



# Nevada Overview

## *2024*

# Introduction to Nevada GOED

# NEVADA'S ELECTRIC, INNOVATIVE, AND CONNECTED FUTURE

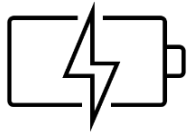
## 5-YEAR COMPREHENSIVE ECONOMIC DEVELOPMENT STRATEGY

*“Fostering an economy that is vibrant, innovative, and sustainable with high-paying jobs and great quality of life for all Nevadans.”*

- Economic and Community Assessment
  - Population and Talent
  - Diversification
  - Innovation
  - Infrastructure and Quality of Life
  - Nevada's Economic Geography: The “Three Nevada's”
- Target Industries
- Strategic Position: SWOT Analysis
- Strategy and Action Plan
- Performance and Evaluation
- Leadership Plan for Inclusive Growth

# NEVADA'S ELECTRIC, INNOVATIVE, AND CONNECTED FUTURE

## STRATEGIC ACTION STEPS



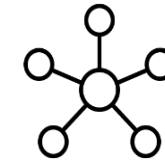
### Electric Nevada

- Assess and strengthen EV production vertical supply chain
- Enable solar energy-related innovations
- Support completion of utility connectivity
- Support the build out of EV infrastructure



### Innovative Nevada

- Create a unified vision for innovation
- Increase capital access to startups and later-stage businesses
- Strengthen university technology transfer system
- Scale industry partnerships to expand STEM workforce
- Lead globally on water scarcity policy and innovation



### Connected Nevada

- Support development of multimodal inland port
- Develop tech-ready industrial parks
- Identify private-sector investment opportunities for freight rail
- Support planned airport-related infrastructure developments
- Support expansion of broadband and 5G infrastructure

# NEVADA'S "LITHIUM LOOP"

## WHAT IS IT?

- Positioned to be the **Lithium Capital of North America**, Nevada is the only U.S. state that encompasses every facet of the Lithium-ion battery economy and life cycle.

## WHY IS IT IMPORTANT?

1. **Demand:** Lithium-ion battery market is expected to grow fivefold this decade to \$115 B
1. **Supply Chain Security:** Currently, 90% of Lithium comes from South America and 80% of raw material refinement is done in China; reshoring is paramount.
1. **Job Growth:** In Nevada, the Lithium-ion economy currently employs upward of 20,000 workers and Nevada can meet the upcoming demands of the entire Lithium supply chain
1. **Federal Support:** US federal support of the Loop includes the EDA Tech Hub and NSF Development award, both based on programs at UNR

# NEVADA'S BUSINESS DEVELOPMENT

## US FEDERAL SUPPORT OF PROGRAMS IN NEVADA

<p><b>Economic Development Administration (EDA) Tech Hub Phase 1 designation in 2022</b></p>	<ul style="list-style-type: none"> <li>• “Supercharging Nevada’s Lithium Batteries and other EV Materials Loop” <ul style="list-style-type: none"> <li>• Led at University of Nevada-Reno</li> <li>• This designation emphasizes ecosystem attractiveness for research, new business development, and overall cluster growth.</li> <li>• The consortium is 60+ and continues to grow as new companies land in NV</li> <li>• Currently undergoing Phase 2 designation, \$7.5 million state-invested</li> </ul> </li> </ul>
<p><b>National Science Foundation (NSF) Development Award 2022</b></p>	<ul style="list-style-type: none"> <li>• “Advancing the circular economy for lithium batteries” <ul style="list-style-type: none"> <li>• Led at University of Nevada-Reno</li> <li>• \$1 Million allocation for the circular supply chain development activity, from resource management of critical materials, to the rejuvenation, repurposing, and recycling of lithium batteries</li> </ul> </li> </ul>
<p><b>National Science Foundation (NSF) Engines 2024</b></p>	<ul style="list-style-type: none"> <li>• “Southwest Sustainability Innovation Engine” <ul style="list-style-type: none"> <li>• Led by Arizona State University and spanning three states — Utah, Nevada and Arizona — aims to elevate the Southwest as a regional hub of economic development catalyzed by sustainability innovation</li> <li>• \$15 million anticipated allocation for the interrelated areas of sustainability: (1) water security, (2) renewable energy, and (3) net carbon emissions.</li> </ul> </li> </ul>

# What is the size of EV Supply Chain in Nevada?

Simplifying into 4 main defined elements:

- Mining and Processing
- Cell Component and Battery Manufacturing
- EV Production
- Recycling and Re-Use



Employment  
(2023)



Business  
Establishments

## 2023 EV Supply Chain Sector

Total Employment

**21,897**

### Mining & Processing

Total Employment

**2,170**

### Cell Component & Battery Manufacturing

Total Employment

**14,470**

### EV Parts Production

Total Employment

**753**

### Recycling & Re-use

Total Employment

**4,505**

## EV Supply Chain Sector – Definition (based on NAICS codes)

### Mining & Processing

*extraction and processing of metals and minerals used for EV batteries, such as lithium, cobalt, nickel, manganese, etc.*

**212 - Mining** (Copper, Nickel, Lead, Zinc Mining and Other Metal Ore Mining, )

**327 - Nonmetallic Mineral Product Manufacturing for processing** (Abrasive Product Manufacturing, Ground or Treated Mineral and Earth Manufacturing, and all other other Miscellaneous Nonmetallic Mineral Product Manufacturing)

**3314 - Nonferrous Metal (except Aluminum) Production and Processing**

### Cell Component & Battery Manufacturing

*production of battery cells, modules, packs, and other components for EVs*

**335 - Electrical Equipment, Appliance, and Component Manufacturing** (Battery Manufacturing, Motor and Generator Manufacturing, - Other Communication and Energy Wire Manufacturing, Carbon and Graphite Product Manufacturing, etc)

### EV and Parts Production

*assembly and manufacturing of electric vehicles and their parts.*

**336 - Transportation Equipment Manufacturing** (Motor Vehicle Body Manufacturing, Motor Vehicle Electrical and Electronic Equipment Manufacturing, Motor Vehicle Transmission and Power Train Parts Manufacturing, Automobile and Light Duty Motor Vehicle Manufacturing, Heavy Duty Truck Manufacturing etc.)

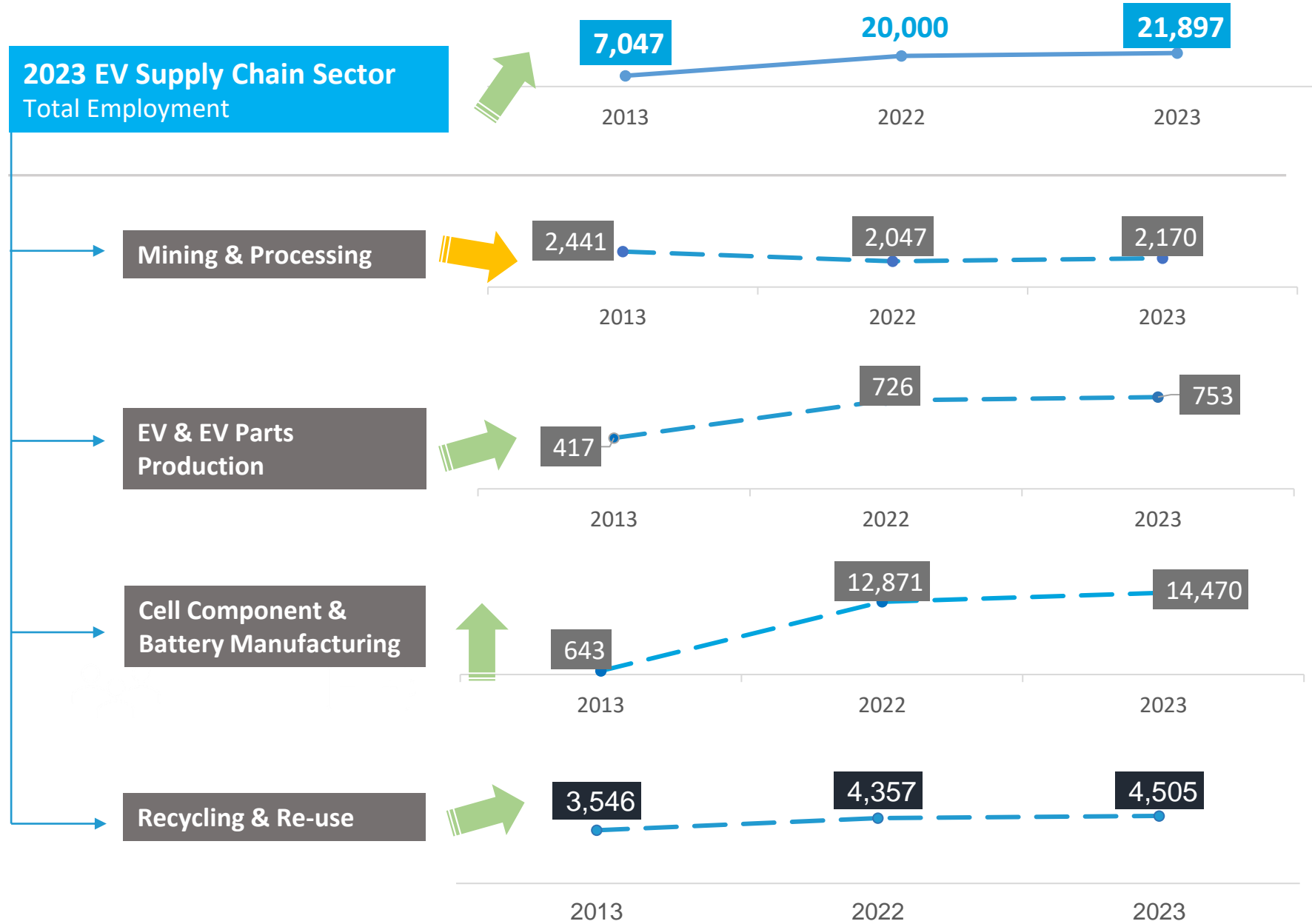
### Recycling & Re-use

*collection, processing, and re-use of EV batteries and materials*

**336 - Transportation Equipment Manufacturing** (Motor Vehicle Body Manufacturing, Motor Vehicle Electrical and Electronic Equipment Manufacturing, Motor Vehicle Transmission and Power Train Parts Manufacturing, Automobile and Light Duty Motor Vehicle Manufacturing, Heavy Duty Truck Manufacturing etc.)



# EV SUPPLY CHAIN – EMPLOYMENT CHANGES



# EV SUPPLY CHAIN – NV BUSINESSES



## Mining & Processing

- Albemarle
- American Battery Technology Co.
- Century Lithium Corp
- HeliosX/Dajin US Corp
- Luna Lithium
- Ioneer
- Lilac Solutions
- Lithium Americas/ Thacker Pass
- Redwood Materials
- Rover Metals
- Schumberger/NeoLith Energy(SLB)
- Surge Battery Metals
- Tonopah Lithium Corp.
- Tesla



## Cell Component & Battery Manufacturing

- Altairnano
- DragonFly Energy
- Lithion Battery
- NexTech Batteries
- Redwood Materials
- Tesla
- Ultion Technologies Inc.
- Panasonic
- DragonFly Energy
- K2 Energy Solutions
- Quantum Copper



## EV and Parts Production

- Halo
- NexTech Batteries
- Nuro
- Quantum Copper
- Tesla
- Ultion Technologies, Inc.



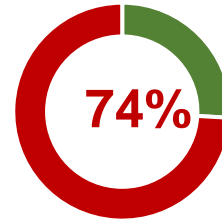
## Recycling & Re-use

- Redwood Materials
- American Battery Technology Company
- Aqua Metals
- LiNiCO Corporation
- Tesla
- Ultion Technologies, Inc.

# HOW DEMAND IS MET: Potential for Import-substitution



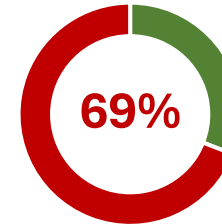
Mining & Processing



- 26% Demand met in region
- 74% Demand met by Imports



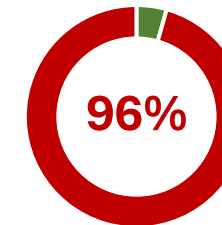
Cell Component & Battery Manufacturing



- 31% Demand met in region
- 69% Demand met by Imports



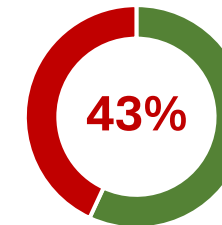
EV and Parts Production



- 4% Demand met in region
- 96% Demand met by Imports



Recycling & Re-use



- 57% Demand met in region
- 43% Demand met by Imports

# Thank you