

State of Nevada Governor's Office of Energy

Nevada's Climate Policy and Public Lands Nexus



Presented to:

Public Lands Foundation

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Nevada's Climate Policy and Public Lands Nexus

- Governor Sisolak: Climate Urgency and Public Lands Protection
- US Climate Alliance
- 2019 Legislative Session
- SB 254 – Climate Targets
- Nevada's Energy History & Future
- Nevada's Greenhouse Gas Emissions Profile
- Transportation Electrification
- Batteries and Strategic Minerals
- Natural and Working Lands



Governor's Office of Energy Mission

- Ensure the wise development of Nevada's energy resources in harmony with local economic needs and to position Nevada to lead the nation in **renewable energy production, energy efficiency & conservation, the exportation of energy, and transportation electrification.**
- GOE implements the laws of the State as defined in Nevada Revised Statutes 701 and 701A; manages energy-related programs; facilitates cooperation between key stakeholders; advises the Governor on energy policy; and collaborates with our local, regional, and federal partners to ensure a reliable and sustainable energy system.



Governor Sisolak's Climate Urgency

At his inaugural State of the State Address this past January, Governor Sisolak remarked:



“Let me be clear: I will not spend a single second debating the reality of climate change. It is real, and it is irresponsible to ignore the science that proves it — and the lives it has already upended, especially across the West.”

As Governor, I am committed to making Nevada a clean energy leader — not only to combat the effects of climate change for future generations, but also for the abundance of green-collar jobs we can create right now.” ⁴



Desire to Protect Public Lands

In that same address, the Governor also remarked:

“We have some of the nation’s most amazing public lands in our state. These lands contribute to this state’s unique beauty, connect us to our past, and are the driving force behind our thriving eco-tourism industry. We must continue to protect these irreplaceable treasures.”





Climate Urgency

- Las Vegas, Nevada is the nation's fastest warming city, with a temperature increase of 5.76°F between 1970 and 2018. ("AMERICAN WARMING: The Fastest-Warming Cities and States in the U.S.," April 17th, 2019, Climate Central.)
- Without global action to reduce carbon emissions, the city will probably experience 96 days of heat above 100F by the end of the century, including 60 days over 105F, and seven "off the chart" (per heat index formula) days. ("Killer Heat in the United States: Climate Choices and the Future of Dangerously Hot Days (2019)," July, 2019, Union of Concerned Scientists.)



US Climate Alliance

- On March 12, 2019, Governor Sisolak joined Nevada with the US Climate Alliance.
- As of late summer, the Alliance includes 24 states and one territory.
- Together, the Alliance represents 55 percent of the U.S. population, an \$11.7 trillion economy, and 40 percent of U.S. greenhouse gas emissions.
- The climate and clean energy policies of Alliance states have created over 1.7 million renewable energy and energy efficiency jobs, equivalent to over 60 percent of all clean energy jobs in the United States.



US Climate Alliance

CORE PRINCIPLES

States are continuing to lead on climate change: Alliance states recognize that climate change presents a serious threat to the environment and our residents, communities, and economy.

State-level climate action is benefiting our economies and strengthening our communities: Alliance members are growing our clean energy economies and creating new jobs, while reducing air pollution, improving public health, and building more resilient communities.

States are showing the nation and the world that ambitious climate action is achievable: Despite the U.S. federal government's decision to withdraw from the Paris Agreement, Alliance members are committed to supporting the international agreement, and are pursuing aggressive climate action to make progress toward its goals.



US Climate Alliance

COMMITMENT

1. Implement policies that advance the goals of the Paris Agreement, aiming to reduce greenhouse gas emissions by at least 26-28 percent below 2005 levels by 2025
2. Track and report progress to the global community in appropriate settings, including when the world convenes to take stock of the Paris Agreement, and
3. Accelerate new and existing policies to reduce carbon pollution and promote clean energy deployment at the state and federal level



2019 Legislature

Renewable Portfolio Standard

- On April 22nd, Governor Sisolak signed SB 358 increasing the RPS to 50% by 2030.





2019 Legislature: SB 254

Greenhouse Gas Reduction Targets:

- Baseline: 2005
- 28 percent by the year 2025
- 45 percent by the year 2030
- zero or near zero by the year 2050



2019 Legislature: SB 254

Greenhouse Gas Reduction: SB 254

- The Department [DCNR] shall, not later than December 31, 2019, and each year thereafter, issue a report that includes a statewide inventory of greenhouse gas emissions in this State and a projection of annual greenhouse gas emissions in this State for the 20 years immediately following the date of the report.
- Sectors:
 - Electricity production;
 - Transportation;
 - Industry;
 - Commercial and residential;
 - Agriculture; and
 - Land use and forestry



2019 Legislature: SB 254

SB 254 requires...

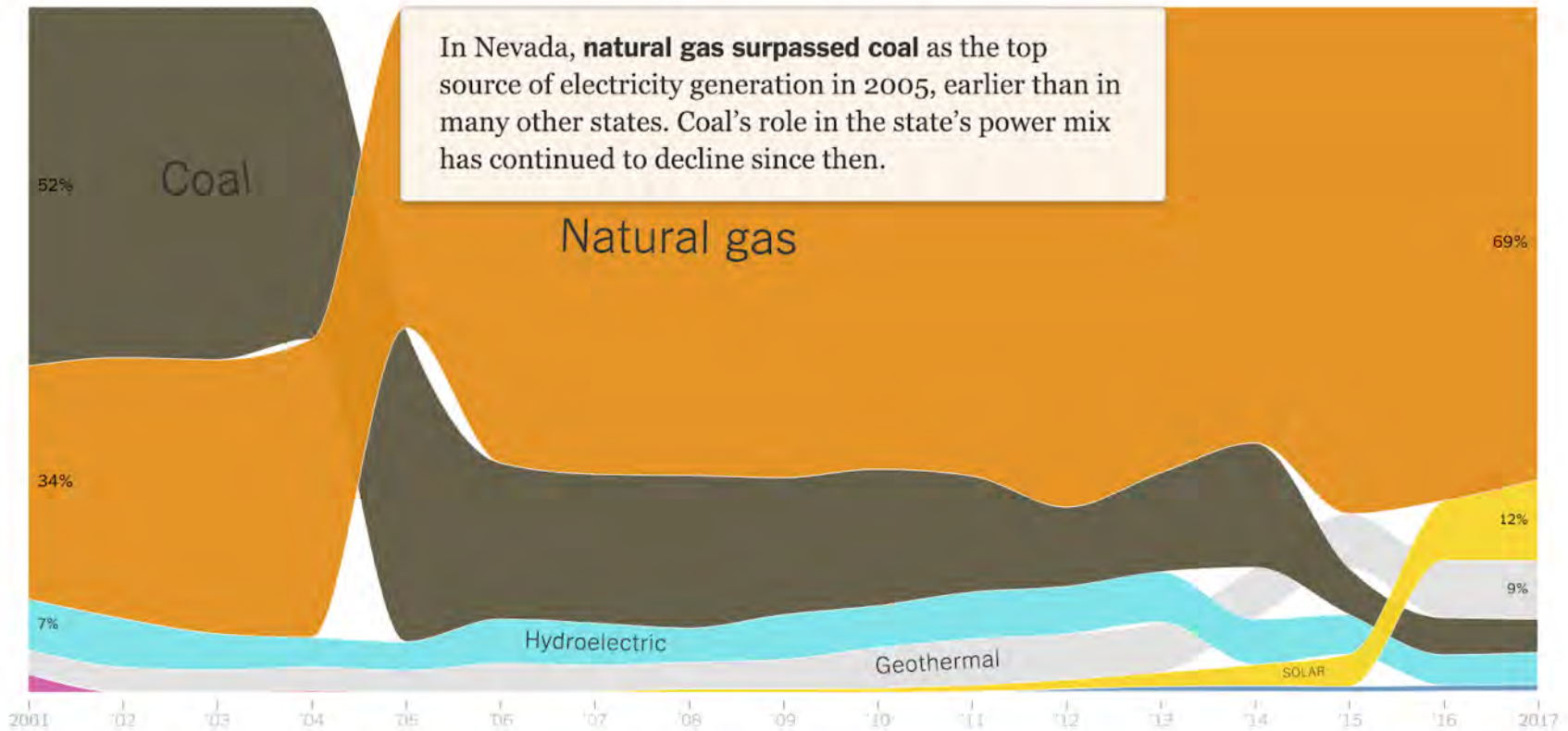
- “A statement of policies, including, without limitation, regulations, identified by the entity or entities designated by the Governor... that could achieve reductions in projected greenhouse gas emissions by the sectors set forth...”
- “A qualitative assessment of whether the policies identified in the statement of policies required by paragraph (c) support long-term reductions of greenhouse gas emissions to zero or near zero by the year 2050.”



Nevada's Energy History

How **Nevada** generated electricity from 2001 to 2017

Percentage of power produced from each energy source



Popovich, Nadja. 2018. "How Does Your State Make Electricity?" The New York Times. <https://www.nytimes.com/interactive/2018/12/24/climate/how-electricity-generation-changed-in-your-state.html> (December 27, 2018).



Nevada's Energy Future: Utility-Scale Renewables

What's coming...

Project Name	Developer	Contracted Solar Capacity (MW)	Commercial Operation Date	Battery Capacity [MW x hours]
Battle Mountain Solar	Cypress Creek	101	6/1/2021	25 x 4
Dodge Flat Solar	NextEra	200	12/1/2021	50 x 4
Fish Springs Ranch	NextEra	100	12/1/2021	25 x 4
Arrow Canyon Solar	EDF	200	12/1/2022	75 x 5
Southern Big Horn	8 Minute Renewables	300	9/1/2023	135 x 4
Gemini Solar	Arevia/QuinnBrook	690	12/1/2023	380 x 3.7



Nevada's Energy Future: Utility-Scale Renewables

What's coming... the long-term debate

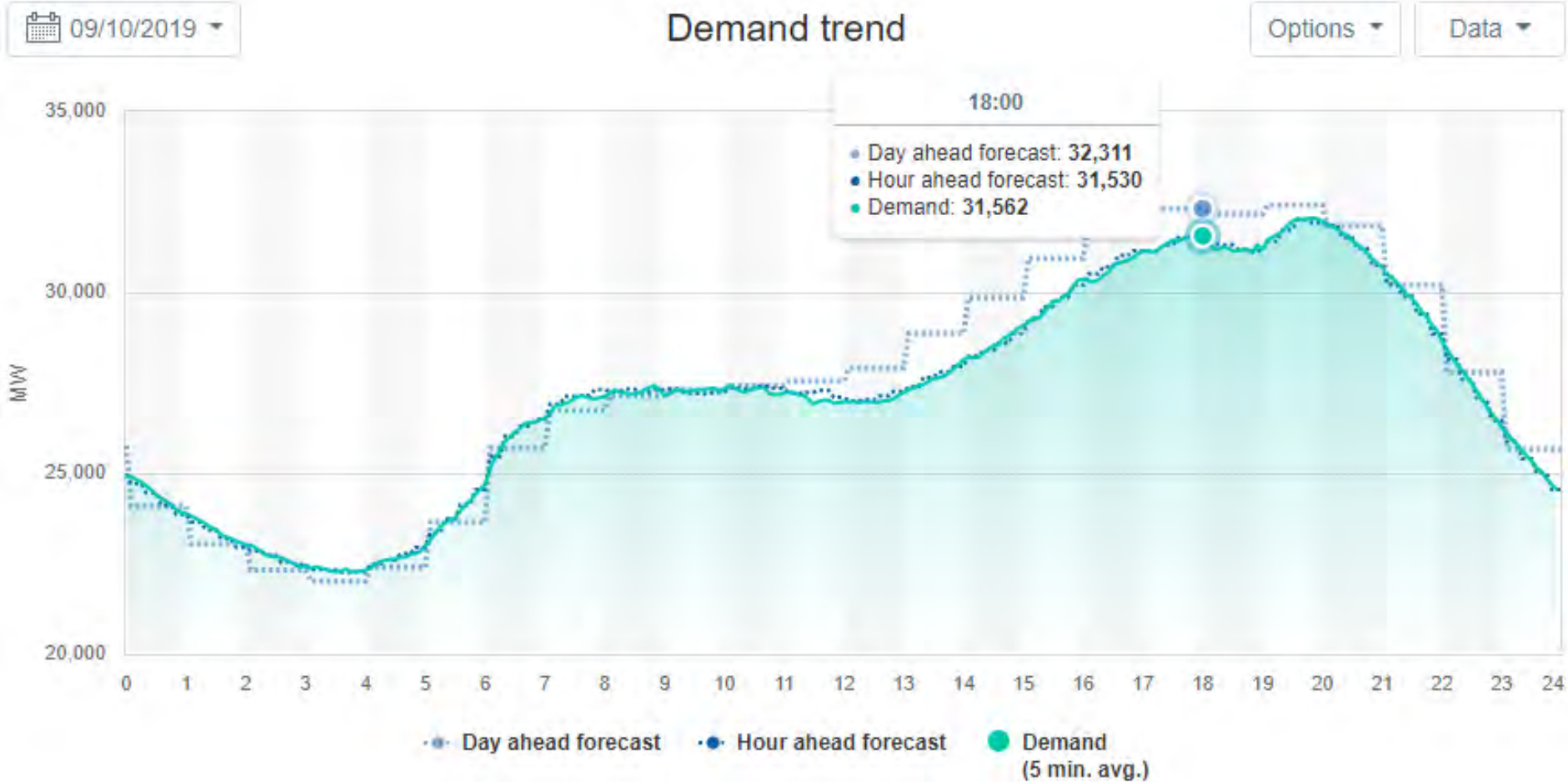
Table 1. Comparison of resource additions and retirements in the NVE Preferred Portfolio and the WRA Alternative

Resource Additions <i>MW (nameplate, cumulative)</i>	<u>NVE Preferred (low carbon)</u>		<u>WRA Alternative Portfolio</u>	
	2028	2038	2028	2038
Natural Gas	865	2,248	600	865
Summer Tolling	865	600	600	865
New Build	0	1,648	0	0
Wind	0	0	-	350
Solar PV	1,313	2,475	2,104	3,917
Battery Storage	100	0	300	920
Geothermal	0	56	400	770
DSM	678	1,366	828	1,616
NEM	172	221	172	221
DR	305	319	340	404

Source: "Analysis of NV Energy's Integrated Resource Plan and An Alternative Resource Portfolio." Western Resource Advocates, December 19, 2018.



Solar on the Grid





PLREDA

Public Lands Renewable Energy Development Act of 2019

- Directs DOI to identify appropriate areas of development
- Distributes the revenue collected from renewable energy development on public lands to support local communities and conservation
- Improves inter-agency (and with states) cooperation on renewable energy projects on public lands.
- Sets a goal for DOI to permit a total of 25 gigawatts of renewable energy on public lands by 2025.





Renewable Energy Impacts

Can desert tortoises and solar arrays co-exist?

One solar energy facility in southern Nevada is helping to answer that question



Rows of solar panels follow the topography of the site. The natural vegetation remains as a food source for the tortoises living on and near the facility. Credit: USFWS

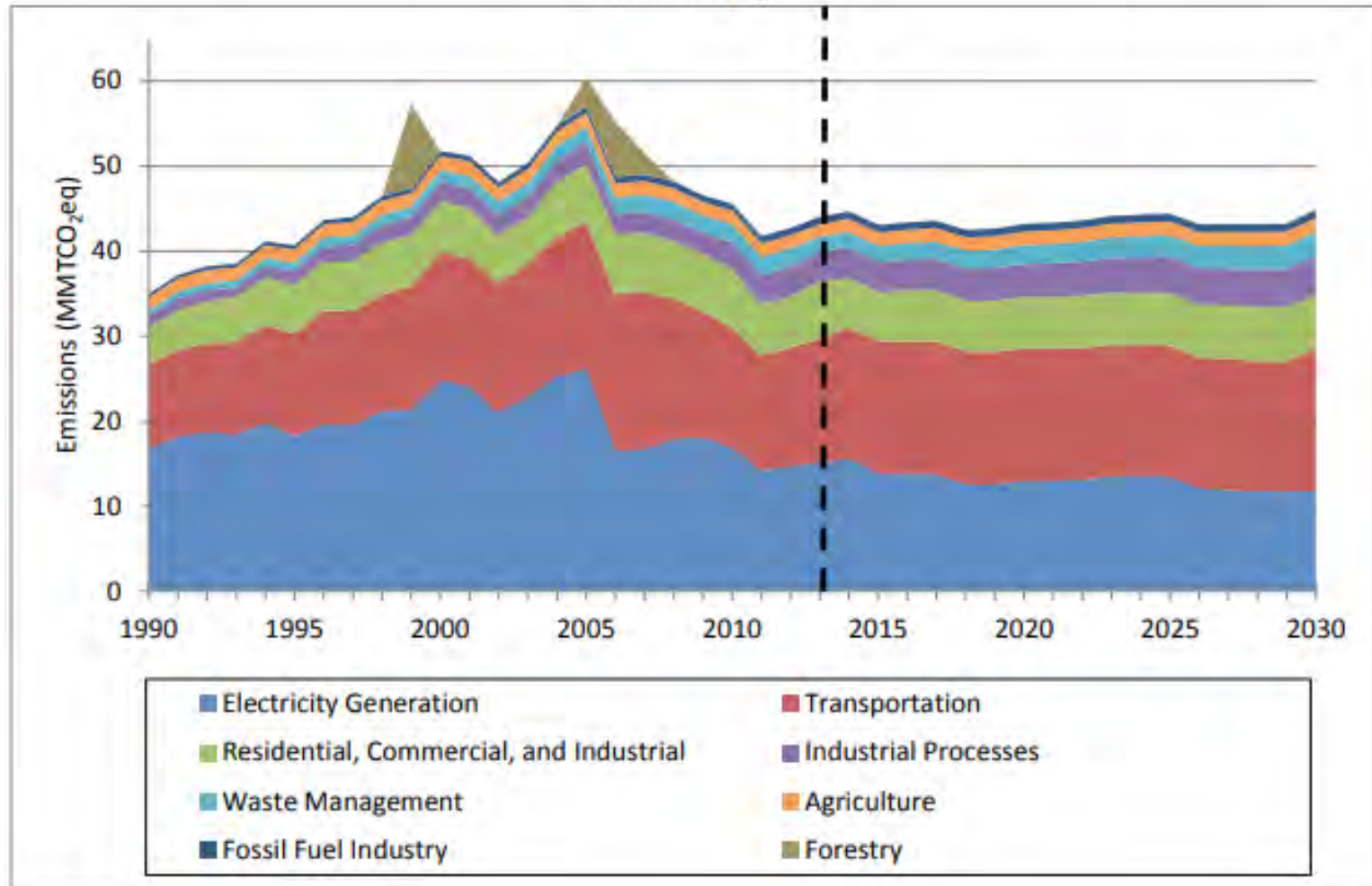


Solar energy planners in Nye County, Nevada hope to alleviate any impacts to habitat for the endangered desert tortoise, like the one shown above near Ash Meadows National Wildlife Refuge. Credit: Dana Wilson/BLM



Nevada Emissions

Figure ES-2: Nevada Historical and Projected Gross Sector Emissions, 1990 – 2030
(MMTCO₂eq)





Transportation Electrification

“Not For You”





The Nevada Electric Highway

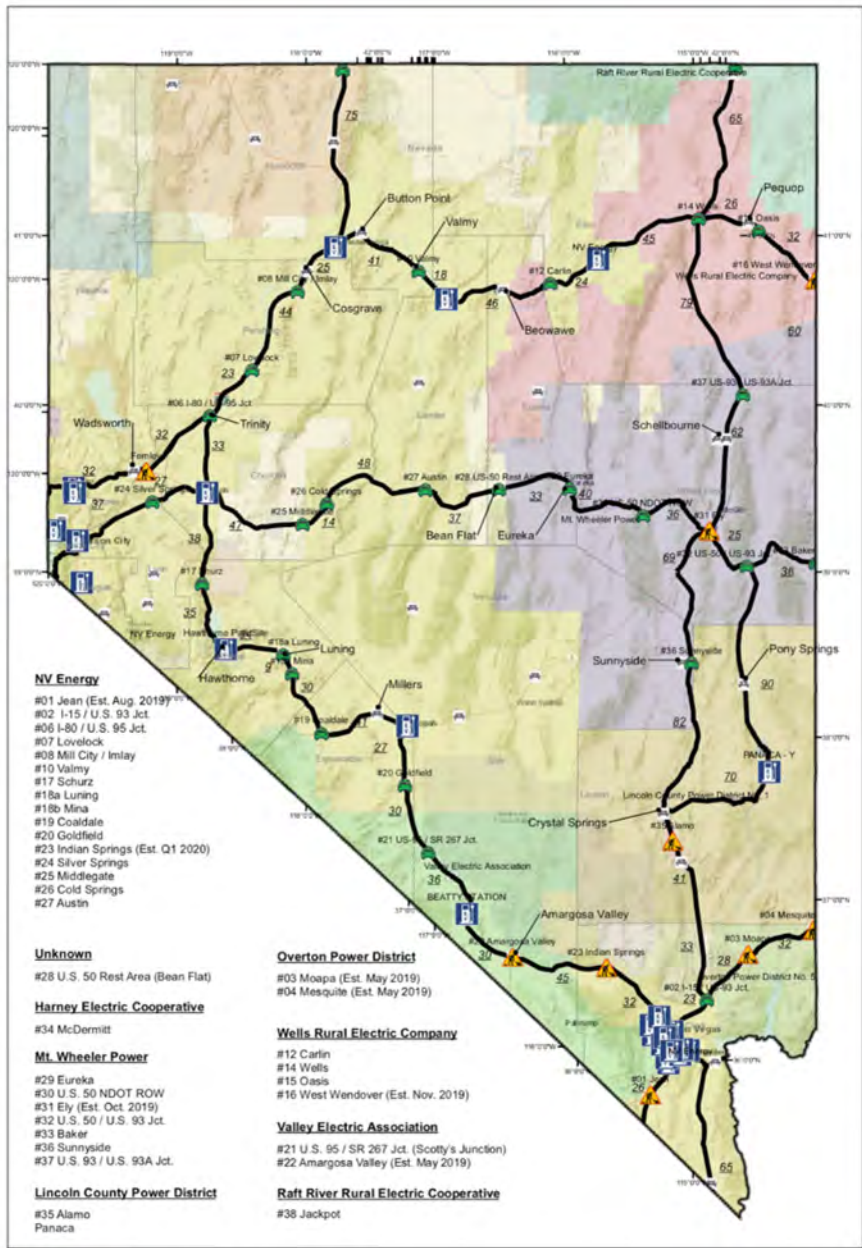


U.S. 95: Reno > Las Vegas

- Fallon (NVE, 10/2016)
- Hawthorne (NDOT, 3/2018)
- Tonopah (NDOT, 5/2019)
- Beatty (VEA, 2/2016)
- *Indian Springs (NVE, early 2019, now delayed)

By 2020 (Phase 2):

- U.S. 95
- U.S. 93
- U.S. 50
- I-80
- I-15



The Nevada Electric Highway

As of May 2019



Nevada Governor's Office of Energy

Nevada Electric Highway

- Installed DC Fast Charging station
- GOE planned DC Fast Charging station
- NDOT Rest Area
- DC Fast Charging station in the works

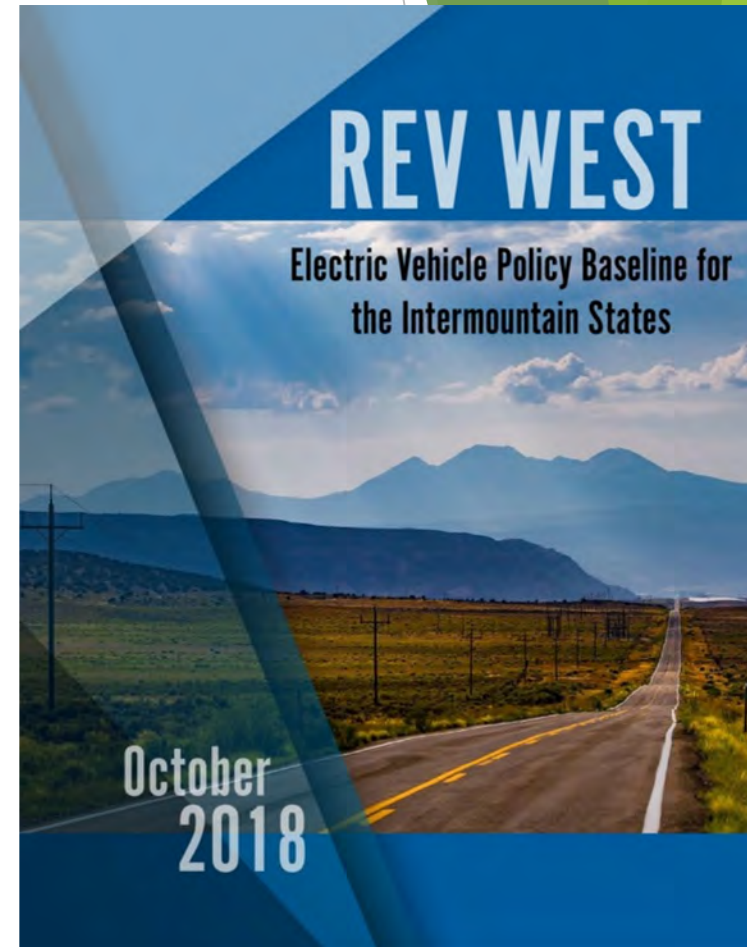


Created 5/16/2019; v2.7



REV West

- Regional Electric Vehicle Plan for the West (“REV West”)
- October 2017, MOU signed by the intermountain west states:
 - Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah and Wyoming
- Purpose: Make it possible for an EV to drive seamlessly across the Signatory States’ major transportation corridors. (Interstates)





Batteries

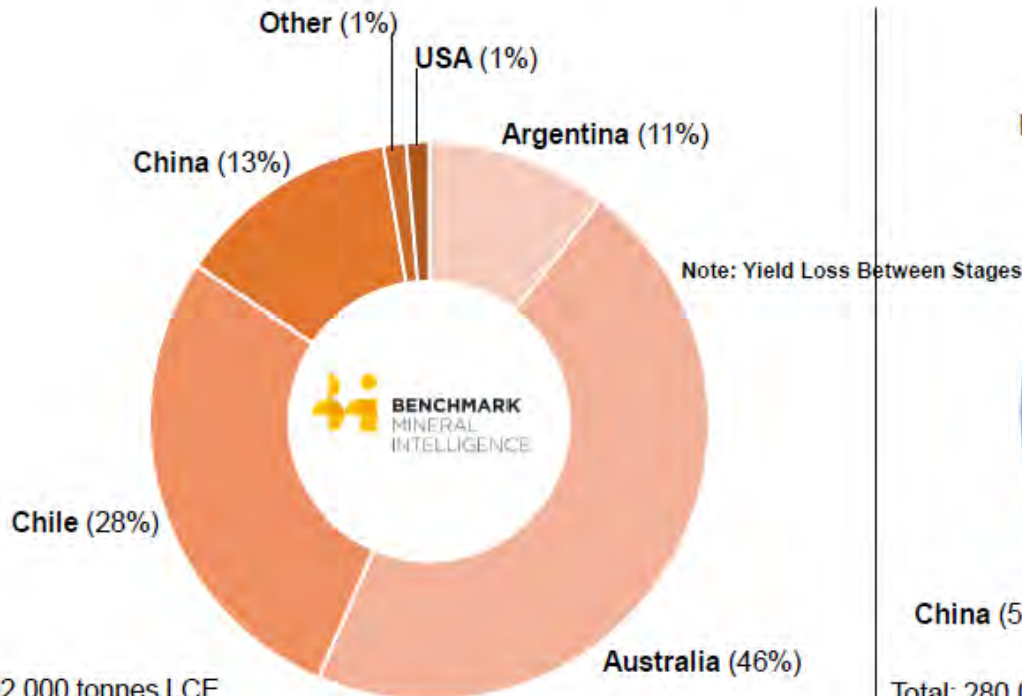


- Lithium batteries now a top 10 export from Nevada
- \$3M in 2015 to \$131M in 2018



Strategic Minerals

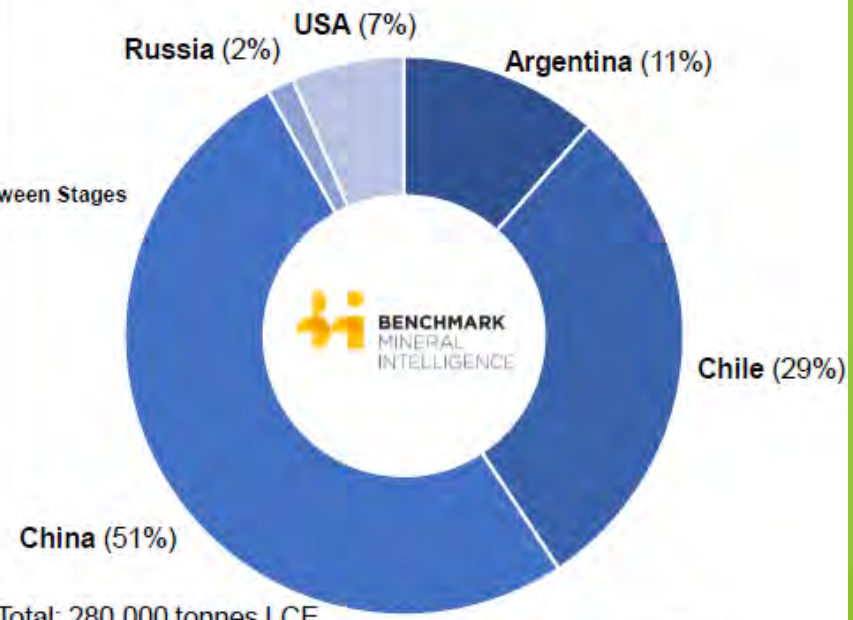
Lithium Raw Material Supply in 2018



Total: 302,000 tonnes LCE
US Interest: **Albemarle** owns significant brine operation in Chile;
Livent Corp owns the mine in Argentina.

Source: Benchmark Mineral Intelligence

Lithium Chemical Supply in 2018



Total: 280,000 tonnes LCE
US Interest: **Livent Corp** owns capacity in Argentina + China;
Albemarle in Chile

Source: Benchmark Mineral Intelligence



Natural & Working Lands



- Improve inventory methods for land-based carbon flux;
- Identify best practices to reduce GHG emissions and increase resilient carbon sequestration;
- Advance programs, policies, and incentives to reduce GHG emissions and enhance resilient carbon sequestration;
- Undertake actions that will support a collective, Alliance-wide goal to maintain natural and working lands as a net sink of carbon and protect and increase carbon storage capacity, while balancing near- and long-term sequestration objectives; and
- Integrate priority actions and pathways into state GHG mitigation plans by 2020.



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