Data Management Plan

American Battery Technology Corporation (ABTC) chooses to use the template Data Management Plan (DMP), Option 1, as provided in the FOA for this project.

Option 1: For the deliverables under the award, the recipient does not plan on making the underlying research data supporting the findings in the deliverables publicly-available for up to five (5) years after the data were first produced because such data will be considered protected under the award. The results from the DOE deliverables can be validated by DOE who will have access, upon request, to the research data. Other than providing deliverables as specified in the award, the recipient does not intend to publish the results from the project. However, in an instance where a publication includes results of the project, the underlying research data will be made available according to the policies of the publishing media. Where no such policy exists, the recipient must indicate on the publication a means for requesting and digitally obtaining the underlying research data. This includes the research data necessary to validate any results, conclusions, charts, figures, images in the publications.

A. ENVIRONMENTAL INFORMATION DESCRIBING THE PROJECT AND THE PROJECT SITE(S).

1. Summary

The objective of this project is to construct, commission, and operate a pre-commercial scale demonstration facility to process unconventional Nevada-based sedimentary lithium-bearing claystone resources to manufacture battery-grade lithium hydroxide monohydrate that meets the rigorous specifications required to synthesize high energy density battery cathode materials.

The manufacturing plant will be designed to sustainably extract and manufacture battery-grade lithium hydroxide monohydrate in a low-cost and low-environmental-impact set of processes. The commercial facility will have a production rate of 5,000 metric tons per year of lithium hydroxide, (b) (4) [redacted]

Major components of the project include:

(b) (4) [redacted]

Major risks during construction, operation, and disposal include land degradation including initial and ongoing disruption to native flora and fauna, water/air/soil/noise/solid waste/light pollution to the surrounding ecosystem and communities.

2. Proposed Project and Its Alternatives

a. Proposed Project

The Property is located approximately 10 km northwest of the town of Tonopah, east of Big Smoky Valley, and west of the San Antonio Mountain range, Nye County, Nevada. The Property consists of 6 contiguous unpatented mining claims that span (b) (4) [redacted]. Elevated lithium concentrations occur in the underlying claystone.

The location of the project is in Big Smoky Valley near Tonopah, Nevada. In a rural area of the state, it is midway between Reno and Las Vegas. Tonopah is the county seat of Nye County, and according to 2020 Census data has a population of 2,009. The site is located in Esmeralda County directly west of Tonopah. Esmeralda County has a population of 729 and is identified as a Disadvantaged Community (DAC) on the Council of Environmental Quality's Environmental Justice Screening Tool, as well as the U.S. Department of Transportation's Historically Disadvantaged Census Tracts.

This project will be conducted in five (5), twelve (12) month-long, budget periods:

Budget Period 1: (b) (4) [redacted]

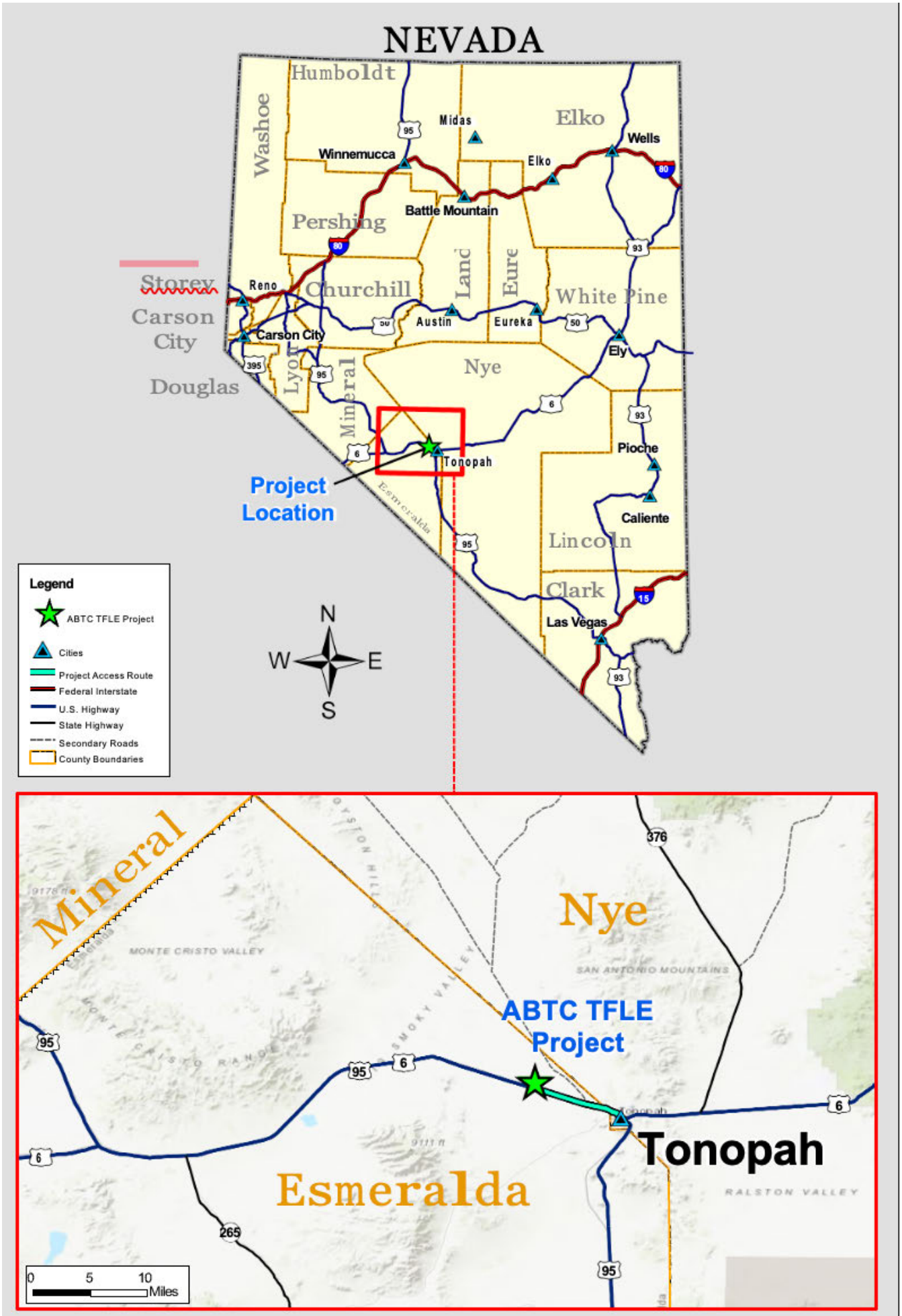
(b) (4) [redacted]

Budget Period 2 (b) (4) [redacted]

Budget Period 3: (b) (4) [redacted]

Budget Period 4: (b) (4) [redacted]

Budget Period 5: (b) (4) [redacted]



Service layer Credit: Base Layers From ESRI.com / USA Topo Maps

Data is for graphical presentation only. The data presented may not be suitable for other purposes or uses.

(MAP SCALE AT 11" X 17")

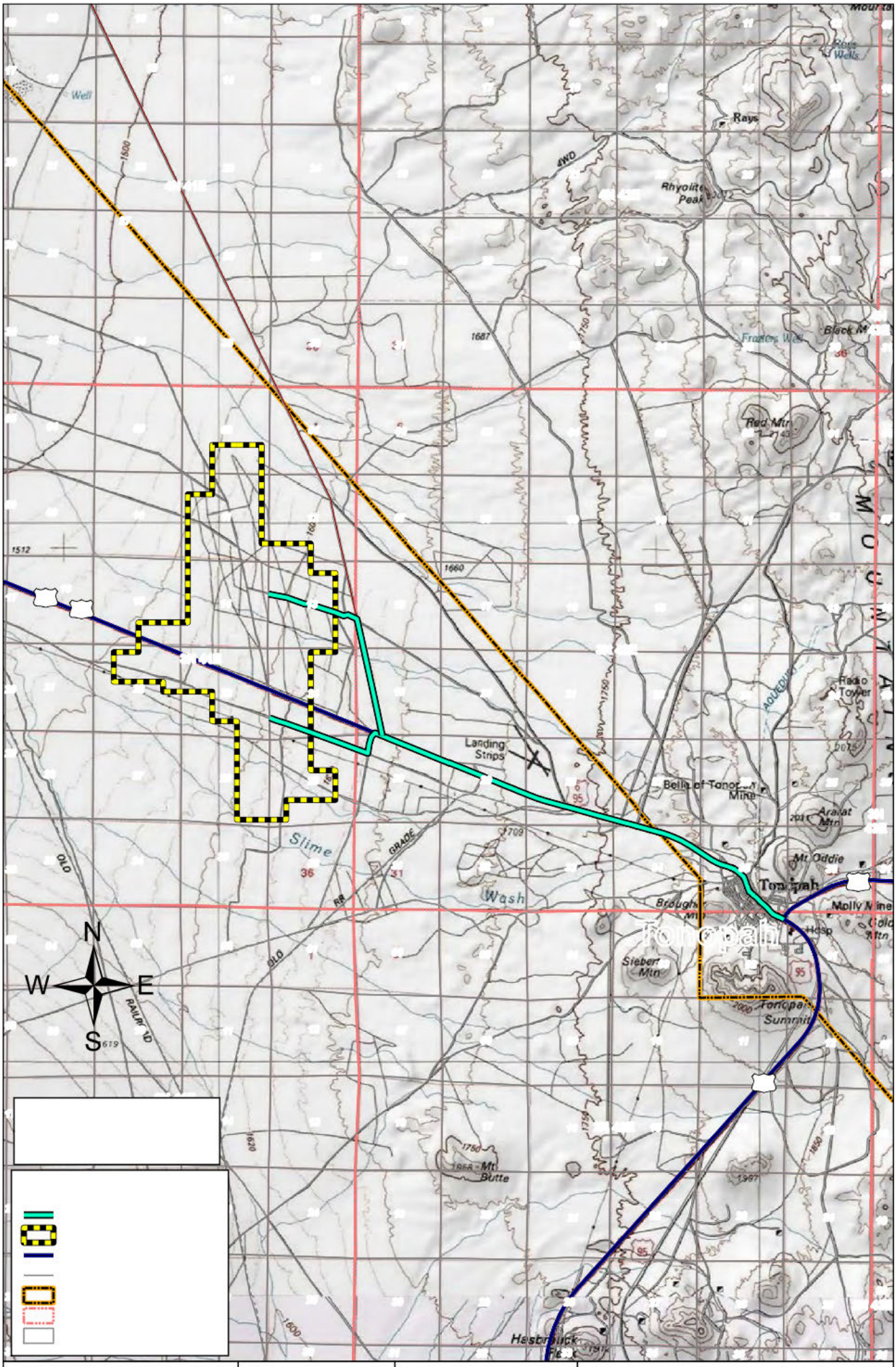
PREPARED BY:
MDES, INC.
1325 AIRMOTIVE WAY SUITE 175U
RENO, NEVADA 89502

DRAWN BY:
ELEVATION TECHNICAL SERVICES
P.O. BOX 150927
ELY, NEVADA 89301

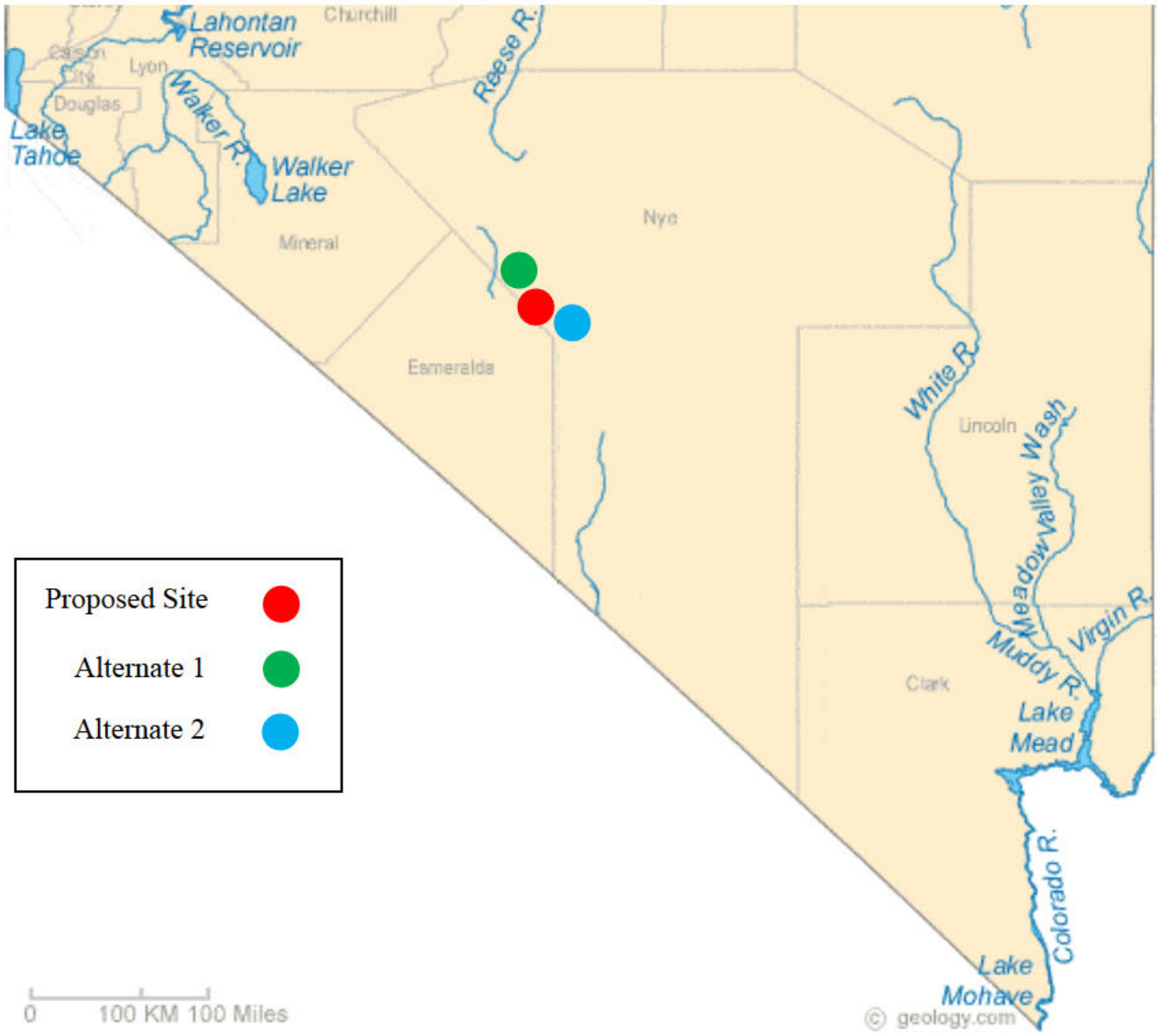
PREPARED FOR:
American Battery Technology Company
Bosma Business Center
401 S Rvland St #138
Reno, NV 89502

TITLE:
TONOPAH FLATS LITHIUM EXPLORATION PROJECT NOTICE
PROJECT LOCATION AND ACCESS

PROJECT:	JOB:	FIGURE:
ABTC: TFLE	2021-ABTC	Figure 1
LOCATION: ESMERALDA COUNTY, NEVADA	DATE: OCT. 19, 2021	


Well
Rays
Rhyolite Peak
4WD
Black M
Frazier Well
Red Mtn
Radio Tower
Landing Strips
Bella of Tonopah Mine
Ararat Mtn
Mt Oddie
Tonopah
Molly Mine
Hdsp
Siebert Mtn
Tonopah Summit
Slime
Wash
GRADE
OLD
RR
RAILR'D
N
W
E
S
Mt Butte
Hestrbrick Flat

b. Alternatives to Proposed Project



Alternative Sites 1 & 2 were deemed unviable prior to conducting technical or economic diligence so additional data is not available on their viability.

3. Existing Environment

a. Land Use

Existing land use conditions in the area of analysis are characterized primarily by open desert, utility corridors and facilities, grazing allotment, recreation, and transportation and access.

BLM administers the vast majority of land in the proposed project area through the BLM Tonopah Field Office (TFO). According to the Tonopah Resource

Management Plan (RMP) (BLM 1997), the area of analysis for the proposed project is subject to the following authorizations or restrictions:

- San Antone grazing allotment (covers the entire area of analysis)
- A ROW avoidance area (Classification 2—other),
- Off-highway vehicle restriction (limited to existing roads and trails and closed to competitive events)
- Visual resource management (Class 4) (covers the entire area of analysis)
- A utility corridor
- Mineral leasing restrictions (no surface occupancy)
- Avoidance of Crescent Sand Dunes (Special Resource Management Area [SRMA]) In addition, based on a data search within BLM's GeoCommunicator (BLM 2010b), the area of analysis is contained within a DOD Airspace Consultation Area.

b. Atmospheric Conditions/Air Quality

The project is located within the South-Central Nevada climatological division, a semi-arid to arid desert climate. Temperatures are mild, rarely exceeding 100°F in the summer and cold in the winter. Daily temperature ranges may be as much as 40°F (Rush and Schroer, 1971).

Two seasonal weather patterns bring precipitation to south central Nevada, winter cold fronts and summer monsoons. The winter cold fronts are characterized by long duration, low intensity broad storms while summer monsoons are short in duration, high Intensity, localized events. It is common to have months of no precipitation between the two periods (Jeton, 2006). Big Smoky Valley occurs in a rain shadow east of a series of major mountain ranges. The rain shadow effect is the most important variable influencing the latitude and elevation distribution of precipitation. In general, precipitation increases with land surface altitude. The air is cooled about 5°F for every 100 feet of lift (Rush and Schroer, 1971).

The Tonopah Flat Subarea receives a total of approximately 580,000 acre-feet of precipitation
annually, with most moisture falling in the winter (Water for Nevada, 1971). Average annual
precipitation is 4-8 inches per year falling over the basin with the least occurring in the valleys. Higher mountains generally receive 20 inches or more per year, mostly as winter snowfall (Rush and Schroer, 1971). The average evaporation rate exceeds precipitation with as much as 90 to 95 percent of the total annual precipitation is lost through evaporation and transpiration (Buqo, 2004).

c. Hydrologic Conditions/Water Quality

Drainage in the Tonopah Flat hydrographic area is internal and terminates in playas located in the lowest portions of the valley floor. The lowest part of the valley floor is located approximately 18 miles southwest of the Project site. Surface drainage to the playas is from the surrounding mountains and toward the south and southwest along the valley floor. In addition, Tonopah Flat receives

surface water inflow from Ione Valley to the northwest and Royston Valley to the west.

Most of the precipitation in the area falls on the mountains that surround Tonopah Flat. Because more precipitation falls on the higher mountains, the primary source of surface water in Tonopah Flat. consists of runoff in streams originating in the Toyabe Range or flowing southeastward into Tonopah Flat from Lone Valley. These streams include Knickerbocker, Cloverdale, Cottonwood and Peavine Creeks. Peavine Creek terminates approximately 2 miles west and downslope of the Project site.

These streams are generally gaining flow in the mountains and losing flow on the alluvial aprons that ring the valley floor. Thus, the streams have their maximum flow at the mountain front and then infiltrate into the basin alluvium or are diverted near the canyon mouths and used for irrigation of local ranches.

Maximum stream flows occur in the spring and early summer and are derived from snowmelt. Flow generally does not reach the valley floor, except during periods of maximum runoff or during infrequent intense rain events. Flow during wet years is nearly twice the average annual flow, and dry year flows are typically at about 75% of the average flows. The largest stream draining from the Toiyabe Range to Tonopah Flat is Peavine Creek, with an average discharge rate of 2.8 cubic feet per second (CFS) and a maximum discharge rate of 13.6 CFS.

Average annual discharge from Peavine Creek is reported as 2,800 AFY. Cottonwood and Cloverdale Creeks do not flow during dry years and have average annual discharges of 350 and 325 AFY, respectively. In 1968, surface water inflows from Royston and Ione Valleys were 60 and 300 acre feet,respectively.

At the Project Location, ephemeral surface water flow occurs in westward draining washes that drain down the alluvial apron at the mountain front. As stated previously, flow in these washes is intermittent and limited to runoff from intense rainfall events. Approximately 30 springs and seeps have been identified near the margins of Tonopah Flat. The closest springs and seeps are located more than 10 miles from the site. Available data regarding spring flows rates range from less than 1 gallon per minute (GPM) to 3 GPM (Rush and Schroer, Table 31, 1971). In general, these springs and seeps are located in the bedrock areas outside the boundaries of the alluvial aquifer system; however, some springs are reported to be located in alluvium. These springs support local phreatophytes and some are used for stock watering or domestic water supply.

The project is situated within the southern portion of Big Smoky Valley, located in the Great Basin section of the Basin and Range Physiographic Province. The Great Basin is composed of two types of aquifers: basin-fill aquifers and carbonate rock aquifers.

The basin-fill aquifer occurs in topographic basins that are physically separated from each other by mountain ranges. The carbonate rock aquifers can extend across topographic basins through the mountain ranges forming multi-basin groundwater flow systems. The carbonate aquifer system is composed of thick sequences of Paleozoic and Mesozoic limestone and underlies a large portion of Nevada. The carbonate aquifer was estimated to reach its western extent along the San Antonio Mountains, which form the eastern edge of the Tonopah Flat Subarea. Thus the Tonopah Flat Subarea is not believed to be hydraulically connected to the carbonate aquifer flow system.

The project site is located in the Central Hydrographic Region, the largest hydrographic region in Nevada, which covers 46,783 square miles in thirteen Nevada counties (Water for Nevada, 1971). The Central Region is located within the larger Basin and Range Groundwater Aquifer System. Basin fill aquifers are composed primarily of alluvial, colluvial and lacustrine deposits with virtually all major groundwater development and withdraw occurring in the upper 500 feet of these aquifers (Buqo, 2004).

d. Geologic/Soil Conditions

The topography of the Proposed Area is generally flat with elevations ranging from approximately 5,000–5,060 feet. Steeply sloping elevations in the background distances range between 9,100 and 11,000 feet. The topography in the borrow pit area is generally flat, with an elevation of approximately 4,881– 4,972 feet. The topography along the proposed project corridor rises slightly from the valley floor to the location of the substation, with an elevation of approximately 4,880–5,200 feet.

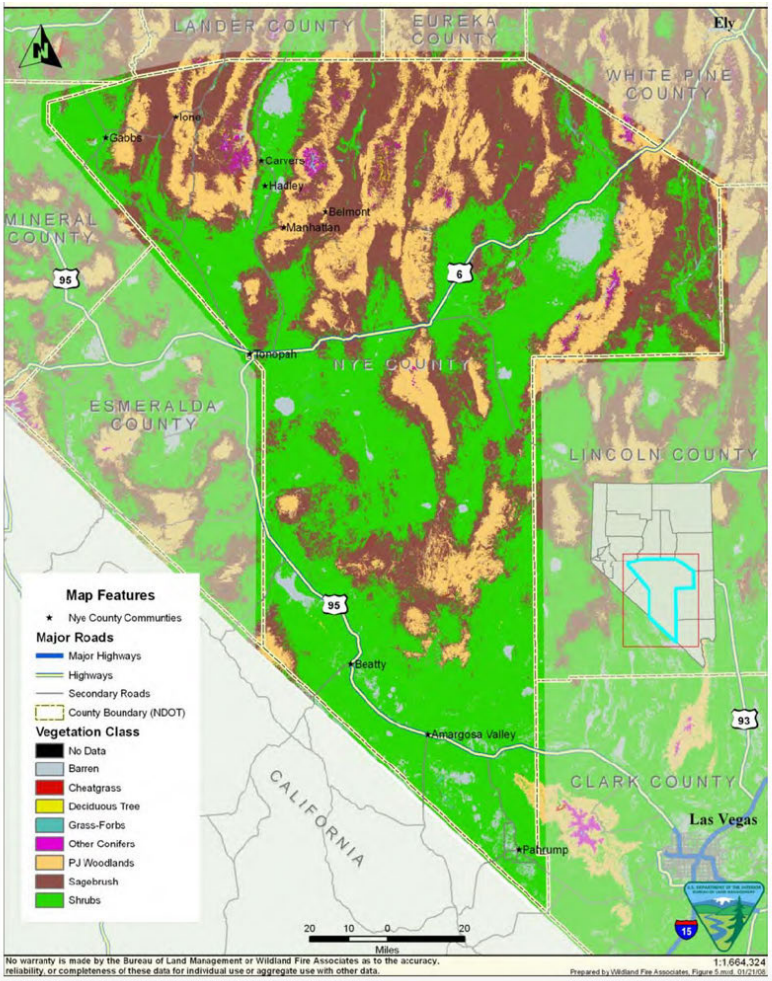
The principal geologic units in southern Big Smoky Valley are consolidated rocks (bedrock) and unconsolidated basin-fill deposits. Bedrock units include volcanic, sedimentary and granitic rocks which underlie the basin fill deposits and are exposed in mountains surrounding the valley. Unconsolidated basin fill material includes Quaternary playa, channel, and alluvial fan deposits. These unconsolidated deposits of gravel, sand, silt, and clay lenses can be up to 5,000 feet thick in the Tonopah Flat Subarea.

The Quaternary basin fill deposits consist of inter-bedded playa, distal fluvial, aeolian sands, and alluvial fan sediments. The alluvial fan deposits occur along the flanks of the valley and are composed of sediments eroded from the bedrock terranes of the local mountain ranges. The fans deposits generally become finer grained away from the mountain fronts toward the valley floor. The surficial playa lake deposits occur within the center and relatively flat regions of the valley. However, relatively older subsurface playa deposits occur at depth beneath older alluvial fan deposits toward the mountain fronts.

Many of the Basin and Range Geomorphic Province (BRGP) valley sinks contained lakes during the glacial maximums of the Pleistocene (Morrison, 1991; Reheis, 1999; Reheis et. al., 2007). Typical pluvial deposits likely occur within the Tonopah Flat region further toward the center of the valley where the ancient lakes would have been deeper (Briggs, et. al, 2005; Morrison, 1991; Dohrenwend, 1991). The principal structural features of the basin are surface contours of the bounding consolidated rock that may provide conduits or obstructions to groundwater flow. In addition, mountain range bounding faults that generally occur near the edge of the valley sediments and the mountain fronts may provide obstructions to groundwater flow.

e. Vegetation & Wildlife Resources

The 9 vegetative zones pictured below occur in the closest neighboring county and are listed with typical species in order of ascending elevation. Sagebrush and Pygmy Conifer are the most widespread zones, and Alpine and Absolute Desert are the least common zones (Charlet 2007).



As of June 18, 2007 the State of Nevada listed 17 animal and plant species as threatened under the federal Endangered Species Act (ESA) of 1973 (Natural Heritage Program 2007). The vast majority of the species are associated with springs or other water bodies which are not located on the project site.

f. Socioeconomic Conditions

The U.S. Census Bureau listed the State of Nevada as the fastest-growing state, until 2006, for 19 consecutive years. The county's largest population center is Pahrump with an estimated population of 36,645 (NSBDC 2007). Pahrump has grown at a tremendous rate since the mid-1990s, and accounts for most of the population increase within the county.

The Nevada Commission of Economic Development lists Bechtel Nevada Corp. and Round Mountain Gold Corp. as 2 of the largest employers in the County (EDEN 2007). Agriculture is also an important industry in the State of Nevada. Nye County realizes the importance of farming and ranching to its economy. Livestock production and dairy operations are important components of the local economy. As of the 2002 agricultural census, which is taken every 5 years by the U.S. Department of Agriculture, the county had 172 farms with total cropland acreage of 41,208. The main crop produced by Nye County farms is hay (EDEN 2007).

The project location takes place in Esmerelda County Esmeralda County's largest population center is Goldfield with an estimated population of 415 in 2008. The population and growth percentages displayed below represent the county as a whole, as well as two of the highest population centers within the county.

Race, Gender, Education

RACE	
White Not of Hispanic Origin	83.1%
Black Not of Hispanic Origin	0.1%
American Indian, Eskimo, etc.	4.6%
Asian or Pacific Islander	0.4%
Hispanic Origin of Any Race	11.8%
GENDER	
Females	45.2%
Males	54.8%
EDUCATION	
Less than 9th Grade	6.9%
9th to 12th Grade, No Diploma	14.2%
High School Graduate	44.3%
Some College, No Degree	18.0%
Associate Degree	7.0%
Bachelor's Degree	8.0%
Graduate Professional Degree	1.5%

The project neighbors Nye County which was established in 1864 and is rural in nature. The majority of the population resides in Amargosa Valley, Beatty, Gabbs, Pahrump, Round Mountain, and Tonopah. Small communities associated with isolated ranching operations are scattered throughout the county providing homes for the remaining population. The county encompasses an 18,147 square mile land area in south and central Nevada, making it the largest county in the state, and the third-largest in the continental United States.

Table 2. Population – Nye County (2001 – 2006)

2001	2002	2003	2004	2005	2006
34,384	35,039	36,651	38,181	41,305	44,795

Source: Nevada State Demographer (2006)

The county seat is located in Tonopah, and the largest town is Pahrump, 63 miles west of Las Vegas. The county government is comprised of a board of county commissioners. Of the approximately 11.6 million acres within the county, 98% of the land is owned by the federal government. The Bureau of Land Management (BLM) manages 6.5 million acres and the US Forest Service (USFS) manages slightly less than 2 million acres. Other significant public lands include those retained by the Department of Defense (DOD) and Department of Energy (DOE) for use for essential government purposes; Yomba Shoshone Tribal Lands (BIA/Tribal) and Berlin-Ichthyosaur State Park located in the northwest corner of the county; Duckwater Indian Reservation (BIA/Tribal), a portion of Death Valley National Park (NPS) that extends into the county; and the US Fish and Wildlife Service (USFWS) administered Ash Meadows NWR.

Tonopah is the closest city to the proposed project. With 2,192 people, Tonopah is the 44th most populated city in the state of Nevada out of 124 cities. The largest Tonopah racial/ethnic groups are White (70.2%) followed by Black (14.4%) and Hispanic (11.9%). In 2020, the median household income of Tonopah households was $31,607 while the median age for residents is 50.6 years young.

g. Historic/Cultural Resources

There are no historic/cultural resources located on the proposed project site. Though below is an overview for Nye County.

Intrastate and interstate high-voltage transmission lines and local electrical distribution lines, microwave towers and other electronics-related equipment, major transportation corridors (US 6, US 95, SR 726), mining operations and mining air ventilating systems, ranches and other agriculturally related sites, parks, historic sites and structures, oil production facilities, airstrips, a state honor camp and other federal, state, and tribal administrative sites are examples of the tangible values found in the county.

There are 55 sites listed on the National Register of Historical Places for Nye County.

Of these, 44 are located within Tonopah. The Nevada State Register of Historical Places lists 8 of these sites on their registry for Nye County. The sites listed on both the federal and the state registers reflect this region's turn of the century mining history and include sites such as Board and Batten Miners Cabin, Brann Boarding House, Brokers Exchange, several row houses, and the Tonopah Mining Company House. Historic districts, historic buildings, and cultural resources on the National Register of Historical Places and the State Register of Historic Places located in the wildland-urban interface and remote sites that could be negatively impacted by

Table 3. Historical Places at Risk, Rural Nye County

Name	Location	Type
44 sites	Tonopah	Buildings
Belmont Historic District	46 miles NE of Tonopah, off Nevada 82	District
Berlin Historic District	Off Nevada 23	District
El Rancho Gardens	3461A/B N. Barney Street, Pahrump	Building
Gatecliff Rockshelter	SE of Austin	Site
James Wild Horse Trap	About 5 miles east of Fish Springs Site	Site
Manhattan School	Gold Avenue, Manhattan	Building
Mizpah Mine	Tonopah	Site
Sedan Crater	Area 10, Nevada Test Site, Mercury	Site
Tom Kelly Bottle House	Chico Street, Rhyolite	Building
Tybo Charcoal Ovens	About 55 miles NE of Tonopah, off U.S. 6	Structures
William H. Berg House	Round Mountain	Structure

Source: National Register of Historic Places and Nevada State Register of Historic Places

h. Visual Resources

No visual resources are currently present on the project site.

i. Health and Safety Factors

There are no current health and safety factors on the project site.

B. ENVIRONMENTAL IMPACTS OF THE WORK TO BE PERFORMED

ABTC is committed to minimizing the project's potential negative impacts on the environment and communities throughout the design, planning, construction, and operation.

Each section below utilizes a matrix to describe the potential impact per category utilizing a rubric to determine how impactful an activity or action may be. An impact may be deemed as Less Significant (LS), Moderately Significant (MS), or Potentially Significant (LS) if more information is needed.

1. Land Use

Impact Name	Impact Description	Level of Significance	Mitigation Measures
Land change & Ecosystem Disruption	The undisturbed parcel of land will be developed for site construction and installation.	[redacted]	(b) (4) [redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
Light Pollution	Construction equipment and facility equipment will generate light pollution at the facility.	LS	Installation of smart sensor lighting technology, low-beam protocols for construction equipment/facility equipment.

2. **Atmospheric Conditions / Air Quality**

Impact Name	Impact Description	Level of Significance	Estimated Emissions (MTCO2E per year)	Mitigation Measures
Existing air pollution sources	Inhalable particles (PM_{10})	PS	5	Conduct analysis to determine baseline measurements; Prepare and implement a dust abatement

				and control plan.
Construction-related air pollutants	Vehicle/equipment-generated particulates, CO2	(b) (4) [redacted]	[redacted]	No plan needed
Operational Emissions	(b) (4) [redacted]	[redacted]	[redacted]	Prepare and implement an air quality and monitoring program.

3. **Hydrologic Conditions/Water Quality**

Impact Name	**Impact Description**	**Level of Significance**	**Mitigation Measures**
Alteration of Drainage Patterns	Alterations of surface drainage patterns that result in increased erosion or siltation.	LTS/MS	Prepare and implement a stormwater control plan; prepare and implement operation and maintenance plan for stormwater control measures; enter into maintenance agreement for stormwater control measures
Stormwater Runoff & Drainage Infrastructure	Result in increased stormwater runoff due to an increase in impervious surfaces and topographic alterations resulting in drainage or flooding impacts	LTS/MS	Prepare and implement a stormwater control plan; prepare and implement operation and maintenance plan for stormwater control measures; enter into maintenance agreement for stormwater control measures
Water Quality	Degrade surface water quality during construction and from operation	LTS/MS	Prepare and implement a stormwater control plan; prepare and implement operation and maintenance plan for stormwater control measures; enter into maintenance agreement

			for stormwater control measures
Groundwater Supply	Substantially Deplete Groundwater Supplies or Interfere with Groundwater Recharge	MS/PS	Prepare and implement a stormwater control plan; prepare and implement operation and maintenance plan for stormwater control measures; enter into maintenance agreement for stormwater control measures; implement a spill prevention and control program; implement measures to maintain surface water or groundwater quality; prepare and implement an erosion and sediment control plan
Risk of Flooding	Place structures within 100-year flood hazard area	LS	No plan needed

4. Geologic/Soil Conditions

Impact Name	Impact Description	Level of Significance	Mitigation Measures
Soil Compaction/Impact	The use of construction equipment and the grading of the site may reduce soil permeability and filtration.	PS	The creation of a geologic mitigation plan will include smart routing to minimize impact of construction equipment on soil; site design will maximize retention of soil permeability.
Soil Health & Toxicity	Change of habitat and discharge of emissions/effluent streams may impact overall soil health.	PS	

5. **Vegetation & Wildlife Resources**

Impact Name	Impact Description	Level of Significance	Mitigation Measures
Habitat Disruption	During construction, local flora and fauna will be removed.	MS	ABTC recognizes its obligation to comply with the Migratory Bird Treaty Act, Endangered Species Act, and the need to go to all lengths to avoid disturbing special status species during project construction and operations.

6. **Socioeconomic Conditions**

Impact Name	Impact Description	Level of Significance	Mitigation Measures
Labor Demand, Construction	The project will require local construction labor.	NS	ABTC has secured support from existing EPCs and local labor organizations.
Labor Demand, Facility Operations	The project will require approximately 50 FTE for operational support.	PS	Engage with local labor institutions, universities, and training programs to increase the availability of specialized labor.

Please also refer to the DEI portion of ABTC's submission for more information regarding the potential impact on socioeconomic conditions.

7. **Historic/Cultural Resources**

Impact Name	Impact Description	Level of Significance	Mitigation Measures
Sensitive Site Discovery	Discovery of an archeological site and/or interference with Native American tribal or other religious practices or sites during construction.	PS	Conduct analysis and advanced imagery to better determine the potential of such discovery; implement a discovery action plan prior to commencing construction to mitigate damage in the event of discovery.

8. **Visual Resources**

Impact Name	Impact Description	Level of Significance	Mitigation Measures
Temporary disruption of natural scenery and vistas	Construction activities may produce plumes of dust/smoke.	NS	The determination of construction hours of operation will take into account and maximize for the local community's enjoyment of any vista that may be impaired.
Permanent disruption of natural scenery and vistas	Site installation will create permanent visual change over landscape.	PS	Minimizing the visual impact of design will be an important criterion in the design phase; complete visual simulations from areas of interest to inform design.

9. **Health and Safety Factors**

Impact Name	Impact Description	Level of Significance	Mitigation Measures
Creation of Occupational Hazards	Throughout construction and project operation, workers will be subject to occupational hazards.	MS	ABTC and project partners have established environmental health and safety plans; robust security will be installed to prevent intrusion by the public.
Increased ambient conditions.	The project's ongoing operations will increase ambient heat, noise, light and odor.	MS	Proactively design to reduce ambient conditions wherever possible; conduct ongoing and rigorous monitoring to better inform implementation of mitigation efforts; implement mitigation processes and technologies wherever possible.

10. **Solid and Hazardous Wastes**

Impact Name	Impact Description	Level of Significance	Mitigation Measures

Solid Waste Generation	All activities of the project will create byproducts.	PS	ABTC and project partners have developed a zero-waste action plan that will be implemented at each stage of the project; it is not anticipated that the project will produce hazardous waste streams.

Type of Solid Waste Generated	Approximate Volume (MT/Y)	Disposal Technique
(b) (4) [redacted]	[redacted]	[redacted]

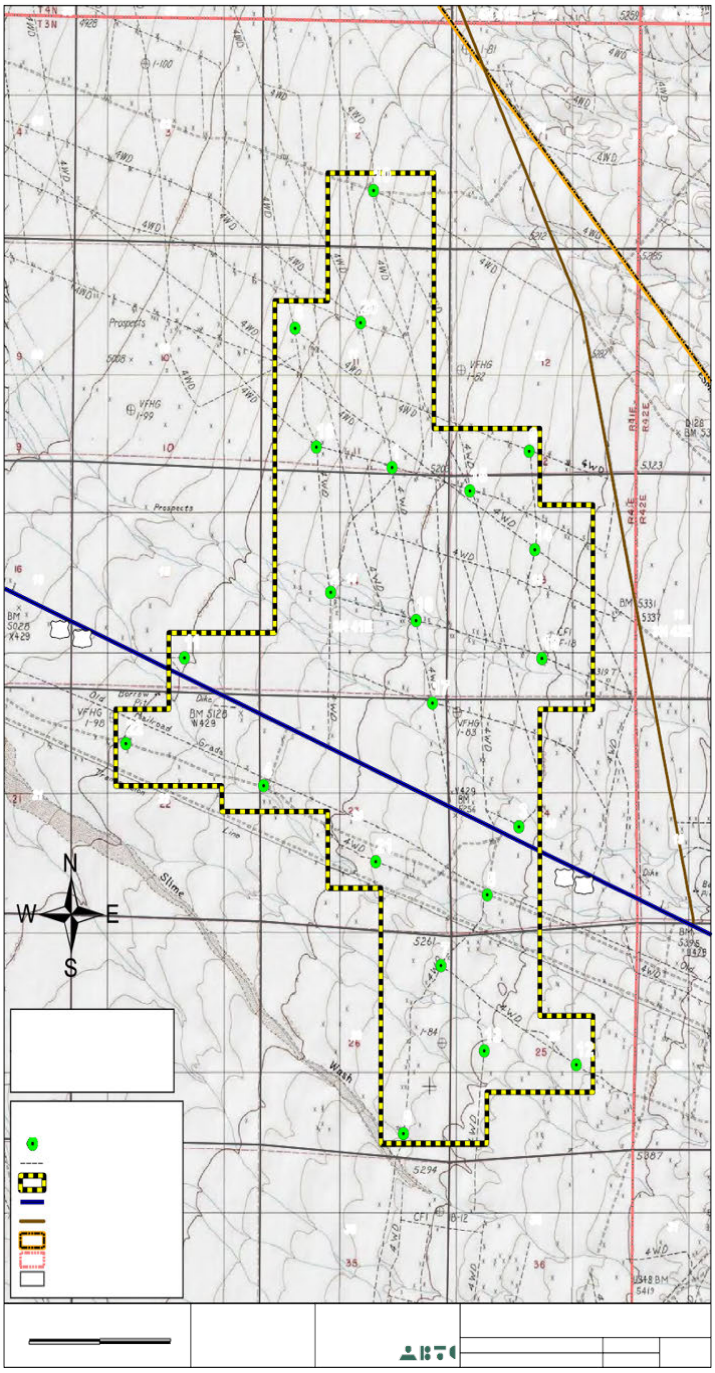
11. Impact on Regional or Local Plans

Impact Name	Impact Description	Level of Significance	Mitigation Measures
Construction & Operational Draw on Resources	Population growth due to construction and operation	PS	Work with state and local economic development groups; ABTC will be active in promoting the economic and infrastructure development of the surrounding areas.

C. POTENTIAL LIABILITY TO DOE OF EXISTING CONDITIONS AT THE SITE(S)

American Battery Technology Company owns or controls mining claims on public lands administered by the BLM in the project area. Claim ownership and a list of the mining claims affected by this Notice are shown in the image below.

Prior to this work, exploration activities have been undertaken by previous operators in this area. Remnant roads from prior operators remain and are drivable in the project area.



D. EXPERIENCE AND APPROACH TO THE IDENTIFICATION AND RESOLUTION OF ENVIRONMENTAL ISSUES

ABTC has developed a set of standard operating procedures to ensure proper environmental protection and reclamation.

Air Quality

Roads will be watered as necessary to control fugitive dust. Vehicular traffic will be minimized, and prudent speeds observed to minimize fugitive dust emissions, protect wildlife and livestock, and maintain operational safety. Vehicles associated with the

exploration program will maintain a safe and appropriate speed limit for existing road conditions.

Cultural Resources

While conducting the exploration program, in accordance with 43 CFR § 3809.420 (b)(8), ABTC will not knowingly disturb, alter, injure, or destroy any scientifically important paleontological remains or any historical or archaeological site, structure, building or object on Federal lands.

ABTC shall immediately bring to the attention of the authorized officer any cultural and/or paleontological resources that might be altered or destroyed on Federal lands by our operations and shall leave such discovery intact until told to proceed by the authorized officer. The authorized officer shall evaluate the discoveries brought to his/her attention, act to protect or remove the resource, and allow operations to proceed within 10 working days after notification to the authorized officer of such discovery.

ABTC will not remove, disturb, alter, injure, or destroy any historical or archaeological site, structure, building, object, or artifact that meets criteria for listing on the National Register of Historic Places or has not been evaluated for National Register eligibility. ABTC will be responsible for ensuring that employees, contractors, or any others associated with the Exploration Project do not damage, destroy, or vandalize archaeological or historical sites. Should damage to cultural resources within or near the Exploration Project occur during the period of construction, operation, or rehabilitation due to the unauthorized, negligent, or inadvertent actions of ABTC or other Exploration Project personnel, ABTC will be responsible for costs of rehabilitation or mitigation. Individuals involved in illegal activities could be subject to penalties under the Archaeological Resources Protection Act (16 U.S.C. 470ii), the Federal Land Management Policy Act (43 U.S.C. 1701), the Native American Graves and Repatriation Act (16 U.S.C. 1170) and other applicable statues.

If human remains/burials or any previously unidentified cultural (archaeological or historical) resources are discovered during the conduction of activities under the approved Plan, ABTC will immediately cease activities within 100 feet of the discovery, ensure that the discovery is appropriately protected, and immediately notify the BLM Authorized Officer by telephone, followed with written confirmation. Work will not resume, and the discovery will be protected until notified in writing by the BLM Authorized Officer that compliance with the provisions for mitigating unforesee impacts as required by 43 CFR § 3809 and additional consultation per 36 CFR § 800.13.b.3 have been satisfied.

Employee Training

ABTC will train employees, contractors, and other related personnel as to the environmental and cultural resources responsibilities required under this Notice as well as state and federal law.

Fire Protection

ABTC will comply with applicable agency and State fire laws and regulations. Reasonable measures to prevent and suppress fires within the Project boundaries will be taken by employees, contractors, and subcontractors. No open fires will be allowed within the Exploration Project Area during the Project.

Smoking will only be permitted in areas that are free of flammable materials and only if allowed by state law or federal regulations. If smoking is allowed, smokers will position themselves in such a manner that burning material will fall within cleared areas. Smoking materials will be extinguished by pressing said materials into mineral soils. When completely extinguished, debris associated with smoking will then be put into containers designed solely for this purpose and properly disposed.

Vehicles and equipment operated on public and private lands and roads will meet proper wildfire preparedness requirements including, but not limited to, being equipped with approved spark arrestors, fire suppression tools, and other appropriate supplies. Power equipment will be equipped with fire extinguishers, buckets, and shovels during the exploration program.

An effective communications network consisting of radios and/or cellular telephones will be in place. Crew vehicles and equipment will be equipped with radios and/or cellular telephones for fire preparedness and prevention, suppression operations, and emergency purposes. Crew vehicles and equipment will also be equipped with an emergency communication list that will include numbers for the administering agency emergency contact.

Solid Waste and Hazardous Substances

Non-hazardous exploration project-related refuse will be collected in approved trash bins and/or containers and hauled from the site by ABTC or their contractors for disposal at an approved landfill on a regular basis. The bins and/or containers will be equipped with weighted lids. Debris that may have a hazardous characteristic, residue, or fluids will not be disposed of in these trash bins. To minimize impacts during precipitation events, trash bins will be regularly inspected for leaks and the weighted lids will remain closed except when depositing debris. The trash bins will not contain materials that may attract wildlife (food items, etc.) and will be emptied on a regular basis.

Hazardous substances employed for the Exploration Project will include diesel fuel, gasoline, hydraulic fluid, and lubricating grease. Approximately 300 gallons of diesel fuel and gasoline will be stored in fuel delivery systems on drill rigs and support vehicles. Approximately 50 pounds of lubricating grease and 35 gallons of hydraulic fluid will be stored on each drill rig or transported by drill trucks. Transportation of these materials will be conducted in accordance with applicable regulatory guidelines.

Surface and Ground Water Erosion Prevention and Control

ABTC will conduct exploration operations to minimize soil erosion. Equipment will not be operated when ground conditions are such that excessive resource damage or increased sediment transport will occur. Best management practices (BMPs) will be utilized to control

erosion and sedimentation. BMPs for sediment control will be employed as needed during construction, operation, and reclamation to minimize sedimentation of disturbed areas. Sediment control structures would include, but not be limited to, fabric and/or certified weed free straw bale filter fences, siltation or filter berms, mud sumps, and down gradient drainage channels to prevent unnecessary or undue degradation to the environment. Sediment traps (sumps), constructed as necessary adjacent to drill sites, will be used to settle drill cuttings, and prevent uncontrolled release of drill cuttings in produced groundwater. To control erosion from roads and drill sites, and from the unlikely event of drilling cuttings being released, certified weed-free straw bales and silt fences will be placed in drainages to capture sediment, where required.

Stormwater Control

Sediment controls, such as certified weed-free hay bales, filter fences, or other controls would be implemented, as necessary.

While not anticipated due to the environment and generally flat terrain, drainage structures would be constructed or installed where necessary to prevent or minimize erosion and sedimentation. Drainage structures would consist of, but not be limited to, water bars, borrow ditches, contour furrows, and culverts sized to handle maximum seasonal water flows.

Disturbed areas would be broadcast-seeded with an approved seed mix to minimize erosion immediately after construction. Once an area has been revegetated, notices and/or signs may be posted to allow vegetation to establish while reducing or restricting vehicular traffic.

Drilling Effluent and Cuttings Management

Drill cuttings (solids) and drilling fluid products used during drilling and abandonment operations will be contained and deposited in sumps to ensure environmental protection. If produced groundwater is discharged from the sumps, drilling fluids and solids will be allowed to settle prior to discharge. Discharge rates will not exceed the threshold volume (250 gpm) and time (48 hours) requiring a discharge permit from the State of Nevada.

Sumps for drill water, fluids, and cuttings will be excavated within the limit of the drill site using a backhoe. Anticipated sump dimensions will be about ten (10) feet long by ten (10) feet wide by six (6) feet deep each, sufficient to hold up to 4,650 gallons each of produced groundwater used in the drilling process. Sumps will be fenced with plastic mesh barrier safety fence or equivalent and one end of each sump will be sloped to provide escape routes for wildlife or other animals.

Sumps will be backfilled after completion of drilling. If mud tanks are cleaned at the site, the contents will be contained in the sump and covered with backfilled soil materials.

Drill Hole Abandonment

Drill holes will be plugged in accordance with Nevada State and administering agency standards and will be consistent with the definitions in NRS and NAC 534 for abandonment.

Each exploration drill hole will be abandoned before the rig moves from each drill site.

Upon completion of drilling operations, a bentonite and freshwater slurry or neat cement grout that is specifically formulated for well or drill hole abandonment will be placed through the drill pipe and circulated from the bottom of the drill hole in a manner that assures against the vertical movement of groundwater found in the drill hole. This will include the annular space surrounding any casing left down the hole.

If circulation from the bottom is not possible, abandonment slurry or grout will be mixed at the surface, circulated through the drill pipe from the bottom of the drill hole under pressure and placed in stages as the drill pipe is retrieved from the drill hole. A cement surface plug will be placed within the top twenty feet (20) of each drill hole.

Portland cement mixed with clean water and aggregates, or bagged cement mixed with clean water, will be used for the surface plug. Remaining surface casing will be removed below the ground surface in a manner that will not interfere with reclamation requirements. The annulus of any casing left down hole will be sealed in a manner that assures against the movement of surface water down the drill hole.

The top of the surface plug will be below the ground surface to eliminate physical hazards to humans and wild or domestic animals as well as to prevent ponding of water directly over the drill hole, allow for placement of growth media, and allow for passage of earthmoving equipment required for reclamation operations.

Survey Monuments

During its exploration activities, ABTC will not tamper with or destroy any existing survey monuments according to § 3809.420 (b) (9).

Wildlife Resources

ABTC understands its obligation to comply with the Migratory Bird Treaty Act, Endangered Species Act, and the need to avoid disturbing special status species during the conduct of the proposed exploration operations.

ABTC will not knowingly disturb nesting migratory and other game birds, including sage grouse. ABTC will take all available measures during operations to ensure nesting birds and other special status wildlife are not disturbed, whether through spatial avoidance or timing of exploration activities. Sumps and other small excavations that pose a hazard or nuisance to the public, wildlife, or livestock will be adequately fenced on three (3) sides, then backfilled or covered within 30 days of completion of drilling to preclude access by wildlife and livestock.

Reclamation Plan

Reclamation of disturbed areas resulting from activities outlined in this Notice will be completed in accordance with Federal 43 CFR § 3809 and State of Nevada NAC 519A regulations and requirements. Appendix B contains a cost estimate of the proposed reclamation activities.

Proposed Activities for Reclamation

Re-contouring, Seedbed Preparation, and Seeding

A CAT 325C, Bobcat skid-steer loader, or similar equipment will be used to complete sump backfilling, drill site recontouring, and cross-hatched scarifying of disturbances. Generally, the final surface of drill sites, backfilled sumps, and scarified disturbances will be left in rough condition to hold seed and to optimize germination. Reclaimed areas will be broadcast seeded with an approved seed mix and scarified where accessible with the use of chain drags, harrows, or similar implements. Seeding will be completed at the appropriate time of year as advised by BLM staff.

Currently, ABTC does not propose to utilize fertilizer or mulch. Final revegetation will be consistent with the post-exploration land uses of grazing, wildlife habitat, and recreation.

ABTC will monitor revegetation success and the presence of noxious weeds on an annual basis until release. Weed control will be performed by ABTC during the appropriate season to eradicate infestations of noxious weeds, if necessary.

Measures Used to Minimize Loading of Sediment

Reclamation operations will be implemented when ABTC determines that a drill road or drill site is no longer needed or no later than 24 months from the start of the drill hole. Regraded slope angle, revegetation (including growth media placement), and BMPs will be used to limit erosion and reduce sediment in runoff. Silt fences, sediment traps, or other BMPs will be used to prevent migration of eroded material until reclaimed slopes and exposed surfaces have demonstrated erosional stability.

Schedule for the Project and Reclamation

Drilling success will determine the reclamation schedule. All disturbances will be reclaimed at the earliest opportunity, typically immediately after drilling.

Earthwork and revegetation activities are limited by the time of year during which such activities can be effectively implemented. Site conditions and/or yearly climatic variations may require that this schedule be modified to achieve revegetation success. Reclamation activities will be coordinated with the administering agency, as necessary. Monitoring of revegetation success will be conducted annually for a minimum of three (3) years or until revegetation standards have been met.

Drill Hole Abandonment Procedures

Exploration drill holes will be abandoned in accordance with appropriate agency and State of Nevada regulations as described above. A drill rig with appropriate support equipment will be used to abandon the drill holes before the drill rig leaves the drill site.

Monitoring

Post-closure management will commence on reclaimed areas following completion of the reclamation work for the area. The BLM will be notified before the commencement of final reclamation work. Monitoring of revegetation success will be conducted annually for a minimum of three years or until revegetation standards have been met as determined by BLM. Revegetation monitoring will occur based on seasonal growth patterns, precipitation, and weather conditions.

Measures to be Taken During Extended Periods of Non-Operation

Only those drill roads and drill sites needed for future exploration will remain open. Interim stabilization measures will be taken as necessary to control erosion at these sites.

DOE F 540
(04-2017)

OMB Number 1910-5175
Exp. 11/30/2020

OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY

ENVIRONMENTAL QUESTIONNAIRE

SECTION I. PROJECT SUMMARY	
Control Number:	2678-1855
Project Title:	Large-Scale Demonstration of Domestic Manufacturing of Low-Cost and Low-Environmental Impact Battery-grade Lithium Hydroxide from Unconventional Domestic Sedimentary Resources
Applicant:	American Battery Technology Company
Other Participants (Subrecipients, Contractors, etc.):	DuPont, University of Nevada, Reno, Argonne National Laboratory
FOA Number:	DE-FOA-0002678
FOA Title: Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing .	

SECTION II. BACKGROUND AND INSTRUCTIONS

Pursuant to the U.S. Department of Energy's National Environmental Policy Act (NEPA) implementing regulations (10 C.F.R. Part 1021), the Office of Energy Efficiency and Renewable Energy (EERE) is required to evaluate the potential environmental impact of projects that it is considering for funding. EERE must determine at the earliest possible time whether any proposed project qualifies for a categorical exclusion under 10 C.F.R.§ 1021.410 or will require further environmental review within an environmental assessment or an environmental impact statement.

You are required to answer the questions below for the project as a whole, including all work to be performed by the Recipient, its subrecipients and contractors, including any work outside of the United States. You may not limit your responses to work performed by the Recipient only unless instructed to do so by EERE. In completing this questionnaire, you must provide specific information regarding the nature of your proposed project, including information on its size, operations, and the types and quantities of air emissions, wastewater discharges, solid wastes, land disturbances, etc. You should identify the location(s) of the proposed project and describe the activities that would occur at each location.

The form should be completed and signed by the Principal Investigator for the project or another member of your organization who has sufficient knowledge of the project to answer the questions truthfully and accurately.

Failure to fully and adequately complete this form will delay EERE's environmental review of your proposed project. Please note that false statements or misrepresentations may result in civil and/or criminal penalties under 18 U.S.C. § 1001.

BURDEN DISCLOSURE STATEMENT
Public reporting burden for this collection of information is estimated to average 60 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Office of Information Resources Management Policy, Plans, and Oversight, AD-241-2-GTN, Paperwork Reduction Project (1910-1800), U.S. Department of Energy, 1000 Independence Avenue S.W., Washington, D.C. 20585; and to the Office of Management and Budget (OMB), Paperwork Reduction Project (1910-1800), Washington, D.C. 20503.

SECTION III. PROJECT EVALUATION

1a. In the box below, please provide a brief summary of the proposed project activities. Describe physical activities, not goals and objectives. Specify if this project is part of a larger project or connected to another project.

Example: The proposed project activities include the design, development, fabrication, and field testing of advanced biomass harvesting equipment. Design, development, and fabrication activities would occur at our research and development facility adjacent to our manufacturing plant in Dearborn, Michigan. Equipment testing would occur in various agricultural fields in the surrounding area over a two-year period.

Explanation:
The proposed project activites include the design, construction, commissioning, and demonstrated operation of a commercial-scale facility to manufacture lithium hydroxide from claystone resources. The design activities will take place at our head quarters and laboratory facilities located in Reno, NV. The construction of the commercial plant will take place in Tonopah, NV.

1b. Is there other Federal government involvement outside of EERE in any aspect of this project (e.g., funding, permitting, technical assistance, project located on Federally administered land)?

Yes ☒ | **No** ☐

If you checked "Yes," please list the agency, describe the nature of its involvement, and provide a point of contact at the agency, if known.

Explanation:

(b) (4) [redacted]

1c. Is the proposed project limited exclusively to intellectual, academic, or analytical activities?

Intellectual, academic, and analytical activities include, but are not limited to:

- Literature searches and information gathering
- Data analysis
- Computer modeling
- Analytical reviews
- Conceptual design
- Feasibility studies
- Document preparation
- Data dissemination
- Paper studies

You must answer "No" to this question if the proposed project involves any laboratory research and/or development, physical experiments, pilot-scale projects, demonstration projects, field tests, land-disturbance, construction, or similar activities.

Yes ☐ | **No** ■

If you checked "Yes," proceed directly to Section IV (Certification) and complete the information and signatures as requested. If you checkned "NO" you must complete the entire questionnaire.

Explanation:

If you checked "Yes," proceed directly to Section IV (Certification) and complete the information and signatures as requested. If you checked "No," you must complete the entire questionnaire.

2a. Is the project fully defined at this point (i.e., all sites and activities are known)?

Yes ☒ | **No** ☐

If you checked "No," please describe those sites and/or activities/tasks that are yet to be defined and complete the remainder of the questionnaire to the best of your knowledge.

Explanation:

2b. In the chart below, please describe the following four types of identifying information concerning project activities to be performed:

(1) each location where work would be performed, including address or coordinates, names of facilities, and whether this is a Recipient, Subrecipient, or Contractor location;
(2) the nature of the location (e.g., urban, industrial, suburban, agricultural, university campus, manufacturing facility) and the current condition and/or use of the site;
(3) the types of activities to be conducted at that location;
(4) land administration (e.g., BLM, USFWS, DOD, state, private).

(1) ***List all Locations Where Project Activities Would Occur (Facility Name and Address or Coordinates) and Indicate Recipient, Subrecipient, or***	*(2)* ***Nature of Location and***	*(3)*	*(4)* ***Land***
(b) (4)			
Smith Laboratory (recipient) 1234 College Lane Baltimore, MD XYZ Corporation (subrecipient) 1232 Industrial Drive Golden, CO	Smith Laboratory – Dedicated University Laboratory Facility XYZ Corporation – Manufacturing Facility in Industrial Park	Activities would include design and fabrication of a gallium-nitrate battery at XYZ Corporation's battery manufacturing facility using existing equipment. The battery would then undergo testing including battery charge/discharge cycling at Smith Laboratory. Data analysis would also occur at Smith Laboratory.	Smith Laboratory – State property XYZ Corporation – Private property
Example 2: Capital High School (recipient) 1234 Eagle Lane Golden, CO	High school property in a suburban environment that has been previously disturbed and is owned by the City.	Activities would include the installation of a 50 kW wind turbine adjacent to the football stadium. The final height for the turbine would not exceed 140 feet (hub height) or 170.6 feet (maximum blade height) with a blade radius of 31.5 feet. There is an airport 15 miles away from project site location.	City

2c. In the box below, please identify and describe: (1) any known or potential health and safety hazards to the public or project workers that may result from or are associated with your proposed project; and (2) any efforts that would be taken to mitigate these hazards. <u>Describe individually for each site discussed in Question 2b.</u>

Example (Hazards): The project would involve the use and handling of various hazardous materials, including metals and industrial solvents. All such handling would occur in-lab, and our organization is dedicated to proper hazardous material handling and disposal practices, so the project activities that involve these materials would pose no risk to the public. All hazardous materials would be managed in accordance with Federal, state, and local environmental regulations.

Example (Mitigation): Existing corporate health and safety policies and procedures would be followed, including employee training, proper protective equipment, engineering controls, monitoring, and internal assessments. Additional policies and procedures would be implemented as necessary as new health and safety risks are identified. This would help ensure compliance with applicable health and safety regulations, and minimize health and safety risks to employees and the public.

Explanation:
The project would involve the use and handling of various hazardous materials, including chemicals. All such handeling would occur in a controlled environemnt dedicated to hazardous material handling and proper disposal practices such that no risk to the public would be involved. All hazardous materials would be managed in accordance with Federal, state, and local environmental regulations. To mitigate hazards associated with this work, standard operating procedures have been developed. Existing health and safety policies and practices will be implemented. If new risks are identified, additional policies and procedures will be implemented as necessary. Yearly safety training and monthly lab safety checks will be carried out.
All lab personnel working on the project will be required go through lab safety training. This will help minimize risk to employees and the public.

2d. In the box below, please identify and describe any of the following that would be associated with the proposed project. <u>Describe individually for each site discussed in Question 2b.</u>

(1) any physical modification of existing facilities or construction of new facilities (this does NOT include modification to equipment, only facilities);
(2) ground disturbing activities;
(3) any change in the use, mission, or operation of existing facilities;
(4) installation or deployment of equipment outdoors including the area of disturbance, what currently exists at the site, the dimensions of the installation, any associated infrastructure, etc.

Example 1: Physical modification of existing facilities and ground disturbing activities -To accommodate testing facilities necessary for the project, the current testing facility would have to be expanded by approximately 4,500 square feet.

Example 2: Change in use of existing facility - A room within our facility that has served as a dedicated wind tunnel would be modified to serve as an environmental test chamber. This would require the adaptation of the chamber's construction to partition off part of the room and seal it to allow generated environmental fluctuations within.

Example 3: Installation of equipment outdoors and ground disturbing activities - The proposed turbine location is on school property located in a previously disturbed area south of the existing school building and near the high school athletic facilities and fields. East of the school are two golf courses; south and north are single family residential neighborhoods; and to the west are two public park properties. There are wooded areas located on the school property to the south and west. The foundation of the wind turbine would be approximately 25 square feet with an additional 5 square feet of disturbance during construction. The foundation would be approximately 10-15 feet in depth. There would be a minor, temporary land disturbance adjacent to the proposed site for crane work and the tower staging area. Existing roads would be used to access the project location.

Explanation:

(b) (4) [redacted]

2e. In the box below, please identify and describe any existing, modifications to, or new permits, licenses, or authorizations that would be required to perform project activities (such as environmental permits, operating permits, or drilling permits). <u>Describe individually for each site discussed in Question 2b.</u>

Example 1: The project would generate small amounts of effluent waste which will be discharged into the Potomac River, requiring our organization to secure the requisite discharge permit pursuant to state and Federal regulations.

Example 2: The project activities would be conducted for the next three years. We would be required to replace our current solid waste disposal permit with an updated permit that may alter the nature of what and how we are permitted to dispose of solid waste.

Example 3: The project activities would take place in marine navigable waters and would require permits from the U.S. Coast Guard and the U.S. Army Corps of Engineers.

Explanation:
The project activities will involve the greenfield construction of a processing plant. Regulatory permits with the NDEQ and the EPA will have to be filed and approved.

2f. In the box below, please list the estimated quantities of materials to be used (e.g., feedstock, chemicals, water) and produced by the project (e.g., biofuel). <u>Describe individually for each site discussed in Question 2b.</u>

Explanation:
(b) (4) [redacted]

2g. In the box below, please quantify, to the extent possible, all emissions into the ambient air resulting from project activities. Indicate if the project site is within an attainment or non-attainment area. <u>Describe air emissions individually for each site discussed in Question 2b.</u>

Note: Potential emissions include, but are not limited to, greenhouse gas emissions, particulate matter, and airborne pollutants. Sources of emissions can include stationary sources, such as boilers, process heaters, generators, and/or solvent usage, or mobile sources such as vehicles. It is presumed that every project would result in some emissions being released into the ambient air, so applicants answering "none" must explain why no emissions would be released. Non-attainment areas are designated parts of the country where air pollution levels persistently exceed the national ambient air quality standards. See <u>42 U.S.C. 7501(2)</u>.

Explanation:
(b) (4) [redacted]

2h. In the box below, please describe: (1) all non-hazardous wastes that would be generated by the proposed project including recycled materials, and (2) the method of their disposal. Describe individually for each site discussed in Question 2b.

Note: It is presumed that every project would generate solid wastes, so applicants answering "none" must explain why no waste would be generated. Non-hazardous waste is any garbage, refuse or trash, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities. See 40 C.F.R. § 261.2.

Explanation:

(b) (4)

3. Is the proposed project near, or does it involve, any of the following resources? Please indicate below any and all resources that could be affected by any project activities. (See Attachment 1 to the Environmental Questionnaire for resource definitions.)

- ☐ a. Historical, archeological, or cultural resources (includes listed and eligible resources over 50 years old or of cultural significance)
- ☐ b. Threatened or endangered species (whether proposed or listed by state or Federal governments), including their habitat
- ☐ c. Marine mammals or essential fish habitat
- ☐ d. Floodplains or wetlands
- ☐ e. Tribal lands or resources of Tribal interest/sensitivity
- ☐ f. Ocean resources (e.g., coral reefs)
- ☐ g. Land resources (e.g., tundra, rainforests)
- ☐ h. Coastal zones
- ☐ i. Migratory birds, or Golden or Bald Eagles
- ☐ j. Areas having a special designation (e.g., Federal and state designated wilderness areas, national parks, national natural landmarks, wild and scenic rivers, state and Federal wildlife refuges, and marine sanctuaries)
- ☐ k. Prime farmland, unique farmland, or other farmland of statewide or local importance
- ☐ l. Special sources of water (e.g., sole source aquifers)

If you checked any boxes above, provide a detailed description of: (1) the resources that could be affected, and (2) how project activities may affect those resources.

Explanation:

4. Does the proposed project involve any of the following activities or areas of concern? Please indicate below any and all activities or areas of concern that exist in the vicinity of your project, are required for your project, or could affect your project. (See Attachment 1 for definitions of each activity or area of concern.)

- ☒ a. Clearing or excavation
- ☐ b. Dredge and/or fill
- ☐ c. Pre-existing contamination
- ☐ d. Pesticide use
- ☐ e. Asbestos or lead-based paint
- ☐ f. Polychlorinated biphenyls (PCBs)
- ☐ g. Navigable air space
- ☐ h. Underground storage tanks
- ☐ i. Underground extraction/injection
- ☐ j. Use of a non-renewable resource

If you checked any boxes above, provide a detailed description of: (1) each activity or area of concern, and (2) the effects of each activity or area of concern on your project and/or the surrounding area.

Explanation:
(1) Greenfield site preparation for construction of commerical facility. (2) Alteration of land to construct the processing facility.

5. Would the proposed project have the potential to result in impacts to the surrounding community? Please indicate below all areas of concern that exist in the vicinity of your project, are required for your project, or could affect your project.

- ☐ a. Visual impacts
- ☒ b. Populations of low income or minorities (Environmental Justice)
- ☒ c. Changes in local employment
- ☐ d. Changes in local traffic patterns or density
- ☐ e. New transportation access
- ☐ f. New utility lines or right-of-ways
- ☐ g. Other impacts

If you checked any boxes above, please provide a detailed description of: (1) the communities affected, and (2) what effects the project would have.

Explanation:
The project site is located in a rural area and in an Economic Development Zone. We have developed an Environmental Justice plan for the commissioning of this greenfield site. The town of Tonopah and surrouding communities will be affected by this project. There will be substantial economic growth to the area and town of Tonopah.

6. Would the proposed project use, result in, or require the management, storage, transport, or disposal of radioactive, toxic, or hazardous chemicals, waste, or other materials that require special handling?

Note: Hazardous chemicals and materials include those which, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may increase the risk of mortality or pose a substantial threat to human health or the environment when improperly stored, transported, disposed of, or otherwise managed.

Yes ☒ | **No** ☐

If you checked "Yes," please provide a detailed description of: (1) the materials; (2) approximate quantity of each; (3) their role in the project; and (4) storage, transport, and disposal procedures for each material.

(b) (4)

7. **Would the proposed project involve the use or development of recombinant DNA or genetically engineered microorganisms, plants, animals, or similar technologies?**

Yes ☐ | **No** ☒

If you checked "Yes," please provide a detailed description of: (1) the genetic modifications, (2) the safety procedures in place for their handling and use over the course of the project, and (3) how they would be disposed of at the project's conclusion.

Explanation:

8. Does the project involve the use of any nanoscale materials or nanotechnology?

Note: Nanotechnology is defined as research and technology development at the atomic, molecular, or macromolecular levels using a length scale of approximately one to one hundred nanometers in any dimension; the creation and use of structures, devices and systems that have novel properties and functions because of their small size; or the ability to control or manipulate matter on an atomic scale.

Yes ☐ | **No** ☒

If you checked "Yes," please describe: (1) the nanoscale materials used, (2) potential risks those materials may pose, and (3) how they would be disposed of.

Explanation:

9. Is there any public opposition concerning any of the project activities?

Yes ☐ | **No** ☒

If you checked "Yes," please describe the nature of the opposition and any actions you may have taken or plan to take to address it.

Explanation:

10. Would the project involve activities or deployments into marine/freshwater aquatic environments?

Yes ☐ | **No** ☒

If you checked "Yes," please provide a detailed description of: (1) the proposed activities or deployment, (2) where and when these activities would occur, and (3) what permit/authorizations have been or would be acquired for this activity.

Explanation:

11. Would the proposed project result in a discharge of any type of wastewater, pollutant, or contaminant, including thermal discharges, to a sewer system, stormwater system, soils, retention ponds, or any water resources (e.g., surface water, including lakes, rivers, creeks, and wetlands; and ground water)?

Note: Under Federal law, the term "pollutant" means dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. See 33 U.S.C. § 1362(6). The term "contaminant" means any physical, chemical, biological, or radiological substance or matter in water. See 42 U.S.C. § 300f(6).

Yes ☒ | **No** ☐

If you checked "Yes", please quantify and characterize the wastewater or pollutants and provide a detailed description of the: (1) wastewater, pollutants, or contaminants to be released; and (2) the water resources that may be affected.

(b) (4)

12. Would the proposed project have the potential to generate noise impacts to adjacent communities, employees working at the project site, wildlife, and/or sensitive receptors including hospitals, schools, daycare facilities, and elderly housing?

Yes ☐ | **No** ☒

If you checked "Yes", please provide a description of: (1) the receptors that may be impacted and their estimated distance from the project activities, (2) the level of noise generated (in A-weighted decibels (dbA)) to each receptor, and (3) anticipated duration.

Explanation:

13. Please provide a detailed description of how the project would be decommissioned, including the disposition of equipment and materials.

Explanation:	The goal of project decommissioning and both interim and final reclamation is to remove the installed capital equipment and return the site to a condition as close to a pre-construction state as feasible. The procedures described for decommissioning and reclamation are designed to ensure public health and safety, environmental protection, and compliance with applicable regulations. The procedures outlined for reclamation include a description of the proposed activities for reclamation to be undertaken during and after completion of project operation and measures to be taken to prevent unnecessary or undue degradation. The objective of interim reclamation is to restore vegetative cover and a portion of the landform sufficient to maintain healthy, biologically active topsoil; control erosion; and minimize habitat, visual, and forage loss during the life of the well or facilities. The long-term objective of final reclamation is to return the land to a condition approximating that which existed prior to disturbance. This includes restoration of the landform and natural vegetative community, hydrologic systems, visual resources, and wildlife habitats. To ensure that the long-term objective will be reached through human and natural processes, actions will be taken to ensure standards are met for site stability, visual quality, hydrological functioning, and vegetative productivity

SECTION IV. CERTIFICATION

I hereby certify that I am authorized to submit, and I do so hereby submit, the information in this questionnaire on behalf of the Recipient named below. I certify that the information provided herein is accurate and complete as of the date shown below. I understand that false statements or misrepresentations may result in civil and/or criminal penalties under 18 U.S.C. § 1001. If I receive any information that would indicate that any of the above-referenced answers are no longer correct or complete, I agree to notify EERE immediately. If it is necessary for EERE to modify the information I provide, EERE will request that I recertify the revised form.

Name	Ryan Melsert
Title	CEO/CTO
Applicant	American Battery Technology COmpany
Signature	
Date	

EERE ENVIRONMENTAL QUESTIONNAIRE
ATTACHMENT 1

Definitions for Question 3 –Resources*

Historical, Archeological, or Cultural Resources. The National Historic Preservation Act; the Historic Sites, Buildings and Antiquities Act; the American Indian Religious Freedom Act; and the Archeological Recovery Act provide for the preservation of sites, buildings, structures, or objects of historic, archeological, or architectural significance designated by Indian, Federal, state, or local governments or listed or eligible for listing on the National Register of Historic Places. The Archeological Resources Protection Act, Antiquities Act, and Native American Graves Protection and Repatriation Act also apply if the proposed project is on Federal and tribal land. This item should be checked "yes" if a proposed project is in an area that meets any of the above, or if an archeological survey has not been performed. Provide documentation of any consultation or State Historic Preservation Officer determination letters if available. If this information is not available or a survey has not been conducted recently, DOE may require such a survey to be conducted prior to any proposed project implementation.

Threatened/Endangered (T/E) Species and/or Critical Habitat. The Endangered Species Act provides for protection of animals, birds, fish, plants, and other living organisms that are in danger of extinction. A list of T/E species is provided in 50 C.F.R. Part 17. Consultations with the U.S. Department of Interior Fish and Wildlife Service (FWS), National Marine Fisheries Services (NMFS), and the corresponding state agency should be documented. This item should be checked "yes" if any state- or Federally-listed or proposed threatened or endangered species or critical habitat is located in the proposed project area, or could be indirectly affected by the proposed project. If the status of T/E species at the proposed project location is unknown, please contact the local or state office of the FWS or NMFS to obtain a listing of potential species and habitats found in the area.

Floodplains. Floodplains are lowlands adjoining inland and coastal waters with a 1 percent or greater chance of inundation in any given year. Indicate "yes" if the proposed project location is in or adjacent to a floodplain area. If documentation is available noting the floodplain boundaries, please provide a copy. Appropriate documentation of the 100 year floodplain [or 500 year floodplain for critical actions**] boundaries include: Flood Insurance Rate Maps or Flood Hazard Boundary Maps prepared by the Federal Emergency Management Agency (FEMA) of the U.S. Department of Homeland Security. Executive Order 11988 Floodplain Management requires Federal agencies to avoid incompatible development in floodplains, and consider the conformance of the proposed project to floodplain standards, potential effects of the proposed projects on floodplains, and potential effects of floodplain modifications on other local properties and improvements.

** Critical actions as defined in the Implementing Guidelines to Executive Order 11988 are activities for which chance of flooding is too great.

Wetlands. Wetlands are areas inundated by surface or groundwater with a frequency sufficient to support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction, [10 C.F.R. 1022.4]. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflow, mudflats, and natural ponds. Man-made ponds can qualify as wetlands if invasion of appropriate flora or fauna has occurred. Appropriate documentation of presence or absence of wetlands within the area of project effect includes: FWS National Wetlands Inventory; U.S. Department of Agriculture Soil Conservation Service Local Identification Maps; U.S. Geological Service (USGS) Local Identification Maps; USGS Topographic Maps; state wetland inventories; and regional or local government sponsored wetland and land use inventories. Executive Order 11990 Protection of Wetlands requires Federal agencies to consider the effects of proposed projects on wetlands, and to avoid, to the extent possible, destruction and modification of wetlands. If the status of land in or around the proposed project location is unknown, please contact the state or local U.S. Army Corps of Engineer's office.

Coastal Zones. Coastal zones are the coastal waters and adjacent shore lands of the Great Lakes, and the Atlantic, Pacific, and Arctic Oceans, Gulf of Mexico, and Long Island Sound. The term "coastal state" includes the states bordering on those bodies, plus Puerto Rico, the Virgin Islands, Guam, the Commonwealth of Northern Mariana Islands, and the Trust Territories of the Pacific Islands and American Samoa. Coastal states have authority regarding actions, which directly affect coastal zones, in accordance with the Department of Commerce regulations promulgated under the Coastal Zone Management Act. Federal activities and Federal development projects must be consistent with state coastal zone management (CZM) programs to the maximum extent possible. Federal activities are those performed by or on behalf of a Federal agency in the exercise of its statutory responsibilities. Indicate "yes" if the proposed project is located in a coastal zone State or is in the vicinity of a coastal zone State. If a consistency determination has been obtained, or a written "negative determination" (indicating that a consistency determination is not required) please provide a copy. See 15 C.F.R. 930.

Migratory Birds, Golden or Bald Eagles. Other Federal and state laws that protect wildlife species include the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Examples of protected migratory birds include Canadian geese and great blue herons. This item should be checked "yes" if the proposed project may directly or indirectly impact any of these species or their habitats. If the status of other protected species is unknown in the proposed project location, please contact the local or state office of the FWS to obtain a listing of potential species and habitats found in the area.

Areas Having a Special Designation. Various Federal laws restrict the ability of Federal agencies to aid developments affecting national wilderness areas, national memorial parks, national parks, national monuments, national primitive areas, national preserves, national recreational areas, national wild and scenic rivers, national grasslands, national wildlife refuges, national forests, national lakeshore or seashore, and national trails. Indicate "yes" if any of these areas of special environmental or natural significance is located in close proximity to the proposed project location and describe the specific special designation.

Prime Farmland, Unique Farmland, or Other Farmland of Statewide or Local Importance. The Farmland Protection Policy Act requires Federal agencies to consider ways to lessen the effects of proposed projects that convert or adversely affect prime farmland which is not currently classified or designated for future urban development or water storage. Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion. Prime farmland also includes land that possesses the above characteristics, but is being used currently to produce livestock and timber. Prime farmland does not include lands designated for future urban development, such as land that has been identified for commercial, industrial, or residential development by zoning code, ordinance, or a comprehensive land use plan [7 U.S.C. 4201(c)(1)]. The U.S. Department of Agriculture Natural Resource Conservation Service (NRCS) field office serving the area can provide assistance in determining whether a proposed location or site meets the definition of prime farmland. Form AD 1006, the Farmland Conversion Impact Rating Form, available at NRCS offices, should be used for this purpose.

Special Sources of Water. Through the Safe Drinking Water Act, EPA and states designate Critical Aquifer Protection Areas and Sole or Principal Source Aquifers, and State-Designated Wellhead Protection Areas in accordance with 42 U.S.C. 300h-6(b), 42 U.S.C. 300h-3(e), and 42 U.S.C. 300h-7(e), respectively. Such areas are accorded special protection to assure the quality and availability of public water supplies. Indicate "yes" if the proposed project is located in an area designated for protection (e.g., is included in an area wide groundwater quality protection plan), or would constitute a potential source of contamination within an existing or expected wellhead protection area serving a public water supply. If aquifer designations are not known for the proposed project area, contact the environmental protection office for the State.

* Definitions and requirements are subject to regulatory changes.

Definitions for Question 4 – Activities or Areas of Concern*

Clearing or Excavation. Clearing or excavation refers to the removal of vegetation, soil, sediments, or disturbance of land surfaces and subsurface including cutting, burning, digging, grading, filling, or blasting. Provide the estimated area to be affected, the quantity of material to be added or removed, and the planned disposition of spoils. Describe the potential for runoff or erosion, any control techniques to be employed, and the distance to nearby surface water bodies, including wetlands.

Dredge and/or Fill. Dredge and/or fill are the excavation of material from waters of the United States. Filling is the discharge of material into waters of the United States to change the bottom elevation. Waters of the United States are all interstate waters, and intrastate lakes, rivers, streams, mudflats, wetlands, sloughs, plays, or natural ponds. These activities include "ocean dumping" as regulated under Sections 102 and 103 of the Clean Water Act, construction of dams, dikes, piers, or others that could alter the course of waters of the United States. Also included is any shore activity with the potential for runoff to waters of the United States. If available, include documentation of appropriate consultation(s), e.g., with the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act or Sections 9 and 10 of the Rivers and Harbors Act; and with EPA [40 C.F.R. Parts 220-233].

Pre-Existing Contamination. Indicate if the proposed project will disturb hazardous substances, pollutants, contaminants, or Comprehensive Environmental Response and Liability Act (CERCLA)-excluded petroleum and natural gas products that pre-exist in the environment. Quantify and characterize such pre-existing substances, including whether they are present above background or regulatory levels. Also quantify the volume of contaminated materials (e.g. soil, sediment, groundwater, debris, etc.) which would require transport to a properly permitted treatment, storage, or disposal facility as the result of the proposed project.

Pesticide Use. A pesticide is a substance intended for preventing, destroying, repelling, or mitigating any type of pest including insects, rodent, nematode, fungus, or weed, and any substance intended for use as a plant regulator, defoliant, or desiccant. While the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) imposes no requirements on private applicators, commercial pesticide applicators must be certified by the state or U.S. EPA. Additionally, FIFRA requires that certain pesticides known as “restricted use pesticides” (listed in 40 C.F.R. 152.175) to only be applied by certified applicators. If either commercial or private pesticide application or the utilization of restricted use pesticides is anticipated, indicate "yes". If a private application is anticipated, document measures to be undertaken to assure safe storage, use, and disposal.

Asbestos. If the proposed project includes demolition or renovation of an existing building, you must determine if asbestos is present. Common asbestos-containing building materials may include but are not limited to floor tile, mastics, wall board, joint compound, acoustic ceiling tiles, thermal insulation, spray-on fire proofing, glazing, caulking, roof flashing, and felts. Demolition and renovation activities that may impact asbestos containing building materials are regulated by the U.S. Occupational Health and Safety Administration (OSHA) through the Asbestos in Construction Standard and asbestos air emissions from asbestos abatements are regulated by the EPA as a hazardous air pollutant under the Clean Air Act (CAA). Include a description of measures to be undertaken to comply with asbestos removal requirements of 29 C.F.R. 1926.1100 and 40 C.F.R. 61 (Subpart M).

Polychlorinated Biphenyls (PCBs). PCBs are a family of man-made organic chemicals that were domestically manufactured from 1929 until banned in 1979 due to their toxicity and persistence in the environment. Given their non-flammability, chemical stability, high boiling point, and electrical insulating properties, PCBs were largely used as dielectric and coolant fluids in transformers, capacitors, electric motors, etc. Manufacture, processing, transport, use, marking, storage, and disposal of PCBs are regulated by EPA [40 C.F.R. Part 761] in accordance with the Toxic Substances Control Act. Some states also regulate PCBs as hazardous waste. If the proposed project involves replacement or removal of capacitors, transformers, voltage regulators, circuit breakers, switches, cables, electromagnets, or other electrical equipment, presence or absence of PCBs should be ascertained. A "yes" indication

should be supported with information on the anticipated concentration and quantity of PCB oil, and the intended method/location of disposal.

Navigable Air Space. The U.S. Department of Transportation Federal Aviation Administration (FAA) regulates objects which invade navigable air space or otherwise constitute an obstruction to air navigation, and determines whether such activities constitute a navigation hazard. Indicate "yes" if the proposed project involves construction or alteration more than 200 feet above ground level, any construction or alteration in instrument approach areas, and other construction or alteration identified in 14 C.F.R. 77.13. Document notification of the appropriate Manager, Air Traffic Division, of the FAA Regional Office for the area within which the construction or alteration will be located. Copies of FAA Form 7460-1 Notice of Proposed Construction or Alteration may be obtained from the regional FAA office or electronically through FAA's website.

Underground Storage Tanks. Indicate "yes" if 10 percent or more of tank volume (including the volume of underground pipes) will be beneath surface of the ground. Indicate if installation, use, or removal of underground storage tanks is anticipated, and whether tank use is/was for storage/collection of hazardous waste, heating oil, other petroleum or petroleum-based substances, stormwater, or wastewater. Describe any leak detection/monitoring methods to be used for storage of hazardous waste or regulated petroleum products like gasoline or diesel.

Underground Extraction/Injection. Underground extraction/injection is the subsurface emplacement of fluids through a bored, drilled, or driven well, or through a dug well where the depth of the well is greater than the largest surface dimension. If the proposed project involves construction or use of an injection well, indicate "yes," and describe the class of the well as defined in 40 C.F.R. 146.5, the type and quantity of contaminants (e.g., waste disposal, hydrocarbon or mineral extraction) and whether the injection involves an exempt aquifer as defined in 40 C.F.R. 146.4.

Use of a Non-Renewable Resource. Non-renewable resources are naturally occurring substances (e.g., metals, minerals, fossil fuels) that are in limited supply and cannot be replaced or regenerated. The exhaustion or threatened exhaustion of such resources could have significant ramifications. Indicate "yes" if the proposed project would involve a resource that is in limited supply.

* Definitions and requirements are subject to regulatory changes.

Supporting Sustainable Community Economic Development

Nevada's unique geology and areas of confirmed lithium-rich claystone deposits is presenting an unprecedented opportunity to extract much desired and needed battery metals to support the transition to electrification from domestic, secure resources. This opportunity comes with the imperative and responsibility to develop these resources sustainably and intentionally alongside our local communities and in full consideration of environmental impacts.

The magnitude of our project, if funded, would have the potential for disruptive, step change, environmental improvements compared to current methods, and could have significant positive economic and social impacts for Tonopah and surrounding areas, which includes the identified Disadvantaged Communities (DAC) of Mineral County, Esmeralda County and Nye County in Nevada[1]. Through cultivation of strong, mutually beneficial partnerships and community-driven, stakeholder engagement models, our Equity Plan seeks to:

- Create new, skilled jobs for the Big Smoky Valley region workforce, and support regional economic development opportunities
- Advance diversity, equity, inclusion and access within the project workforce and future workforce, amongst suppliers/vendors, and within the region
- Facilitate and support community-driven betterment projects within Justice40 DACs
- Exist to support the further development of a battery metals circular economy aimed at transitioning a cleaner energy future by mitigating climate change

Our 'Glocal' Approach

As we grow as a company, our corporate environmental and social responsibility programs will grow and mature as well. With intention and respect, we will evolve our impact programs alongside our employee and community stakeholders to ensure that our environmental and social footprints have impacts that are 'glocal', mutually beneficial and inclusive of community-defined and driven needs.

We are a company driven by innovation and impact. Diversity, equity, inclusion, and accessibility (DEIA) are driving forces that sustain our culture of innovation, inspires evolution and ensure relevancy of impact for all.

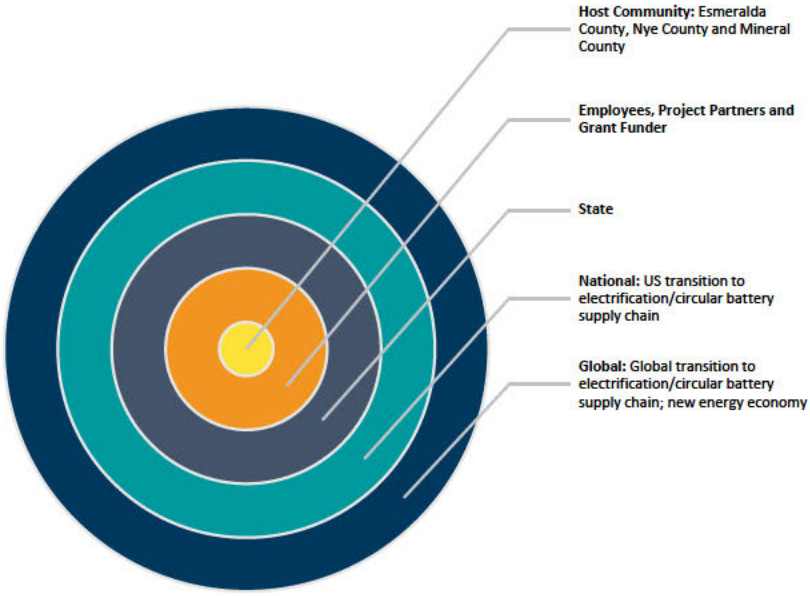


Figure 1: American Battery Technology Company's "Glocal" Impact Approach

[1] Noted Disadvantaged Community (DAC) on the Council of Environmental Quality's Environmental Justice Screening Tool, as well as the U.S. Department of Transportation's Historically Disadvantaged Census Tracts.

Being an eclectic team, many of us who are scientists and/or passionate about nature, we see things systematically, connected, and interdependent. This holds true for how we view our potential to be impactful beyond our industry innovations. Embracing differences and curiosity, we value authenticity, mutual respect, openness, and inclusion. We are principle-led, understanding the value in extending our impact beyond comfort zones, conventions, and profits.

Figure 2: America Battery Technology Company's Values

We are committed to being environmental stewards, good neighbors in the communities in which we work and live and creating safe and healthy environments for our employees. As part of living our values and investing in our people, we are cultivating a culture at American Battery Technology Company (ABTC) that through demonstration of our actions, we are working to set new standards in our industry that lead with our commitment to and accountability for social and environmental responsibilities.

Our Impact Model

Providing innovative solutions to addressing the challenges of battery metals supply that can help facilitate a global transition to electrification is our business. Purpose-based, environmental, and social impact is inherent to our company mission and vision. In addition to our business solutions and as part of our values, we also work to better the communities in which we live and work.

Our opportunity to make a positive difference and have direct impact is twofold:

1.) **Operations:** We exist to provide and manufacture battery metals that can support the development of a sustainable, circular battery metals supply chain to facilitate a transition to electrification. Through our operations and business models, we have direct, positive impact on the environment and support a lower-carbon future aimed to address climate change.

2.) **Proactive Community Engagement:** Additionally, by building community-driven engagement programs, we aim to positively and directly impact the people, communities, and environment in which we work and live.

Our ABTC impact model has four primary focus areas. These include:

- **Environment**

- **Education**
- **Economic Development**
- **Equity**

ABTC IMPACT FOCUS AREAS			
ENVIRONMENT	**EDUCATION**	**EQUITY**	**ECONOMIC DEVELOPMENT**
Advancing a battery metals circular economy aimed at facilitating the transition to a cleaner energy future by mitigating climate change.	Facilitating opportunities for education, community betterment and environmental stewardship through local community investments and engagement.	Cultivating a culture that embraces differences and curiosity and values authenticity, mutual respect, openness, and inclusion.	Supporting current and create new community and regional economic development opportunities.
Manufacturing and processing of battery metals through recycling and primary resource development.	Working with our partners to support increased access and enrollment in higher education opportunities for the communities in which we live and work.	Advancing high/higher wages to reduce income disparities across race/gender lines.	Creating new, quality jobs for local workforce.
Utilizing renewable energy whenever possible to power our facilities.	Providing curricular support for courses/majors related to mining, critical minerals, and lithium-ion battery recycling.	Seeking out, selecting, and working with contractors, vendors and strategic partners who have established and transparent policies, procedures, and programs that support and advance equity.	Facilitating opportunities for education, community betterment and environmental stewardship.
Conserving of natural resources, including water.	Fostering internships for university students giving them the ability to work in their area of study gaining first-hand knowledge and research experience.	Attracting, engaging, and retaining a diverse workforce that reflects the makeup of society and the communities where we live, work, and serve.	Providing infrastructure improvements updating and expanding electrical and water facilities while adding and/or improving roads and rail.
Avoiding air and liquid pollutant emissions through strategic design, no high-temperature operations.	Creating career pathways for future professionals in our industry.	Maintaining a governance process that ensures we employ best practices, and bring transparency and accountability to our challenges, plans, and progress toward meeting our company goals.	

Achieving Impact
ABTC actively and intentionally seeks out partners who have established and transparent policies, procedures, and programs that support and advance equity. We believe we can facilitate the most sustainable and equitable impacts by joining others, including our employees, our strategic partners, and our communities, in making meaningful change and improving communities and our environment.

Our project partners will be instrumental in implementing our equity plan by expanding our reach, access and impact for underrepresented groups; leveraging established and successful workplace diversity, inclusion, equity and access resources and programs; and strengthening a public/private network aimed at growing our next generation of diverse, STEM-focused talent pipeline.

University of Reno - Nevada
Since its inception in 1874 as the state of Nevada's first university, the University of Nevada, Reno has delivered on the promise of providing the citizens of Nevada with a better future. As the state's land-grant university and ranked among the nation's top research universities by the Carnegie Foundation, the University is known as a high-impact institution. Students and faculty are solving the pressing issues of our time and providing new paths for the state's next generation of leaders.

Inspired by its land-grant foundation, the University of Nevada, Reno provides outstanding learning, discovery, and engagement programs that serve the economic, social, environmental, and cultural needs of the citizens of Nevada, the nation, and the world. The University recognizes and embraces the critical importance of diversity in preparing students for global citizenship and is committed to a culture of excellence, inclusion and accessibility.

The University of Nevada, Reno is recognized by the U.S. Department of Education as an emerging Hispanic Serving Institution. They have a dedicated task force actively working on becoming a designated Hispanic Serving Institute once enrollment reaches 25%. As of 2019, full-time Hispanic student enrollment was 22%.

Since March 2021, ABTC technology team has taken residence at the University of Nevada Reno's (UNR) National Center for Applied Research (NCAR) incubator facilities. The ABTC team has expanded three-fold in technical personnel as well as expanded into two new laboratory spaces and an office space since then. The ABTC team and UNR faculty and staff have been collaborating on our current government grants and developing proposals for current grant solicitations. Much of our work done at UNR has been demonstrating our technologies at the bench scale and pilot projects. The expansion of our laboratory capabilities at UNR/NCAR is directly related to our scale up demonstration work.

In addition to co-location, we are exploring different areas of collaboration, including a potential workforce development pipeline for Tonopah area high-school students as well as University students. The current collaboration includes university internship opportunities with ABTC.

Already the ABTC team has hired five full-time scientists/engineers that are UNR alumni, three of which were interns and facilitated by the cooperative work of UNR/NCAR and ABTC.

UNR has a Latnix student population close to 23%, which qualifies UNR as an emerging Hispanic Serving Institution (HSI). Within this context, we plan to work actively with the Latnix student community and other minorities on internship and training opportunities with ABTC. The college of engineering has an active chapters of Society of Women Engineers (SWE) and the Society of Hispanic Professional Engineers (SHPE). The ABTC team along with UNR faculty and staff will work with SWE, SHPE, and other student organizations to develop a strong internship program with ABTC and train the student to become a qualified workforce. UNR will recruit graduate and undergraduate students from underrepresented groups to work on the project.

Argonne National Laboratory
seeks solutions to pressing national problems in science and technology. The nation's first national laboratory, Argonne conducts leading-edge basic and applied scientific research in virtually every scientific discipline. Argonne researchers work closely with researchers from hundreds of companies, universities, and federal, state and municipal agencies to help them solve their specific problems, advance America's scientific leadership and prepare the nation for a better future. With employees from more than 60 nations, Argonne is managed by UChicago Argonne, LLC for the U.S. Department of Energy's Office of Science.

Argonne National Laboratory (ANL) is committed to recruiting, hiring and retaining the' very best people — a diverse group of smart, talented and capable men and women who are committed to our mission of delivering new discoveries and innovations that address our nation's most pressing needs in energy, sustainability and security. Additionally, ANL believes in building a safe, equitable, diverse, and inclusive work environment grounded in their core values.

DuPont
DuPont is a global innovation leader with technology-based materials and solutions that help transform industries and everyday life. Their employees apply diverse science and expertise to help customers advance their best ideas and deliver essential innovations in key markets including electronics, transportation, construction, water, healthcare, and worker safety.

DuPont believes that diversity, equity and inclusion are central to their high-performing culture, and has several, long-standing DEI programs that support a culture of inclusivity and growing access for underrepresented groups. For example, the DuPont GOLD (Growth Opportunities Leading in Diversity) program is intended for doctoral and post-doctoral scientists from underrepresented groups (African American/Black, American Indian/Alaskan Native, Hispanic/Latinx, or Native Hawaiian/Pacific Islander) interested in career opportunities in industrial research at DuPont.

It is the policy of DuPont that their businesses include and support high-performing, small and diverse suppliers in their supply chains as a component of our global commitment to diversity and inclusion. Ensuring their supply base reflects their customers, employees and the

communities where the live, and work is a key business strategy. Among their Supplier Diversity programs and policies, DuPont is working with the National Minority Development Council (NMSDC) as part of their Centers of Excellence Program. The NMSDC Centers of Excellence (COE) are regional business modules designed to strengthen corporate supplier diversity processes and to help minority businesses compete in a global environment. Corporate participants can nominate Minority Business Enterprises (MBEs) in their region to participate in these modules and be an integral part of their growth. The business modules—comprised of eight to 10 corporate members, 16-20 MBEs and an affiliate council president— are committed to enhancing the supplier diversity process by implementing NMSDC minority business development best practices. Each module is facilitated by an NMSDC affiliate regional council and is 18-24 months in duration.

About the Project

Since September 2021, ABTC has secured 517 unpatented lode mining claims covering approximately 10,340 acres of land that is administered by the Bureau of Land Management (BLM). This land was previously mined for silver, and initial surface and subsurface drilling indicate positive lithium-bearing results.

The greenfield construction of this primary lithium extraction facility can provide significant benefits to the local and surrounding communities. The facility is in Esmeralda County 6 miles west of Tonopah, Nevada. The estimated $200 million dollar construction project can boost the local and regional economies, provide for improved infrastructure, create jobs for local residents, and provide for long-term economic growth opportunities.

Figure 3: Justice40 DAC Sites in Nevada. Source Council on Environmental Quality Environmental Justice Screening Tool.

Big Smoky Valley and Tonopah, Nevada

The location of the project is in Big Smoky Valley near Tonopah, Nevada. In a rural area of the state, it is midway between Reno and Las Vegas. The closest town to our project site is Tonopah, Nevada. Tonopah is the county seat of Nye County, and according to 2020 Census data has a population of 2,009. The project site is located in Esmeralda County directly west of Tonopah. Esmeralda County has a population of 729, and is identified as a Disadvantaged Community (DAC) on the Council of Environmental Quality's Environmental Justice Screening Tool, as well as the U.S. Department of Transportation's Historically Disadvantaged Census Tracts.

History of the Area

The town of Tonopah and surrounding areas have a rich and celebrated history of mining. In the early 1900s, the area experienced a silver and gold mining boom with the start credited to Jim Butler.

Prior to white settlers and the mining boom of the early 1900s, the area was primarily inhabited by the Western Shoshone Indians. They utilized Big Smoky Valley as their permanent winter camping grounds.

ABTC Commitment to Stakeholder Engagement
ABTC's commitment to being good neighbors in the communities in which we work and live informs our Equity Plan and further commitment to engaging with community-based organizations representing local stakeholders. Our developing model for stakeholder engagement will utilize strategic analysis and problem solving, active listening and communication, and adaptive leadership to co-create a community benefits agreement with stakeholders and develop a Community Input/Feedback Structure.

Additionally, our project partners, including (b) (4) have established histories of strong community engagement.

Project Outreach and Communications
Communication is critical to building trusting and productive relationships with community stakeholders. ABTC is committed to working with project partners and community leaders to provide pre-project, during project, and post project information to the community and establish ways in which community members can share feedback and express any potential project-related concerns.

Community Engagement
As part of our recommended community and stakeholder engagement model that is community driven, ABTC would facilitate the development and coordination of the following engagement activities and programs:

- **Community Equity Round Table**
- **Community Benefits Agreement**
- **Community Micro-Grants Impact Program**
- **Employee "Community Corps" serving as 'Justice 40 Activators'**

Community Equity Round Table
ABTC would work with grant partners, civic leaders, local elected officials, and the community to develop a small group of representatives from the community that could serve on the Community Equity Round Table. This small group could provide direct and regular feedback on community perspectives, needs, recommendations, and key consultation on project activities requiring community input. This group could also ensure that we are reaching our local and diverse audiences and help ensure any community impact improvement investments are driven by community needs. This group make up will reflect the demographic make-up of the community, and ABTC will work to ensure DAC and tribal representation in the group is a priority. Representation on the Community Equity Round Table will be appointed by local elected officials and may take place concurrently with another or other community-based meetings.

Community Benefits Agreement
ABTC will work with the Community Equity Round Table representatives and project partners to co-create and adopt a Community Benefits Agreement. This agreement will include and address commitments to the host community, a structure by which community members can

provide direct feedback, and a resolution framework for any potential community concerns that may arise.

- Create opportunities and access to quality jobs for residents in partnership with our project partners
- Establish Economic Host Agreement
- Provide workforce development and pipeline creation in partnership with our partners
- Invest in the community through our community engagement activities and programs
- Support labor Unions and labor equity
- Conduct initial and consultative outreach to tribal communities in the area

Community Micro-Grants Impact Program
As part of our commitment to supporting community vitality and the communities in which we live and work, ABTC would develop and implement a community-based, micro-grant program for non-profit (501c3) and public education, non-exempt programs that align with the company's four impact focus areas and meet giving criteria. Priority selection of grant awards will be given to community projects that directly address DAC identified risks factors for each county.

ABTC will also work with project partners to engage them in opportunities to support local community impact work and betterment projects.

Employee "Community Corps" serving as 'Justice 40 Activators'
As part of the micro grants program, ABTC will design and implement an employee "Community Corps" that engages a small group of interested employees as "Justice 40 Activators". These employees would serve as liaisons to mini-grant awardees supporting their community projects by attending events and championing Equity Plan impacts. This reinforces connections between project employees and community, workplace DEIA culture and creates an additional support and accountability mechanism for ensuring we are actively working to address local challenges in these DACs.

Initiative for Responsible Mining Assurance
Additionally, ABTC is a pending member of the Initiative for Responsible Mining Assurance (IRMA) whose mission is to protect people and the environment directly affected by mining. They serve as an independent third-party verification and certification against a comprehensive standard for all mined materials that provides 'one-stop coverage' of the full range of issues related to the impacts of industrial-scale mines. IRMA certification requirements and stakeholder engagement standards ensure that certified mines respect the human rights and aspirations of affected communities, provide safe, healthy, and supportive workplaces, minimizes harm to the environment, and leaves positive legacies.

Initial Stakeholder Mapping
We work with our community to ensure we have established productive communication channels and have a positive impact on our local communities. One of the first steps to building a stakeholder engagement plan that can ensure transparency, encourages community input and consultation, and prioritizes meeting community needs, is initial identification of active community members.

Following is our initial stakeholder identification for this project. As the project evolves, stakeholders are engaged, and community priorities are identified, this list will evolve.

Initial Stakeholder Mapping – June 2022

Civic, Community and Nonprofits	Economic Development	Education	Environment	Government	Health & Safety	Industry Associations, Unions & Trades	Legislators	Local Businesses	Media Outlets	Tribal
American Legion Tonopah (Veterans)	Nevada Economic Assessment Project (NEAP) - Nye County	Nye County School District (NCSD)/ - Tonopah Schools	Sierra Club	Nevada Division of Environmental Protection	Nye County Health & Human Services	American Legion Tonopah	Representative Steven Horsford	Stage Stop Cafe	Pahrump Valley Times	Western Shoshone
Tonopah Community Fund	Southwest Central Regional Economic Development Authority	NCSD - Round Mountain Schools	Great Basin Mine Watch	Nye County Brownfields Program	Nye County Sheriff s Office	Work for Warriors Nevada	Senator Cortez Masto Catherine	Belvada Hotel	KPVM-TV	Timbisha Shoshone Tribe
Tonopah Main Street	Nevada Department of Employment Training and Rehabil tation	Esmeralda County School District	Basin and Range Watch	Nevada Division of Pub ic and Behavioral Health	Tonopah Fire Service & Tonopah Volunteer EMS	Nevada Mining Association	Senator Rosen Jacky	Mizpah Hotel	Great Country Broadcasting INC (KIBS/KBOV)	Las Vegas Paiute Tribe
Tonopah Rotary Club	Rural Nevada Development Corporation	Tonopah Public Library	Nevada Water Environment Association	Esmeralda County Road and Solid Waste	Esmeralda County Emergency Management	United Mine Workers of America	Governor Steve Sisolak	A Bar L Western Store	8 News Now	Duckwater Shoshone Tribe
Tonopah Town Board	Nevada Governor s Office of Economic Development (GOED)	Esmeralda County Pub ic Libraries (3)	Southern Nevada Water Author ty	Tonopah Town Administration	Nye County Health & Human Services	Southern Nevada Laborers-Employers Cooperation and Education Trust (SNLECET)	Nye County Administration	Mountain View Apartments	3 News Las Vegas	Nevada Indian Commission
Tonopah Historic Mining Park Foundation		UNR Tonopah Extension	Nye County Renewable Resource Development	Esmeralda County Administration	Nevada Highway Patrol	Laborers Local 872	County Commissioner (Tonopah) Bruce Jabbour	Tonopah Station Casino Restaurant & Bar	KTNV Las Vegas	
Central Nevada Historical Society		Great Basin College				National Mining Association	District Attorney Chris Arabia	Mike s Bikes	Tonopah Main Street - Facebook	
Tonopah Salvation Army		Deep Springs College				UNR Mackay School of Earth Sciences and Engineering	County Manager Timothy Sutton	Sagebrush Dreams	Tonopah NV-Buy-Sell-Trade	
Nye Communities Coalition							Tonopah Justice of the Peace Jennifer Klapper	Tonopah Trading Company		
Central Nevada Grange							Fifth Judicial Justice Court Judge Wanker	Mike s Rubbish and Recycling		
Pioneer Territory CASA (Court Appointed Special Advocates for Children)							Esmeralda County Offices	Sierra Vista Inn/Apartments		
Three Square (Food Bank)								Cal-Nevada Towing & Transport		
The Goldfield Historical Society								American Lithium		

This initial list serves as the start of our target local, pre-project communication, outreach, and recruitment contacts.

Using our initial stakeholder mapping, we would work to build out our community outreach and engagement plan. Following are Examples of Outreach, Communications, and Community Engagement/Investment. Actual activities and plans will be based on community-driven input, and the expansion of our stakeholder list.

Example Engagement Activities	Pre-Project	During Project	Post Project
Project/Company Hosted Community Meetings	X	X	X
Speak at Community, Civic, Public Meetings	X	X	X
Written Surveys and Request for Feedback		X	X
Dedicated Project Microsite	X	X	X
Dedicated Project email and hotline	X	X	X
Local print and radio advertisements	X	X	X
Develop contact list and provide direct communications	X	X	X
Establish a Community Equity Roundtable		X	
With the help of the Community Roundtable, establish a Community Benefits Agreement to include establishment of community feedback channels	X	X	X

With the help of Community Roundtable, establish a Community Impact and Giving Micro Grant Program		**X**	**X**
Develop an Employee Community Impact Corps who serve as grant program partners and Justice 40 Ambassadors as representatives of the company and 'on-the-ground' DOE grant activators	**X**	**X**	**X**

ABTC Commitment to Advancing the Local Workforce
This project has the potential to provide significant economic benefits and job creation opportunities to the Big Smoky Valley and the three area DACs.

The project will provide 50-125 of jobs during construction, and 50 or more jobs once completed and operational.

ABTC is committed to creating a framework for advancing the local workforce by:

- providing good-paying jobs that reduces income disparity and inequalities across race and gender lines
- ensuring the local workforce is reflective of the local demographic
- cultivating a culture that values diversity, inclusion, equity and accessibility, including neutrality towards organized labor and union activity
- attracting, retaining, and training needed workforce
- ensuring a safe, healthy work culture and environment
- supporting, when possible, workforce training opportunities and transitional programs.
- supporting any Project Labor Agreement as required

To accomplish these goals, ABTC will work with our project partners who have established and proven workforce development programs.

University of Nevada at Reno
Working in partnership with the University of Nevada at Reno, accessing the Governor's Office of Economic Development's program, and leveraging local workforce development resources, ABTC is committed to utilizing and creating workforce programs that seek to foster employees in the workforce, underrepresented in the workforce and grow our next generation workforce.

In an already established collaboration with the University Nevada-Reno's National Center for Applied Research, ABTC hired diverse and underrepresented interns to work in our research and development center.

Accessing and Leveraging State Workforce Development and Training Programs
We are committed to expanding our hiring to skill-based recruiting in collaboration with the Nevada's Governor's Office of Economic Development, the Nevada Department of Employment Training and Rehabilitation, and the Governor's Office of Workforce Innovation.

Working with regional and local economic development resources, like Nye County Regional Economic Development Authority, our intention is to hire locally whenever possible and to create our own on-the-job training programs to encourage candidates to not only join us but to create opportunities for advancement within our organization.

Our hiring efforts will include segmented recruitment and acquisition of underrepresented veteran populations.

Additionally, ABTC will work with the Community Equity Roundtable and community stakeholder groups to attract and retain local talent and explore the possibility of creating local talent pipeline programs to build skills capacities for unskilled, under-represented and transitional workforce, as well as opportunities for Veterans.

Diversity, Equity, Inclusion and Accessibility
As part of our corporate values, ABTC are champions of each other, our shareholders, our customers, and our communities. Embracing differences and curiosity, we value authenticity, mutual respect, openness, and inclusion. ABTC is committed to building supportive supply chain ecosystems through identifying and utilizing underrepresented businesses and project partners, when available.

ABTC seeks qualified suppliers and subcontractors to share our commitment to the highest safety and ethical standards in the industry. We seek suppliers and subcontractors who understand their obligations and collaborate with us to meet our customers' expectations.

ABTC leverages our employee networks, local chambers of commerce, resource partners, and additional partnerships to help level the playing field for business owners and aspiring entrepreneurs who historically have lacked access to business opportunities. Our program focuses on maintaining a balance between high levels of service, quality, and competitive pricing, while assisting businesses that have been formerly overlooked in the procurement process.

As part of our supplier diversity program, ABTC will utilize best practices and standards from multiple councils and third parties such as the Women's Business Enterprise National Council, the National Minority Supplier Development Council, the Association for Service-Disabled Veterans, the U.S. Hispanic Chamber of Commerce, the Small Business Association and others to solicit bids on supplies, services, and needed equipment.

Our current design/build engineering and construction firm, (b) (4) [redacted] standards that recognizes the value that a diverse supply chain system brings to business and the impact it can have on local communities. Although structured around global businesses that serve a broad spectrum of industries, (b) (4) [redacted] and ABTC share a common supplier diversity goal: to maximize opportunities for companies in the locality of the project and for small and disadvantaged businesses.

[redacted]l is committed to respecting human rights everywhere they operate, consistent with [redacted] and the spirit and intent of the United Nations Guiding Principles on Business and Human Rights, and the U.K. Modern Slavery Act and other applicable laws. To that end, [redacted] does not tolerate the use of slavery, servitude, forced or compulsory labor, or human trafficking. [redacted] expects suppliers and subcontractors to obey the laws that require them to treat workers fairly, provide a safe and healthy work climate, and care for the environment. [redacted] expects suppliers and subcontractors to adhere to these standards and expects them to hold their own suppliers and subcontractors to the same standards.

[redacted] has a commitment to offering colleagues a diverse and inclusive culture in which to thrive. [redacted] engages and collaborates with a range of external organizations focused on supporting and developing individuals from underrepresented groups, particularly in STEM fields.

[redacted] recommends suppliers develop a supplier advocacy plan that accomplishes the following:

- Advises supplier's senior management on opportunities and benefits with small and local businesses
- Sponsors, represents, and/or participates in various local, regional, and national Small Business events
- Coordinates with Small Business organizations, economic development organizations, and other organizations at local, state, and national levels
- Meets with small and local companies to assist them in becoming familiar with the processes involved in doing business with both your company and [redacted] and providing them with contacts
- Promotes, advises, and trains your company's management personnel on the principles of the Supplier Diversity Program to foster continual support

As part of ABTC's supplier diversity program, we continue to seek partners with inclusive supply chain programs that encompass a pipeline of diverse and highly qualified talent.

ATBC strongly believes in collaboration with researchers in a thoughtful approach to crafting a culture that honors the principles of diversity, equity, and inclusion. We seek to recruit, develop, and retain the most talented people from a diverse candidate pool and create inclusive lab spaces and STEM opportunities that engenders a diversity of perspectives. When hiring, ABTC employs practices to ensure candidates from Minority Serving Institutes (MSIs) are considered alongside other candidates. We will actively recruit potential candidates from the four Minority Serving Institutions in Nevada:

- University of Nevada - Las Vegas
- AANAPISI & HSI College of Southern Nevada - Las Vegas
- HSI Nevada State College - Henderson
- HSI Western Nevada College - Carson City

ABTC will explore opportunities with workforce development and government agencies to foster improved access to jobs for members of the community, including under-represented individuals and those facing barriers to employment, such as those with disabilities. We are committed to expanding our hiring to skill-based recruiting in collaboration with the Nevada's Governor's Office of Economic Development, the Nevada Department of Employment Training and Rehabilitation, and the Governor's Office of Workforce Innovation.

ABTC is an equal opportunity employer and employment decisions are made without regard to race, color, gender, age, religion, national origin, ancestry, physical or mental disability, veteran status, sexual orientation, gender identity, caste, and other grounds for discrimination prohibited

by applicable law. This policy applies to all terms and conditions of employment, including recruiting, hiring, placement, promotion, termination, layoff, recall, transfer, leaves of absence, compensation, and training.

We believe that diversity and inclusion among our team and suppliers is critical to our success. We seek to recruit, develop and retain the most talented people from a diverse candidate pool and create inclusive lab spaces and STEM opportunities that engenders a diversity of perspectives. We accomplish this through:

- Hiring practices that work to broaden the applicant pool
- Mentoring strategies to aid talent in transitioning into a new environment in a way that supports their success
- Internal education, training, policies, and procedures in place to check and assess DEI initiatives

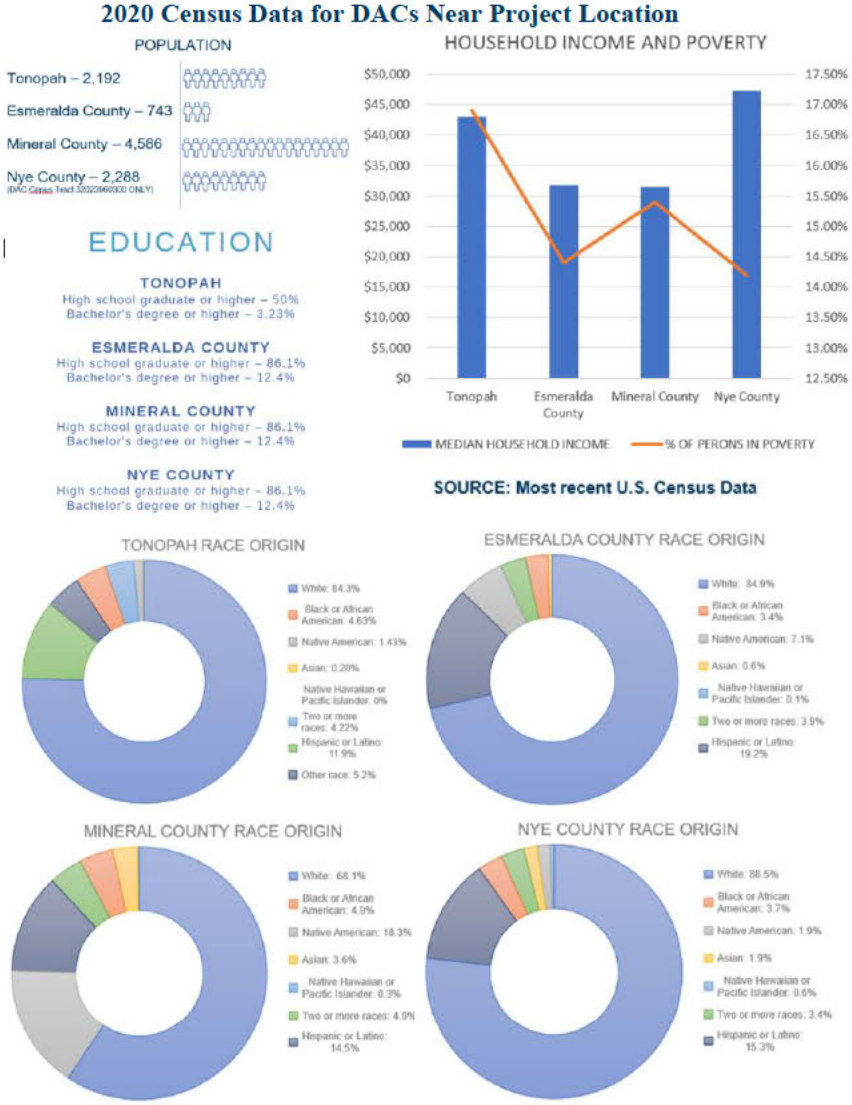


Figure 4: Census Data of Project Site DACs. The project is located in Nevada DAC Esmeralda County, and adjacent to DACs Mineral County and Nye County.

Justice40 Initiative

ABTC's values, operational goals and impact model can support the Justice40 Initiative and targeted benefits to DACs[2]. ABTC can not only implement co-aligned equity tactics but also can

[2] **DAC Benefits noted in Funding Opportunity Announcement (FOA) Number: DE-FOA-0002678, page 16, Section C include:** (1) a decrease in energy burden; (2) a decrease in environmental exposure and burdens; (3) an increase in access to low-cost capital; (4) an increase in job creation, the clean energy job pipeline, and job training for individuals; (5) increases in clean energy enterprise creation and contracting (e.g., minority-owned or diverse business enterprises); (6)increases in energy democracy, including community ownership; (7) increased parity in clean energy technology access and adoption; and 8) an increase in energy resilience.

serve as champions of the program demonstrating community activation and impact. ABTC's full Equity Plan has been developed using the Justice40 Initiative framework to support the Federal government's goal of achieving greater participation from underserved communities and underrepresented groups.

Disadvantaged Communities: Esmeralda County, Nye County and Mineral County
The project site is in a rural area of Nevada in Esmeralda County. Per 2020 Census data, Esmeralda County has a population of 729 making it the least populated county in Nevada.

Esmeralda County is identified as a Disadvantaged Community (DAC) on the Council of Environmental Quality's Environmental Justice Screening Tool, as well as the U.S. Department of Transportation's Historically Disadvantaged Census Tracts.

Directly northwest of Esmeralda County is Mineral County and a portion of Nye County located directly southeast of Esmeralda County. Given the rural location of the project site, residents of these three counties often must travel to neighboring counties, and further, for work, health care, education, and other resources. Our equity plan communities include these three DACs.

Applicable DAC Benefits of Project
The following table highlights the targeted and measurable DAC benefits of this project.

ABTC Impact Focus	DACs Applicable Benefit	Target Measured Outcome	Pre-Construction (1 year)	During Construction (3 years)	Post Construction (1 year)	Operational (Annually)
Environment and Economic Development	Job Creation and Clean Energy Job Pipeline	Jobs Created	5	75 - 125	50	50-75
Environment, Economic Development and Education	Job Creation, Clean Energy Job Pipeline, and Job Training for Individuals	Internships Provided	5	15	5	5
Environment, Economic Development, Equity and Education	Job Creation, Clean Energy Job Pipeline, and Job Training for Individuals	% of Internships provided that serve underrepresented groups	25%	50%	50%	50%
Environment, Economic Development, Equity and Education	All 8 of DAC Benefits; Grant Submissions that directly address DAC Benefits will receive priority awards.	Micro Grant Program – # of Justice40 Micro Grants Awarded ($2K maximum each)	15 - 25	75 - 200	15-25	Total grant awards based on 1% of annual profits
Environment, Economic Development, Equity and Education	All 8 of DAC Benefits; Grant Submissions that directly address DAC Benefits will receive priority awards.	# of Employees serving in "Community Corps" as Justice40 Ambassadors	5	20-50	10	25

Equity and Environment	Job Creation and Clean Energy Job Pipeline	Dedicated program and L&D trainer for DEIA, EHS, and Environmental Stewardship	1	1	1	1
Equity and Environment	Job Creation and Clean Energy Job Pipeline	% Workforce trained on DEIA, EHS, and Environmental Stewardship	100	100	100	100
Environment, Economic Development, and Equity	Job Creation and Clean Energy Job Pipeline	Dedicated Technical, DEIA Recruiter	1	1	1	1
Environment, Economic Development, Equity and Education	All 8 of DAC Benefits; Community Liaison will support micro grant program and employee community corps	Dedicated Locally Based Community Liaison	1	1	1	1
Environment, Economic Development, and Equity	Job Creation and Clean Energy Job Pipeline	Target and Segmented Recruitment and Outreach - Annual regional recruitment events	2	3	1	1
Environment, Economic Development, and Equity	Job Creation and Clean Energy Job Pipeline	Hiring consideration (%) given to competitively qualified, voluntarily self-identified local candidates	100	100	100	100
Environment, Economic Development, and Equity	Clean energy enterprise creation and contracting	Vendor considerati on (%) given to competitively qualified Minority Owned, Women Owned, Veteran Owned Businesses and/or Enterprises	100	100	100	100

Mitigating DAC Project Impacts

ABTC is committed to sharing information about the project with the community and DAC members and keeping them abreast of any potential negative impacts should they occur. We will provide and share a number of ways a community member can contact us to share feedback, ask questions or raise a concern. These would include but not limited to open house public meetings, public phone number and an email that will be staffed by local employees, website form, and a project website.

As part of a proactive, community driven stakeholder engagement model, feedback and community consultation structures will be put in place. This includes the creation of a Community Equity Round Table consisting of community representatives who will serve to provide direct and regular feedback to the project team and assist with addressing community needs and mitigating community concerns should they arise.

DAC Benefits Flow

ABTC already has a small team of employees located in Tonopah. This team includes a community liaison who will be poised to start equity plan work immediately with the support of the full project team, human resources, public relations, and communications team.

The development and coordination of the Equity Plan's Stakeholder Engagement components, Community Equity Round Table, Community Benefits Agreement, Employee Equity Corps and the Equity Plan Coordination with Project Partners will be by the ABTC Communications and Marketing team under the direction of the CEO/CTO. The Workforce Development and Recruitment efforts will be managed by the ABTC HR Director under the direction of the COO. The Equity Plan's Internship and UNR partnership programs will be managed by ABTC's Research and Development Director under the direction of the CEO/CTO. The Supplier Diversity initiatives will be managed by ABTC's procurement team under the direction of the CFO.

DAC Impact Tracking and Economic Benefits Analysis

In order to evaluate the progress, impact and success of this Equity Plan as well as the project's environmental analysis and impact, we will work with UNR's faculty and staff. This team will develop an impact analysis framework to capture data prior to project start, during the project and after the project to determine the overall project success, impact of the equity plan on DACs, and overall positive environmental impacts. The UNR team has dedicated staff to help with these efforts and coordination in the project.

Department of Energy
Argonne Site Office
9800 South Cass Avenue
Argonne, Illinois 60439

June 27, 2022

Diane M. Hart
Manager, Sponsored Research and Contract Administration
Argonne National Laboratory
9700 S. Cass Avenue
Lemont, IL 60439

Dear Ms. Hart:
SUBJECT: APPROVAL FOR ARGONNE NATIONAL LABORATORY TO RESPOND

TO: **DOE MESC and EERE**
FUNDING OPPORTUNITY ANNOUNCEMENT: **DE-FOA-0002678**
CFDA NUMBER: **81.086**
TITLED: **Bipartisan Infrastructure Law (BIL)Battery Materials Processing and Battery Manufacturing**
DIVISION TRACKING NUMBER: AMD2051

Authorization is granted for the Argonne National Laboratory (Argonne) to submit or participate in a proposal in response to the subject financial assistance opportunity or other solicitation. The work proposed for Argonne is consistent with or complementary to the missions of the Laboratory and will not adversely impact execution of the current DOE assigned programs at the Argonne. This work will not place Argonne in direct competition with the private sector.

Argonne is managed and operated by UChicago Argonne, LLC for the Department of Energy (DOE) under prime contract Contract NO. DE-AC02-06CH11357. All work conducted by Argonne is subject to the terms and conditions of this contract. It must be clear that no additional terms and conditions, including any specific flow down requirements to subcontractors, are accepted by the action of the Argonne submitting a proposal or participating as a member in a proposal under the subject financial assistance opportunity or other solicitation. In rare instances, additional terms and conditions may be considered by DOE on a case-by-case basis but must be reviewed and approved by DOE before an award or funding is accepted by DOE and/or Argonne.

If Argonne is expected to receive any direct DOE program funding, the DOE sponsor must follow the requirements under DEAR 970.5211-1 Work Authorization and DOE Order 412.1A. Again, no additional terms and conditions are accepted by Argonne Laboratory under a DOE funding action.

Should you have any questions concerning this authorization please contact me at (630) 252-2193 or jacquelyn.brocker@science.doe.gov.

Sincerely,

Jacquelyn D. Brocker
Contracting Officer

Diane Hart
Sponsored Research and Contract Administration
Sponsored Research Office

Argonne National Laboratory
9700 South Cass Avenue, Bldg. 362, Room E285
Lemont, IL 60439

1-630-252-7677 phone
dhart@anl.gov

June 27, 2022

Mr. Ryan Melsert
CEO, American Battery Technology Company
100 Washington St, STE 100
Reno, NV 89503

Re: Response to FOA-0002678 Topic Area 04

Dear Mr. Melsert,

This letter confirms the commitment of Argonne National Laboratory (ANL) to work as a subcontractor to American Battery Technology Company on the proposal entitled "Large-Scale Demonstration of Domestic Manufacturing of Low-Cost and Low-Environmental Impact Battery-grade Lithium Hydroxide from Unconventional Domestic Sedimentary Resources". The period of performance is sixty months and will be for $500,000 total. Qiang Dai is the principal investigator for Argonne.

Signature below indicates institutional approval for submission and commitment of resources. If a grant is awarded as a result of the application, Argonne National Laboratory will accept, subject to U.S. Department of Energy approval, a contract to perform the work as outlined in the proposal.

Personnel and facilities at the Laboratory are available under the terms and conditions of Prime Contract DE-AC02-06CH11357 with the Department of Energy and subject to full cost recovery. In the event of a conflict with the terms and conditions as stated in the grant proposal and/or award document, the provisions of this contract DE-AC02-06CH11357 will take precedence.

We look forward to participating in this endeavor and working with American Battery Technology Company.

Sincerely,

Diane Hart
Sponsored Research and Contract Administration

Location(s) of Work Documentation

DE-FOA-0002678

Control Number: 2678-1855

Prime Applicant/ Team Member	Address	City	State	Nine Digit Zip Code (ZIP+4)
American Battery Technology Company	100 Washington St, Suite 100	Reno	Nevada	89503
DuPont	974 Centre Rd	Wilmington	Deleware	19805
University of Nevada, Reno	1664 N Virginia St	Reno	Nevada	89557
Argonne National Lab	9700 S Cass Ave	Lemont	Illinois	60439

BIOGRAPHICAL SKETCH

Ryan Melsert
Chief Executive Officer &Chief Technological Officer
American Battery Technology Company
E-mail: [redacted] (b) (6) [redacted]

A. PROFESSIONAL PREPARATION

Pennsylvania State University, University Park, PA	Mechanical Engineering	B.S. 2004
Pennsylvania State University, University Park, PA	Engineering Science	B.S. 2004
Georgia Institute of Technology, Atlanta, GA	Mechanical Engineering	M.S. 2007
Georgia Institute of Technology, Atlanta, GA	Business Administration	M.A 2010
Georgia Institute of Technology, Atlanta, GA	Mechanical Engineering	Ph.D (not completed)

B. APPOINTMENTS

Aug 2021-present	Chief Executive Officer, American Battery Technology Company
Aug 2019-present	Chief Technological Officer, American Battery Technology Company
Jun 2015–Mar 2019	R&D Manager, Battery Materials Synthesis & Recycling, Tesla, Inc.
Apr 2013–Jun 2015	R&D Manager, Advanced Energy & Transportation Technologies, Tesla, Inc.
Mar 2013–May 2015	R&D Manager, Advanced Energy & Transportation Technologies, Southern Research

C. PRODUCTS RELATED TO THE PROPOSED PROJECT

1. Founded and lead a cross-functional team of 8-10 chemical and mechanical engineers and scientists in the development of first-of-kind processes for the synthesis and recycling of battery materials and components.
2. Created strategic project roadmap, hired team of cross-functional subject matter experts, built a wet chemistry process lab, secured executive support and funding, led construction and commissioning of commercial scale facilities, and trained operators to enable successful implementation of internally developed processing technologies.
3. Process design, bench-scale prototyping, and pilot scale validation of an integrated process train for the complete recycling of Li-ion batteries and the reintroduction of extracted battery grade feedstocks back to supply chain
4. Development, synthesis, and evaluation of lithium selective solid-state membranes and sorbents for the extraction and purification of aqueous lithium
5. Led project team of 5-10 chemical and mechanical engineers in fundamental design of first-of-kind systems throughout energy systems field. Developed physics based models designed and built prototype units, designed/built field pilot systems, and commercialized successful technologies.
6. Led conceptual design, rigorous modeling, bench validations, and commercialization for 6

US DOE awarded projects.

7. Development of a reversible gas-solid reaction based system utilizing a tailored stabilized calcium-based sorbent in a closed-loop thermochemical reactor for high-temperature (~800C) energy storage utilizing supercritical CO2 (sCO2) in a closed-loop Brayton cycle heat engine.
8. Developed hybrid system utilizing nanostructured thermoelectric solid-state modules, membrane distillation, and selective sorbents for co-generation of electricity and extraction of LiOH from low-temperature brines.
9. Development of system utilizing gasifier, hot gas cleanup, and packed-bed reactor with hybrid water-gas shift catalyst and magnesium-based CO2 sorbent to generate hydrogen rich fuel.
10. Development of system utilizing downdraft gasifier, hot gas cleanup, and selective Fischer-Tropsch catalyst to synthesize fuel from biomass/coal feedstocks.

D. SYNERGISTIC ACTIVITIES

- Winner of the BASF Circularity Challenge, acceptance into largest clean technology incubator in US (Greentown Labs) 2019
- Received Performance Award as *Top 1% Performer* among employees company-wide
- Developed and submitted 3 patent applications for battery design, materials processing, and cell manufacturing; received first patent granted to Tesla for battery manufacturing processes at Gigafactory
- Led conceptual design, rigorous modeling, bench validations, and commercialization for 6 US DOE awarded projects
- Won DOE SunShot grant for sorbent development and construction of bench-scale system
- Won second DOE SunShot grant for construction of 1.0 MWhr field pilot -Secured funding from electric utility (Southern Company) and EPRI
- Won company-wide “Invention of the Year” 2015, presented at ARPA-E Innovation Summit
- Won DOE grant from NETL office for construction of prototype.
- Global Cool Prize Finalist for First-of-kind residential air conditioning system that exhibits a disruptive improvement in energy efficiency over current state-of-the-art systems.

BIOGRAPHICAL SKETCH

Chuck Leber
Lead Onsite Project Manager
American Battery Technology Company
Email: (b) (4) [redacted]
(b) (6)

A. PROFESSIONAL PREPARATION

Columbia University, New York, NY Mechanical Engineering B.S. 1971

B. APPOINTMENTS

Apr 2020-present	Lead Onsite Project Manager, American Battery Technology Company, Reno, Nevada
Apr 2018-Apr 2020	Project Manager, Fujifilm Electronic Materials U.S.A., Inc., Mesa, Arizona
Oct 2016-Apr 2018	Construction Manager, Tesla Inc., Sparks, Nevada
Feb. 2011-Oct 2016	Sr. Project Manager, KM Kelly Inc., Rochdale, Massachusetts at GlobalFoundries, Malta, NY
Mar 2007-Feb 2011	Vice President LotusWorks, Vancouver, Washington
July 1992-Mar 2007	Vice President, Performance Improvement for Industry, Inc., Vancouver, Washington
Sep 1990-July 1992	Training Manager, Boise Cascade Corp., St. Helens, Oregon
May 1987-Sep 1990	Production Engineer, Boise Cascade Corp., St. Helens, Oregon
Apr 1985-May 1987	Project Manager, Paper Group Engineering, Boise, Idaho
Jun 1981-Apr 1985	Engineering Manager, Pacific United Constructors, Inc., White City, Oregon
Jun 1980-Jun 1981	Project Manager, HGE Engineers and Planners, Coos Bay, Oregon
Mar 1975-Jun 1980	Project Engineer, Industrial Services, Inc., North Bend, Oregon
Jan 1973-Mar 1975	Associate for Young Adult and Minority Youth Ministries, United Presbyterian Church, New York, New York
Jun 1971-Jan 1973	Intern, Joint Office of Urban-Industrial Ministries, United Presbyterian Church, New York, New York

C. PRODUCTS RELATED TO THE PROPOSED PROJECT

N/A

D. SYNERGISTIC ACTIVITIES

- Managed the design and construction of an ultra-pure semiconductor chemicals facility expansion that includes three warehouses, a 2-story office building, and a clean room laboratory building

- Managed MEP projects totaling $200 million in the Gigafactory CUB and Utility Yard. Responsible for capital cost budgeting and PO requests, RFQ scoping, proposal evaluation, contractor management, scheduling, and design reviews for constructability, operability, and maintainability. Contractors managed include mechanical, process piping, structural, electrical, controls & instrumentation, process programming and systems integration, acceptance testing, and commissioning. Projects include installation of high and low-pressure air compressors, RO skids, chillers and chilled water systems, cooling tower systems, wastewater treatment systems, chemical refining systems, electrolyte systems, liquid nitrogen system, 34.5 KV / 4160V / 480V / 208/120V power distribution.
- Managed power and controls installation of Bulk Chemical Distribution System, and Fire Alarm and Security Systems at a semiconductor foundry
- Managed the permitting of a 150 MW wind farm in eastern Oregon
- Represented the Owner for the construction of a 300 MW combined-cycle power plant in Longview, Washington
- Managed the commissioning/startup, training, and document control services for a green-energy wine bottle manufacturing facility, in Kalama, Washington
- Managed the design and construction of a Research and Development facility for a pulp & paper company in Portland, Oregon
- Designer of material handling systems, structural steel, and machine components

BIOGRAPHICAL SKETCH

York R. Smith
Director of Research and Development
American Battery Technology Company
E-mail: (b) (4) [redacted] (b) (6) [redacted]

A. PROFESSIONAL PREPARATION

University of Nevada, Reno, NV	Chemical Engineering	B.S. 2010
University of Nevada, Reno, NV	Chemical Engineering	M.S. 2011
University of Utah, Salt Lake City, UT	Metallurgical Engineering	Ph.D. 2014
University of Utah, Salt Lake City, UT	Metallurgical Engineering	PDF 2014–16

B. APPOINTMENTS

Mar 2022-present	Director of Research & Development, American Battery Technology Company
Mar 2022-present	Adjunct Associate Professor, Materials Science & Engineering Department, University of Utah
Jul 2016–Mar 2022	Assistant Professor, Metallurgical Engineering Department, University of Utah
Sep 2015–Aug 2016	U.S. DOE EERE Sunshot Postdoctoral Research Associate, Metallurgical Engineering Department, University of Utah
Jun 2014–Aug 2015	Postdoctoral Research Associate, Metallurgical Engineering Department, University of Utah

C. PRODUCTS RELATED TO THE PROPOSED PROJECT

1. (b) (4) [redacted]

6. (b) (4) [redacted]

D. *SYNERGISTIC ACTIVITIES*

- U.S. Department of Energy, American-Made Challenges: Geothermal Lithium Extraction Prize, Phase I Finalists, July 2021.
- Henry Krumb Lecturer 2019-2020, Society of Mining, Metallurgy & Exploration
    a. Lecture title: "Lithium: Resources, Recovery, and Recycling"
- U.S. DOE EERE SunShot Postdoctoral Research Award, 2015-2016
- Nevada State Board Engineer Intern (FE exam pass, EI#: 0T5730)
- Associate Editor, *Mining, Metallurgy & Exploration*, 2019-present
- Strategic Advisory Committee, The REMADE Institute, 2019- 2022
- Member, Society of Mining, Metallurgy, and Exploration (SME)
    a. Co-Chair, Industrial Minerals & Aggregates: Energy and Critical Materials (2019–2020)
    b. Mineral Processing Division Scholarship Committee, Member (2019-2020), Chair (2021-2022)
    c. Accreditation & Curriculum Issues Subcommittee (2019-2020)
    d. Mineral Industry Education Award Committee, Mineral Processing Division, 2019
    e. Antoine Gaudin Award Committee, Member (2022)
- Associated Member, UU Global Change & Sustainability Center (2017–present)
- Assessment Advisory Board, Member, University of Utah (2021-2022)
- Allocation Committee Member, Sustainable Campus Initiative Fund, University of Utah (2017-2019)
- IT Committee- College of Mines and Earth Sciences (2018-2022)
- CMES Proposal Review Committee- UU College of Mines and Earth Sciences (2021-2022)
- Graduate Admission Committee- UU Metallurgical Engineering Program (2017-2021)
- ABET Program Coordinator- UU Metallurgical Engineering Program (2016-2021)
- Curriculum Committee- UU Department of Materials Science & Engineering (2017-2022)
- Faculty Search Committee- UU Department of Materials Science & Engineering (2021-2022)
- Contributed and participated in numerous college and department outreach activities at UU (e.g., Science Day and Engineering Day, lab tours and open houses)

Mark McDaniel, PhD
Senior Staff Analytical Chemist
American Battery Technology Company

A. PROFESSIONAL PREPARATION

University of Nevada, Reno, NV	Environmental Science	B.S. 1997
University of Nevada, Reno, NV	Environmental Analytical Chemistry	M.S. 1999
University of Nevada, Reno, NV	Atmospheric Science	Ph.D. 2013

B. APPOINTMENTS

March 2022 - present	Senior Staff Analytical Chemist, American Battery Technology Company
May 2019 - March 2022	Environmental Scientist III, Nevada Division of Environmental Protection
June 2018 - May 2019	Staff Research Scientist, Tesla
April 2017 - June 2018	Senior Analytical Chemist, Tesla
August 2013 - March 2017	Assistant Research Scientist, Desert Research Institute
August 1999 - August 2013	Environmental Analyst

C. (b) (4) (b) (6) [redacted]

6

7

(b) (4)

D. *SYNERGISTIC ACTIVITIES*

- University of Nevada, Reno Alumni Association Senior Scholar Award, 1997
- USEPA National Network for Environmental Management Studies Fellow, 1997-1999
- State of California Off-Highway Vehicle Commission, Award No. 05-CR-11052008-044, 2013

BIOGRAPHICAL SKETCH

Axel Drefahl
Senior Chemist
American Battery Technology Company
E-mail:(b) (4) [redacted] (b) (6) [redacted]

A. PROFESSIONAL PREPARATION

Georg-August-University of Göttingen, Germany	Chemistry	Pre-Diplom, 1981
Georg-August-University of Göttingen, Germany	Chemistry	Diplom/Master, 1984
Technical University of Munich, Germany	Natural Sciences	Ph.D. 1989
Stanford University, California	Chemical Modeling	PDF 1990–1995

B. APPOINTMENTS & ENTREPRENEURSHIP

2019-present	Senior Chemist, American Battery Technology Company, Reno, NV
2015-2018	Research Chemist/Hydrometallurgy, Cycladex, Gold Hill, NV
2014-2015	Hydrometallurgical Chemist, Comstock Mining Lab, Gold Hill, NV
2011-present	Founder of the CurlySMILES Project: open-source software development for chemical data mining & modeling, Reno, NV
2000–2010	Research Chemist/photovoltaic materials, Owens Technology Company, Palo Alto, CA (2001-2005) and Reno, NV (2006-2010)
1996-1999	Project Leader/Monte-Carlo-Simulation of Surfactant Systems, School of Mining (“Bergakademie”), Freiberg, Germany
1990–1995	Postdoctoral Research Associate, Chemical modeling of hazardous compounds, Terman Engineering Center, Stanford University, CA

C. PRODUCTS RELATED TO THE PROPOSED PROJECT

(b) (4) [redacted]

(b) (4)

[redacted].

D. SYNERGISTIC ACTIVITIES

- Greentown Labs, Somerville, Massachusetts, **2020-2021**: ABTC wet lab operations, networking with climatech pioneers and recruiting of interns.
- Invited talk: Ionic liquids and solids: open-access-data, modeling and design, Dec. 5, **2008**; invited by Ana de Bettencourt-Dias, Dept. of Chemistry, UNR, Reno, NV.
- ACS presentation: Application of CurlySMILES to the encoding of polymer systems, Aug. 16, **2015**, ACS 250th National Meeting in Boston, Division: Computers in Chemistry.
- Indo-US workshop presentation: Monte Carlo Simulation in Surfactant and Polymer Chemistry, *First Indo-US Workshop on Mathematical Chemistry*, Jan. 9-13, **1998**, Visva-Bharati University, Santiniketan, India (http://www.axeleratio.com/axel/reviewMCS.pdf).
- Outreach for ABTC at Fernley STEM Festival: interviewed by Chris Lauborough of Skyfall Video Services to inspire next-generation scientists and research planing, **2021**.
- Teaching: physical chemistry (thermodynamics, materials science) and scientific programming (C++ and Python for chemical modeling), Freiberg, **1995-2000**.
- Training of interns: wet-lab operations to extract and recycle metals (ABTC Labs at Greentown and in Reno, **2019-present**).
- Diverse web-based activities supporting chemical modeling and data mining, for example:
    a. Design of calculators (www.axeleratio.com/calc/water_density/form/Kell-equation.htm)
    b. Encoding with CurlySMILES (http://www.axeleratio.com/csm/proj/main.htm)
    c. Introduction to statististical analysis using Python and R (https://axeleratio.blogspot.com/2019)
- Volunteered as a *Young Scientists Award* judge for the Intel International Science & Engineering Fair (ISEF) competition in **2009**, Reno-Sparks Convention Center, Reno, NV.
- Memberships, participation in and contributions to events of the American Chemical Society (ACS) and the German Chemical Society (GDCh), **2000-present**.

- Certificates: Mine safety (MSHA) and OSHA-10, **2021**.

BIOGRAPHICAL SKETCH

Yanli Yin
Senior Staff Chemical Engineer
American Battery Technology Company
E-mail:(b) (4) (b) (6)

A. PROFESSIONAL PREPARATION

Tsinghua University, Beijing, China Physics Ph.D. 2015 Shandong University, Jinan, China Microelectronics B.S. 2010

B. APPOINTMENTS

Dec 2021-present Sr. Staff Chemical Engineer, American Battery Technology Company Apr 2021-Dec 2021 Electrochemistry Engineer Technical Specialist, Cummins Inc. Jul 2020-Apr 2021 Senior Systems Engineer, Cummins Inc.
Nov 2017-Nov 2019 Postdoctoral Researcher, National Renewable Energy Laboratory Jun 2017-Nov 2017 Visiting Courtesy Postdoctoral Associate, Florida State University Jan 2016-Jun 2017 Postdoctoral Research Associate, Florida State University Jul 2015-Dec 2015 Lecturer, Beijing University of Chemical Technology

C. PRODUCTS RELATED TO THE PROPOSED PROJECT

(b) (4)

(b) (4)

(b) (4)

[redacted]

(b) (4)

[redacted]

D. SYNERGISTIC ACTIVITIES

(b) (4)

BIOGRAPHICAL SKETCH

(b) (4) (b) (6)

DuPont, Water Solutions

E-mail: (b) (4) (b) (6)

A. PROFESSIONAL PREPARATION

University of Illinois,	Chemistry	Ph.D. 2011
University of Virginia.	Chemistry	B.Sc. 2006

B. APPOINTMENTS

(b) (4)

C. PRODUCTS RELATED TO THE PROPOSED PROJECT

(b) (4)

SYNERGISTIC ACTIVITIES

(b) (4)

BIOGRAPHICAL SKETCH

(b) (4) [redacted]

DuPont Water Solutions

E-mail: (b) (4) [redacted]

(b) (6) [redacted]

A. PROFESSIONAL PREPARATION

University of California, Berkeley	Chemical Engineering	Ph.D.2007
Yale University, New Haven, CT	Chemical Engineering	B.S. 2002

(b) (4) [redacted]

C. PRODUCTS RELATED TO THE PROPOSED PROJECT

(b) (4) [redacted]

D. SYNERGISTIC ACTIVITIES

- First sales, 2 R&D 100 Awards, Business Intelligence Group Sustainability Award, ICIS Innovation Award in 2016, Bronze Edison Award in 2017
- Designed and built guided wave depolarized light scattering apparatus for studying block copolymer grain structure in thin films
- Designed and built oscillatory shear alignment apparatus for studying microstructural orientation in polymer samples

(b) (4) [redacted]

- Designed and built high throughput sample stage with temperature control and vacuum chamber for small angle X-ray scattering
- Extensive experience with polymer characterization techniques: light scattering, depolarized light scattering, gel permeation chromatography, small angle X-ray scattering (b) (4) [redacted] X-ray photon correlation spectroscopy, differential scanning calorimetry, rheometry, atomic force microscopy, optical microscopy
- Experience with block copolymer synthesis (anionic polymerization), e-beam crosslinking, thin film preparation, self consistent field theory

BIOGRAPHICAL SKETCH

(b) (4) (b) (6)
[redacted]
Argonne National Laboratory
E-mail Address: (b) (4) (b) (6)

A. PROFESSIONAL PREPARATION

The University of Michigan ,	Environmental Engineering,	Ph.D. 2014
The University of Michigan	Environmental Engineering	M.S.E 2010
Tianjin University, China	Environmental Engineering	B.E. 2007

B. APPOINTMENTS

[redacted]

(b) (4) [redacted]

[redacted]

D. SYNERGISTIC ACTIVITIES

(b) (4) [redacted]

BIOGRAPHICAL SKETCH

(b) (4) (b) (6)

DuPont Water Solutions

E-mail: (b) (6)

A. PROFESSIONAL PREPARATION

University of Houston	Chemical Engineering	Ph.D 2003-2008:
Indian Institute of Technology-Kanpur	Chemical Engineering	M.S 2001-2003
Jadavpur University, Kolkata.	Chemical Engineering	B.S 1996-2000

B. APPOINTMENTS

(b) (4)

C. PRODUCTS RELATED TO THE PROPOSED PROJECT

1. (b) (4)
2. Responsible for market evaluation through direct customer interaction and IP evaluation
3. Liaison between the technical team and manufacturing and commercial functions
4. (b) (4)
5. Contributed to a multitude of technologies as a team leader as well as an individual contributor
6. Led History Department at San Lorenzo High School–developing and delivering state-standard curriculum to motivate and foster inquiry; negotiated learning contracts with parents and students to promote student engagement, accountability, and optimal learning outcomes.**2001**
7. Managed Asahikawa branch of an English language conversation school, conducted membership drives, trained instructors, and taught adult students in the Japanese business community effective English reading, writing, and speaking skills. **1992**

D. SYNERGISTIC ACTIVITIES

- Six-sigma Green Belt Project Leadership (GBPL) (2011)
- Technical leadership development workshop (TLDW):
- DuPont internal certification (2018) •
- Sustainability Citification: Erb Institute, Ross School of Business, University of Michigan, Ann Arbor (2018)

[redacted]

Email: (b) (6) [redacted]

Highlights

- Executive MBA from HEC in 2016, the program ranked the 2nd by Finance Times in the global in 2020
- Master of Engineering in Applied Chemistry from Wuhan University, one of the top universities in China founded in year 1893
- Entrepreneurship; built successful business practices from scratch in the past three years in Europe. Practices covered cross nations acquisition, team's integration under different language and cultures, process purification knowledge for different applications including lithium extraction from brine
- 12 years successful career path in Dow Chemical, with multiple roles from sales and sales management, key account management, strategic marketing, business development and project management
- Strategic judgments on unmet needs of new markets and identification of appropriate technologies
- A highly self-motivated person with persistence to deliver the result
- Excellent communicator by Mandarin, fluent in English, 19 years working language by English, and basic French

Experience

[redacted]

(b) (4)

(b) (4) (b) (6)

A. PROFESSIONAL PREPARATION

Utkal University	Bhubaneswar, OR, India	Chemistry	B.Sc. 1970
Regional Engineering College	Rourkela, OR, India	Chemistry	M.Sc.1972
South Dakota School of Mines	Rapid City, SD, USA	Metallurgical Engg.	M.S. 1977
University of Utah	Salt Lake City, UT, USA	Metallurgical Engg.	Ph.D. 1981

B. APPOINTMENTS

(b) (4)

C. PRODUCTS

(b) (4) [redacted].

[redacted]

(b) (4)

SYNERGISTIC ACTIVITIES

(b) (4)

(b) (4) (b) (6)

A. PROFESSIONAL PREPARATION

McGill University	Montreal, Canada	Mechanical Eng.	B.Eng. 2007
McGill University	Montreal, Canada	Mechanical Eng.	M.Eng. 2012
McGill University	Montreal, Canada	Materials Eng.	Ph.D. 2017

B. APPOINTMENTS

(b) (4)

2017-2019 Postdoctoral Research Scientist, Mineral Processing, CanmetMINING, Ottawa

C. PRODUCTS

Ten Closely Related to This Project

(b) (4)

(b) (4)

D. SYNERGISTIC ACTIVITIES

1. Member of Society for Mining, Metallurgy and Exploration (SME)
2. Session Co-Chair for 2022 SME Conference - Gas Interactions and Methane Management Technical Session
3. Grant Reviewer for Department of Energy (DOE)/Critical Materials Institute (CMI) 2020 Critical Materials Supply Chain Innovation Program
4. 28th International Mineral Processing Congress, Flotation Plant Design, Co-Chair

BIOGRAPHICAL SKETCH

(b) (4) (b) (6)

A. PROFESSIONAL PREPARATION

Mangalore University, Mangalore, India, General Science, **B.Sc.,** 1995
Mangalore University, Mangalore, India, Materials Science, **M.Sc.,** 1997
National Institute of Technology (NIT), Surathkal, India, Materials Engineering, **M.Tech.**, 1999
Indian Institute of Science (IISc), Bangalore, India, Materials Engineering, **Ph.D.,** 2008

(b) (4) (b) (6)

09/2008-06/2015 Post-Doctoral Research Associate, University of Wisconsin-Milwaukee
05/2008-08/2008 Post-Doctoral Research Associate, University of Pittsburgh

C. PRODUCTS RELATED TO THE PROPOSED PROJECT

(b) (4)

6.

- (b) (4) [redacted]
- [redacted]
- [redacted]
- [redacted]

D. SYNERGISTIC ACTIVITIES

1. Editorial board member of 10 journals and journal reviewer of more than 50 journals.
2. (b) (4) [redacted]
3. Proposal Reviewer for the US Department of Energy; and National Science Foundation
4. [redacted]

Approved by OMB
0348-0046

Disclosure of Lobbying Activities

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352
(See reverse for public burden disclosure)

1. Type of Federal Action: a. contract __b__ b. grant c. cooperative agreement d. loan e. loan guarantee f. loan insurance	**2. Status of Federal Action:** a. bid/offer/application __b__ b. initial award c. post-award	**3. Report Type:** a. initial filing __a__ b. material change
4. Name and Address of Reporting Entity: ____ Prime ___X_ Subawardee Tier_____, if Known: **UChicago Argonne, LLC** **9700 S Cass Ave** **Lemont, IL 60439** **Congressional District, if known: IL-003**	**5. If Reporting Entity in No. 4 is Subawardee,** Enter Name and Address of Prime: **American Battery Technology Company** **100 Washington St, STE 100** **Reno, NV 89503** **Congressional District, if known:**	
6. Federal Department/Agency: Dept of Energy (DOE) - MESC and EERE	**7. Federal Program Name/Description:** Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing CFDA Number, *if applicable*: 81.086	
7. **Federal Action Number,** *if known:* DE-FOA-0002678	**9. Award Amount**, *if known:* **$**	
10. a. Name and Address of Lobbying Registrant *(if individual, last name, first name, MI):* n/a	**b. Individuals Performing Services** *(including address if different from No. 10a)* *(last name, first name, MI):* n/a	
11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.	**Signature:**_____ **Print Name: Diane M Hart** **Title: Mgr., Sponsored Research & Contract Admin** **Telephone No.: (630)252-7677 Date: 6/24/2022**	
Federal Use Only	**Authorized for Local Reproduction** **Standard Form - LLL (Rev. 7-97)**	

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.

2. Identify the status of the covered Federal action.

3. Identify the appropriate classification of this report. If this is a followup report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.

4. Enter the full name, address, city, State and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.

5. If the organization filing the report in item 4 checks "Subawardee," then enter the full name, address, city, State and zip code of the prime Federal recipient. Include Congressional District, if known.

6. Enter the name of the federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.

7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.

8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitations for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency). Included prefixes, e.g., "RFP-DE-90-001."

9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.

10. (a) Enter the full name, address, city, State and zip code of the lobbying registrant under the Lobbying Disclosure Act of 1995 engaged by the reporting entity identified in item 4 to influence the covered Federal action.

    (b) Enter the full names of the individual(s) performing services, and include full address if different from 10(a). Enter Last Name, First Name, and Middle Initial (MI).

11. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

According to the Paperwork Reduction Act, as amended, no persons are required to respond to a collection of information unless it displays a valid OMB control Number. The valid OMB control number for this information collection is OMB No. 0348-0046. Public reporting burden for this collection of information is estimated to average 10 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0046), Washington, DC 20503

Statement of Project Objectives

Large-Scale Demonstration of Domestic Manufacturing of Low-Cost and Low-Environmental Impact Battery-grade Lithium Hydroxide from Unconventional Domestic Sedimentary Resources

A. OBJECTIVES

The objective of this project is to construct, commission, and operate a pre-commercial scale demonstration facility to process unconventional Nevada-based sedimentary lithium-bearing claystone resources in order to manufacture battery-grade lithium hydroxide monohydrate that meets the rigorous specifications required to synthesize high energy density battery cathode materials. The manufacturing plant will be designed to sustainably extract and manufacture battery grade lithium hydroxide monohydrate in a low-cost and low-environmental-impact set of processes. (b) (4) [redacted]

B. SCOPE OF WORK

This project will be conducted in five (5), twelve (12) month-long, budget periods:

Budget Period 1: (b) (4) [redacted]

Budget Period 2: (b) (4) [redacted]

Budget Period 3: (b) (4) [redacted]

Budget Period 4: (b) (4) [redacted]

Budget Period 5: (b) (4) [redacted]

C. TASKS TO BE PERFORMED

The following tasks will be conducted:

All Budget Periods

Overall Project Management and Planning

The recipient will perform project management activities to include project planning and control, subcontractor control, financial management, data management, management of supplies and/or equipment, risk management, and reporting as required to successfully achieve the overall objectives of the project.

Task 0.0 – Project Management and Planning:

The Recipient shall develop and maintain the Project Management Plan (PMP). The content, organization, and requirements for revision of the PMP are identified in the Federal Assistance Reporting Checklist and Instructions. The Recipient shall manage and implement the project in accordance with the PMP.

Subtask 0.1- Kick-Off Meeting:

The Recipient will participate in a project kickoff meeting with the DOE within 30 days of project initiation.

Budget Period 1: Preliminary Engineering

Task 1.0 - Detailed EPC (Engineering, Procurement, Construction) of Site, Infrastructure, and Production Plant Design: Will utilize information from field demonstration trials to design the processing plant infrastructure needed to produce 5,000 tonnes per annum of battery-grade lithium hydroxide. For this task we intend to use the proven method of 30%-60%-90%-IFC construction design milestones to effectively review drawing packages, capture comments and clarifications from internal and external stakeholders, and refine designs, throughout the

engineering process. The objective of this task is to design a first-of-kind pre-commercial plant, and to generate drawings for use in further engineering, procurement, and construction. As the design team progresses from one milestone drawing set (i.e., 30%, 60%, 90%, or IFC) to the next, changes and additions to the drawing set will be clearly defined therein to ensure proper revision control and a clear historical progression of design development.

Subtask 1.1 – (b) (4) [redacted]

Subtask 1.2 – (b) (4) [redacted] t.

Milestone	Type	Description
(b) (4) [redacted]		

Go/No Go Decision: Updated TEA/LCA and completion of designs and drawings	Go/ No Go	Updated TEA/LCA demonstrates a production cost of (b) (4) [redacted]

Budget Period 2: Detailed Design, Procurement, and Groundbreaking

Task 1.0 - Detailed EPC (Engineering, Procurement, Construction) Site, Infrastructure, and Production Plant Design:

[redacted]

Subtask 1.4. – (b) (4) [redacted]

Task 2.0 - Sourcing and contracting of services, materials, and equipment for construction of full site:

The refined IFB drawings sets that include equipment specifications and detailed construction designs will be used to develop requests for proposals (RFPs) for owner furnished, contractor installed (OFCI) capital equipment, subcontractor services and construction materials. Using meticulous bid levelling methodologies, equipment vendors and subcontractors will be selected and the (b) (4) [redacted]

Subtask 2.1. – (b) (4) [redacted]

(b) (4) [redacted]

Subtask 2.2. – (b) (4) [redacted]

Task 3.0 - Construction of lithium hydroxide processing plant:
The subcontractors, materials, and equipment purchased through the procurement process in Task 2.0 will be utilized to complete construction of all infrastructure on-site. Construction activities will be phased to efficiently make use of labor, space and construction equipment, as well as be planned around the delivery of long lead equipment.

Subtask 3.1. – (b) (4) [redacted]

Subtask 3.2. – (b) (4) [redacted]

Milestone	Type	Description
(b) (4) [redacted]		

(b) (4)

Budget Period 3: Construction of commercial-scale processing plant:

Task 3.0 - Construction of lithium hydroxide processing plant:

(b) (4)

Subtask 3.4. – (b) (4)

Subtask 3.5. – (b) (4)

Subtask 3.6. – (b) (4)

Milestone	Type	Description

(b) (4)

Go/No-Go 3: Updated TEA/LCA with actual contracted values confirming continued	Go/ No-Go	production cost of

Budget Period 4: Construction Close-out, Start-up and Commissioning of Plant Operations and Turn-over for Initial Production Ramp

Task 4.0 – Completion of all construction activities, commissioning of processing plant, and turnover to operations team: The overall objectives of this task will ensure the completion and QA/QC of all construction and installation activities. Commissioning of the processing plant will be carried out to ensure proper operation and functionality of all unit operations and supporting systems. At the completion of this task, control of the processing plant will be turned over to the plant operations team.

Subtask 4.1. – (b) (4)

Subtask 4.2. – (b) (4)

[redacted].

Subtask 4.3. – (b) (4) [redacted].

Task 5.0 – Ramp up of production and internal/external validation of product specifications: In this task we will initiate operation of the processing plant and scale up production starting at (b) (4) [redacted]. We will monitor and evaluate the plant product yields, final product quality, and overall processing plant performance metrics. At the completion of this task, we will have a fully functioning and operational processing plant at (b) (4) [redacted].

Subtask 5.1. – (b) (4) [redacted] methods.

Milestone	Type	Description
[redacted]	[redacted]	(b) (4) [redacted]
[redacted]	[redacted]	[redacted]
M5.1.1: Demonstration of ability to operate at [redacted] achieving product purity specifications	Technical	Complete ramp to [redacted] and reach battery-grade lithium hydroxide specifications.
M5.1.2: Demonstration of ability to operate at [redacted]	Technical	Complete ramp to [redacted] and prove operating costs fall below [redacted]
Go/No-Go 4: Updated TEA/LCA with actual operating values confirming continued [redacted]	Go/ No Go	Updated TEA/LCA demonstrates a production cost of [redacted]

Budget Period 5: Continued Ramp and Operation of the Pre-Commercial Scale Plant

Task 5.0 – Ramp up of production and internal/external validation of product specifications: Continued from Budget Period 4.

Subtask 5.2. – (b) (4) [redacted].

Milestone	Type	Description
M5.2.1: Demonstrate the ability to operate at [redacted] while achieving product purity specifications	Technical	Complete ramp to [redacted] and reach battery-grade lithium hydroxide specifications.
M5.2.2: Demonstrate the ability to operate at [redacted]	Technical	Complete ramp to [redacted] and prove operating costs fall below [redacted]
M5.2.1: Demonstrate the ability to operate at [redacted] while achieving product purity specifications	Technical	Complete ramp to [redacted]-grade lithium hydroxide specifications.
M5.2.2: Demonstrate the ability to operate at [redacted]	Technical	Complete ramp to [redacted] and prove operating costs fall below [redacted].
End of Project Goal: Demonstrate a functioning processing plant that manufactures battery-grade LiOH, at production costs [redacted] that enables the validation and de-risking to construct commercial scale domestic facilities	End of Project Goal	Updated TEA/LCA demonstrates a production cost of < [redacted], as well as validation by external offtake partners of product specifications.

D. DELIVERABLES

In addition to the reports specified in the "Federal Assistance Reporting Checklist", the Recipient will provide the following to the DOE Project Officer (identified in Block 15 of the Assistance Agreement as the Program Manager):

- Summary of accomplishments and project work report will be prepared for inclusion in the Vehicle Technologies Office annual programmatic progress report. Report will be due by October 31 of each year.
- All approved milestone drawing set (i.e., 30%, 60%, 90% and IFC) cover sheets, signed by both project team and EPC contractor
- Qualification documents and Certificates of Analysis for battery-grade lithium hydroxide by internal team and by third-party customers

E. BRIEFINGS AND TECHNICAL PRESENTATIONS

- A technical presentation will be given at the Vehicle Technologies Annual Merit Review Meeting held in Washington, DC.
- Detailed project status update briefings at Washington, DC or via communication/conferencing media approximately twice per year. Briefings will explain the plans, progress, and results of the technical effort.
- Technical paper(s) and presentations as appropriate at technical society meetings, or at technical exchange meetings.

Summary for Public Release

American Battery Technology Company (ABTC), in partnership with DuPont Water Solutions, the University of Nevada at Reno, and Argonne National Laboratory, and with product offtake and/or product quality validation by (b) (4) [redacted] proposes to design, construct, commission, and operate a large-scale demonstration pre-commercial manufacturing facility for the production of battery grade lithium hydroxide from domestic-US unconventional sedimentary resources using the manufacturing processing train developed by ABTC and its partners. These unconventional lithium-bearing domestic-US sedimentary materials contain some of the largest deposits of lithium in the world. However, to date, there have been no processes developed and commercialized that can produce battery grade lithium products from these unconventional sedimentary deposits in an economically competitive and low-environmental impact manner. This project team is proud to have developed such a system, to have validated these processes at the bench level, to be currently demonstrating this integrated continuous processing train at the multi-ton per day scale through the support of a grant award from the US DOE AMO, and to now be scaling this project to an initial 5,000 MT LiOH/year pre-commercial facility with the proposed support of this Battery Materials Processing and Battery Manufacturing program.

The magnitude of our project, if funded, would have the potential for disruptive step change, in environmental improvements compared to current methods, and could have significant positive economic and social impacts for Tonopah and surrounding communities. ABTC highly values its relationships with the local community and is excited to bring further high-quality jobs and community benefits to the Tonopah, NV area with the construction and operation of this lithium hydroxide manufacturing facility. We have been active and participating members in this community for many years and are proud to have received support from the (b) (4) [redacted] detailing the impacts that our increased activity in the area will generate with our underrepresented partners.

University of Nevada, Reno

Mridul Gautam
Vice President for Research and Innovation

Dear American Battery Technology Company,

The University of Nevada, Reno (UNR) is pleased to support the proposal submitted by American Battery Technology Company (ABTC) entitled "Large-Scale Demonstration of Domestic Manufacturing of Low-Cost and Low-Environmental Impact Battery-grade Lithium Hydroxide from Unconventional Domestic Sedimentary Resources" in response to DE-FOA-0002678. UNR is a land-grant research university that is committed to the promise of a future powered by knowledge. The research, teaching and outreach performed by many of our faculty and students work towards building a clean and equitable energy economy, supporting President Biden's goal of achieving carbon pollution-free electricity by 2035. To that end, we are proud to work alongside ABTC and its partners to design, construct and commission a commercial-scale facility to produce battery-grade lithium hydroxide monohydrate from domestic sources to support clean and efficient energy storage.

This project works to build a new energy economy that will fully realize environmental and economic justice. The advanced technology and processing capabilities this project develops will not only achieve environmental sustainability that fuels robust economic growth across the country, but it will also broaden the scope of participation in scientific research and economic development to include individuals from groups that have been historically underrepresented and underserved. Students, scholars, faculty and staff across our campus are united in our common desire to make the world a better place through a commitment to diversity, equity and inclusion. Through our research, teaching, and contributions to this project, UNR is an example of inclusive excellence.

This project represents a tremendous opportunity to realize our shared national goals. Our support of this proposal exemplifies our commitment to cutting-edge research with the capacity to transform our world through groundbreaking discovery. As Vice President for Research and Innovation at the University of Nevada, Reno, I commit my support and that of the University to American Battery Technology Company and your team in the form of the identified cost share. Please feel free to contact me if you have any questions.

Sincerely,

Mridul Gautam, Ph.D.
Vice President for Research and Innovation

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DuPont Water Solutions
Experimental Station
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Wilmington, DE 19803 USA

LETTER OF COMMITMENT

June 25, 2022

Mr. Ryan Melsert
CEO, American Battery Technology Company
100 Washington St., Suite 100
Reno, NV 89503

Re: Support for ABTC - Large-Scale Demonstration of Domestic Manufacturing of Low-Cost and Low-Environmental Impact Battery-grade Lithium Hydroxide from Unconventional Domestic Sedimentary Resources; under DE-FOA-0002678, Area of Interest 4.

DuPont Water Solutions is pleased to offer this Letter of Commitment to support American Battery Technology Company (ABTC) in its large-scale demonstration of domestic manufacturing battery-grade lithium hydroxide from its US domestic claystone resources.

DuPont Water Solutions is supporting ABTC field demonstrations under DE-FOA-0002322 and will continue to support ABTC on this large-scale pre-commercial project DE-FOA-0002678 to further ensure the successful domestic production of lithium hydroxide, a material critical to the United States, through a tailored process with low cost and low environmental impact, and to help foster domestic strategic manufacturing industries.

DuPont Water Solutions commits to provide required support and professional service including:

(b) (4) [redacted]

DuPont Water Solutions has a long history of supporting development and commercialization of [redacted] and is excited to participate in this opportunity. We look forward to working with the US DOE, ABTC, and other partners in this industry-led partnership to implement the large-scale demonstration and validation of this first-of-kind cost-effective process of manufacturing domestically sourced lithium hydroxide.

Sincerely,

Gary Gu, Ph.D.
Senior Global Technology Director
DuPont Water Solutions

June 30, 2022

Mr. Ryan Melsert
CEO, American Battery Technology Company
100 Washington St., Suite 100
Reno, NV 89503

Letter of Support for American Battery Technology Company's (ABTC) Proposal Titled, "Large-Scale Demonstration of Domestic Manufacturing of Low-Cost and Low-Environmental Impact Battery-grade Lithium Hydroxide from Unconventional Domestic Sedimentary Resources" in response to the Department of Energy funding opportunity DOE-FOA-0002678

Dear Mr. Melsert,

[redacted] is pleased to offer this Letter of Support for the ABTC proposal, which addresses the commercialization of ABTC internally developed technologies for the manufacturing of battery-grade lithium hydroxide from unconventional domestic-US sedimentary resources to support the domestic lithium-ion battery manufacturing supply chain.

As long-time members of the Tonopah community, ABTC and the local team have proven to be faithful environmental stewards and respected community members. They have cultivated and earned a strong, positive reputation as business leaders within the community. Additionally, ABTC is a company that is prepared and equipped to ensure success.

In complete alignment with the goals of our office, this project directly supports significant and long-lasting positive economic development and community investments for our region, including the following:

- Creation of new, skilled jobs for the Big Smoky Valley region workforce and support regional economic development opportunities.
- Advancement of diversity, equity, inclusion, and access within the project and future workforce, amongst suppliers/vendors, and within the region.
- Facilitation and support of community-driven betterment projects.
- Development of a battery metals circular economy aimed at transitioning to a cleaner energy future that is sustainable, domestically, and ethically sourced.

On behalf of (b) (4) [redacted], I would like to express our strong and full support for this project. I am very excited about the opportunity to expand our local economic development opportunities and support the advancement of creating a domestic battery metals supply chain.

(b) (4)

Sincerely,

(b) (4)

1301 S. Hwy 160 • 2nd Floor, Pahrump, NV 89048
Phone: (775)727-0716 • Fax: (775)582-7222 • Email: SWCREDA@gmail.com

(b) (4) [redacted]

June 29, 2022

Mr. Ryan Melsert
CEO, American Battery Technology Company
100 Washington St., Suite 100
Reno, NV 89503

Subject: Letter of Support for American Battery Technology Company's (ABTC) Proposal Titled, "Large-Scale Demonstration of Domestic Manufacturing of Low-Cost and Low-Environmental Impact Battery-Grade Lithium Hydroxide from Unconventional Domestic Sedimentary Resources" in response to the Department of Energy funding opportunity DOE-FOA-0002678

Dear Mr. Melsert:

(b) (4) [redacted] doing business as [redacted] is pleased to offer this letter of support for the subject ABTC proposal which addresses the commercialization of ABTCs internally-developed technologies for the manufacturing of battery grade lithium hydroxide from unconventional domestic-US sedimentary resources to support the domestic lithium-ion battery manufacturing supply chain.

[redacted] doing business as [redacted] is dedicated to improving the quality of life and revitalizing the business climate while preserving our unique, historic past. We promote economic growth through the implementation of the [redacted] that focuses on Economic Vitality, Design, Promotion, and Organization. Established in 2001, [redacted] is community-based and volunteer-driven.

We are pleased to welcome and collaborate with new projects interested in developing our mineral resources and investing in our community. We understand the sustainable community economic development goals proposed by the ABTC project team will bring benefits in the areas of environment, education, economic development, and equity, including:

- Creating new, skilled jobs for local Tonopah and Big Smoky Valley Area workforce;
- Facilitating opportunities for education, community betterment and environmental stewardship;
- Advancing high/higher wages and reducing income disparities across race/gender lines; and
- Working with contractors, vendors and strategic partners who have established and transparent policies, procedures and programs that support and advance equity.

ABTC has been a member of our community for some time and has shown themselves to be supportive community members through financial contributions to local projects and staff participation in community organizations. We are proud to call them a [redacted] supporter and welcome the opportunity to further engage with the ABTC team and their partners to assist in their goal of making this project one that benefits our local community.

Sincerely,

(b) (4) [redacted] (b) (6)

Large-Scale Demonstration of Domestic Manufacturing of Low-Cost and Low-Environmental Impact Battery-grade Lithium Hydroxide from Unconventional Domestic Sedimentary Resources

DE-FOA-0002678, Area of Interest 4

Technical Point of Contact: Ryan Melsert, (b) (4) [redacted]
Business Point of Contact: Kristopher Gustafson, (b) (4) (b) (6) [redacted]

Team Members / Subrecipients:

DUPONT Water Solutions

University of Nevada, Reno

Argonne NATIONAL LABORATORY

(b) (4) [redacted]

Pages 2-50 of this document may contain trade secrets, confidential, proprietary, or privileged information that is exempt from public disclosure. Such information shall be used or disclosed only for evaluation purposes or in accordance with a financial assistance or loan agreement between the submitter and the Government. The Government may use or disclose any information that is not appropriately marked or otherwise restricted, regardless of source.

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1. Project Overview

American Battery Technology Company (ABTC), in partnership with DuPont Water Solutions, the University of Nevada at Reno, and Argonne National Laboratory, and with product offtake and/or product quality validation by (b) (4) [redacted], proposes to construct, commission, and operate a large-scale demonstration pre-commercial manufacturing facility for the production of battery grade lithium hydroxide from domestic-US unconventional sedimentary resources using the manufacturing processing train developed by ABTC and its partners. These unconventional lithium-bearing domestic-US sedimentary materials contain some of the largest deposits of lithium in the world, however to date there have been no processes developed and commercialized that can produce battery grade lithium products from these unconventional sedimentary deposits in an economically competitive and low-environmental impact manner. This project team is proud to have developed such a system, to have validated these processes at the bench level, to be currently demonstrating this integrated continuous processing train at the multi-ton per day scale through the support of a grant award from the US DOE AMO Critical Materials Innovation program, and to now be scaling this project to an initial 5,000 MT LiOH/year pre-commercial facility with the proposed support of this Battery Materials Processing and Battery Manufacturing program.

To date, the attempts that have been made to produce battery grade lithium products from these vast quantities of lithium-bearing unconventional sedimentary resources have used processes that were established for use with hard rock or brine-based resources. (b) (4) [redacted]

Alternatively, instead of utilizing existing process flowsheets and attempting to force them to apply to a different type of resource, this project team employed a first-principles (b) (4) [redacted]

[redacted]

(b) (4) [redacted]

This project team is proud to have previously presented these detailed processes and results to the US DOE through its application to the (b) (4) [redacted] This team has now secured approximately 10,500 acres of this lithium-bearing sedimentary resource near Tonopah, NV, has completed its initial rounds of exploration, sampling, and material evaluations, completed and passed its initial EPA NEPA review, and with the support of the full project team has developed this proposed project to construct and operate an initial large-scale pre-commercial 5,000 MT LiOH/year manufacturing facility. (b) (4) [redacted]

ABTC is excited to have formed an industry-led partnership to ensure the successful commercialization of this technology and manufacturing facility. The ABTC key personnel have extensive experience in scaling up first-of-kind systems to commercial scale operations through their experiences designing, constructing, and commissioning the first Tesla Gigafactory, as well as through several previous DOE-funded R&D and commercialization grants for the design and manufacturing of engineered sorbents for the selective extraction of lithium from US (b) (4) [redacted]

These skillsets are complemented by the EPC Contractor that this project team has enlisted, which is headquartered in the US and is one of the largest EPC firms in the world. This premier global engineering, procurement, and construction firm has extensive experience with large scale construction projects throughout the world and has a long history of (b) (4) [redacted]

A third member of this industry-led partnership is DuPont Water Solutions. DuPont has immense experience in the design of technologies and manufacturing of products for the (b) (4) [redacted]

The University of Nevada, Reno (UNR) is one of the leading metallurgy, mining, and materials processing universities in the nation. ABTC and UNR have worked collaboratively for many years, and ABTC has established several of its development laboratories on the UNR campus in order to work collaboratively with UNR faculty and students on a daily basis. The UNR team will lead the (b) (4) [redacted]

Argonne National Laboratory (ANL) and ABTC have worked together for many years and ANL has joined this project team to lead the techno-economic analyses and life-cycle assessments of this novel process and to compare these metrics to industry baselines. As each section of the facility is constructed and commissioned, the ANL team will update their modeled values with actual values to continuously update these analyses.

The ability to manufacture commercial scale quantities of materials that can consistently surpass the strict specifications set forth for battery grade feedstocks is not trivial, and key personnel from this project team have previously acted as procurement agents and quality control analytical chemists for these materials first-hand. (b) (4) [redacted]

ABTC highly values its relationships with the local community and is excited to bring further high-quality jobs and community benefits to the Tonopah, NV area with the construction and operation of this lithium hydroxide manufacturing facility. We have been active and participating members in this community for many years and are proud to have received support from the (b) (4) [redacted] detailing the impacts that our increased activity in the area will generate with our underrepresented partners.

1.1 Background

(b) (4) [redacted]

(b) (4) [redacted]

American Battery Technology Company is headquartered in Reno, NV, with its development centers on the UNR campus in Reno, NV and at the cleantech development center Greentown Labs in Cambridge, MA. ABTC operates a material processing facility and owns approximately 10,500 acres of lithium-bearing sedimentary resource mining claims near Tonopah, NV, and also is constructing a commercial lithium-ion battery recycling facility in Fernley, NV.

ABTC has two dominant business units: primary lithium hydroxide manufacturing from unconventional sedimentary resources, and the commercial scale recycling of lithium-ion batteries for the manufacturing of battery grade critical materials. Through its primary lithium manufacturing operations, ABTC develops novel first-of-kind technologies for the extraction, separation & purification, and manufacturing of battery grade lithium hydroxide from unconventional sedimentary resources. These technologies are first developed and optimized at its laboratory facilities in NV and MA, then scaled-up to field demonstration integrated continuous operating systems, and then commercial scale manufacturing facilities of these proven and validated operations are constructed.

Through its lithium-ion battery recycling business unit, ABTC has developed a first-of-kind integrated processing train for the processing of electric vehicle, stationary storage, and consumer electronic batteries and the upgrading of the extracted metals up to battery grade specifications. ABTC is currently constructing a 100,000 square-feet industrial processing facility in Fernley, NV that will process up to 20,000 MT/yr of lithium-ion batteries and sell the recycled battery metal products back into the domestic US manufacturing supply chain.

Similar to the lack of critical battery material manufacturing within the US, there is also very limited manufacturing of these materials into active cathode materials and the only top-tier cathode manufacturer that has manufacturing capacity (b) (4) [redacted]

It should be noted that battery grade lithium hydroxide is not a commodity product, but rather a specialty chemical that has specific requirements that need to be met for each cathode manufacturer. ABTC has been working (b) (4) [redacted]

[redacted]

(b) (4) [redacted]

The production and quality validation of battery grade lithium-hydroxide at the laboratory scale is important, however there are additional challenges introduced when manufacturing these products at large scale, when synthesizing these products into active cathode material, and when ensuring that the subsequent full scale battery cells manufactured from these materials are able to achieve performance requirements. As such, the ABTC team, (b) (4) [redacted] to test the performance of these recycled-metal cells against otherwise identical cells manufactured from conventional virgin-sourced metals.

(b) (4) [redacted]

1.2 Project Goal

The goal of this project is to utilize the set of technologies that have been developed and field validated by this project team, and to design, construct, commission, and operate a pre-commercial scale facility for the manufacturing of battery grade lithium hydroxide from unconventional sedimentary resources in Tonopah, NV.

This proposed project consists of five distinct phases: (b) (4) [redacted]

(b) (4) [redacted]

(b) (4) [redacted]

1.3 Impact of DOE Funding

Funding from DOE for this endeavor will allow this industry-led partnership to advance beyond the short-term multi-ton/day field demonstration of this processing plant and to design, construct, commission, and operate a pre-commercial (5,000 MT LiOH/yr) battery grade lithium hydroxide manufacturing facility. This evolution of these technologies will allow for the manufacturing of meaningful quantities of critical material lithium hydroxide, sourced from domestic feedstocks, that is then validated and received by domestic downstream customers including the largest high energy density cathode manufacturer in the US. This is a crucial step in de-risking this technology before building subsequent commercial manufacturing trains at this ABTC sedimentary resource site to truly enable to domestic US manufacturing of this critical material and strategic resource to address our national challenges.

1.4 Equity Plan

This project has the potential to provide significant economic benefits and high-quality job creation opportunities to the Tonopah, NV area and to the three disadvantaged communities (DAC) in the area. The project (b) (4) [redacted]. ABTC is committed to creating a framework for advancing the local workforce by:

- Providing good-paying jobs that reduce income disparity and inequalities across race and gender lines
- Ensuring the local workforce is reflective of the local demographics
- Cultivating a culture that values diversity, inclusion, equity and accessibility, including neutrality towards organized labor and union activity
- Attracting, retaining, and training needed workforce
- Ensuring a safe and healthy work culture and environment
- Supporting workforce training opportunities and transitional programs
- Supporting any Project Labor Agreement as required

To accomplish these goals, ABTC will work with our project partners who have established and proven workforce development programs. In addition to our existing relationship with UNR, we are exploring different areas of collaboration, including a workforce development pipeline for Tonopah area high-school students as well as University students. The current collaboration includes university internship opportunities with ABTC. Already, the ABTC team has hired five full-time scientists/engineers that are UNR alumni, three of which were interns and facilitated by the cooperative work of UNR/NCAR (Nevada Center for Applied Research) and ABTC. We have already demonstrated a diverse workforce development "pipeline" of trained interns to full-time employees, and we plan to build upon this success to have a much larger positive impact in training and employing a diverse workforce.

2. Technical Description, Innovation, and Impact

2.1 Relevance and Outcomes

Battery grade lithium products are currently manufactured from two conventional types of resources; high salinity brines and hard rock resources. (b) (4) [redacted]

(b) (4) [redacted]

(b) (4) [redacted]

(b) (4) [redacted]

(b) (4) [redacted]

(b) (4) [redacted]

(b) (4) [redacted]

(b) (4)

[redacted]

(b) (4)

[redacted]

(b) (4)

[redacted]

As a result of this highly strategic and targeted lithium hydroxide manufacturing system, the following candidate metrics are targeted to be achieved.

(b) (4) [redacted]

[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]

(b) (4) [redacted]

(b) (4) [redacted]

(b) (4) [redacted]

Large-Scale Pre-Commercial Demonstration Facility

(b) (4) [redacted]

ABTC owns approximately 10,500 acres of lithium-bearing sedimentary resource near Tonopah, NV where it will construct the processing facility. The initial pre-commercial facility will utilize

(b) (4) [redacted].

This ABTC site is also fortunate to be located next to a neighboring 110 MWe concentrating solar power (CSP) power generation facility with 1.1 GWhr of thermal storage capacity. While the lithium hydroxide processing plant has the ability to be supplied by the overhead 120kV source, the CSP facility has also offered to directly supply the processing plant from its own generating station. This would result in all of the electricity consumption of the processing plant to be

supplied by 100% renewable solar electricity, without the need for consuming grid average electricity.

The city of Tonopah, NV has a long history of supporting mining operations and has a readily available workforce, for both the construction of the facility and its subsequent commissioning and operations. The project team is proud to have received extremely positive responses from the individuals, businesses, local agencies, and corporate development organizations from the Tonopah community.

(b) (4)

[redacted]

The ABTC team and its partners have performed extensive exploration, sampling, and quantification of the lithium-bearing materials at this deposit. While many deposits contain large amounts of overburden, the surface material that does not contain the element of interest, which needs to be drilled through or removed at cost in order to access the element of interest, the (b) (4) [redacted]

Once below the overburden, this deposit is observed to (b) (4) [redacted]

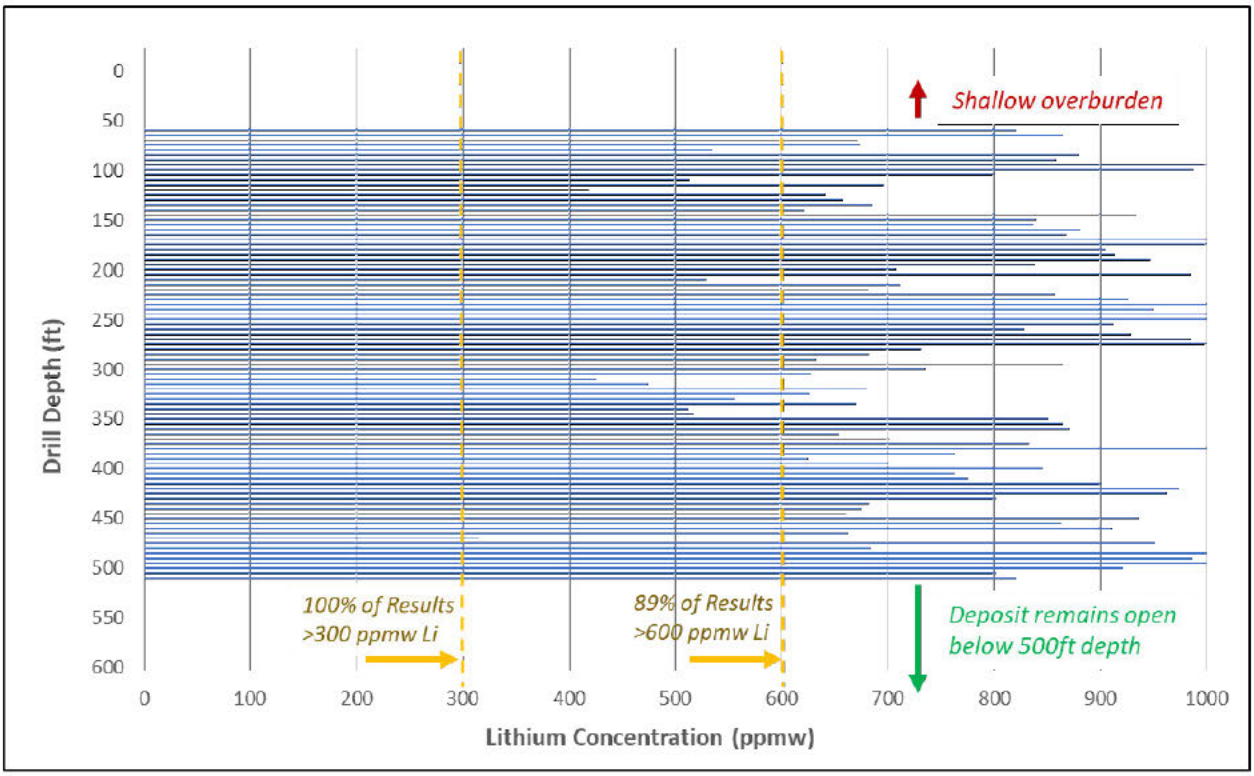

Figure 6: Sedimentary material characterization data from ABTC sampling location

The project team is excited to be joined by our EPC Contractor, one of the premier engineering, procurement, and construction companies in the world. Through review of existing processing and operations data, the team has developed an overall project plan, project cost, project cash flow, and project management plan to ensure the successful on-time, on-budget, and safe implementation of this pre-commercial scale facility.

<u>Project Cost Estimate:</u>

Project costs are those costs included in the proposal Budget Justification, and these costs can be further broken out into Capital (CAPEX) Costs and Operations & Maintenance (O&M) Costs. The breakdown of these categories is shown below in Table 2.

(b) (4)

(b) (4)

(b) (4)

(b) (4)

(b) (4) [redacted]

[redacted]

(b) (4)

[redacted]

(b) (4)

[redacted]

(b) (4)

[redacted]

(b) (4)

(b) (4)

(b) (4)

(b) (4)

(b) (4)

2.2 Feasibility

The feasibility of successfully designing, constructing, commissioning, and operating this facility to manufacture battery grade lithium hydroxide is greatly enhanced by the previous work accomplished by the individual members of this project team, by the project team as a whole, and by the team with the support of the US DOE AMO during its current multi-ton/day field demonstration project.

This industry-led partnership has an extremely high amount of experience in the design, engineering, procurement, construction, and operations of large-scale construction projects and battery grade material systems. The ABTC personnel have worked in the battery materials processing industry for over 15 years, while the (b) (4) [redacted]

2.3 Innovation and Impact

The current state of the art is for critical material lithium hydroxide to be manufactured outside of the US, and to do so using high salinity brines and hard rock resources as feedstocks. The innovation of the system described in this proposal can allow for the US to utilize its existing immense reserves of sedimentary resources to bring high quality battery grade lithium hydroxide manufacturing to the US.

Extraction of lithium from sedimentary resources has several advantages over hard-rock processing or recovery from brine resources. (b) (4) [redacted]

In these claystone deposits, lithium occurs in a group of minerals called smectites. Clay minerals are sheet silicates consisting of layers of polymerized silicate tetrahedra stacked on one another. In smectites, cations (including lithium) are held in the tetrahedra or the spaces between sheets. The location where the lithium is held within the mineral structure is important because it determines how amenable to leaching the clay behaves. These clay formations happen to be readily leachable, however, with the described selective leaching technique recoveries of lithium greater than 85% can be achieved. A common problem with lithium clay deposits is that lithium is bound up tightly in the clay, which leads to long leaching times, high acid consumption, and poor lithium recovery. Conventional approaches to extract lithium from these claystone deposits are by "brute force" acidic leaching, i.e., use of high concentrations of mineral acids (e.g., sulfuric and hydrochloric). Other metals, however, can also be leached out using this approach. Magnesium, calcium, potassium, sodium, and aluminum can leach out alongside lithium. Since these elements are present in the clay ore in much higher quantities, they consume most of the acid in clay leaching scenarios. In addition to being reagent intensive, this has the effect of making the pregnant leach solution (PLS) — acid solution that bears leached elements— rich with contaminants. Additional processing is then required to remove non-lithium metals from the PLS.

3. Work Plan

3.1 Project Objectives

In order to increase the US domestic production of battery critical materials, such as lithium hydroxide, new unconventional resources and new (b) (4) [redacted]

(b) (4) [redacted]

This project consists of 5 budget periods of 12-months duration each. The objectives of the first budget period are complete the (b) (4) [redacted]

At the conclusion of this project, a full scale pre-commercial battery grade lithium hydroxide manufacturing facility will have been constructed and commissioned, with the feed material sourced from domestic-US resources, and the final products qualified by domestic-US downstream customers

3.2 Technical Scope Summary

This technology has already been optimized at the bench scale, and validated through a multi-ton/day field demonstration project that is supported by a current grant from the US DOE AMO under the Critical Materials Innovation program. The project team is (b) (4) [redacted]

As such, this project will focus on the detailed construction design and implementation of this facility through the 30-60-90-IFC project pipeline, the commissioning of the facility, and the collaboration with offtake partners to ensure that the manufactured product meets all of the requirements of the battery grade material specifications.

3.3 Work Breakdown Structure and Task Descriptions

Task 0: Project Management & Reporting (b) (4) [redacted]

The Recipient and Sub-recipients will develop and maintain the Project Management Plan (PMP). The content, organization, and requirements for revision of the PMP are identified in the Federal Assistance Reporting Checklist and Instructions. The Recipient shall manage and implement the project in accordance with the PMP. Furthermore, the Recipient and Sub-recipients will attend and participate in quarterly / annual DOE and conferences and meetings to provide insight into industry knowledge and project updates.

Task 1: Detailed EPC (Engineering, Procurement, Construction) Site, Infrastructure, and Production Plant Design (b) (4) [redacted]

(b) (4)

[redacted]

(b) (4)

[redacted]

(b) (4)

(b) (4)

Milestones: (b) (4) [redacted]

(b) (4) [redacted]

(b) (4) [redacted]

[redacted]

[redacted]

[redacted]

Milestones: (1) Demonstration of ability to operate at (b) (4) [redacted]

[redacted]

3.4 (b) (4) [redacted]

[redacted]

(b) (4)

[redacted]

(b) (4)

Go/No-Go Decision Points

(b) (4)

(b) (4)

3.5 Project Schedule

(b) (4)

3.6 Buy American Requirements for Infrastructure Projects

Staying true to its name, American Battery Technology Company always strives to source services, materials and equipment domestically. As such, ABTC will solely utilize American manufactured construction material and union labor for this project. High dollar value construction materials include the likes of structural steel, mechanical ducting, various schedules of process piping and electrical cabling. Furthermore, when possible, ABTC will look to source directly from within Nevada to support the local economies. Locally sourced materials will include aggregates, concrete, and architectural finishes. ABTC will also give preference to American equipment manufacturers over international equipment manufacturers when levelling and reviewing equipment bids.

3.7 Project Management

The overall project will be managed by ABTC, with the support of project partners, in a project management infrastructure that allows for effective communication and achievement of milestones. Effective coordination and communication among team members and program participants is a key to the success of the proposed project. The Principal Investigators, working closely with the key personnel identified below, will have responsibility for maintaining effective communication and coordination.

ABTC will work together with the DOE Project Officer upon award to develop a mutually agreed to Project Management Plan (PMP), and the PMP shall be submitted within 30 days of the award. The DOE Project Officer shall have 20 calendar days from receipt of the Project Management Plan to review and provide comments to the Recipient. Within 15 calendar days after receipt of the DOE's comments, the Recipient shall submit a final Project Management Plan to the DOE Project Officer for review and approval. ABTC will review, update, and amend the Project Management Plan (as requested by the DOE Project Officer) at key points in the project, notably at each Go/No-Go Decision Point and upon schedule variances of more than 3 months and cost variances of more than 15%, which require amendments to the agreement and constitutes a re-base lining of the project.

The PMP shall define the approach to management and include information relative to project risk, timelines, milestones, funding and cost plans, and decision-point success criteria. ABTC will execute the project in accordance with the approved Project Management Plan covering the entire project period. ABTC will manage and control project activities in accordance with their established processes and procedures to ensure subtasks and tasks are completed within schedule and budget constraints defined by the Project Management Plan. This includes tracking and reporting progress and project risks to DOE and other stakeholders. The following table summarizes the general role of each company/institution in the project (Table 7).

Table 7: General role of each company/institution in the project

Company/Institution	Role in Project
ABTC	Project lead/management and design
EPC Contractor	Engineering, Construction, and Procurement services
DuPont	Plant design and engineering
UNR	Engineering and characterization support
ANL	Life-Cycle Analysis and techno-economic analysis support
(b) (4) [redacted]	[redacted]

(b) (4) [redacted]

The project management team will consist of the PI, Co-PIs, and team leaders. They will address financial, schedule, personnel, and other management issues as well as facilitate the integration of the scientific aims, R&D, and technology validation. The team will also take input from DOE Program Managers in the execution of the project. The project PI will take input from the technical leaders, individual researchers, technicians, and graduate students. Monthly video conference meetings will be held. Several interactions are planned beyond monthly meetings, e.g., yearly All-Hands meetings for all team members and the DOE program manager, site meetings, and technical conferences.

The research and engineering teams will work and communicate closely with one another to ensure the mitigation of any interdependencies bottlenecks. Project management tools with tasks will be utilized to ensure research tasks stay on time and within budget.

The team will function collaboratively, with the direction and approach developed through consensus building and discussions. The detailed execution of the tasks will be directed by the investigators who have the major responsibility for those tasks. Regular reviews of the results of investigations will be held by the project team to interpret them and make decisions regarding possible refinement/revision of the approach. Application of Go/No-Go metrics and risk assessments will be used to aid in decision making.

Engineering, Procurement, and Construction (EPC) Management Plan

ABTC proposes to take an EPC approach to the execution of this project. The following outlines our EPC Management Plan including key project handoffs, engineering, procurement, and construction management plans.

Project Handoffs: (b) (4) [redacted]

Engineering: [redacted]

for the engineering phase. 30-60-90-IFC refers to the sophistication (percentage of completion) of the design documents when released at their respective milestones (30% meaning 30% comple te, 60% meaning 60% complete, etc.). IFC refers to "issued for construction", at which point t he drawings are considered 100% complete as they will be used in the field to build the physic al infrastructure. In order to hit each milestone, the designs will need to be inclusive of details at levels sufficient to facilitate completion of the next critical activities as specific logic is tied to these milestones. As the design team progresses from one milestone drawing set (i.e., 30%, 60%,

90%, or IFC) to the next, changes and additions to the drawing set will be clearly defined therein to ensure proper revision control and a clear historical progression of design development.

- 30% Definition: Upon completion of the 30% drawings sets, the EPC contractor will have completed basic engineering tasks, including but not limited to, structural calculations, architectural site layouts and plot plans, civil elevation schematics, and process flow diagrams (PFDs) and utility loads.
- 60% Definition: Upon completion of the 60% drawing set, ABTC and the EPC contractor will have a design suitable to begin procurement of equipment, construction materials and subcontractor services. Components of the 60% drawing set include stick-built structural designs, detailed civil grading plans, process & instrumentation diagrams (P&IDs), electrical single line diagrams (SLDs) and equipment specifications.
- 90% Definition: Upon completion of the 90% drawing set, ABTC and the EPC contractor will have a fabrication level design that facilitates the final contracting of equipment, construction materials and subcontractor services, and is sufficient for local jurisdictions to begin review for permitting purposes. This increased level of design provides a high level of confidence in specified quantities and materials from piping isometrics, and detailed structural, mechanical & electrical plans.
- IFC Definition: Upon completion of the 100% IFC drawing set, the EPC contractor will have a complete design that allows for all work on site to proceed per their planning and scheduling performed throughout the design stage.

Procurement: During the procurement stage of the project, ABTC and the EPC contractor will undertake the sourcing, negotiation, contracting, and issuance of Purchase Orders (POs) for all subcontractor services, construction materials and equipment required for the project. The beginning of procurement activities, in other words the generation of requests for proposals (RFPs), is tied to the completion of the 60% drawing set. ABTC will cede the procurement of most construction materials and subcontractor services to the EPC contractor but will oversee the contracting of most long lead capital equipment, otherwise known as owner-furnished, contractor-installed (OFCI) equipment. As OFCI equipment is "contractor-installed", the EPC contractor will still be responsible for the installation of said equipment. Although most sourcing and contracting will wrap up upon the completion of the 90% design, procurement activities will persist throughout most of construction in the form of contract management, logistics, transportation and material handling on site.

Construction: During the construction phase of the project, the EPC contractor will manage all aspects of the site and ensure construction goals are met in a speedy and safe manner with the best quality. The subcontractors, materials, and equipment purchased throughout the procurement phase will be pooled together to complete all civil, structural, architectural, mechanical, electrical, process and equipment installation scope on-site. The plans and costs developed throughout the design & procurement phases will be continuously tracked, progressed & forecasted by the EPC contractor's project controls team and used to submit weekly / monthly reports, with varying levels of information, to ABTC for review. ABTC will maintain a construction management presence on site, but primarily with the intentions of managing the EPC contractor.

Financial Management: (b) (4) [redacted]

(b) (4) [redacted]

Risk Management

The following table (Table 8) summarizes the potential project risks and mitigation strategies. This table will be continuously reviewed and updated as necessary for the duration of the project.

Table 8: Project risks and mitigation strategies

(b) (4) [redacted]

(b) (4)

The workforce in Nevada is increasingly diverse with an increasing population of Latinx of more than 30% in Clark County and around 28% in Washoe County. This population sector is highly sought out in the clean energy and technological sectors. These statistics are reflected in the institutions of higher education as well (UNR and UNLV). For UNR, the Latinx student population is close to 23%, which qualifies UNR as an emerging Hispanic Serving Institution (HSI). Within this context, we plan to work actively with the Latinx student community and other minorities on internship and training opportunities with ABTC. The UNR college of engineering has a very active chapter of the Society of Women Engineers (SWE) and Society of Hispanic Engineer (SHPE). The ABTC team along with UNR faculty and staff will work with SWE, SHPE, and other student organizations to develop a strong internship program with ABTC and train them to become a qualified workforce. UNR will recruit graduate and undergraduate students from minority and underrepresents groups to work on the project. More details regarding how we plan to recruit and maintain a diverse and qualified workforce are outlined in our Equity Plan.

Open and consistent communication between all project teams and members will be maintained through a variety of means during the project. Regular meetings, and/or teleconferences will consider results, scheduling, coordination, dissemination of results, and other activities. These meetings will be used to identify and understand technical issues in the project and come up with a plan of action to address any technological hurdles using the combined interdisciplinary strengths of the team. To ensure consistent and effective communication, several regular interactions are planned. Monthly meetings will be scheduled and team members showing progress and planned activities for the next quarter will hold quarterly formal reviews with presentations. Annual 'all-hands' meetings will be held that include the DOE Program manager and all team members. The objective of the annual meeting is to set the direction of the project and make any adjustments if needed.

Quality Assurance Project Plan

(b) (4)

(b) (4) [redacted]

[redacted]

[redacted]

3.8 Market Transformation/Commercialization Plan

The market for battery grade lithium hydroxide within the US is very limited, as there is only one top tier high-volume battery cathode manufacturer (BASF) that manufactures cathode within the US. (b) (4) [redacted]

(b) (4) [redacted]

Establishing and growing relationships with key companies in other sections of this industry are crucial, and the ABTC team is fortunate to have several former key executives from US based automakers on its board of directors. These include Sherif Marakby, formerly the VP of Electrification at Ford, and Beth Lowery, formerly the General Counsel and ESG lead at General Motors. This project team will continue to engage with these strategic partners in order to foster these relationships and to grow the demand for domestically sourced lithium hydroxide products.

ABTCs market goals are to effectively extract lithium from the lithium-bearing claims in Tonopah, Nevada in a low-cost and low-environmental impact fashion, and to then refine these extracted materials into battery grade lithium hydroxide for sale to the domestic market. The company's capabilities to mine and refine lithium domestically unlock the ability to bypass using foreign services and assets to bring products to market. This helps to ensure the success of US-based manufacturing and enhances our national security through less dependence on foreign imports. In addition, ABTC has the flexibility to refine other producer's materials at its facility, further boosting domestic supply of critical materials.

ABTC recently announced positive drill results from our initial exploratory subsurface drill program, Phase 1, at our Tonopah Flats Lithium Project in Big Smoky Valley, Nev. This initial exploratory drilling program consisted of 16 targeted drill holes on ABTC's 10,340 acres of lithium-bearing claystone claims and was guided by surface sampling results collected in early 2022. ABTC drilled approximately 7,895-feet in this Phase 1 program and based on these results we will expand these drilling, sampling, mapping, geochemical, and analysis efforts to be able to fully define and quantify this resource. These sampling and characterization efforts provide the foundation for the validation and commercialization of our internally developed selective lithium leaching and lithium hydroxide manufacturing technologies that are critical to solving our domestic and global critical battery metals challenges.

To increase our competitiveness and access to markets, ABTC has assembled a world-class consortium of partners to assist in the development and deployment of the project. (b) (4) [redacted]

ABTCs marketing and distribution plan is focused on balancing maximizing value, diversification, and downside risk protection from market/pricing fluctuations. We do this by distributing products through established and novel channels. Established downstream partners (b) (4) [redacted]

Data dissemination will be handled through our partnership with the University of Nevada, Reno where we will help develop programs, internships, and apprenticeships to bolster their mining and recycling curriculum majors along with maintaining research labs on university grounds. We will also be working with stakeholder groups from both the Tonopah and Fernley communities to make sure they are fully educated about our business goals and intentions. We will be recruiting locally to staff our plants and will provide long-term employment in these two underemployed locations. Finally, we will disseminate data about our technology and products through our onsite research and education labs which are incorporated into the building plans of both sites.

4. Technical Qualifications and Resources

4.1 Project Team Qualifications

The team has been strategically formed to successfully complete the goals and objectives of the project. Many of the members of the ABTC team, as well as our collaborators, have extensive experience in the commissioning of commercial-scale greenfield site projects. (b) (4) [redacted]

(b) (4) [redacted]

American Battery Technology – Management and Operations Team

(b) (4) [redacted] **(PI)**: is CEO, CTO, and Director of American Battery Technology Company. [redacted] previously served as R&D Manager for Tesla's Gigafactory Battery Materials Processing group. He founded and led a cross-functional team of mechanical and chemical engineers who implemented first-principles design to develop novel first-of-kind systems for the extraction, purification, and synthesis of precursor and active battery materials. Among his previous roles [redacted] was an R&D Manager (Advanced Energy & Transportation Technologies) for Southern Research and Energy Systems, and a consultant for the Advanced Technology Development Center in Atlanta Georgia. He has a variety of publications and patents in his name, and in previous positions has won several Department of Energy grants and innovation competitions. [redacted] is a member of the technical advisory board of the US DOE Critical Materials Institute, and is a founding member of the Mining and Circularity working group of the Institute for Responsible Mining Assurance (IRMA).

(b) (4) [redacted] is Chief Operating Officer of ABTC, and has over fifteen years of extensive experience both with the operations of manufacturing facilities as well as with the evolution of high-growth startups to established global corporations. In his previous work as a global supply manager for Apple, [redacted] focused on the commissioning and scale-up of manufacturing facilities across Asia and the implementation of cost efficiencies throughout their supply chain. [redacted] also spent time at McKinsey and Company as an engagement manager, where he analyzed the manufacturing operations of global corporations and developed strategic assessments for executives to implement operational efficiencies in their facilities and business units.

(b) (4) [redacted]**:** is the Lead Procurement Manager of ABTC, and the lead business officer for the current US DOE AMO field demonstration grant and also for this proposed pre-commercial scale lithium hydroxide manufacturing project. Upon graduation from University of Illinois at Urbana-Champaign with a BS in Civil Engineering, [redacted] began his career at EPC firm AECOM as part of their project controls team. Focusing on greenfield megaprojects within the energy sector, he honed his quantitative and analytical project management skills including, but not limited to, estimating, cost control, scheduling and forecasting. [redacted] then joined EPC firm Burns & McDonnell as a Project Manager where he led cross-functional teams in the permitting, design, procurement and construction of multiple electrical infrastructure projects centered around power generation from renewable sources across California. Most recently, [redacted] was a Staff Procurement Manager on Tesla's Engineering, Procurement and Construction team. At Tesla he performed all aspects of the procurement process throughout the development of successful infrastructure programs at Gigafactory 1 in Sparks, Nevada, the Fremont Factory in Fremont, California, Gigafactory Berlin in Germany and Gigafactory Texas in Austin, Texas. Utilizing his diverse set of skills, [redacted] will drive the contract generation and negotiation for all process equipment. With his engineering background, he will help to bridge the gap between the commercial and technical sides of the traditional procurement approach and bring unique experience as we scale from the bench/pilot to commercial operations.

[redacted] Lead Onsite Manager with ABTC. Chuck has experience as a project manager for capital project work in a wide variety of roles for more than three decades. He has worked as an OEM designer, a consulting engineer, an engineering manager for a general contractor, a production engineer in a manufacturing plant, a partner in both a technical training company and an operations & maintenance company, and as a project manager for an electrical & instrumentation contractor at a semiconductor foundry. Most recently he has been the owner's construction manager on several projects, including in the utility department at the Tesla Gigafactory in the Reno, Nevada area, at a semiconductor high-purity chemical manufacturer in Arizona, and now at ABTC back in Reno.

American Battery Technology – Finance and Procurement Team

[redacted] is Chief Financial Officer of American Battery Technology Company. Eckert has over two decades of corporate finance and strategic mineral resource development experience, working specifically within the critical minerals and precious metals industry, across the investment banking, corporate financial management, investment management, and strategic consulting fields. Eckert served as Vice President at Deutsche Bank in Global Corporate Investment Banking of its Natural Resources Metals & Mining group, and as the Director of Strategic Development at Coeur Mining, a company focused on the development of critical and precious metals throughout Nevada, South Dakota, Alaska, British Columbia, and Mexico. She is an expert in corporate strategy, valuation, capital raises, and investor relations, with specific financial expertise in seed-stage start-ups within the natural resources industry. Over the course of her career, she has advised and executed on debt and equity linked financings as lead or joint bookrunner, and advised on numerous mergers, acquisitions, and divestitures.

[redacted]**:** is Director of Tax & Compliance with ABTC. Ramsey has over twelve years of extensive experience both within public accounting and private, corporate accounting operations. He has helped facilitate the growth of many accounting teams with extensive experience in areas such as financial reporting, corporate tax, various ERPs, IPO and subsequent SEC reporting and its related GAAP technicalities. In his previous work as Senior Tax Manager for a top-20 CPA firm, Dexter focused primarily on industries including manufacturing, hospitality and software while helping manage a 20-person team of CPAs. Ramsey is also a CPA and holds an MBA degree.

American Battery Technology – Primary Mineral Resources Team

[redacted]**:** is Chief Resource Officer for the American Battery Technology Company, has development expertise spanning five decades including expertise in construction, mining and land development, water resource, claims management, economic and environmental solutions. Prior to joining the Company, he served as the Director of Development and General Site Manager for Comstock Mining Inc. from 2005 until November 2020, where he managed all commercial transactions, including land, water and other major capital expenditures and acquisitions and served on Comstock's board of directors for two years. His other roles include the President and CEO for Virginia City Ventures, which established the Comstock Gold Mill and partnered with the Tri-County Railway Commission. Jolcover has board and leadership roles with Nevada Works, Northern Nevada Development Authority (NNDA), Design and Construction Committee,

and a 20-year relationship with Virginia City Tourism Commission (VCTC), including Chair and Vice-Chair roles.

[redacted]: is Head of Resources at ABTC where he coordinates and develops primary lithium resources as well as lithium extraction opportunities for the company. Ross has over 30 years' experience in exploration, development, and operation control of several exploration and mining ventures globally. He also has expertise in local, state, and federal permitting, permit compliance and employee health and safety. His technical certifications include: Hazardous Waste Operations and Emergency Response, A.C.I. American Concrete Institute Field Inspections and Testing, N.I.C.E.T. Engineering Technician I.A.Q.A. CIE Designation as Certified Indoor Environmentalist, M.S.H.A. Instructor Surface Mines 1978. Ross currently resides in Tonopah, Nevada and ***is a U.S. Army Veteran***.

American Battery Technology – R&D and Analytical Chemistry Team

[redacted] is Director of Research and Development at ABTC. Smith has several years of research and development experience, with an extensive background in applied sciences in chemical engineering and sustainable technology process development, with specific focuses on extractive metallurgy and electrochemistry. Smith received his B.S. and M.S. degrees in chemical engineering from the University of Nevada, Reno, and his Ph.D. in metallurgical engineering from the University of Utah. Prior to joining ABTC, he was an assistant professor of extractive metallurgy and mineral processing in the Department of Materials Science & Engineering at the University of Utah. While at the University of Utah, he led a team of interdisciplinary researchers developing innovative and sustainable technologies for lithium extraction from primary and secondary resources. Smith has experience with government funded research projects as serving as PI or Co-PI on numerous DOE projects. [redacted] has also held roles as Chief Process Engineer for various startup companies. In 2019 he was awarded the distinguished honor of serving as part of the Henry Krumb Lecturer Series issued by the Society of Mining, Metallurgy, & Exploration for his work on "Lithium: Resources, Recovery, and Recycling." [redacted] has published extensively with over 50 peer-reviewed journal publications and has given over 50 presentations, 13 of which were invited or keynote.

[redacted]: is Senior Staff Analytical Chemist at ABTC. [redacted] has 23 years of experience spanning environmental science, industrial operations, and academia with 17 of those years as an Analytical Chemist in the Organic Analytical Laboratory at the Desert Research Institute (DRI) in Reno, NV. Most of his work at DRI was in the characterization of volatile and semi-volatile organic pollutants generated by combustion of fossil fuels and biomass. [redacted] also has experience in the quantitation of greenhouse gases and ozone depleting chemicals in ambient air as well as in the measurement of persistent organic contaminants in snow and water samples as they cycle between gaseous, adsorbed, and aqueous phases. In his recent role as Staff Research Scientist at the Tesla Gigafactory he applied many of the same analytical techniques to chemical processes in support of factory operations. [redacted] also spent three years at the Nevada Division of Environmental Protection in the Water Quality Planning Bureau where he contributed to the administration of the Lake Tahoe TMDL program and participated in routine surface water monitoring efforts throughout the state. Now at ABTC, McDaniel is helping to establish chemical analysis methods and laboratory protocols to support the development and operation of primary lithium resource extraction. [redacted] holds a bachelor's degree in Environmental Science, a

master's degree in Environmental Analytical Chemistry, and a doctorate degree in Atmospheric Science, all earned at the University of Nevada Reno.

[redacted]**:** is Senior Chemist at ABTC. [redacted] has several years of experience in metal extraction operations and hydrometallurgical process development. [redacted] extensive background in chemistry, chemical modeling and scientific software development focuses on task-specific problem-solving for challenging work with complex systems. [redacted] experience in extractive hydrometallurgy includes design and testing of leach protocols, dissolution and recycling of spent-battery materials, screening (factorial design), solvent extraction (SX) and application of ion-exchange resins. [redacted] received his "Chemie-Diplom" (Master's degree) in chemistry from the Georg-August University of Göttingen, Germany, and his Ph.D. in natural sciences (chemistry/molecular modeling) from the Technical University of Munich, Germany. While a postdoctoral research fellow at Stanford University, [redacted]—with Prof. Martin Reinhard—published a handbook on methods for the estimation of properties and behavior of chemicals released into the environment. Prior to joining ABTC, Drefahl was a research chemist in hydrometallurgy, optimizing assay procedures at Comstock Mining and exploring selective gold winning by including ion-exchange resins and complex-forming reagents in the metal separation train at Cycladex. In addition to the handbook publication, [redacted] publications include peer-reviewed articles in cheminformatics and molecular modeling. Further, [redacted] engages in open-source projects such as CurlySMILES, to enhance and promote problem-oriented data mining and AI-driven materials research.

[redacted]**:** is Senior Staff Chemical Engineer at ABTC. [redacted] has 2 years of industrial experience in Li-ion battery recycling, Li-ion battery module/system validation and test, Li-ion cell forensic analysis, electrochemical test and reliability analysis, and working with the regulative electrified automotive industry. [redacted] has 10+ years of academic experience in Li-ion battery chemistry, materials science, and electrochemistry: two postdoctoral positions from National Renewable Energy Laboratory (NREL) and Florida State University, a Ph.D. in physics from Tsinghua University, bachelor's degree in microelectronics from Shandong University. Prior to joining ABTC, he was an Electrochemistry Engineer Technical Specialist at Cummins Inc., and postdoctoral researcher at National Renewable Energy Laboratory. While at Cummins Inc., he led Li-ion battery cell qualification projects, and forensic analysis by advising a few battery technicians. While at National Laboratory, Yin has experience with the Department of Energy (DOE) funded research projects serving as key personnel. While at NREL, [redacted] has experience with the Department of Energy (DOE) funded research project (Silicon Electrolyte Interface Stabilization, Funding for FY19: $3900K) serving as key personnel. In 2020, [redacted] was awarded with a NFPA 70E HV Operation Certification. [redacted] has 4 U.S. patents granted and 10+ peer-reviewed journal research papers published.

American Battery Technology – Communications and EDI Team

[redacted]**:** As Head of Communications and Marketing at ABTC, [redacted] is working to co-create, implement and drive the company's new, transformational ESG/CSR principled communications and brand evolution in preparation for company scaling and commercialization. With over 20 years of experience in communications, community engagement and social impact, [redacted] has had the opportunity to hone and develop expertise in marketing, brand management, media relations, social media, crisis communications, public policy, strategic communications,

community engagement, internal communications and corporate social responsibility. In addition, [redacted] has over 15 years of marketing experience with emphasis on creative services, brand reputation, cause marketing and website management. She has experience identifying and growing talent overseeing teams as large as 60 full-time employees; and excels at change management, building sustainable organizational infrastructures, strategic resource allocation and fiscal responsibility. [redacted] received her bachelor's degree in Classics from the University of Colorado – Boulder; and her master's degree in Education from the Harvard Graduate School of Education. She has also earned an associate degree in fine arts-photography, and enjoys spending time with her family, traveling and volunteering.

[redacted] brings background as a reporter, news editor, and non-profit writing work to her role as Communications Manager at ABTC. She is passionate about community development and non-profit work, having held several marketing positions at human rights and community development organizations including Hardwired Global, The Freedom Story, and Rotary International. Her background also includes several years of experience in education, through providing admissions counseling to prospective students at Westmont College and working at an international school in Frankfurt, Germany. [redacted] holds a bachelor's degree in Social Science from Westmont College

[redacted] currently Director of Human Resources at ABTC. An accomplished, diligent, and innovative human resource professional, [redacted] joins ABTC with three decades of experience in applying effective strategies to improve processes, drive productivity, and achieve sustainable growth. As a performance-focused human resource expert, she is highly proficient in analyzing and defining operational requirements and executing tools that are essential for the successful implementation of strategic measures to achieve wider margins. Workforce management, HR business partnering, employee experience, performance management, compensation and benefits, recruitment and selection, and talent acquisition are some of her areas of expertise.

American Battery Technology – Business Development and Policy Team

[redacted]**:** is the Business Development and Strategic Partnerships lead for ABTC. He is responsible for initiating communications and relationships with potential strategic partners throughout the value chain. This includes potential suppliers, customers, strategics, trade/membership organizations, NGOs, and government entities (elected officials and agencies). As relationships form and collaborations mature, he works to execute and deliver mutually beneficial outcomes. [redacted] cultivates the relationships to achieve technical and business development milestones by all parties in order to ensure these initiatives are successful and capable of growth. He has proven success working with cross-functional teams and uses excellent writing and analytical skills coupled with strong interpersonal and communication skills.

[redacted] is Head of Policy at ABTC. He leads the policy team and directs the company's domestic policy initiatives, including state and federal regulatory reform as well as government grant and loan programs. He will additionally oversee public policy collaboration with industry partners and trade organizations. [redacted] brings 20 years of experience in sales and business development in the renewable energy and education sectors to the company. He introduced a new science curriculum for middle school aged children in California. Before that he spent 10 years building solar companies in California [redacted] also spent 11 years as a high school teacher

developing curriculum and running his department. He received his BA degree from the University of California at Berkeley and his master's from Stanford University.

[redacted] is a Manager of Commercial Development with ABTC. Upon graduation from University of Illinois at Urbana-Champaign with a BA in Environmental Science, Ross began his career at the global environmental service provider, Waste Management, Inc. as part of their sustainability services team. Focusing on implementing zero waste strategies within the industrial manufacturing industry for large corporate clients including GM, Nike, and Ford. Ross then spent time in the Private Equity industry learning and applying advanced financial models to properly evaluate and invest in early-stage, climate-focused companies. With a combination in operations management and financial literacy, [redacted] helped build the bioindustrial company Full Cycle. Here he led cross-functional teams focused on technical sales and research and development.

Dupont Water Solutions

DuPont de Nemours, Inc., commonly known as DuPont, is an American company formed by the merger of Dow Chemical and E. I. du Pont de Nemours and Company on August 31, 2017, and the subsequent spinoffs of Dow Inc. and Corteva. Prior to the spinoffs it was the world's largest chemical company in terms of sales. ABTC and Dupont have an active DOE project directly related to the work proposed in this project, i.e., a pilot-scale demonstration of manufacturing battery grade lithium hydroxide monohydrate from sedimentary lithium claystone.

(b) (4) [redacted]

[redacted]

[redacted]

(b) (4)

Argonne National Laboratory

is the Materials Recycling Group Leader in the Applied Materials Division at Argonne National Laboratory. His group works to solve material separation, recovery, and recycling challenges resulting in cost effective and environmentally sustainable processes resulting in commercialized plants. also leads the ReCell Center, a national collaboration — located at Argonne — of industry, academia and national laboratories working together to advance recycling technologies along the entire battery life cycle for current and future battery chemistries.

is an Energy Systems Analyst at Argonne National Laboratory focusing on cost and environmental impacts of battery materials production, battery manufacturing and recycling. has published a number of papers surrounding the life cycle analyses of automotive grade lithium-based batteries and prior to her current role was focused on the environmental impacts of material production, alternative fuel pathways, and vehicle light-weighting. has a Ph.D. in Environmental Engineering from the University of Michigan and brings over 12 years of research experience to the project team.

University of Nevada, Reno

is a professor of chemical and materials engineering at UNR. He has conducted numerous projects funded by DOE, ARPA-E, and NSF. has 35 years of research background in mineral processing, comminution, and extractive metallurgy. He will provide technical guidance and overall management on the project at the UNR side.

is an assistant professor in metallurgical engineering at UNR. His research expertise is in mineral processing of lithium clays and rare earth minerals. He is working with multiple lithium mining companies in Nevada to develop efficient lithium extraction processes from clays. He will aid in field and lab validation, commissioning, and troubleshooting.

is an associate professor in mechanical engineering at UNR. His research expertise is in tribology, material characterization, and equipment design. He will be assisting with the equipment selection and scale-up.

Offtake / Validation Organizations:

(b) (4)

(b) (4)

[redacted]

4.2 Equipment and Facilities

ABTC operates out of four primary facilities: Headquarter offices (Reno, NV), development laboratories on UNR campus (Reno, NV), Battery Recycling Pilot Plant (Fernley, NV), and the Tonopah field office (Tonopah, NV). We own approximately 10,500 acres of lithium-bearing sedimentary claystone mining claims located near Tonopah, Nevada. Our UNR Labs are housed at the Nevada Center for Applied Research (NCAR), which is an applied research and development technology center. The center is a part of the University's Innovation Ecosystem, supported by the Governor's Office of Economic Development and embraced and championed by the City of Reno. Our UNR Labs have all the analytical capabilities and resources necessary to ensure product QA/QC specifications along with many of our bench and pre-pilot scale processing units for process development and optimization. All our collaborators and partners on this project have all the necessary facilities and resources needed for successful completion. As previously noted, many of our partners are world leaders in the design, construction, and commissioning of such facilities.

(b) (4)

[redacted]

(b) (4) [redacted]

ABTC is also a member of Greentown Labs in Cambridge, MA which houses an 1,800 square-feet BSL-1 wet chemistry laboratory, piloting facilities for operation and optimization of systems, and large prototyping areas for construction and operation of large multi-ton per day demonstration systems. Greentown labs is the largest clean technology incubator in the US is home to more than 90 startups and has supported more than 230 startups since its inception. The incubator's mission is to provide entrepreneurs with the community, resources, and space they need to thrive.

UNR has a variety of equipment and facilities that will be used by this project team. The metallurgical engineering lab houses a comminution lab, a physical separation lab, an extractive metallurgy lab, and a surface chemistry lab. Relevant equipment (b) (4) [redacted].

DuPont has world class R&D and manufacturing facilities that are used for the development and fabrication of all relevant components in this project. These facilities have been used for the development and testing of individual unit operations in the current US DOE AMO grant project, and will also be used for the fabrication of commercial scale entities of these components in this proposed scale-up project.

4.3 Relevant Previous Efforts

This project team has been collaborating closely for several years, including by working as a project team on a current US DOE AMO grant for the fabrication and operations of a multi-ton per day field demonstration system for this proposed technology. Separately, the ABTC and BASF teams have worked together on multiple projects, including on a lithium hydroxide manufacturing from recycled content project sponsored by the US DOE VTO through the US Advanced Battery Consortium.

Key personnel from the ABTC team have previously been awarded and managed several US DOE grants for similar scale work including from the US DOE GTO, SunSHOT, NETL, and BETO.

4.4 Time Commitment of Key Personnel

Team Member	Role	% Total Time Commitment	% Cost-Shared Time Commitment
ABTC			
[redacted]	(b) (4) [redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]			
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]			
[redacted]	[redacted]	[redacted] 0	0 [redacted]
[redacted]			
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]

4.5 Technical Services to be Provided by FFRDCs

This project team includes Argonne National Laboratory (ANL) as a participating FFRDC.

ANL will be performing the services of leading the techno-economic analyses and life-cycle assessments of this novel process and to compare these metrics to industry baselines through its EverBatt and GREET modeling tools. As each section of the facility is constructed and commissioned, the ANL team will update their modeled values with actual values to continuously update these analyses. The ANL and ABTC teams have worked together for many years and will work iteratively to ensure that these analyses are performed successfully.

4.6 Export of Recovered or Critical Materials to a Foreign Entity of Concern

The project team does not export recovered or critical materials to a foreign entity of concern as defined in 42 U.S.C. 18741 (a)(5). The project team commits to not use battery material supplied by or originating from a foreign entity of concern as defined in 42 U.S.C. 18741 (a)(5).

4.7 Multi-Organizational Project

This multi-organizational project team has worked together extensively on previous efforts. ABTC will lead overall project efforts, with support on the brine purification and separations from DuPont Water Solutions, support on the sedimentary material processing and characterization from UNR, support from ANL on the TEA/LCA sections of the project, and with our EPC contracting leading the construction efforts.

Technical Decision Management

The coordination and integration of all technical areas will be conducted in a cohesive manner to achieve the project goals and objectives. The leaders from each technical team internally along with leadership from our collaborators will have regular meetings to coordinate project activities and make changes as needed based on team feedback. All teams will have clearly defined goals, timelines, and responsibilities.

Should the project not proceed as anticipated in a particular task or area, an approach will be discussed in the project meetings and refined as needed with input from all team members and Program Managers. Discussions will be conducted on the scientific and technological principles in a frank and open manner that embodies the spirit of enquiry and development. The critical criterion for resolution of any conflict will be the suitability or appropriateness of any proposed revision/refinement for accomplishing the project objectives. All the investigators enjoy excellent relationships with each other, and no conflicts are anticipated in the project.

Communications, Publications, and Intellectual Property

This project comprises of numerous technical and non-technical teams requiring close communication between members to take advantage of the team synergies. Regular monthly meetings, and/or teleconferences will consider results, scheduling, coordination, dissemination of results, and other activities. These meetings will be used to identify and understand technical issues in the project and come up with a plan of action to address any technological hurdles using the combined interdisciplinary strengths of the team. To ensure consistent and effective communication, several regular interactions are planned. Monthly meetings will be scheduled and team members showing progress and planned activities for the next quarter will hold quarterly formal reviews with presentations. Quarterly meetings will be held that include all Program Managers and team members. The objective of these quarterly meetings is will be to set the direction of the project and make any adjustments if needed. Detailed records will be recorded and maintained of the discussions taking place in group meetings. The investigators will also plan to

attend meetings at technical conferences. if they are in attendance. The project team will also implement a secure cloud-based (e.g., Google Drive, Office 365) information exchange system where literature articles, data, and other documents related to the project will be stored and part of a Data Management Plan.

As per our Data Management Plan (Option 1), we do not intend to make any underlying research data supporting the project and deliverables publicly available for up to five years after the data is first produced. When timely and prudent, project results will be presented to the scientific and engineering communities at technical conferences and disseminated in the form of meeting papers and/or peer-reviewed journal articles published in established journals. The support of funding agency will be acknowledged in all instances of oral and written dissemination. In addition, quarterly and annual reports of the project progress will be submitted to the Program Manager. All intellectual property issues will be resolved according to the existing policies of the institutions involved.

Please complete the following items and submit to DOE by the date indicated.

Document	Action Needed	Due (Business Days from Date of letter)	Submission Type	Send Information to:
Administrative				
Pre-Award Information Sheet	Complete and submit	10	Email	DOE Contract Specialist (CS)/Grants Management Specialist (GMS)
Participants and Collaborating Organizations	Prepare and submit (see FOA Section VI.B.xvi)	30	Email	DOE CS/GMS & Project Manager (PM)
Current and Pending Support for PIs & Co-PIs (if changed from original submission)	Prepare and submit (see FOA Section VI.B.xvii)	30	Email	DOE CS/GMS & PM
Copy of Indirect Rate Agreement (if applicable)	Submit Indirect Rate Agreement	10	Email	DOE CS/GMS
Communication Points of Contact	Submit contact information for a communications/public affairs point of contact	5	Email	DOE CS/GMS & PM
Environmental				
Environmental Questionnaire	Complete and submit the Environmental Questionnaire and Environmental Information Volume	20	Electronic	EERE Project Management Center website at https://www.eere-pmc.energy.gov/NEPA.aspx. After sign-in, select the NEPA EQ Submission tab, and select "Submit a new NEPA Environmental Questionnaire (EQ-1) Form". Your "Create EQ-1 Submission," enter

				MS0000010 as the "DOE Award Number" and select the PM identified below for "DOE Technology Office Point of Contact." **Further guidance will be provided the DOE PM**
Assurances and Waivers				
Davis-Bacon Act Assurances (if applicable)	For all projects that include construction, submit Assurances (see FOA Section IV.J.ix)	10	Email	DOE CS/GMS & PM
Foreign Entity Participation Waiver (if changed from original submission)	Submit Waiver Request for work completed by a Prime, Subrecipient, & Vendors who do not qualify as domestic (See Section III.A.iii.)	20	Email	DOE CS/GMS & PM
Foreign Work Waiver (if changed from original submission)	Submit Waiver Request for work performed outside of the United States (Vendors providing services require a waiver. Vendors solely providing supplies or equipment do NOT require a waiver)	20	Email	DOE CS/GMS & PM
Justifications				
Domestic Preference Standard Buy American Requirement: If your organization plans to purchase project equipment, supplies, or construction materials overseas in support of the proposed project, your organization is required to provide a justification for those purchases. The document must include an analysis that addresses whether or not the product is available in the United States, and if available, the analysis must compare and contrast both the price and project impacts of substituting a domestic source. The document must also provide a sound and quantifiable rationale for use of a non-domestic source. Please note that DOE reserves the right to deny purchases that do not appropriately consider domestic sources during award negotiations. Submit the Justification within 30 days to the DOE CS/GMS & PM				
Buy American Requirements: If your project involves the construction, alteration, and/or repair of public infrastructure, you must ensure that all iron, steel, manufactured goods and/or construction materials are procured domestically. Refer to the FOA for definitions of "public" and "infrastructure" to determine the applicability of the Buy American Requirement. If the requirement applies to your project and you do not believe it is possible or feasible for your organization to comply, refer to Appendix C of the FOA for information on required content for a Waiver to the Buy American Requirement for Instructure Projects.				