have the largest energy poverty. And bring those dollars to bear so we can hopefully increase the efficiency and reduce the bills of the people who most need it. It's a great starting point. But it hasn't even started yet. We're waiting for the rules to come out and the grant opportunities and hopefully we can leapfrog and push forward with all this federal funding.

The other one I'll talk about is the Sustainable Economy Task Force and the Sustainable Economy Advisory Council. These were, again, brought by community organizations; Public Power New Mexico, Center for City of Policy, Somos un Pueblo Unido, who are some of the organizations who established a task force of cabinet secretaries and an advisory committee made up of community members, members of Native American tribes that have created

a plan and working to revise it, on ways to move our economy away from fossil fuels in an equitable way. And those same organizations fought for substantial funding for energy transition funding. We'll see how well this can be implemented. Funding will go to things like economic opportunity and workforce development. As we see jobs being created in this field, we want to make sure those jobs don't just go to the people who normally get those jobs but go to the communities that have historically been left behind. These are both great examples of foundational policies. There's a lot of work left to do.

Jim:

The focus of RIA is on what we call distributed energy resources. These resources are not the big wind farms and the big solar farms. These are systems that are in the built environment already. If we had solar on top of the Hispanic Cultural Center, on top of Target, or someone's home, that would be a distributed energy resource. It could also be community solar because they're not connected directly to the transmission line. The reason why I bring this up is that it adds resilience. It's more distributed so we don't put all our eggs in one basket. It defers expensive upgrades. We don't need expensive transmission lines like the Sun Zía that took 15 years just to get permitted. A variation on that is something called virtual power plants. For example, in New Mexico, there's approximately 45,000 solar systems behind the meter on commercial buildings, government buildings and homes. A virtual power plant allows you to tie all of those together. In a way, it's like a microgrid, although it's different. But what it does is enable utilities when they want to dispatch all that energy instantly. That's powerful. A big benefit eliminates utilities theorizing about balancing the load. I just saw a presentation about gas peaker plants. Gas peaker plants are historically in marginalized communities. By being able to do this, we can get those out. This is something we are going to be following.

Daren:

I think the role for nonprofits and other groups is to get the word out about some of these programs. We're going to be flooded with money here soon with energy efficiency, electrification, workforce development and Solar for All.

We want to target not just the Rio Grande Valley. We want to target all corners of the state, including Hidalgo County, which the local co-ops trips, 50 times a year, shutting off that geothermal power plant. We know something about that because we permitted that facility. That's the kind of focus we want. There's a lot that needs to be done. Like to Jim's point about microgrids and virtual power plants. But there's also the reality of long duration storage, and the need. If we electrify our heating, our summer peak is going to turn into a winter peak very quickly if the sun doesn't shine very long in the winter and when the wind sometimes doesn't blow at 5am. When it's 5 below or 20 below in Angel Fire, the sun isn't up, and the wind is not blowing you're in a heap of hurt if you don't have some long duration storage or a dispatch or a resource.

PNM's latest models just for the PNM system, is a third of the state's energy. It's a big utility, but overall, it's not that big in the whole scheme of things. They need 100 gigawatt hours of storage if they keep all their peaking plants online and somehow convert them to hydrogen. So even with Paloverde Station, that dispatchable resource of the peaking plants, they still need 100 gigawatts of storage. From a cost-wise perspective, that's building 20 San Juan generating stations. There's a big bill that is yet to be realized in some of this. That's the big question mark. What is that final bill? It drives home the reason we need to double down on energy efficiency and rooftop solar. Anything that helps an individual hedge their bets. I'm from the Midwest. That's what farmers do all the time. They hedge their bets. They store the grain in their silos. If they need another silo, they put another silo in. That's hedging your bets. And that's what we need to do for our people.

HISTORICAL PERSPECTIVES ON THE ENERGY TRANSITION

WHEN WE KNOW OUR PAST, WE CAN BETTER UNDERSTAND OUR PRESENT AND BUILD OUR FUTURE

By **Leila Flores Dueñas** and **Carol Vigil**



Musicians, educators and storytellers Leila Flores Dueñas and Carol Vigil of “Las Flores Del Valle: A Musical Duo” presented a look back at New Mexico’s electricity generation and a look to the future of renewable

energy using song and archival photographs. Together, Carol and Leila research southwestern history, and use music to capture both sentiment and story.

In this presentation, we share how New Mexican Hispanic communities, who make up a very large part of this state, often center their lives on the traditions of their extended families. In the 2020 Census, New Mexico recorded 1.032 million Hispanics. These families tend to maintain frequent contact with one another while making important decisions together to improve their daily lives. Sharing family responsibilities with elders, trading skills, and caring for children require that these families make frequent visits to extended family. For example, *Nuevo Mexicanos* often buy similar products and refer each other to trusted businesses. Hispanos of New Mexico have a vast, yet private communication system that is highly developed and can be tapped to reach New Mexican communities.

Carol Vigil’s great grandmother and father’s family, 1948.





In 1882, Santa Fe still did not have electricity. However, in 1885, the first electrical power plant arrived in New Mexico.



Dawson Coal Mine 1924. Good website on New Mexican history of mines: <http://www.miningartifacts.org/New-Mexico-Mines.html>

Historically, rural Hispanos mostly worked on farms and used wood stoves for heating and cooking. They lived more agrarian lives in the past and continue to live on compound family farms today. For example, within Carol’s parents’ generation, people came and went from their rural homes to the city, back and forth. However, at the turn of the century, many New Mexican families had to seek seasonal work in states such as Utah, Wyoming, Arizona, California, Colorado, and Texas, where they formed new communities and learned from others. Many of these families eventually returned to New Mexico, and continue to form very large families who maintain close relationships today. These migratory patterns have been documented by the Manito Trail of New Mexico. The following song refers to four dried corn fields on a beloved property left behind.

The song “Cuatro Milpas” is about leaving rural life behind.

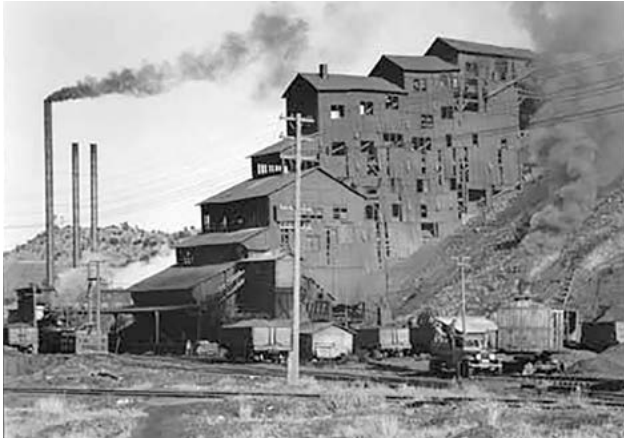
Other rural Hispanos went to work for the mining industry. For instance, on Carol’s birth mother’s side of the family, they worked in the Madrid, New Mexico mines and then migrated to Gallup, NM to work in other mines. Working in the mines was dangerous and affected New Mexican families. Many Hispano family members decided to remove their men from working in mines. This sort of change also left many rural families without breadwinners and forced them to move to urban areas of the state.

In 1930, the census tallied 316,501 residents across the state, with 106,816 of those were from urban areas. By 1940, the state population had increased by more than 65%. Additionally, in 1940, the New Mexico total urban population

Cuatro Milpas

*Cuatro milpas tan sólo han quedado,
Del ranchito que era mío, ¡ay!
De aquella casita tan blanca y bonita,
Lo triste que esta.
Si me prestas tus ojos, morena,
Los llevo en el alma,
Que miren allá.
Los despojos de aquella casita,
Tan blanca y bonita lo triste que esta.*

Only four cornfields have remained,
Of the little ranch that was mine, oh!
Of that little house so white and pretty,
How sad it is.
If you lend me your eyes, brunette,
I carry them in my soul
Let them look there.
The remains of that little house,
So white and pretty how sad it is.



A photo from circa 1935 shows an anthracite coal breaker and power house buildings in Madrid, New Mexico. The history of mining in New Mexico goes back nearly five centuries. Lead mining in the 17th century gave way to coal and gold mines by the 19th. By the 1890s coal mining had become big enough to require a railroad spur to connect the area to the Santa Fe Railroad, and a seven-story anthracite coal breaker was built. Madrid became a Company coal town, with inhabitants living in prefab cabins shipped out from Kansas.

Within a decade of this photo, taken around 1935 by an unknown photographer, the coal industry would decline as natural gas gained in popularity. By the 1950s the last Company had pulled up stakes, most of the residents moved away, and the railroad spur was removed. In recent decades Madrid has become a popular art colony and tourist destination along the Turquoise Trail (New Mexico State Road 14.)

Source: "Anthracite coal breaker and power house buildings, Madrid, New Mexico" (Negative Number 054262); digital images, "Palace of the Governors Photo Archives Collection," New Mexico History Museum, Santa Fe, New Mexico Digital Collections (<http://digitalnm.unm.edu/cdm/singleitem/collection/acpa/id/5766>.)



Track homes in New Mexico.

totalled 176,401. The 1940 Federal census also found that 35,500 people were counted in Albuquerque, but by 1950, it had more than doubled to about 96,815 residents.

Moving from the farm to the city has had an influence on the creation of the urban grid.

Track homes built in the 1940s and 1950s make-up many of our urban homes today and have limited electrical systems that can be easily overloaded as families grow.

This next song, "Little Boxes," is about this time in our nation's growth of suburbia.

The song "Little Boxes" is a social satire that addresses the development of suburbs and is associated with conformist middle-class attitudes. It mocks suburban tract housing as "little boxes" made of ticky-tacky, or the shoddy, inefficient material used in the construction of homes.

Little Boxes Malvina Reynolds

Little boxes on the hillside,
little boxes made of ticky tacky

Little boxes on the hillside,
little boxes all the same

There's a pink one and a green one,
and a blue one and a yellow one

And they're all made out of ticky tacky,
and they all look just the same

And the people in the houses,
all went to the university

Where they were put in boxes,
and they came out all the same

Today, Hispano families now make up a large part of urban middle-class communities and are living in these older tracked homes. When making decisions about who should have access to governmental programming to conserve energy, Nuevo Mexicanos should be considered to help make impactful steps in developing an ideology toward renewable energy.

NM EPSCOR TOWN HALL

EMPOWERING NEW MEXICO COMMUNITIES

By **Bobby Jeffers, PhD**, NREL Senior Resilience Research Advisor, **August 9, 2023**

Bobby Jeffers is the resilience R & D advisor for the Energy Security and Resilience Center at NREL where he applies system dynamics and power engineering principles to diverse problems concerning the intersection between social, natural, and engineered systems. He has a history of working with a wide variety of stakeholders such as states, municipalities, electric utilities, the military, and other community representatives to develop long-term holistic solutions to resilience, sustainability, affordability, and social equity challenges.

Currently, he supports NREL and the U.S. Department of Energy in developing cohesive and broad strategy on resilience R & D, prioritizing national and international engagement, and multi-stakeholder coordination. He began his career at Idaho National Laboratory as an engineering and environment systems modeler and power and controls researcher. Dr Jeffers earned his master's degree in electrical engineering and power systems from Virginia Tech and his doctorate in environmental science from Washington State University.

I want to talk today about some of the work that we're doing directly with communities that's funded by the Department of Energy, some of the opportunities for communities to

be engaged at the federal level as well as at the local level and to get, potentially some technical assistance from the national labs to do that. We have a national lab in our backyard here at Sandia, but there's 17 DOE, Department of Energy National Laboratories throughout the US.

NREL is the only one that's prime contract is with the Energy Efficiency and Renewable Energy Office within DOE. NREL has a special mission around development of renewable energy technologies and integration of those technologies into communities and onto the grid. Sandia and Los Alamos National Labs also do energy work with us, but their prime contract is with NNSA. We all do work together to solve the nation's energy challenges.

I had to work resilience into this somehow and then get into a few of the different programs at DOE that support community engaged research. This is not my personal vision. This is NREL's vision, hand-in-hand with the DOE.

The vision is a cleaner energy future, not just for some, but for all. There's a lot of data that show that the energy transition now is happening, but it's not yet happening for everyone. We want to move from an area where there's clean energy for some, and we're able to decarbonize, to an area where there's clean energy for everyone, and

we're able to decarbonize with a lens toward equity.

It doesn't mean just working in ivory towers. It means opening the doors to those ivory towers, enhancing the diversity within our laboratories, working with diverse communities directly, and having diverse partners across the nation.



You don't have to look very far in New Mexico to see quite a bit of clean energy development, and quite a bit of fossil fuel retirement. It's on a decent track to meet some of the IPPC targets and the Paris Accord agreements. We're not moving fast enough, but in the right direction. However, of that development, 21% in 2021, up to 44% in 2050, these projections by the EIA are always very conservative. We're really looking at exponential growth in renewable development. What we don't see is growth for all communities. Still, where we're working across the country, we see black majority census tracts that are installing 69% less rooftop PV.

We see the least affluent 20% of households spending more on transportation, more on energy, more on just meeting their day-to-day needs. We see 70% of American households living in neighborhoods where the combined housing and transportation costs are just not affordable. When we look at this wallet share, we look at how much of your overall income you spend in energy, we see vast inequities across our system. Affordability is not the only dimension that we're looking. There are also not wealth generation opportunities for the lowest income or the most disadvantaged communities in America. There are not resilience development opportunities. And we see in many areas, not all, but in many areas of the United States, the grid is out for longer and more frequently in those disadvantaged communities than in the richer neighborhoods. These are all sorts of things that make up this complex equity challenge for the power system, for our overall energy system, and for our country.

The DOE and the Biden administration have committed to making justice a top priority for all work across the federal government, but specifically for our energy work. I had the pleasure of meeting Secretary Granholm a couple months ago. She's on the ground in Puerto Rico trying to figure out what are the energy challenges, how do we meet communities where they are to solve those energy challenges, and then what does it look like from the top down?

What do we need to do differently in DOE to make sure that these communities aren't being abandoned?

One initiative spurring a lot of this work is the Justice 40 Initiative. It's an executive order that 40% of overall benefits from federal activities flow to disadvantaged communities and are trackable to disadvantaged communities. That doesn't mean that it's only 40%. There are several benefits that we can't track. We know that a lot of the federal activities, something like only 33%, maybe only a third, can we track where those benefits are going. Of that third, this administration is committed to making 40% of that make sure that they go to disadvantaged communities. It could be more. I think it's a start. We've never seen this kind of mandate to track and make sure the benefits are being received.

That's not just clean energy. It also means affordable and sustainable housing. It also means training and workforce development. It also means making sure that we target environmental justice communities and reduce the pollution and even the legacy pollution. We have a lot of that in New Mexico. These are the policy priorities that DOE have set out. And I had the pleasure of working with this team that was putting together these policy priorities and providing some technical assistance to them.

I was very happy to see as a resilience R&D advisor that increasing resilience in disadvantaged communities is one of the policy priorities. This equity approach is multi-dimensional. We're not just targeting affordability, although that's extremely important for our communities. We're targeting environmental exposure and burdens. We're targeting resilience. We're targeting energy democracy and increasing the procedural equity. And we're targeting generating wealth in communities so that it's more of an intergenerational equity and it's not just sending some money their way and hoping it all works out.

I'd like to think about why resilience is one of the core factors of an equitable system. I think major heat waves that we've just experienced are here, the events that we're seeing with climate change. I think the western grid is seeing a lot more issues where New Mexico is subject to what might be happening between California and Wyoming and Colorado. The western interconnect is all

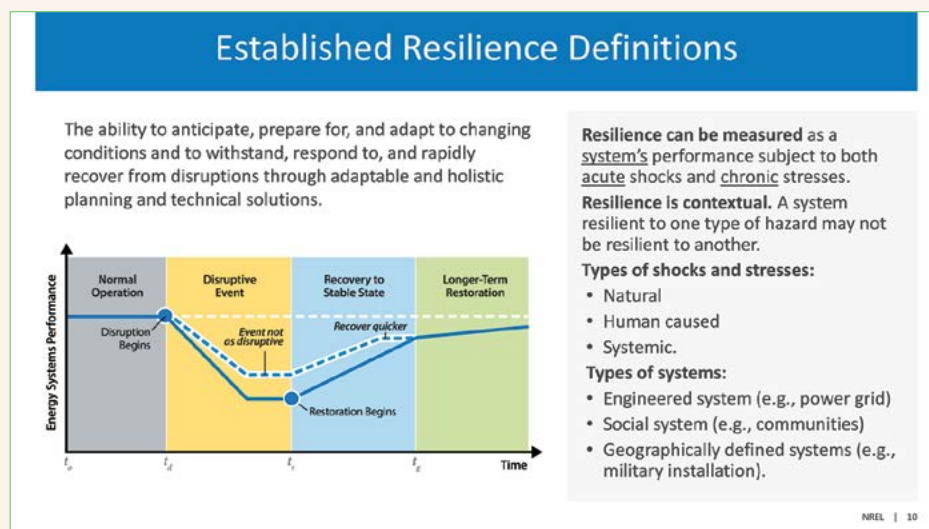
interconnected. We're seeing a lot more frequent and extreme events. Resilience is really what we do to prepare for to withstand and adapt to those events.

And what we see is in many disadvantaged communities, that has been underinvested. Those communities are subject to either longer duration or more frequent disruptions. You can't necessarily just leave town. You can't necessarily go to a hotel when the power goes out. You may have loved ones you need to care for. And you may really have resource limitations that doesn't allow you to do some of the things that the richer communities are doing like buying a backup generator or buying a backup battery on your house. That's what we're talking about when we see equitable resilience. Not just decreasing the frequency and the duration of those extreme impacts to those communities, but also focusing on the coping mechanisms, focusing on enabling those communities to get their critical needs met, to make sure that their well-being is targeted as the outcome and not just their resources.

When a disruption happens, what we're trying to do is not only limit how many people suffer that outage, but also recover more quickly. And that's what resilience is all about. But classically, the utilities and the researchers and industry at large has put kilowatts or kilowatt hours on that y-axis (see graph Established Resilience Definitions).

What would happen if we put human well-being on that y-axis? So that's really what we're talking about when we think about an equitable resilience posture. One of the things that we're doing for this is developing new metrics and new quantitative approaches.

One of the ones that I personally had a strong hand in is called social burden, where we are calculating how

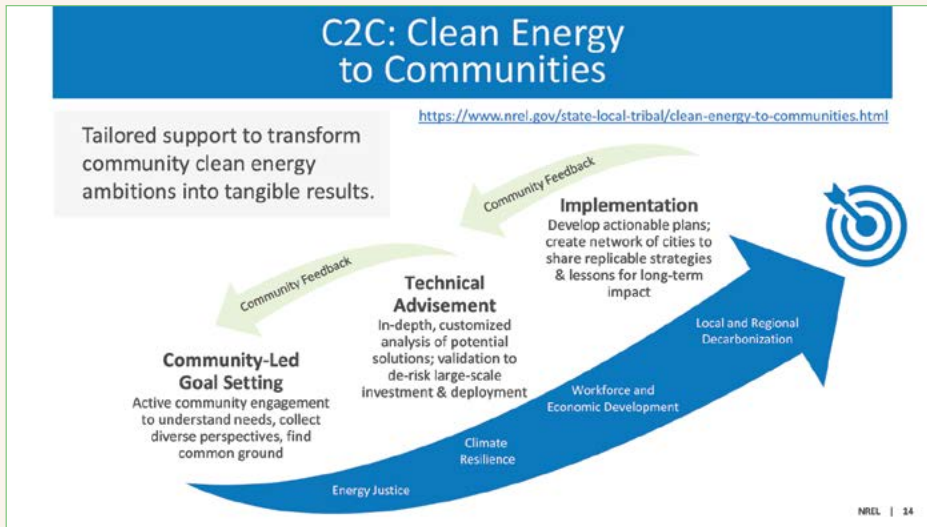


hard people are working during a major disruption just to meet their basic human needs. We've set up some mathematical formulations around that and included it within planning processes.

While I was at Sandia, we designed 159 microgrids to really reduce that social burden and really target as the outcome, not just kilowatts served customers as the outcome. When you build those, you start to think about these resilience hubs with those communities. You start to say, I need to get in the community and ask them what they're going to use during a power outage. It's just a completely different way of thinking. And I really have enjoyed seeing the fruits of this new approach born out in a lot of community work.

I'm going to end with a few examples of programs. These are not all the programs at the DOE and there's a new one every week. But a few Departments of Energy programs at the federal level that are helping us as laboratories work directly with communities to provide technical assistance and really take them along through that journey in the energy transition.

There're more than 2,000 communities that includes tribes and local jurisdictions that we work with. We also work directly with utilities, businesses, but a lot of this work is directly with communities themselves.



The first program I'd like to talk about is the CEPA program. C2C, Clean Energy to Communities. C2C program is targeting the energy transition.

How do we help the communities decarbonize in a way that works for them?

What I like about this program is there's different levels of technical assistance. There's a phone a friend option where you can just get about 40 hours of technical assistance. You might need the labs to tell you what's out there. How should I approach this particularly hard problem of energy transition in my community? There's also direct technical assistance where the labs are working to help plan with communities. There's cohort development where the labs are supporting communities to come together and discuss their issues with one another.

The second one is the Communities Leap. We just call it C-Leap for short. This is more on the ground, direct technical assistance, often with

COMMUNITIES LEAP

U.S. DEPARTMENT OF ENERGY

Communities Local Energy Action Program (LEAP) aims to facilitate sustained community-wide economic empowerment through clean energy, improve local environmental conditions, and open the way for other benefits primarily through DOE's clean energy deployment work.

<https://www.energy.gov/communitiesLEAP/communities-leap>

U.S. DEPARTMENT OF ENERGY | Communities LEAP (Local Energy Action Program) Pilot | www.energy.gov/communitiesLEAP | 23

ENERGY TRANSITIONS INITIATIVE

U.S. Department of Energy

Partnership Project

<https://www.nrel.gov/state-local-tribal/etipp-technical-assistance.html>

DOE OFFICES AND PROGRAMS

Office of Energy Efficiency & Renewable Energy
Energy Transitions Initiative
Industrial Technologies Office
Grid Modernization Office

REGIONAL PARTNERS

OREAP
Spark Northwest
NREL

NATIONAL LABS

Sandia National Laboratories
BERKELEY LAB

community-based organizations, but often also bringing in the electric utility and bringing in the city government or the local government. There's a lot of pairing and sorting of making sure that the voices of the community are being heard by the planners in the utility and by the city government so that those solutions that are being developed at that scale can flow down to the community or the community can develop their own solutions and integrated into the utilities or city's plan.

What I like about C-Leap is there's a lot of questions that we're allowed to answer in Communities Leap and resilience is one of those questions. It's not just about decarbonization, it's about affordability. It's about wealth generation, transportation, and housing in those communities. We're allowed to think outside the box and not just really focus on the structure of the Department of Energy where you've got one office funding vehicles, one office funding buildings. This is an all-technology and goals approach.

The third is ETIP, Energy Transitions Initiative. Right now, it's a partnership project. It's funded by many DOE offices in partnership with many national laboratories and regional partners. ETIP focuses on rural and remote communities. We do a lot of work with island communities, the cooperative utilities, and the communities that they serve. What I like about ETIP is it causes us to think outside that normal urban system that we focus on so much so that we can really bring solutions to a lot of Americans that are also disadvantaged that live outside of our urban centers.

I'll end with a lot of the works that we do with the Indian Energy Office. We support and work with our Native American communities and really make sure this is a different relationship than we have with a city government. This is a government-to-government relationship. We need to make sure that we respect sovereignty. How are they approaching the energy transition and how can we support that? And it includes all scales of technical assistance from just simple communications and outreach to direct technical

assistance and capacity building, training, workforce development and doing big analyses. How do we decarbonize by a certain year those types of analyses where we really make sure we're checking all the technical boxes. And then do a lot of programmatic support with the Office of Indian Energy to make sure that their funding announcement opportunities are truly going to be equitable and be responsive to the needs of our Indian Energy community.

I want to mention that at the laboratories, we are having the hard conversations about how we embed this goal of equity lower in the technology development chain. It's not just about deploying these technologies, although there's a lot of money out there for that right now with IIJA and IRA and the various federal programs that have come out of that. It's also about ingrain as a goal across our mission space. When we make a breakthrough in clean energy technology, who are we doing that for? Are we targeting the right goals for that breakthrough? You might want to target something like operations and maintenance costs, make that technology a little bit more maintainable, more affordable, more usable as you start to develop the technology, not at the end. This is starting to become more and more ingrained in a lot of the work that we do at the labs. I'm excited to see that and make sure that we just focus on accelerating that transition, not stopping now, but making sure that includes a diverse community, not just at the labs, but in who we're working with.

MICRO GRIDS AND SUPERHEROES

By **Shaun Beyale**

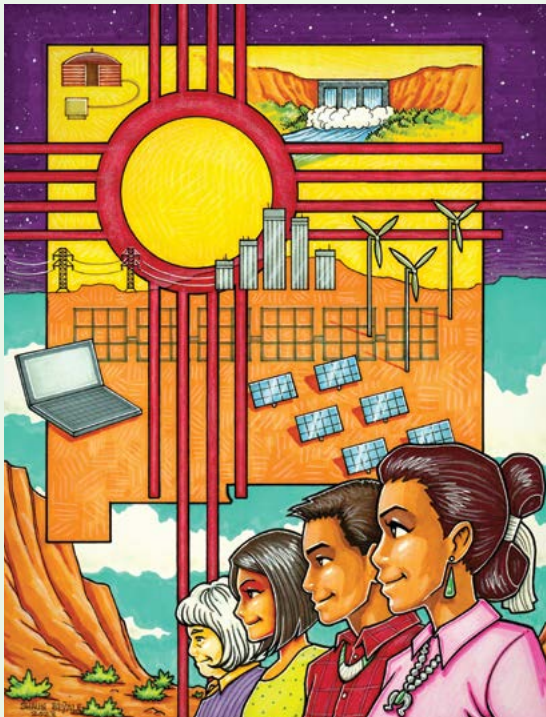
I'm an indigenous artist from Bloomfield, New Mexico. I create comic book style artwork. As a participant during the community conversations at San Juan College, I listened and learned from people in the community about safe and affordable energy. Because I'm from the Navajo Nation, it's like living in a third world country. Even though I live 15 miles from town, I didn't grow up with electricity and running water. This was a hardship for me and my community. But it made me who I am as a person. Many times, when I was younger, I created artwork. Comic books were a source of entertainment, a source of escapism. Even though I didn't have

electricity, I still could have entertainment like comic books. Art empowered me to rise above and become who I am today.

I created three illustrations to reflect coming together as a community. The first one was based on the interactions at the San Juan College. There was majority Navajo there, so I wanted to show a little bit of the Navajo community. You can see the landscape in the background, the New Mexico state symbol and all this computer technology we have been talking about going into the future. When I was young, I didn't have internet or computers until I got to college and that was 20 years ago. As an artist I utilize technology to express myself and promote my art and my culture. Something much needed in our community because I think it can help hold on to my traditions but look to the future with the use of technology.

Now we have internet and Wi-Fi. My cousins and my nieces and nephews are growing up with technology. I talk to them about they're the future generation. Its up to them to be the next leaders. I want to empower them through my art and still be who I am while at the same time do something that's beneficial for the community. I illustrated a little bit of everything, the micro grids, the solar power, the turbines, everything that we could utilize in our community.



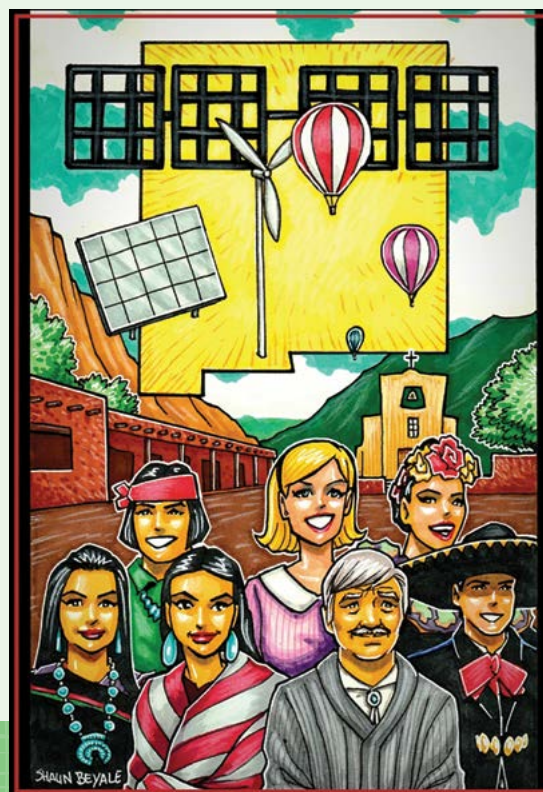


The second drawing captures the different cultures of New Mexico. I wanted to show Santa Fe because I attended and received an art degree from the Institute of American Indian Arts. Going to Santa Fe was the first time living outside of my community. Santa Fe is a different place because it's such a melting pot of cultures. Going to art school, meeting other indigenous tribes, and learning about their culture inspired me to show a little bit of the variety of cultures that we have in this part of New Mexico. You should recognize some of the historical monuments in the background and popular images like the balloons. Like the others, I also wanted to show technology, microgrids and energy sources.

The third illustration was a fun piece because it pushed me outside of my comfort zone of drawing superheroes. As an artist I feel it's

my responsibility to share my gifts with the community. Superheroes get their power through my art, so my power is to create art to share it with the world to empower others to be superheroes. This image has an urban theme

created for the Albuquerque Town Hall. It illustrates global cultures, different ages, the landscape, technology, and the Rio Grande. When I was younger, I remember the Rio Grande being full. How I wish one day the Rio Grande would return to its full glory. If we work together towards the future, I think we can build it back up.



TOWN HALL THEME GROUPS

Town Hall participants chose to participate in one of four breakout groups. Facilitators led the breakout groups to assess New Mexico's greatest opportunities, threats, challenges, and urgent needs, and helped them to develop policy or systems change solutions. Participants prioritized and refined their three top priorities into recommendations which were presented to the full group in the final plenary session where each recommendation was reviewed, refined, and voted on by participants. All the recommendations achieved 90% support or higher and are listed by topic, not by priority.

BREAKOUT GROUP THEMES

Regulation: NM Energy Transition Act,
Community Solar, & Data

Energy Sovereignty
& Self-Determination

Rural Capacity Building
& Workforce Development

Education and Public Awareness
& Technical Assistance to Communities

REGULATION: NM ENERGY TRANSITION ACT, COMMUNITY SOLAR, & DATA

Facilitators: **Theresa Cardenas** and **Danielle Garcia** Scribes: **Theresa Cardenas** and **Danielle Garcia**

ROUND 1

What's promising to address equity?

- To assist disenfranchised communities, there are many groups organizing around the topic of equity to help facilitate the many incentives at the state and federal level.
- The use of arts and culture in the convening is wonderful.
- Focusing on community voices to work on policy priorities in addressing equity.
- During the morning program, having a historical perspective to frame the conversation is very helpful.
- Equity is a shared value that resonated with participants.
- There are various economic levels of equity that can influence policies.
- Economies of scale matter with large build outs of renewable energy.
- Opportunities to being self-sufficient is at the intersection to make regulations more equitable.
- To make regulations more equitable related to utility rate design; utilities need to have different structures to address equity.
- Having access to batteries is very hopeful.

ROUND 2

Is there anything about regulations, the ETA or Community Solar that contributes to inequities to energy including but limited to access, affordability, and access to clean energy job training?

- There are inequities when the ETA was established amounting to 30 million to loss of jobs, but not enough to replace the losses at and near the San Juan generating station. Adding to the losses are undocumented workers not able to attain support to transition to renewable energy jobs.
- Another inequity is the fact that the oil and gas industry have consistent subsidies.
- There are inequities in policy priorities such as the current utility rate design framework that is not designed for renewables on the grid nor is it designed for low-income households. Do we want a “socialist”, “democratic” or “capitalist” grid?
- Another inequity is that co-ops don't allow to breakaway causing access for rural communities who want renewable energy.
- The weatherization customer waiting list is too long affecting the window of time to use current incentives. That's huge for low-income families, the elderly and disabled.



- Related to the Community Solar Act, rural co-ops are not accessible in some parts of rural communities because they are not required to participate and are limited by Tri-state. There are also issues of outsourced jobs and lack of workforce development.
- Not much is known here in New Mexico about data availability and energy inequities. It doesn't exist. Having broadband access is the first step to data collection and access. Most issues can be seen from every household. Large utilities have access to data that can't be shared with the public. That data collected helps their interests and not necessarily the common good.

How do we develop incentives to benefit front line communities?

- Developing the incentives isn't the problem. Existing state incentives are fully refundable. One issue is that it takes too long for a potential user to research available incentives. A user-friendly way of researching incentives would be very helpful for those who need more guidance and understanding.
- The Energy Star label needs updating to reflect today's economic challenges.
- Weatherization contractors need to have many installers to keep up with the demand. Installations are paid for by the customer, therefore the customer never sees the turnkey service. To make the installation process more efficient, create regional partners. Appliances need to be all energy efficient.

ROUND 3

Identify structural issues that need policy or systems change solutions.

- Not enough public engagement at the PRC hearings and other related meetings. The PRC is so complex resulting in low public attendance at the hearings.
- The current PRC has less visibility and transparency and not delivering the same public service as the past commission. It's difficult to identify structural policy issues if PRC engagement is not accessible.

- The Efficient Use of Energy Act (EUEA) provides the statutory requirements for incorporating energy efficiency as a resource. It directs "public utilities to develop all cost-effective and achievable energy efficiency and load management resources". This law needs to be reworked to propose a flat rate tied to your energy bill. The current law is financially starving the program. This requires immediate action.
- Working with low-income people, who are undocumented, can't access incentives. They fear retaliation if they access community to community programs. As a solution, community partners are needed to conduct outreach and education.

ROUND 4

How would you solve the inequities? What policy building blocks can we build on that already promotes clean energy?

- Creating and promoting a community-to-community model to train a workforce that is paid for by industry developers. The training would be on the job. Hold developers, utilities accountable to finance the training model.
- Create business incentives to hire a local workforce.
- Extend the Community Energy Efficiency Development program (CEED) by 10 million a year for a decade to begin to address the needs of low-income homes and encourage energy efficiency business development. Ask county administrators to administer, like administering the Agriculture Mitigation program.
- Related to the CEED program; create a home energy audit program at the county level.
- Need a better working business model that does not exist to push energy efficiency.
- The current electricity rate design framework to set utility prices is not equitable and must be reformed to ensure a stable transition to less carbon – intensive sources for a customer-centric electric-



power industry. It must be streamlined, simplified and transparent. Ask the legislature to appropriate funding to create a working group to research and propose solutions.

- To help fund the program, require solar energy customers to pay into the Efficient Use of Energy Act Net Metering program through a flat rate instead of a percentage of energy use.
- Energy efficiency incentives do not include costs to homeowners for installation. Ask the legislator to amend the Efficient Use of Energy Act Net Metering program to help solve this problem.
- To improve economies of scale, regional partners are needed to increase the number of energy efficient home upgrades.
- Ask the state legislature to fund a new program to market energy efficiency rebate programs to communities who need them the most.
- Data must be available and easy to analyze for all interested parties – regulators, researchers,

businesses, and community-based organizations to meet the ETA. Ask the legislature to fund an Energy Equity Data Act to:

- Create an open, accessible process to identify high priority data gaps. The process should include multiple government agencies, data collectors (e.g. utilities), researchers, and frontline community representatives and organizations so that efforts to fill data gaps can be coordinated.
- Identify the end outcomes and proposed uses of data for each type of data desired.
- Define the data strategy parameters, who collects, maintains, and funds data management.
- Research other available data sources. Researchers, regulators, advocates, and community organizers may be entitled to data that already exists but has not been previously published or publicly disclosed.

ENERGY SOVEREIGNTY & SELF-DETERMINATION

Facilitators: **Krystal Curley** and **Melissa Toledo Ontiveros** | Scribes: **Andra Kiscaden** and **Selena Connealy**

ROUND 1

What is missing from the previous conversations about energy equity and sovereignty self-determination, and local choice?

- Not thinking about equity across the state.
 - The ecosystem isn't contained in NM.
 - Transportation mechanisms are missing for Tribes, Pueblo's and Nations. There are more issues with outside workers coming into communities.
 - Not using historical measures or knowledge to inform decisions leads to a lack of trust.
 - Continued disparities across sectors and within makeup of leadership.
 - Navajo Nation hasn't revised energy policy. The regulatory framework has not caught up to progress or projects/agreements that are underway or proposed. This may be viewed as a top-down issue.
 - Are resources available to address grassroots needs?
 - Resources are not flowing into communities and promises are not being kept from Tribal Leadership, Federal government, or corporations (Navajo Nation).
 - Colonial mindset and quick cash from agreements are holding back progress or the ability to think across the ecosystem and/or globally.
 - Constitutional measures may be needed to codify sovereignty.
 - Are there ways to ensure energy companies aren't inherently exploitative? Can they be required to stay in communities and do what they said they would?
 - Can we create channels to get money directly to community leaders and redefine what the community is?
- Critical skills of writing, research, etc. and more capacity building in communities is needed to be able to respond to these changes.
 - Navajo Nation- Tribal leadership needs to return to fundamental law to be able to accomplish or enact policies that benefit the community and for resources to flow down to where they're needed.
 - Everything has to flow through Tribal government which causes delays and creates complexities.
 - The Navajo Nation has its own EPA but anytime it is involved progress isn't rolled out to communities.
 - Lack of trust between and within communities is a key issue.

ROUND 2

Is there anything about sovereignty, self-determination, and local choice that contributes to inequities but not limited to access, affordability, and access to clean energy training?

- Local or small issues aren't given the attention that large corporate issues and initiatives are given.
- There is a lack of capacity in Tribal communities to full take advantage of available resources.
- Communities feel it's too hard to go after federal opportunities. There are too many barriers.
- There are models that provide funds/resources to communities to apply for and implement federally funded projects.

- Sovereignty doesn't inherently lead to inequity. The systems that are in place do. Tribes are defaulting to a Western science model to develop energy policies. There isn't cultural application, historical acknowledgment, or understanding.
- The Navajo Nation has served as a middleman to enable extraction. Sovereignty would mean total ownership. We have to look at what sovereignty really means. There is only one entity providing utility services on the Navajo Nation and it cannot provide the service that is needed. The infrastructure does not exist to make Tribal utilities successful on the Navajo Nation.
- The Navajo Nation functions as a territory. The Tribe does not "own" the resources underneath the ground.
- All policy should be grounded in fundamental law because equity is built into the system. Federal timelines and Tribal government systems do not allow for use of fundamental law.
- We need to acknowledge the differences between Tribes, Pueblos, and the Navajo Nation. These differences need to be taken into consideration when developing policies and timelines.
- Convening the Community happens under frameworks that are inherently excluding community.
 - No access to broadband or data, no community understanding of technical language, community is not even aware of the discussions that are being held.
 - Critical information is not being given to communities.
- Government doesn't necessarily represent the people or have their best interests at heart.

How do we develop incentives to benefit front line communities?

- Give stock ownership directly to Tribal community members in any corporation involved in extraction on Tribal lands.
- The Navajo Nation has coal. Coal is required for silica which is needed for many renewable technologies.

- A better understanding of how to protect Tribal communities from mining.

Identify structural issues that need policy or systems changes.

- There is no such thing as clean energy, just decisions about trade-offs.
- Since a trade-off is required, you should return to Tribal beliefs about what an acceptable trade is.
- You have to know the community to know what the values are.
- Consider how energy will impact food systems.
- Indigenous lands are disproportionately targeted by the federal government for extraction and exploitation.
- Must talk about structural determinants of health and social determinants of health which are interlocked.
- Organizations need to understand and respect Tribal sovereignty.
- History is important and understanding Native American histories helps to understand how to improve policy.

ROUND 3

How would we solve the inequities identified at a local, statewide, or federal level?

- Consider a self-sustaining silica plant on Navajo land.
- Equip youth to undertake energy leadership so they are empowered to move forward.
- Young people don't want to be exploited.
- There needs to be acknowledgment and understanding of generational trauma before partnerships can be established.
- There must be discussion of health, social, cultural, and environmental ramifications of economic decisions and job creation.

- DOH at the Navajo Nation was not utilized when developing energy policy. Ask the DOH to help develop policies.
- There is need for intersectionality at a grassroots level. To effect change at the human level, political power needs to be built across sectors and communities.
- Build understanding of the human effect and meaning in job creation.

What building blocks could we build on that already promote clean energy?

- Not recorded/discussed.
- Look at examples of different Tribal approaches to hydrogen development- consider safety ramifications and environmental impacts.
- There are tradeoffs with different energy sources. The only clean energy is energy you don't use.
- Some chapters are interested in an energy microgrids.

ROUND 4

Solutions and Recommendations

- Understand the geopolitical landscape of Tribal Nations.
 - This is the basis for strong alliances/collaborations.
- Build more communication channels for Tribal members/Nations to provide technical assistance, mutual support, relationship building and trusting partnerships and collaborations.
- Emphasize education strategies to disseminate accurate information within and across Tribal Nations.
- Prioritize more data that reflect people's experiences beyond what is undercounted in the Census.
- Conduct community health assessments.
- Re-evaluate and revise FPIC to include strict enforcement and penalties for noncompliance.

Make FPIC (Free, Prior and Informed Consent) policy mandatory for city, county, state, and federal levels.

- Decision-making needs must include Tribal members and Tribal leadership voices.
- Create youth mentorships to inform energy efforts:
 - Law and Native American Water rights
 - Economics and finance
 - Taxes
 - Public health
- Fund and promote job training and apprenticeships so people can earn while they learn.
- Allow for more adaptive grant funding opportunities for Tribal Nations. Include:
 - Financial technical assistance
 - Make applications more accessible/remember broadband can be more tenuous on Tribal Nations.
 - Identify, train, and support homegrown grant writers.
 - Make reporting less burdensome.



RURAL CAPACITY BUILDING & WORKFORCE DEVELOPMENT

Facilitator: **Lilly Irwin-Vitela** | Scribe: **Isis Serna**

ROUND 1

What did you hear that seems promising to address equity?

- Appreciated Priscilla Lucero's ability to frame how energy equity issues are playing out in rural and remote area communities. Councils of Government are hubs with trusted leaders who disseminate information in rural/remote area communities.
- Explora is really reaching out to rural/remote communities across school districts to be more inclusive around educational opportunities.

What is missing from the previous conversations about equity and rural development/workforce development related to renewable energy?

- A need to focus more on how transportation and road conditions impact rural development and workforce development.
- Broadband access has a huge impact on applying for and securing jobs as well as the capacity to work remotely or participate in job training.
- The need for high quality childcare so parents/guardians can have peace of mind while they are working.
- People who are decision-makers and voters need to know the difference between rural and remote/area, unincorporated, or frontier communities because the needs and access to resources are more challenging in more remote communities. For example, some people are commuting two-hours to access healthcare or more.
- Certificate programs for workforce development need to be more localized.

- Mobile education programs could be really useful to have labs that can travel and give people who are taking remote classes opportunities for hands-on learning.
- Some smaller/more rural schools have closed, maybe that space can be used for career changes to renewables.
- ETA (Energy Transition Act) information is important but may not be getting to rural communities with enough specificity and technical assistance to respond to opportunities.
- We need to think more about skills transfer especially in communities that have been focused on extractive industries.
- People need access to healthcare throughout NM to attract and retain workers.
 - A holistic approach to family's needs with healthcare, mental healthcare, decent schools, childcare, transportation, internet access in the context of language, family, and culture is important to a durable and effective approach to how we create a renewable energy workforce. It's all interconnected.

Is there anything about rural development and workforce development that contributes to inequities but not limited to access, affordability, and access to clean energy training?

- There is a chicken and egg dilemma, how do we build community capacity for new systems while already trying to get work done today within existing systems?
- The social pieces of support are important and too often overlooked in workforce development and job training. They are often the pieces that make-or-break success.

- Energy transition seems a bit “field of dreams.” People need training for jobs now but so much of what’s needed is still emerging and future oriented.
- People need actual skills like the basics of electronics, OSHA standards, knowledge of distributed energy, and computer science for example.
- We need more immediate and accessible federal funds without paperwork burdens that are too high of barriers in local governments to support energy efficiency.
- We need clear pathways to fund and do energy efficiency.
- Wraparound services and childcare are important. Model and expand on Santa Fe Community college’s approach to childcare, a health/behavioral health clinic, emergency food, and financial supports.

ROUND 2

How do we develop incentives to benefit front line communities?

- Emphasize solutions that are centered in local values and place-based decision-making. There is not a one-size-fits all approach.
- We need to start with values and relationships and people who know the community and the lay of the land.
- Community has to be brought along on these issues and not by special interests who are trying to capture a market.
- Use renewables to reduce cost burdens of energy to homeowners and small businesses.
- We need to better understand and prepare for the useful life of technologies, so people are not in the same inequitable position in the future.
- We need to figure out ways to meet increased needs and interests with less resources.
- Provide more funding for people with local knowledge to come up to speed on these issues so that communities are better able to navigate these challenges and opportunities with energy.

- This requires greater transparency in decision-making.
- We need community-centered approaches to how federal money is used, rate setting, and how that impacts people.
- Incentivize renewable energy infrastructure by offsetting operating costs.
- Incentivize electricians to be certified in renewables.

Identify structural issues that need policy or systems changes.

- Reports from the USDA about equity, show that the SW region of NM is not receiving a fair share of funding.
- Variances in interest, training, passions can impact how leaders understand the needs and interests of their communities on a whole range of issues. Energy and infrastructure issues may not be framed in the most compelling ways.
- Without data, it’s hard to leverage resources and demonstrate need or capacity.
- There is overwhelming need in NM but there needs to be a system to rank needs and determine how to share resources so that communities with the strongest grant writers are not the only ones served.
- If rural/remote area communities had reliable energy, issues like cold storage of food, medicine, and critical medical equipment would not be so vulnerable and prone to negatively impact the health and well-being of communities.
- Many people do not understand what renewable energies are and need to be educated.
- Renewable energy is not cheap and affordable especially in low-income and rural communities unless it is socialized.
- Resources tend to go to more densely populated communities.
- We need state and federal money and a way to distribute it fairly because renewables are not affordable, and the knowledge required has not been spread.

- There are tradeoffs in efficiency vs. sustainability. For example, extraction can be very efficient, at least in the short term.
- Need to educate students K-12 to increase energy literacy.

ROUND 3

How would we solve the inequities identified at a local, statewide, or federal level?

- Make energy systems more transparent.
 - Make decision-making and funding systems more transparent.
- Reduce the administrative burden to leverage money and launch projects. See for example some of the strategies being used in the “trust-based philanthropy” movement.
- Provide more economic development tax credits for communities that use renewables.
- Increase the Rural Opportunities enterprise Fund. (Land, buildings, equipment, furnishings, and operations.)
- Keep finding ways to communicate complex ideas in practical ways and honor the importance of people skills along with technical skills and knowledge.
- Teach technical people how to work with government leaders/elected officials. Provide hands-on training and opportunities for networking.
- Continue working with higher education (professors/ instructors and administrators) to understand community development and workforce development needs.
- K-12- how do we get children excited about renewables?
 - Could we use art/film to inspire young people?
- Higher education could move past the “field of dreams” reputation and create more specific credentials by working with industry.
- Look at the workforce Innovation and Opportunity Act sector strategies to do more impactful workforce development.
- Broadband access and lack of water or impacts on water supply are important considerations.
- Partnering with NGOs who are often nimbler may be a way to spread jobs.
- Better more navigable mapping of existing infrastructure and renewable energy needs and efforts.
- Foster more programs for girls in STEAM because women of color and women in general are underrepresented.
- Think about entrepreneurship and opportunities for ethnic/racial minorities and women in renewable industries and renewable adjacent industries.



What building blocks could we build on that already promote clean energy?

- 2022 Rural Opportunities Act- \$70M to incentivize rural development. More money would allow for more projects. \$17.5M for COGs can allow for more staffing.
 - NM Finance Authority- They provide small loan pools for rural communities around \$5M which allows capital to get going.
 - Look at model policies that reduce the administrative burden. For example, test out no written reporting requirements. Oral interviews and videos can provide accountability without burning through staff time with administrative burden.
 - Tribal, rural, remote are communities and colonias need more set asides or carve outs to address equity. Examples include.
 - Colonias Infrastructure Fund
 - Tribal Infrastructure Fund
 - Economic Development Tax Credits
 - Build on Councils of Government as trusted people in the community and resource them appropriately to be staffed to meet the needs of community with renewable energy opportunities at the State and Federal levels.
- Support technical assistance around building revenue streams.
 - Include Councils of Government-COGs, Transportation, Economic Development Agencies, Community Development, Housing, Workforce Development (including industry) and education k-12 through higher education in collaborations.
 - Start in Grant County because there is already a potential core of the collaboration just in the breakout session.
 - Then use this model to leverage more funding from the state legislature across the state.

ROUND 4

Solutions and Recommendations

- Fund at least 7 regional resilience learning centers with satellite and mobile units in frontier/remote area communities. Pilot regional resilience/learning hubs in local government or Tribal entity of rural/frontier with funding for equipment, operations, outreach, broadband access, paid learning opportunities, promotion of entrepreneurship and wrap-around supports.
 - This can help build capacity while dealing with broadband barriers.
 - There is a sustainable broadband example in Taos.
 - Fund for a minimum of 3-5 years to allow time to become established.
- Add pre-k-12 renewable energy literacy and project-based learning as part of the state educational standards to move upstream in workforce development.
- Appropriate \$7M for the NM Association of Councils of Government for local capacity building for renewable energy planning, implementation, and coordination with the Rural Ombuds Program.

EDUCATION AND PUBLIC AWARENESS & TECHNICAL ASSISTANCE TO COMMUNITIES

Facilitator: **Leila Flores Duenas** | Scribe: **Dustin Allen**

ROUND 1

What did you hear that seems promising to address equity?

- To help reduce inequities, the Inflation Reduction Act has incentives such as tax credits for low-income households and communities.
- Just listening to community and helping local communities to work locally with partners, installers, community educators and RE developers.
- Addressing the lack of RE installers.
- Ensuring all marginalized and front-line communities have a voice at the table.
- Middle class is also priced out of the housing market. They too can benefit for available incentives to lower cost of home ownership.
- San Juan College energy program is a gateway for job transition. CNM has a good program as well.
- Most renewable energy development happens in rural communities giving opportunity to rural communities for job training and economic growth.

Is there anything about education that contributes to inequities but not limited to access, affordability, and access to clean energy training?

- Resources for education are directed toward urban areas. Nonunion based jobs and training need resources too.
- Wind programs are good and should be modeled and

promoted to increase opportunities to enter the job market.

- Lack of education creates inequities. Work with kids to make an integrated education system such as integrating art with STEM or STEAM. Look to the ACE Leadership High School or Highland High School in Albuquerque.
- Making incentives to create opportunities easier reduces inequities.
- Building capacity at the local level to address inequities would create opportunities.
- The need for public education to promote RE job opportunities is key to solving the inequities in access to education and training.
- Inequities exist when communities need technical assistance to navigate programs and incentives established at a bureaucratic level.

ROUND 2

How do we develop incentives to benefit front line communities? Identify structural issues that need policy or systems changes.

- Begin by listening to community to identify roadblocks.
- The Mortgage Finance Authority has a seven-year waiting list limited to Bernalillo County. Identify another way to get funds to communities.
- Meet communities where they are at and explore the different ways to solve the inequities.



- Building trust with targeted community members by offering informal learning opportunities.
- Identify allies in communities such as the New Mexico Solar Association who can conduct outreach.
- Accelerate USDA incentives like R.E.A.P grant.
- Statewide K-12 and high education renewable energy program is needed.
- Social norms unique to the community can be roadblocks.
- NGO's have limited capacity to solve the problem.
- State funding needs efficient flow of funding to trickle down faster to communities.
- State needs metrics to set community goals.
- K-12 Environmental education is needed.
- General public education and incentive awareness is needed.

ROUND 3

How would we solve the inequities identified at a local, statewide, or federal level?

- At the local level promote and conduct community level education.

- To ensure equity, agencies need competitive pay and adequate community funding.
- At the local level, create a culture of change and pro renewable energy development with teachers and librarians.
- Create accredited curriculum with schools.
- Use of different mediums of communication.
- Create a BAMD program like model.
- Create programs that don't require FICO score.
- Create a K-12 program to workforce development program.
- Create demonstration projects to learn from.
- Use music and the arts in programming.
- Go into communities to build trust, inclusion of older people using different learning styles. Trust building should address turnover, maybe create apprenticeship programs for technicians, free education for people to work in rural areas like MP programs.
- Create a Governor lead infomercial about renewable energy education and workforce development opportunities.
- Utilize the county extension offices to educate.
- Utilize USDA resources.

- Create a statewide education program.
- Pay teachers to be like "promotores." Similar to the Promotores de salud or community health workers. This is a program where community members work as paraprofessionals in the health fields to help vulnerable communities. <https://www.cdc.gov/minorityhealth/promotores/>
- Reach families through the kids at k-12.
- Advance STEAM that includes renewable energy education.
- At the state level ask the legislature to fund renewable energy education in all schools to include measuring outcomes.
- Build education resources center as a knowledge repository. Use federal infrastructure funding to create these centers.
- Create a resource office to serve local communities with information training, funding, and metrics that define how energy efficient the local community is so they can decide how to apply for resources.
- Create a workforce development multi-language energy efficiency and electrification program.
- Ask the state legislature to provide and support professional development using incentives and support materials for k-12 educators on energy sustainability.
- Use the Santa Fe Community College workforce development to integrate into k-12 curriculum.
- Create education at the local level in partnership with Explora in Albuquerque.
- Create a standardized curriculum within the k-12 public school systems.
- Create professional development credits and a summer program.
- Have a science fair on energy efficiency.
- Develop an energy equity center to offer community

engagement, education, and resource dissemination.

- Ask the legislature to develop a New Mexican energy equity center or resource office that prioritizes local community engagement, public awareness, skills training, and resource dissemination. The center will support four regional programs (Valencia County, Farmington, Carlsbad, Northern NM location) to ensure outreach and support are addressed. The center should be staffed by community representatives.
 - Partners could be UNM, Community Colleges, Acequia Association.
- Ask the state legislature to provide professional development support to k-12 educators on energy sustainability.

ROUND 4

Solutions and Recommendations

Public Education, Awareness & Technical Assistance to Communities

- Ask the state legislature to develop a New Mexico Center for Energy Equity that prioritizes community engagement, public awareness, and resource dissemination. The Center will support 7 regional offices to ensure local priorities are identified and addressed.
- Ask the state legislature to provide paid professional development incentives and STEAM support materials to public K-12 educators and administrators on energy efficiency and sustainability.

TOWN HALL RECOMMENDATIONS

Regulations: NM Energy Transition Act, Community Solar, & Data

1.1 Ask the NM State Legislature to fund a statewide working group to write legislation to incorporate equity within utility rate design for all energy utilities, including co-ops. Working group members should include industry partners, community groups, economists, national and state technical, environmental, and legal experts.

1.2 Ask the NM State Legislature to create and fund the Energy Data Act to be administered by NM EMNRD, addressing use, demand, source, level of need, resilience, energy burden, etc., in order to make energy data available and easy to analyze for all interested parties—regulators, Tribes/Pueblos/Nations in state level work groups, local government and special districts, researchers, businesses, and community-based organizations.

1.3 Ask the NM State Legislature to extend the Community Energy Efficiency Development Block Grant Act by \$10M a year for the next decade in order to begin to address the needs of limited income homes and encourage energy efficiency business development.

Energy Sovereignty & Self Determination

2.1 Create a task force that includes state agencies, federal agencies, NGOs, local governments, Tribal Nations, and community members to establish communication channels, relationships, and trust to advance sovereign renewable energy development through partnerships and collaboration.

2.2 Direct state, federal and private foundations to provide more adaptable and equitable grant funding opportunities for Tribal Nations to fund financial and technical assistance, home-grown grant writers, and reporting assistance.

2.3 Create state and federal laws around Free Prior, and Informed Consent (FPIC) to include strict enforcement and penalties and make mandatory for city, council, state, and federal governments.



Rural Capacity Building & Workforce Development

3.1 Pilot regional resilience/learning hubs in local government or Tribal entity in rural/frontier communities with funding for equipment, operations, outreach, broadband access, paid learning opportunities, promotion of entrepreneurship and wrap-around supports (community college, industry, labor, K-12).

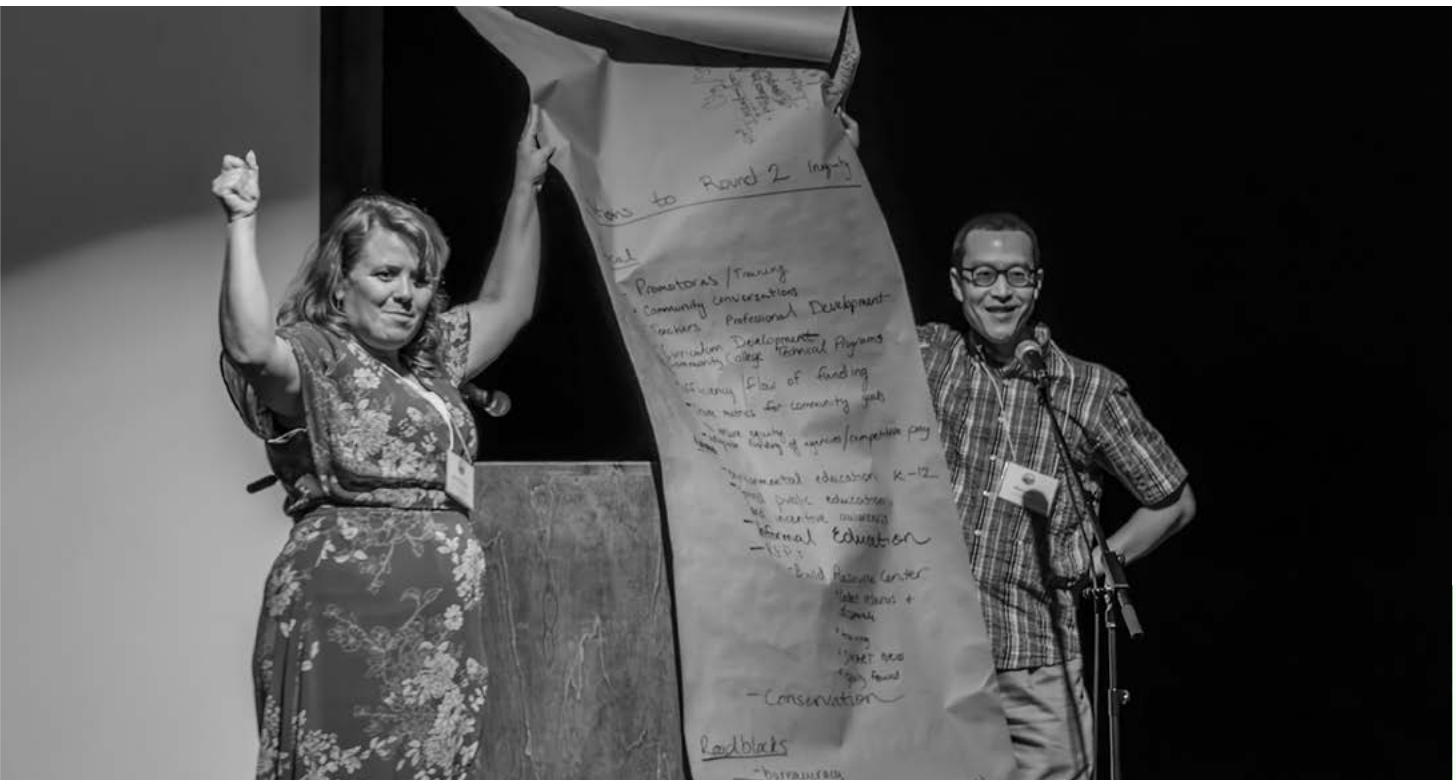
3.2 Add pre-K-12 renewable energy literacy and project-based learning as part of the state educational standards to support workforce development.

3.3 Appropriate \$7M for the NM Association of Councils of Government for local capacity building for renewable energy planning, implementation, and coordination with the Rural Ombuds Program.

Public Education and Awareness & Technical Assistance to Communities

4.1 Ask the NM State Legislature to develop a NM Center for Energy Equity that prioritizes community engagement, public awareness, and resource dissemination. The Center will support seven regional offices to ensure local priorities are identified and addressed.

4.2 Ask the NM State Legislature to provide paid professional development incentives and STEAM support materials on energy efficiency and sustainability to public K-12 educators and administrators.





COMMUNITY CONVERSATIONS

PREPARING FOR THE TOWN HALL

EPSCoR New Mexico spent 5-years building a SMART Grid Center to research, mentor and train the next generation of engineers to modernize the grid using microgrid technologies. As part of that effort they want to build a deeper understanding of the level of interest in communities across New Mexico in new technologies and what implications it would mean for low-income and communities of color. EPSCoR partnered with Noble Renewables Group LLC, and Community Connects Consulting LLC to design and facilitate 5 community conversations across New Mexico to learn with and from community about how the concept of microgrids fit with community beliefs, values, and readiness. This series of conversations comes at a time when the state and federal policy landscape and energy landscape are rapidly changing in recognition of climate change and impacts, an aging energy infrastructure, and the need to consider how to engage frontline communities in the critical questions and problem solving about their current energy situation, access, affordability and future. As the need for policy and system changes elevates now is the time to engage those being effected most in a meaningful way.

STRUCTURE & GUIDING QUESTIONS

The Structure of Community Conversations

Participants gather in solidarity to talk and converse about energy equity. The root of which is only about a decade old but can be traced to environmental justice that has been going on for decades related to social justice. Today it's recognized as "Climate justice is racial justice" and "Indigenous justice is environmental justice". Historically, the energy system has consistently (through not exclusively) been a source of inequities. The present inequities that accrued over many decades will grow and persist without actions to actually reverse inequities. The energy savings from energy efficiency, solar, and vehicles, for instance, continue to provide financial returns and generate wealth for those households, disproportionately white and higher income, that were able to take advantage of special government and utility incentives that were mostly not accessible to people of color and lower incomes. Reversing energy inequities is possible at anytime, provided there is a willingness to

shift the underlying structures. The goal of the community conversations are to prepare vulnerable communities for a statewide town hall meeting in which stakeholders from across New Mexico will build an analysis, consensus and make recommendations about the systems and policy change strategies needed that will best position New Mexico communities for a healthier more just energy present and future. Our state does not have an energy roadmap to address equity by mapping out inequities and how to advance equity by utilizing metrics as we move toward 100% renewables.

Prior to the conversation participants listened to a 15 minute video with Dr. Selena Connealy about micro-grids and technology advances what it might mean to their communities.

At the Farmington meeting two facilitators, Theresa Cardenas and Lilly Irvin-Vitela, helped community participants understand their own unique definition of equity. A clear understanding of equity is intended to create a shared understanding and language, to guide the



development of the conversation toward equity targets, goals and best practices. Once we have guiding principles it helps assess questions about equity inequities, setting targets and measurements and therefore, better prepared to make recommendations such as directing the necessary resources to access clean energy.

When we converse about equity we begin with three pillars:

1 Recognizing – Who is vulnerable, who is privileged, and how?

2 Asking – Who is at the table and what voice and power do they have in influencing planning, decision making, and implementation? Who bears the brunt of the burdens, and who benefits, and how?

3 Restorative – How can we rectify past injustices caused by the energy system and prevent future harms?

Guiding Questions

- Why is this issue important to you?
- What did you hear this morning or come in knowing that seems promising for your community to address inequities?
- What guiding principles do we want to see established in the energy system?
- What is the extent of energy inequities we face? Is it affordability, clean energy access, access to clean energy job training?
- Are you aware and have access to data to help us quantify these inequities?
- What are the structural issues in the energy system (financial, regulatory, policy) that have and continue to contribute to these inequities?
- How would we remediate them?
- Power mapping – who are making energy decisions that impact us?
- What specific powers do they have and what maintains those forms of power?
- What levers do we have to intervene?
- What tools, tactics, and narratives would inspire our community members to action?
- What do we want from people in power?
- What are our asks?
- If we must start somewhere, what are our highest priorities?



FARMINGTON, NEW MEXICO





APRIL 2023

Farmington, New Mexico is a community that has been hard hit by New Mexico's and

the US's energy policy. An area rich in culture and natural resources, Farmington has experienced the boom-and-bust cycles of extractive approaches to energy production and distribution going back decades. The following report outlines the perspectives of community stakeholders who participated in the first Farmington community conversation on 4.22.23 at the San Juan Community College. The majority of participants were born and raised in New Mexico and 75% of participants were Diné. Participants are mothers, fathers, grandparents, educators, homemakers and farmers. Parents have worked in the oil and gas fields. Two participants had moved away from their native home land to be near aging parents and then returned to find environmental degradation. One participant had a public health lens. Memories were shared about their homes without running water and electricity. Diné language at times was spoken during this conversation.

DISCUSSION RESPONSES

Why is this issue important to you?

- Believe that people most impacted should be at the center of decision-making about energy and help shape systems and policies to increase fair and just approaches.
- Concerned about the impact of a failing energy grid on food production, distribution and storage.
- Concerned about community health both in terms of the burden of securing energy disproportionately impacting people with lower incomes.
- Also worry about the impact on clinics, hospitals, and people using oxygen or other medical devices at home when the grid fails periodically with rolling brown outs or for good.
- Concerned about how energy impacts access to water.
- Come from a family with a culture that is deeply connected to the land and water and passionate about her connection to the land.
- Want to better understand how we survive and thrive with a failing grid.
- Curious about what the research from EPSCoR and community perspectives point us toward in terms of safe and well-paying jobs in renewables.
- Interested in renewable energy options such as solar.
- Believe in empowerment through art and the use of art to help build community and promote community ideas and solutions around challenging issues. This is an especially important strategy to engage youth and Indigenous people.
- Interested in how the micro-grids might increase self-sufficiency and self-determination and move Indigenous people into a healthier relationship with energy production, distribution, and consumption.
- See a pattern in energy of still fighting some of the same challenges 60 years ago.
- Fossil fuels are finite and may be necessary for certain things and should be used for those limited things while using wind and solar for other needs. Drilling and fracking cause a lot of damage to people and our environment.
- This is related to other environmental issues like helium and hydrogen. We need to think about the impacts not just immediate gain for some people.
- Especially concerned about environmental health and the use of sacred water resources.
- The Navajo Nation has been a national sacrifice zone and others in the state and country have benefited while Navajo people have had to live with the environmental, health, and economic harms.
- The economic benefit to the Navajo Nation from extraction has been pennies on the billions of dollars and has left people with less health and wealth, no access to running water and electricity.
- Our communities are still reeling from Uranium mining and the contamination to land and water. Clean-up efforts have been minimal and ineffective.
- Even proposed “green” approaches need to be considered. Carbon capture for example is putting excess carbon into our earth, not sure of the long-term results.
- Deep concern about the public health impacts of how we create and use energy.
- Farmington is homeland and an area steeped in history and legacies. We are threatened and harmed by extraction without community input.
- Care about the relationships between people and nature.

- We need to not only look at bio markers but also the social and structural determinants of health.
- Understand that we are a part of a global system and these decisions impact health, migration, economics.
- Look to the Centers for Disease Control statement on structural racism to evaluate policy decisions about energy.
- We need a political context to make recommendations such as public health impacts.

What did you know or learn about micro grids today that sounds promising?

- There is a shared passion for the environment, connection to the land/places we've grown up. Many people are parents thinking about our children and grandchildren and beyond ourselves.
- There is an understanding that how we grow up impacts our potential and access to education and options.
- There is power and hope in teamwork and sharing our voices and working together to create changes. This keeps us from being uneducated and fearful. It allows more people to be unafraid, share their voices, and look for options. Conversations or gatherings like this add up.
- I'm glad there are organizations and people who want energy to be more sustainable and to have grids that are safe and sustainable for future generations.
- I'm excited to be living at a time when we're working to transition to safer, cleaner, renewable energy.
- I know we need to be prepared for pushback from the fossil fuel industry.

- There is so much to learn. We each need to learn and share what we know to educate others. We can take what we're learning and have information sessions at Chapter Houses on Navajo land and really think about how we communicate this in Diné and translate technical terms.
- If we continue to collaborate and educate each other, we can come up with solutions and better ways to influence and inform leaders.

What did you know or learn today that gives you hope for addressing energy injustices?

- We know that in the past policy and solutions kept certain sectors out. This drives resources and opportunities to benefit some. There are power differentials and we are aware of them.
- We know our history and that other communities have capitalized on resources in the Navajo Nation.
- We need more community research to analyze policy, how it's made, who it benefits and who is harmed.
- Current technology cannot support the kind of life people need but it's a vicious cycle and we're dependent on it for our livelihoods. Getting to the goal of 100% clean energy by 2040 seems to have a gap between the goal and ways to get there.
- Like the micro grid idea of energy at a neighborhood scale using wind or solar.
- There are examples of microgrids being effective in other countries. Traveling in Mongolia there were windmills, solar panels, and battery storage in very remote areas.
- Harnessing the experiences of older people and enthusiasm of younger people and doing things

intergenerationally. There are things both can teach and learn from each other to come up with and work toward solutions. We have to be patient with each other and make sure youth are empowered. The use of many gifts including artists are important.

- We need to make sure that safe and affordable technologies get to the communities that suffer the burden of historical and ongoing degradation to soil, water, air, people. We need to do that in a way that shifts power and makes sure community is helping decide what will come next.
- We need to include youth. We need more access to education for our youth.
- We know that pattern of big corporations that can extract from the land and not be held accountable for clean-up. This doesn't just happen here. It happens all over the country and the world. Through communities working together, passing and enforcing legislation, we can hold corporations accountable.
- We know how to think about environmental impacts.
- There are structural issues on the Navajo Nation where people who have clout shape environmental policies and direction. But those people are under the pressure from the US government, the State, and businesses who want our natural resources.
- We need to look at where our power really is with our treaty rights.
- We need to preserve what is left for future generations.

What principles or values do we want to see at work in the energy system?

- Clean energy—minimize our carbon footprint. This is a responsibility for individuals and industry. Each person has a responsibility to live minimally.
- Responsible consumption—teach people how to be more responsible about how we use energy, what kind of demand we're creating, and how to be less wasteful. We need to live on less and practice the principles of



reusing and not throwing things away that take energy to make. We have to change our expectations to adapt and survive. It requires greater simplicity.

- Understand the environmental burden of disease—the cost of keeping people healthy is not distributed equally. Data about health impacts is suppressed and not everything that needs to be measured or counted is. We need better measures for health outcomes related to energy policies and practices. If people say a certain technology has better health outcomes, how do they prove that? Need to look at physical and psychological health impacts of energy policies and practices. There is so much harm and trauma related to energy choices.
- Transparent communication—this is important around decision-making about energy creation and distribution. For example, Avangrid is producing 1 gigawatt of energy to balance PNM's loss of coal. How



is that impacting communities outside of NM too? People need to be connected to be protected. If we can learn from each other and communicate, we can know what to do and not to do.

- Diné Fundamental Law—shouldn't use it to benefit corporate entities that don't really benefit communities for the long-term. We need to think about who pays for the impacts on the people and broader ecological system.
- Health skepticism—we were told there would be better living through coal. There will be jobs. People will have refrigerators and stoves. There are still people without refrigerators and stoves. There was never a conversation of what would be left behind. "We were promised a great future but it didn't pan out."
- Prioritize healthy outcomes—we need to consider how every decision impacts our own health and the health of future generations.

- Consider the energy landscape—we cannot just look at our own area. We need to look at communities that are coal impacted and prioritize the transition to other energy sources. We need tax rebates that are not just beneficial to the rich. We have to educate and be educated by community because there is a lot of information. Political engagement can shape a better energy landscape that leads to better public health and use of all of our resources including water.

Please describe the energy injustice and inequities we face in this region.

- An overarching structural issue is the Navajo Nation's holding land in trust and how that impacts the ability to get infrastructure in place.
- Excited for the future possibilities but concerned about tribal challenges and changes.

- Concerned about the language barriers to advancements in technology and training a new work force to work out in rural areas bringing along unsafe working conditions and general safety.
- Convening tribal leadership to address equity issues.
- Inequities exist because we don't analyze policies in terms of the health outcomes they will produce and the impact on ecosystems and health services.
- Where is the accountability from Secretary Haaland?
- Research can be unfair if used before looking closely at existing and proposed policy. Diné fundamental law, how is it being used?
- Some issues connected to affordability include:
 - If you don't own land or have home ownership, you don't have equity.
 - Even if you own a home and on the grid you can't install RE and sell back to the power company.
 - People pay higher rates for energy- example one participant described paying \$130 a month for energy and they're just 10 miles from the solar energy plant that extracts solar energy to benefit other communities.
 - NTUA has a monopoly and people are not allowed to put energy back on the grid through solar or they will be cut off from the grid.
 - People have no say in rate increases and are left to deal with the impacts.
 - As jobs emerge for renewable energies, people need more education.
 - Where is the PRC in all of this? Can they intervene on affordable causes if agreements include NM?
 - Affordability, safety and jobs are all intertwined.
- Some issues raised connected to safety include:
 - Energy policy doesn't address health impacts adequately, remember how long it took to pass RICA.
 - There isn't a working EPA on the Navajo Nation or Public Regulation Commission which takes away safeguards.
- Health systems and services are impacted by energy decisions.
- New jobs and new industries bring new people to vulnerable communities. NM has among the highest rates of missing and murdered Indigenous women and relatives. This increases around extractive industries. Over 90% of perpetrators are not from the communities of the victims/survivors and their families.
- Worker conditions are often poor and access to health care is limited or non-existent. People are working 12 hour shifts and it's not even questioned.
- Union is not doing anything to protect workers.
- Some issues raised connected to jobs include:
 - There may be jobs now but no support for what's next as technologies change.
 - The price for jobs now is often dangerous clean up later and those are high risk jobs that threaten health.
 - People work in short and long-term dangerous jobs with high risk of illness or harm and long hours but there seems to be an attitude of working people to death because they're replaceable.
 - Even when people know there is some risk, which isn't always the case, they're trying to survive and support their families today.
 - These jobs don't have adequate regulation/ oversight, compensation, or benefits.
 - Corporations seem to find legal ways to get cheap labor.
 - People need to be educated and supported to look at safer options.
 - People are often worried about speaking up to voice concerns or threats because they still need to take care of themselves and their families.
 - Community must stay involved to uplift voices and change policies. Advocacy and support matters.
 - People working in a safe environment where workers have access to good and affordable health care benefit the society as a whole.

- It's more affordable in the long run to have safer and greener jobs because the cost to people and our environment is high.
- We need to shift now because we are getting sicker.
- There is a sense that small communities are being taken advantage of if they don't have already good paying jobs.

What are the structural issues in the energy system that contribute to injustice/inequity/harm?

- Public perceptions and lack of awareness about the harms.
- Some of the financial issues identified include:
 - See the previous comments about tax policies/ incentives primarily benefiting the wealthy.
 - The need for green banks to be established and be willing to lend to underserved communities.
 - Tribal and rural communities need access to capital.
 - People need to be paid better wages on both the technical end of energy and to work with and co-create solutions with community.
 - How we compensate people impacts their self-values/self-worth.
- Some of the regulatory issues identified include:
 - The need for rule making that leads to better oversight around health, safety, worker and community health impacts.
 - Need for federal policy and intervention. Where are they?
 - How can the ETA be amended?
 - When there are public hearings, a more authentic effort needs to be made to inform the public and act in a way that is responsive to community needs, concerns, and ideas.
 - Meetings should be held in the most impacted communities to reduce barriers to participation.
 - Sound community engagement keeps regulations relevant and useful to the health and well-being of community.
- Communities also need seats at decision-making tables.
- Some of the policy issues identified include:
 - Issues around self-determination and sovereignty need to be respected in the policy making processes.
 - A better analysis of policies that have permitted exploitation, extraction, and harm in the energy industry need to be analyzed and educated about to prevent a repeat of the same injustices.
 - Tax policies reinforce benefits to the wealthy and lack of access to everyone else.
 - The Energy Policy Act of 2013 is a Tribal policy that needs to be brought up to date.
 - We need to continue to strengthen the Energy Transition Act and oversee early implementation.
 - Support needs to be in place to make change happen at the tribal presidential level.
 - Needs more coordination and transparency with the city, county, state and national level.

LAS VEGAS, NEW MEXICO





MAY 2023

Las Vegas, New Mexico is a community that has borne the brunt of climate change impacts and risk. The Calf Canyon and Hermits Peak fire in 2022 is testament to the level of risk. According to the New Mexico Climate Risk Map: Local Data Summary for Las Vegas (EMNRDClimateAction@state.nm.us) Las Vegas is at a high risk for the five climate change related hazards: air quality, drought, heat, flooding, and wildfire. The climate change risk report was shared with participants.

The fire destroyed 341,735 acres. It was the most destructive wildfire in the history of the state, drawing national attention and was approved a major disaster declaration. Between 1,000 and 1,500 homes and structures were destroyed. 15,500 New Mexico households were forced to evacuate. Multiple communities were threatened. The main water shed to Las Vegas was impacted and air was polluted for miles and miles. Hispanic people account for approximately 80% of the population in both San Miguel and Mora Counties. Communities, settlements, and family homesteads whose history dates back centuries to when the region was a part of the Spanish Empire in the Americas have lost their way of life for generations to come.

DISCUSSION RESPONSES

Why is this issue important to you?

- Concerned about direction of climate policy to help modernize the grid.
- Committed to equity and how energy touches all aspects of our lives with serious impacts across communities and economies.
- One participant dedicated much of their career to safe energy.
- Interested in engaging the private sector and encouraging people to go green through incentives.
- Care about access to safe and affordable energy.
- Has seen examples moving in the right direction in Santa Fe, Los Alamos, and Taos
- 1 in 6 here in Las Vegas live in manufactured housing. Energy efficiency is a concern. Housing needs subsidies, especially after the fires.

What did you know or learn about micro grids today that sounds promising?

- The fact that we're talking is huge. We can't keep approaching it like we did in the past because when a huge portion of community members are left out, the solutions don't work for everyone. Equity is being addressed more federally and locally. It's important.
- The Inflation Reduction Act is a good example of a meaningful policy commitment. If folks seeking funding couldn't uplift equity, they're not funded. Unfortunately, all of NM is disadvantaged. This means we didn't have to ask more serious and nuanced questions about the places and communities with greatest need in order to leverage dollars. We shouldn't miss the opportunity.
- When we don't have real ground energy policy and systems change in a deep understanding of community, it creates roadblocks to access. For example, after the fire FEMA trailers provided are not particularly energy efficient or sustainable. In contrast we have a manufactured

home builder in Las Vegas which could offer better short and long-term solutions. These local factory built homes are state of the art with energy efficiency and take three-hours to construct. Instead, we have FEMA trailers sitting while people are unhoused or under-housed and applications for assistance are denied for one reason or another. Some land owners affected by the fires have been waiting months for power to be restored.

- If we had a smart grid, people could produce solar energy with their own cars and homes, there would be more access to affordable and safe power. Extra energy that is produced could go back into a battery or the larger power grid.
- In rural communities and on Pueblos, Tribes, and Nations, solar energy with battery storage could be a game changer in terms of energy independence.
- It's nice to know there is interest in bringing research about micro grids into practice and that there is awareness about how fast the technology will change and we will need to adapt.

What principles or values do we want to see at work in the energy system?

- There are equity principles that were developed as part of New Mexico's climate change task force. This was a Governors executive order led by NMEMNRD. The principles are important and so are the ways they were developed with community input, interest group input, and consultation with Pueblos, Tribes, and Nations. Really listening to people and engaging people matters.
- The climate change task force equity principles were approved for use across state agencies in March 2022 but fell short of next steps. Used as a lens, they are intended as a check and balance to review climate actions. To move forward these principles need to be shared with communities. Now is the time.
- Principles need to guide the use of federal funding such as the IRB for clean energy.
- The principles could be used to prioritize legislation

and implementation of projects. It's important to be inclusive and transparent about climate actors.

- Make sure EPA investments of \$3M each to states and \$1M to some municipalities are aligned with equity principles.
- Santa Fe County also developed some guiding principles that could be informative, see www.coalitionscnm.org
- When it comes to equity, different communities and groups within communities have shared different values around what makes a good life.
- In the past field hearings helped develop policies that are responsive to complex needs.
- Where you sit on the grid, impacts your perspective. If you're at the end of the power line like Las Vegas, there is an obvious interest in micro grids because you'll be most impacted by rolling blackouts.
- Are there too many principles out there? Don't know how many are saying the same thing.

Please describe the energy injustice and inequities we face in this region.

- When community is engaged and their input doesn't have an impact, it creates mistrust and fatigue.
- Related to affordability, the following inequities were identified:
 - Pushing clean energy electrification is expensive. People may not have money to convert their homes and appliances.
 - PNM is proposing higher prices for people who use more energy. People of lower income in older and less efficient homes, then have the additional burden of higher rates.
 - The price of entry to technologies that people need is a barrier.
 - Municipalities need to be challenged to transition to more efficient tools.
- Related to clean energy, the following inequities were identified:
 - Even after a natural disaster, it's hard to transform to

renewables. Las Vegas is a prime example with the FEMA trailers instead of sourcing the local energy efficient manufactured homes. In addition, applications for FEMA trailers are denied because land lacks electrical infrastructure or delays in restoring power.

- Land grants are also not eligible if the way land is owned or property is titled doesn't align with what the Feds require in applications. This is a similar challenge for people on Pueblos, Tribes, or Nations where land is held in trust.
- Related to workforce development and jobs, the following inequities were identified:
 - Pushing four-year degrees is problematic in multiple ways. They aren't always accessible in rural and remote communities. Four-year degrees are not always aligned with the jobs that are actually needed in communities.
 - As Selena said in the video, the jobs related to micro grids may be better matched with certificate programs and on the job training.
 - Access to training is also financial access issue, not all needed technical jobs have financial aid for job training. In addition, people need to earn while they're learning. Paid training isn't available everywhere. More scholarships, financial aid, and paid internships/mentorships/apprenticeships are needed.

Are you aware and do you have access to data to help us quantify these inequities?

- The use of EMNRD's Climate Risk Map which was created by EDAC is not widely known and hard to find on the website.
- Kristen Casias with the Coalition of Sustainable Communities helps communities identify baseline data. For example, baseline data can include:
 - % of power that is used that comes from fossil fuels vs. renewable sources.
 - decarbonization goals and metrics.
 - Which sector is using energy.

- Data is used to set priorities and support county sustainability officers in planning and implementation. If we had baseline energy use data it can be used to justify subsidies. To build capacity you need data.
- Can use data about clean fuel standards but out of state supplier data is obscure.
- County level data is often good but not helpful when there are overlapping jurisdictions and decision-makers.
- Data collection and analysis is a good role for regional planners such as COG's and at the county level.
- Currently county, city, and municipal regulators use their authority more to question and create barriers to affordable and safe energy rather than to encourage or support renewables.
- Example, there was a solar proposal in Rancho Viejo and SF County Land Use said no because of contractual permits but the use of the terms permitted, permit, and conditional permits creates confusion.
- Some of the policy issues identified include:
 - ETA only mentions the electricity sector.
 - Transportation policy is mostly federal and makes it difficult to make change locally. The IRA does explicitly center equity.
 - Not clear how equity is operationalized even when it is mentioned.
 - Rural co-op managers mobilized to axe proposal for low-income rates.

What are the structural issues in the energy system that contribute to injustice/inequity/harm?

- Some of the financial issues identified include:
 - Utilities are capital intensive.
 - Access to capital is problematic, need green banks across NM.
 - Renewables are more labor intensive requiring more jobs in the trades that don't need four year degrees.
 - See the notes above about PNM's rate structure which disproportionately impacts users with low-incomes.
 - If you are paying more than \$50 a month for electricity you can justify solar. Having access to renewable choices is critical.
 - There are solar incentives but state lacks energy efficiency incentives.
 - Need to consider the roles for New Mexico's Community Action agencies who are skilled in working with and deploying programs in families and communities of low-income.
- Some of the regulatory issues identified include:
 - Few people with expertise in energy regulation makes transparency and decision-making difficult.
 - The PRC, Land Use Planning Councils, Code Enforcement, plan reviewers, inspectors and other related roles all need training in renewables.
 - We need to change perspectives about what could be built or renovated to shift energy use.
 - Cities and counties need support updating land use and planning guidance about renewables.

How would we remediate them?

- FEMA needs to change policies. We need other housing options for families impacted by the fire to include local sources and clean energy sources too.
- There are examples of people building back in more sustainable ways after disasters. After tornadoes in Kansas, there was a green rebuild that was timely and high quality.
 - The rebuild allowed for healthier more energy efficient buildings.
 - Approaches to rebuilding should also support local economic development.
 - If the Las Vegas manufactured home maker were chosen it would be good for the local economy and more efficient to get homes in faster.
 - In Northern NM, need options that allow people to follow historical and current patterns of living with extended families on the same property.
 - Look at opportunities for more community solar.
- Here in Las Vegas there isn't an electricity coordinator and Tri-State holds the responsiveness to power outages.
- There are many responsible parties but not clarity in Las Vegas across FEMA, the City Council, and County Commission.

- There is well-earned distrust of the Feds.
- Local brokers who are moving forward solutions should be paid for their efforts because of the trust they hold as formal and informal community leaders.

Power mapping: Decision makers

- Trust in and respect for the Federal delegation was expressed. Those seen as making important local energy decisions are:
 - Tri-State
 - Rural Co-op
 - PNM- their control centers provide more insight into sources of energy including wind and solar.
 - FEMA requiring electricity hook ups to rebuild even if there wasn't electricity before. Local elected officials make decisions about rights of way issues.
 - Senator Campos is seen as very important to appropriations both as a local legislator and also as a member of Senate Finance.
 - PRC, code informants, city & county and land use offices have a lot of power they could use for the better good. Policies could be identified that are counter productive. The PRC is important to decision-making, and the Governor makes those appointments.
 - Have authority to budget for transitioning to renewables.
 - Could support Las Vegas in moving toward energy independence.
 - Could support microgrids to build capacity within the energy grid or provide support when there are challenges to the larger power grid.
- The role of oil and gas decision makers are international and seem hard to influence.
 - OPEC.
 - Oil and gas prices are set internationally.
 - Natural gas prices are not set locally either.
 - Propane- monopoly of few providers.
 - Wood is more local but too much federal control over forest management. Renewables have the potential to localize energy decisions.
- What levers does community have to intervene?
 - Identify trusted power brokers to work with community.

- Work more closely with Tri-State who is not local to develop strategies to comply with ETA.
- Utilize community solar.
- FEMA who can't make decisions but can offer assistance.
- Change the narrative after disasters from survival to building back stronger.
 - Look at the Greenfield Kansas example.
 - Recognize that the historical, political, and cultural context is complex. Embrace that and don't allow it to be minimized in problem-solving if equity really matters.
 - Share stories of places where sustainable, safe, and healthy investment in energy are possible.
 - Find examples of energy self-sufficient communities.
 - Learn more about Ithaca, NY energy decarbonization.
 - Look at efforts in downtown Silver City.
 - Look at Las Cruces building electrification efforts.
- Respect, empower, and compensate local knowledge that is needed for problem solving to find a better energy future.
- Understand what creates political will.
- Maybe Mainstreet has examples of where there are opportunities to continue demonstration projects with micro grids.

Other Ideas

- When communicating about energy, state the obvious because people don't necessarily know how electricity or other forms of energy works.
- People assume energy is healthy and safe and will just turn on. More literacy about energy is important.
- Keep having community conversations and connecting the dots.
- Build more case studies of what's working with safe and affordable energy and the building blocks to microgrids.
 - Example, Rocky Mountain Youth Corp efforts in Wagon Mound, NM
- Need private examples in the private sector because technology is expensive.

SILVER CITY, NEW MEXICO





JUNE 2023

Silver City, New Mexico is a rural mountain community that has produced copper for the

country. Neighboring the 3.3 million acre Gila National Forest and the high desert, this community is on the front-line of climate impacts. The Gila fire in 2022 is testament to the level of risk. The Black Fire was a massive wildfire that burned in the northern Black Range in Sierra County, Catron County, and Grant County, Northeast of Silver City. The fire became the second largest fire in modern New Mexico history, behind the Calf Canyon/Hermits Peak Fire. The fire burned nearly 325,133 acres. It contributed to poor air quality throughout the region.

According to the U.S. Department of Energy's Low-Income Energy Affordability (LEAD) tool, Cibola and Catron Counties are energy burdened. Cibola residents spend 3% of their household income on energy costs while Catron County residents spend 6%.

DISCUSSION RESPONSES

Why is this issue important to you?

- Retired from a career of working to serve people experiencing homelessness, poverty, and trauma. Access to safe and affordable energy is part of helping a community to be healthy and strong.
- Was curious and believes the community needs to know more.
- Lived in Silver City for 40 years and engaged in various civic groups including New Energy Economy and St. Francis Newman Center. Care for the environment and access to safe and affordable energy is a strong faith issue. “We need to take care of the planet and each other. I have a love for my community and the planet.”
- The politics around oil and gas is overwhelming. Renewables are important and meeting to share information helps with mitigation.
- The science and technology have improved around renewables since the 70s but policy has not kept pace.
- Serves as a County Commissioner and “policy suggestor” and has cared about and worked on renewable energy as someone who studied physics and as an advocate for decades.
- Care about this as an economic development issue. Access to safe and affordable energy impacts housing development and how to rehabilitate housing.
- More vulnerable populations including elders and people with low incomes in rural communities with less access to support are especially hard hit.
- Access to weatherization and renewable energy is harder depending on home ownership and the condition of housing. Often people who are most in need of support can’t access support or incentives.
- Water systems and wastewater systems are threatened by lack of reliable access to power. This is a threat to

community health and safety.

- Access to safe and affordable power is an emergency response issue.
- Concerned that rural and remote communities are at a disadvantage in renewable energy implementation because of baseline infrastructure, ability to meet federal match requirements, grant writing burden, and lack of workforce development for the people who would implement these new technologies.

What did you know or learn about micro grids today that sounds promising?

- Just learning more about what microgrids are and how they work.
- The potential for more energy independence as communities, families, businesses.
- Potential for more local choice.
- More realistic approaches to energy security.
- See parallels in Grant County water systems.
- Like the idea of local/regional job creation and opportunities for youth and young families with micro-credentials.
- In on the conversation now vs. 5 years later when we’re playing catch up after being left behind.
- Potential to push for solar, wind, etc. and push public utilities to really be a public service.
- Currently limited to 200 megawatts but there is massive supply potential in homes, cars, businesses.
- We could require that 30% of energy be allocated to people with low incomes or provide rate breaks.
- We need more affordability and more options.

What principles or values do we want to see at work in the energy system?

- Investing in renewable energy should be government funded from home-to-home and not just for low-income people.
- Push funding agencies to understand that eligible activities around renewables may need to look different in rural/remote communities because baseline capacity and infrastructure is different than urban areas.
- People with the most inefficient appliances have the least money and may end up being higher energy users. Rate structures that are only based on use create further disadvantages for people who are in poverty.
- Helping businesses that create environmental challenges be a part of the solution. For example, the roof tops of big box stores have enough space to host solar panels to produce energy for neighborhoods/towns. Maybe this is part of how they mitigate some of their negative environmental impacts.
- Affordability should be a guiding principle.
- We've had geothermal capacity for over 30 years.
- Use what exists and is working well and incentivize families and businesses that use renewable energy but be careful with incentives to not give away the tax base.

Please describe the energy injustice and inequities we face in this region.

- Related to affordability, the following inequities were identified:
 - Need to promote more local co-ops.
 - The capital requirements to move forward with improvements and conversion to renewables is often cost prohibitive.

- Related to clean energy, the following inequities were identified:
 - PNM only uses 7-8% renewables.
 - Avangrid is a threat to our energy future and is not transparent.
 - PNM has not been transparent to consumers about decisions and the impacts.
 - We need local choice energy.
 - Concerns about reliance on the Permian basin and the economic, environmental, and community impacts of imported labor, exported wealth, and health and safety impacts.
- Related to workforce development and jobs, the following inequities were identified:
 - Worry about the short and long-term health and safety risks of jobs in the energy sector.
 - Need to take guidance from the principles outlined in the Energy Transition Act about jobs in a just transition.
 - 10-15 years we were prepping in this region for job training around geothermal and solar. What happened?
 - There's not enough investment in vocational education.
 - Challenges with the capital outlay process, when money becomes available, and how quickly it must be used or reverted. This makes it harder in places that have been underinvested in to make real gains.

Are you aware and do you have access to data to help us quantify these inequities?

- No specific sources referenced.

What are the structural issues in the energy system that contribute to injustice/inequity/harm?

- Some of the financial issues identified include:
 - Lack of investment back into communities
 - Tension between a public good that is operating within private, for-profit business models.
 - There is a potential for more municipal co-ops but not enough exist.
 - Programs that assist homeowners miss renters and don't always engage landlords.
 - Rentals need to be more energy efficient, but this requires investment and in a housing shortage, there is not a financial incentive to do the right thing.
- Some of the regulatory issues identified include:
 - Concern about the ethics/politization of the PRC.
 - Self-interest can stand in the way of the public good.
 - Regulatory decision-making needs to be more transparent.
- Some of the policy issues identified include:
 - The role of money in politics and perceived conflicts of interest.
 - Lack of political will and courage to support renewables over oil and gas interests.
 - Aging housing stock and reliance on firewood, propane, and natural gas.
 - Consider a renewable energy Corp to support a just transition.

How would we remediate them?

- Frame a reliable grid that can operate as a whole system or as an island system as the disaster preparedness and National Security issue that it is. Use 1/3 of the national defense budget to modernize the grid and build infrastructure for micro grids across the country including rural and remote area communities.
- We need policy makers to understand and be educated on how implementation would really work in rural and remote area communities.

- In New Mexico, sometimes statewide planning strategies are narrowly focused on highly populated areas and strategies don't make sense in areas with lower population density.
- Consider implementation of micro grids at Senior Centers across NM.

Power Mapping: Decision Makers

- The Public Regulatory Commission
- The Governor's Office
- County Commissions
- City Councils
- The State Legislature through enabling legislation and appropriations.
- Federal Agencies like the Economic Development Administration, the Bureau of Land Management, the Department of Defense, The National Forest Service, the Department of Energy. or any agency managing public lands/facilities.

What levers does the community have to intervene?

- Pass legislation requiring each state agency to develop micro grid goals.
- Make energy a required element in local comprehensive planning.
- Work to educate faith communities like Interfaith Power and Light and the Ministerial Alliance to mobilize around energy issues and micro grids as a justice and care for each other and the earth ministry.
- Create a "trunk show" about micro grids to take to k-12 schools to educate youth about the issues, science, and job opportunities associated with developing and maintaining safe and affordable access to energy.
- Help local elected officials understand how local generation and distribution a security, safety, and economic development issue is.

What tools, tactics, and narratives can inspire others in the community to get involved?

- Take a cross generational approach and focus on engaging youth and elders.
- Emphasize the value of local generation and distribution to front-line communities.
- Build local government capacity to provide education on these issues. A paid position in City and County governments that focus on safe and renewable energy could support comprehensive planning and implementation as well as outreach and education.
- There are trust issues because of historical and present-day energy inequities.
- Develop fact sheets that are visually oriented and videos to highlight successful projects and what works. Local examples would be best.
- Understand that safe, affordable, and locally controlled energy keeps money associated with energy production and distribution locally.
- Always follow the money to know who is making energy decisions and who is benefiting.

What is our ask to decision makers?

- Stop hydrogen, it's a false solution.
- Stop carbon capture, it's a false solution.
- Pass community solar legislation.
- Pass local choice legislation.
- Invest in training and workforce development.

What are our highest priorities for action?

- Local choice energy.
- Education
- State or grant funded positions for a local training and technical assistance provider.
- Building buy-in with governments and the general public.
- Implementing community solar using solar farms- look at LANLs approach.

Other Ideas

- Build support for local governments to lead the way in transitioning to renewable and safe energy.
- Encourage local governments to use electric vehicles.
- Make eligibility for implementation grants align with the sale of rural and remote communities too.
- Develop a passenger train from Silver City to Las Cruces.
- Use county building roof space to generate electricity.
- Use solar in government parking lots as demonstration projects.

GALLUP, NEW MEXICO





JUNE 2023

Gallup, New Mexico is a rural community located in McKinley County, neighboring the

Navajo Nation. According to the New Mexico Climate Risk Map: Local Data Summary for Gallup (EMNRDClimateAction@state.nm.us), this community is at a high risk for climate change related hazards such as air quality, drought, heat, flooding, and wildfire. One area of concern is energy and water access, critical for mitigating the effects of extreme heat. According to the U.S. Dept. of Energy's Low-income Energy Affordability Data Tool, McKinley County is energy burdened. McKinley County residents spend 4% of their household income on energy costs. A few other note worthy climate risks; $\frac{1}{3}$ of Navajos are without running water and electricity, 30% have disabilities, 31% have asthma, 16% have diabetes and 26% experience food insecurity. 89% of the population is Native American.

DISCUSSION RESPONSES

What is promising for your community? What did you know or learn about micro grids today that sounds promising?

- Community solar opportunities.
- Solar gardens or also called solar corrals. Family units or hogans are grouped together. It's a perfect application for a micro-grid.
- Solar installations are very remote. Hoping to develop a reliable work force.
- Opportunities to develop a trained workforce.
 - You need to have specialized skills.
 - Would like for a way where apprenticeships projects can be implemented on a regional basis with chapters, community members to have the ability to be on board with these types of projects. There are young people that are home because they are helping the family in some way and they remain within the common because they are comfortable being there. They need the basic skills that can turn into professional skills.
 - Would like to see apprenticeship programs and projects on a regular basis. Chapters are on board with these kind of programs.
 - Traditional families who live in close proximity to one another need to have these programs to develop specialized skill sets.
 - In response to the lack of transportation, there is a need for vans to take workers to renewable energy locations for training and jobs.
- Opportunities for rural elders to have access to cold storage for medications vs running into Gallup for ice. It's going to be economical and a big opportunity to save on transportation, time and access to medications as needed.
- Use in solid waste collection processes.
- The importance in having renewable energy for cold storage to store medications and food is critical.
- Many Navajo's have grown up in hogans lacking electricity and water. RE can help modernize the traditional way of shelter.
- There is much controversy around Chaco Canyon land issues. The big dispute is around the economic gain from extraction. Are there other options being presented that are not black and white? The Navajo Nation is reliant on the extractive industry. There is much hope in renewables as another way of economic prosperity. If we have groups present what a micro-grid is, what it can do for the communities in that area their might be options to utilize the land and hope for the future.
- Use this an opportunity to educate, plan for the future and increase other streams of funding.
- There is hope in creating cluster housing using micro-grids to demonstrate the concept like a pilot so that other chapters can learn and create opportunity.
- There is an interest in a youth training component. Often there are youth organizations who can highlight and act on training.
- There was a highlighted interest in incorporating renewables like solar into their transitions to help educate the youth and elders. Especially for the Zuni and Navajo who respect the sun's energy. Old school extraction destroys mother earth.
- There was an interest in promoting new technology as a cost savings to propane. At chapter meetings members are stressing the high cost of everything.
- Those in the fossil fuel industry admit that we are transitioning to renewables. They see the tea leaves. Talking about the cost benefits to reduce energy costs that's hopeful.
- Can you imagine micro-grids around Chaco where farmers markets can be developed to provide food

and other goods to tourists.

- Grazing is one wealth they have both traditionally and economically carry on to the next generation. There was some excitement in having a place to start like maybe looking at solar grazing as an example. Livestock would love the shade under the solar panels.

What principles or values do we want to see at work in the energy system?

- Integrate traditional knowledge with new technologies.
- Having opportunities to reduce energy costs.
- Affordability by building in incentives.
- Include community voices. Doing outreach, group sessions in a native language.
- Creating organizers that can lead and be ambassadors by Identify indigenous speakers.
- Identify people in the communities that have knowledge in a medicinal way like medicine people sharing knowledge.
- Reaching out to the schools to create partnerships. They have funding for apprentices.
- Might be a senior project for students and maybe internships.
- For the younger kids with EXPLORA and through the libraries using visual information that is easy to understand for all generations.
- Hold educational institutions accountable to help others to excel even if they are not at the top of the grade point average scale.
- Thinking at the chapter level isn't wise. We need to think Hogan to Hogan and not Chapter to Chapter or government to government. For example, as a food grower when I first started growing it was the non profits and the relatives that were growing food that

were introducing it to us. I see this happening with micro-grids. It's not going to be the presentations, heavy texts, it's going to be people who are doing it from the ground up and from the visuals and the hands on experience that will make it happen. Not only is education tied into our traditions, but also just to have other relatives doing it. It's going to be family by family that will need the hands on visual learning component. Mobile learning is needed.

Please describe the energy injustice and inequities we face in this region.

- Overall, where renewable energy is coming from how it's made and how it gets to us. There is a lack of clear transparency with the knowledgeable ones. Sometimes we are not aware of what community needs to know and sometimes don't know how to cover the information. Appointing a communications person from the area would help. Make more community investments in local voices would be beneficial. This helps build trust therefore we get more back.
- Solar company outreach is about just checking the boxes and not giving us any technical assistance. They don't do any leg work to be in the community.
- Solar companies use outreach for their own needs. It's considered extractive and therefore leaving communities behind and without the necessary support to help solve problems. Big industry wide efforts are pulling from us at bits and pieces without giving communities anything back.
- During the pandemic we worked with a non profit to get hydro-panels to homes. After the install we found another use. The company gave us no support to move the panels.
- Not enough community networking to create a safety net. To solve this problem Volunteers are available with support to organize.

- Not enough maintenance support to maintain hydro panels or solar installations. If the skill isn't available it creates an inequity.

Are you aware and do you have access to data to help us quantify these inequities?

- Regional partners have been collecting data for a health impact assessment. Unfortunately energy is not one of the choices. Hoping to add another line to include in the assessment.
- I think there is zero data available to us. You have many energy companies that have data but much is not specific to our communities.
- Data isn't broken down into indigenous communities. It's like we don't exist. A good example, the energy companies design data tied to counties, districts, rural vs urban.
- What about land status that affect our families? How many solar panels have been installed would be helpful? We need data on what communities have access to a grid.
- There was an effort through Arizona State University to map out the grid and dump sites. All that data was given over to Window Rock but it isn't available to us. It was hard to find. A central location is needed that can have all the maps for this area within NM with all land status.
- Most of the health data comes from the American Community Surveys and Census Data, also the NM Data Collaborative. We also work with the National Collaborative Health Equity initiative which looks at data and few other sources about inequities and how we can focus on how to frame it in an opportunity way rather than focusing on how much poverty, focus on how many are out of poverty so we can move along those data sets easily.
- When a community doesn't know how data is being used or it becomes proprietary it's an inequity. Having

an inherent contract with community and knowing that the data belongs to them helps us feel at ease and gives us buy in to the data.

- If we don't know how others collect data and chop it up for their own use it's an inequity. Data belongs to us. Having that sovereignty is important.
- Having an inherent buy in from communities on what is collected, the meaning and where to find it is important.

What are the structural issues in the energy system that contribute to injustice/inequity/harm (financial, regulatory, policy)?

Related to affordability and financial structures, the following inequities were identified.

- Navajo Nation owns and generates its own power company but energy leaves to benefit Arizona's grid rather than its own people.
- There has been some organizing around wanting local choice energy. How to have ownership in local energy production has been a challenge for communities.
- Co-op members do not have independence in how energy is made and how it is distributed.
- With Continental Divide, a co-op, there is ownership opportunity but getting to meetings and hearings held in Grants is difficult because the condition of roads and bridges are a hindrance to attending meetings and organizing efforts.
- The co-op has gotten so big that it's forgotten its community members voices.
- Energy advocates are tired fighting big oil, gas and electric generation companies. It's an endless battle with no choice, no ownership, or independence.
- Size of the Navajo Nation is unable to reach people that get left behind.
- Going on for decades, inequities have caused 1/3 of the population to be without running water and electricity.

Related to regulatory and policy structures, the following inequities were identified.

- Land status and the building process is an issue for people who want to live on trust lands. There are multiple layers of regulations, rules and Federal red tape before we can have sustainable housing. The process is long and tiresome.
 - They are required to apply for a residential lease. You have two years to build on the land and if you don't build, it can be revoked.
 - Utilities will not provide electricity if you don't have a solid foundation to build on.
 - If you want water you need to work with the Indian Health Service to provide a permit.
 - You have to have a bathroom designed before they will approve your application.
 - There are locations on the reservation with clusters of homes. Those are the potential locations for micro-grids.
 - It takes a lot of patience to go through the building process and it's expensive. You need a legal survey and an archeology report that could run \$800 to \$1200. Then you need to go through Fish and Wildlife application if you are in a bio resource area, based on a 2008 Federal law. People need to know where these sensitive areas are and don't so they end up being denied.

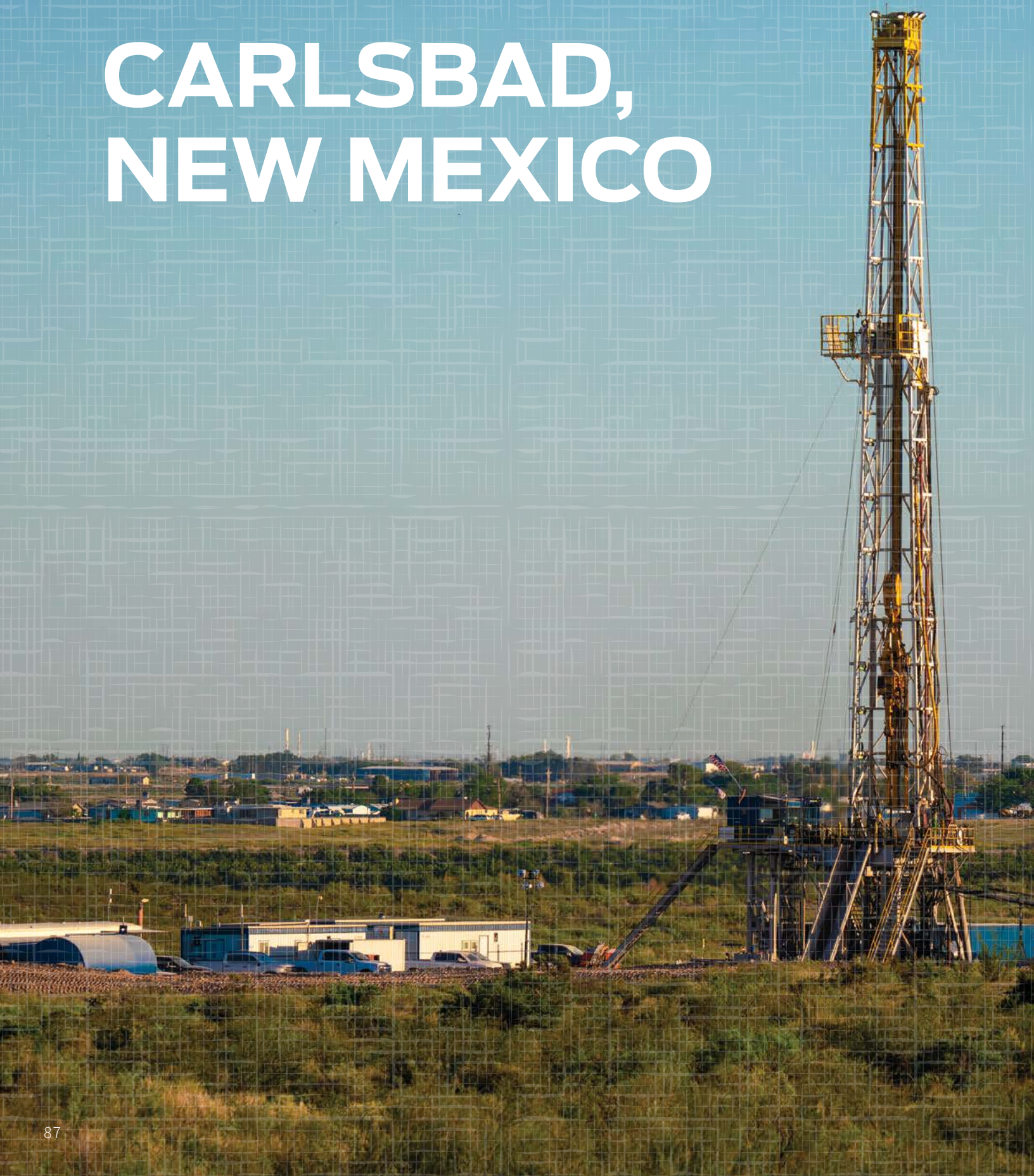
Other comments:

- It would be beneficial for communities who want to pursue micro-grids incorporating it with broadband. It is an important equity part of the conversation. The solar gardens are big opportunities too. Live stock feed such as hay bales have opportunity for year long stock feed availability using solar gardens. Building economy around fresh foods and live stock feed is important.
- Small scale farming, animal raising is a focus right now. Hydro-panels can be applied to this opportunity.

Power Mapping - Who are making decisions that impact us?

- Who are the energy makers?
 - City of Gallup, Continental Divide/Tri-Star Energy and Navajo Tribal Utility Authority.
- How can we look at equity a little bit better on the overall issue?
 - It should be in collaboration with entities because you can't solve inequities alone because they interplay with each other. For example, you can't have a sustainable house unless you have electricity and a healthy economic sector that can support that. No one entity can solve these inequities.
 - From a public health perspective and from an organizers perspective we are always trying to find solutions to everything without having to gather up all of the collaborating efforts which is harder for it to be scaled up but at the community level it's easier because there is community buy-in. At a larger scale you lose that independence and ownership.
- Where do you see your power at?
 - Getting the support and information at the community level that affects policy and elected officials.
 - Identifying what energy companies are doing and getting information out to communities in a timely manner. Example; Continental Divide is looking at using existing power lines as another route to put broad band to current customers.
 - Asking the question; are motives grounded in social justice such as providing government incentives to developers without transparency in who's benefiting and how they are benefiting?

CARLSBAD, NEW MEXICO





JUNE 2023

Carlsbad, New Mexico is a community located in Eddy County, neighboring many oil and gas extraction wells.

According to the New Mexico Climate Risk Map: Local Data Summary for Eddy County (EMNRDClimateAction@state.nm.us), this community is at a high risk for climate change related hazards such as air quality, drought, heat, flooding, and wildfire. One area of concern is energy and water access, critical for mitigating the effects of extreme heat. Eddy County energy burden is 2.00 - 3.00 percent of income spent on energy costs.

Participants included southeastern community organizers and advocates working on permian basin issues, a retired geologist working in coal, petroleum and an electric co-op, a pastor and organizer and a community member and journalist from Roswell working on Xcel SPS/IRP and a community member interested in eco-systems and economics. This topic is new to most participants.

Electric provider is Xcel Energy. Majority of the energy demand is coming from oil and gas industry with only a fraction being served by solar. Xcel is meeting their ETA timeline. Xcel has five different solar arrays. There was a general concern about not having enough data to understand more about air quality related to health outcomes.

DISCUSSION RESPONSES

What is promising for your community? What did you know or learn about micro grids today that sounds promising?

- Opportunities for adding solar for home use.
- Lower energy bills after seven years.
- Abundant regional solar and wind.
- Xcel is meeting the ETA targets.
- The free market leading the cause.
- Moving in the direction of clean energy is essential especially for communities with high rates of poverty such as Carlsbad.

What principles or values do we want to see at work in the energy system?

- Abundant energy and reliable energy. Note: there was a concern with the ETA forcing the shut down of the four corners power plant before we had solar and wind on line.
- Reading between the lines that the free market has provided the reliability of the system. It hasn't been transparent. The free market should be given the opportunity to bridge and establish the transition.
- One participant agrees that the free market has failed us to address the inequities that are steadily growing.
- One commonsense step to take is to require that every new building have a solar.
- Resilient system that if a threat were to happen the system needs an isolated reliable backup. If we had transformers with a backup that would mean resilience. We need isolated microgrids to have resilience.
- Having reliable batteries.
- Having youth take an initiative to aspire toward a

livable future utilizing modern technology like solar and wind to get there.

- We need a healthy political environment to get there.
- Use of technology to have hope for the future.

Inequity concerns:

- General low awareness of inequities.
- Concern over what is the size of the global problem.
- Concern about the areas of NM without running water and electricity.
- Concern about what the size of the problem is when it comes to access to electricity and what kind of electricity. Do we really have an inequity problem?
- Concern about Xcel the local energy provider focused on profits and not local community concerns.
- Concern that the community is bought by oil and gas industry which means media isn't focused on inequities or the greater good of a healthy community.
- The Bigger problem; people who have adequate resources have a great capacity to deny the reality that exists for people who do not have the resources. They have no idea about how a large portion of the population of this county live.
- The people that are vulnerable have no voice. Some are not visible because they live with family or friends, sleep in cars or live in shelters.
- There was concern of shutting down the four corners without bringing on line solar and wind causing an unreliable grid.
- Irresponsible development and lack of energy efficient homes. Carlsbad has encouraged the development of large homes that have high energy use needs.
- XCEL has tremendous obstacles to installing solar on a private residence. Long process to get paperwork approved.

- Solar communities are not helpful with financing rooftop solar and discourage you by making financing difficult.
- Applying for state and federal incentives are difficult to apply for. If you are at the poverty level or below you can't take advantage of the incentives.
- Southwest Community Action Agency that runs the Headstart programs in five counties serve a huge population below the poverty level. Obtaining less expensive energy for them is non-existent. They can't offer energy bill assistance. It's obvious that clean energy is the answer.
- There is a concern that there is not enough information on how reliable the grid is in Carlsbad and surrounding areas. Another words, what is your capacity? If you take the load today how much reserve do you have today?
- Concern the grid is not reliable and that Xcel is not being transparent. Media is not clear on the data.
- The over-site agencies do not want to give out any information.
- Oil and gas are putting stress on the grid.

How aware are you of clean energy jobs?

- Hobbs Jr College has a training program.

Are you aware and do you have access to data to help us quantify these inequities?

- Non steady power results in a more unstable grid. The free market is not providing this information.
- Power for NM is a good way to check for information.
- Community Solar Program is the beginning stages of providing data but have a long way to go. There is quite a bit of murkiness. They need a place to go to sign up.

What are the structural issues in the energy system that contribute to injustice/inequity/harm (financial, regulatory, policy)?

- What ever kind of energy you produce there is going to be waste. Even wind and solar have waste that keeps piling up.
- Land degradation.
- Economy here is beholden to oil and gas. People here in leadership and multi billion dollar corporations who employ people are barriers to a clean energy economy.
- When oil and gas eventually are phased out of the energy supply, lands will be left degraded and the economy will falter.
- Continuation of nuclear energy.
- Geo politics and federal regulation are preventing to move forward.
- Dept. of Interior is still selling and leasing lands.

Give us some remedies?

- Have a convention in this part of the state about alternative energy.
- Clean energy can't be defined as blue hydrogen to continue oil and gas.
- Continuing education.
- Raise public awareness.
- Fix the financing system to make it easy for rooftop solar.
- We want elected officials to be thinking about the future.
- More community solar opportunities.

NEW MEXICO COALITION OF SUSTAINABLE COMMUNITIES





NM

JULY 2023

The Coalition of Sustainable Communities is a nonprofit, nonpartisan membership organization representing and serving New Mexico's cities, counties and Native American pueblos, nations and tribes. It exists within the Santa Fe Community Foundation (SFCF), which is a 501(c)3 organization and is the Coalition's fiscal sponsor. Under that umbrella the Coalition operates as a program, with the ability to guide its operations and seek membership dues, grants and donations to fund those operations.

Full membership is comprised of one elected official, a designed staff member as point of contact, and other appropriate staff designees. All members serve on the Steering Committee and elected officials will serve on the Executive Committee. Its governance is guided by an Executive Committee, Working Groups, Steering Committee, and Executive Director and other Coalition staff.

DISCUSSION RESPONSES

When you talk about energy buy back, what does that buy back look like for disadvantaged communities?

- Most utilities are only obligated to purchase power at the avoided cost. Most solar company developers that install infrastructure don't tell the whole story.
- In Taos we want to make utility scale solar more affordable and accessible for all. Taos is a good example to address equity issues.
- From our experience in Santa Fe, we are wrapping up a solar program running in partnership with Youth Works and Habitat for Humanity to increase access to residential solar. We had some subsidies and a few vendor commitments to a lower price. We encountered with the subsidies and negotiated price point the investment came below what their utility payments would be. The State credit was refundable. Even with the payments it's about 8 to 10 years payback. At the end of the day, even when presented with the information there were always barriers such as interest rate and service panel upgrades for older homes. A lot of pieces are at play into barriers such as lack of public education.
- Energy load peaks in the nighttime. You must have energy storage as a component to any program. NM doesn't have storage incentives but should.

What do you think about microgrid opportunities?

- Having the ability to sectionalize the grid gives more flexibility to communities who are vulnerable to various climate change impacts such as the recent historic forest fires. Keeping vital infrastructure up and running is most important.

- Any institute such as a health centers, schools would serve as critical infrastructure for a natural disaster or national emergency. Not so much as an offset to energy costs. Microgrids could be part of a natural disaster resiliency plan.
- With utility scale solar here in Taos we can sectionalize the grid. We are looking at buying generators. Hoping that the IRA will address this cost.

How do we address this as a state?

- In all our communities the need for resiliency centers can function during a disaster. Also, an alert system to notify who's in need during a disaster would be most beneficial.
- Using satellites to address communication needs would also increase resilience. Think about the people who are shut off from family and loved ones during a disaster.
- Looking at the subdivision level, equip one home to serve as a backup shelter for cooling and heating would increase resilience.

How is the state addressing storage needs?

- Resiliency funding through the Infrastructure Investment and Jobs Act (IIJA) administered through the DOE and managed by EMNRD does not include storage as eligible. We are slated to get 7 million dollars a year for the next five years mostly going to the utilities. Resiliency can be done more cost effectively if you think more strategically. For example, the State has an 81-Kilowatt solar installation micro grid at the Santa Fe Hide Park area running 24/7. There is no other power source. By 10:00am in the summer the storage capacity is full. You have about half of your capacity going into

the atmosphere without adequate storage capacity. The use case scenario is very important. There isn't another way to store the wasted solar energy, so it's lost to the atmosphere.

Addressing the inequity in utility rate design.

- Utility rate design is critical. For example, with Excel there isn't an incentive to put solar on a school building because the rate design is designed for the demand side, nothing on the energy side. This is an inequity. Same goes for the Co-ops because they are allowed to give you avoided costs. PNM just gives you retail rates. If you want to effect change you have to work with the PRC to address how and why they allow these rates to be so screwed in one area verses another. That's the critical piece of the whole cost effectiveness. What is cost effective in one part of the state is not cost effective in other parts of the state. It's unfortunate for our rural communities.
- As we get to our ETA goals you have to think more strategically about how to get there. Is little or a lot on the grid the cheapest way to get there or is the old model of feeding down to us the better way? In the middle of winter when the wind isn't blowing what are we going to do about long term storage? The 100 giga watts that costs billions, you can't do this on a small scale.

What's the goal of using the 7 million dollars per year in Federal Funds?

- The El Rito campus in Española is looking at modernization. As you look toward modernization you think about power outages in small communities. Kit Carson shared some outage time information. Some rural community households go for long periods of time when the electricity goes out.

We don't often hear about small communities out of power. Hopefully this is one problem that can be solved with this money.

What is the best way to have an all-renewable energy on the grid? Who is going to benefit?

- There are many ways to get this done. If the metric is the least overall cost this is just one trajectory. We need to prioritize. Looking at what job opportunities can be created. Looking at who's electric bill is coming down the most. Looking at who has access to RE generation. There will be 7 billion of Federal funding coming to New Mexico to help address low-income households. If you want to get to a renewable grid to address the inequities, have more distributed energy on the grid.

What inequities do we face?

- Lack of information in rural communities such as farms and ranches. Land grant communities need organized outreach. Land grants are recognized as their own governments. They need guidance to share what information is available.
- One of the largest contributors of inequities is how investor-owned utilities and those co-ops are tied to G&T's (Generation and Transmission) and IOU's (Investor-Owned Utilities). The question to ask is; what do their caps look like? Within those communities encourage to push their caps to seek alternative energy sources. It could be utility buyouts to have more local choice such as the case in Taos. We will never get to where we want to go to build RE capacity if the utility companies are still dictated by the G&T's and IOU's. It's too hard to do this from behind the private side or the meter. If it's truly the desire of the state to get into a more RE portfolio, like Taos, rural communities need local choices.

- From the IOU perspective it will take the IOU's to change their portfolio. To create local choice energy, you need a critical awareness to push the governing board toward change. That's what the town of Taos did to increase the RE cap to have access to RE. That's when avoided costs comes into the conversation. It is a given that the co-op doesn't want to cause harm to the grid. Those that have the means to install rooftop solar, not necessarily for the payback, will help grid reliance at night but end up displacing those that can't pay. The most disadvantaged are subsidizing the grid for those that can afford to pay. When it comes to local choice as in the case of Taos, let the community decide how much to increase the caps and what energy mix they want.

How did Taos approach this?

- Leadership from the top changed the course to opt for local choice energy. Bold leadership from the co-ops board lead by Louis Reyes, CEO of Kit Carson Electric. He engaged leadership from the County commission, city councilors and large consumers such as Taos Ski Valley. Taos Ski Valley's case helped change the rate design arbitrarily controlled by the G&T and Tri-State.
- A feasibility study on the Tri-State buyout vs the cost savings was completed. The results showed the first year that co-ops electricity rate dropped by 25% and passed that on to its customers. They were able to sell off excessing energy too, demonstrated local resilience and energy savings. They can now offer 100% solar to low-income households. This demonstrates a shift away from G&T's.

How can weatherization help fill the equity gap?

- Energy usage and weatherization starts with the home. Energy Star appliances, insulation and other energy saving measures help to lower energy costs especially for low-income homes. There is plenty of funding through state and federal agencies to



weatherize homes to help prepare a home for renewable energy.

What other ways can be used to fill the equity gap?

- Building capacity is often needed. Federal funding is not that easy to apply for and not every community has access to information. Having someone to help navigate through the whole process would be helpful. I don't know many organizations out there to help with this capacity. The Councils of Governments around the state are helpful but don't have funding to expand their capacity.
- Hopefully with the new Seed funding it will go to communities in need. To build capacity, leverage this funding with Community Block Grants. EMNRD already have a program for commercial buildings but now we need something for homes.



- What's needed is a funding project design that allows for one energy service provider to go out to service a block of homes in a community to be weatherized rather than the current one by one approach. From the ground up too. You can't electrify a home that needs weatherization because they will end up with a large electric bill in the wintertime. Weatherization first then electrify.
- There is a concern with the Federal Seed money going to EMNRD, will go to urban areas first and that rural communities need to hear about the funding as soon as possible. Cities need to identify the projects and need local community members to do this outreach.
- How do we find out about the Seed money for residential? NMEMNRD has a seed coordinator you can contact.
- Another program, the Sustainable Building Tax Credits also for windows, doors, and insulation should be highlighted. For low-income they can be fully refundable.
- Another idea. Have AmeriCorps be involved to get students involved to conduct needs assessments in small communities to help with a competitive grant application.

What Data is needed and is it important?

- There are methodologies used to help collect data that are not accessible and hard to use to determine affordability, access to renewable energy and other markers. For example, mobile home parks. There isn't one place to find it. You have to know the many places to find the data. Before the data is collected make a case for data collection.

TRIBES, PUEBLOS AND NATIONS





AUGUST 2023

New Mexico is home to 23 federally recognized tribes in New Mexico counties.

Participants, mostly Native American and several renewable energy company representatives and advisors gathered together at the Indian Pueblo Cultural Center to learn about microgrids and technology advances and what it might mean for the energy future of their communities.

Energy and water access are critical for mitigating the effects of extreme heat and severe cold in the winter. Households with high energy burden (high energy costs relative to household income) may not be able to cool indoor spaces effectively. Poor housing quality often correlates with low insulation levels which can lead to high energy costs and may also correlate with lack of air conditioning. Data is showing that the Jicarilla Apache Nation (for example) ranges from 0.00 - 8.00 percent of income spent on energy (EMNRDClimatAction@state.nm.us). A few other note worthy climate risks; 1/3 of Navajo's are without running water and electricity, 30% have disabilities, 31% have asthma, 16% have diabetes and 26% experience food insecurity.

DISCUSSION RESPONSES

TABLE 1

What seems promising to address equity?

- Community conversations are good.
- Coordination between Navajo Nation and Permian front line communities is promising (Sustainable Economy Advisory Committee)
- Legislation in last Session was pushed by front line communities—brown, indigenous, rural and low-income communities that are living and working near extraction and development sites, are impacted by climate disasters and bearing the brunt of the adverse effects.
- Ruling about Chaco—high paying jobs related to extraction so tribal officials and allottees don't speak out against. There are real economic consequences for communities if extraction is halted.

What are some guiding principles?

- Community knowledge
- Tribal leaders don't know value of renewable energy; they need information and knowledge to make sound decisions.

What is the extent of inequities we face? What are the structural issues in the energy statement (financial, regulatory, policy) that contribute to inequities?

- Energy initiative may only benefit tribal buildings or economy, not community members.
- Power generated in communities doesn't stay in communities.
- New energy projects don't necessarily address the energy needs of communities. 30% of Navajo Nation households don't have access to electricity or running water.

- Be intentional about consultation. Gov't to gov't is a legal process and implementation doesn't necessarily involve community members.
- Ensure that definition of tribal consultation is included in laws/policy and is followed.
- Government agencies will do the bare minimum so we need to ensure that there is collective guidance about what that minimum is.
- Lots of different systems: tribal/city/state/federal to keep following and keep track of.
- NM State Collaboration Act was passed in early 2010s and NM State gov't departments post it on their websites, but don't necessarily follow the rules.
- Change over of Tribal leadership in December gets taken advantage of by industry and gov't. Decision about Petroglyph was made after a missed deadline because of transition.
- If communities are not engaged, the solutions won't fit their needs
- Volunteer legislators are "sponsored" by industry and are unduly influenced by their funding.
- Consider how farms are funded and subsidized. Who gets the money? For what?
- Hydrogen is a false solution. It's not a "silver bullet." Impact on community and environment are not known. Very resource intensive, e.g, water. What infrastructure would be needed?
- Money for hydrogen development could be better used elsewhere to implement solutions that work, and that will help community.
- Definition of "clean fuel" is murky.
- Low carbon fuel standards set by CA and includes hydrogen.
- Data for rural areas and individuals are needed

- Accountability—full cost of projects vs. benefits isn't clear.
- Tribes could have own independent energy and food systems that are sovereign and self sustaining. Would need capital expenditures and leaders with knowledge and vision.
- How do we empower youth to do this work without overwhelming them?
- How can we ensure that lost income from oil & gas industry is replaced with at least equivalent income? There is a tension between immediate income to take care of one's family and concern for longer term environment and health consequences.

How would we remediate them?

- Economic Transition Act of 2023 wasn't successful but will be put forward again this session. Would establish bridge and pathways for accessing state and federal dollars in rural and front line communities. Includes: satellite offices, grant writing support, technical training, connection to broader economy, e.g., sustainable farming, film industry.
- Previous workforce training has been held in Albuquerque and Las Cruces and didn't reach front line, rural communities. Solution would be to move to other communities, partner with higher education like Diné College, or high schools.
- How can we ensure that sustainable farming is a viable career? Native farmers are stewards of the land as well as producer of food and agricultural products. They need access to equipment, access to land that is clean and safe, agrovoltaic systems and reinstating traditional economy, traditional knowledge and wisdom, e.g., clay ->pottery, food, jewelry.
- Tribes could have own independent energy and food systems that are sovereign and self sustaining. Would need capital expenditures and leaders with knowledge and vision.

Who are making decisions that impact us?

- Xochitl Torres-Small, USDA
- Nathan Small, NM Legislator
- Melanie Stansbury, NM congressperson
- Theresa Leger-Fernandez, NM congressperson
- Deb Haaland has lost some credibility around Chaco decision making.
- Heinrich is championing hydrogen.
- Tribal and Nations leadership.

TABLE 2

What did you hear this morning that was promising or concerning to address inequities?

- Need for more public and community information about the benefits of renewable energy development and micro-grids that could help improve inequities.
- There is a concern for youth and the lack of education about renewable energy. Work force development should include STEM education as early as the 7th grade.
- More information is needed to know where to go for renewable energy job training.
- On-line training is lacking in rural communities and transportation is needed to reach programs that offer training.
- There is a need for improved access to education such as tutoring and help with certification to be an installer

Name a few principles?

- All participants represent the industry and could not answer this question however they value tribal sovereignty, clean air, access to education and traditional values.

What is the extent of energy inequities?

- Affordability of clean energy is concerning and not easily achieved because of lack of resources, education, training and partnership opportunities. Without subsidies, clean energy would not be possible.
- The reliability of sources to install and maintain solar is lacking.
- Newer technologies such as Micro-grid technology are slow to be adopted.
- Tribes need ownership of energy generation to help address equity issues such as clean air, access to energy and affordability.
- Access to energy has become a competition between the dominance of oil and gas. Development revenues on tribal land and renewable energy development opportunities.
- Fracking has become an inequity.

What are the solutions?

- Renewable energy companies should offer a basic training program to communities who want to adopt renewable energy. This would assure a stable work force to install and maintain equipment.
- Utilize the Job Training Partnership Act implemented by the State Economic Development Department to develop the workforce.
- Transform the renewable energy industry by shifting oil and gas federal subsidies toward the renewable energy industry.
- Create partnerships that have resources to help build capacity.
- Shift away from short term planning to long term planning.
- Build trust by working with communities in person.
- Tribal ownership of electricity generation is important.
- Industry needs time to develop name recognition therefore builds trust with communities that are new to renewable energy.
- There is a federal law that Industry profits and accountability reports are due quarterly. Advocate to

shareholders and nonprofit boards a shift away from short term reporting to long term reporting would benefit the industry and partners long term goals and profits.

- The use of ITC (tax credits) is a game changer. There is a need to form partnership with developers to best utilize the credits.
- Building trust is a critical pathway to a renewable energy development. Here are a few solutions to build that trust needed to complete a successful project partnership.
 - Face to face meetings is best. Use social impact spending support to help solve other social problems. Create champions to advocate for renewable energy. Encourage tribes to work together. Create and encourage a longer timeline investment plan. This would require a change in policy, rules, and regulations.
- Educate and encourage the development of microgrid technology on tribal lands, especially communities without running water and electricity. Ask to build a pilot project on a school or community building.
- Know what great questions to ask.
- To create affordability, ask leadership to provide resources and training to communities that want to own and maintain their own community solar program.
- A project might take up to two years. To shorten development time, have consistent permitting rules and regulations with BIA, Tribal government, and state regulators.
- In addition to curriculum design from an early age, build STEM education into schools using pilots and model projects. Ask tribal leadership to fund, partner, and create programs.

Who are the decision makers and what do we ask them to do?

- Governor and leadership change happens every one to two years. Industry needs to adapt by planning for longer development lead times.
- Give credit to the NM Congressional Delegation for their assistance and continue to work closely with them as more renewables come on-line.

TABLE 3

Hopeful/Concerned

- Active microgrid at Mesa Del Sol - residential.
- Economic development opportunities with data and modernization.
- Data monetization- impacts the pockets of community members.
- Economics- who pays?- think private investment too.
- Questions and Themes across geographies to use as equity measure.
- Does not identify what measures looked like longitudinally.
- Themes have validity- why aren't companies centering equity, disgust on corporate level.
- Cost Accountability of energy sources in NM.
 - Nuclear, oil/gas, Solar, and Wind
- Tribal clean energy development by design- built into structures.
- Curious
 - If end of line and last one in, then microgrids make sense.
 - If not giving away 5 megawatts away- but real valuation that builds on needs and wealth within tribal nation.

(Concerns) Economic Model Social Impact E.S.G.

Environmental

- Environmental burden of disease.
- Solar's water needs.

Social

- Monetary incentives.
- Also about current global economic design, needs to look at long term impacts. Not adjusted to real time; land leases, private leases, bond rate; troubling example San Carlos.

Government

- Political cumulative impacts of health.

Guiding Principals

- How we use energy and water should not make plants and animals a target for sacrifice.
- All technology and economic models must restore the earth and its peoples way of life back to the way they found it.
- Avoid targeting indigenous tribes for: natural resource mining and transporting, hydrogen, federal incentives, and leaving a waste land.
- Encourage collaboration with NM's 23 tribes, pueblos and nations.
- Understand the difference in working with native American governments and non-native governments.
- Consider sovereign relationships and pressures with Federal, state and local governments.
- Understand carrying capacity to deal with growth.
- Create a just economic role for tribes, pueblos and nations by:
 - Considering a more equitable share of profits on partnerships or turn over ownership to tribe or front line community to lesson energy burdens.
 - Institute safety measures to lesson impact on land, water and housing.

What is the extent of energy equity we face?

Affordability

- Start in certain areas (hubs); international district, Barrels, South Valley in Albuquerque. With/ IRA and state funding, philanthropic gap funds to increase affordability and increase access. Focused implementation. C-PACE- small businesses have access.

Access

- Language perspectives need to deeply shift to translate to community level- 5th Grade.
- Customized to the community.
- Education is important to not needing outside business advise.

Jobs and Training

- Job losses from decommission fossil fuel plants need a plan for family supported jobs.
- Reinvest profit into jobs and training and paid internships. Not just dirty jobs.
- Include healthcare package and retirement
- There is not measuring for transportation and roads, especially in NW- reside in AZ, Utah, and NM. Different perspectives and different jurisdictions make it complex.

Solutions

- To make tribes, pueblos and nations more sustainable, work in concert with housing materials, weatherization, and energy efficient appliances.
- NM needs to implement circular economy projects in energy and technology.
- Develop and install solar panels, water purification systems, Agrovoltatics and increase soil moisture with LANL funding.
- Navajo Power Homes: promote individual power grids and weatherization for homes.
- PNM says, “give priority to Tribal Nation and tell us how much you want to build and we’ll pay you a fair price.”
- Co-Ops follow suit because of history toward Pueblos and Tribes;
 - Example Kit Carson - transparency with money with tribe
 - Example Laguna
 - Gov. Richardson
- Empower each Tribe to be a utility. Each Pueblo needs to own their own power source. Considerations: Timeline is long and funding is not accessible. Shift could be foundational to building equity.
- Targeting and Selecting- negative impacts on Native American Tribes- targeted for land and resources.
 - Consider what negative impacts on Native American lands and people.
 - Consider investor- buy back land, with and on behalf of Tribe.

- Build renewables and then reprioritize and enter into a trust. Own assets fully in 5 years.
- Revisit Engagements with Pueblos, Tribes and Nations.
 - Because reflecting has it been vulturous (as a developer).
 - Take what we need and then let the land rest.
 - Protection against those other presences.
- Focus on Tribal Energy Independence and Sovereignty.
- Takes time to invest over time to really develop relationships.
- Reduce the amount of targeting to NM’s Indigenous Tribes.

Decision Makers and the ASK

- Work with Secretary Haaland.
- Tribal Governments
 - Even with solar and renewables targeting tribes
 - Truth about scaling
 - Pueblos- Nation to Nation
 - Different Federal relationships with the non-native
- DOE, States, Tribes
 - Approaching Tribes and Pueblos not thinking of development impacts on other Tribes.
- Tri-State
 - Tries to get around independence
 - Psychological trauma
 - Charge for lost profits
- Land Grant Communities could also build independence but PNM has laws that would make community pay for the lost profit, like Tri-State.
- Create community owned utilities.
- Plans, Ideas, Investments must work for Native Americans:
 - Looks good on paper and in theory but remind ourselves we’re at the beginning of a process. Be patient for both partner and community.
 - Ask how much money is going back into improving science and technology that would benefit the community?
 - To lessen lands becoming waste lands or sacrifice zones, ask what to do with outdated batteries and recycling to deal with waste.

ACKNOWLEDGMENTS

This project about energy equity is building on the expertise and current efforts of many frontline communities and community-based organizations who have contributed a significant amount of work to this area. We would also like to acknowledge the many individuals and organizations who participated in the state-wide community conversations and town hall and for their continued efforts to implement the recommendations.

We also acknowledge that our knowledge about energy equity is a growing topic, and a collaborative process. We invite feedback from anyone. You can visit our website at www.nmenergyequity.org.

SPONSORS



The New Mexico Established Program to Stimulate Competitive Research (NM EPSCoR) is building the state's capacity to conduct scientific research and is training a diverse, well-qualified Science, Technology, Engineering and Mathematics (STEM) workforce. We do this through multi-year, federally funded projects that include New Mexico's research universities, primarily undergraduate higher education institutions, national laboratories, and other organizations. Our current focus is the NM SMART Grid Center, an interdisciplinary National Science Foundation (NSF) project that is pursuing research and workforce training for next-generation electric power production and delivery.

NM EPSCoR is funded by the National Science Foundation award #OIA-1757207. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.



AES funded the Tribes, Pueblos and Nations community conversation

TEAM



Theresa Cardenas,

a native New Mexican, is the founder and CEO of Noble Renewables Group LLC, a sustainability leadership consultancy firm to facilitate social and environmental change for a more

sustainable world by offering strategic planning, coalition building, facilitation, civic engagement, environmental policy advocacy, and community education. She has expertise in policy action at the local, state, and federal level in clean air, water management, climate change, and electricity transition. Theresa earned her undergraduate degree from the University of New Mexico, and her masters in Sustainability degree from Arizona State University. She is passionate about the arts and humanities as a voice for equity and social change.



Lilly Irvin-Vitela

was born, raised, and educated in New Mexico. She is the president of Community Connects Consulting and has 25+ years of experience in supporting principled collaboration, facilitating

restorative conflict management processes, shaping public policy and systems change, working cross-culturally, and leveraging resources to achieve stronger outcomes that are centered in equity and justice. Lilly holds an undergraduate degree in Philosophy and Political Science and a Master's degree in Community and Regional Planning from the University of New Mexico. She is passionate about people coming together to create healthy communities and positive change, and determined to include people who are often overlooked and undervalued in decision making in ways that focus on strengths and opportunities while acknowledging challenges that frontline communities face.



Selena Connealy, PhD

is the Associate Director for the NM EPSCoR State Office. In that role, she is the co-Principal Investigator for the NSF-funded NM SMART Grid Center, a \$24 million research

project to modernize the electricity grid and develop a diverse and highly-qualified workforce. Dr. Connealy began her education career as a middle school teacher in Texas and was a Project Associate at the Council of Chief State School Officers in Washington, DC. For the past twenty years, she has worked at the intersection of formal and informal education, supporting educators and learners at the NM Museum of Natural History and Science, NM State Parks, and UNM, and advocating for systemic change through the NM Partnership for Mathematics and Science Education.



Brittney Van Der Werff

works for EPSCoR as their communication and outreach specialist. She earned her undergraduate degree in Psychology from Northern Arizona University,

and her master's from the University of Michigan's School for Natural Resources and the Environment. She is passionate about effective communication, equity, and conservation behavior.

Town Hall Facilitators

Theresa Cardenas
Krystal Curley
Leila Flores Duenas

Lilly Irvin-Vitela
Danielle Garcia
Melissa Toledo Ontiveros

Town Hall Scribes

Dustin Allen
Selena Connealy

Andra Kiscaden
Isis Serna



NMENERGYEQUITY.ORG