



Innovation and Commercialization
for a Regional Energy Workforce

Innovation and Commercialization for a Regional Energy Workforce (i-CREW)

October 26, 2020

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New Mexico State University

NM
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I-CREW: Jobs, Innovation, Connectivity and Commercialization

i-CREW is a U.S. EDA-funded program focused on clean energy as an emerging economic opportunity to create and retain jobs, enhance commercialization and innovation, and foster regional connectivity.

Program Goals:

- Economic development, including rural, economically disadvantaged, and Native American communities
- Workforce development (education, job training and retraining)
- Clean energy business assistance
- Clean energy entrepreneurship
- Clean Energy Roadmap





Program Team



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College of Engineering



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**College of Agricultural, Consumer
and Environmental Sciences**
Indian Resources Development



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Workforce Development

Goal 1: Expand Workforce Development through NMSU System

- Academic classroom education and training
- Experiential, hands-on education and training (apprenticeships, internships, Co-Op, design projects)
- Short courses and workshops for existing workforce
- Industry certifications



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Outreach

Goal 2: Expand outreach to businesses and communities

- Technical services to businesses and communities (e.g. energy efficiency, clean energy integration)
- Outreach for integration of clean energy emerging technologies
 - Transportation (e.g. electric vehicles)
 - Housing
 - Grid modernization
- Collaborative partnerships with ENMRD and NMED on energy efficiency and source reduction workshops (funded by USDA grant)



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Innovation and Commercialization

Goal 3: Accelerate Technology Innovation and Commercialization

- Create Sector-Based Entrepreneurship Training
 - Energy Sprint Business Accelerator
 - Entrepreneurial training statewide
 - Enterprise advisor and information network
- Advance emerging clean energy technologies for potential commercialization
- Tech-Match (e.g. match promising technologies with licensees)



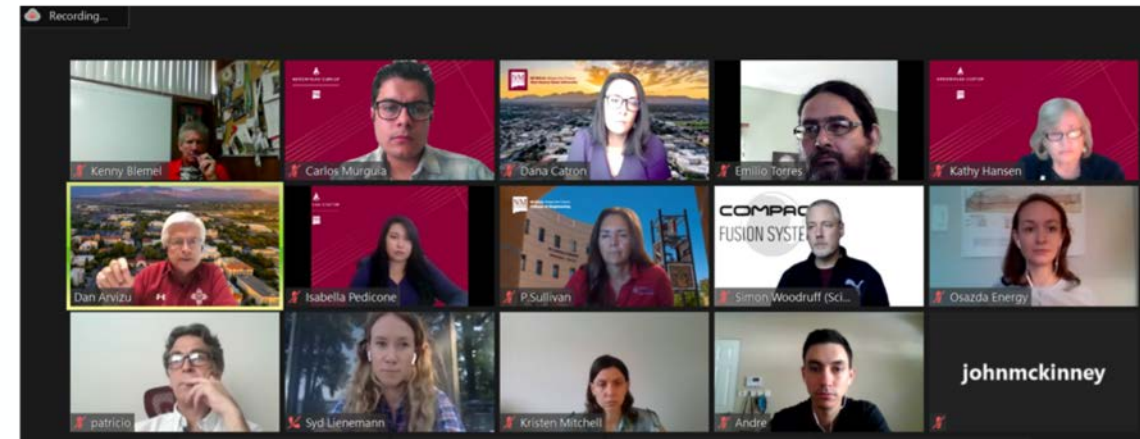
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EnergySprint 2020

- 100% virtual format, 8 clean energy businesses: 25% woman-owned, 38% minority-owned and 13% veteran-owned.
- Connected participants to advisors, programs and opportunities:
 - 18 program mentors and speakers
 - Prototyping assistance through the Foster Innovation Exchange
 - NMSBA assistance
 - SBIR funding
 - NMSU faculty
 - Potential investors
 - 3rd Place in ABQid Balloon Pitch Competition
- DOE EPIC Award: 1 of 20 national awards



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EnergySprint 2020



Company Name	City	Project
Compact Fusion Systems	Santa Fe	A new type of engine that does not produce CO2, and does not rely on hydrocarbon fuels
McKinney Burner System	Aztec	Burner System
Speed Joule	Alamogordo	Speed Joule
Management Sciences	Albuquerque	Solar Guardian Photovoltaic
UpCycle Power	Albuquerque	Refurbish used electric vehicle to provide stationary storage
Osazda Energy	Albuquerque	Cost-effective crack-resistant metallization for photovoltaics
Evus	Las Cruces	Permanent Magnet Induction Heating
Sol Investment	Las Cruces	Multi-family residential and commercial apartment complex



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Statewide Clean Energy Road Map

Goal 4: Develop Statewide Clean Energy Road Map led by i-CREW partner, North American Intelligent Manufacturing Initiative (NAIMI)

- Regional and community working groups (e.g. statewide mission with localized relevance)
- Alignment with NM Energy Transition Act
- Adoption of clean energy technologies
- Engagement in clean energy workforce development
- Champion entrepreneurial clean energy start-ups and expansion of existing businesses



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Clean Energy Economy Roadmap

- New Mexico is transitioning to Clean Energy using our solar and wind energy resources that are among the best in the Country.
- This presents an opportunity to make the State a national leader in clean energy and to grow a Clean Energy Economy.
- NAIMI has the lead on i-CREW to develop a Clean Energy Economy Roadmap that will identify the needs, issues, and opportunities in growing a Clean Energy Economy.
- The Roadmap will compile information on clean energy technologies and workforce and economic development efforts.
- It will carry out a needs and issues assessment on strengths, challenges, and opportunities for a NM Clean Energy Economy.
- It will provide a set of prioritized actions needed that will directly support growing a clean energy economy workforce.
- *The ICREW* Roadmap will be completed by June 31, 2022.*



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Clean Energy Economy Roadmap

The Roadmap will identify the needs, issues, and opportunities that affect the growth of a clean energy economy in New Mexico and develop a set of actions and recommendations for the next five years that will kick-start a clean energy economy in NM.

Components of the Roadmap

- Compile information on clean energy technologies and workforce and economic development efforts in New Mexico.
- Carry out a needs and issues assessment that reflect strengths,, challenges, and opportunities for a NM Clean Energy Economy.
- Provide a set of prioritized actions needed that will directly support growing a clean energy workforce and businesses.



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Regional Roadmap Working Groups

Alamogordo

James P. Miller, Dean Emeritus, ENMU Ruidoso, NM Renewable Energy
Transmission Authority Board Member

Albuquerque

Abbas Akihl, NM State Representative

Carlsbad

Mike Espiritu, Director – Roswell Chaves County Economic Development
John Waters, Executive Director – Carlsbad Dept of Development

Farmington

Steve Grey, Board Chair -- Four Corners Economic Development
Arvin Trujillo, CEO -- Four Corners Economic Development

Gallup

Michael Sage, Deputy Director, Greater Gallup EDC

Grants

Eileen Yarborough, Director - Cibola County Economic Development

Hobbs

Missi Currier, Director – Hobbs Economic Development Corp

Las Cruces

Davin Lopez, President/CEO – Mesilla Valley Economic Development
Authority

Kathryn Hansen – Director – NMSU Arrowhead Center

Portales

Chase Gentry, Director – Clovis Economic Development

Santa Fe

Camilla Bustamante, Dean – Santa Fe Community College

Silver City

Priscilla Lucero, Executive Director – Southwestern Council of
Governments

Socorro

Van Romero, VP Research – NM Tech



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Challenges and Opportunities

Clean Energy – Smart Grid

- Educate the public on how the Smart Grid can provide energy savings and flexibility in how homes use electricity

Information Technology – Cybersecurity

- Cybersecurity needs to be improved for the electric grid
- Cyber attacks are already underway and will likely increase
- NMSU and NMT have resources that support grid security
- 2.1M unfilled cybersec jobs are projected in 2021

Workforce

- Opportunity for clean energy job growth exists under new leadership in State government
- Need to ensure NM people fill the clean energy jobs that will be created

Technology

- Reshoring of manufacturing/supply chain
- Manufacturing Extension Partnership NIST
- COVID has shown the danger of relying on foreign suppliers for PPE, ventilators, etc.
- Similar danger exists for clean energy suppliers
- Need to investigate possibility of reshoring of the clean energy manufacturing/supply chain in NM

Widespread Needs Identified

- Improved Broadband access
- New electricity transmission lines
- Cost-effective long-term energy storage
- Improved transportation infrastructure to support EVs



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Progress to Date

Progress

- Conducted meetings of the Regional Advisory Groups
- Virtual Town Hall meeting held on August 5 with 160 participants to get statewide input on the Roadmap
- Virtual Beneficial Electrification Summit on October 14 with 159 participants
- Working with State agencies
 - Support EDD on EV charging station maintenance program
 - Support EMNRD to explore pumped hydro storage
 - Collaborate on programs to grow clean energy economy
 - Support local businesses with EnergySprint Accelerators



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Next Steps

- Conduct follow-up meetings with Regional Advisory Groups
- Conduct 2nd meeting of the Statewide Advisory Group
- Develop a first draft of the Roadmap by the end of the 2020
- Continue collaboration with EMNRD and NMED on clean energy, energy efficiency and grid modernization efforts
- Develop collaborative relationship with MIT on the Roosevelt Project (a Case Study on clean energy transition and societal adoption)



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Questions?

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