I. AGENDA

STATE OF NEVADA
COMMISSION ON MINERAL RESOURCES
DIVISION OF MINERALS
400 W. King Street, Suite 106
Carson City, Nevada 89703
(775) 684-7040 • Fax (775) 684-7052
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375 E. Warm Springs Rd. #205, Las Vegas, NV 89119
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JOE LOMBARDO
Governor

ROBERT GHIGLIERI
Administrator

COMMISSION ON MINERAL RESOURCES
Nevada Division of Minerals

Meeting Location:
Ormat Technologies, Inc
6884 Sierra Center Pkwy,
Reno, NV 89511

Virtual: Zoom
Join Zoom Meeting
https://us02web.zoom.us/j/88079163618?pwd=uMNZAEkBX1tJ5b5uQRYDPZUOzuPJc9.1
Meeting ID: 880 7916 3618
Passcode: NDOM
By phone: 1-253-205-0468 (US) | Meeting ID: 880 7916 3618 | Passcode: 848710

Thursday November 13, 2025 at 1:00 P.M.

AGENDA

CALL TO ORDER

The agenda for this meeting of the Commission on Mineral Resources has been properly posted for this date and time in accordance with the relevant Nevada Revised Statutes ("N.R.S.") and Nevada Administrative Code ("N.A.C.") requirements.

ROLL CALL

PLEDGE OF ALLEGIANCE

COMMENTS BY THE GENERAL PUBLIC — ACTION WILL NOT BE TAKEN

Pursuant to N.R.S. Chapter 241, this time is devoted to comments by the public, if any, and discussion of those comments. No action may be taken upon a matter raised under this item on the agenda until the matter itself has been specifically included on a successive agenda and identified as an item for possible action. To provide comments telephonically, dial +1 719 359 4580 US. When prompted, provide the meeting ID 860 3227 9141. Public comments may be limited to 5 minutes for each person.

I. AGENDA

A. Approval of the Agenda — **FOR POSSIBLE ACTION**

II. MINUTES

A. Approval of the August 7, 2025 meeting minutes **FOR POSSIBLE ACTION**

III. INTENT TO ADOPT REGULATION

A. NAC 519A **FOR POSSIBLE ACTION**

IV. AGENCY BUSINESS

A. NvMA Update **FOR DISCUSSION ONLY**

- Amanda Hilton

B. Thorium Presentation **FOR DISCUSSION ONLY**

- Fred Dilger

C. Agency Budget Update **FOR POSSIBLE ACTION**

- Garrett Wake

D. Open Data Site Update **FOR DISCUSSION ONLY**

- Lucia Patterson

E. Recent Copper and AML Reports **FOR POSSIBLE ACTION**

- Rob Ghiglieri

F. NMBG/CREG Update and Project Proposals **FOR POSSIBLE ACTION**

- Simon Jowett

G. Ormat Update **FOR DISCUSSION ONLY**

- Josh Nordquist

H. Language Access Plan **FOR DISCUSSION ONLY**

- Garrett Wake

I. Administrator Report **FOR DISCUSSION ONLY**

- Rob Ghiglieri

V. COMMISSION BUSINESS

A. Election of Vice Chair **FOR POSSIBLE ACTION**
B. Correspondence from the Commission **FOR DISCUSSION ONLY**
C. Review of staff monthly activity reports **FOR DISCUSSION ONLY**
D. Future meeting agenda items, location, and date **FOR DISCUSSION ONLY**

COMMENTS BY THE GENERAL PUBLIC **ACTION WILL NOT BE TAKEN**

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ADJOURNMENT

NOTICE TO PERSONS WITH DISABILITIES

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or contact Rebecca Tims at (775) 684-7043 or by email at rtims@minerals.nv.gov.

II. MINUTES

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JOE LOMBARDO
Governor

ROBERT GHIGLIERI
Administrator

Thursday, August 7, 2025 1:00 P.M.

MINUTES

Commission	Staff	Public
Josh Nordquist	Robert Ghiglieri	Dan Worthy
Arthur Henderson	Rebecca Tims	Christina Erling
Nigel Bain Via Zoom	Garrett Wake	
Stephanie Hallinan	Dustin Holcomb	
Bob Felder Via Zoom	Sean Derby	
Randy Griffin Via Zoom	Nicole Ting	
Bob Potts		

CALL TO ORDER
1:00 PM by Josh Nordquist

Roll Call
All commissioners were present.

COMMENTS BY THE GENERAL PUBLIC
There were no comments.

I. Agenda

A. Approval of the Agenda
Motion to approve the agenda made by: Stephanie Hallinan
Seconded by: Arthur Henderson
Unanimously approved

II. Minutes

A. Approval of the meeting minutes from the May 29, 2025, meeting
Motion to approve the minutes made by: Stephanie Hallinan
Seconded by: Arthur Henderson
Unanimously approved

III. Agency Business

A. Northeastern Nevada Regional Development Authority (NNRDA) Update
Sheldon Mudd presented to the commission on the role of the Northern Nevada Regional Development Authority. He discussed the regional development authority model in the State of Nevada and how it works well for rural Nevada regions that don't necessarily have the resources for economic development pursuits. The

NNRDA footprint is about the size of Kentucky and is the largest, in terms of area, in the state. Their role is to establish industry; they primarily work in the industrial sector, less so the commercial and retail sectors. NNRDA focuses on three main pillars: workforce development, community development, and business development. The eastern region of Nevada has the second approved "development district" in the state, which allows them to create a comprehensive economic development strategy for the region. The NNRDA is targeting the wholesale trade, agriculture, healthcare, aerospace & defense, and construction and vocational trades sectors currently. Sheldon closed by discussing programs the NNRDA is facilitating to spur economic development and showed data relating to economic development investment in the region since 2018.

Rob Ghiglieri mentioned that mining operations are expanding, and new operations are coming online in places that haven't recently had mining operations. Rob asked if there has been any change in the ability to develop housing in rural areas faster and if Jackpot, NV, is an example of this. **Sheldon Mudd** mentioned that the Surge Batteries project outside of Jackpot, NV has attracted the attention of housing developers. **Bob Potts** asked how many units are being built. Sheldon stated there will be 16 initially, but in three phases there will be a total of 146-150 units. Sheldon said that once AB540 is in place, he hopes it will help Ely and Eureka as well. Sheldon said they are trying to capture some of the $133M that was funded in the bill. He further stated there are two developers looking at properties in Wells, NV. **Rob Ghiglieri** said I-80 gold is looking to expand the Ruby Hill mine by 2030-2032 and how an operation like this will bring a couple of hundred jobs to the region. **Sheldon Mudd** said there is a developer that is looking into that area right now and now Eureka is an area the needs to be focused on. **Stephanie Hallinan** asked what is in mind for the aerospace and defense sectors and whether they are associated with Nellis. **Sheldon Mudd** said no, and he thinks that they have recognized the terrain here mimics the theater that we have been in for the last 20 years. He states that since we are so remote and rural there is a benefit, that there are a lot of companies that are doing secure operations, and they are worried about their classification and encroachment. Sheldon also mentioned "dark sky" needs, the ability to look into space, we have the darkest skies in the continental US. He also says there are some individuals in the area with great connections in the defense space and one of them is in Wells, NV, and they are considering manufacturing military clothing for women in Wells.

B. AML Update

Sean Derby briefed the commission on updates in the AML program. The AML interns are now using heat detection monitors to measure field conditions for work stoppages. **Rob Ghiglieri** mentioned that there was a state law that passed which requires the agency to monitor heat conditions for field staff, among other things. **Garrett Wake** said that the regulations aren't developed yet but will be within a year or two. **Sean Derby** discussed the intern safety plan and daily safety discussions, safety drills which were conducted, and increased the number of daily check-ins with staff. Sean then showed summer intern performance statistics for hazard, securing, revisit and non-hazard visits, and how the use of lidar played into the summer program. He then provided an update on the "Jimmy King" digital media, public safety program, including demographics and view statistics. Sean then showed current federal grant funding. **Rob Ghiglieri** discussed the future national AML hardrock program grant opportunity. **Sean Derby** concluded his presentation.

Bob Potts asked if we expect the funding to go up from OEPC. **Rob Ghiglieri** says he doesn't expect that number to go up. **Garrett Wake** mentioned the heat illness regulation goes into effect next year. **Garrett Wake** clarified that the Nevada heat injury regulations were codified this past year, but a new air quality monitoring statute was passed this legislative session and would need regulations to be developed. **Sean Derby** talked about an upcoming environment project in partnership with the BLM in the Freiberg mining district. He said people have been camping there for years near potential historic mine contamination and that we're doing a survey there to assess this. **Rob Ghiglieri** said that this is in the Great Basin National Monument and that it's telling that the BLM came to us to assist with this project.

C. Annual Status and Production Report

Robert Ghiglieri presented to the commission updates on the 2024 annual status and production report. He stated that Nevada was #1 in non-fuel mineral production at $9.97B (USGS estimate) and $9.7B (NV Dept. of

Taxation estimate); Rob is going to look into the difference between the two. Rob showed slides highlighting Nevada's gold production, gross proceeds of minerals by county, and a 20-year history of net versus gross proceeds. Rob detailed the state's gold, silver, copper, molybdenum, barite, lithium, diatomite, gypsum, oil, and geothermal energy production using the NDOM open data website (ndomdata.com). Rob then showed slides highlighting potential upcoming or near-term mineral projects.

Randy Griffin asked about the Centerra project and whether it is operating. **Rob Ghiglieri** said that they are planning to go into operation within the next few years. **Bob Felder** commented that AngloGold Ashanti changed the name of the Silicon project to Arthur and that the project may pass Round Mountain in its endowment, potentially more than a 30-year mine life. **Bob Potts** mentioned that Ioneer hit the pause button and asked Rob if he had heard anything. **Robert Ghiglieri** stated that they are trying to raise capital and trying to get the final investment to go in to building the development. They did a lot of public outreaches to try and get a fire station. Outside of that he hasn't heard too much. Between Thacker Pass and Ioneer could potentially get Nevada to be one of the largest producers of lithium in the world.

D. NGM Update

Christina Erling and **Dan Worthy** from Nevada Gold Mines (NGM) briefed the commission on NGM updates. Christina gave an overview of NGM's projects. Dan discussed NGM's safety culture and programs. Christina and Dan discussed NGM's employment, turnover rate, partnerships with Nevada colleges and vocational programs, workforce development, mine production. **Rob Ghiglieri** asked if there were any plans on building more processing infrastructure at Cortez or elsewhere. **Dan Worthy** said they're looking at an ore-transport process between Carlin and Cortez. Dan continued to discuss NGM's production profile, project highlights, the Goldrush/Fourmile projects, recent technological advancements in assaying, and permitting. Christina talked about NGM's community investments, impacts, and partnerships.

Bob Potts asked how the heritage fund is used. **Christina Erling** said there is a list of approved nonprofits that their employees can pick from and the company will match the donation. **Nigel Bain** asked why they disconnected the Four Mile gold deposit from the Gold Rush deposit. **Dan Worthy** said that when NGM was formed, Four Mile was not understood, and there were a couple of projects that were in the Newmont portfolio that were not fully understood and were not able to be valued to come into the joint venture at that point in time. **Bob Potts** asked what they see as the biggest challenges on the work force development side. **Dan Worthy** states that bringing technical people in and getting them excited to live in places that are more remote is a challenge but that goes for mechanics, electricians, etc. and getting people interested in those trades and is not just important for them but everywhere. **Christina Erling** said they brought broadband internet to the area to get people plugged in, but childcare and long shifts are a challenge. **Bob Potts** asked about demand for labor with more automation. **Dan Worthy** said that the demand for labor isn't currently decreasing. **Robert Ghiglieri** noted that on a tour of a mine in Wyoming recently he saw that three D-11 bulldozers were being operated remotely by one person. **Randy Griffin** asked NGM about having a degree for their jobs and skilled laborers and stated that certain positions require a college degree and it seems that some companies don't value work experience as much. **Dan Worthy** says they have roles throughout the business where people are moved so that they can gain experience and move upwards through just experience. Dan also noted that their company will assist their employees with continuing their education if it is work related. **Robert Ghiglieri** noted that the State of Nevada recently removed the degree requirement to receive an interview to improve hiring.

E. Kinross Update

Stephanie Hallinan presented updates from Kinross and Bald Mountain to the commission. Stephanie gave an overview of the history of the Bald Mountain Mine, the current mine plan, employee programs and a more detailed view of the mine's North and South Operations Areas and nearby pits and leach facilities. Stephanie then gave an overview of ongoing reclamation sites at the Bald Mountain mine.

F. Agency Budget Update

Garrett Wake updated the commission on the agency's budget. Garrett focused on the closing of fiscal year 2025, including the current reserve balance, mining claim filing fees, fiscal years 25 and 26 actual and forecasted revenues and expenditures. **Stephanie Hallinan** asked about plan of operation fee revenue payments. **Rob Ghiglieri** described what the payments were for and where they originate in NRS and NAC 519A. Rob further stated that the agency may look into modifying how the fees are assessed, to possibly an annual model instead of a one-time model. **Stephanie Hallinan** stated that mines already pay an annual fee to the Nevada Division of Environmental Protection. **Robert Ghiglieri** stated that the current fee structure is hard to forecast and doesn't adequately fund the AML program. **Garrett Wake** stated that the fee funds are there, it's just not consistent because it's a one-time fee. Garrett also said that the fee isn't listed in the reclamation permit, and that the Division is working on getting the fee language added. **Bob Potts** asked if it would be easier on industry if it was in the permit. **Rob Ghiglieri** said that chapter 519A is very long and our portion is small. **Bob Potts** asked why were forecasting a drop in mining claim filing fees. **Rob Ghiglieri** said that we had to forecast for this fiscal year two years ago and at the time the BLM was raising mining claim fees. **Garrett Wake** continued detailing the agency financials. **Robert Ghiglieri** said that the agency had to hold back on conducting some hard closure work because we didn't receive certain federal funding and we haven't received approvals for some projects. **Garrett Wake** finished showing the financials for the Division's Reclamation Performance Bond Pool account and provided an overview of the bond pool.

Robert Ghiglieri noted that our bond pool is relatively small, that the NDEP bond pool is upwards of five billion dollars. **Stephanie Hallinan** asked if anyone has ever defaulted in the bond pool. **Garrett Wake** said it doesn't happen often, but it does happen from time to time. **Robert Ghiglieri** said that participants have to pay a 2% fee even when their bond is whole to sustain the program. **Garrett Wake** said that even if a notice level bond defaults, they are already paid in for the whole amount of their bond, so there is no loss to the State. **Robert Ghiglieri** reminded the commission that they approved $30,000 to be presented to the Nevada State Museum for a project, but they were unable to receive the funding. **Garrett Wake** said that we will now have to go to the interim finance committee to approve the funding next fiscal year, whereas it would have been much easier for us to transfer the funds this fiscal year. **Josh Nordquist** asked if they were still planning to complete the project. **Robert Ghiglieri** affirmed and said they haven't bought any equipment yet.

G. Kingston Mill Reclamation Project

Garrett Wake briefed the commission on the Kingston Mill Reclamation Project. Garrett stated that the company that held the bond, Western Mine Development, defaulted on the bond in 2006. **Robert Ghiglieri** stated that this started when Mike Visher was the administrator. Western Mine Development didn't mine any of this site, they acquired the property but the bond was under funded, and eventually defaulted. **Garrett Wake** continued in saying that the Division had the funding to conduct reclamation but it took several years to receive approval from the BLM to perform reclamation. Garrett said that the project moved quickly on the project and finished within the budget. **Stephanie Hallinan** asked about the reclamation of a septic tank. **Robert Ghiglieri** said the tank was used for an office building and not mine processing. Robert said that this is one of three parts of this mine that need to be reclaimed and the remaining funds may be used for this. **Bob Potts** asked where this site was located. **Robert Ghiglieri** replied Kingston, Nevada. **Garrett Wake** finished the presentation by discussing the new bond pool database funded by the commission.

Stephanie Hallinan said that this is a great project for the Division to complete. **Rob Ghiglieri** said that we will assess the other sites and possibly use additional bond pool funding to reclaim the other sites. **Garrett Wake** mentioned that Keith Hayes, project manager for NDOM, did a lot of work on this project.

H. Administrator's Report

Robert Ghiglieri provided his Administrator's report to the commission. Rob introduced new commissioner Bob Potts to the commission. Rob also mentioned that four commissioners went through the re-appointment process. Rob informed the commission that the Division of Minerals has a new logo and that new swag will be ordered with the logo. Rob noted that SB 464 was passed by the last legislative session, making Nevada a full member of the Interstate Mining Compact Commission. Rob also discussed the development and near-term

release of a copper report partially funded by the Division of Minerals; he believes the final report may be released soon at the Critical Minerals Forum. Rob then discussed the near-term release of the Hardrock AML report that the Division has participated in generating; this will be the first comprehensive nationwide hardrock abandoned mine lands report produced. Rob reminded the commission that the regulation workshop for NACs 513, 519A, 522, and 534A is scheduled for August 26th and briefly described the changes. He discussed the AML Good Samaritan bill, where the Division is working with NDEP to reclaim a historic mining site owned by UNR located between Reno and Carson City. He further said the site is getting an initial evaluation right now and there is an engineering firm that may be willing to provide the closure design specifications at no cost. Rob said that an application must be provided to the EPA as early as October to further determine whether this site meets the criteria and may be one of only a maximum of fifteen projects selected in the U.S. Rob concluded his report by notifying the commission that the Division conducted the annual Nevada Excellence in Mine Reclamation Award tour in July and the three awarded mines will receive the award during the NvMA mining convention in September.

Art Henderson asked Administrator Ghiglieri if the Division could present on thorium-fueled nuclear reactors at the next meeting. **Robert Ghiglieri** thinks we can find a subject expert to present on this topic. **Bob Potts** agrees with this.

IV. Commission Business

A. Vice Chair Selection

Josh Nordquist mentioned the commission needs a new vice chair since the departure of Mary Korpi. **Bob Potts** said he would think about taking on the role but would want the rest of the commission to agree with that.

B. Correspondence to the Commission

No items were submitted to the commission since the previous meeting.

C. Review of Staff Monthly Reports

The Commission reviewed staff monthly reports. **Bob Potts** said he appreciates the Division submitting monthly reports.

D. Future Agenda Items and Meeting Location

The next commission meeting is scheduled for November 6th, and all commissioners have agreed on this date. The commission agreed to hold the next quarterly commission meeting in Northern Nevada.

COMMENTS BY THE GENERAL PUBLIC

There were no comments.

ADJOURNMENT

4:27 PM

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III. INTENT TO ADOPT REGULATION

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IV. AGENCY BUSINESS

A.

THIS SECTION IS INTENTIONALLY LEFT BLANK.

B.

THERE IS A RACE FOR THE FUTURE

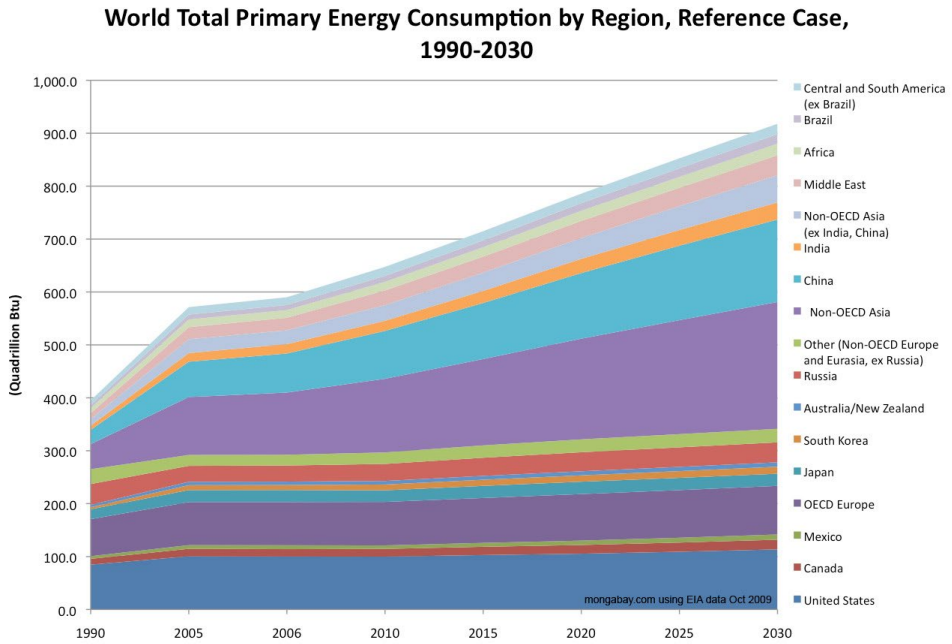
FRED DILGER, PhD

Executive Director, Nevada Agency for Nuclear Projects

https://anp.nv.gov/

11/16/25

What's this about?



- Energy generally
- Advanced Nuclear Reactors
- Fusion

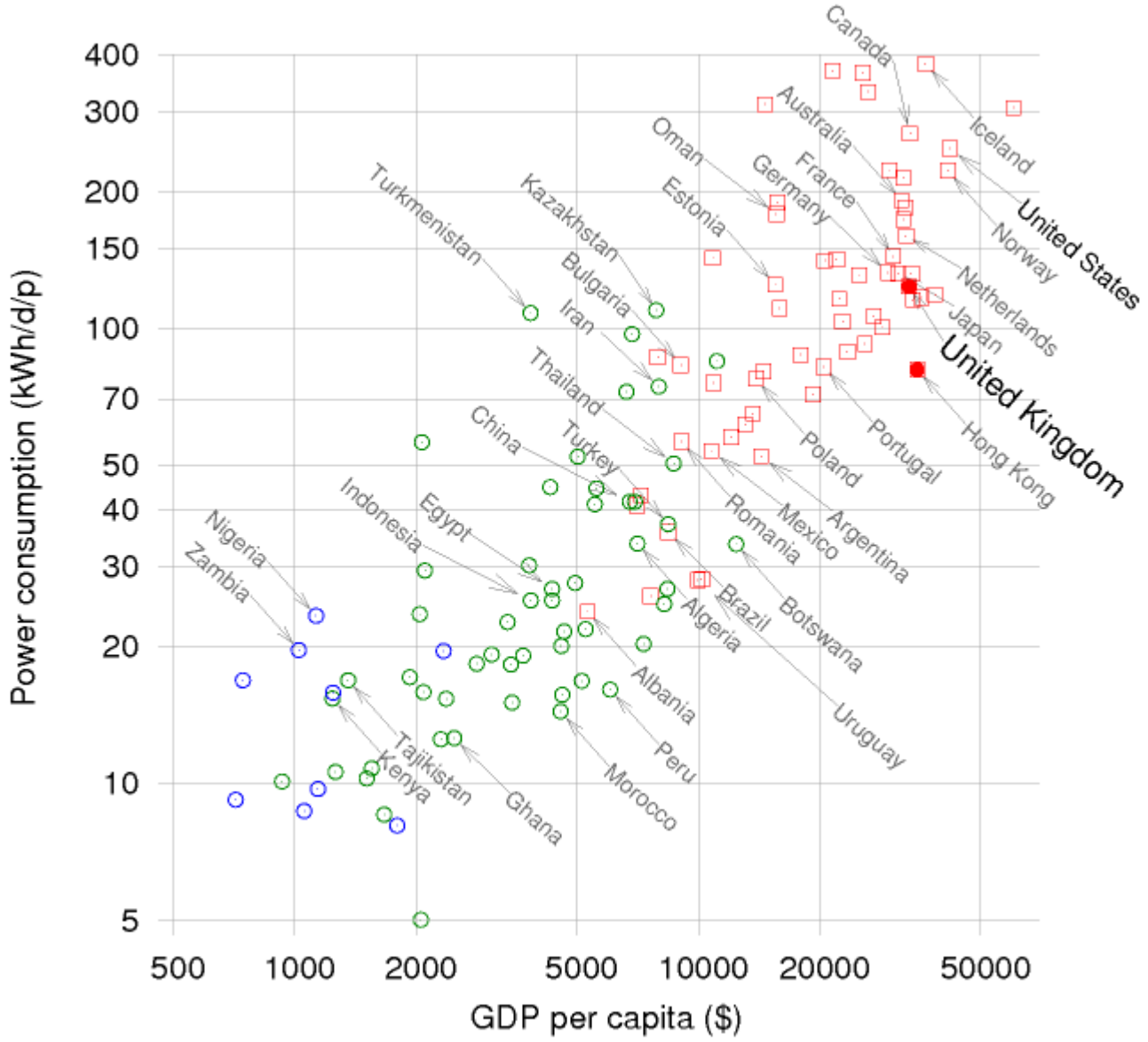
Energy

We will never run out of energy

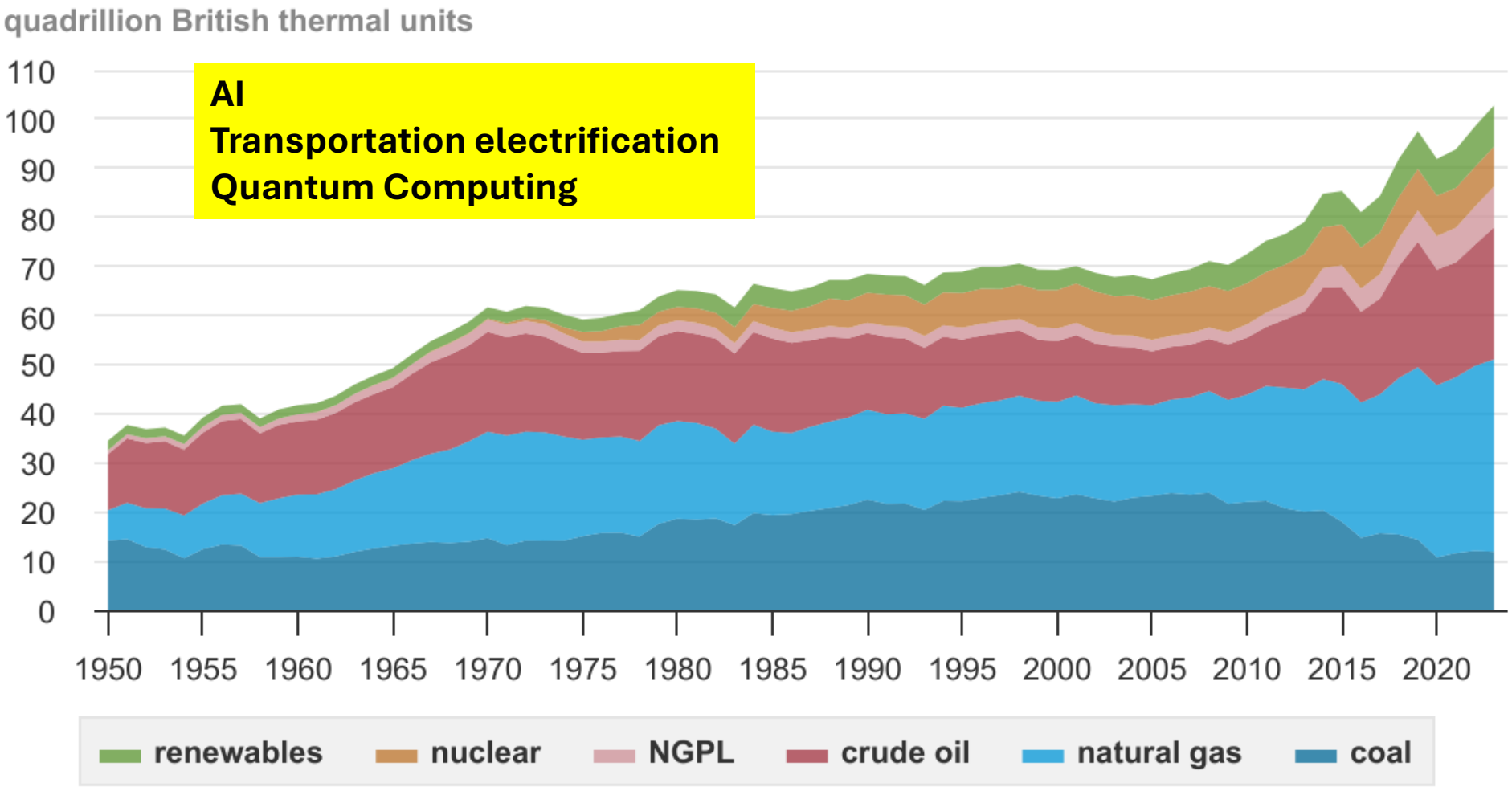
We may forget how to get the energy

We may be unwilling to get energy the way its available

“If you don’t have electricity you are camping”-**and poor**



U.S. primary energy production by major sources, 1950-2023



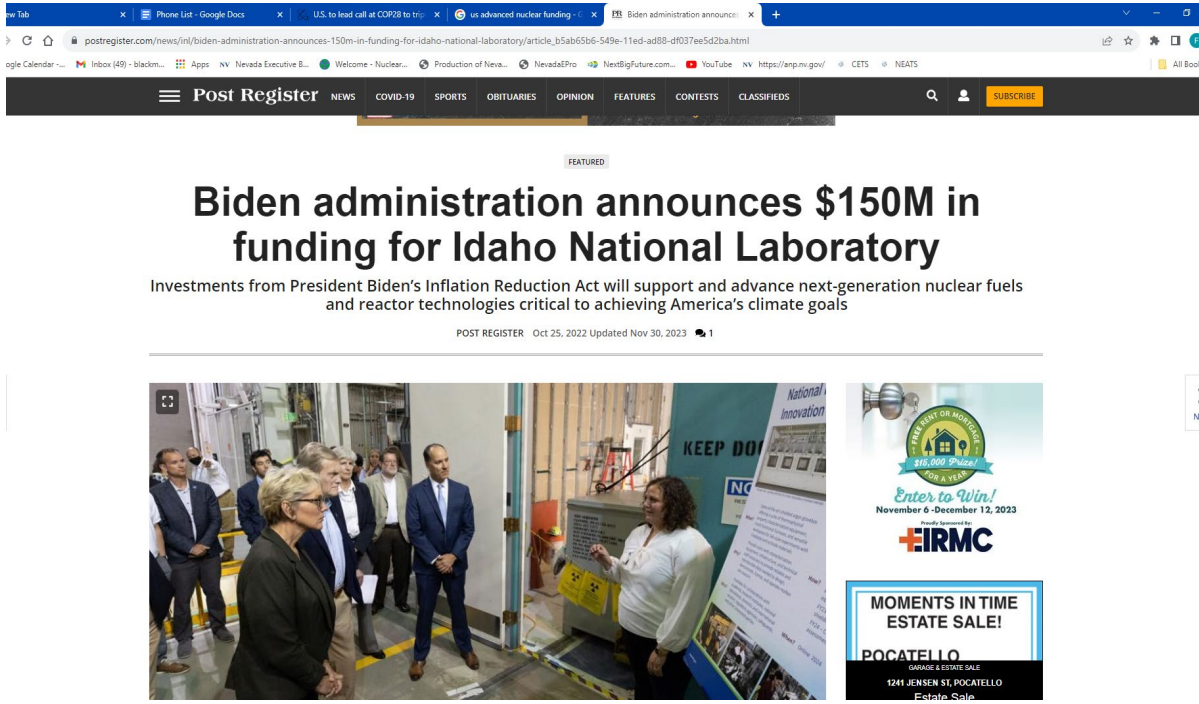
Data source: U.S. Energy Information Administration, *Monthly Energy Review*, Table 1.2, April 2024, preliminary data for 2023
Note: NGPL=natural gas plant liquids

Projected US Energy Demand 2050

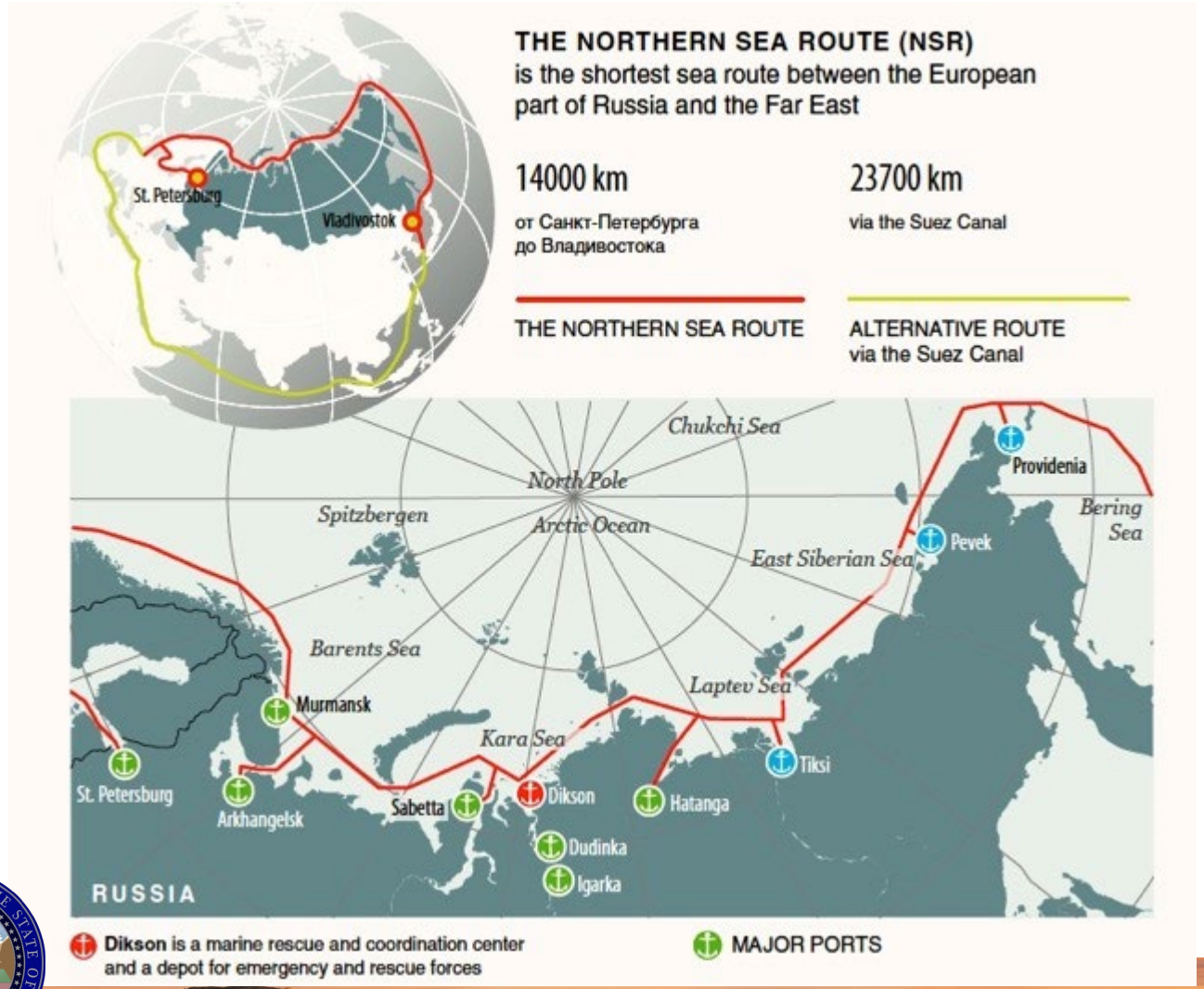
Advanced nuclear may not have to pass a market test: "We need all the things"

- Three intertwined motivations:
  - Great Power Competition
  - Commercial interests
  - Technology

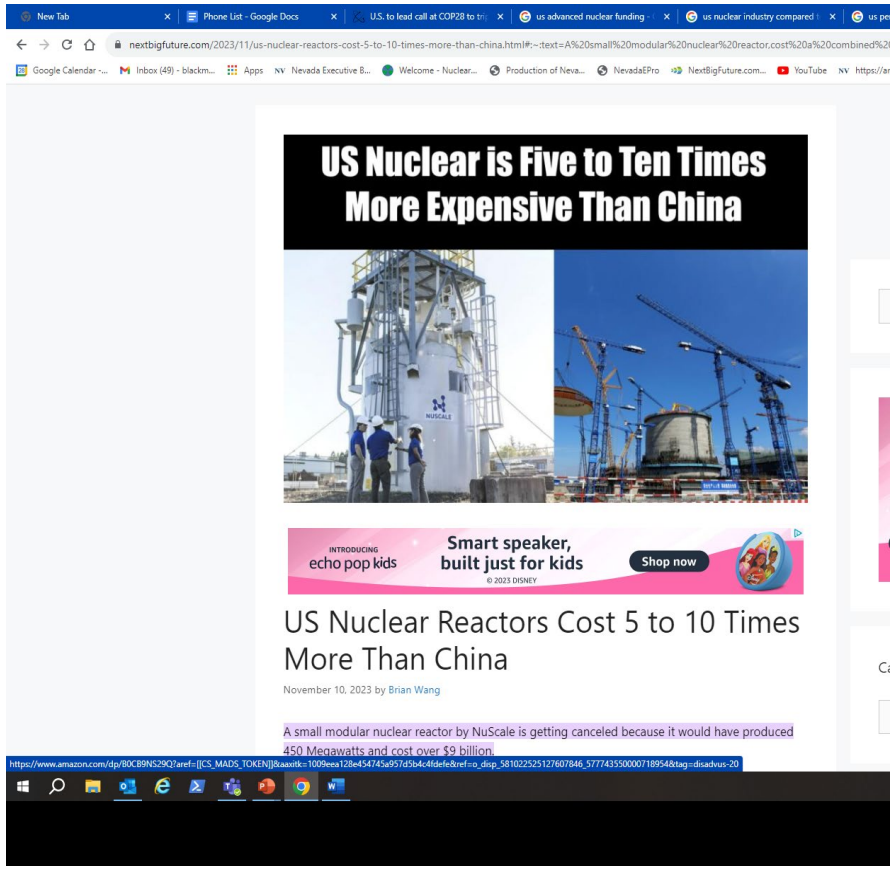
- Nuclear: 90% Dispatchable energy



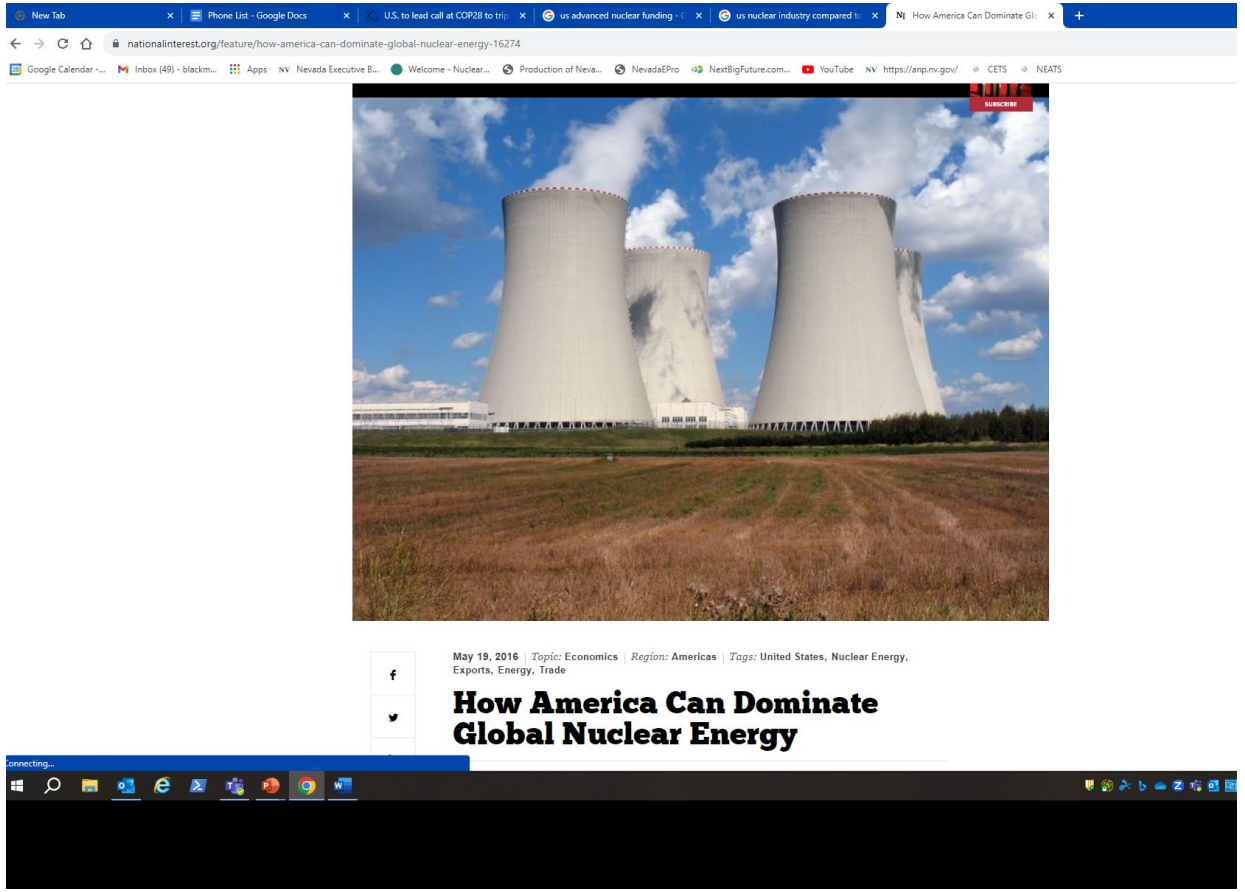
Great Power Competition



Commercial Interests



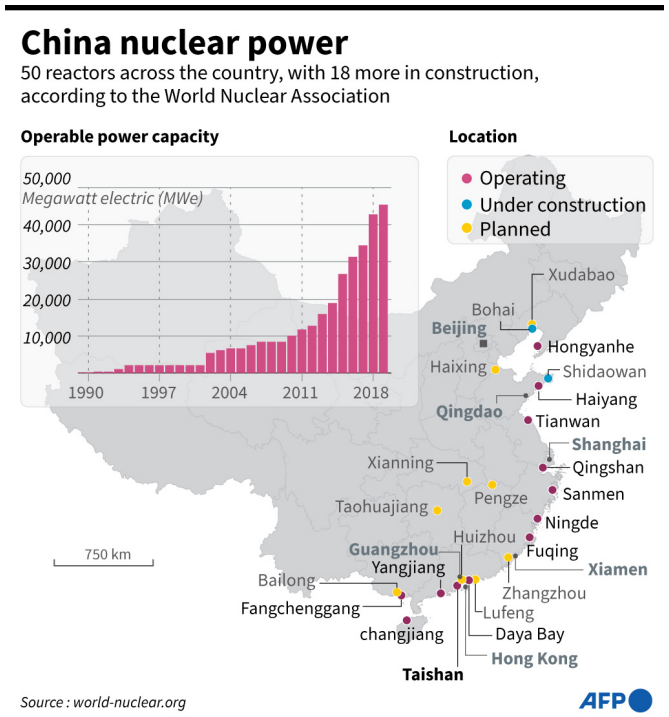
Next Big Future



The National Interest

Technology: China

World's first nuclear power plant using 4th generation high-temperature gas reactor officially enters operation in China's Shandong Province



Natural Gas and Nuclear

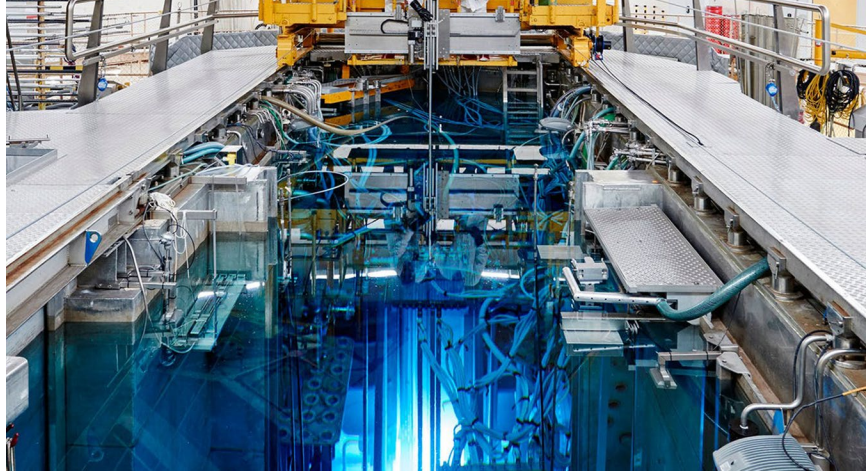
Deer Park Energy Center, TX

- 1100 Mw
- Construction 2001-2003
- Construction Cost $980,000,000

Vogtle 3 & 4

- 2200 Mw
- Georgia Power began the project in 2012
- Six years late
- Began fuel loading in 2022
- $16 Billion over budget
- Current cost $30 Billion

Advanced Reactors



Can be classified based on their coolant:

- Light Water (traditional)
- Exotics (Lead-cooled, molten-salt, etc…)
- Fusion reactors

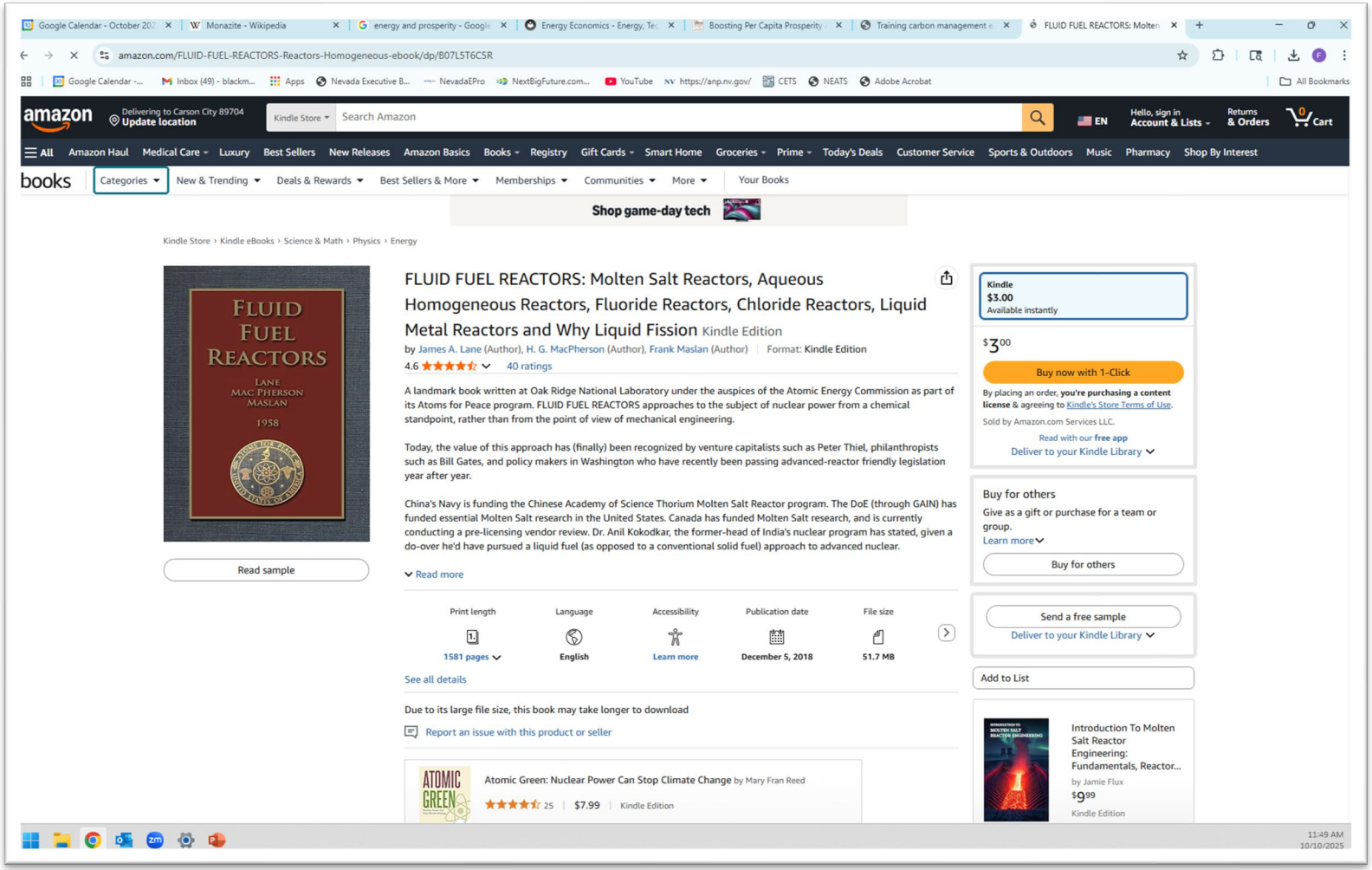
- Regulations not yet prepared for all (2030)
- Uncertainty about regulations, costs, economies of scale

Exotics

Coolant	Neutron Energy	Moderator	Fuel Material	Fuel Form	Fuel Cycle	Reactor Size
Light water	Thermal	Light water	LEU	Oxide, Metal clad	Open	Microreactor
Heavy water	Fast	Heavy water	HALEU	TRISO Pebble bed	High burnup	SMR
Liquid metal		Graphite	Plutonium	Other TRISO	Closed	Conventional
Molten salt		Helium	Thorium	Molten salt	Closed	SMR
Helium		None	Varies	Metal	Closed	SMR
CO2		None	Varies	Carbide	Closed	SMR

History

- Following WWII, the scientists who had developed the atomic bomb wanted to use the technology for energy
- The research done to make the bomb was readily adapted to produce energy and military purposes



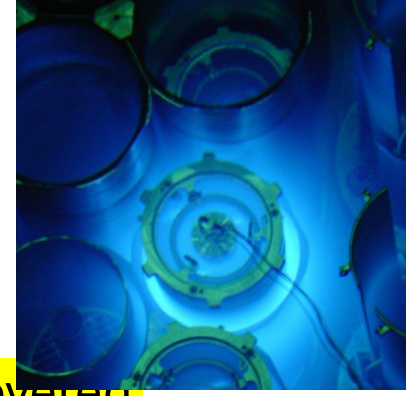
History

- There were a large number of competing reactor designs
- The molten salt reactor was originally proposed for use in the nuclear bomber

NRB 36

Molten Salt Reactor Vessel

Development Timeline

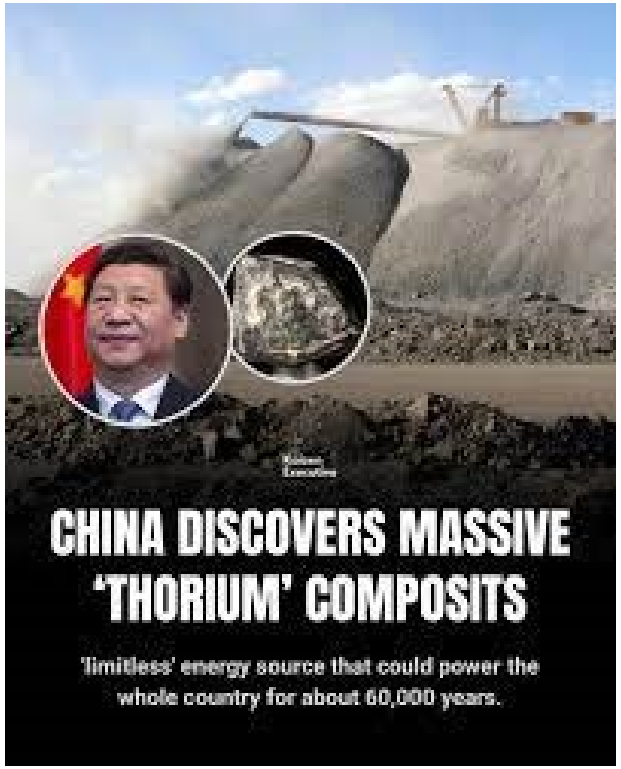


- **1940s: Discovery and initial consideration.** In 1942, scientist Glenn Seaborg discovered that bombarding thorium-232 with neutrons could produce fissile uranium-233. The Manhattan Project prioritized plutonium, which was deemed more suitable for the immediate goal of developing nuclear weapons.
- **1960s: Molten-Salt Reactor Experiment (MSRE).** ORNL shifted focus to developing molten salt reactors for commercial power generation. The MSRE operated from 1965 to 1969, demonstrating the feasibility of using liquid fuel in a reactor. It operated for thousands of hours using uranium-235, and later became the first reactor to run on the thorium-derived uranium-233.
- **1970s: Cancellation of the program.** The MSRE program was shut down in 1969. The US Atomic Energy Commission (AEC) decided to focus its resources on developing the uranium-based Liquid Metal Fast Breeder Reactor (LMFBR). Funding for thorium research dried up, causing the technology to be largely abandoned in the US.

Development Timeline

- **1970s: Shippingport Light Water Breeder Reactor (LWBR).** The US Navy funded a separate project to demonstrate thorium breeding in a light-water reactor. The LWBR core, installed at the Shippingport Atomic Power Station operated from 1977 to 1982. It successfully demonstrated a positive breeding ratio, confirming that thorium could produce more fissile material than it consumed.
- **1970s-1980s: German High-Temperature Reactors.** Germany operated two high-temperature gas-cooled reactors (HTGRs) that used thorium-based fuel in the form of pebbles: the AVR pebble-bed reactor and the Thorium High-Temperature Reactor (THTR-300). The commercial THTR-300 operated for only four years before being shut down due to technical and economic issues.
- **1980s-present: India's Three-Stage Program.** With vast thorium deposits, India initiated a long-term strategy to eventually transition its nuclear program to a thorium fuel cycle.
  - **Phase 1:** Uses natural uranium in pressurized heavy water reactors (PHWRs).
  - **Phase 2:** Uses plutonium from the first stage in fast breeder reactors to breed more plutonium and begin breeding uranium-233 from thorium.
  - **Phase 3:** Aims to deploy Advanced Heavy Water Reactors (AHWRs) powered by thorium and the bred uranium-233. 21st-century revival
- **2011: China launches an aggressive program.** China’s state-backed Shanghai Institute of Applied Physics (SINAP) began an ambitious thorium molten salt reactor (TMSR) program. Leveraging publicly available research from ORNL

Thorium is 3-4 Times More common than Uranium

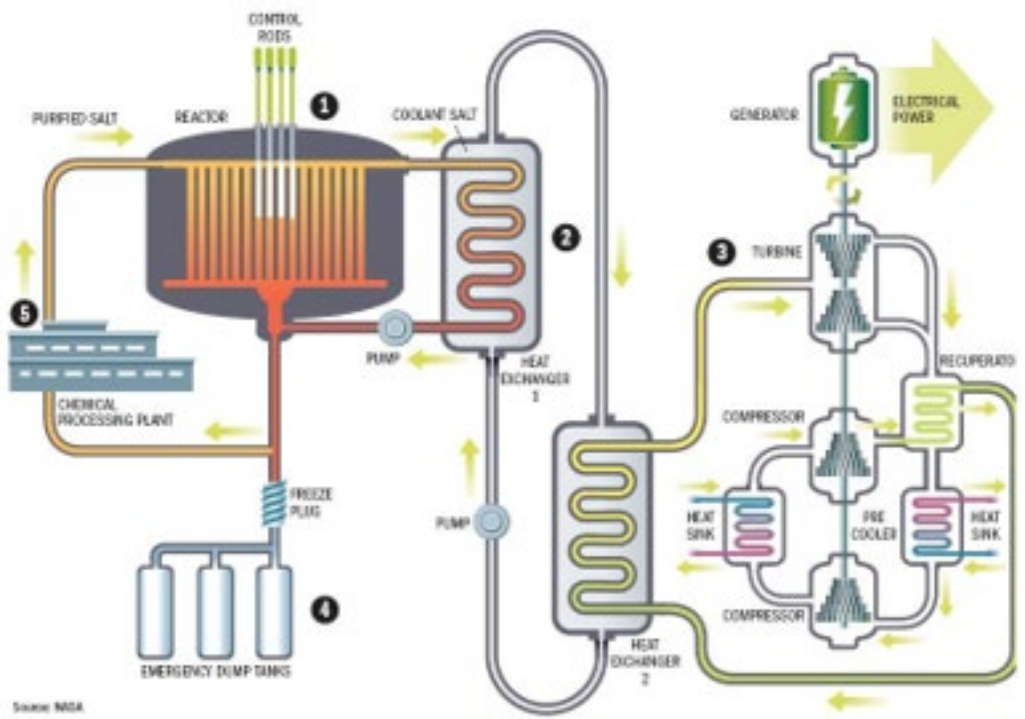


Monazite

Chinese thorium mine

How a thorium reactor works

- First, thorium-232 and uranium-233 are added to fluoride salts in the reactor core. As fission occurs, heat and neutrons are released from the core and absorbed by the surrounding salt. This creates a uranium-233 isotope, as the thorium-232 takes on an additional neutron. The salt melts into a molten state, which runs a heat exchanger, heating an inert gas such as helium, which drives a turbine to generate electricity. The radiated salt flows into a post-processing plant, which separates the uranium from the salt. The uranium is then sent back to the core to start the fission process again.
- Thorium reactors generate significantly less radioactive waste, and can re-use separated uranium, making the reactor self-sufficient once started.
- Since LFTRs use thorium in its natural state, no expensive fuel enrichment processes or fabrication for solid fuel rods are required.



Advantages

- **Greater abundance**: Thorium is more abundant than uranium in the Earth's crust.
- **Reduced long-term waste**: A thorium fuel cycle produces significantly less long-lived radioactive waste than a uranium-plutonium fuel cycle.
- **Enhanced safety**: Many thorium reactors are designed as molten salt reactors (MSRs), which are considered inherently safer than conventional reactors.
  - MSRs operate at low pressure, which prevents explosive events.
  - In the event of a power failure, a passive safety feature can cause a "freeze plug" to melt, draining the fuel into a storage tank and shutting down the reaction.

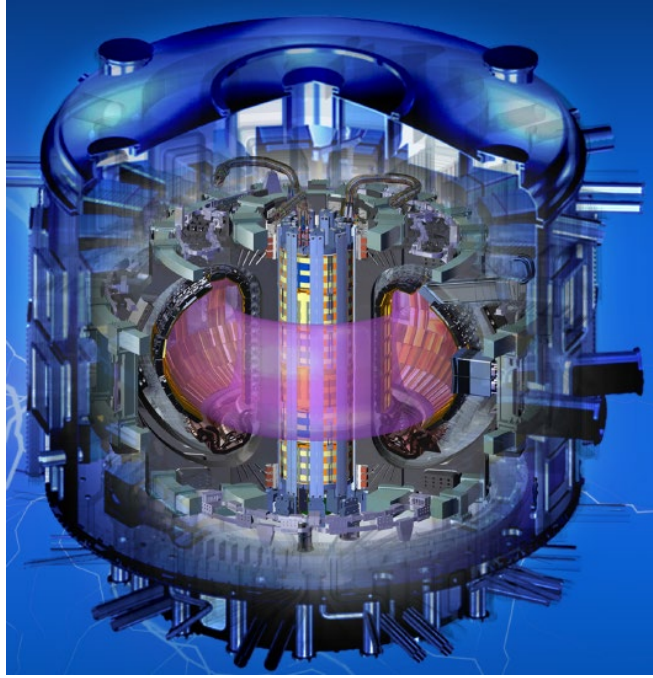
Disadvantages

- **Technical and economic challenges**: The thorium fuel cycle is less mature than the established uranium fuel cycle. Developing new thorium reactors requires significant investment in research, testing, and licensing.
- **Waste management issues**: Though the total volume and longevity of waste are lower, the waste from molten salt reactors is chemically complex and requires new handling and disposal procedures.
- **Material corrosion**: The molten salt used in MSR designs can be highly corrosive to reactor components, presenting a unique engineering challenge.
- **Dual-use potential**: While less suitable for weapons than other nuclear materials, the uranium-233 bred in a thorium reactor is still a fissile material that carries a risk of proliferation.
- **Lack of infrastructure**: The entire commercial infrastructure for mining, manufacturing, and reprocessing thorium fuel does not exist. Establishing this complex supply chain would require massive capital investment with uncertain returns.
- **Economically uncompetitive**: From a utility's perspective, the economic case for switching to thorium is weak. The high costs associated with new fuel fabrication, licensing, and reactor modifications make the switch unappealing without a strong economic driver.

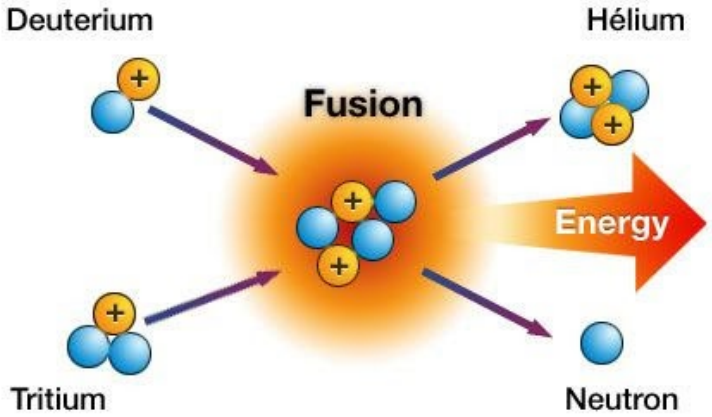
Reactor Developments

- Microsoft and Three Mile Island
- Holtec and Palisades
- Kairos Power construction permit from the Nuclear Regulatory Commission (NRC) to build the Hermes demonstration reactor, finalized contract with the U.S. Department of Energy for up to $303 million in risk reduction funding through the Advanced Reactor Demonstration Program.
- Amazon signs agreements for innovative nuclear energy projects to address growing energy demands
- MICRO-REACTOR PILOT PROGRAM Eielson Air Force Base (AFB) is the Department of the Air Force's (DAF) preferred location to pilot its first micro-reactor.

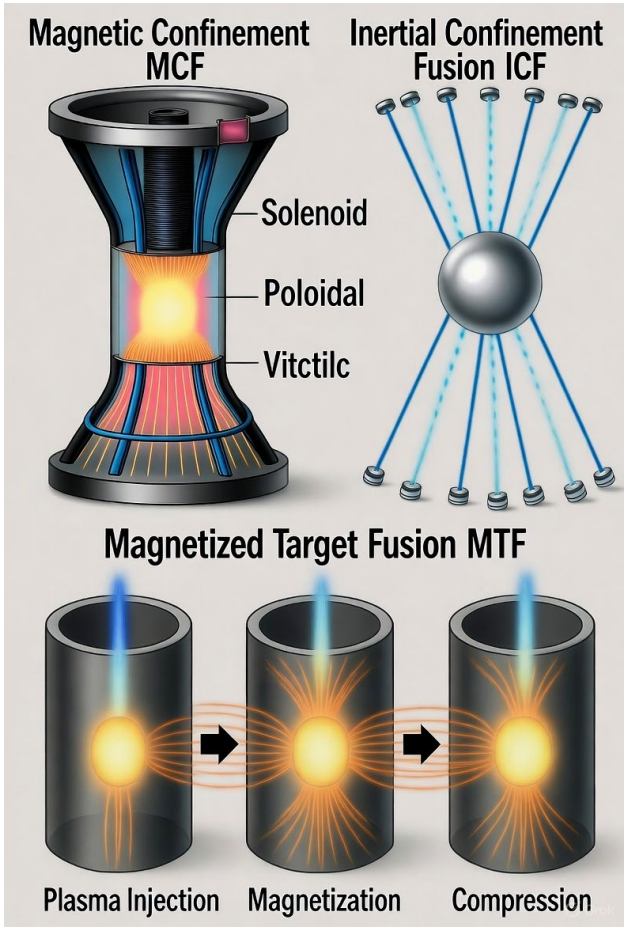
Fusion

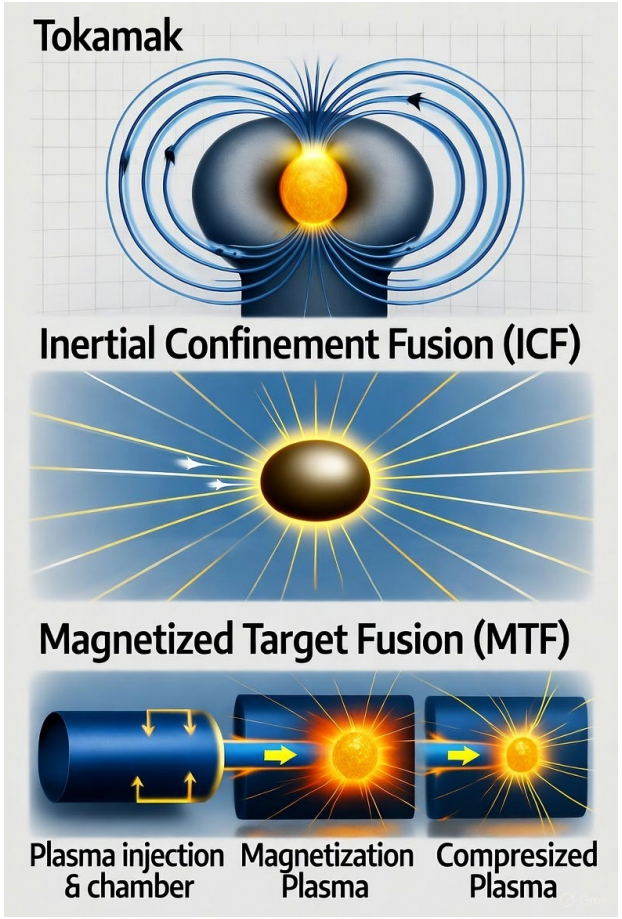


- In fission, a heavy nucleus is split into smaller nuclei
- With fusion, lighter nuclei are fused into a heavier nucleus
- The fusion process is the reaction that powers the sun
- The sun fuses four isotopes of hydrogen-1 into helium-4 with the release of 200 million times the energy produced by coal
- Two isotopes of hydrogen are used for fusion development:
  - H-2, called deuterium, and H-3, called tritium.
  - Deuterium is relatively abundant
  - Tritium doesn't occur naturally, but it can be produced



How to get to commercial fusion?





Fusion Challenges

In August of 2022, the National Ignition Facility (part of the DOE) created a “Gain” in energy of 1.5. That is 1.5 times as much energy was created by the fusion reaction than was used to create the reaction. That has increased.

GAO estimates that a Gain of 10 times is necessary for commercial adoption.

There is no credible estimate for when fusion energy will be delivered to the grid-but

The support system needed to provide fusion technology is developing

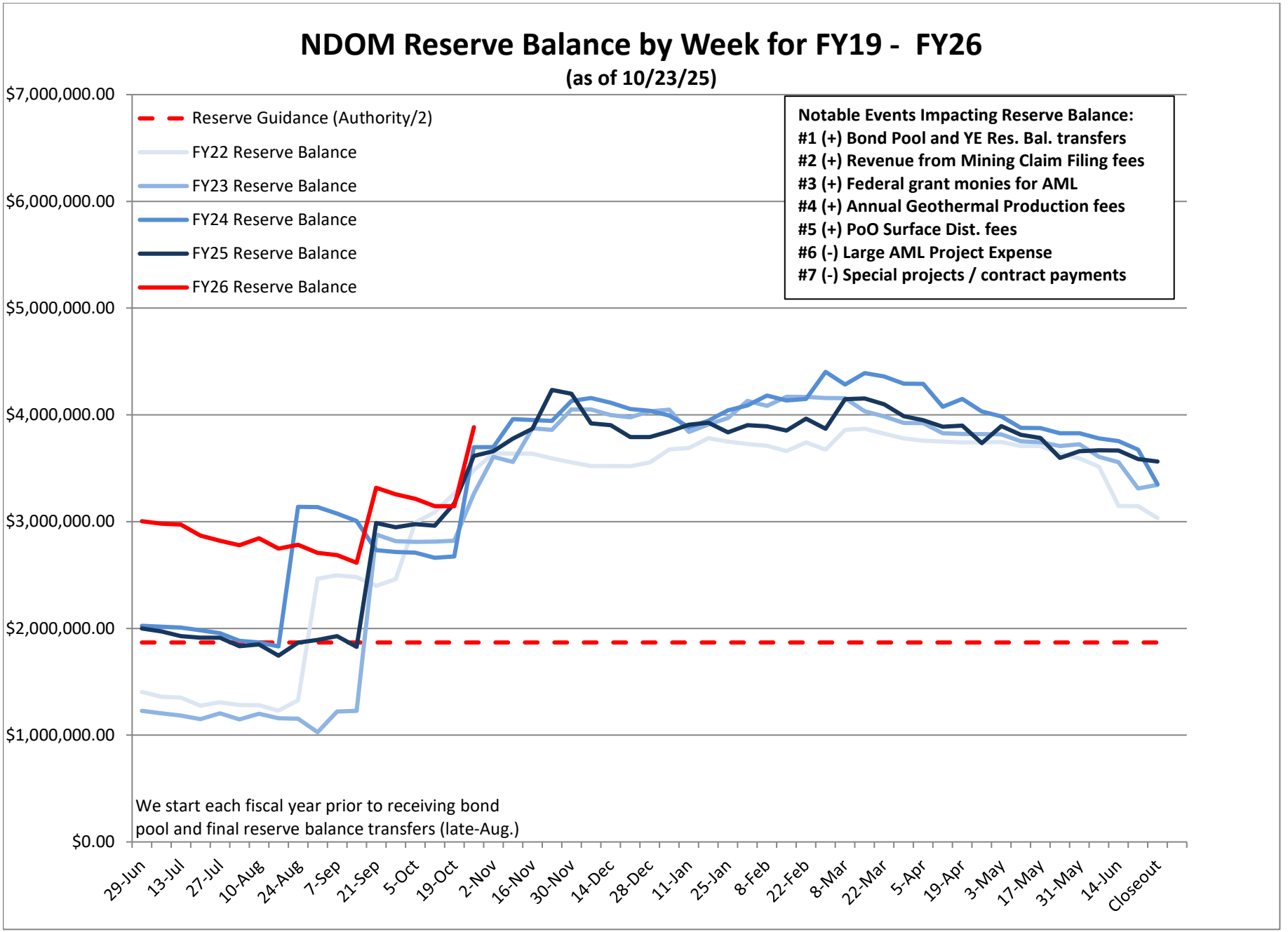
Lithium is a key input

Fusion Development

- Commonwealth Fusion Systems >$2 Billion in private funding
- Fusion industry 40 private fusion companies >$5 billion raised
- National governments establishing fusion strategies
- Supply chain, groundwork being laid
- 2027 Launch for commercially relevant net fusion energy
- Early 2030’s approximately 400 Mw deployed on the grid

Type	Utility Operating Experience	Regulations in Place	Public or Private Funding	Waste	Cost
Light Water (Least uncertain)	Yes	Yes	Public/Private	Known	Varies
Exotics (Most uncertainty)	No	No (2030)	Public/Private	Uncertain	Uncertain
Fusion (Some uncertainty)	No	Yes	Private (Mostly)	Known	Uncertain

C.


NDOM Reserve Balance by Week for FY19 - FY26
(as of 10/23/25)
$7,000,000.00
$6,000,000.00
$5,000,000.00
$4,000,000.00
$3,000,000.00
$2,000,000.00
$1,000,000.00
$0.00
Reserve Guidance (Authority/2)
FY22 Reserve Balance
FY23 Reserve Balance
FY24 Reserve Balance
FY25 Reserve Balance
FY26 Reserve Balance
Notable Events Impacting Reserve Balance:
#1 (+) Bond Pool and YE Res. Bal. transfers
#2 (+) Revenue from Mining Claim Filing fees
#3 (+) Federal grant monies for AML
#4 (+) Annual Geothermal Production fees
#5 (+) PoO Surface Dist. fees
#6 (-) Large AML Project Expense
#7 (-) Special projects / contract payments
We start each fiscal year prior to receiving bond pool and final reserve balance transfers (late-Aug.)
29-Jun
13-Jul
27-Jul
10-Aug
24-Aug
7-Sep
21-Sep
5-Oct
19-Oct
2-Nov
16-Nov
30-Nov
14-Dec
28-Dec
11-Jan
25-Jan
8-Feb
22-Feb
8-Mar
22-Mar
5-Apr
19-Apr
3-May
17-May
31-May
14-Jun
Closeout

FY25 Mining Claim Fees by County (thru 10/23/2025)

Counties	Monthly or Quarterly	July	August	September	October	November	December	January	February	March	April	May	June	Total
Carson	Quarterly			$ 470			$ 560			$ -			$ 760	$ 1,790
Churchill	Quarterly			$ 28,940			$ 17,800			$ 1,760			$ 3,440	$ 51,940
Clark	Monthly	$ 3,190	$ 8,420	$ 4,720	$ 4,200	$ 50	$ 1,240	$ 2,400	$ 40	$ 80	$ -	$ 10	$ 1,390	$ 25,740
Douglas	Quarterly			$ 5,220			$ 1,960			$ 80			$ 3,440	$ 10,700
Elko	Monthly	$ 40,020	$ 32,650	$ 55,110	$ 212,860	$ 4,570	$ 5,090	$ 3,920	$ 20	$ 1,090	$ 440	$ 8,570	$ 30,640	$ 394,980
Esmeralda	Quarterly			$ 90,790			$ 117,560			$ 15,390			$ 226	$ 223,966
Eureka	Monthly	$ 25,130	$ 10,570	$ 140,010	$ 104,310	$ 6,230	$ 590	$ 520	$ 600	$ 320	$ 370		$ 11,800	$ 300,450
Humboldt	Quarterly			$ 196,880			$ 71,320			$ 5,670			$ 19,010	$ 292,880
Lander	Quarterly			$ 222,730			$ 52,910			$ 3,880			$ 31,680	$ 311,200
Lincoln	Quarterly			$ 13,910			$ 37,520			$ 1,210			$ 2,330	$ 54,970
Lyon	Quarterly			$ 49,630			$ 21,490			$ 380			$ 800	$ 72,300
Mineral	Monthly	$ 31,850	$ 27,060	$ 35,970	$ 48,780	$ 1,410	$ 420	$ 3,290	$ 240	$ 2,020	$ 210	$ 1,870	$ 1,520	$ 154,640
Nye	Quarterly			$ 196,440			$ 152,400			$ 13,260			$ 12,180	$ 374,280
Pershing	Quarterly			$ 71,490			$ 79,690			$ 7,420			$ 32,400	$ 191,000
Storey	Quarterly			$ 1,360			$ 3,280			$ -			$ 3,440	$ 8,080
Washoe	Monthly	$ 4,320	$ 470	$ 17,990	$ 6,350	$ 140	$ -	$ 60	$ 700	$ 730	$ -	$ -	$ -	$ 30,760
White Pine	Quarterly			$ 95,110			$ 120,420			$ 900			$ 530	$ 216,960
	FY 25	**$ 104,510**	**$ 79,170**	**$ 1,226,770**	**$ 376,500**	**$ 12,400**	**$ 684,250**	**$ 10,190**	**$ 1,600**	**$ 54,190**	**$ 1,020**	**$ 10,450**	**$ 155,586**	**$ 2,716,636**
	FY 24	$ 54,900	$ 133,015	$ 1,473,860	$ 245,810	$ 28,010	$ 685,460	$ 13,210	$ 3,010	$ 74,270	$ 4,060	$ 2,340	$ 50,780	$ 2,768,725
	FY 23	$ 97,420	$ 319,200	$ 1,175,110	$ 209,470	$ 22,020	$ 552,040	$ 8,450	$ 7,320	$ 147,100	$ 3,310	$ 6,090	$ 195,360	$ 2,742,890
	FY 25 CUMULATIVE	**$ 104,510**	**$ 183,680**	**$ 1,410,450**	**$ 1,786,950**	**$ 1,799,350**	**$ 2,483,600**	**$ 2,493,790**	**$ 2,495,390**	**$ 2,549,580**	**$ 2,550,600**	**$ 2,561,050**	**$ 2,716,636**	

Thru Jun FY23	$ 2,742,890			
Thru Jun FY24	$ 2,768,725			
Thru Jun FY25	$ 2,716,636		**Full FY Proj.**	**FY23/24 Avg.**
Difference 23 to 25	$ (26,254)	-1.0%	$ 2,716,636	$ 2,755,808
Difference 24 to 25	$ (52,089)	-1.9%	$ 2,716,636	
On/Before Nov 1 FY23	$ 1,801,200			
On/Before Nov 1 FY24	$ 1,907,585			
On/Before Nov 1 FY25	$ 1,786,950			
Difference FY 23 to 25	$ (14,250)	-1%		
Difference FY 24 to 25	$ (120,635)	-6.3%		
2025 Projected revenue	$ 2,703,962			
2025 Projected filings	270,396			

Amount provided by recorder but not yet received

PROJECTED AMOUNT NOT ACTUAL

FY26 Mining Claim Fees by County (thru 10/23/2025)

Counties	Monthly or Quarterly	July	August	September	October	November	December	January	February	March	April	May	June	Total
Carson	Quarterly			$ 1,380										$ 1,380
Churchill	Quarterly			$ 22,100										$ 22,100
Clark	Monthly	$ 1,860	$ 7,470	$ 6,050										$ 15,380
Douglas	Quarterly	$ -												$ -
Elko	Monthly	$ 54,710	$ 91,480	$ 63,030										$ 209,220
Esmeralda	Quarterly													$ -
Eureka	Monthly	$ 64,580	$ 117,100	$ 20,490										$ 202,170
Humboldt	Quarterly													$ -
Lander	Quarterly			$ 154,010										$ 154,010
Lincoln	Quarterly													$ -
Lyon	Quarterly													$ -
Mineral	Monthly	$ 8,160	$ 51,580											$ 59,740
Nye	Quarterly													$ -
Pershing	Quarterly			$ 60,260										$ 60,260
Storey	Quarterly			$ 1,350										$ 1,350
Washoe	Monthly	$ 340	$ 760											$ 1,100
White Pine	Quarterly			$ 193,200										$ 193,200
	FY 26	**$ 129,650**	**$ 268,390**	**$ 521,870**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 919,910**
	FY 25	$ 104,510	$ 79,170	$ 1,226,770	$ 376,500	$ 12,400	$ 684,250	$ 10,190	$ 1,600	$ 54,190	$ 1,020	$ 10,450	$ 155,586	$ 2,716,636
	FY 24	$ 54,900	$ 133,015	$ 1,473,860	$ 245,810	$ 28,010	$ 685,460	$ 13,210	$ 3,010	$ 74,270	$ 4,060	$ 2,340	$ 50,780	$ 2,768,725
	FY 26 CUMULATIVE	**$ 129,650**	**$ 398,040**	**$ 919,910**	**$ 919,910**	**$ 919,910**	**$ 919,910**	**$ 919,910**	**$ 919,910**	**$ 919,910**	**$ 919,910**	**$ 919,910**	**$ 919,910**	

Thru Sept. FY24	$ 1,661,775	
Thru Sept. FY25	$ 1,410,450	
Thru Sept. FY26	$ 919,910	
Difference 24 to 26	$ (741,865)	
Difference 25 to 26	$ (490,540)	
On/Before Nov 1 FY24	$ 1,907,585	
On/Before Nov 1 FY25	$ 1,786,950	
On/Before Nov 1 FY26	$ 919,910	
Difference FY 24 to 26	$ (987,675)	-52%
Difference FY 25 to 26	$ (867,040)	-48.5%

Amount provided by recorder but not yet received

PROJECTED AMOUNT NOT ACTUAL

REPORT DATE AS OF: 10/22/2025
PROC ID: BSR_GEN_BCLS_REPORT

STATE OF NEVADA
Office of the State Controller

Budget Status Report - Obligations

Fiscal Year: 2026

Fund: 101 GENERAL FUND **Department:** 500 COMMISSION ON MINERAL RESOURCE

Unit: 4219 MINERALS **Activity:** 4219 HR-DEPARTMENT OF MINERALS

	YTD Actual	Work Program	Difference
Total Expenditures	864,936.91		
Total Encumbrances	4,986.00		
Total Pre-encumbrances	.00		
Total Obligations	869,922.91	7,781,713.00	6,911,790.09

Category	Description	Expended	Encumbered	Pre-encumbered	Obligated	Work Program	Difference
01	PERSONNEL SERVICES	517,816.79	.00	.00	517,816.79	1,911,060.00	1,393,243.21
02	OUT OF STATE TRAVEL	8,493.21	.00	.00	8,493.21	57,361.00	48,867.79
03	IN STATE TRAVEL	4,456.16	.00	.00	4,456.16	21,423.00	16,966.84
04	OPERATING	89,521.45	.00	.00	89,521.45	186,074.00	96,552.55
05	EQUIPMENT	.00	.00	.00	.00	17,558.00	17,558.00
08	BOARD TRAVEL	732.08	.00	.00	732.08	9,907.00	9,174.92
09	SPECIAL PROJECT	45,088.11	.00	.00	45,088.11	119,949.00	74,860.89
17	FLUID MINERALS	7,705.28	.00	.00	7,705.28	82,922.00	75,216.72
18	AML SUPPORT	37,716.04	.00	.00	37,716.04	146,473.00	108,756.96
26	INFORMATION SERVICES	17,078.12	4,986.00	.00	22,064.12	50,793.00	28,728.88
30	TRAINING	5,545.00	.00	.00	5,545.00	25,663.00	20,118.00
39	ABANDONED MINE LAND ENHANCEMNT	24,404.17	.00	.00	24,404.17	1,753,126.00	1,728,721.83
82	EITS COST ALLOCATION	106,380.50	.00	.00	106,380.50	226,547.00	120,166.50
86	RESERVE	.00	.00	.00	.00	3,147,660.00	3,147,660.00
88	ST COST PLAN RECOVERY	.00	.00	.00	.00	25,197.00	25,197.00

REPORT DATE AS OF: 10/22/2025
PROC ID: BSR_REC_FUND_SUM

STATE OF NEVADA
Office of the State Controller

Budget Status Report - Receipts/Funding

Fiscal Year: 2026

Fund: 101 GENERAL FUND **Department:** 500 COMMISSION ON MINERAL RESOURCE

Unit: 4219 MINERALS **Activity:** 4219 HR-DEPARTMENT OF MINERALS

	YTD Actual	Work Program	Difference
Total Receipts/Funding	4,754,640.23	7,781,713.00	-3,027,072.77

Code	Description	YTD Actual	Work Program	Difference
47	BEGINNING CASH	3,563,567.00	3,563,567.00	.00
3578	BLM ASSISTANT AGREEMENT	47,822.08	680,000.00	-632,177.92
3580	USFS ASSISTANCE AGREEMENT	.00	114,120.00	-114,120.00
3581	FED GRANT-A	.00	250,000.00	-250,000.00
3584	FED GRANT-D	.00	77,787.00	-77,787.00
3654	GAS MONTHLY ASSESSMENT FEES	4,573.15	25,355.00	-20,781.85
3717	GAS PERMIT AND SUNDRY FEES	300.00	4,400.00	-4,100.00
3718	MINING CLAIM FEES	670,150.00	1,540,377.00	-870,227.00
3727	DANGEROUS MINE FEE	446,540.00	1,019,573.00	-573,033.00
3736	GEOTHERMAL FEES	4,400.00	156,550.00	-152,150.00
3740	DISSOLVED MINERAL RES EXPL	6,160.00	8,000.00	-1,840.00
3770	A.M.L. SECURING FEE	11,080.00	92,080.00	-81,000.00
4011	PRINTING SALES	.00	27.00	-27.00
4027	PUBLICATION SALES	48.00	2,937.00	-2,889.00
4311	MEDALLION ROYALTY INCOME	.00	253.00	-253.00
4326	TREASURER'S INTEREST DISTRIB	.00	168,985.00	-168,985.00
4620	TRANS FR RECL BOND POOL BA4220	.00	77,702.00	-77,702.00

Return to Selection Screen Download the Report

Transaction: Bond Status Report

Bond Pool Status

Run Date 10/23/2025 **DAWN** 10/23/2025 **Cash in Bond Pool** 3573394.93 Run

Reclamation Bond Pool Status Report			Current to: 10/23/2025			
Plan-level Bonds Company	**Project**	**Entry Date**	**Bond Amount**	**% of Pool**	**Deposit + Premiums**	**% Bond Whole**
Allegiant Gold (US) Ltd	Eastside Project	11/19/2021	$163,064.00	5.95%	$144,771.27	88.78%
Dun Glen Mining Corp	Dun Glen Placer Mine	08/11/2014	$371,138.00	13.56%	$408,759.80	110.13%
Quartz Lake Mining	Red Rock Mill Project	08/16/2023	$712,867.00	26.04%	$540,472.61	75.81%
Sunrise Minerals LLC	Section 17 Project	05/31/2025	$783,246.00	28.61%	$492,360.64	62.86%
TNT Ventures c/o Western Mine and Mineral LLC	Big Canyon Project	05/11/2015	$81,956.00	2.99%	$100,762.90	122.94%
Western Mine Development - Terminated	Kingston Mill	01/28/2002	$100,450.00	3.67%	$0.00	0%
Western Mine Development - Terminated	Victorine Mine	01/28/2002	$45,875.39	1.67%	$0.00	0%
Subtotal:			$2,258,596.39	82.53%	$1,687,127.22	
Statewide Notice-Level - 36 bonds	Various	Various	$478,247.00	17.47%	$0.00	0%
Total:			$2,736,843.39	100%		

Total Bond Obligations	$2,736,843.39
Cash in Pool's Account (From DAWN - 10/23/2025)	$3,573,394.93
Funding Surplus	$836,551.54
Percent Funded	130.57%

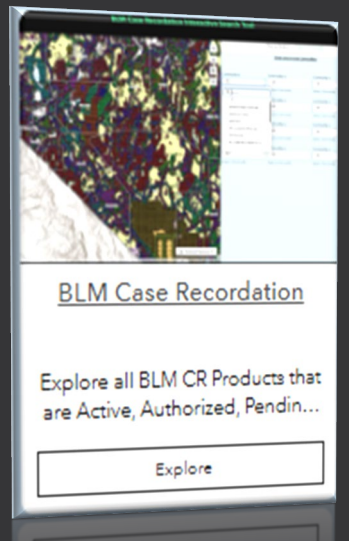
export excel

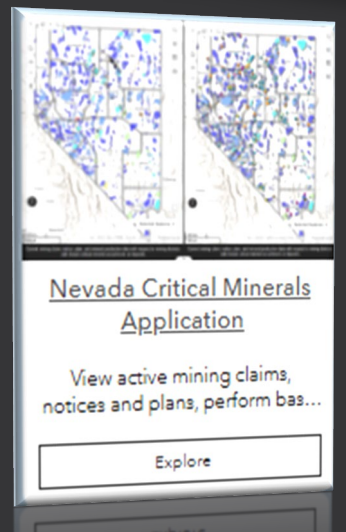
Previous Finish

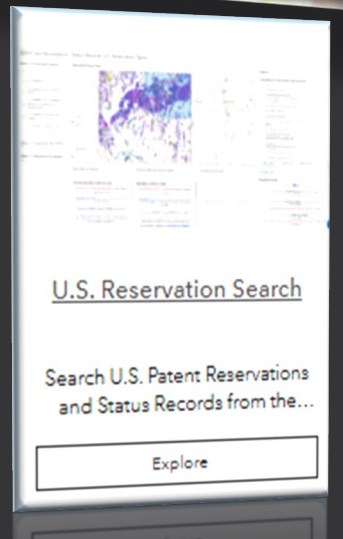
D.

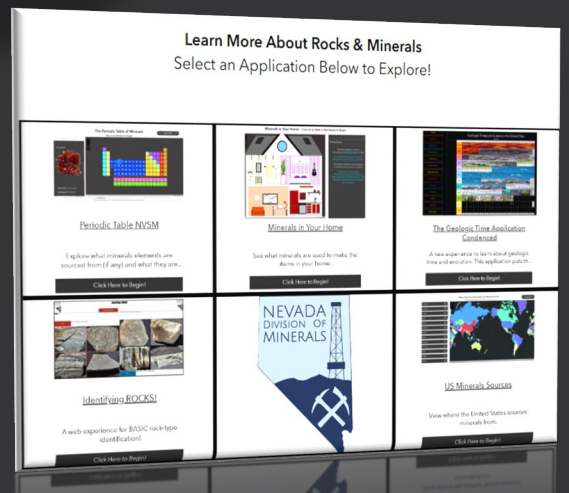
Open Data Site Updates – Live Demo

Commission on Mineral Resources, November 2025



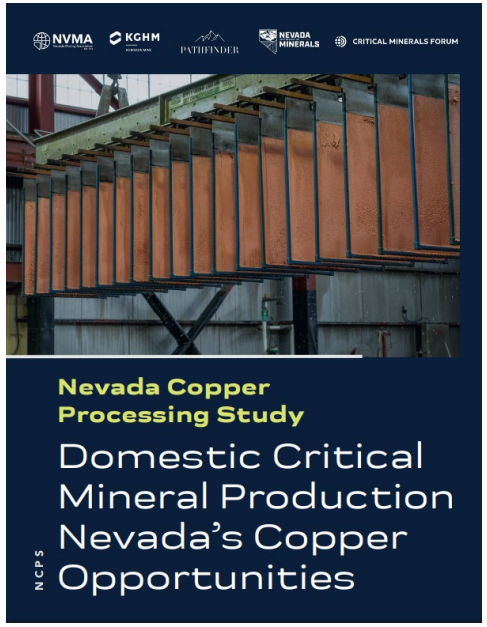






E.

Nevada Copper Processing Study
&
National Hardrock AML Report

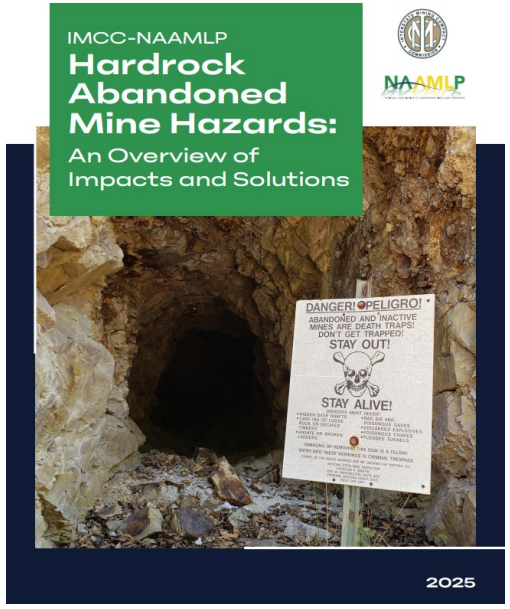


Commission on Mineral Resource Quarterly Meeting

November 13, 2025

Rob Ghiglieri

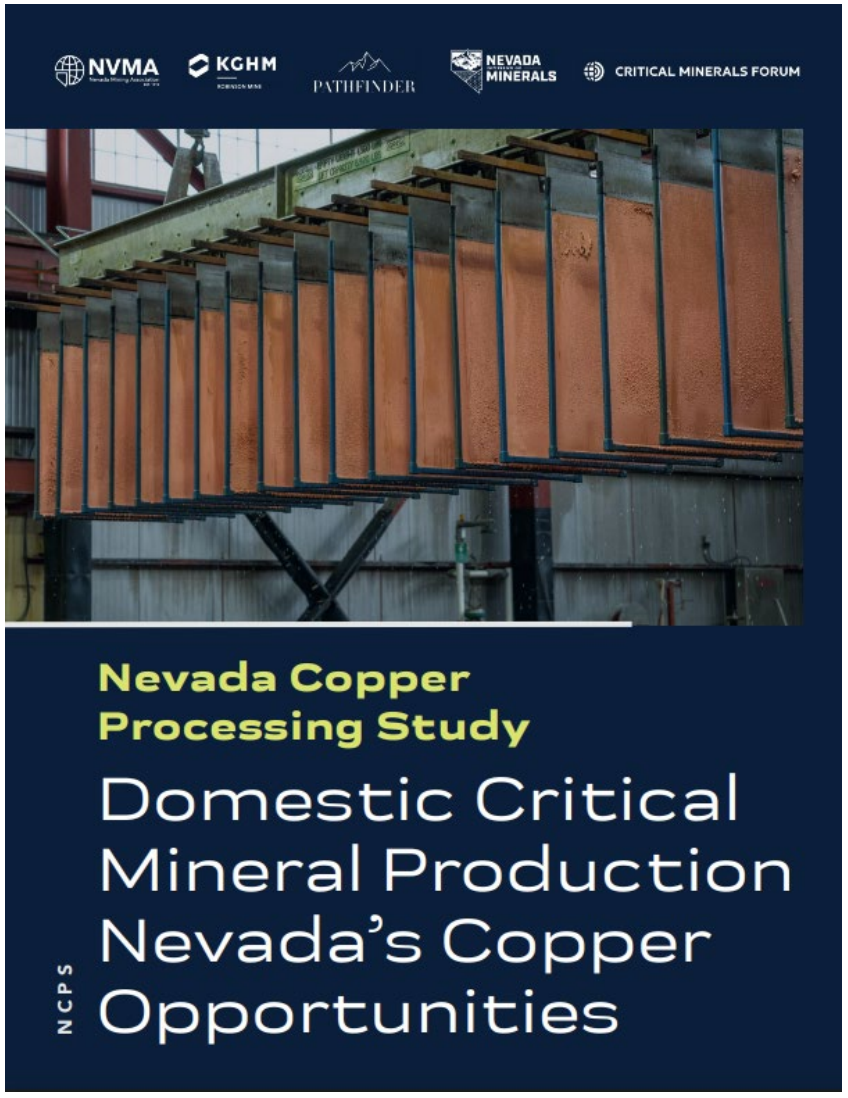
Administrator, Division of Minerals



Copper Report

Eight Sections of Focus

- Act as a resource
- Identify areas of opportunity
- Identify key bottlenecks
- Raise awareness of the current environment
- A guide for industry and policy makers



Copper Report

NEVADA DIVISION OF MINERALS

Eight Sections of Focus

1. Worldwide Copper Output and Forecast
2. Nevada and Western US Geology/Resources
3. Technologies: Existing and Potential
4. Facility Siting Criteria and Permitting Requirements
5. Investment and Funding
6. Economics
7. Strengths, Weaknesses, Opportunities, and Threats
8. Conclusion and Next steps

3.1 GLOBAL AND DOMESTIC COPPER DEMAND

The copper market is in a period of dynamic change, defined by historic price volatility, geopolitical realignments, and a widening gap between supply and demand. According to the U.S. Geological Survey's *Mineral Commodity Summaries 2024*, copper remains a vital metal for modern technologies, underpinning clean energy infrastructure, advanced electronics, and military applications. In 2024, the U.S. consumed approximately 1.6 million metric tons (Mt) of refined copper, maintaining its position as the world's second-largest consumer after China (U.S. Geological Survey, 2025). While prices for other critical minerals like lithium and nickel plummeted in 2023, copper reached a record $11,460 per metric ton on the London Metal Exchange (LME) in May 2024 (London Metal Exchange, 2024). This surge reflects a perfect storm of structural demand growth and constrained supply, with Charles (2025) warning of a 30% global shortfall by 2035 if production fails to accelerate.

Copper's rally stems from its irreplaceable role in two transformative sectors: renewable energy and artificial intelligence. Electric vehicles (EVs) require roughly 2.5 times more copper than internal combustion engines, while solar farms demand 5 tonnes per megawatt of installed capacity (International Energy Agency, 2021). The International Energy Agency (IEA) estimates that achieving net-zero targets by 2050 will require annual copper production to double by 2035, but current mining projects and recycling rates fall short (International Energy Agency, 2023). Compounding this pressure is the AI boom, with data centers projected to add 1 Mt to annual copper demand by 2030, equivalent to 4% of 2023's global consumption (McKinsey & Company, 2024). Each AI server rack alone consumes up to 165 pounds of copper for power and cooling systems (McKinsey & Company, 2024).

3.2 CURRENT NEED, PRODUCERS, AND PROCESSORS

The U.S. is the fifth-largest copper producer globally, with the seventh-largest reserves and second-largest resources (U.S. Geological Survey, 2025; Mudd & Jowitt, 2018). In 2024, U.S. mines produced approximately 1.1 million tonnes (Mt) of recoverable copper

Table 1 2024 Copper Production, Reserves, and Refining by Country

2024 PRODUCTION, RESERVES, AND REFINING BY COUNTRY			
COUNTRY	RESERVES TONNES (000S)	PRODUCTION TONNES (000S)	REFINING CAPACITY TONNES (000'S)
Chile	190,000	5,300	2,080
DRC	80,000	3,300	2,170
Peru	100,000	2,600	400
China	41,000	1,800	12,000
United States	48,000	1,100	850
Indonesia	21,000	1,100	225

Copper Report - Highlights

- In 2024, the U.S. consumed approximately 1.6 million metric tons (Mt) of refined copper, maintaining its position as the world's second-largest consumer after China. Currently the U.S. imports roughly 890,000 tonnes of refined copper.
- The U.S. is the fifth-largest copper producer globally, with the seventh-largest reserves and second-largest resources (U.S. Geological Survey, 2025; Mudd & Jowitt, 2018).
- The sum of the top 5 refining countries, excluding the U.S., account for 74% of global refined copper production.
- This limited capacity has led to a reliance on exports; in 2024, the U.S. exported 320,000 tonnes of domestically mined copper ore and concentrate to other countries for refining.

Table 8 Other Important Mines and Resources

OTHER IMPORTANT MINES AND RESOURCES					
DEPOSIT NAME	YEAR	TONNES (000)	% CU	CLASSIFICATION	CONTAINED CU POUNDS (000)
OTHER WESTERN MINES					
Morenci	2023	1,270,000	0.36%	Measured & Indicated	10,000,000
Morenci	2023	273,000	0.34%	Inferred	2,000,000
Bagdad	2021	1,969,000	0.24%	Measured & Indicated	11,300,000
Sierrita	2018	3,057,000	0.23%	Measured & Indicated	16,400,000
Chino	2019	294,000	0.45%	Measured & Indicated	2,700,000
Mission Complex	1992	531,000	0.67%	Measured & Indicated	7,800,000
Resolution	2022	1,700,000	1.52%	Inferred	51,400,000
Copper World	2021	1,172,000	0.41%	Measured & Indicated	10,600,000
Pinto Valley	2023	1,270,000	0.29%	Measured & Indicated	8,960,000
Mineral Park	2025	188,000	0.15%	Measured & Indicated	587,000
Total Sulfide Copper		11,724,000	0.40%		121,747,000

Chino

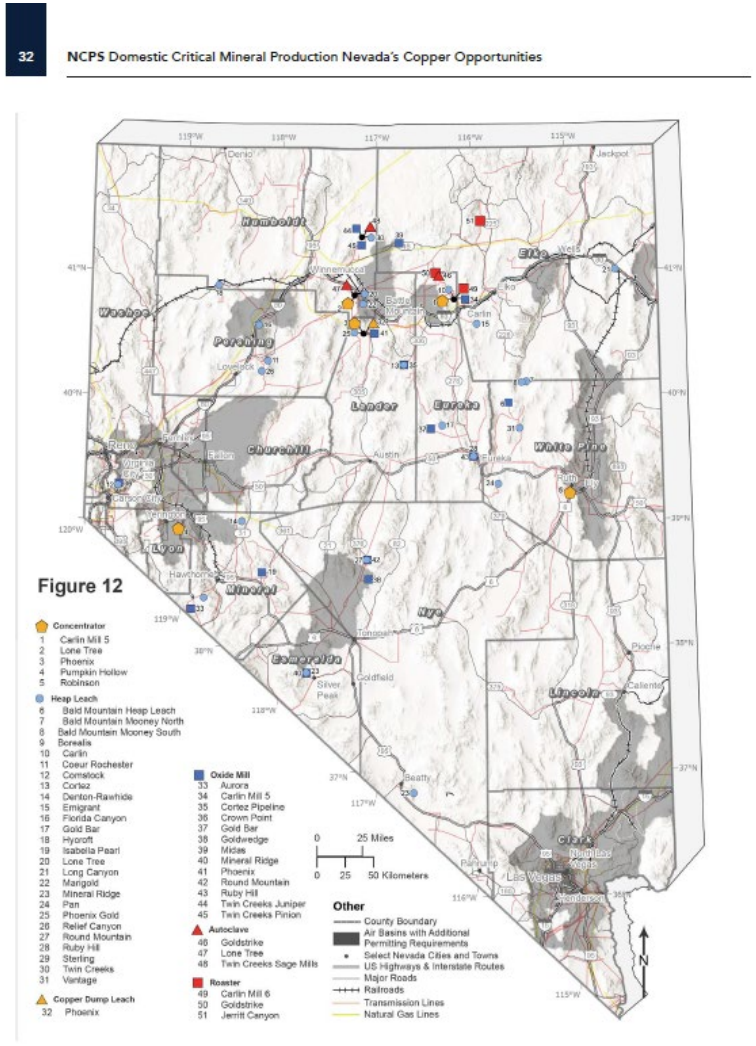
The Chino Mine near Silver City, New Mexico, is a large porphyry copper-molybdenum deposit owned and operated by Freeport-McMoRan. It features an open pit operation with an integrated concentrator and SX/EW facilities. The concentrator processes about 50,000 to 60,000 tonnes per day, producing copper concentrate grading 28–30% copper. Annual copper production is approximately 100,000 tonnes, with molybdenum recovered as a byproduct. The concentrate is shipped to domestic and international smelters. Geologically, Chino is a Laramide-age calc-alkaline porphyry system hosted in Tertiary quartz monzonite and volcanic rocks, with mineralization mainly as disseminated chalcopyrite and molybdenite, plus localized supergene chalcocite enrichment. Copper grades range from 0.3–0.5% copper, with molybdenum around 0.01%. Alteration zones include potassic, phyllic, and propylitic assemblages, with minor gold and silver associated with sulfides. The deposit has low levels of deleterious elements such as arsenic and mercury.

Mission Complex

The Mission Complex in Pima County, Arizona, owned by Asarco LLC (Grupo Mexico), is a

Copper Report - Highlights

- Yes, there is enough mineral reserves in Nevada and surrounding states to support a regional processing facility.
  - Yerington alone holds over 20 million pounds of copper in Measured indicated and inferred resources.
- Yes, the current economics do support a regional processing facility, however with some Asian smelters are currently processing at a loss or even paying to smelt the copper, it does make it difficult to maintain a profitable toll processing facility.
  - For example, the Australian govt subsidies $400 million to Glencore's Mount Isa copper smelter to keep it operational.
- Private Public Partnership would be key



Copper Report – Bottlenecks

- Geographical Concentration
- Refining Capacity Constraints
- Aging Infrastructure & Declining Grades
- Environmental & Regulatory Delays
- Logistics & Transport
- Political & Social Risks
- Funding and Long-Term Investment

Table 6 Copper Sulfide Resources in Nevada

**Resources are historic and may not be code compliant*

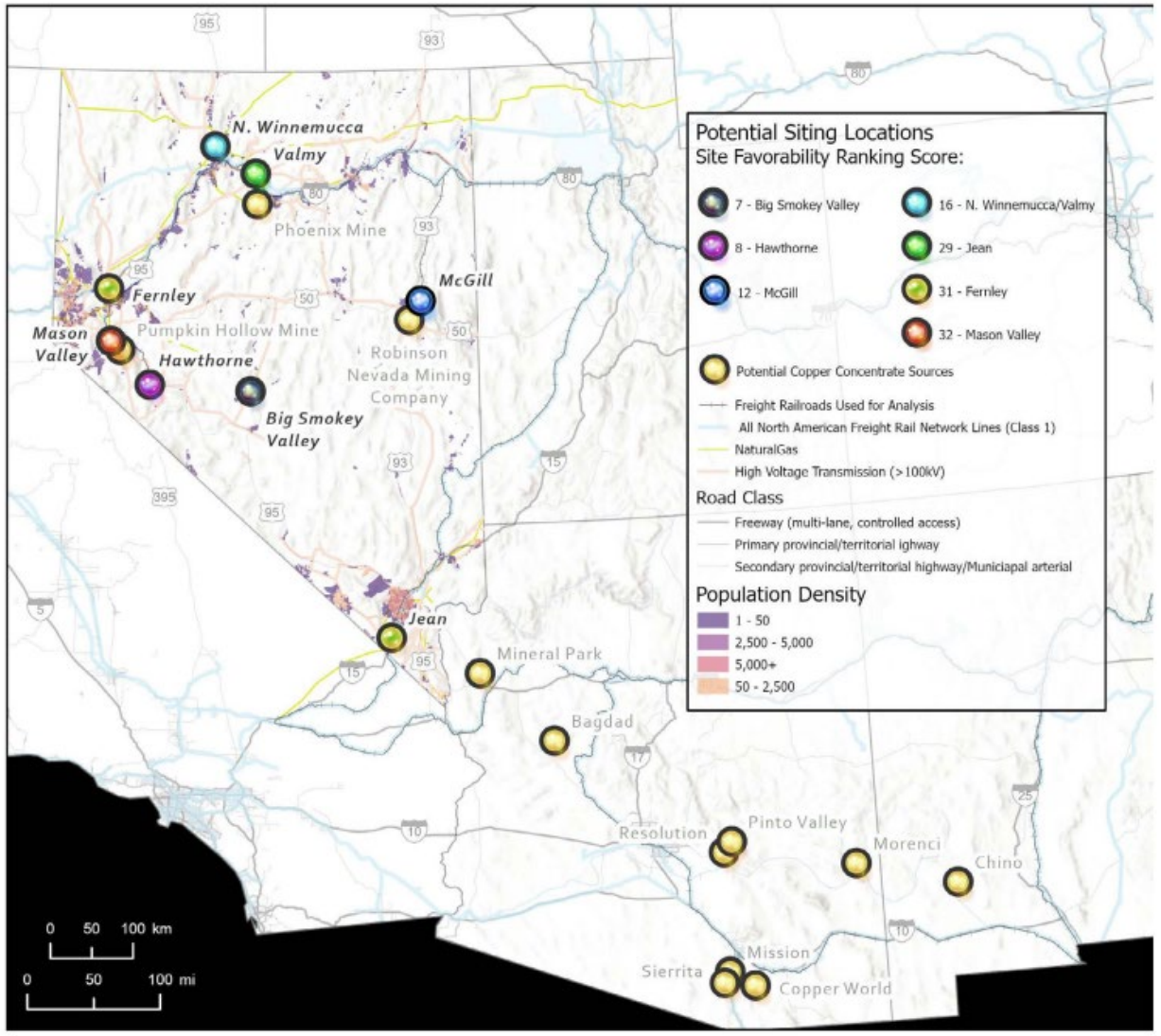
COPPER SULFIDE RESOURCES IN NEVADA					
DEPOSIT NAME	YEAR	TONNES (000)	% CU	CLASSIFICATION	CONTAINED CU POUNDS (000)
YERINGTON DISTRICT					
Mason Project	2021	2,219,000	0.29%	Measured & Indicated	14,157,220
Mason Project	2021	237,000	0.24%	Inferred	1,137,600
Blue Hill - Sulfide	2017	45,000	0.17%	Inferred	169,524
MacArthur - Sulfide	2022	13,500	0.20%	Measured & Indicated	59,185
MacArthur - Sulfide	2022	8,200	0.204%	Inferred	36,942
Pumpkin Hollow - Open Pit	2019	502,000	0.452%	Measured & Indicated	5,000,000
Pumpkin Hollow - Open Pit	2019	25,000	0.358%	Inferred	197,000
Pumpkin Hollow - U'ground	2019	49,000	1.39%	Measured & Indicated	1,503,000
Pumpkin Hollow - U'ground	2019	27,000	1.09%	Inferred	636,000
Yerington - Sulfide	2023	112,000	0.30%	Measured & Indicated	732,500
Yerington - Sulfide	2023	73,000	0.24%	Inferred	385,938
Subtotal Yerington District		3,310,700	0.33%		24,014,909

Copper Report - Siting

Siting Analysis for New Facility

Factored in:

- Rail mileage
- Population Density
- Air Basin
- Sage-Grouse
- Power Transmission
- Natural Gas



Copper Report – Costs

Table 14 Table Estimated Capital Costs

COPPER PROCESSING FACILITY SCALE BY TONNES OF COPPER PRODUCED				
SCALE	CAPEX (SMELTER ONLY)	CAPEX (SMELTER + REFINERY)	PERMITTING (SMELTER ONLY)	PERMITTING (SMELTER + REFINERY)
Small	$300M–$500M (one-time)	$400M–$650M (one-time)	$5M–$10M & 1–3 years	$5M–$10M & 1–3 years
Mid	$500M–$900M (one-time)	$700M–$1.2B (one-time)	$8M–$20M & 2–4 years	$8M–$20M & 2–4 years
Large	$700M–$1.2B (one-time)	$1.2B–$2.0B (one-time)	$10M–$25M & 2–4 years	$10M–$25M & 2–4 years
Mega	$1.5B–$3B (one-time)	$2.0B–$4.0B (one-time)	$20M–$50M & 4–6+ years	$20M–$50M & 4–6+ years

Table 15 Estimated Smelter Operating Costs Per Year

ESTIMATED SMELTER OPERATING COSTS PER YEAR				
SCALE	ENERGY	PERSONNEL	WATER	TAXES
Small	$5M–$8M/year	$15M–$25M/year	$1.5M–$3M/year	$2M–$5M/year
Mid	$10M–$16M/year	$30M–$45M/year	$3M–$6M/year	$5M–$10M/year
Large	$14M–$22M/year	$40M–$55M/year	$4.5M–$9M/year	$8M–$15M/year
Mega	$25M–$40M/year	$60M–$90M/year	$9M–$15M/year	$15M–$30M/year

Assumptions: *Energy is based on estimated 500–800 kWh per tonne of copper produced and average electricity cost of $0.08/kWh. Personnel includes direct employees (operations, maintenance, environmental) with an average loaded cost of ~$110,000/year. Water includes process usage (cooling, scrubbing, slag) at $1.50/m³. Taxes include property, severance/net proceeds, and estimated income tax as % of EBITDA. CAPEX covers smelter, acid plant, utilities, slag handling, and basic infrastructure. Permitting includes air, water, cultural, zoning, and federal (if applicable), and can vary significantly by location and federal involvement.*

Table 17 Estimated Personnel Requirements

ESTIMATED PERSONNEL REQUIREMENTS	
AREA	ESTIMATED FTES
Smelter Operations	150–200
Refinery Operations	100–150
Utilities & Acid Plant	30–50
Environmental & Safety	20–30
Maintenance & Engineering	70–100
Quality, Lab, & Metallurgical	20–30
Administration & Logistics	60–90
TOTAL	450–650

Table 18 Processing Facility Components and Estimated Area Requirements

PROCESSING FACILITY COMPONENTS AND ESTIMATED AREA REQUIREMENTS		
COMPONENT	AREA (ACRES)	NOTES
Smelting plant (concentrate handling, furnaces, converters)	50-65 acres	Flash smelting or ISA/ Outotec-type furnace
Electrolytic refinery	40-55 acres	Including tankhouses, anode/cathode handling
Sulfuric acid plant (byproduct)	15-25 acres	Often integrated to capture SO_2
Oxygen plant	8-12 acres	Required for modern flash smelting
Slag and tailings handling	30-40 acres	Could be off-site depending on design
Raw material and product storage	25-35 acres	Copper concentrate, blister copper, cathodes
Utilities, maintenance, labs, admin	15-25 acres	Power substation, workshops, etc.
Buffer zones, roads, stormwater ponds	30-50 acres	Environmental compliance, haul roads, safety
TOTAL ESTIMATED AREA	213-307 ACRES	

Table 16 Smelter with Estimated Integrated Refining Operating Costs Per Year

ESTIMATED SMELTER OPERATING COSTS PER YEAR				
SCALE	ENERGY	PERSONNEL	WATER	TAXES
Small	$5M–$8M/year	$15M–$25M/year	$1.5M–$3M/year	$2M–$5M/year
Mid	$10M–$16M/year	$30M–$45M/year	$3M–$6M/year	$5M–$10M/year
Large	$14M–$22M/year	$40M–$55M/year	$4.5M–$9M/year	$8M–$15M/year
Mega	$25M–$40M/year	$60M–$90M/year	$9M–$15M/year	$15M–$30M/year

Assumptions: *Refining Energy Use: 100–200 kWh/ton (mostly for electrorefining). Refining CAPEX Add-On: $100M–$300M depending on size and tech (e.g., ISA Cells, tankhouses). Electrolyte Management: Ongoing cost and maintenance increases with scale. Automation: Refineries benefit more from automation, reducing marginal personnel cost at large scale. Product Output: Electrolytic copper cathode (99.99% Cu), aligned with LME Grade A specs.*

Copper Report – SWOT

NEVADA DIVISION OF MINERALS

STRENGTHS

Strategic Resource Availability

- Existing copper production from Nevada (Phoenix, Robinson) and near-term projects (Pumpkin Hollow, Mason) can supply substantial feedstock.
- Potential access to Arizona concentrates (Copper World, Pinto Valley, Mineral Park, Resolution Copper) adds regional support.

Scrap Copper Feedstock: U.S. generates >900,000 tonnes tonnes of scrap annually, most of which is exported. Redirecting domestic scrap offers stable, high-quality input.

Logistics & Infrastructure

- Favorable infrastructure along I-80 and US-95 corridors (rail, road, HV power lines, natural gas, potential water sources).
- Proximity to mines reduces transportation costs; estimated international shipping savings range from $90–$150 per wet tonne.

Environmental & Regulatory Framework

- Clear permitting pathways in Nevada through NDEP and other state agencies; potential federal alignment via strategic mineral designation.
- Opportunities for land acquisition via disposal of public lands for critical mineral infrastructure projects.

WEAKNESSES

Insufficient Current In-State Supply

Existing concentrate production in Nevada (~730–910 tonnes tonnes/day) falls short of commercial-scale smelter needs (~1,800–2,700 tonnes tonnes/day).

High Capital & Operating Costs

CAPEX for a smelter or leach plant is $1–$3 billion, depending on technology and compliance costs.

Energy-intensive operations with volatile natural gas and electricity prices impact OPEX.

Stringent U.S. Regulatory Burden

RCRA, NPDES, Title V Air Permits, NEPA, and wildlife regulations increase complexity and permitting timelines (24–48 months).

Higher compliance costs vs. international smelters, especially in China, will hurt competitiveness without subsidies.

TCRC Market Dynamics

2024–2025 benchmark TCRCs are low (~$27/DMT, $0.02/lb), limiting smelter revenues. May require policy support or market shifts to ensure ROI.

OPPORTUNITIES

Re-shoring Industrial Capacity

Aligns with U.S. federal critical mineral strategies and domestic supply chain security goals.

Captures value currently lost in concentrate and scrap exports (>350,000 tonnes concentrate and >960,000 tonnes scrap exported in 2023).

Emerging Technologies

Deployment of low-emission leaching processes (e.g., Rio Tinto's Nuton) could improve economics and permitting viability.

Byproduct Revenue Streams

Potential to recover and monetize gold, silver, sulfuric acid from concentrates enhances economic feasibility.

Public-Private Partnerships

Potential for federal or state incentives, grants, or tax credits to support development under the Inflation Reduction Act or DOE initiatives.

THREATS

Global Market Volatility

Copper prices and TCRC rates are highly sensitive to macroeconomic conditions and Chinese smelting capacity.

Environmental Opposition & Legal Delays

Risk of litigation, public opposition, and lengthy EIS processes, particularly for siting near sensitive habitats or federal lands.

Competition from Foreign Smelters

International facilities benefit from lower costs, economies of scale, and more lenient regulatory environments.

Copper Report – Next Steps

- Comprehensive site, geologic, and metallurgical evaluation
- Establish a comprehensive public-private partnership (PPP) that engages a diverse range of stakeholders
- Stakeholder Engagement must be structured across local, state, and federal levels to align priorities, unlock support, and build long-term project legitimacy.
- Identify funding opportunities at both local and Federal level
- Development of a comprehensive project roadmap is essential to guide execution. This document should establish critical milestones spanning site acquisition, permitting, detailed engineering, financing, and construction, ensuring all workstreams progress in alignment with regulatory timelines and investment goals.

9.1 CONCENTRATE SUPPLY

Table 19 Selected Potential Processing Facility Feeds

PROCESSING FACILITY COMPONENTS AND ESTIMATED AREA REQUIREMENTS				
MINE NAME	STATUS	DAILY CONC. TONNES	CONCENTRATE %CU	DAILY CONTAINED CU POUNDS
NEVADA PROCESSING FACILITY FEEDS				
Phoenix	Production	140	25%	75,000
Robinson	Production	450	25%	250,000
Pumpkin Hollow	Care and Maintenance	270	25.5%	150,000
Mason	Development	1,100	30%	720,000
Pathfinder - Liberty	Development	290	22%	145,900
TOTAL NEVADA PROJECTS		2,250	27%	1,340,900
OTHER PROCESSING FACILITY FEEDS				
Copper World	Production	820	28%	454,000
Morenci	Production	4,500	26%	2,500,000
Bagdad	Production	820	26%	460,000
Mission	Production	590	26%	332,000
Sierrita	Production	820	25%	450,000
Chino	Production	680	25%	360,000
Pinto Valley	Production	540	28%	300,000
Mineral Park	Development	110	32%	70,000
Resolution	Development	6,000	33%	4,000,000
TOTAL OTHER MINES		14,880	29%	11,607,800

Developing a centralized processing facility in Nevada will require feed. Three mines in Nevada, KGHMs Robinson, Nevada Gold Mine's Phoenix mine, and Southwest Critical Materials's Pumpkin Hollow Mine (currently not producing), can produce or are capable of producing copper concentrate at the time of this study. As of 2024, Phoenix and Robinson produce an average of approximately 450 to 640 tonnes of concentrates per day containing an estimated 300,000 to 400,000 pounds of copper. When Pumpkin Hollow re-opens the underground operations may be capable of contributing an additional 270 tonnes of concentrate daily for an additional 150,000 pounds of copper. This output is likely not sufficient to sustain operations at a new

Hardrock Abandoned Mine Hazards: An Overview of Impacts and Solutions

NEVADA DIVISION OF MINERALS

NAAMLP
NATIONAL ASSOCIATION OF ABANDONED MINE LAND PROGRAMS

INTERSTATE MINING COMPACT COMMISSION

The report is…

- a public resource
- a way to raise awareness
- a guide for policy makers

Overview of Report Sections

1.0 Fundamentals of Hardrock AML

2.0 Benefits of Reclaiming AML sites

3.0 Hardrock AML Programs

4.0 The Reclamation Process

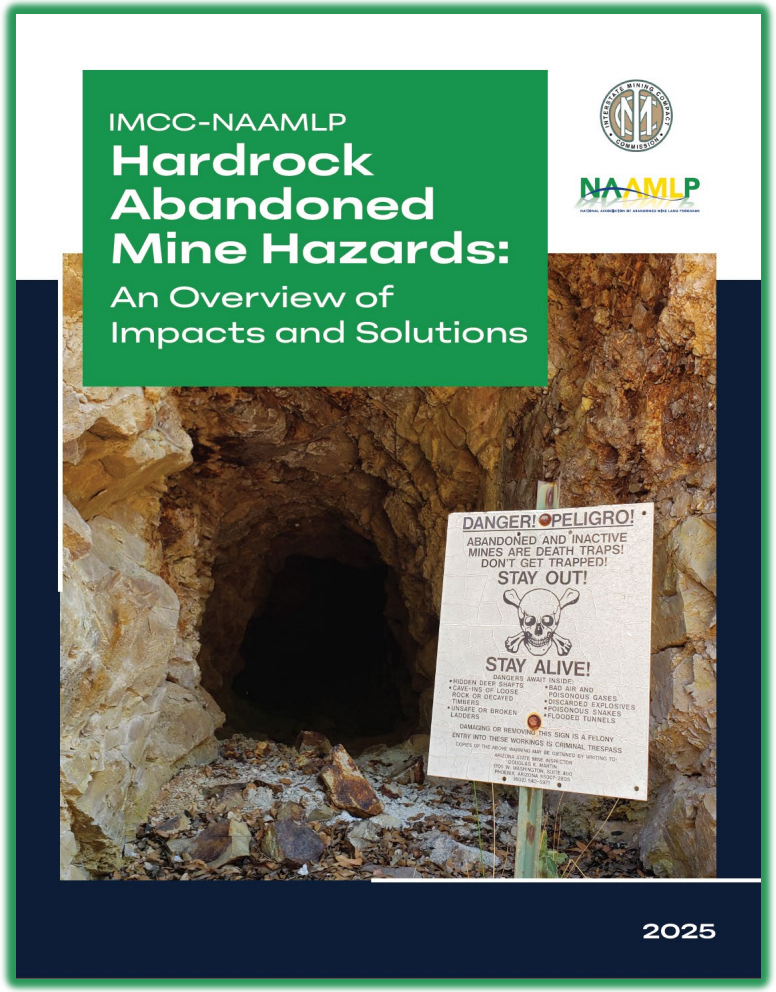
5.0 Hardrock AML Inventorying

6.0 Projecting Hazards and Costs

7.0 Reclamation Success Stories

8.0 A National Hardrock AML Strategy – Policy Recommendations

Appx. State and Tribal Hardrock AML Profiles



Physical and Environmental

PHYSICAL HAZARDS VERSUS PUBLIC HEALTH AND ENVIRONMENTAL HAZARDS

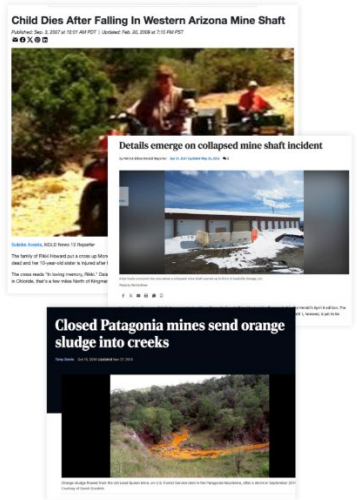
Physical Hazards include:

- Openings in the ground that people and animals can fall into
- Falling rock inside old underground mine workings
- Collapse of old underground mine workings or unmaintained structures
- "Bad air" made up of toxic gases and lacking oxygen
- Old and unstable explosives
- Unmaintained surface waters (i.e. ponds or pits) or flooded mine workings that are a drowning hazard

Public Health and Environmental Hazards include:

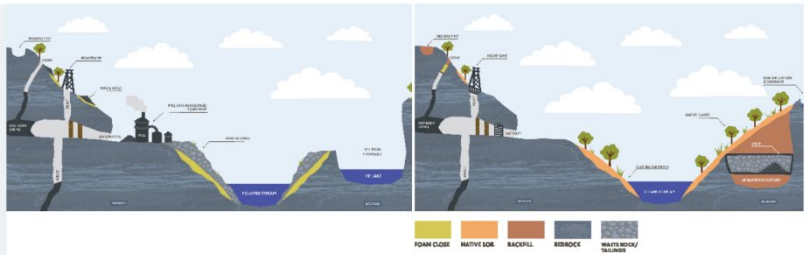
- Drainage of water through mines and tailings elevating heavy metals content in surface water and groundwater to the point they are unable to support life (known as "Acid mine drainage" (AMD))
- Releases of hazardous chemicals from ore processing and mineral extraction equipment and tailings impoundments
- Transport of contaminants during rain or snow melt
- Ingestion or inhalation of airblown radioactive materials that emit alpha, beta and gamma radiation
- Uptake of radioactive materials in wildlife that impacts the food chain or water supply

The most common types of AML features are listed and described in the following pages, including the types of hazards they pose to people and the environment. Table 2 outlines the most common AML hazards reported by states that responded to IMCC surveys, and Table 3 shows the estimated percentage of AML sites posing physical hazards and/or environmental hazards, as reported by states in IMCC surveys.



Mine Openings and Underground Workings

- Adits/Portals – horizontal entries into mine workings
- Tunnels – horizontal workings with at least two openings
- Inclines and Declines – angled entrances and trenches into mine workings
- Stopes – an underground, upward cut into ore or rock, typically utilizing gravity to move material down to a haulage area



Highwall

- Vertical to near vertical surface feature cut into rock or earth, typically by blasting

Waste Rock and Tailings

- Waste Rock - rock removed from the mine but not processed through a mill that is generally low in ore content
- Tailings - left-over materials from processing mined ore

Open Pits

- Large surface excavations that may include multiple highwalls or former quarries

Abandoned Equipment

- Mining equipment or former processing facilities, an infinitely variable category of structures and industrial equipment
- Decomposing explosives that become more unstable and hazardous over time and are absorbed into surrounding materials resulting in highly hazardous storage situations; arid environments can lead to higher risk of static discharge creating sparks with improper grounding of storage

Subsidence

- Settling of earth into void space left by mine workings, creating sinkholes

Water Pollution/Acid Mine Drainage

- Heavy metal contamination of water moving through the AML site from processing facilities, tailings ponds, and/or waste rock piles
- Water draining from mine workings that have low pH or contain a variety of contaminants

Chemical Contamination

- Radiation from uranium, vanadium, radium, and other radioactive materials
- Hazardous chemicals left on site after processing such as cyanide, arsenic, mercury, and acids

Dangerous Waterbodies/Impoundments

- Water-filled pits, tailings ponds, or other mine-related reservoirs

Sedimentation/Erosion

- Movement of contaminated sediment at the AML site due to run-off from rain or snowmelt

Benefits

2.0 Benefits of Reclaiming AML Sites

Reclaiming hardrock AML hazards delivers significant public safety and health, environmental, and economic benefits. Safe, clean, productive land and water resources are at the core of what any community needs to thrive. Reclaiming AML sites also serves broader national interests such as access to domestic supply of critical minerals.

2.1 Public Safety Benefits

Abandoned hardrock mines pose serious public safety and health risks. These dangers are often hard to avoid. They may be hidden by vegetation or sediment, can collapse suddenly, or the danger may be invisible, as with toxic air inside a mine. The primary goal for an AML program is typically eliminating these kinds of public hazards, e.g. by sealing and stabilizing mine openings.

Above: Rescue operation at open mine shaft in Boulder County, CO.
Below: Sealed mine shaft in Boulder County, CO.

DID YOU KNOW?

In September 2021, the Boulder County, Colorado Sheriff's Office was called to the scene of an abandoned mine along the popular Switzerland Trail to conduct a rescue operation for a 19-year-old that had fallen into a mine shaft. Upon arrival, rescuers found the individual trapped nearly 45 feet below the surface. The individual was successfully rescued from the mine shaft following a more than 3 hour ordeal.

The Colorado Division of Reclamation, Mining and Safety (CDRMS) was contacted by Boulder County following the rescue to provide assistance in addressing this and other potential abandoned mine hazards in the area located on both private and federal lands, highlighting the complexity of land ownership in areas impacted by historic hardrock mining.

That same year, CDRMS secured funding and landowner consent to move forward with a project to safeguard 24 hazardous mine features in what would become the Bald Mountain Project. The Bald Mountain Project was completed in 2022, resulting in 24 physical safety closures around the popular Switzerland Trail, significantly reducing risk to public safety and generating increased community awareness of the hazards associated with abandoned hardrock mines.

2.2 Public Health & Environment Benefits

AML sites can leave behind barren landscapes and toxic waterways, where water draining through mine workings and mine waste becomes laden with harmful chemicals and other pollutants. Without intervention, these sites will continue to degrade the local environment indefinitely. AML programs redirect or treat water affected by AML sites to restore water quality and revitalize habitats, bringing once-lifeless areas back to productive use. AML programs take care to reclaim AML sites in a way that preserves their benefits to wildlife, e.g., where they serve as shelter for bats or desert tortoises.

Efforts to restore AML polluted water are constrained both by limited funding and by the lack of a Good Samaritan program. More information can be found in *Section 8.5, Establish Protections for Good Samaritan AML Cleanups.*

Acid Mine drainage in Louisa County, VA

Tailings and acid mine drainage at New Idria Mercury Mine, Superfund site in San Benito County, California

DID YOU KNOW?

Pinto Creek in Arizona is a 33-mile intermittent stream that flows into Roosevelt Lake, which is highly recreated and provides drinking water to the Phoenix Metropolitan Area. The upper half of the creek is located on the Tonto National Forest. The watershed is home to ranchers, animals, and plants, including threatened and endangered species like the Mexican spotted owl and yellow-billed cuckoo.

Beginning in 2001, Arizona Department of Environmental Quality (ADEQ) identified six hardrock AML sites contributing to heavy metals in Pinto Creek, which negatively impacts drinking water for both people and animals. Between 2006 and 2023, ADEQ, the U.S. Forest Service (USFS), contractors, and private landowners forged relationships to catalyze clean-ups at these sites.

Project highlights include:

- Removing 100,000 tons of mine-impacted soils
- Aggregating 8,340 cubic yards of waste rock in 5 onsite consolidation cells
- Closure of 10 adits and 5 shafts with waste rock, polyurethane foam, bat-friendly grates, and/or wire-mesh grids
- Revegetation of 6.5 acres of disturbed areas using USFS-approved native seed mix

With the reclamation of these six AML sites complete, the upper segments of Pinto Creek are now meeting protective water quality standards. Reclamation was successful in restoring the health of this important Arizona water.

Process

SECTION 4.0

4.1 The Reclamation Process

The primary function of an AML project is to restore AML sites to a safe, healthy, and productive state. Each AML project is a multi-step process; there are a number of activities AML programs must undertake to ensure AML projects are successful.

The activities required to conduct AML projects are summarized below. AML programs differ in their processes and priorities, but their goals are fundamentally the same.

Workers constructing a block wall closure at an abandoned uranium mine adit wearing protective clothing and respirators. San Juan County, Utah

AML PROGRAM GOALS

01 Identify and analyze hardrock AML problems

02 Determine the best approach to address them

03 Resolve the problem as effectively as possible

RECLAMATION STEPS

At high-level, AML programs generally follow the same the process for conducting a reclamation project, which is illustrated in the graphic below. However, AML projects often involve unique challenges requiring tailored engineering solutions due to the extremely varied nature of AML sites.

STEP ONE
PRE-PROJECT

- INVENTORYING
- SITE HISTORY
- PRIORITIZATION
- COORDINATION

STEP TWO
PROJECT IMPLEMENTATION

- SITE CHARACTERIZATION
- INTERIM RECLAMATION ACTIONS
- RECLAMATION DESIGN
- RECLAMATION IMPLEMENTATION
- COMPLIANCE

STEP THREE
POST-PROJECT

- MONITORING & EVALUATION
- MAINTENANCE

Feature Types by State

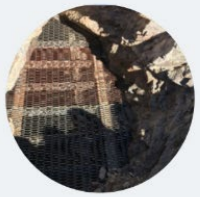
TABLE 5: STATE/TRIBE HARDROCK AML INVENTORIES: ESTIMATED SITES/FEATURES AND INVENTORY COMPLETION

State/Tribe	Estimated Sites/Features	No Inventory	Partial Inventory	Fairly Comprehensive Inventory	Cost Estimates Included	Cost Estimates Up-to-Date
AK	Unknown	•				
AL	Unknown	•				
AZ	~200,000 features		•		•	
CA (DOC)[6]	274,000 features; 19,000 sites		•		•	•
CA (SLC)[6]	1,759 features			•	•	•
CA (WB)[6]	~67 features in Central Valley, unknown elsewhere		•			
CO	46,000 features; 40,000+ sites		•		•	
ID	100s to several 1,000s		•			
IL	Unknown		•		•	
IN	Unknown	•				
IA	Unknown		•			
KY	Unknown	•				
ME	~579 features		•			
MD	250 sites		•			
MI	700+ sites			•	•	
MN	Unknown	•				
MS	Unknown		•			
MT	8,524 features ; ~3.200 sites		•			
Navajo	1,300 sites		•			
NV	200-300,000 features; 40,000 sites		•			
NJ	431 sites		•			
NM	~20,069 features		•			
NY	~1,600 sites	•				
NC	At least 130 sites		•			
OH	Unknown	•				
OK	Unknown					
OR	8,000 features		•			
PA	2,800 sites		•			
SD	900 sites		•			
TN	190 sites		•			
TX	12,000+ sites		•			
UT	~17,000 hazardous features		•			
VA	9,900+ features/sites			•	•	•
WY	~3,000-4,000 features; ~1,500 sites			•	•	•

[6] (DOC) Department of Conservation; (SLC) State Land Conservancy; (WB) Water Boards

Cost Range

COST OF ELIMINATING AML HAZARDS



Air Grate
A rigid metal structure covering a shaft or incline that allows air flow into a mine but does not have flyways for bats or other animals.

Cost Range:
$7,500-$20,000

Culvert gate
Bat gate mounted inside or on one end of a culvert to prevent natural closure of a mine through subsidence, erosion, or rockfall. A culvert is typically corrugated metal pipe, but plastic and concrete can also be used.

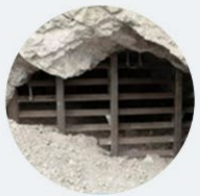
Cost Range:
$5,000-$15,000

Backfill
Filling an adit, shaft, prospect, etc., with on-site material. Can be backfilled by mechanical means (heavy equipment) or by hand if shallow.

Cost Range:
$500-$5,000

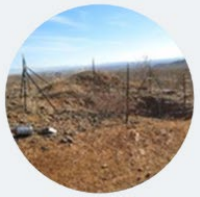
Cupola
Metal structure built over the collar of a shaft or incline with horizontal bars forming bat flyways on at least one side. Can be mounted on concrete foundation or pinned directly to rock or soil.

Cost Range:
$10,000-$30,000



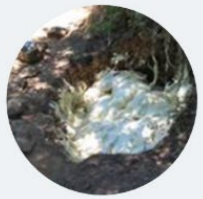
Bat Gate
Metal structure installed inside an adit or incline with gaps in the structure to allow for bats to exit the feature but prevent human access. Can have a removable bar and lock that allows for access for future studies.

Cost Range:
$7,500-$15,000



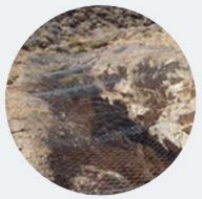
Fence
A barrier that is commonly installed around a fall hazard such as a shaft or deep pit. Prices vary drastically depending on the hazard the fence is protecting, e.g., a mine shaft versus an open pit.

Cost Range:
$500-$15,000



Polyurethane Foam Plug (PUF)
Rigid, self-supporting plug installed in vertical or steep workings to remove fall hazard. Poured as a liquid which then expands and hardens. Must be covered (typically with soil or rock) to prevent UV degradation.

Cost Range:
$5,000-$15,000



Wire Net
Woven metal panel or net that can be draped over irregularly shaped features (stopes, shafts, etc) and anchored to the rock surrounding the feature.

Cost Range:
$7,500-$25,000

Wall
Cement block or native stone wall constructed inside the opening of an adit or decline. The wall is a hard closure that can be installed if there is not adequate backfill material or if it is desired to preserve the mine opening.

Cost Range:
$2,000-$7,000

Before and after safeguarding steep mine entry in Death Valley National Park, Inyo County, California

Project Examples

7.4 Hillside Mine, Yavapai County, Arizona

Problem

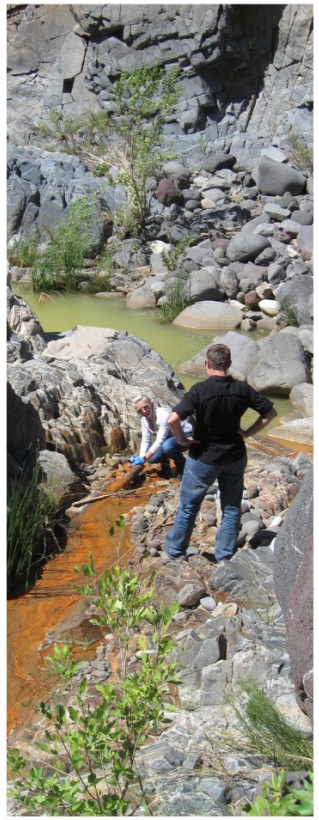
In 2000, Boulder Creek was listed on Arizona's Clean Water Act 303(d) list as impaired for arsenic, copper, and zinc. Flowing seasonally, it is located in a rural, mountainous area about 2 hours northwest of Phoenix, Arizona. Water in Boulder Creek is important to wildlife and drains into highly recreated areas downstream, including lakes and rivers that eventually flow into the Colorado River. Historic metal mining features from the now inactive Hillside Mine were identified as sources for the Boulder Creek impairments. An adit was continuously discharging contaminated water at a rate of five gallons per minute, and stormwater would interact with the tailings piles to release additional pollutant metals into the creek. The historic mine was spread out over three different properties; two were owned by government entities, BLM and Arizona State Land Department (ASLD), and one was privately owned.

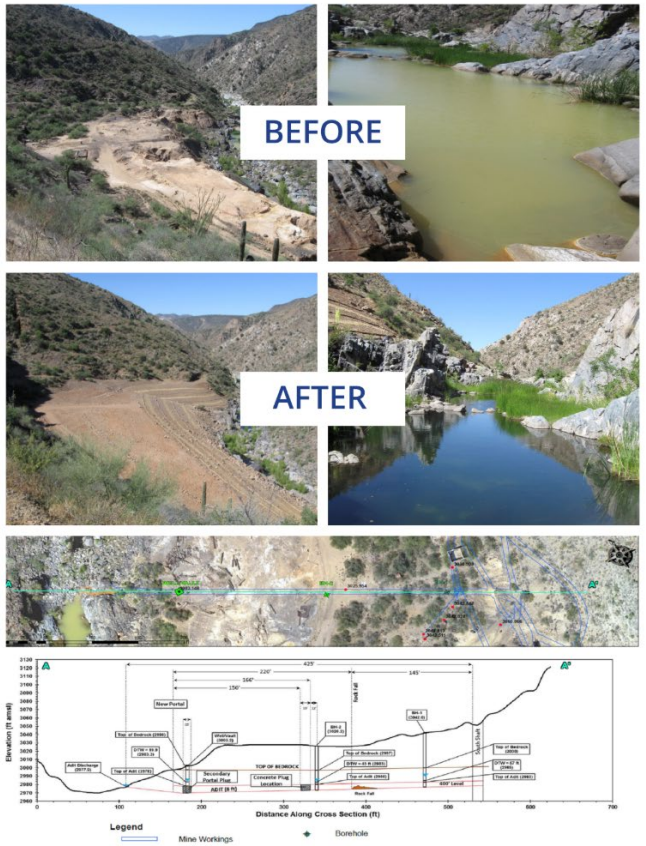
Solution

BLM completed reclamation of the upper tailings pile in 2015. The lower tailings pile was reclaimed in 2017 as a coordinated effort between ASLD, Arizona Department of Administration (ADOA), and ADEQ. The middle tailings pile and discharging adit were located on private land, on which ADEQ coordinated reclamation completed in 2019.

Outcomes & Benefits

After reclamation of the Hillside Mine, murky water originally in the creek turned clear and blue; cattails and other vegetation were reestablished; and fish returned to the creek. Data collected showed an improvement of 90 percent for zinc, 74 percent for copper and 21 percent for arsenic. These improvements also led to delisting metal pollutants for Boulder Creek from the 2022 Clean Water Act 303(d) impaired waters list.





State Profiles

NEVADA

State Agencies with responsibility for AML:
Nevada Division of Minerals, Commission on Mineral Resources https://minerals.nv.gov/

Nevada Division of Environmental Protection, Department of Conservation and Natural Resources https://ndep.nv.gov/land/abandoned-mine-lands

Full-time state employees devoted to AML: 8 (4 each agency)

Funding available to agencies for hardrock AML:

Division of Minerals: 5-year average funding: $1,348,000. Funding for the AML program is derived from:

- A $4 fee collected by county recorders and remitted to the Division for each unpatented mining claim filing
- A one-time fee of $20 per acre for every acre of permitted disturbance associated with new or amended mining or exploration plans of operation on public lands
- Assistance agreements with partnering organizations including the Bureau of Land Management (BLM), the United States Forest Service (USFS), and the National Park Service (NPS)

Division of Environmental Protection: 5-year average funding (excluding specific projects funded by Responsible Parties: Approximately $400,000 for AML activities derived from:

- EPA PA/SI grant program for inventory of AML sites
- Subgrant for critical minerals inventory work from USGS through the Nevada Bureau of Mines and Geology (NBGM) (providing supplemental AML inventory
- State Hazardous Waste Fund (used where no funding source is available)

No state general funds are used to operate either Nevada AML program.

Minerals most commonly associated with hardrock AML: Gold, silver, copper, mercury, antimony, zinc, lead, manganese, tungsten, barite, gypsum, dolomite, barium, and diatomite.

Most common types of AML hazards: Physical safety hazards include shafts, adits, stopes, inclines, declines, pits, highwalls, and abandoned explosives. Environmental hazards consist of tailing piles, groundwater contamination, chemical hazards, waste rock piles, acid mine draining including acid generating rock piles/tailings and drainage from adits, abandoned chemical stockpiles, radionuclides, process fluids (e.g. HLP drain-down), and process ponds.

Mercury retort in Mineral County Nevada

Program description:

Nevada Division of Minerals:
The Nevada Legislature established the Division's AML program in 1987 due to incidents at abandoned mines. The Legislature established three main functions of the program.

1. Inventory and rank dangerous conditions that result from mining practices that took place at a mine that is no longer operating; and identify and notify the owner or other person responsible for the condition, if feasible.
2. Secure hazardous conditions on open public lands where no claimant or property owner could be identified.
3. Develop a public awareness campaign to educate the public about dangerous conditions that exist as a result of historic mining activities.

Nevada estimates 300,000 historic mining related features within the state and 40,000-50,000 physically dangerous hazards. To date, 26,020 physical hazards have been inventoried. 3,954 hazards have been safeguarded, for example with a fence or barricade and signage. 7,209 have been permanently closed, for example with a backfill or bat compatible closure. 133,560 historic mining features have been identified as non-hazardous.

Nevada Division of Environmental Protection:

The NDEP AML program has operated within the Bureau of Corrective Actions since 2013, first as a subgroup of the Superfund Branch, then as a separate branch unto itself since 2017. The NDEP AML program is focused on remediation of environmental impacts due to legacy mining activities to mitigate risk to human health, wildlife, and the environment. This activity consists of the following specific tasks:

1. Inventorying and screening of AML sites.
2. Further investigation of sites which show potential for environmental impact.
3. Remediation of sites with identifiable risk to human health, wildlife, and the environment.

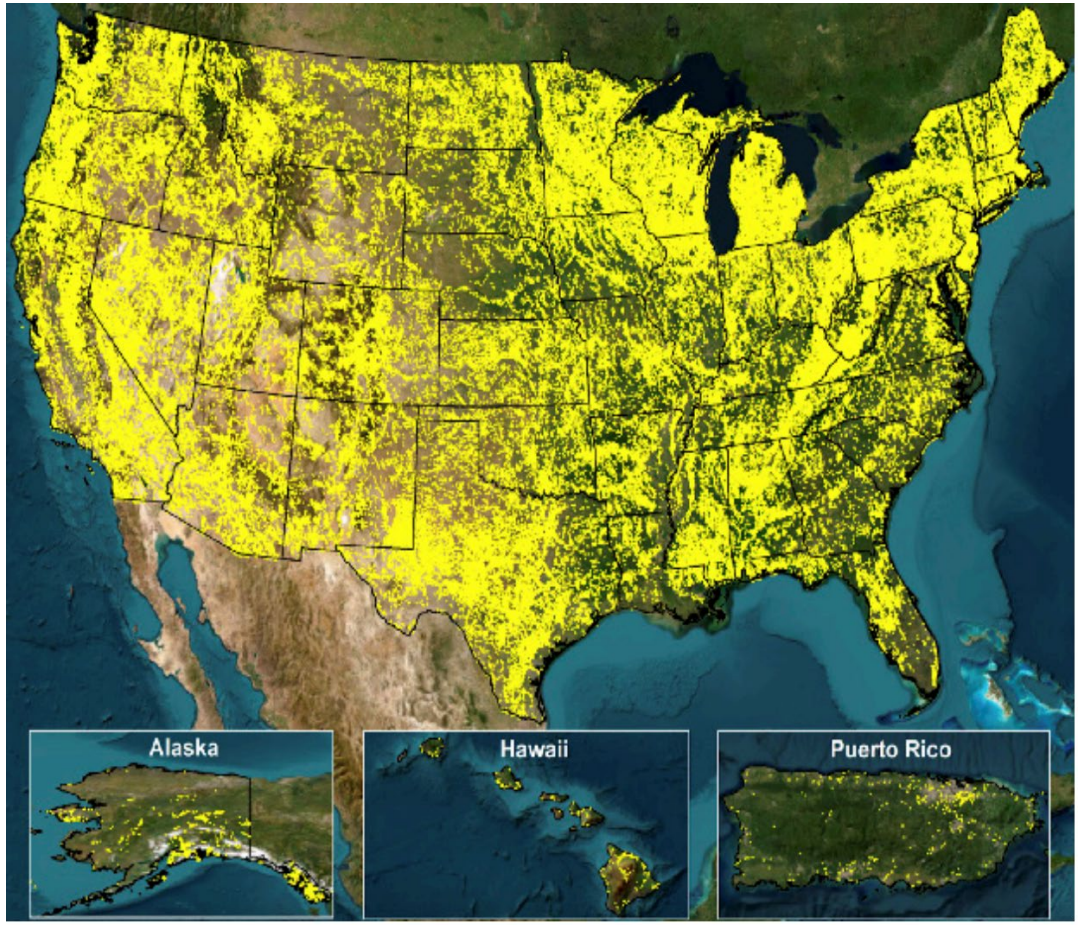
Inventorying, screening, and remediation are currently funded through grants and/or through responsible parties. Major sites where investigation and remediation are currently funded by responsible parties include:

- Anaconda Copper Mine Site, Yerington
- Rio Tinto Copper Mine, Mountain City
- Caselton Mine and Mill, Pioche
- McGill Copper Mill, McGill

Both Nevada AML programs work closely together and with our state and federal partners including the NBGM, BLM, NPS, USACE, USEPA, USFS, and USGS to maximize the expertise, funding, and sharing of data on sites of interest to all agencies.

Finishing a bat cupola over a shaft with tarps protecting the timber below

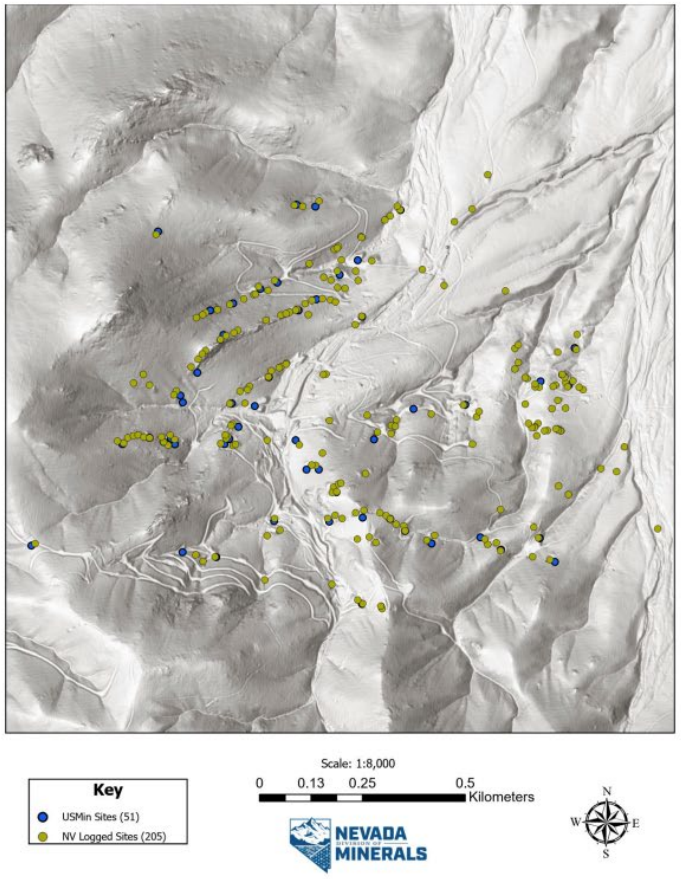
KEY POINTS – PROJECTING HAZARDS AND COSTS

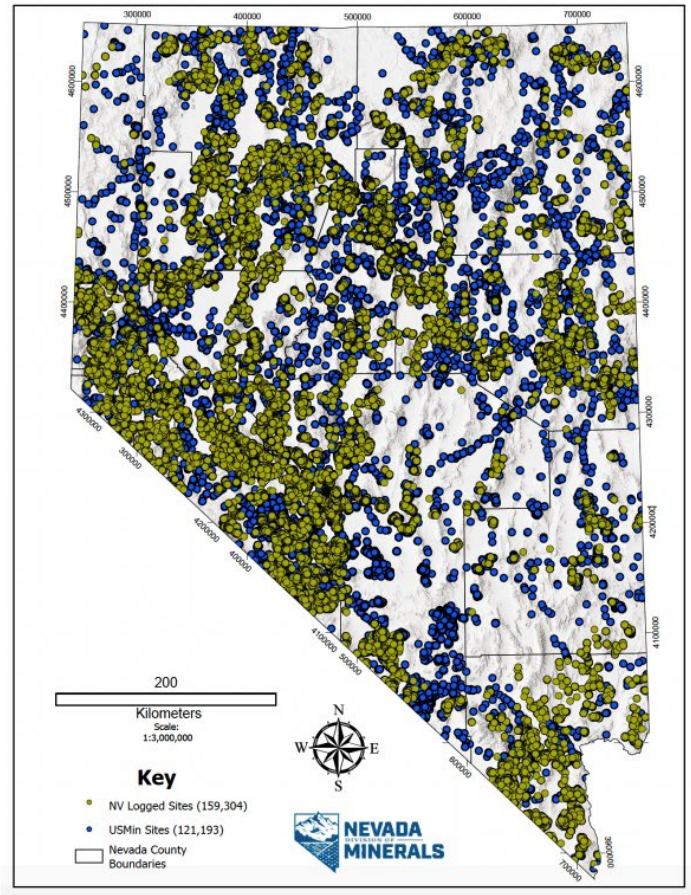


"Thousand Points of Light" map, displaying historic mine features throughout the country contained in the USMIN database

- We know enough about hardrock AML problems for nationwide estimates
- GAO report (GAO-23-105408) was helpful, but had limited data to work with
- Comparing USMIN data with sample of state inventories is new approach

USMIN vs. State Data





Two examples showcasing the increase of mining related features on the ground vs known USMIN mine symbol data points. Left: A 4 sq km area in Western Nevada showing the 4:1 ratio of Nevada's hardrock AML inventory (yellow) against USMIN mine symbols (blue). Right: The entire state of Nevada showing the Nevada logged AML features (yellow) vs. the USMIN mine symbols (blue).

Estimated Features and Costs

1.8M
Hardrock AML Features

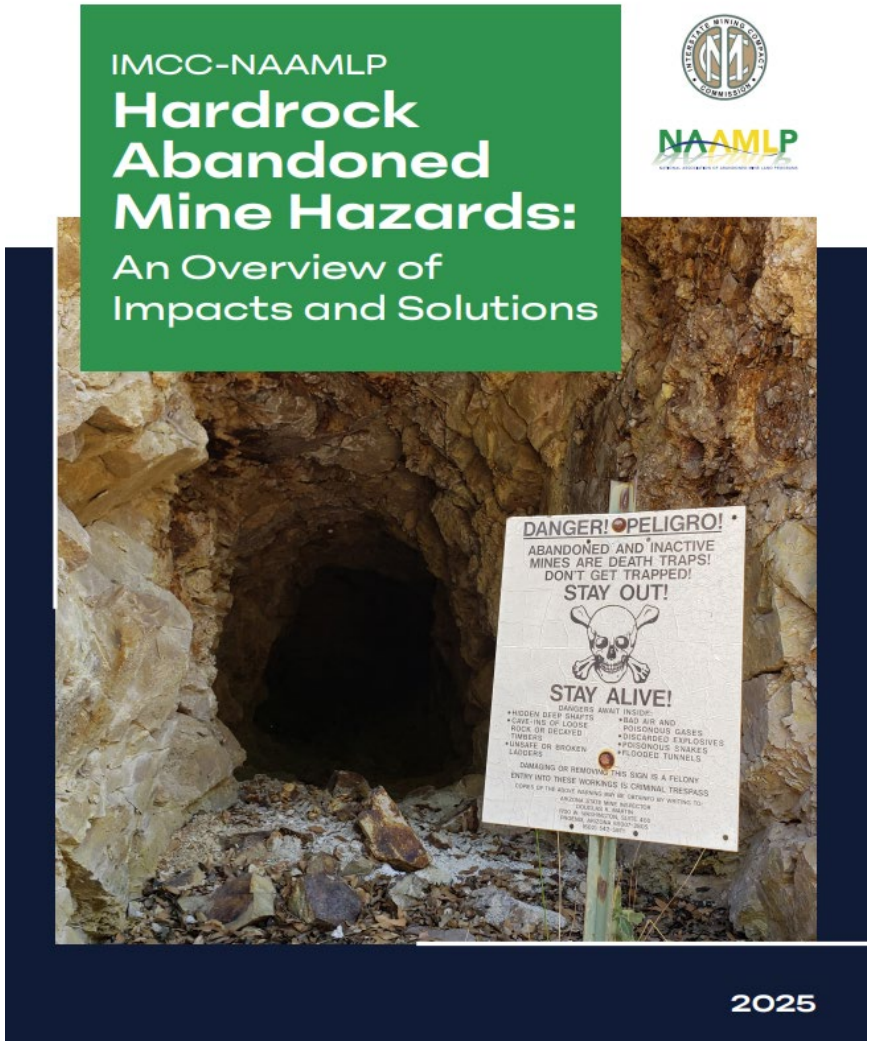
750k
Hardrock AML Safety Hazards

$11B
To Reclaim All Hardrock AML Safety Hazards

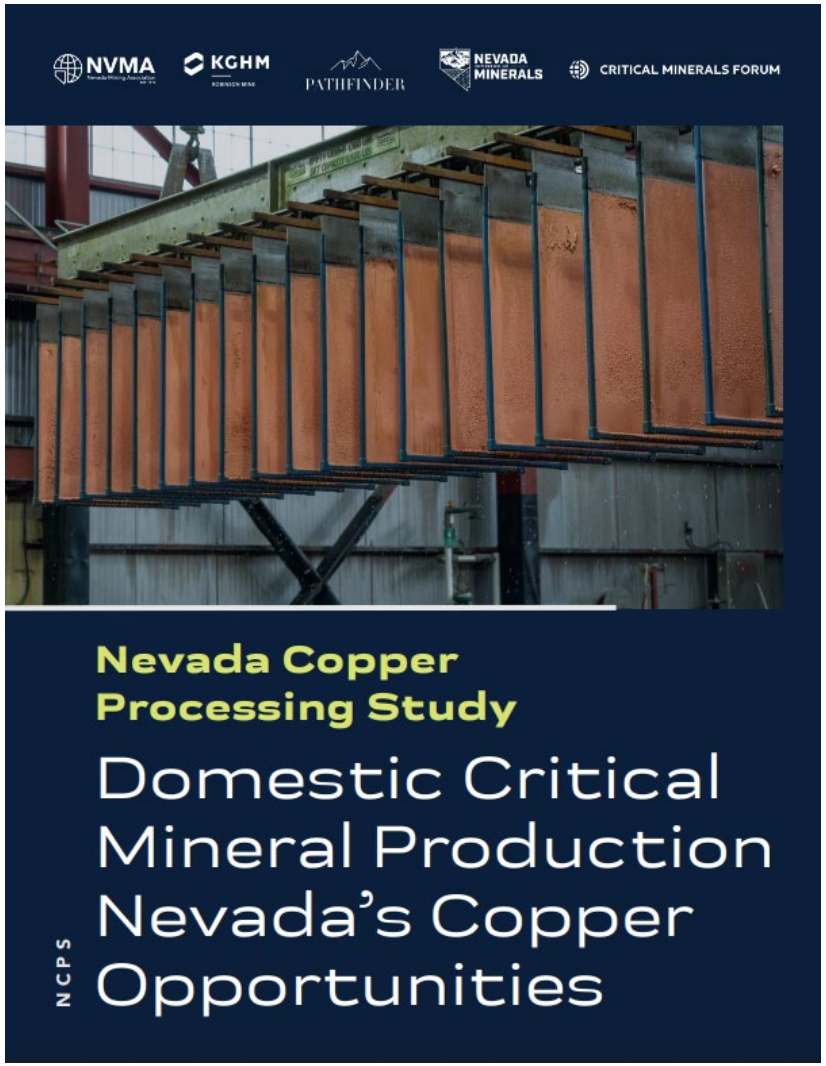
$50B
To Clean Up All Hardrock AML Environmental Hazards

Policy Reccomendations

- National Funding
  - Can’t wait for complete inventory
- State Primacy Approach
  - Support federal AML agency work, coordination with states and tribes
- Set up AHMR for Success
- National Inventory
  - Continue supporting USGS development of national hardrock AML inventory
- Good Sam Program
- Critical Minerals



Both reports can be downloaded at https://minerals.nv.gov/



F.

NBMG/CREG Overview and Potential Projects

Simon Jowitt

Director and Nevada State Geologist, Nevada Bureau of Mines and Geology and the Ralph J. Roberts Center for Research in Economic Geology, UNR

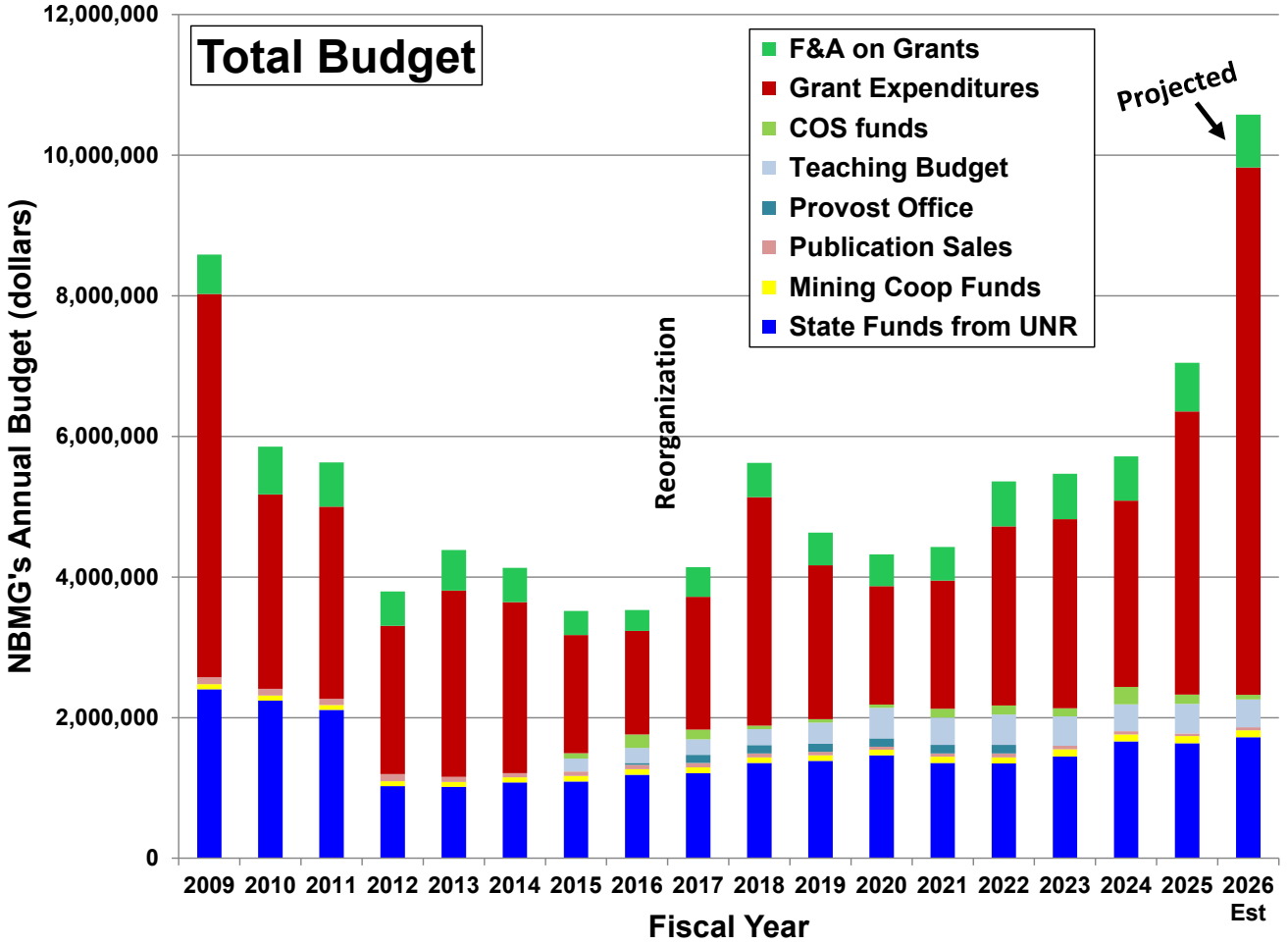
sjowitt@unr.edu, @The_Jow

Today’s presentation

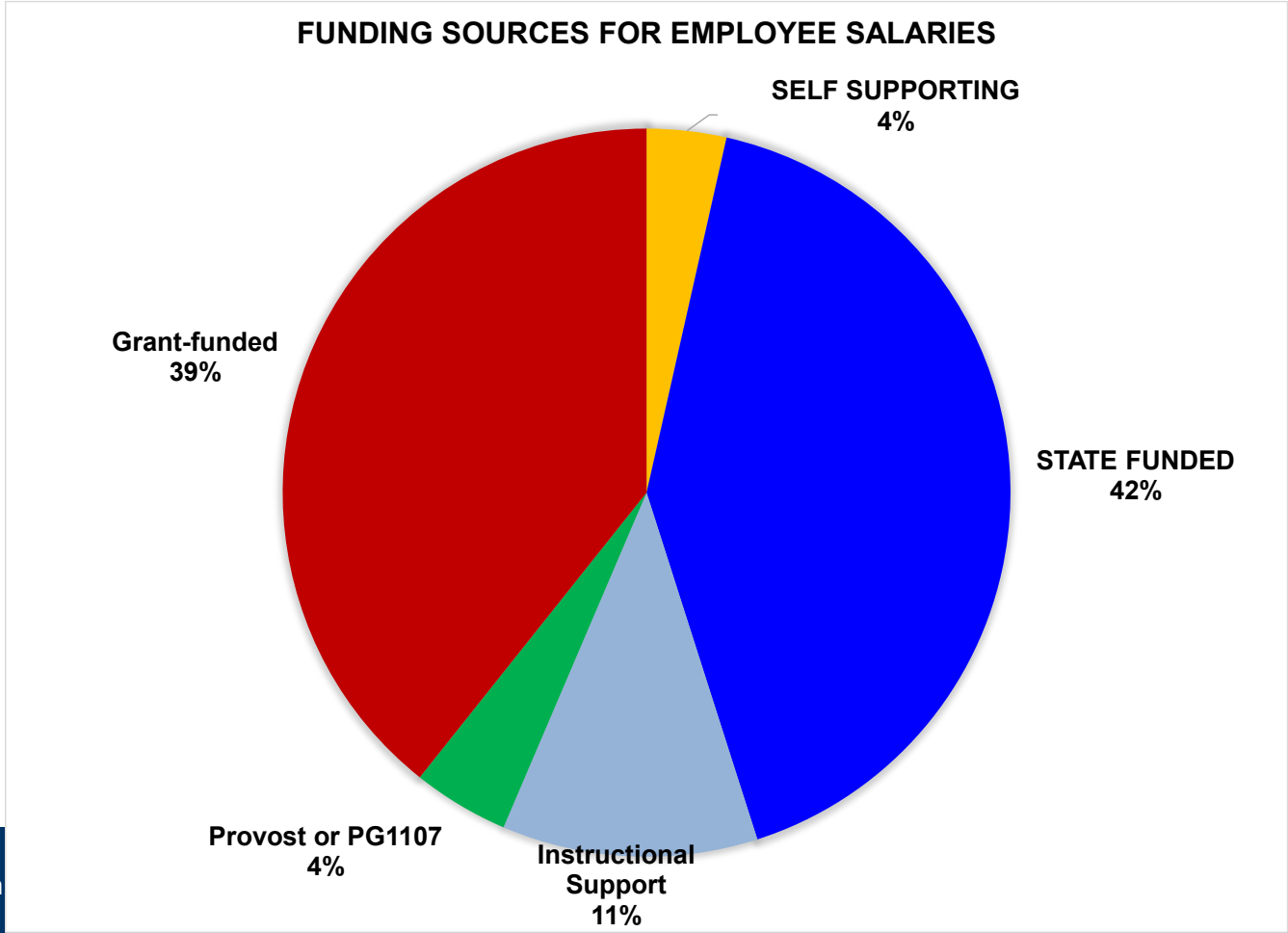
- Brief overview and updates from NBMG
- Update on CREG activities
- Brief outline of potential projects of interest to the Commission and NDOM

NBMG Budget

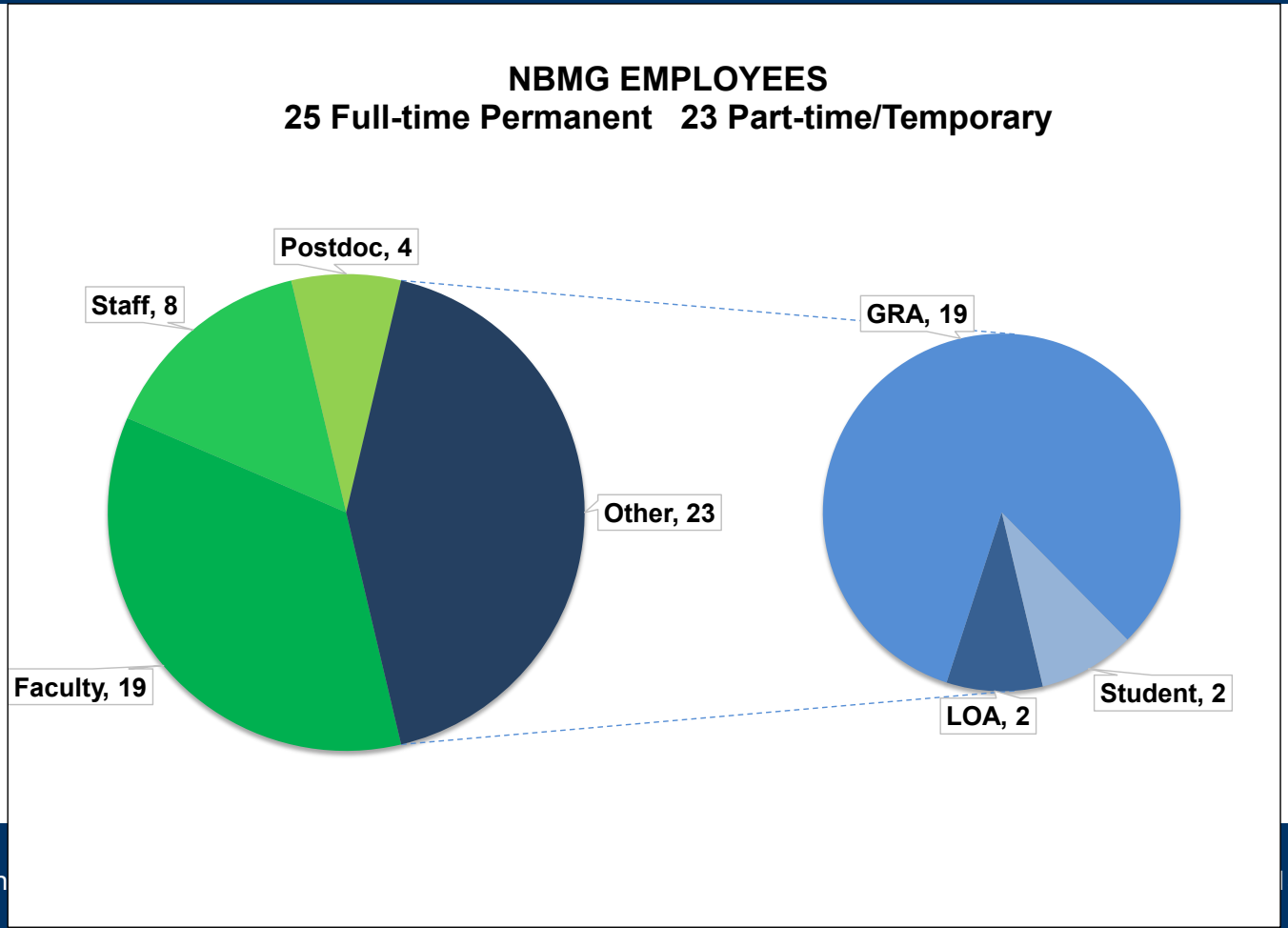
- 2025, 2026 budget increase in grant expenditures relates to DoE INGENIOUS drilling
- Significant increase in funding for economic geology projects 2024-2026



NBMG Budget for salaries only (total $3,553,018)



NBMG Budget for salaries only (total $3,553,018)

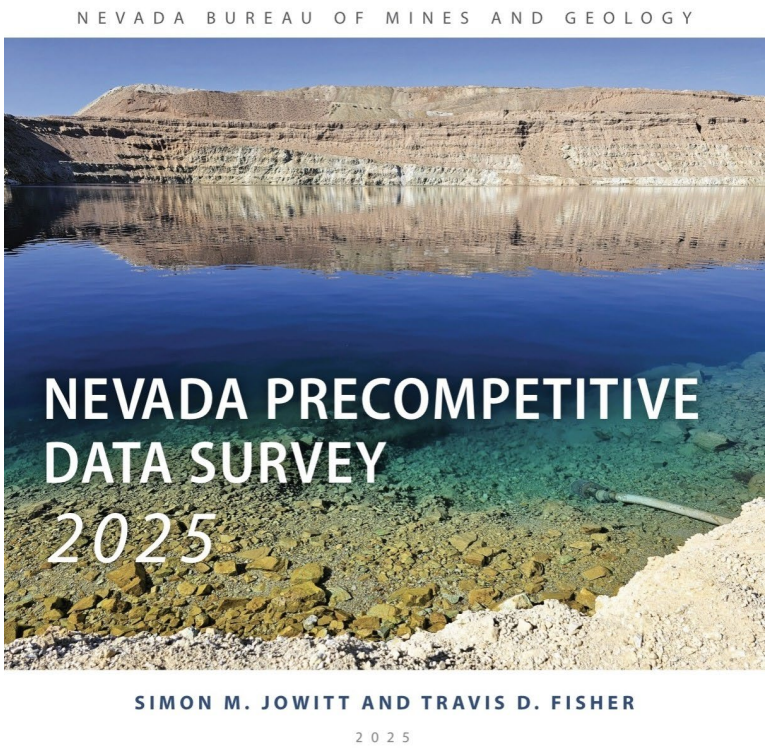


NBMG Faculty and Staff

- Total of 48 employees (with some changes over the past year); most partly or completely soft funded
- 19 Faculty
- 8 Staff
- 4 Postdoctoral research fellows
- 2 Letters of appointment
- 21 students
- Groups at NBMG include CREG, GBCGE, Gold Building/Data and Sample Preservation, Natural Hazards, Geologic Mapping, GIS and Cartography, Publications
- CREG is the largest group by numbers; 2 faculty, 3 postdoctoral research fellows, 11 students, plus recruiting new CREG Director – more on this shortly

Recent NBMG publications (* = Commission/NDOM support)

- Stratigraphic and Structural Framework of the Soda Lake Geothermal Field, Western Nevada-Implications for Understanding Geothermal Systems in the Great Basin Region*
- Geophysical investigation of Kane Springs Valley, Coyote Spring Valley, and part of the Muddy River Springs Area
- Geologic Map of the Northern Snake Range Metamorphic Core Complex, White Pine County, Nevada and Millard County, Utah
- Nevada active mines and energy producers
- Nevada mineral and energy resource exploration survey 2023/2024*
- Geologic map of the Ruby Valley School Quadrangle, Elko county, Nevada
- The anatomy of the Railroad Valley Basin: Host to Nevada's largest oil fields*
- Nevada Precompetitive Data Survey 2025
- MI report 2024*



CREG Highlights

- SMJ joined NBMG as new CREG director 1st July 2023
- Two CREG students completed degrees in 2024:
  - Silas Goetz, UNR, MS on “Gold Hill low-sulfidation epithermal Au-Ag vein system, Nevada”
  - Steve O’Connell, MS – non-thesis degree
- Sean Ingersoll, Marcus Angus and Alyssa Lindsey next students due to defend…

CREG Personnel

- One research scientist, three postdoctoral research fellows, and 11 current CREG students at UNR, with SMJ co-supervising one other student at UNLV:
  - Jorge Crespo Mena, Assistant Research Professor, UNR, “Geological Mapping in the McDermitt Caldera Lithium Focus Area, Northern Nevada”, USGS EarthMRI funded.
  - Homay Fath, Postdoctoral Research Fellow, UNR, “Identifying high potential areas for tellurium extraction within existing base and precious metal supply chains”, US Department of Energy funded.
  - Jesse Scholpp, Postdoctoral Research Fellow, UNR, “Geochemical Characterization of Nevada’s Mine Waste Sites”, USGS Earth MRI funded.
  - Mohammed Seid Mohammedyasin, Postdoctoral Research Fellow, UNR, “Understanding the Critical Metal Potential of VMS Systems of the western Great Basin”, USGS Earth MRI funded.

CREG Personnel

- One research scientist, three postdoctoral research fellows, and 11 current CREG students at UNR, with SMJ co-supervising one other student at UNLV:
  - Alyssa Lindsey, UNR, “Understanding the complex and overprinting mineralization systems at Ruby Hill, Nevada”.
  - Amber Prevallet, UNR, “Understanding Carlin-type mineralization at the Ren deposit, Nevada”.
  - Brock Moody, UNR, “Global lithium resources, reserves, supply, demand, and implications for the energy transition”.
  - Chris Kosmach, UNR, “Surface geochemistry of the Great Basin and implications for mineral exploration and mineral system identification”.
  - Joe Rosal, UNR, “Characterization of Mine Waste within Nevada; implications for mineral systems understanding and critical metal resource potential”.

CREG Personnel

- One research scientist, three postdoctoral research fellows, and 11 current CREG students at UNR, with SMJ co-supervising one other student at UNLV:
  - Jose Carbajal Ronces, UNR, “Tracing Critical Metals in Pyrite: A Window into Hydrothermal Processes in Porphyry Copper Deposits”.
  - Marcus Angus, UNR, “Constraining Mineralization and Alteration Through New Geologic Mapping at Spring Peak Low-Sulfidation Epithermal System”.
  - Matthew Towne, UNR, “Tungsten and Molybdenum systems of Nevada”
  - Sterling Ferguson, UNR, “Geological controls on the generation of the Selena deposit, Nevada”.
  - Ruben Underwood-Aguilar, Center for Research in Economic Geology, UNR, 2024-present, “The role of detachment faulting in the formation of epithermal systems of southern Nevada”
  - Travis Fisher, UNR, “Understanding Carlin-type and polymetallic Pb-Zn mineralization at Taylor, eastern Nevada”
- Could easily take on more students; economic geology opportunities in the US are still few and far between, programs at AZ, CSM losing faculty

CREG Funding

- 2025 CREG industry and individual donor funding of $163.5k
- 2024 CREG industry and individual donor funding was $117.5k
- 2023 CREG industry and individual donor funding was $99.5k
- For reference, previous donations were as follows:
  - 2022, 4 CREG sponsors donated $96,000
  - 2021, 16 CREG sponsors donated $168,434
  - 2020, 17 CREG sponsors donated $153,434
  - 2019, 17 CREG sponsors donated $206,540
  - 2018, 14 CREG sponsors donated $110,400
- Significant in-kind analytical support continues to be provided by ALS and Terracorp
- Donations for 2026 are estimated at ~$170-180k or higher – increasing engagement with industry, including majors coming into NV (AngloGold Ashanti, Agnico Eagle, and others; meeting with First Quantum tomorrow)

CREG Budget – External Grants and Funding

- US EDA Tech Hub 2026 critical metals funding, **$143,000**, supporting Homay Fath
- US Department of the Army REE conference funding for 2026, **$24,725**
- USGS 2024-2029 Cooperative Research Agreement, **$474,633** supporting multiple graduate students; signed new five year agreement in 2024
- USGS EarthMRI funding for McDermitt Caldera research; total funding of **$299,656**, finishing early 2026, supporting Jorge Crespo Mena
- US DoE NREL funding for Global Tellurium Supply Chain work; total funding of **$300,000**, started March 2024, 2 year project, supporting Homay Fath
- US Geological Survey EarthMRI Mine Waste funding for 2025, **$351,978**, supporting Jesse Scholpp and Joe Rosal as well as Gold Building staff
- US Geological Survey EarthMRI Mine Waste funding for 2026, **$355,615**, supporting Jesse Scholpp and Joe Rosal as well as Gold Building staff

CREG Budget – External Grants and Funding

- NSF 2025-2027 funding with UNLV, **$439,728**, UNR share **$148,621**, supporting Jose Carbajal Ronces
- USGS EarthMRI 2024-2027 funding for Great Basin West VMS research, **$329,878**, supporting Mohammed Seid Mohammedyasin
- USGS EarthMRI 2025-2028 funding for Intrusion Geochronology research, **$329,620**, supporting a new postdoc starting 2026
- Outstanding proposals totaling around $13 million; **CREG share $5 million**
- EarthMRI and Mine Waste proposals expected for 2026; if successful, likely $700k
- Total CREG **federal** support to date under SMJ: >**$3 million since July 2023; average annual research budget from all sources of >$1.5 million**

Other developments – CREG representation

- SMJ continues to represent CREG and NV nationally and internationally – multiple plenary and keynote talks at scientific and industry conferences, invited talks at universities and workshops
- Given multiple interviews relating to geology and mineral deposits of NV and metal supply and demand

Nevada Has Loads of Lithium. Here's Why.

Nevada is becoming a major producer of lithium, thanks to topography, climate, and geologic serendipity.

By Evan Howell 31 October 2024

Most of Nevada's basins are now dry, with only curled mud cracks and salts remaining as vestiges of yesteryear's lakes. Crustal extension continues today and is key to the state's vast lithium reserves.

"Nevada is the fastest growing state, tectonically speaking," Faulds said.

> ***"Nevada is the fastest growing state, tectonically speaking."***

Lithium's story begins with igneous rocks, explained Simon Jowitt, an economic geologist at the University of Nevada, Reno. Most lithium mined worldwide is extracted directly from these hard rocks, including at the world's largest lithium mine in Australia's Greenbushes pegmatite.

But Nevada's lithium source rocks, namely, rhyolite (the erupted form of granite), contain only trace amounts of lithium—not enough to economically mine directly. Here geologists are instead interested in "volcano sedimentary deposits," where the highly soluble metal is concentrated in nearby basins after being weathered out of its source rock.

Streams generally collect runoff and flow to the sea, but Nevada's arid climate and topography render most basins hydrologically closed. Streams instead bring water into internally drained basins, where it pools.

Eos

A Major Miner Problem

Economic geology, mining, and mineral resources programs are working to meet the needs of an industry that's struggling to find employees—at a time when some say they're needed more than ever.

By Emily Dieckman 19 December 2024

"For many years that went by, we kind of, as an industry, recycled all our old miners," said Bill Bieber, executive director of the Mining and Petroleum Training Service at the University of Alaska Fairbanks. "And one day we woke up and looked around and went, 'We're all old. Where's the new generation?'"

Why Mine?

"You can't have a modern standard of living without mining, and we mine more now than at any other point in human history," said Simon Jowitt, an economic geologist at the University of Nevada, Reno.

Mined minerals are in our buildings, roads, vehicles, pipes, electronics, cosmetics, furniture, appliances, and more. Cell phones contain at least a dozen minerals.

It's not only current technologies that need mineral resources, mining experts argue, but also those of the future: Renewable energy technology, including solar panels, wind turbines, and electric vehicles, needs elements such as silicon, cobalt, lithium, manganese, copper, and rare earth elements such as neodymium and praseodymium.

Greenland is getting a lot of international attention for its mineral resources – but what is hiding under the ice?

22 January 2025

Sarah Derouin

While critical minerals are likely in Greenland, it is unclear if mining is economically viable. That's where exploration comes in. "Mineral exploration is amongst the most challenging and risky of enterprises related to mining," says Simon Jowitt, director of the Ralph J. Roberts Center for Research and Economic Geology at the University of Nevada, Reno. He notes that for every 100 mineral exploration projects, one of them might turn into a mine.

ENVIRONMENT

Why can't the US mine and refine all its copper? What to know about new Trump order

Debra Utacia Krol
Arizona Republic

Published 5:03 a.m. MT Feb. 28, 2025

The U.S. Geological Survey reported the nation mined about 1.1 million tons of copper ore in 2024 with about 890,000 tons of refined copper produced within its borders. Arizona produced 70% of the nation's supply, solidifying its place as king of copper.

But the nation requires about 1.8 million tons of the ruddy element to use in vehicles, electric grids, phones and other items each year, according to Nevada State Geologist Simon Jowitt. That's one reason why the U.S. imports about 45% of the copper necessary for what Jowitt said was the industrialized world's "modern way of living."

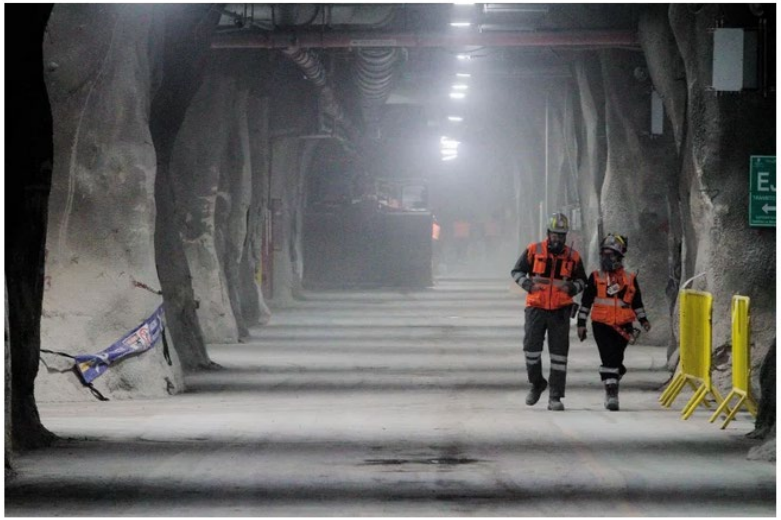
Jowitt also said per-capita copper production has increased three times from the 1950s to now. "Modern living is mineral and metal intensive," he said.

WORLD

Forget about rare earth minerals. We need more copper

MARCH 16, 2025 · 6:01 AM ET

By Scott Neuman



Employees of the Codelco's Chuquicamata copper mine work in Calama in Chile's Antofagasta province, on April 11, 2023.
Glenn Arcos/AFP via Getty Images

Even if new mines can be opened, the U.S. only has two operating copper smelters to handle the raw ore — one in Arizona and another in Utah. They are "already running at capacity," Jowitt says.

"There's potential for much more copper here, but we don't have enough smelting capacity," he says. "Even if new mines come online, the issue is where we will process it."

Canada has been the answer until now, but that can easily be disrupted if the current trade war heats up any further, he worries.

"We're losing friendly relations with those places that could actually do the copper processing," Jowitt says. "You've got the mine, but you need that intermediate step before you can start putting that copper into copper wiring, into our electric vehicles, into whatever you want to put it in."

Current developmentd

- Research capacity remains a real challenge
- One current faculty economic geologist within the entirety of UNR vs typically 3 at NBMG, 1 at DGSE (and ~3 currently at UNLV)
- New recruitment and interviewing of CREG Director is ongoing
- Domestic situation means external candidate recruitment may be challenging for other positions (if they become available)

Agricola, De Re Metallica, 1556

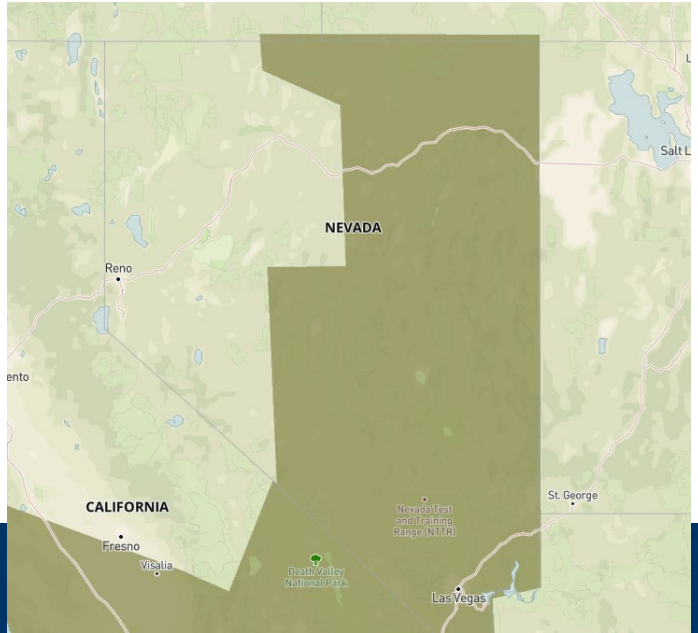
"*Nay, if I understand anything, greater wealth now lies hidden beneath the ground in the mountainous parts of your territory than is visible and apparent above ground*."

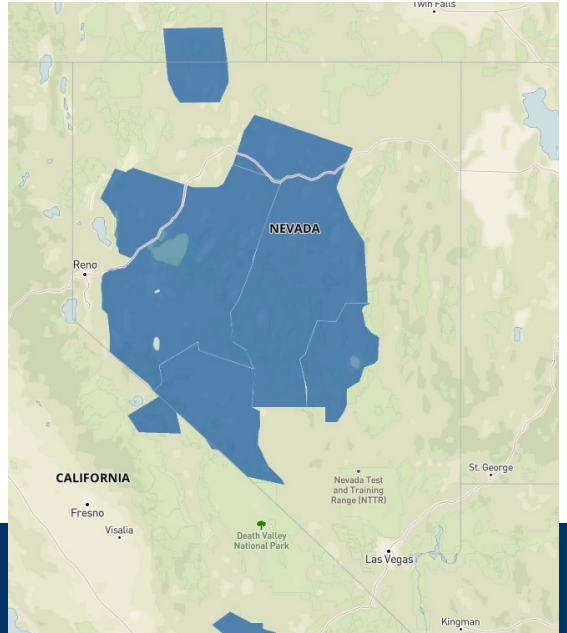
This still applies even after significant time spent exploring… Nevada has huge potential and we need to help realize this; CREG and NBMG have a crucial role here

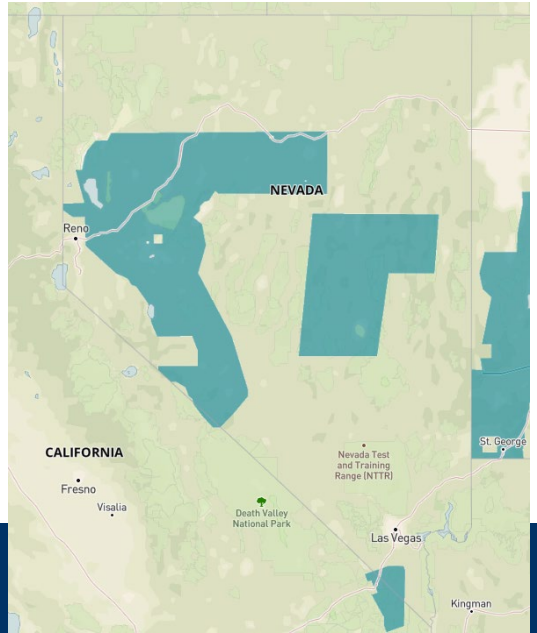
A—Twig. B—Trench.

Economic Geology at NBMG/UNR

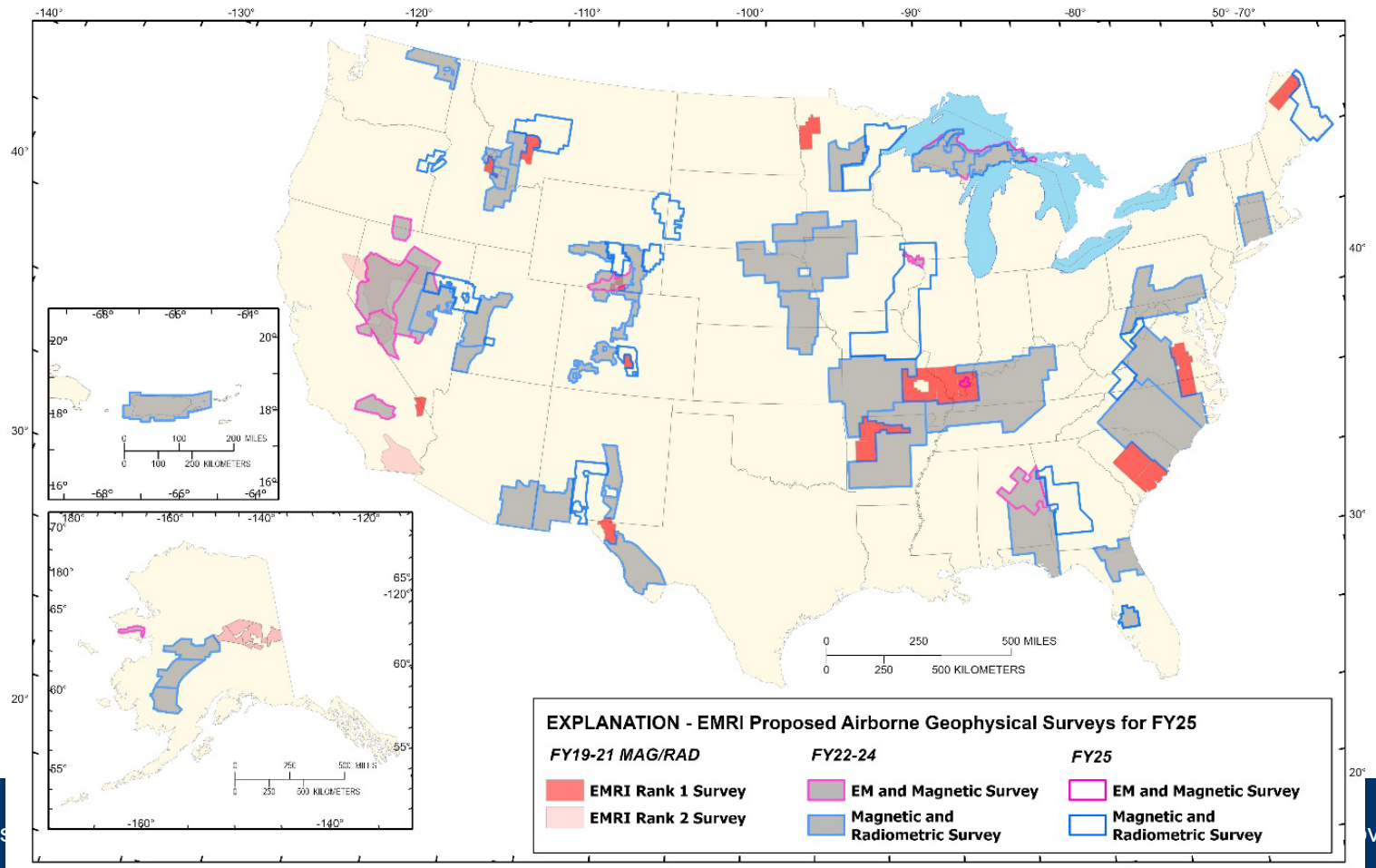
- CREG, NBMG and SMJ continue to advocate for federal funding for precompetitive data acquisitions in Nevada; globally, every $1 spent on this typically has an ROI of >$15 (often >>$50-100) as well as employment, discovery, and other positive returns
- From L to R, Hyperspectral, Electromagnetic, Aeromag-aerorad (with planned surveys for 2025 not shown yet); represents tens of millions of federal dollars already, will be pushing for more of this in future years as otherwise funding will go to other states; use it or lose it… **potential to collaborate with industry in this area**
- State already covered by high precision LiDAR
- More aeromag-aerorad surveys likely for 2026, 2027; probably $9 million expenditure







USGS airborne geophysics coverage – increasing in NV



2026 – 30th Anniversary of CREG

- Need to consider some way to commemorate this perhaps?

CREG aims to fill gaps in mining needs

The Center for Research in Economic Geology has helped unearth Nevada's mineral riches

Research & Innovation | **December 18, 2024**

A photo of Steven Roberts, in memory of whom Ralph Roberts established the endowment that helps to support CREG, rests on a bookshelf in the offices where CREG graduate students work.

This story was originally published in the 2024 edition of Discovery magazine, the College of Science's publication. This edition of Discovery celebrated the 20th anniversary of the College of Science.

The Ralph J. Roberts Center for Research in Economic Geology (CREG) will celebrate its 30th year at the University in 2026. In its first 28 years, CREG has built a strong history in the Silver State. The center is named for Ralph J. Roberts, a U.S. Geological Survey (USGS) geologist who came up with a model for how the extensive gold deposits in Northern Nevada formed, paving the way for exploration success over the last few decades. The center welcomed a new director, Simon Jowitt, in 2023.

University of Nevada, Reno

The University of Nevada, Reno Foundation Fund titled **Ralph Roberts Economic Geology Program** was established on the 18th day of January, 1996 for research gifts to support the work of graduate students in economic geology.

The University of Nevada, Reno Foundation defines a research gift as any item of value given by a donor who wishes to support the research of one or more specified faculty members or research programs at the University of Nevada, Reno, and who expects nothing of significant value in return, other than recognition and disposition of the gift in accordance with the donor's wishes.

In general, the following characteristics describe a research gift:

Fact Sheet: CREG

Tommy B. Thompson
13 December 1998

I. History of Ralph J. Roberts Center for Research in Economic Geology (CREG)

CREG was founded in mid-1996 by a combined initiative between the Department of Geological Sciences, the U.S. Geological Survey, and Nevada minerals industry representatives. The center operated that year on an interim basis with a steering committee; a Director was hired late in 1996 who came to campus full-time in January, 1997. The name was selected to honor Ralph J. Roberts, emeritus U.S. Geological Survey geologist, who had recognized the importance of gold mineral occurrences in certain structural settings in northern Nevada. Dr. Roberts, who was involved in the initiation of CREG, contributed money to set up a lecture series for distinguished researchers in economic geology with particular focus on Nevada ore deposits. CREG has prospered due to continued support from the minerals industry; the initial focus of research is centered on sedimentary rock-hosted gold deposits in northern Nevada and is addressing key issues pertaining to origin of those economically-important gold resources in our state.

II. Contributions: **1996: $178,000.00 (16 industry contributors)**
1997*: $153,250.00 (19 industry contributors & U.S. Geological Survey).
1998*: $239,200.00 (from 19 industry contributors & U.S. Geological Survey).

Total Contributions to CREG from sponsors: $570,450.00

*Please note that there have been 5 changes in industry contributors between 1997 & 1998. CREG has been fortunate to find additional contributors when some industry sponsors have dropped out with their support.

Additionally, the Steven A. Roberts endowment was received in 1997 after Ralph J. Roberts requested that the monies he contributed there toward an endowment with the same name and which were not being used (Harvard no longer has an Economic Geology program), be transferred to Mackay School of Mines. The interest income generated is additionally being used to support graduate students, purchase new equipment, and repair other pieces of equipment used by the Department of Geological Sciences.

Wrapping up

- NBMG has a huge role to play relating to precompetitive geoscience data for the state; acquisition, curation, dissemination, and interpretation
- My door (and email) are usually open; **if you want information on a specific area or deposit, just ask – it's part of our mission**
- Ralph J. Roberts Center for Research in Economic Geology (aka CREG) also crucial on the research and workforce sides, and much more
- Some recent good news for CREG; thanks to a generous donation from their respective families the CREG Director is now the **Donald J. Decker & Alan Branham Endowed Director**
- **$200k for new Director startup research, and a $5.5 million endowment specifically for CREG; will pay out $220-250k a year for CREG student support and research**
- **Funds specifically for CREG and not for other uses elsewhere at UNR; SMJ was part of agreement process**

Potential NBMG/Commission/NDOM projects

- **Nevada Explorers Manual**; a manual outlining “recipes” for different mineral systems in the state, providing examples of deposits, link to key areas and case studies, mineral exploration signatures
- **Nevada Metallogenic Map** – see example for Western Australia, providing a map indicating the location of major deposits, prospects, past producers split by mineral system/deposit type and commodities
- **Nevada Mineral Statistics**; comprehensive compilation, due diligence and analysis of mineral production data for the last 50 years or earlier, including data by deposit type and project
- **Geological map compilation and synthesis**; project to create more compilation and interpretation of multiple quadrangle and other maps and data in key areas (e.g., at a 1 x 2 degree or 1:150k scale)

Potential NBMG/Commission/NDOM projects

- Publication of "**The Impact of Mining on the Humboldt County, Nevada, Economy in the Early 1900s**" by Alan Wallace; ~80 pages, including tables and figures, potentially publishable as a Special Publication or Open File. Report focuses on the history of mining in Humboldt County in the early 1900s
- Publication of **two mining education activities** in the NBMG Educational series:
- 1) Critical Elements for Energy by Elisabeth and Jonathan Price. 2) How Much Gold is on the Windows? by Jonathan Price.
- All of the above could be bundled together; funding needed to support production/post-production efforts of NBMG staff
- **Critical mineral maps**; identifying areas of critical mineral production, past production, and potential. Past production information currently available is decent, but given 50% of critical minerals are co- and by-products, a lot of potential is not being promoted or discussed

Any questions?

- If not now, can always email me at sjowitt@unr.edu

G.

YEARS OF POWERING A SUSTAINABLE FUTURE

ORMAT

ORMAT TECHNOLOGIES, INC.

COMPANY UPDATE

30 October 2025

CD4 Geothermal Power Plant, Mammoth, CA, USA

SAFE HARBOR STATEMENT AND NON-GAAP METRICS

THIS PRESENTATION INCLUDES FORWARD-LOOKING STATEMENTS, AND THE DISCLAIMER SHOULD BE READ CAREFULLY

FORWARD-LOOKING STATEMENTS

This presentation, and information provided during any discussion accompanying this presentation, may contain "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. These statements involve estimates, expectations, projections, goals, objectives, assumptions and risks, and activities, events and developments that may or will occur in the future. When used in or during the course of this presentation, the words "may", "will", "could", "should", "expects", "plans", "anticipates", "believes", "estimates", "predicts", "projects", "thinks", "forecasts", "guidance", "continue", "goal", "outlook", "potential," "prospect" or "target", or the negative of these terms or other comparable terminology are intended to identify forward-looking statements, although not all forward-looking statements contain such words or expressions. Such forward-looking statements include, but are not limited to: statements about Ormat Technologies, Inc.'s and its affiliates' ("Ormat") business strategy; statements about Ormat's competitive strengths; statements about Ormat's development and operation of electricity generation, storage and energy management assets, including distributed energy resources; statements about Ormat's other plans, expectations, objectives and targets; statements about Ormat's views on market and industry developments and economic conditions, and the growth of the markets in which Ormat conducts its business; and statements about the growth and diversification of Ormat's customer base and Ormat's future revenues, expenses, earnings, capital expenditures, regional market penetration, ability to capitalize on increased demand, electricity generation, and other operational performance metrics, including statements about "target" or "targeted" amounts for 2028 growth (MW) metrics such as growth (MW), adjusted EBITDA, portfolio growth and potential and planned capacity (MW), and statement regarding Ormat's ESG plans, initiatives, projections, goals, commitments, expectations or prospects, among others.

All of these and other forward-looking statements made in or during the course of this presentation are made only as of the date hereof and Ormat undertakes no obligation to update or revise any forward-looking statements, whether as a result of new information, future developments or otherwise, except as required by law. Forward-looking statements about "target" or "targeted" amounts represent current goals of Ormat's management and are neither estimates of Ormat's actual results nor financial projections or forecasts that have been prepared in accordance with Securities and Exchange Commission ("SEC") rules or guidelines adopted by the American Institute of Certified Public Accountants.

These forward-looking statements are not intended to be a guarantee of future results, but instead constitute Ormat's current expectations based on assumptions that Ormat currently believes are reasonable. You are cautioned not to place undue reliance on the expectations, projections and other forward-looking statements made in or during the course of this presentation as actual future results and developments may differ materially from such expectations, projections and forward-looking statements due to a number of risks, uncertainties and other factors, many of which are beyond Ormat's control.

These risks, uncertainties and other factors include, but are not limited to, the risks, uncertainties and other factors described in Ormat Technologies, Inc.'s most recent Form 10-K and in subsequent filings filed with the SEC.

NON-GAAP METRICS
RECONCILIATION TO US GAAP FINANCIAL INFORMATION

This presentation includes certain "non-GAAP financial measures" within the meaning of Regulation G under the Securities Exchange Act of 1934, as amended, including EBITDA and Adjusted EBITDA. The presentation of these non-GAAP financial measures is not intended as a substitute for financial information prepared and presented in accordance with GAAP and such non-GAAP financial measures should not be considered as a measure of liquidity or as an alternative to cash flow from operating activities, net income or any other measures of performance prepared and presented in accordance with GAAP. Such non-GAAP financial measures may be different from non-GAAP financial measures used by other companies.

The appendix slides in this presentation reconcile the non-GAAP financial measures included in the presentation to the most directly comparable financial measures prepared and presented in accordance with U.S. GAAP. The Company is unable to provide a reconciliation for its Adjusted EBITDA projections range to net income without unreasonable efforts due to high variability and complexity with respect to estimating certain forward-looking amounts. These include impairments and disposition and acquisition of business interests, income tax expense, and other non-cash expenses and adjusting items that are excluded from the calculation of Adjusted EBITDA.

OUR BUSINESS SEGMENTS

ELECTRICITY

80% of 2024 revenues

Develop and operate geothermal, solar and REG[1] power plants

Serve utilities, municipalities and CCAs

PRODUCT

16% of 2024 revenues

Design and manufacture geothermal and REG[1] equipment

Provide EPC services

ENERGY STORAGE

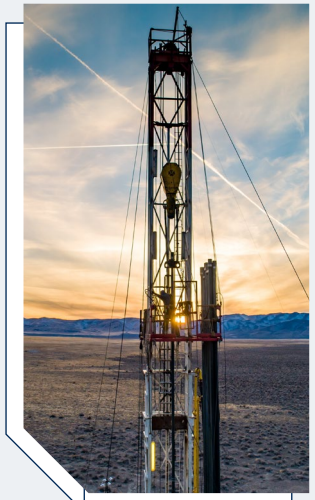
4% of 2024 revenues

Establishing U.S. market leadership, expanding to Israel

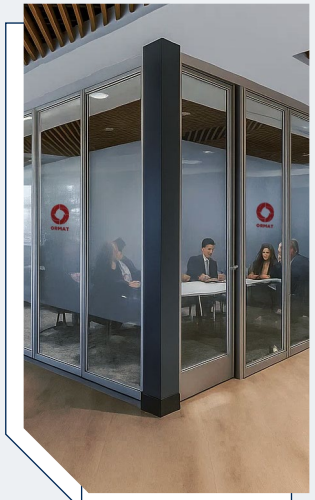
Leverage core EPC, O&M and finance capabilities

1. REG - recovered energy-based power plants

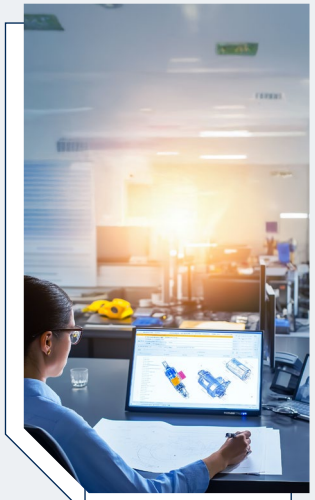
SIX DECADES OF INTEGRATED EXPERTISE



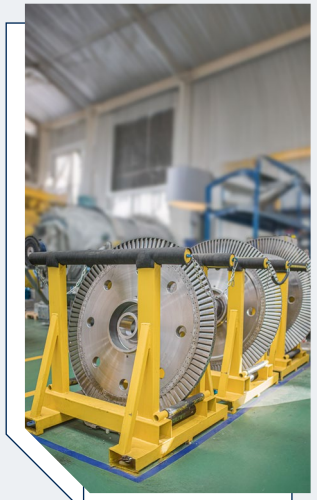
Exploration
(Geothermal)



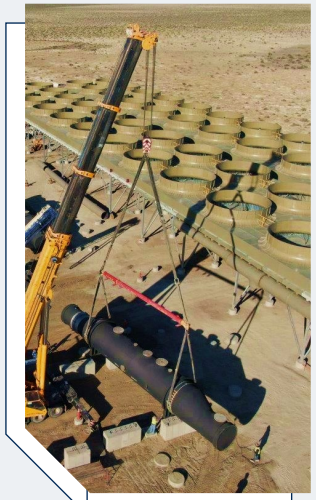
Development



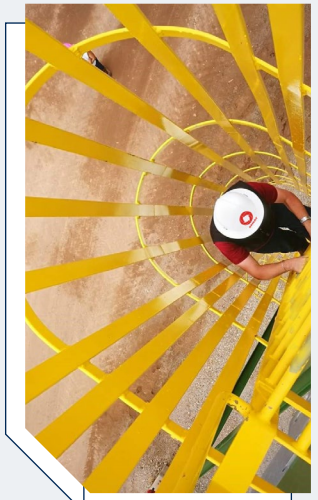
Engineering



Manufacturing
(Geothermal)
System Integration
(Storage)



Construction



Operation

BUSINESS HIGHLIGHTS

FOR Q3 2024 – Q2 2025

ELECTRICITY

Successful **integration** of Enel assets, releasing enhancements on all 3 facilities

Acquired Blue Mountain facility in NV USA

COD of Ijen joint-venture in Indonesia

Curtailments

U.S. and Olkaria

STORAGE

Signed **2 new tolling** agreements & one **Resource Adequacy** agreement

Lower Rio, Bird Dog, Shirk

Brought on-line **2 new** facilities 100MW/340MWh

Bottleneck, Montague

Improved margins

PRODUCT

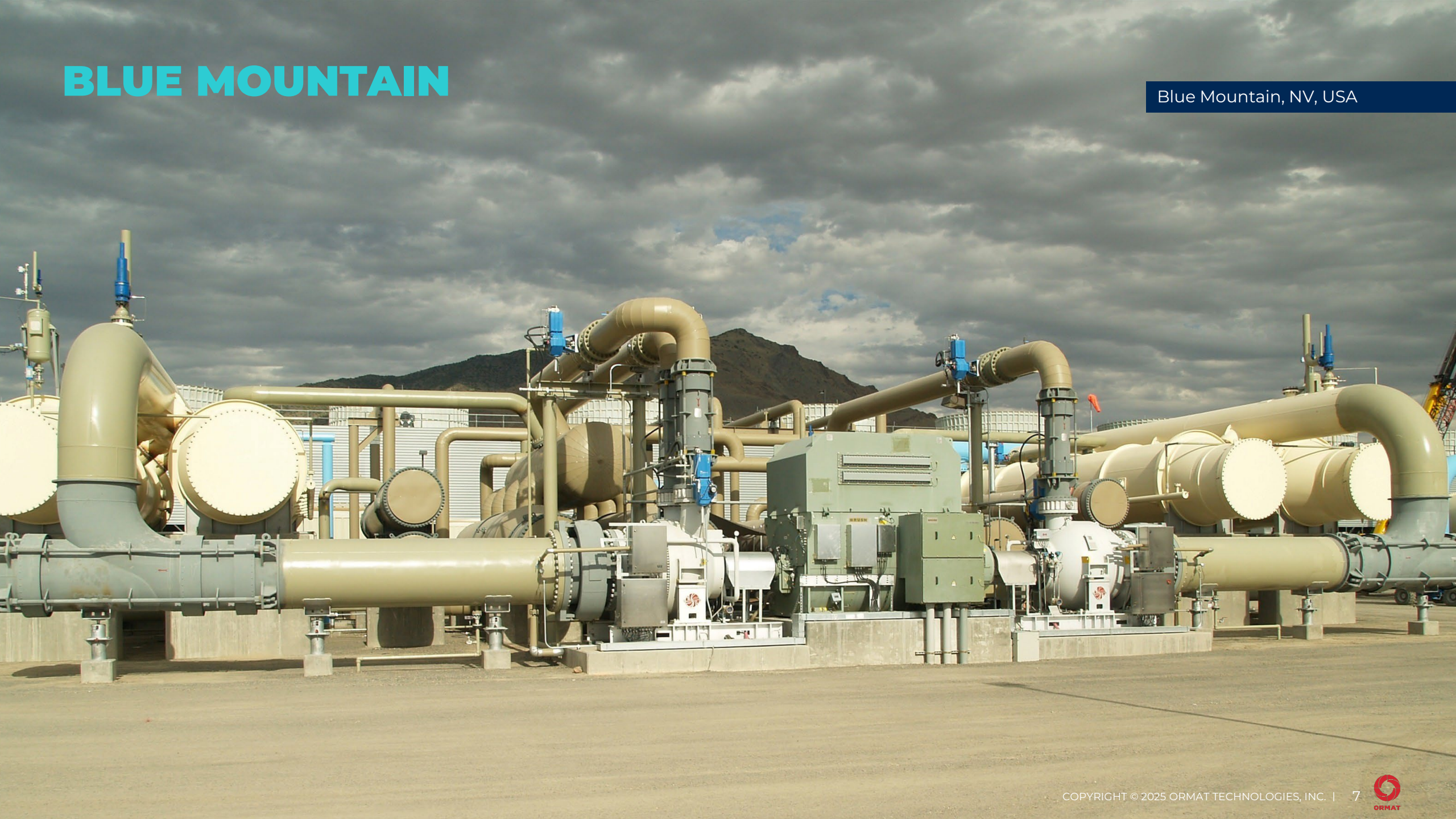
Record backlog reached at **$340M including** ~$210 million contract in New Zealand

Improved gross margins and EBITDA

IJEN

Ijen, Java, Indonesia

BLUE MOUNTAIN



Blue Mountain, NV, USA

ELECTRICITY SEGMENT DELIVERING CONSISTENT GROWTH

APPROX.

1,268

MW PORTFOLIO[1]

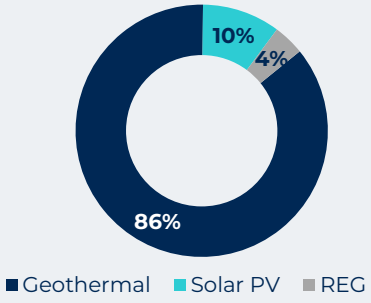
6

Countries

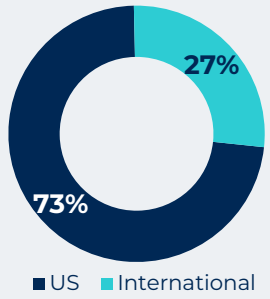
29

Operating Geothermal Fields[2]

MW by Technology Type

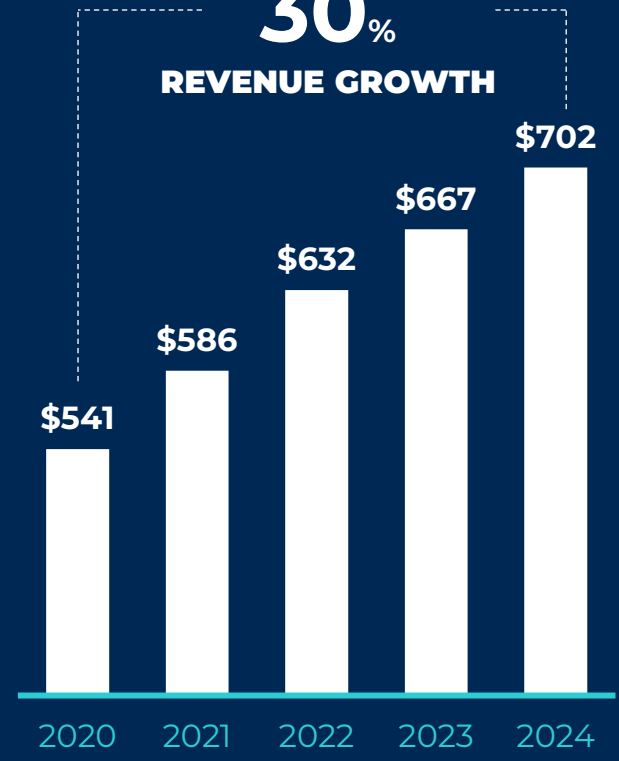


2024 revenue by geography



SUSTAINABLE GROWTH ENGINE

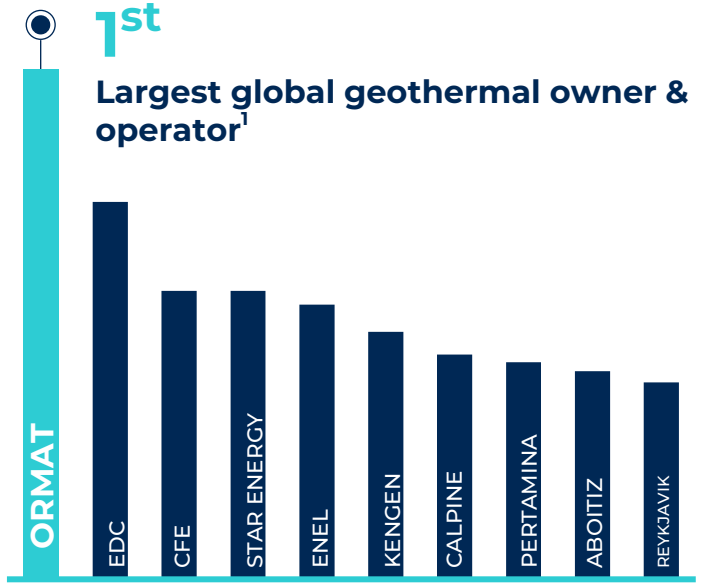
Revenue ($M)



1. Include Ormat's 12.75% share in Sarulla complex and 49% share in Ijen complex
2. Of the 29 Operational Geothermal Fields, Ormat is the Operator of 27 with the Sarulla complex having 2 fields and Ijen complex having 1 field

GEOTHERMAL MARKET

POSITION

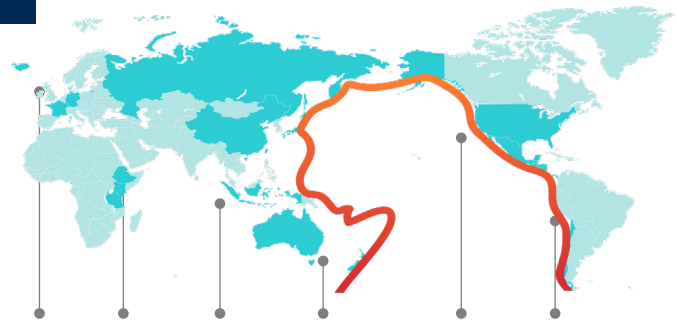


1st

Largest global geothermal owner & operator[1]

POTENTIAL

Ring of fire



	EU	Africa	ASIA	Oceania	U.S	LATAM
Installed	3.6	0.9	4.9	1.0	3.9	1.7
Potential	7.2	5.1	74.3	3.6	35.0	36.4

~16.5GW

Global installed geothermal capacity[1]

10x

Global potential vs. installed[1]

1. Source of above charts: ThinkGeoEnergy - "Geothermal Market Analysis" from August 2025 by Alexander Richter; Data is presented at gross installed capacity; Ormat internal database.

PILLARS OF SCALABLE GROWTH

01

STRONG DEMAND:
A NEW ERA OF U.S. ELECTRICITY DEMAND

02

ATTRACTIVE MARKET DYNAMICS:
RECORD HIGH PPA PRICES
BATTERIES PRICE REDUCTION

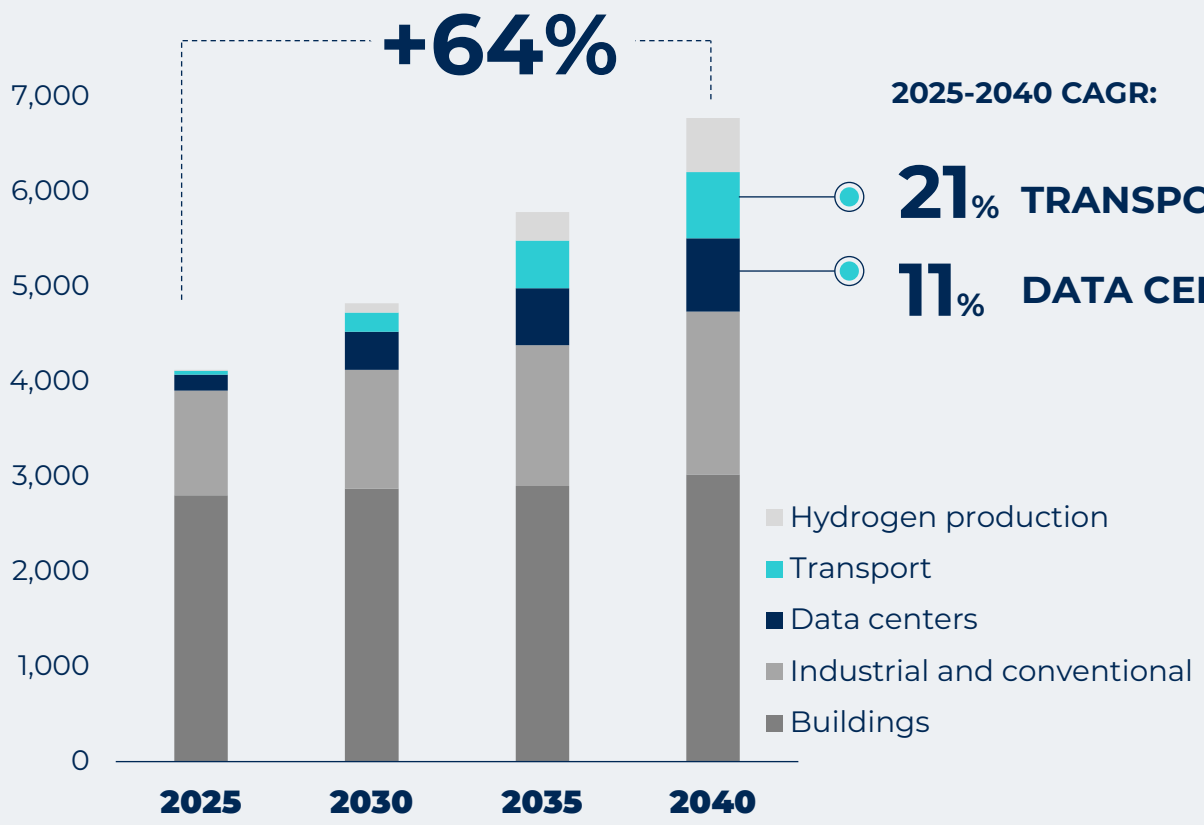
03

REGULATORY UPDATES
TAX BENEFITS AND RISING SUPPORT FOR GEOTHERMAL AND STORAGE FROM OBBB AND PERMITTING REFORM

STRONG DEMAND

A NEW ERA OF U.S. ELECTRICITY DEMAND

US POWER DEMAND BY SECTOR[1]
terawatt-hours



2025-2040 CAGR:

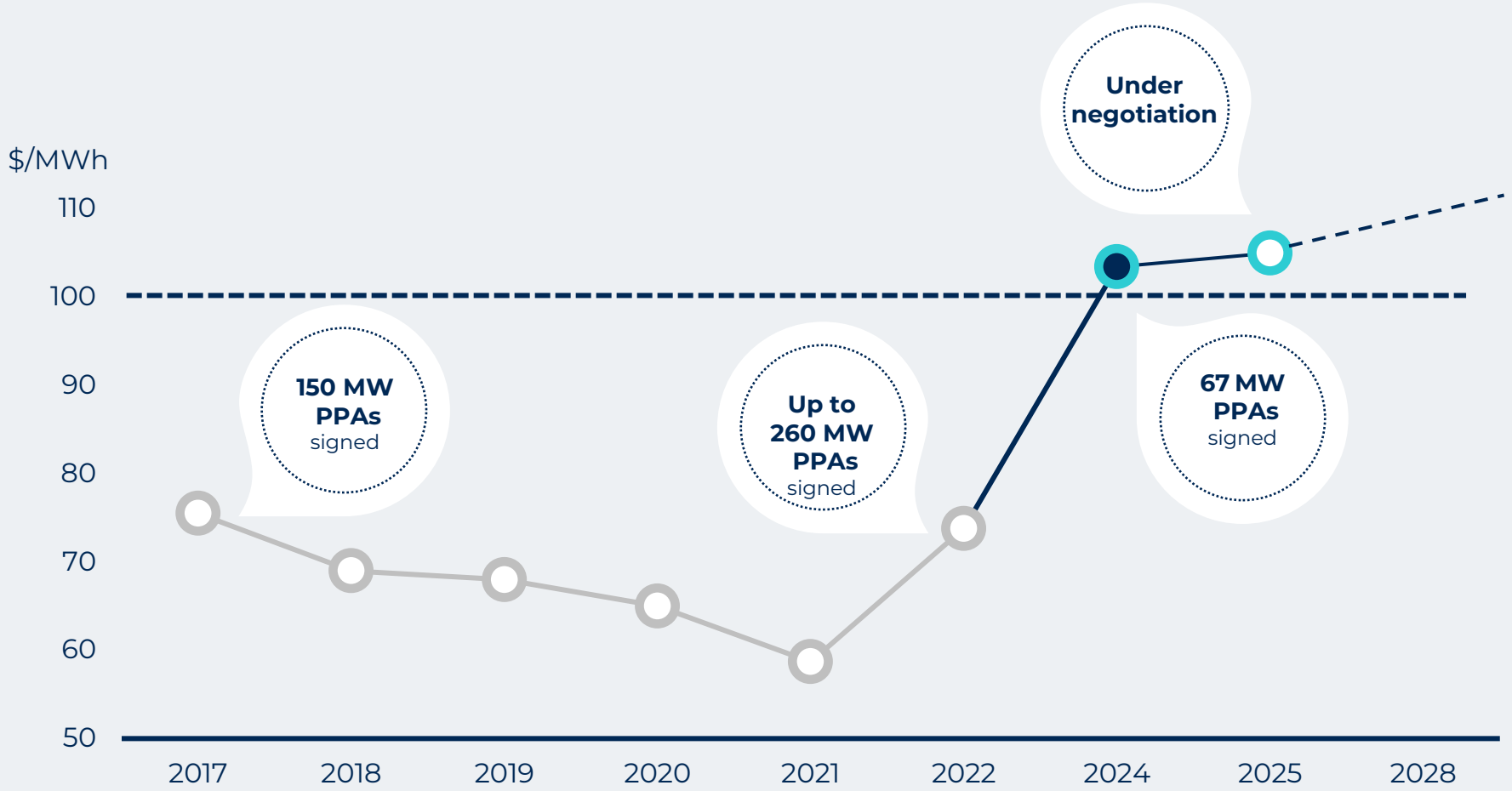
21% **TRANSPORTATION**

11% **DATA CENTERS**

1. McKinsey & Company, Powering a new era of US energy demand, April 2025

ATTRACTIVE MARKET DYNAMICS: ELECTRICITY SEGMENT

PPA PRICES ABOVE $100 /MWh SUPPORT NEAR AND LONG-TERM GROWTH



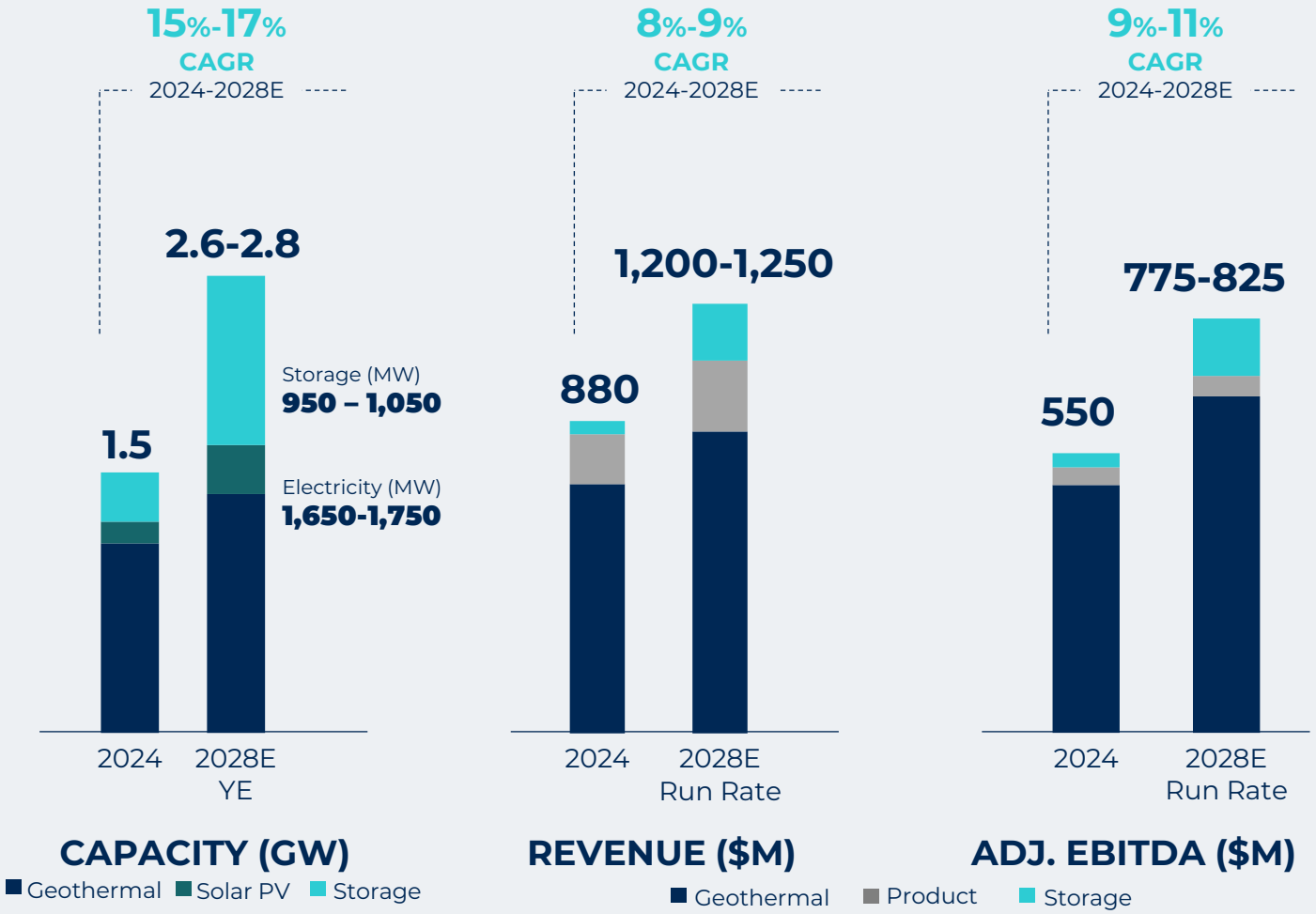
GEOTHERMAL PPA PRICING IN MAINLAND US

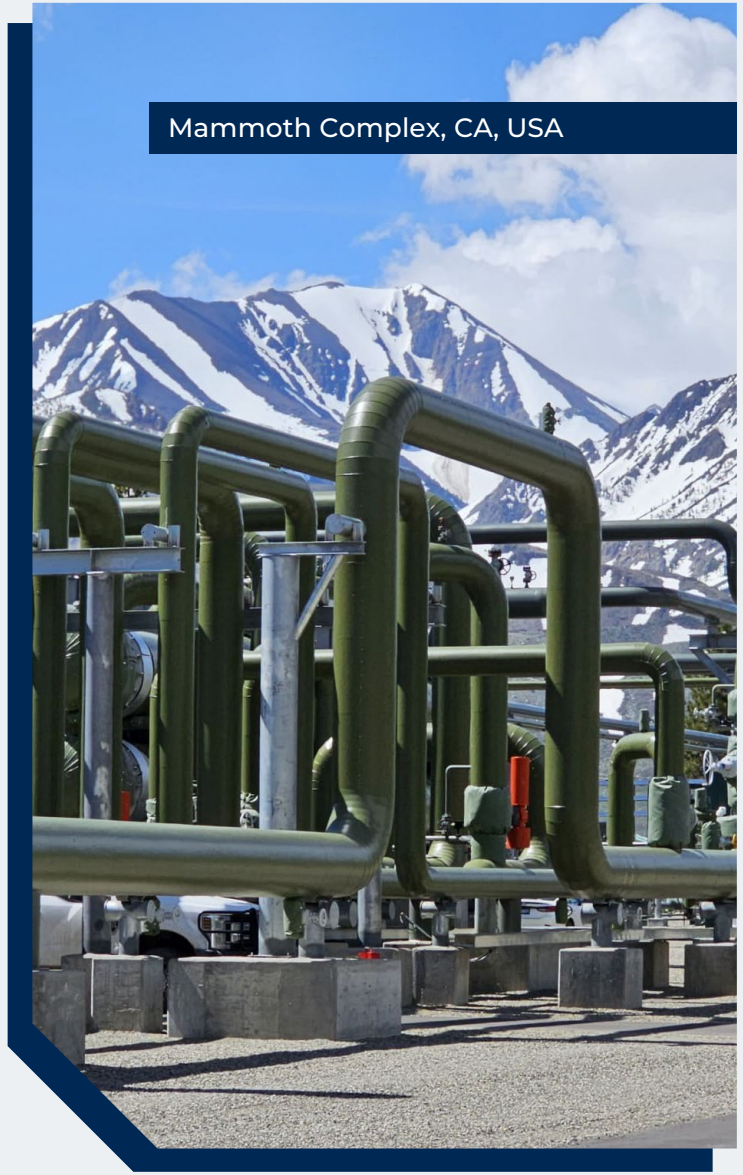
250 MW+
Negotiating
Portfolio PPA

Negotiating with Hyper-scalers
at rates over
$100/MWh

1. PPA extension for Heber 1 with SCPPA signed and approved – securing 52MW of geothermal power through 2052, effective February 2026.

ROBUST GROWTH PLAN[1]





1. This growth plan is subject to obtaining all permits and regulatory approvals required as well as completing the development and construction of these power plants as planned.

GEOTHERMAL DEVELOPMENT

Project	Projected Capacity (MW)	Expected COD	PPA
Indonesia – Ijen	**17**[1]	**Q1 2025** ✓	✓
Blue Mountain – New M&A	**20**	**Q2 2025** ✓	✓
New Zealand – Kawerau - Topp 2	50	Q4 2025	✓
Stillwater – upgrade	5	H2 2025	✓
Dominica – Roseau Valley	10	Q1 2026	✓
Salt Wells – upgrade	5	Q1 2026	✓
Guadeloupe - Bouillante	10	Q2 2026	✓
Cove Fort – upgrade	7	H1 2026	✓
Guatemala – Zunil	5	2026	✓
Heber complex expansion – New	25	2027	✓
Blue Mountain expansion – New M&A	3.5	2027	✓
U.S – Dixie Meadows	12	Suspended	✓

121MW

Under development across 9 projects

1. Ormat's share
✓ Commercial operation was completed

SOLAR DEVELOPMENT

Project	Projected Capacity (MW)	Expected COD	PPA
U.S. – Beowawe Solar	**6**	**Q1 2025** ✓	✓
U.S. – Arrowleaf	42	Q4 2025	✓
U.S. – McGinness Hills Solar	14	End of 2026	✓
Heber Complex expansion – New	22	2027	✓

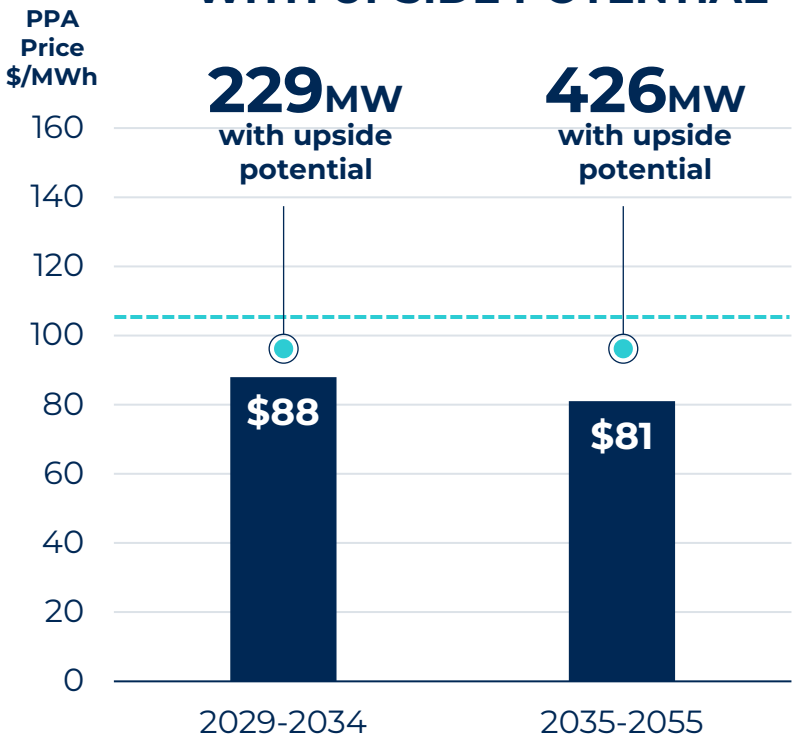
✓ Commercial operation was completed

LONG TERM VIEW: PIPELINE AND PPA RECONTACTING

ACCELERATED EXPLORATION TO MAINTAIN A ROBUST PIPELINE

+40 **geothermal sites** under exploration & development **across 6 countries**

NEGOTIATING PPA WITH UPSIDE POTENTIAL



CORE DRILLING

Core Drilling, NV USA

DRILLING

LONG TERM VIEW: REGULATION

RISING DEMAND FOR GEOTHERMAL

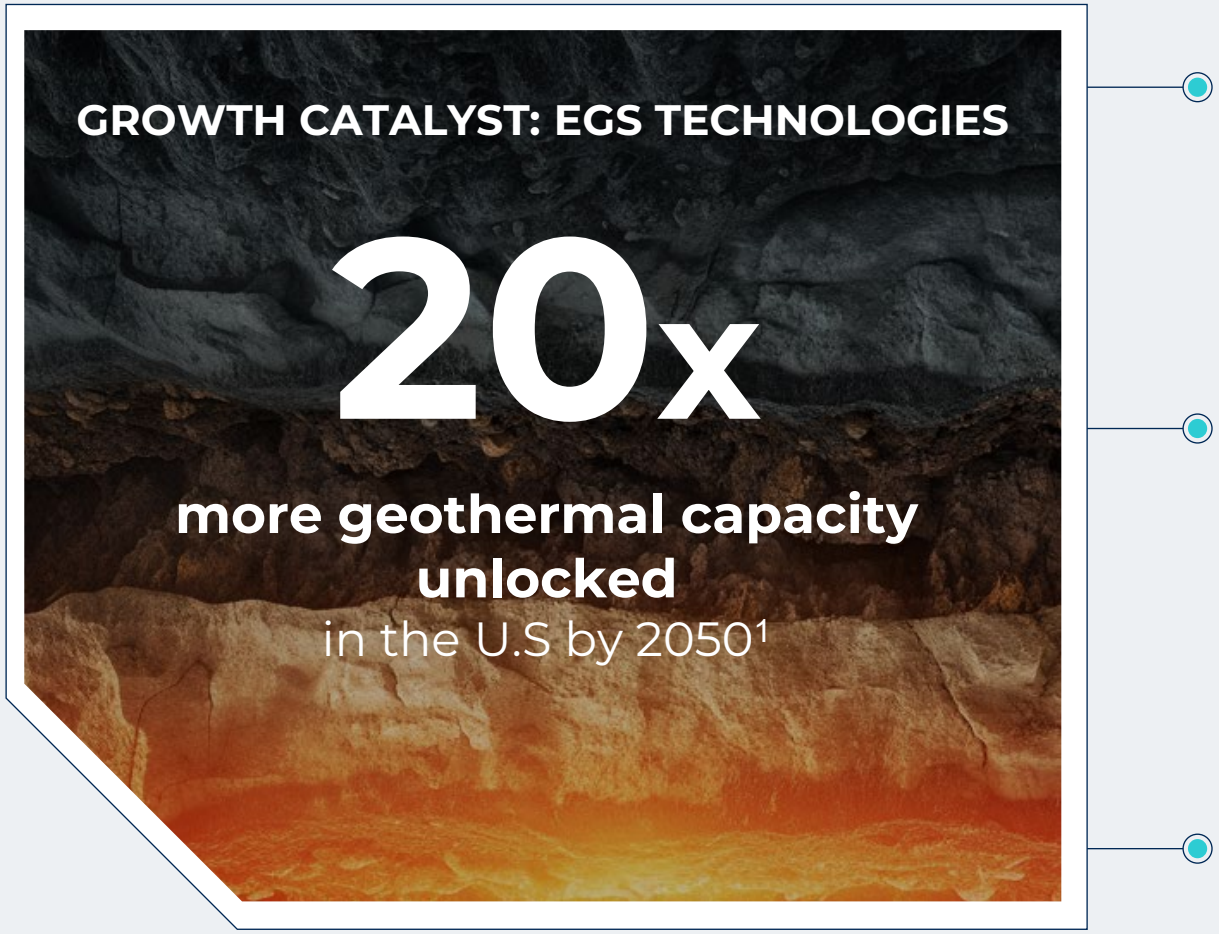
Faster permitting for geothermal projects
under new energy emergency executive order[1]

Geothermal wins big in U.S. energy reform[2]
Full tax credits extended to projects start construction in 2033

New Projects
Successfully secured BLM lands in Utah, Nevada, and Oregon; continuing to look to acquire additional projects in favorable markets

1. Source: The white House National Energy Emergency Declaration, January 2025. Link. And, BLM Press Release DOI implements emergency permitting procedures to accelerate geothermal energy development, May 2025 Link
2. The White House, July 4, 2025, Link

EGS TECHNOLOGIES



DEDICATED LEADERSHIP

Appointed Senior Vice President for Resource, Drilling and EGS

TECHNOLOGY DEVELOPMENT

- Advanced drilling techniques for asset optimization
- Strategic investments in EGS companies
- Signed commercial agreement with Sage expected to be closed by the end of 2025
- Announced partnership with SLB to accelerate the development and deployment of integrated geothermal assets and next-generation EGS solutions

PRODUCT OPPORTUNITIES

Ormat's Binary technology solutions for EGS market

1. Berkeley Lab link to source

ORMAT

THANK YOU

H.

STATE OF NEVADA
COMMISSION ON MINERAL RESOURCES
DIVISION OF MINERALS
400 W. King Street, Suite 106
Carson City, Nevada 89703
(775) 684-7040 • Fax (775) 684-7052
http://minerals.nv.gov/

Las Vegas Office: 375 E. Warm Springs Rd. #205, Las Vegas, NV 89119
Phone: (702) 486-4343; Fax: (702) 486-4345

JOE LOMBARDO
Governor

ROBERT GHIGLIERI
Administrator

Nevada Division of Minerals

Language Access Plan

September, 2025 Rev 1

I. Purpose and Authority

Per NRS 232.0081, the purpose of this plan is to assess the existing needs of people served by the agency for language services, the degree to which the agency has met those needs, and to expand language services, if need be, to improve access to services and information provided by the agency.

II. Policy Statement

It is the policy of the Nevada Division of Minerals to take reasonable steps to provide Limited English Proficiency (LEP) individuals with meaningful access to its programs in a language familiar to them and that Division employees are trained on the required protocol for providing services to or interacting with LEP individuals.

The Division endorses the following policies:

- The Division is committed to equity and will take all reasonable steps to provide LEP individuals with meaningful access to all its services, programs, and activities.
- The Division, rather than the LEP individual, bears the responsibility for providing appropriate language services, regardless of the LEP individual's preferred language, at no cost to the LEP individual.
- Division staff at the initial points of contact have the specific duty to identify and record language needs.
- The use of informal interpreters such as family, friends of the person seeking service, or other customers is not allowed. Minor children are prohibited from acting as interpreters.
- Division staff may not suggest or require that an LEP individual provide an interpreter to receive Division services.

III. Applicability

The provisions of this plan apply to all employees working under the authority of the Division of Minerals.

IV. Definitions

Bilingual Staff Member – Any agency staff member who has demonstrated proficiency in both English and at least one other language.

Division – The Nevada Division of Minerals.

Limited English Proficient (LEP) Individuals – A person who reads, writes, or speaks a language other than English and who cannot readily understand or communicate in the English language in written or spoken form, as applicable, based on the way information is being communicated.

Meaningful Access – Language assistance that results in accurate, timely, and effective communication to the LEP Individual. For LEP individuals, meaningful access denotes reasonable efforts to provide language assistance services to ensure that LEP individuals have substantially equal access to Division programs, services, and activities.

V. Nevada Division of Minerals Overview

It is the mission of the Nevada Commission on Mineral Resources, Division of Minerals, to encourage and assist in the responsible exploration for and the production of minerals, oil, gas, and geothermal energy which are economically beneficial to the state, to provide for public safety by identifying, ranking and securing dangerous conditions at mines that are no longer operating, collecting and disseminating information on exploration, production and related topics and education and community outreach on these activities.

The Division has designated a Language Access Coordinator who will maintain this Language Access plan, update it biennially, and ensure staff members are trained in its content.

VI. Demographics of Persons Served

The Division provides limited direct services to the public and has not received any requests for interpretation or translation services. As such, demographics on individuals accessing the Division's services have not been collected. However, demographics on visitation to the agency's webpage have been collected and are provided in Attachment 1. Data on languages used statewide as well as emerging language trends have been collected and are provided in Attachment 2.

VII. Language Access Services Provided

The Division does not currently employ personnel who are bilingual.

The Division recognizes that LEP individuals may contact the agency for data or other services and is committed to ensuring meaningful access to LEP individuals. Division

staff will provide free translation services, whether by sign, written, or oral, through one of the active statewide contracts for translation and interpreter services, which can be found on the State of Nevada, Purchasing Division's contracts webpage (solicitation 99SWC-S1847). A list of vendors providing these services is provided herein as Attachment 3.

If services are provided, user data will be collected and tracked. The data received will be analyzed as part of the biennial update to this plan; the plan will be adjusted, as necessary, to provide LEP individuals with more effective access to its programs and services.

VIII. Notice of Availability of Language Assistance Services

A notice has been posted at the bottom of the homepage of the Division's website stating the following:

> "Notice to Limited English Proficient Individuals: If you have difficulty understanding English, you may request language assistance services for NDOM information that is available to the public. These language assistance services are available free of charge. If you need more information about interpretation or translation services, please call NDOM at 702.486.4343 or email at ndomlv@minerals.nv.gov."

The Division's website may also be translated into a host of languages using Google's translation widget located at the bottom of the Division's homepage.

IX. Employee Training

The Division's Language Access Coordinator is responsible for providing agency staff with the necessary training to ensure they are familiar with the Language Access Plan content and requirements. The training will include:

- How to respond to LEP individuals via phone, writing, or in person.
- How to seek assistance with internal or state sanctioned language access resources.
- How to document the mode of communication and preferred language of an LEP individual to better understand the needs of those accessing services and ensure that equitable access is available throughout the duration of their interactions.
- How to report these interactions to the Language Access Coordinator.

X. Future Language Needs

If translations services are required, the Division will provide the necessary services to ensure translation of written documents, oral, or sign language interpretation services are available. Feedback regarding this and any concerns with this Language Access Plan will be documented, tracked and resolved to make improvements to the services offered.

At this time, the Division does not foresee the need for additional funding to perform language services due to the limited current need.

XI. Public Comment

The Division Language Access Plan will be reviewed by the Language Access Coordinator on a biannual basis. If the plan is updated in the future, this information will be added to the agenda of an upcoming Commission on Mineral Resources meeting for discussion or comment by the commission and members of the public.

XII. Recommendations

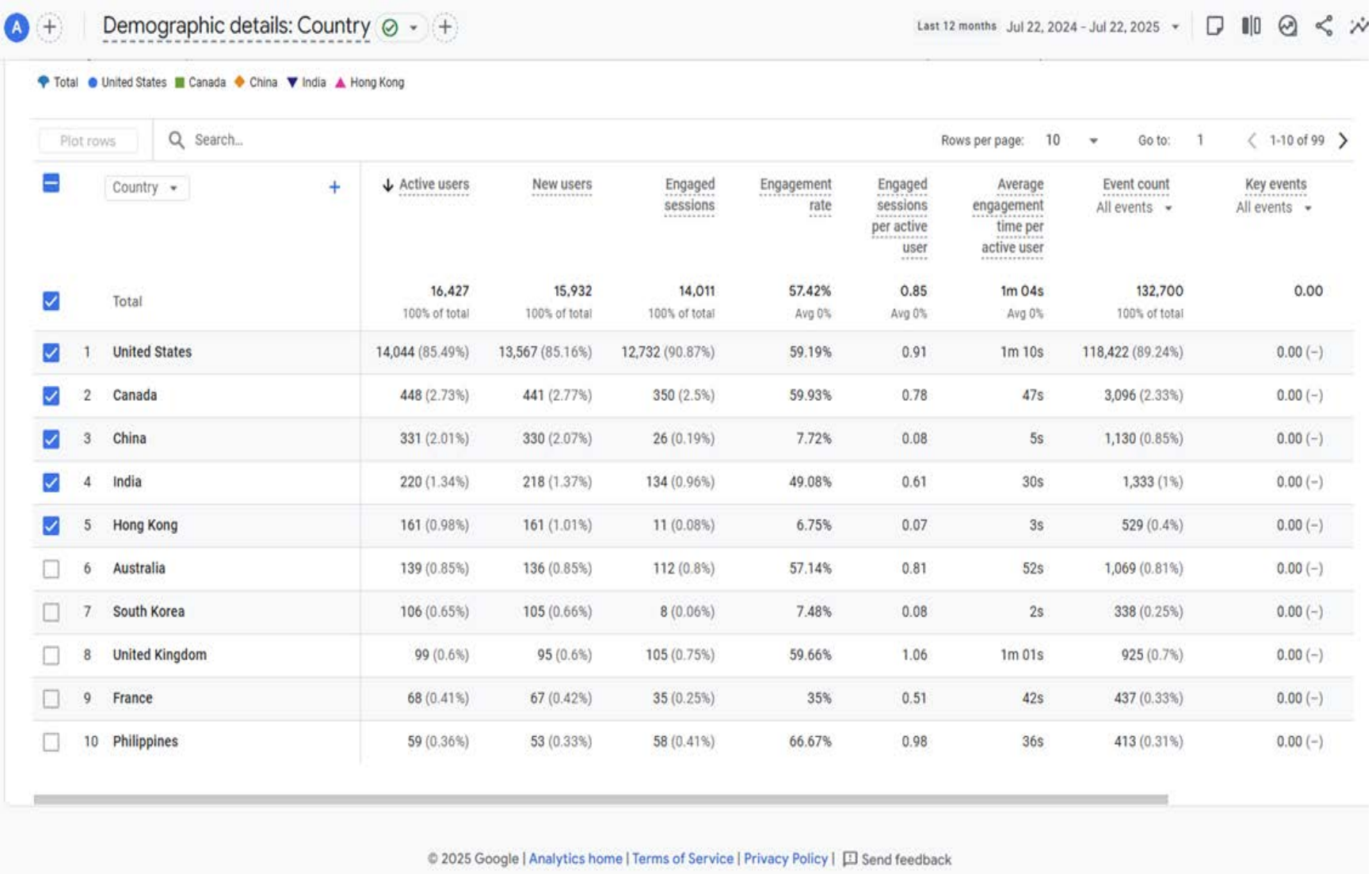
The Language Access Coordinator will make recommendations to the legislature concerning any statutory changes necessary to implement or improve a language access plan, if necessary; and will include any funding requirements necessary to carry out a language access plan, including, without limitation, any additional funding necessary to meet the needs of persons with limited English proficiency served by the agency.

XIII. Language Access Coordinator Contact:

Carol Shelton, Education and Outreach Specialist
Nevada Division of Minerals
Phone: 702-486-3915
Email: cshelton@minerals.nv.gov

Carol Shelton, Agency Language Access Coordinator	Date
Robert Ghiglieri, Administrator	Date

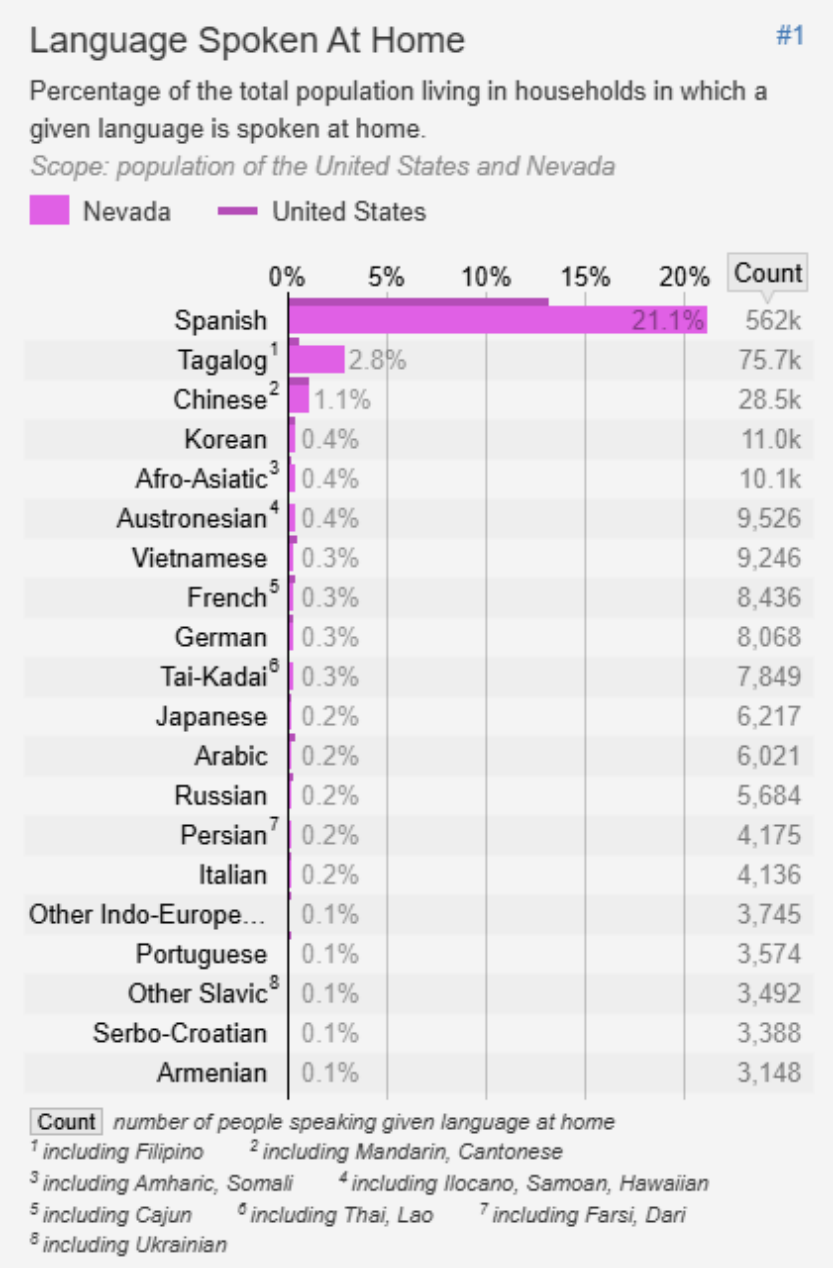
ATTACHEMENT 1



	Country	Active users	New users	Engaged sessions	Engagement rate	Engaged sessions per active user	Average engagement time per active user	Event count All events	Key events All events
	Total	16,427 100% of total	15,932 100% of total	14,011 100% of total	57.42% Avg 0%	0.85 Avg 0%	1m 04s Avg 0%	132,700 100% of total	0.00
1	United States	14,044 (85.49%)	13,567 (85.16%)	12,732 (90.87%)	59.19%	0.91	1m 10s	118,422 (89.24%)	0.00 (–)
2	Canada	448 (2.73%)	441 (2.77%)	350 (2.5%)	59.93%	0.78	47s	3,096 (2.33%)	0.00 (–)
3	China	331 (2.01%)	330 (2.07%)	26 (0.19%)	7.72%	0.08	5s	1,130 (0.85%)	0.00 (–)
4	India	220 (1.34%)	218 (1.37%)	134 (0.96%)	49.08%	0.61	30s	1,333 (1%)	0.00 (–)
5	Hong Kong	161 (0.98%)	161 (1.01%)	11 (0.08%)	6.75%	0.07	3s	529 (0.4%)	0.00 (–)
6	Australia	139 (0.85%)	136 (0.85%)	112 (0.8%)	57.14%	0.81	52s	1,069 (0.81%)	0.00 (–)
7	South Korea	106 (0.65%)	105 (0.66%)	8 (0.06%)	7.48%	0.08	2s	338 (0.25%)	0.00 (–)
8	United Kingdom	99 (0.6%)	95 (0.6%)	105 (0.75%)	59.66%	1.06	1m 01s	925 (0.7%)	0.00 (–)
9	France	68 (0.41%)	67 (0.42%)	35 (0.25%)	35%	0.51	42s	437 (0.33%)	0.00 (–)
10	Philippines	59 (0.36%)	53 (0.33%)	58 (0.41%)	66.67%	0.98	36s	413 (0.31%)	0.00 (–)

ATTACHMENT 2

https://statisticalatlas.com/state/Nevada/Languages



(Statistical Atlas, Languages in Nevada, Language Spoken At Home)

99SWC-S1847 | translation interpretation | Mandatory for state agencies

On-Site Spoken and Sign Language Interpretation, Document Translation and Other Related Services

Contract Overview

All vendors contracted under RFQ 99SWC-S1847 provide on-site spoken and sign language interpretation, document translation and other related services. Please refer to "Vendor Specific Instruction" for more information regarding services each vendor provides.

Permissive Users

These contracts may be used by the Nevada System of Higher Education, the Court System, the Legislative Counsel Bureau and all Political Subdivisions within the State of Nevada.

Quick Links to Vendors

- American Sign Language Communication (99SWC-NV22-11700)
- Avantpage (99SWC-NV22-11697)
- Captions Unlimited of Nevada, Inc (99SWC-NV22-11676)
- Diversidad LLC (99SWC-NV22-11706)
- eTranslation Services (99SWC-NV22-11681)
- Focus Language International (99SWC-NV22-11678)
- GLOBO Language Solutions LLC (99SWC-NV22-15218)
- Homeland Language Services(99SWC-NV22-11691)
- Language Line Services (99SWC-NV22-11705)
- Language Link (99SWC-NV22-11696)
- Languages Translation Services (99SWC-NV22-11693)
- Las Vegas Interpreters Connection, LLC (99SWC-NV22-11698)
- Powerling (99SWC-NV22-11680)
- Preston Bass Interpreting (99SWC-NV22-11695)
- Propio Language Services LLC (99SWC-NV22-11689)
- Sign Language USA, Inc (99SWC-NV22-11688)
- Transfective Language Services LLC (99SWC-NV22-11675)
- United Language Group (99SWC-NV22-11703)
- Universal Language Service, Inc. (99SWC-NV22-11686)
- Volatia Language Network, Inc (99SWC-NV22-11684)
- WorldWide Interpreters, Inc. (99SWC-NV22-11690)

Ordering Instructions	One time orders can be processed direct by the using agency or through NevadaEPro. On going service or large projects should have a written Service Agreement between the Using Agency and the Contractor to govern the relationship.
Contract Administrator	Primary: Ryan Vradenburg (775) 531-3316 rvradenburg@admin.nv.gov
Solicitation Documents	Bid Solicitation 99SWC-S1847 Vendor Services Matrix

Vendor(s)

Vendor Name	**American Sign Language Communication (99SWC-NV22-11700)**
Vendor Number	T29026382
Contract Period	07/12/2022 through 03/31/2026
Vendor Contact(s)	
Vendor Contract Documents	Contract 99SWC-NV22-11700

Vendor Name	**Avantpage (99SWC-NV22-11697)**
Vendor Number	T32012153
Contract Period	04/12/2022 through 03/31/2026

Vendor Contact(s)	
Vendor Contract Documents	Master Blanket Purchase Order 99SWC-NV22-11697
Vendor Name	**Captions Unlimited of Nevada, Inc (99SWC-NV22-11676)**
Vendor Number	T81082135
Contract Period	07/12/2022 through 03/31/2026
Vendor Contact(s)	
Vendor Contract Documents	Contract 99SWC-NV22-11676
Vendor Name	**Diversidad LLC (99SWC-NV22-11706)**
Vendor Number	T29042158
Contract Period	07/01/2022 through 03/31/2026
Vendor Contact(s)	
Vendor Contract Documents	Contract 99SWC-NV22-11706
Vendor Name	**eTranslation Services (99SWC-NV22-11681)**
Vendor Number	T29045128
Contract Period	03/08/2022 through 03/31/2026
Vendor Contact(s)	
Vendor Contract Documents	Contract 99SWC-NV22-11681
Vendor Name	**Focus Language International (99SWC-NV22-11678)**
Vendor Number	T29045094
Contract Period	04/12/2022 through 03/31/2026
Vendor Contact(s)	
Vendor Contract Documents	Contract 99SWC-NV22-11678
Vendor Name	**GLOBO Language Solutions LLC (99SWC-NV22-15218)**
Vendor Number	T29047125
Contract Period	03/14/2023 through 03/31/2026
Vendor Contact(s)	statewide Tal Roth Kyle@helloglobo.com or Ed@helloglobo.com 145 Greenwood Ave Wyncote, PA 19095 800-555-3010 |
Vendor Contract Documents	Contract 99SWC-NV22-15218
Vendor Website	Helloglobo.com
Vendor Name	**Homeland Language Services(99SWC-NV22-11691)**
Vendor Number	T32012310
Contract Period	04/12/2022 through 03/31/2026
Vendor Contact(s)	
Vendor Contract Documents	Contract 99SWC-NV22-11691
Vendor Name	**Language Line Services (99SWC-NV22-11705)**
Vendor Number	T29000549
Contract Period	02/14/2023 through 03/31/2026
Vendor Contact(s)	statewide Greg Holt customercare@languageline.com 1 Lower Ragsdale Dr. BLDG 2 Monterey, CA 93940 800-752-6096 |
Vendor Contract Documents	Contract 99SWC-NV22-11705
Vendor Website	Languageline.com
Vendor Name	**Language Link (99SWC-NV22-11696)**
Vendor Number	T32000889
Contract Period	02/14/2023 through 03/31/2026
Vendor Contact(s)	
Vendor Contract Documents	Contract 99SWC-NV22-11696
Vendor Name	**Languages Translation Services (99SWC-NV22-11693)**

Vendor Number	T29045228
Contract Period	04/12/2022 through 03/31/2026
Vendor Contact(s)	northern
	,
Vendor Contract Documents	Contract 99SWC-NV22-11693
Vendor Name	**Las Vegas Interpreters Connection, LLC (99SWC-NV22-11698)**
Vendor Number	T27005869
Contract Period	04/12/2022 through 03/31/2026
Vendor Contact(s)	
Vendor Contract Documents	Contract 99SWC-NV22-11698
Vendor Name	**Powerling (99SWC-NV22-11680)**
Vendor Number	T29045102
Contract Period	04/12/2022 through 03/31/2026
Vendor Contact(s)	
Vendor Contract Documents	Contract 99SWC-NV22-11680
Vendor Name	**Preston Bass Interpreting (99SWC-NV22-11695)**
Vendor Number	T27008077
Contract Period	04/12/2022 through 03/31/2026
Vendor Contact(s)	
Vendor Contract Documents	Contract 99SWC-NV22-11695
Vendor Name	**Propio Language Services LLC (99SWC-NV22-11689)**
Vendor Number	T27044765
Contract Period	07/12/2022 through 03/31/2026
Vendor Contact(s)	
Vendor Contract Documents	Contract 99SWC-NV22-11689
Vendor Name	**Sign Language USA, Inc (99SWC-NV22-11688)**
Vendor Number	T32012127
Contract Period	05/10/2022 through 03/31/2026
Vendor Contact(s)	
Vendor Contract Documents	Contract 99SWC-NV22-11688
Vendor Website	https://www.signlanguageusa.com/
Vendor Name	**Transfective Language Services LLC (99SWC-NV22-11675)**
Vendor Number	T29045102
Contract Period	04/12/2022 through 03/31/2026
Vendor Contact(s)	
Vendor Contract Documents	Contract 99SWC-NV22-11675
Vendor Name	**United Language Group (99SWC-NV22-11703)**
Vendor Number	T29045110
Contract Period	06/27/2022 through 03/31/2026
Vendor Contact(s)	
Vendor Contract Documents	Contract 99SWC-NV22-11703
Vendor Name	**Universal Language Service, Inc. (99SWC-NV22-11686)**
Vendor Number	T29045107
Contract Period	06/27/2022 through 03/31/2026
Vendor Contact(s)	
Vendor Contract Documents	Contract 99SWC-NV22-11686
Vendor Name	**Volatia Language Network, Inc (99SWC-NV22-11684)**
Vendor Number	T32013574
Contract Period	03/08/2022 through 03/31/2026
Vendor Contact(s)	
Vendor Contract Documents	Contract 99SWC-NV22-11684

Vendor Name	**WorldWide Interpreters, Inc. (99SWC-NV22-11690)**
Vendor Number	T32012112
Contract Period	04/12/2022 through 03/31/2026
Vendor Contact(s)	
Vendor Contract Documents	Contract 99SWC-NV22-11690

I.

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V. COMMISSION BUSINESS

A.

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B.

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C.

STATE OF NEVADA
COMMISSION ON MINERAL RESOURCES
DIVISION OF MINERALS
400 W. King Street, Suite 106
Carson City, Nevada 89703
(775) 684-7040 • Fax (775) 684-7052
http://minerals.nv.gov/

JOE LOMBARDO
Governor

Las Vegas Office:
375 E. Warm Springs Rd. #205, Las Vegas, NV 89119
Phone: (702) 486-4343; Fax: (702) 486-4345

ROBERT GHIGLIERI
Administrator

EXECUTIVE SUMMARY REPORTS
September 2025

Legislation, Industry, and Public Relations: The agency updated draft regulation changes in response to the August public workshop for NAC 513, 519A, 522 and 534A. NAC 513, 519A, and 522 were sent to LCB for the creation of R-numbers and legislative review. NAC 534A comments are still being evaluated and updated into the proposed regulation changes. The AML program in coordination with the National Association of Abandoned Mine Lands Programs and Interstate Mining Compact Commission (IMCC) released the first National Hardrock Abandoned Mine Land Report. This was a year long effort and legislative updates and meetings are currently being scheduled in the House and Senate in Washington D.C. in early November during the IMCC annual meeting. The Administrator presented the 2025 Excellence in Mine Reclamation Awards presentation at the 2025 Nevada Mining Association Awards Ceremony, in coordination with the BLM and NDEP. The award video can be seen here.

Abandoned Mine Lands (AML): Hard closure project work began at the historical Caselton mining district in Lincoln County, NV 20 of 51 sites are complete. AML staff attended the NAAMLP conference in Gulf Shores, AL and collaborated with western partner states to organize a future database/inventory workshop supporting federal efforts for nationwide AML inventory mapping. AML staff also received clarification and updates for EPA and OEPC funding/project coordination. AML staff reviewed performance measures and funded a second round of ad buys for the Jimmy King digital marketing campaign.

End-of-September AML statistics:

	SITES INVENTORIED	SITES SECURED	% Secured
Since 1987	26,594	21,610	81%
2024 To Date	564	310	54%

Fluid Minerals: One sundry was processed for geothermal well activity. 21 geothermal resource development well permits were issued. Four DMRE permits were issued. Logs and reports were compiled for NBMG/NDOM log exchange.

FY 2026 Well Inspections					
	Total # of Wells	# Wells Needed for FY26 (1/3 of total)	Wells Inspected this month	# of Wells Inspected in FY26	Wells Remaining
Geothermal	503	167	33	35	132
Oil	121	40	0	0	40
Totals	624	207	0	0	207

Bond Pool: Three notice level bond increases are in process. The bond pool is currently funded at 130.56%

Bond Pool Status

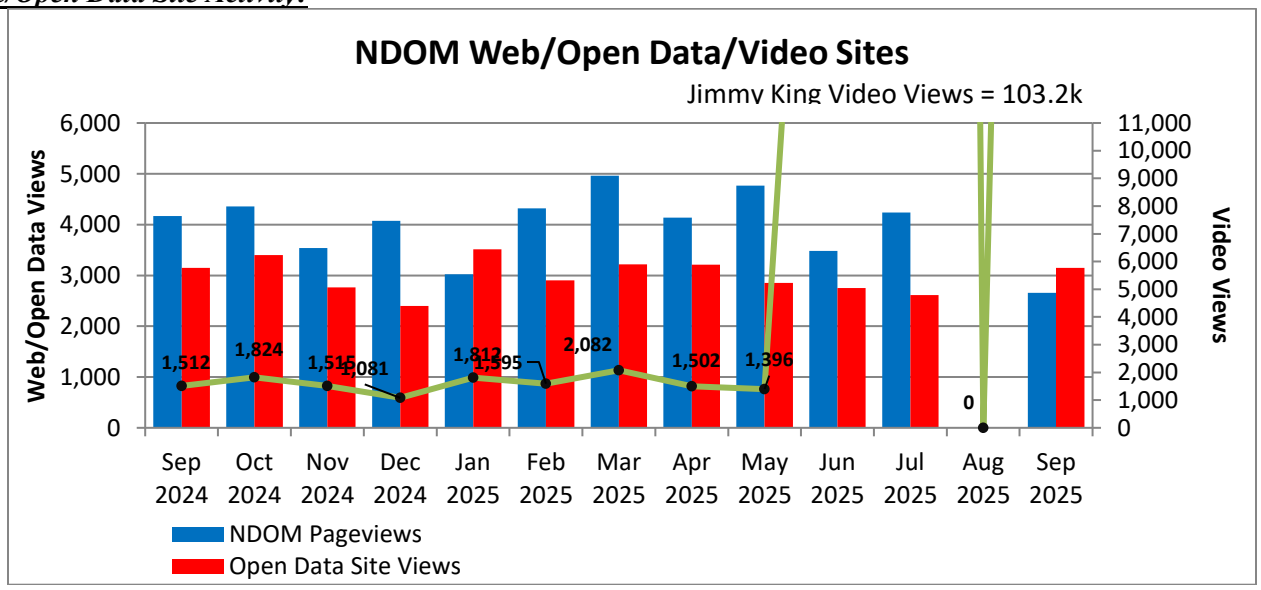
Run Date 10/14/2025 DAWN 10/14/2025 Cash in Bond Pool 3572094.65 Run

Reclamation Bond Pool Status Report			Current to: 10/14/2025			
Plan-level Bonds Company	**Project**	**Entry Date**	**Bond Amount**	**% of Pool**	**Deposit + Premiums**	**% Bond Whole**
Allegiant Gold (US) Ltd	Eastside Project	11/19/2021	$163,064.00	5.96%	$144,771.27	88.78%
Dun Glen Mining Corp	Dun Glen Placer Mine	08/11/2014	$371,138.00	13.56%	$408,759.80	110.13%
Quartz Lake Mining	Red Rock Mill Project	08/16/2023	$712,867.00	26.05%	$540,472.61	75.81%
Sunrise Minerals LLC	Section 17 Project	05/31/2025	$783,246.00	28.62%	$492,360.64	62.86%
TNT Ventures c/o Western Mine and Mineral LLC	Big Canyon Project	05/11/2015	$81,956.00	2.99%	$100,762.90	122.94%
Western Mine Development - Terminated	Kingston Mill	01/28/2002	$100,450.00	3.67%	$0.00	0%
Western Mine Development - Terminated	Victorine Mine	01/28/2002	$45,875.39	1.67%	$0.00	0%
Subtotal:			$2,258,596.39	0.9999999227839081	$1,687,127.22	
Statewide Notice-Level - 36 bonds	Various	Various	$477,356.00	17.44%	$0.00	0%
Total:			$2,735,952.39	100%		

Total Bond Obligations	$2,735,952.39
Cash in Pool's Account (From DAWN - 10/14/2025)	$3,572,094.65
Funding Surplus	$836,142.26
Percent Funded	130.56%

Minerals Education and Outreach: Carol Shelton was out for the month of September and returned the beginning of October.

Website/Open Data Site Activity:



Financial, Personnel, and Safety: The agency realized funding available at the end of September was $3,145,471.99. Crystal Cruson was on maternity leave the month of September with an anticipated return date of December 1st. Richard Kauffman accepted the position of GIS Analyst III, and recruiting will begin soon for his previous position of Field Specialist. There were no work safety incidents in September.

MONTHLY ACTIVITY REPORTS
September 2025

Administrator (Rob Ghiglieri):

1. Updated draft regulation changes in response to the August public workshop for NAC 513, 519A, 522 and 534A. NAC 513, 519A, and 522 were sent to LCB for the creation of R-numbers and legislative review. NAC 534A comments are still being evaluated and updated into the proposed regulation changes.
2. Participated on a panel "Looking Ahead- Discussing the Future of Nevada Mining" at the NvMA annual conference.
3. Participated in a State Environmental Commission meeting.
4. Attended and gave an agency update to the Governor's Cabinet Meeting.
5. Participated in the quarterly FRTC meeting where mining claim payments were discussed.
6. Attended and presented on a panel at Governor Lombardo's Critical Mineral Summit in Las Vegas.
7. Attended a site visit at Redwood Materials and their recently acquired Gooseberry mine site. Discussed remediation options with Redwood and the BLM.
8. Performed employee work performance standard meetings with nearly all staff in coordination with Garrett.
9. In coordination with agency staff, NDEP, and Industry, we continued development of the proposed site to meet the requirements under the AML Good Sam law.
10. Presented the 2025 Excellence in Mine Reclamation Awards presentation at the 2025 Nevada Mining Association Awards Ceremony, in coordination with the BLM and NDEP. The award video can be seen here.
11. Attended the BLM's annual Gold Belt Meeting and discussed ongoing mining and NEPA ongoing activities.
12. Continued to manage agency business without access to our normal file servers due to a State IT issue.
13. Participated in other various meetings and committees not mentioned above to include geothermal industry members, GOE, GOED, NvMA, IMCC, NDEP, BLM, Governor's Office, and various members of the public and minerals industry.

Deputy Administrator (Garrett Wake):

1. Attended the Nevada Lithium Summit hosted in Las Vegas with Administrator Ghiglieri.
2. Prepared revised work performance standards for all agency personnel for Administrator review. Assisted the Administrator during work performance discussions with agency personnel.
3. Prepared and submitted reclassification requests for Lucia P. from a GIS Analyst III to GIS Analyst IV, and Richard K. from a Field Specialist to a GIS Analyst III. Reclassification occurred in early October.
4. Amended one AML service agreement and assisted the AML program manager with preparing a scope of work for another service agreement.
5. Managed and monitored the agency's finances, travel, bond pool, and contracts throughout the period.
6. Represented the Division at a Burkholder Academy of Environmental Science Magnet Advisory Board meeting.
7. Participated in the following: SOSA RAMS database meeting, FY Closing meetings, GTO data recovery meetings, Geotab vehicle tracking trainings, NvMA Education Committee meeting, McCaw School of Mines board meeting, and an NDOM staff meeting.

Bond Pool Activity:

- Three notice level bond increases are in process.

Bond Pool Status

Run Date 10/14/2025 DAWN 10/14/2025 Cash in Bond Pool 3572094.65 Run

Reclamation Bond Pool Status Report			Current to: 10/14/2025			
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Total:			$2,735,952.39	100%		

Total Bond Obligations	$2,735,952.39
Cash in Pool's Account (From DAWN - 10/14/2025)	$3,572,094.65
Funding Surplus	$836,142.26
Percent Funded	130.56%

Chief, Abandoned Mine Lands Program (Sean Derby)

1. AML staff coordinated with GOE and MSATS in a collaborative grant application for mining industry safety training improvements.
2. Hard closure project work began at the historical Caselton mining district in Lincoln County, NV 20 of 51 sites are complete.
3. AML staff coordinated with technical / financial partners to advance Good Samaritan Grant application including collaboration with BLM on CX eligibility/approval, review of sampling protocol and initiating sample analysis, and contributing to project scope of work and services agreements.
4. AML staff attended the NAAMLP conference in Gulf Shores, AL and collaborated with western partner states to organize a future database/inventory workshop supporting federal efforts for nationwide AML inventory mapping. AML staff also received clarification and updates for EPA and OEPC funding/project coordination.
5. AML staff reviewed performance measures and funded a second round of ad buys for the Jimmy King digital marketing campaign.
6. AML staff responded to public reports of open abandoned mines in Mineral County.
7. AML Chief met with UES technicians in Lincoln County to commence field work at the Freiberg Environmental Remediation project. Field work was completed on September 22
8. AML chief coordinated BLM Caliente / USAF to complete drone surveys for the Mt. Irish Hard Closure Project.
9. AML contractor West Consultants completed pending wildlife surveys at Berlin/Cave Lake contributing to a summary report for OEPC for final approval in anticipation of hard closure project work on state lands.
10. AML staff complete onsite mandatory HR supervisor training.

	SITES INVENTORIED	SITES SECURED	% Secured
Since 1987	26,594	21,610	81%
2024 To Date	564	310	54%

AML Hard Closure Project Pipeline

Planning Phase	Wildlife/Cultural Surveys in Progress	Pending CX	CX District Approval Pending	In Progress	Recently Completed
	Mt. Irish	WFO East; Elko, 24 hazards	Jarbidge, Elko, 9 Hazards		
Avequema	Frontier 500	361 NDOT, Mineral & Nye, 100 Hazards		Caselton; Lincoln, 51 hazards	
		Kingston; Nye & Lander , 49 hazards	Jumping Jack, Nye, 5 hazards		
	Delamar, Lincoln County, 45 Hazards		State Lands OEPC 27 Sites (Pending EA)		

GIS/ Field Specialist (Lucia Patterson):

1. Lots of work on MLRS data processing. Scripted data import and worked with BLM on data issues.
2. Updated mining claims, plan, notice, and ROW data on the open data site.
3. Created a new dashboard to view mining claim, plan and notice activity on a per county basis: https://experience.arcgis.com/experience/b0fbad1675704968a25b52f232f4328c/page/Page?views=Activity-Viewer
4. Modified the Critical Minerals application to show all critical minerals lists and associated USGS data.
5. Processed and scripted mining claim data from MLRS, mostly focused on patented mining claims. Then I went through and assigned MS numbers to all patented mining claims to provide quick links to the mineral survey maps within GLO records.
6. Created a web application for filtering and researching US reservations utilizing Status Records from the BLM's MLRS database.
7. Attended a virtual talk on Smelters through the Women's Mining Coalition.
8. I gave a presentation to Diedrich Elementary in Sparks on the rock cycle.

Field Specialist (Rick Kauffman)

1. Prep and reviews with California, Wyoming and USGS for the 2025 NAAMLP Inventory presentation.
2. Created geothermal proximity maps for new geothermal well permits.
3. Worked on Top Corp online classes, in preparation for upcoming Top Corp training.
4. Worked with Layth on nex gen SOSA Database and worked with Beta version while the database was down.
5. Conducted a geothermal site inspection at Stillwater geothermal field.

AML/Fluid Minerals Field Specialist (Peter Engh):

1. Created a backlog of data requests from different consultancy agencies due to the cyberattack
2. Worked on the Good Samaritan Application for the EPA
    a. Facilitated a virtual follow up meeting
    b. Drafted several new sections for the application

c. Coordinated with SRK, NDEP, NDOT, and Broadbent regarding aspects of the application

3. Worked on HAZWOPER 40-hour course
4. Visited Jarbidge with Trout Unlimited to investigate potential reclamation projects and visited sites along the Owyhee river near Mountain City to collect soil samples
5. Coordinated with wildlife biologist for Cave Lake and Berlin State Park for the OEPC grant
6. Planned an AML trip to Pioche in Lincoln County to oversee construction during the Castleton Hard Closure project

Fluid Minerals Program Manager (Dustin Holcomb):

1. Attend the 2025 IOGCC Annual Conference, in Anchorage, AK
2. Attend monthly and weekly staff meetings.
3. Meet with the BLM for the monthly coordination meeting.
4. Compile logs and reports for NBMG/NDOM log exchange.
5. Coordinate with field staff to audit the Stillwater geothermal well field.
6. Meet with Invergy geothermal division to discuss planned drilling operations
7. Review geothermal well permit applications.
8. Process 1 Sundries for geothermal well activity.
9. Issue 21 Geothermal Resource Development Well Permits.
10. Issue 4 DMRE Well Permits.
11. Track drilling activity in the State.

FY 2026 Well Inspections					
	Total # of Wells	# Wells Needed for FY26 (1/3 of total)	Wells Inspected this month	# of Wells Inspected in FY26	Wells Remaining
Geothermal	503	167	33	35	132
Oil	121	40	0	0	40
Totals	624	207	0	0	207

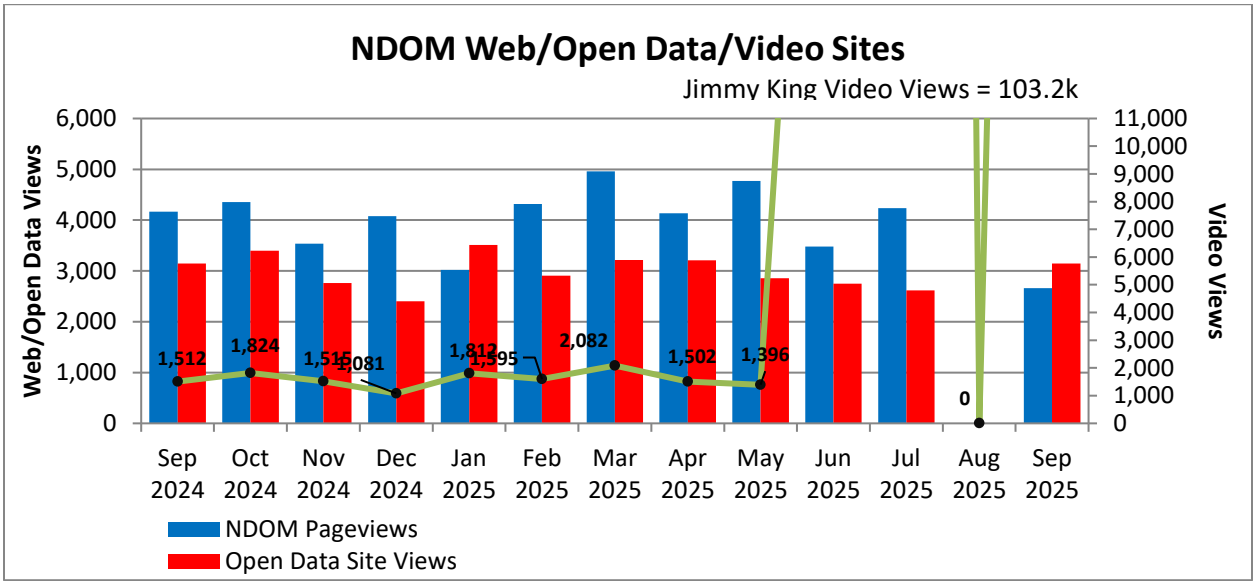
Well Drilling Operations					
Permit	Well	Operator	Field	Type	Status
1662	OBS-1	Elko Heat Company	ELKO	Obs	Drilling
1602	46(37)-2	Ormat Nevada	CRV	Inj	Drilling
1671	46-23	Ormat Nevada	MGE	Pro	Drilling
1678	ROS-28-15	Zanskar	ROS	TG	Drilling
1652	63-12	Ormat Nevada	HMY	TG	Drilling
W0055	65-19	Ormat Nevada	PTO	DMRE	Drilling
1530	27(38)-12	Ormat Nevada	BLZ	Pro	Complete
1641	53B(54)-3	Ormat Nevada	CRV	Inj	Complete
1657	77(86)-15	Ormat Nevada	HMY	TG	Complete
1663	47-21	Star Peak	RYE	Pro	Complete
W0046	78-13	Ormat Nevada	EXC	DMRE	Complete

Project Manager (Keith Hayes):

1. Sent Monthly Trip Reports to Fleet Services
2. Assisted Fluid Minerals Program with compliance issues concerning inactive wells
3. Attended Education Committee meeting to discuss Workshops
4. Worked with Lorraine to develop a landing page for the QR codes on the Education Outreach business cards to promote NDOM education outreach and the Education Workshops

5. Attended a Webinar entitled *Psychosocial Risks: Managing in High-Risk Environments* offered through EAP
6. Registered staff for AEMA conference in December
7. Ordered electric service for GRC at the end of October
8. Completed coursework for TOPCORP
9. Participated in the Silver Stage Fall Festival at Silver Stage School
10. Reached out to the Nevada State Science Teachers Association to distribute information about NDOM's education outreach
11. Managed daily, monthly, and quarterly reports for Fluid Minerals Program
12. Assisted Fluid Minerals Program with permit applications

AML/Public Outreach and Education – Southern Nevada Field Specialist (Carol Shelton):
Carol Shelton was out on medical leave the entire month of September.



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ROBERT GHIGLIERI
Administrator

EXECUTIVE SUMMARY AND MONTHLY ACTIVITY REPORTS
August 2025

Legislation, Industry, and Public Relations: A regulation update workshop was held on August 26 for proposed updates on NAC 513, Commission on Mineral Resources, Division of Minerals; NAC 519A, the reclamation bond pool; NAC 522 Oil and Gas, and NAC 534A Geothermal. The intent of the workshop was to increase agency efficiencies, remove outdated regulations under EO 2023-003, and update geothermal for new technologies. The agency finalized a 10 month long project of evaluating the existing copper production, processing, and supply chain and published a new report: 2025 Nevada Copper Processing Study – Domestic Critical Mineral Production Report. This report was in collaboration with Nevada Mining Association, Critical Mineral Forum, KHGM Robinson, Patherfinder Tonopah and Convergent Mining. The AML program continued to work on the Good Samaritan AML project development in partnership with NDEP, EPA, and Nevada's Mining industry.
Managed agency activities and expected outcomes due to a statewide cyber security incident where access to all shared drives, websites, and databases was lost. The Governor's Technology Office is currently resolving the issue.

Abandoned Mine Lands (AML): AML staff ended the summer intern field season completing inventory, revisits, and securing's in White Pine County, NV. AML staff reviewed performance measures and funded a second round of ad buys for the Jimmy King digital marketing campaign. AML staff responded to public reports of open abandoned mines in Mineral County.

End-of-August AML statistics:

	SITES INVENTORIED	SITES SECURED	% Secured
Since 1987	26,577	21,599	81%
2024 To Date	547	299	54%

Fluid Minerals: A regulation workshop was held on August 26 to update both NAC 522, and 534A. Elko Heat Company's Observation well #1 was inspected along with Open Mountain's drill rig and operation for 47-21. Unable to tabulate inspections until the cyber incident is resolved and access is reinstated to the database

Reclamation Bond Pool: The bond pool funded the reclamation of the Kingston Mine site at a cost of $52,881.20. $92,836.76 was transferred from the bond pool into BA 4219 for administrative costs associated with administering the bond pool and building the bond pool SQL database. The end of year finances was reconciled, and FY 25 was submitted for closing. The Bond Pool monthly table is currently unavailable to the cyber security incident.

Minerals Education and Outreach: Carol Shelton Participated in the Spring Valley Library Back to School Fair highlighting Nevada mining and the dangers of abandoned mines. Carol Worked with Desert Research Institute staff to coordinate a Back-to-School STEM Showcase. Carol also Assisted with changes to the All About Mining: Mining for a STEM virtual workshop. The AML Program continued is AML Stay Out Stay Alive campaign. Agency staff

held a booth at the Nevada State Museum for multiple public events. Over 600 people attended the events at the State Museum.

Website/Open Data Site Activity:
YouTube Video Views: 212.2K (Jimmy King AML Campaign)
*All other video data is not available at this time due to cyber security incident

Financial, Personnel, and Safety: AML brought back two interns from the summer intern season to assist Dustin with scanning of geothermal files and other duties, as needed. Crystal Cruson went out on maternity leave at the end of August and is expected to return the beginning of December. The agency realized funding available at the end of August was $2,602,626.08. There was one health safety incident with a staff member. The staff is now recovering and will be back to work in October.

MONTHLY ACTIVITY REPORTS

Administrator (Rob Ghiglieri):

1. Prepared draft regulation changes for NAC 513, 519A, 522, and 534A for a public workshop on August 26th.
2. Held a Commission on Mineral Resource Meeting in Elko NV.
3. Finalized and published the 2025 Nevada Copper Processing Study – Domestic Critical Mineral Production Report.
4. Attended a Governor Lombardo Cabinet Meeting.
5. Attended a meeting with Congressman Amodei and representatives from Mineral County, USFS, BLM, NDOW, NDOR, and Industry to discuss ongoing exploration and mining in Mineral County.
6. Attended the NvMA Environmental Committee meeting and presented on ongoing NDOM activities and the progress of the AML Good Samaritan project.
7. Held a public workshop for proposed regulation changes to NAC 513, 519A, 522, and 534A.
8. Held meetings with the EPA and NAAMLP member states on the new draft financial assurance requirements of the AML Good Sam law.
9. Prepared for the 2025 Excellence in Mine Reclamation Awards presentation at the 2025 Nevada Mining Association Awards Ceremony.
10. Started managing agency business without access to our normal file servers due to a State IT issue.
11. Participated in other various meetings and committees not mentioned above included geothermal industry members, MMSA, GOED, NvMA, NDEP, BLM, Governor's Office, and various members of the public and minerals industry.

Deputy Administrator (Garrett Wake):

1. Assisted the agency's budget analyst with fiscal year 2025 closing and balance forward work programs for budget accounts 4219, 4220, and 6201.
2. Assisted Administrator Ghiglieri with the drafting of regulations and small business impact statements for NACs 513, 519A, 522, and 534A.
3. Executed a service agreement between NDOM and Broadbent & Associates for environmental evaluation of the Union Mine site.
4. Attended a quarterly Commission on Mineral Resources meeting in Elko, NV; presented on the agency's finances and reclamation of the Kingston Mill site.
5. Prepared and submitted a position reclassification packet converting one of the agency's GIS III position into a GIS IV position.
6. Managed and monitored the agency's finances, bond pool, and contracts throughout the period.
7. Participated in the following: NDOM monthly staff meeting, NvMA Education Committee meeting, and 3rd quarter Veteran's Peer Mentor group meeting, regulation change workshop, bond issuance and post issuance compliance training, domestic critical minerals and materials supply chains workshop, and Office of Financial Assistance grant training session.

Bond Pool Activity:

- The bond pool funded the reclamation of the Kingston Mine site at a cost of $52,881.20.
- $92,836.76 was transferred from the bond pool into BA 4219 for administrative costs associated with administering the bond pool and building the bond pool SQL database.
- The bond pool end of year finances were reconciled and FY 25 was submitted for closing.

Chief, Abandoned Mine Lands Program (Sean Derby):

1. AML staff ended the summer intern field season completing inventory, revisits, and securing's in White Pine County, NV.
2. AML contractor EPS was tasked with the Caselton Hard Closure project including 51 sites in Lincoln County
3. AML staff coordinated with technical / financial partners to advance Good Samaritan Grant application including collaboration with BLM on CX eligibility/approval, review of sampling protocol and initiating sample analysis, and contributing to project scope of work and services agreements.
4. AML staff collaborated with partner states to organize a Database Management and Data Collection Workshop for the upcoming NAAMLP conference in Gulf Shores, AL.

5. NDOM AML staff coordinated with Washoe County Search and Rescue and Northern Comstock Mining and is approved to conduct AML Safety and Awareness training to be held in Virgina City, NV on November 1 - 2, 2025.
6. AML staff reviewed performance measures and funded a second round of ad buys for the Jimmy King digital marketing campaign.
7. AML staff responded to public reports of open abandoned mines in Mineral County.
8. AML staff held pre-project meetings with UES and BLM Caliente to coordinate the Freiberg Environmental Remediation project and received approval to begin work on September 22.
9. AML staff received approval from USAF to conduct drone surveys for the Mt. Irish Hard Closure Project to be conducted on September 21.
10. AML staff tasked West Consultants to complete pending wildlife surveys at Berlin/Cave Lake and provide a summary report to OEPC for final approval in anticipation of hard closure project work on state lands.

	SITES INVENTORIED	SITES SECURED	% Secured
Since 1987	26,577	21,599	81%
2024 To Date	547	299	54%

AML Hard Closure Project Pipeline					
Planning Phase	Wildlife/Cultural Surveys in Progress	Pending CX	CX District Approval Pending	In Progress	Recently Completed
	Mt. Irish	WFO East; Elko, 24 hazards	Jarbidge, Elko, 9 Hazards		
Avequema	Frontier 500	361 NDOT, Mineral & Nye, 100 Hazards		Caselton; Lincoln, 51 hazards	
		Kingston; Nye & Lander , 49 hazards	Jumping Jack, Nye, 5 hazards		
	Delamar, Lincoln County, 45 Hazards		State Lands OEPC 27 Sites (Pending EA)		

GIS Analyst III (Lucia Patterson):

1. Prepared for, helped market, and worked at the Capital Christmas Tree ornament making event at the State Museum.
2. Attended the first strike event at the State Museum.
3. Helped paint the new AML display at the State Museum.
4. Assisted Administrator Ghiglieri with updating regulations for NACs 513, 519A, 522, and 534A.
5. Attended the Nevada Builders Association meeting with the Governor's office in Las Vegas and updated Web Application.
6. Prepped for and participated in an ornament making event at Bethlehem Lutheran School (160 kids).
7. Worked with the BLM to get data in a format for the Disposal map then worked on compiling data from the Case Recordation shapshot provided by the BLM to pull Case Records with land descriptions and U.S. Reservations.
8. Digitized Sage Grouse SAP areas and analyzed the mineral conflicts within.
9. Made an interim home page for the Division while website was down.
10. Attended the Smart from the Start Colloquium meeting.
11. Answered numerous emails regarding mineral production, mining claims, mining claim filings, mineral rights, and data.

12. Had meetings with two companies demonstrating the Open Data site.

Field Specialist (Rick Kauffman):

1. Upload intern data and associated land research
2. Worked at the Galena summer camp with Crystal. We had about 13 kids, and we made toothpaste and talked about industrial minerals that go into toothpaste.
3. Work on 2025 NAAMLP Presentation on hard rock field data collection
4. Worked at the Nevada State Museum Coin show for public outreach.
5. Attended the Critical Mineral Workshop put on by the Department of Energy.

AML/Fluid Minerals Field Specialist (Peter Engh):

1. Processed data requests from different consultancy agencies
2. Worked on the Good Samaritan Application for the EPA
   a. Attended the public meeting held by NDEP for the Good Samaritan Project in Pleasant Valley
   b. Attended a site visit with SRK to discuss engineering design and brainstorm ideas
   c. Held a virtual follow up meeting for all Good Sam stakeholders
   d. Attended a meeting with the EPA to discuss readiness for Good Sam application
   e. Created a Service Agreement for Broadbent to sample BLM lands
3. Enrolled in a HAZWOPER 40-hour course
4. Managed the Garmin Messenger program and subscriptions for winter and ordered a new Garmin to replace one broken in the summer
5. Attended a RAMS meeting with Broadbent to discuss SOSA updates
6. Scheduled a trip to Jarbidge with Trout Unlimited to investigate potential reclamation projects
7. Organized wildlife surveys for Cave Lake and Berlin State Park for the OEPC grant

Fluid Minerals Program Manager (Dustin Holcomb):

1. Worked with contractor to build new SQL database.
2. Coordinated with NDEP on cross-agency drill sump design agreement.
3. Reviewed and edited proposed NAC 534A rules ahead of Regulations Workshop.
4. Attended 3rd Quarter Commission meeting in Elko.
5. Inspected Elko Heat Company's Observation Well #1 pad.
6. Inspected Open Mountain drill rig and operations for 47-21.
7. Notified industry of Rulemaking Workshop.
8. Attended Rulemaking Workshop.
9. Coordinated delegation of Program Officer II duties during maternity leave.
10. Troubleshot State IT ransomware attack and shutdown.
11. Developed SOP for temporary IT system shutdown.
12. Delegated follow-up duties for 2-year inactive well reporting.
13. Developed drilling program template to help operators standardize applications.
14. Responded to inquiries on NAC 534A rulemaking and geothermal permitting.

FY 2025 Well Audits					
	Total # of Wells	**# Wells Needed for FY26 (1/3 of total)**	**Wells Audited this month**	**# of Wells Audited in FY26** 2 Geothermal	**Wells Remaining**

Unable to tabulate inspections until the database is returned

Permit	Well	Well Type	Status	Field	Operator	Spud Date	Completion Date
1663	47-21	Pro	Drilling	RYE	OME	7/18/2025	
1662	Obs #1	Obs	Drilling	ELKO	EHC	8/26/2025	
1641	53B(54)-3	Inj	Drilling	CRV	Ormat	8/6/2025	
1530	27-12	Pro	Drilling	BLZ	Ormat	8/6/2025	

AML/Public Outreach Project Manager (Keith Hayes):

1. Sent Monthly Trip Reports to Fleet Services
2. Performed two well inspections for the Fluid Minerals Program
3. Supervised AML intern field work near Ely
4. Attended webinar entitled *Psychosocial Risks: Introduction for Staff and Managers* offered through PEBP Employee Assistance Program (EAP)
5. Sent out 534A. 465 compliance letters for the Fluid Minerals Program and worked on creating boiler plate compliance letters and a Standard Operating Procedure (SOP) for dealing with idle well compliance
6. Filed the insurance change form with the Office of the Attorney General and arranged for the pickup of the 2009 GMC Yukon with the Purchasing Division
7. Created a working draft for business cards for use in promoting NDOM classroom visits/activities and the Earth Science Education Workshops
8. Updated branding on existing agency display banners
9. Assisted Rebecca T. with swag ordering
10. Registered for a booth at the BOOnanza event in Carson City on October 30
11. Registered for a booth at Silver Stage School for their Fall Festival on September 25
12. Attended webinar entitled *Creating a Resilient Mindset* offered through PEBP Employee Assistance Program (EAP)

AML/Public Outreach and Education – Southern Nevada Field Specialist (Carol Shelton):

1. Participated in the Spring Valley Library Back to School Fair highlighting Nevada mining and the dangers of abandoned mines.
2. Worked with Desert Research Institute staff to coordinate a Back-to-School STEM Showcase.
3. Assisted with changes to the All About Mining: Mining for a STEM virtual workshop.
4. Continued to develop materials and presentations, and book presentation opportunities, for the 2025-2026 school year.
5. Attended a monthly NDOM staff meeting and participated in a NvMA Education Committee meeting.

Website Activity:

YouTube Video Views: 212.2K

*All other video data is not available at this time due to a statewide cyber security incident

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ROBERT GHIGLIERI
Administrator

EXECUTIVE SUMMARY REPORTS
July 2025

Legislation, Industry, and Public Relations:

Abandoned Mine Lands (AML): The AML staff conducted 4 weeks of field work with summer interns and inventoried 220 hazards in Eureka, Lander, Lincoln and White Pine Counties. AML staff collaborated with Wyoming AML in effort to develop a DOI approved EA/CX for federally funded AML hard closures on State lands. AML staff reviewed performance measures and funded a second round of ad buys for the Jimmy King digital marketing campaign.
End-of-July AML statistics:

	SITES INVENTORIED	SITES SECURED	% Secured
Since 1987	26,577	21,599	81%
2024 To Date	547	299	54%

Fluid Minerals: Dustin Holcomb worked on updating NAC 534A Geothermal regulations. 50 geothermal and 7 DMRE well permit applications were reviewed. 6 Sundries for geothermal well activity were processed. 4 Geothermal Resource Development Well Permits were issued as well as the issuance of 6 DMRE Well Permits.

FY 2026 Well Inspections					
	Total # of Wells	# Wells Needed for FY26 (1/3 of total)	Wells Inspected this month	# of Wells Inspected in FY26	Wells Remaining
Geothermal	503	167	31	31	136
Oil	121	40	0	0	40
Totals	624	207	31	31	176

Bond Pool: One notice level bond was released. Development in phase II of the bond pool database continued.

Bond Pool Status

Run Date 06/30/2025 BSR 06/30/2025 Cash in Bond Pool 3678357.24 Run

Reclamation Bond Pool Status Report		Current to:	06/30/2025			
Plan-level Bonds Company	**Project**	**Entry Date**	**Bond Amount**	**% of Pool**	**Deposit + Premiums**	**% Bond Whole**
Allegiant Gold (US) Ltd	Eastside Project	11/19/2021	$163,064.00	5.9%	$144,771.27	88.78%
Dun Glen Mining Corp	Dun Glen Placer Mine	08/11/2014	$371,138.00	13.43%	$406,904.11	109.63%
Quartz Lake Mining	Red Rock Mill Project	08/16/2023	$712,867.00	25.79%	$524,745.63	73.61%
Sunrise Minerals LLC	Section 17 Project	05/31/2025	$783,246.00	28.34%	$475,311.44	60.68%
TNT Ventures c/o Western Mine and Mineral LLC	Big Canyon Project	05/11/2015	$81,956.00	2.96%	$100,353.62	122.44%
Western Mine Development - Terminated	Kingston Mill	01/28/2002	$100,450.00	3.63%	$0.00	0%
Western Mine Development - Terminated	Victorine Mine	01/28/2002	$45,875.39	1.66%	$0.00	0%
Statewide Notice-Level - 37 bonds	Various	Various	$504,506.00	18.25%	$0.00	0%

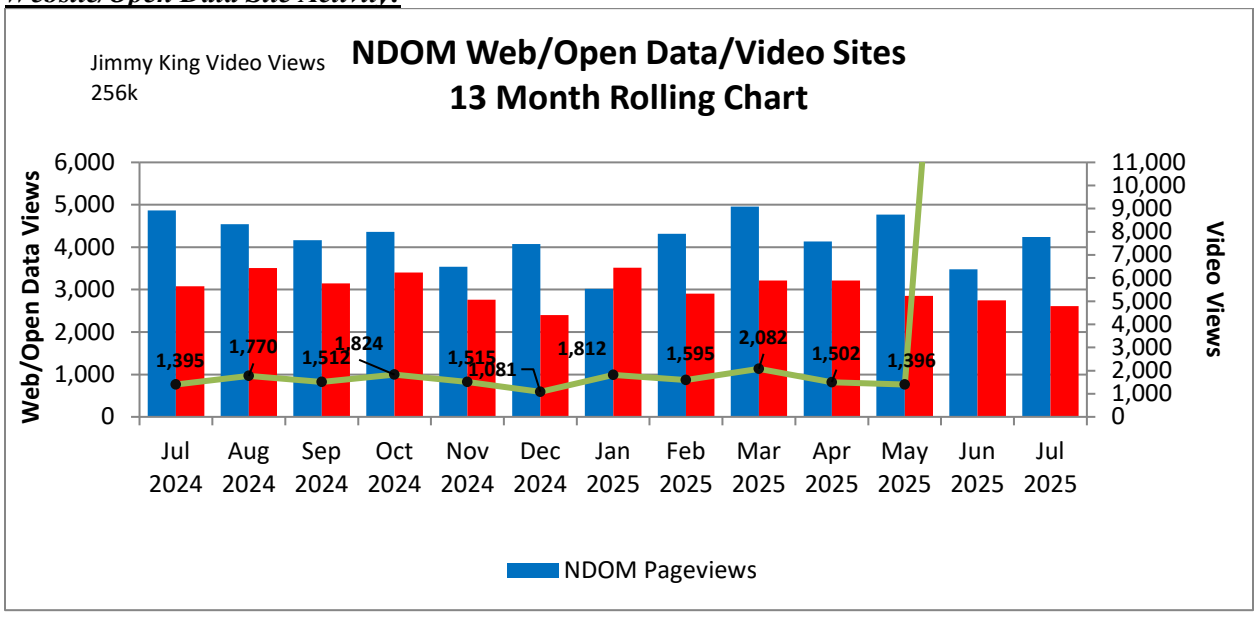
Total Bond Amounts	$2,763,102.39
Cash in Pool's Account (From BSR - 06/30/2025)	$3,678,357.24
Funding Surplus	$915,254.85
Percent Funded	133.12%

export excel

Minerals Education and Outreach:

Carol Shelton wrote a base presentation to use during the 2025-2026 school year. The presentation covers mining, minerals, careers in mining in Nevada and AML. Carol also prepared a 90-minute presentation for the DRI Back to School STEM Showcase hosted by DRI for teachers and hosted two All About Mining mandatory live sync close-out meetings

Website/Open Data Site Activity:



Financial, Personnel, and Safety: The agency realized funding available at the end of July was $2,817,842.58. There were no work safety incidents in July.

MONTHLY ACTIVITY REPORTS
July 2025

Administrator (Rob Ghiglieri):

1. Finalized the Copper Processing report and sent it to the publishers for document
2. Organized and led the 2025 Excellence in Reclmation Awards tour to three nominated sites in Nevada. This year, the tour was filmed by 3 Sticks Media under contract with the Division of Minerals to document the awards and showcase the reclamation work. The award winners will be announced on September 5th during the NvMA annual convention Awards Ceremony.
3. With Lucia, we drafted a response to the Department of Energy RFI on Critical Minerals and its evaluation of the supply chain. NDOM's response was compiled with other state agencies and submitted by GOED.
4. Held a meeting with DCNR, NDEP, and DWR to discuss the water questions that have been raised by industry on enhanced geothermal.
5. Continued to work with NDEP on developing a project that would qualify for the new EPA Good Samaritan Law.
6. Attended the MMSA Good Samaritan AML Summit in Leadville Colorado. Presented on Nevada's potential projects.
7. Continued research and development of draft geothermal regulation updates to incorporate enhanced geothermal.
8. Attended the University of Nevada – University Center for Economic Development Advisory Board meeting.
9. Participated in other various meetings and committees not mentioned above to include IMCC, MMSA, the Governor's Office, NvMA, NDEP, BLM, AEMA, National Mining Association, and various members of the public and minerals industry.

Deputy Administrator (Garrett Wake):

1. Presented to the Las Vegas Rock and Mineral Society on staking a mining claim and the dangers of abandoned mines in Nevada; approximately 50 people were in attendance.
2. Participated in the annual Reclamation Award tours. Visited the AngloGold Ashanti Sterling reclamation site and Merlin deposit overview, Nevada Gold Mines' Long Canyon reclamation, and Bald Mountain Mine South Gator Access Road reclamation.
3. Assisted Administrator Ghiglieri and Dustin Holcomb with drafting proposed revisions to NACs 513, 519A, 522, and 534A.
4. Monitored agency contracts, grants and budget; reviewed all agency travel requests, claims, accounts payables and receivables; managed the Reclamation Performance Bond Pool.
5. Attended the following: NDOM staff meeting; NACs 513, 519A, 522 and 534A meetings; NvMA Education Committee Meeting; NvMA/NDOM workshop meeting; Biennial budget review meeting; AML SOSA RAMS Database meeting; and chaired a McCaw School of Mines board meeting.

Bond pool activity for this period:

- One notice level bond release.
- Continued development of bond pool database phase II

Bond Pool Status

Run Date 08/04/2025 DAWN 08/04/2025 Cash in Bond Pool 3667751.25 Run

Reclamation Bond Pool Status Report		Current to:	08/04/2025			
Plan-level Bonds Company	**Project**	**Entry Date**	**Bond Amount**	**% of Pool**	**Deposit + Premiums**	**% Bond Whole**
Allegiant Gold (US) Ltd	Eastside Project	11/19/2021	$163,064.00	5.96%	$144,771.27	88.78%
Dun Glen Mining Corp	Dun Glen Placer Mine	08/11/2014	$371,138.00	13.56%	$406,904.11	109.63%
Quartz Lake Mining	Red Rock Mill Project	08/16/2023	$712,867.00	26.05%	$540,472.61	75.81%
Sunrise Minerals LLC	Section 17 Project	05/31/2025	$783,246.00	28.62%	$475,311.44	60.68%
TNT Ventures c/o Western Mine and Mineral LLC	Big Canyon Project	05/11/2015	$81,956.00	2.99%	$100,353.62	122.44%
Western Mine Development - Terminated	Kingston Mill	01/28/2002	$100,450.00	3.67%	$0.00	0%
Western Mine Development - Terminated	Victorine Mine	01/28/2002	$45,875.39	1.67%	$0.00	0%
Statewide Notice-Level - 36 bonds	Various	Various	$477,356.00	17.44%	$0.00	0%

Total Bond Obligations	$2,735,952.39
Cash in Pool's Account (From DAWN - 08/04/2025)	$3,667,751.25
Funding Surplus	$931,798.86
Percent Funded	134.06%

export excel

Chief, Abandoned Mine Lands Program (Sean Derby)

1. AML staff conducted 4 weeks of field work with summer interns and inventoried 220 hazards in, Eureka, Lander, Lincoln and White Pine Counties.
2. AML contractor EPS completed safeguarding project work in Lincoln County including 44 sites.
3. AML staff coordinated with potential funding partners and others to evaluate project proposals in consideration of the Union mine Good Sam project proposal and received tentative approvals to submit a project to EPA.
4. AML staff collaborated with Wyoming AML in effort to develop a DOI approved EA/CX for federally funded AML hard closures on State lands.
5. NDOM AML staff coordinated with Washoe County Search and Rescue to receive approval for a training site this October "Heavy Rope Training" to be held in Virgina City, NV.
6. AML staff reviewed performance measures and funded a second round of ad buys for the Jimmy King digital marketing campaign.
7. AML staff responded to public reports of open abandoned mines in Mineral County.
8. AML staff submitted grant funding modifications to BLM and USFS based on decreased available FY26 budgets.

	SITES INVENTORIED	SITES SECURED	% Secured
Since 1987	26,577	21,599	81%
2024 To Date	547	299	54%

AML Hard Closure Project Pipeline					
Planning Phase	Wildlife/Cultural Surveys in Progress	Pending CX	CX Received, Pending Closures	Federal Funding Hold	Recently Completed
	Mt. Irish	WFO East; Elko, 24 hazards		Jarbidge, Elko, 9 Hazards	

Avequema	Frontier 500	361 NDOT, Mineral & Nye, 100 Hazards	Caselton; Lincoln, 51 hazards		
		Kingston; Nye & Lander , 49 hazards		Jumping Jack, Nye, 5 hazards	
	Delamar, Lincoln County, 45 Hazards		State Lands OEPC 15 Sites (Pending EA)		

GIS/ Field Specialist (Lucia Patterson):

1. Updated Mining Claims, Plan-Notice, NEPA and ROW data on Open Data Site.
2. Worked on finalizing smelter report.
3. Made ornaments for outreach event to take place in August (over 600 ornaments and stencils).
4. Assisted the State Museum folks in developing the new AML exhibit.
5. Moved back into my office.
6. Digitized telecommunications and electric service areas in state for Disposal Map.
7. Updated NEPA data.
8. Presented Disposal Map to Southern Nevada Builders association.
9. Worked on draft of NDOM logo.
10. Made comments on U.S. Department of Energy Critical Minerals Policy and List.
11. Updated production application on open data site.
12. Updated all OGG data on open data site.

Field Specialist (Rick Kauffman)

1. Summer AML field work with interns for 2 weeks.
2. Attended 2025 ESRI User Conference.
3. Continued land research for newly found AML hazards.
4. Organized and uploaded data for summer intern field work.
5. Conducted a geothermal inspection at Mcginness Hills geothermal plant, that included data uploads.
6. Organized kick off meeting for 2025 NAAMLP presentation on Field Data Collection of Hard Rock AML, involving CA, WY and NV with assistance from the USGS.

AML/Fluid Minerals Field Specialist (Peter Engh):

1. Processed data requests from different consultancy agencies
2. Completed the FAA Par 107 Small UAS Recurrent test to remain a current drone pilot
3. Attended MMSA in Leadville Colorado to learn about Good Sam Legislation and how Nevada can apply for a project
4. Held a meeting with West about future Hard Closure Projects and to discuss which sites need wildlife surveys
5. Spent a week in the field supervising the interns in Ely Nevada
6. Met with NDOW to discuss a NDOW lead Hard Closure Project in Tenabo, Nevada
7. Union Mine Good Sam Project
    a. Met with Broadbent and NDEP to discuss the Untion mine on July 8th
    b. Hosted a site visit at the Union Mine with most land stakeholders on July 18th
    c. Met with Wyoming AML to discuss creating EAs for project
    d. Met to discuss creating a service agreement for sampling of Union Mine
    e. Coordinated with stakeholders to plan future meetings

8. Reached out to Nevada Division of State Parks to plan a Hard Closure Project construction window in the fall
9. Registered for NAAMLP 2025
10. Met to discuss a NAAMLP HRC data collection presentation

Fluid Minerals Program Manager (Dustin Holcomb):

1. Attend the Whirlwind and Fish Lake Valley geothermal project NEPA kickoff meetings.
2. Attend monthly staff meetings
3. Review POII fluid mineral duties and delegate responsibilities while she's on maternity leave
4. Meet with the BLM for the monthly coordination meeting.
5. Review the Fluid Minerals program budget.
6. Provide the Colorado Energy & Carbon Management Commission with examples of NDOM's well audit procedures.
7. Complete UIC Training course with NDEP.
8. Attend the IOGCC Geothermal Operations State Regulatory Forum.
9. Work on draft NAC 534A Geothermal regulations update.
10. Present to the Geothermal Rising Policy Committee.
11. Help design the geothermal invoicing function of the new SQL database.
12. Coordinate with field staff to audit the McGinness Hills geothermal well field.
13. Review 50 geothermal and 7 DMRE well permit applications.
14. Process 6 Sundries for geothermal well activity.
15. Issue 4 Geothermal Resource Development Well Permits.
16. Issue 6 DMRE Well Permits.

FY 2026 Well Inspections					
	Total # of Wells	# Wells Needed for FY26 (1/3 of total)	Wells Inspected this month	# of Wells Inspected in FY26	Wells Remaining
Geothermal	503	167	31	31	136
Oil	121	40	0	0	40
Totals	624	207	31	31	176

Well Drilling Operations					
Permit	Well	Operator	Field	Type	Status
1590	21-31	Ormat	LMT	Pro	Complete
1638	STC-2A	STC Ventures	STB	Obs	Complete
1575	25(15)-23	Ormat	MGE	Obs	Drilling
1591	62A-25	Ormat	LMT	Pro	Complete

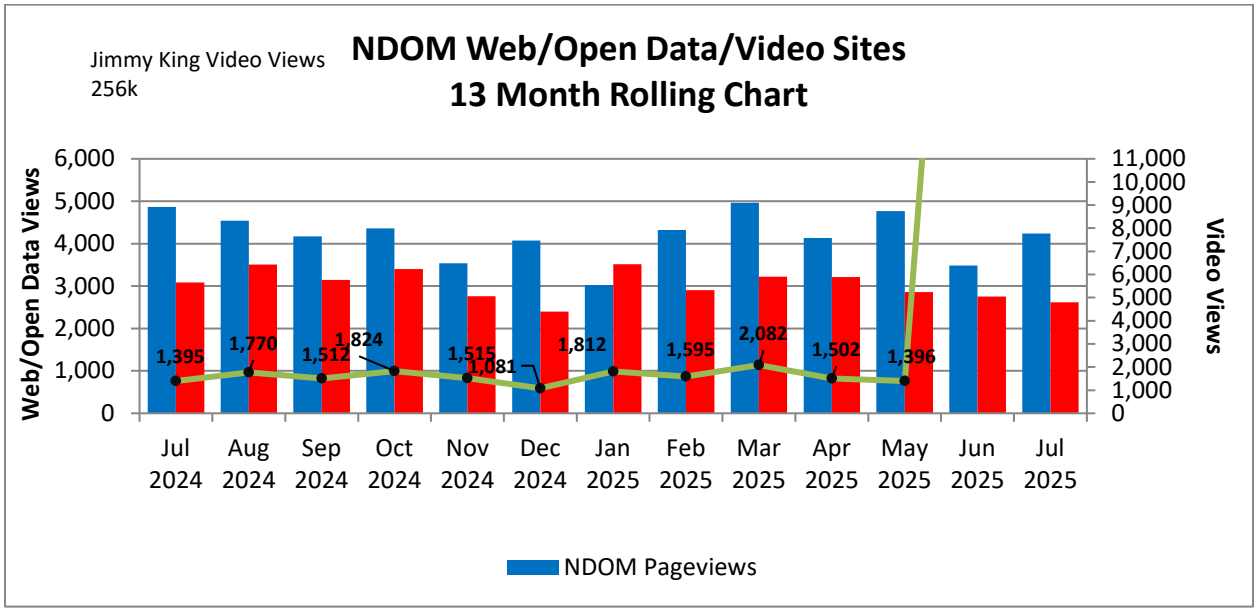
Project Manager (Keith Hayes):

1. Created a draft of a business card to be used by NDOM to promote classroom presentations and the Earth Science Education Workshops. Worked with Garrett W. and Carol S. to refine the business card. Some website revisions will need to be made before the card can be printed for use
2. Attended webinar entitled *A Boost to Oil & Gas Revenues: How New Financial Instruments Can Help the States*
3. Taught a Geothermal section in the All About Mining online course
4. Presented the *Paste with a Taste* activity at the Reno Public Library for their STEAM Program
5. Attended the *Revised Orphan Well Formula and Matching Grant Guidance States Only Roundtable*
6. Attended the *Geothermal Operations State Regulatory Forum*
7. Attended webinar entitled *Understanding Pennsylvania's Legacy Wells*

8. Attended GRPC, State Sub Committee meeting with Dustin H. where Dustin presented NDOM's geothermal regulatory framework and I discussed outreach opportunities for the industry. Dustin and I will continue to interact with these industry professionals to stay more connected and better serve the industry
9. Attended DETR Supervisory Leadership training course
10. Send Broadbent's Final Report on the Kingston Mill Reclamation Project to the BLM Mount Lewis Field Office
11. This month, I started working on more compliance issues in the Fluid Minerals Program, familiarizing myself with the regulations, attending meetings and webinars, building connections to the industry, and began working on templates for compliance letters

AML/Public Outreach and Education – Southern Nevada Field Specialist (Carol Shelton):

1. Prepared a 90-minute presentation for the DRI Back to School STEM Showcase hosted by DRI for teachers.
2. Updated the principal's contact list for schools in Southern Nevada and surrounding areas.
3. Prepared flyers to send to schools offering geoscience presentations and career day speakers. Flyers are sent to past participants as well as all principles in Southern Nevada and the surrounding areas.
4. Continued scoring teacher submittals for the two All About Mining classes being hosted this summer.
5. Hosted two All About Mining mandatory live sync close-out meetings.
6. Attended the Safety Coordinator meeting where they discussed the upcoming Risk Management workshop which will be held in Mesquite, NV in September.
7. Attended the Diversity and Inclusive Liaison Annual meeting. Discussions included progress made and ways to implement inclusion for Limited English Proficiency persons who use state services.
8. Rewrote and updated the NDOM Language Access Plan in compliance with NRS 232.0081.
9. Completed the Progress Checklist Language Access Planning and Services as requested by the Governor's Office for New Americans.
10. Wrote base presentation to use during the 2025-2026 school year. The presentation covers mining, minerals, careers in mining in Nevada and AML.



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