

# “Supercharging Nevada’s Lithium Batteries and Other EV Materials Loop”

## Nevada’s Regional Technology and Innovation Hub

Frederick Steinmann

Director, University Center for Economic  
Development

Principal Investigator, Nevada Regional Technology  
and Innovation Hub



**Western Nevada Development District Member’s Summit**  
**March 25, 2024 and March 26, 2024**



University of Nevada, Reno

# A little bit about UCED and Nevada

- ***The University Center for Economic Development:*** established in 1992, Nevada's only US EDA funded University Center Program...a statewide mission to foster economic development throughout Nevada by making the extensive resources of the University of Nevada, Reno to organizations and areas that can benefit from job and income creation and job retention efforts.
  - Existing work entails strategic community, organizational and economic development planning; socio-demographic, economic, and community data collection and analysis; contingency and resiliency planning; and technical assistance, economic assessment, and feasibility studies.
- ***Nevada:*** 17 counties, 8 regional economic development authorities (through the Governor's Office of Economic Development), 2 EDA Economic Development Districts, and 32 federally recognized Tribes.
  - A geographically large state (11,567 sq. miles) with 'low' population (3.14 million total population in 2021)...but the most 'urban' state in the United States (approx. 90% of the state's population lives in three MSA's)...plus nearly 80% of Nevada's land is federally owned.



# Nevada's Regional Technology and Innovation Hub (Tech Hub)

- Established on October 23, 2023 as part of the US Economic Development's Regional Technology and Innovation Hub Program (Phase 1 Designation).
- Includes 16 of Nevada's 17 counties, 7 of Nevada's 8 Regional Development Authorities, and both of Nevada's two Economic Development Districts.
- Over 60 consortium partners: Institutional Partners, Industry, Economic Development Organizations, Workforce Development, State and Local Government, Tribal Governments, Venture Development Organizations
- Key Technology Focus Area: ***Advanced Energy and Industrial Efficiency Technologies*** (Critical Elements Tech Hub).
- "Cradle to Cradle" Approach: from Extraction to Processing to Manufacturing to Recycling.
- ***"...Nevada is poised to build a self-sustaining and globally competitive advanced energy cluster representing a key component in of the U.S.' transition to clean energy."***



# Nevada's Regional Technology and Innovation Hub (Tech Hub)

Six Component Projects:

**Supply Chain Enhancement**

**Workforce Development**

**Lithium Campus**

**Commercialization and Entrepreneurship**

**Infrastructure, Community Capacity, and Housing**

**Nevada Native Nations Center**

---

Project Goals over Five Years:

Create 3,000 New Businesses

Expand 2,000 Existing Businesses

Create 50,000 New Jobs

Potential Economic Impact of the EV Sector:

*Moderate Growth Scenario*

**Employment:** 350,000 (2030) and 570,000 (2040)

**Contribution to U.S. GDP:** \$60.0 billion (2030) and \$110.0 billion (2040)

**Economic Output:** **\$90.0 billion (2030) and \$150.0 billion (2040)**

*High Growth Scenario*

**Employment:** 510,000 (2030) and 740,000 (2040)

**Contribution to U.S. GDP:** \$90.0 billion (2030) and \$150.0 billion (2040)

**Economic Output:** **\$130.0 billion (2030) and \$200.0 billion (2040)**



# The Nevada Tech Hub – Supply Chain Enhancement Component Project



**CHINA CONTROLS THE FOLLOWING ELEMENTS OF GLOBAL SUPPLY:**

**100%**  
OF OTHER  
CRITICAL  
ELEMENTS

**100%**  
SPHERICAL  
GRAPHITE

**95%**  
MANGANESE

**75%**  
COBALT

**70%**  
GLOBAL SUPPLY  
OF LITHIUM-ION  
BATTERIES

**69%**  
SYNTHETIC  
GRAPHITE

**58%**  
GLOBAL  
LITHIUM  
COMPOUNDS

**69%**  
NICKEL SULFATE

**NEVADA PROVIDED  
CRITICAL ELEMENTS  
AND NATURAL  
RESOURCES (2022)**

**5.5 MILLION OUNCES  
OF SILVER**

**4 MILLION OUNCES  
OF GOLD**

**141.8 MILLION POUNDS  
OF COPPER**

**8.2 MILLION POUNDS OF  
LITHIUM CARBONATE**

Sources:

- Global EV Outlook 2023 Executive Summary, 2023 IEA
- North America's Rapidly Growing Electric Vehicle Market: Implications for the Geography of Automotive Production, Thomas H. Klier and James Rubenstein, Economic Perspectives No. 5, December 2022 U.S. Federal Reserve Bank of Chicago
- The Macroeconomic Impact of Increased U.S. Electric Vehicle Battery Production, Mariah Freeman, Elan Rabin, Caroline Brown, Doug McElroy, and Verena Reinold, 2023 EPRI Group Company for CALSTART's U.S. Electric Vehicle Battery Initiative
- State of Nevada, Nevada Division of Minerals & the Commission on Mineral Resources



**US ANTICIPATED  
FUTURE ELECTRIC  
VEHICLE DEMAND**

Electric Vehicle (EV) sales to reach  
**64%** of light vehicle production by  
2030 in North America

EV's expected to account  
for **49%** of all vehicles  
assembled in North  
America by 2030

EV's expected to  
account for **45%** of  
all vehicles  
assembled globally  
by 2030

**LIGHT-DUTY EV MARKET SHARE OF ANNUAL  
US DOMESTIC NEW VEHICLE SALES:**

**29%** BY 2025

**60%** BY 2030

**85%** BY 2035

**100%** BY 2040

## Major Challenges:

- Uncertainty citing facilities, meeting regulatory burdens, constructing facilities, financial risk.
- Lax environmental regulations and protectionist policies in China.

## Major Participants:

- University of Nevada, Reno; University Center for Economic Development
- Northern Nevada Development Authority (Lead)
- Governor's Office of Economic Development
- University of Nevada, Las Vegas; Center for Business and Economic Research
- The Regional Development Authorities and EDD's
- Manufacturer Nevada
- Nevada Battery Coalition
- Nevada Mining Association
- Various Industry Representatives





Chris Brandon  
Western Nevada  
Development District  
[cbrandon@wndd.org](mailto:cbrandon@wndd.org)



Wendy Colborne  
Building and Construction Trades  
Council of Northern Nevada  
[wendy@bctnn.org](mailto:wendy@bctnn.org)



Frederick Steinmann  
University of Nevada, Reno  
[fred@unr.edu](mailto:fred@unr.edu)



Bob Lucey  
Governor's Office of  
Economic Development  
[b.lucey@goed.nv.gov](mailto:b.lucey@goed.nv.gov)



Jeff Sutich  
Northern Nevada Development Authority  
[jsutich@nnda.org](mailto:jsutich@nnda.org)



Don Tatro  
Redwood Materials  
[don.tatro@redwoodmaterials.com](mailto:don.tatro@redwoodmaterials.com)

