



**BLUE WHALE
MATERIALS**

NAATBATT 2025

EXTENDING RANGE

February 2025

RECYCLING BATTERIES FOR A SUSTAINABLE FUTURE

BWM & BWEI MEMBER UPDATE

BLUE WHALE MATERIALS

Solutions for multiple stages of the Li-ion battery recycling process.

BLACKSAND™



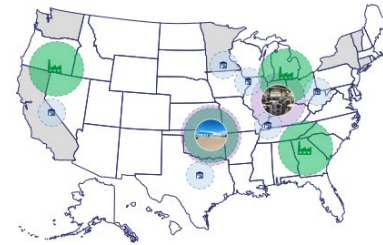
- 14ktpa processing plant in Bartlesville, OK by 2025
- 54ktpa by 2028 with DOE award
- 50-acre campus with 100k sqft processing & 50k sqft storage facility
- Feedstock & offtake secured

TESTING



- Testing lab in operation since 2012
- Performance & abuse testing for Li-ion manufacturers
- End-of-Life testing & grading for remanufacturing & second life

COLLECTION INFRASTRUCTURE



- Expanding existing collection frameworks & establishing new partnerships for wide-reaching and consistent supply
- Strategically located collection centers to fill gap in battery collection infrastructure to optimize efficiency and costs

BATTERY MINERAL EXTRACTION



- Ongoing R&D to add lithium extraction, graphite & graphene production



BARTLESVILLE, OK FACILITY COMMISIONING UNDERWAY



Processing

- **100,000 square foot facility**
- **Initial processing capacity of +14,000 MT/year**
- Ability to process production scrap, EV batteries, and consumer batteries on one line
- Option to shred entire pack



Storage

- **50,000 square foot storage facility**
- Continuous processing enhances facility efficiency and safety



Testing & Evaluation

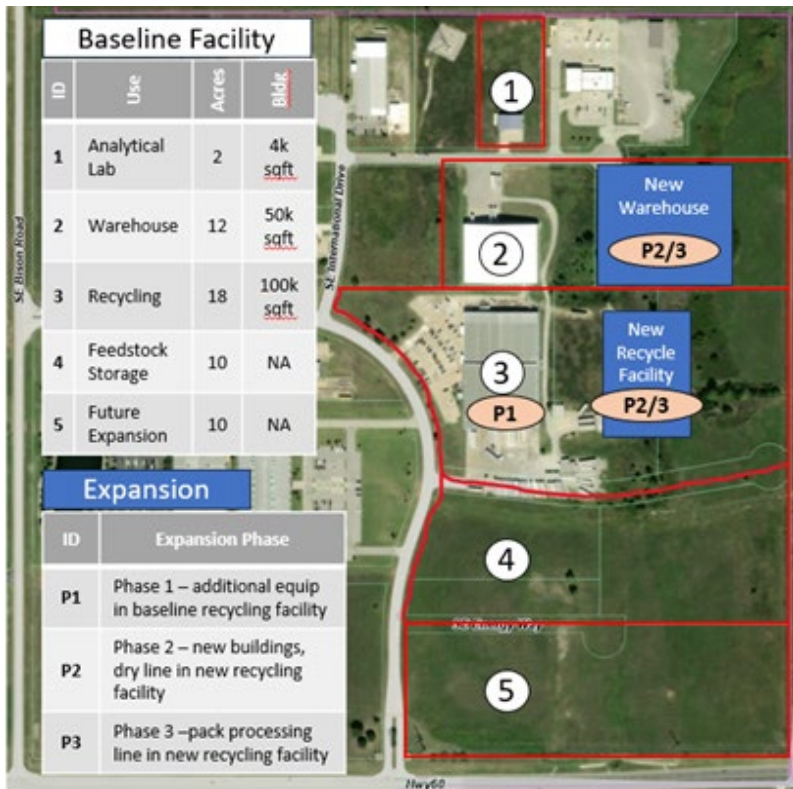
- Testing and pack dismantling capabilities
- End-of-life state-of-health grading services on the pack, and module level



AWARDED DOE GRANT TO EXPAND BARTLESVILLE FACILITY

Fully operational, the plant will produce materials for

>10GWh of LiBs per year & power 100k EVs



- BWM selected for DOE award negotiation to expand Bartlesville site
- Expand feedstock capacity to > 54,000 tonnes per year
- Additional Line to process batteries and Mfg scrap with electrolyte
- Additional Line to process Mfg scrap without electrolyte
- Additional warehousing and storage space

Federal Cost Share:

\$55,232,669

Non-Federal Cost Share:

\$55,232,675

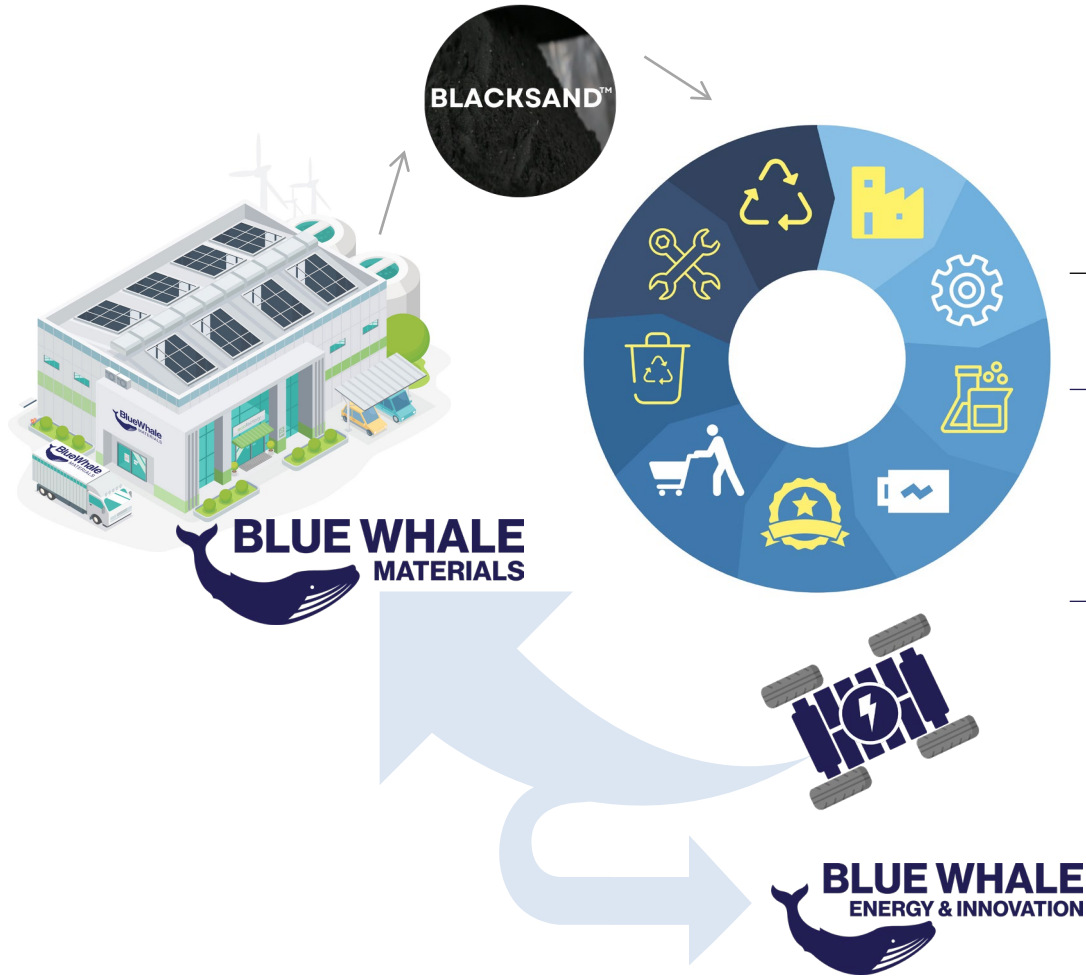
Comprehensive CBP:

Creating **150** full-time jobs & **180** construction jobs in a DAC & Energy Community



BW ENERGY & INNOVATION

BWE&I, formerly Eclipse Energy, has been in the battery testing business since 2012. The team, with 100+ years of experience, offers battery development and test services as well as new in-person trainings.



VERTICALS

MANUFACTURING

- Life-cycle testing
- End of line performance testing up to **420V**
- Lead acid, Li-ion, and complex chemistries
- **ISO/IEC 17025** accredited since 2017

R&D VALIDATION

- Performance testing
- Abuse testing

REMANUFACTURING/ SECOND USE

- EOL state of health testing for packs, modules, cells
- **700+** channels for testing and grading
- EIS testing

EDUCATION, TRAINING & CONSULTING

- Course offerings include Battery 101 (Cell Theory, Electrical Fundamentals), Fire Safety & First Responder Training, Energy Storage Fundamentals, Battery Management Systems, and Battery Standards & applications
- Courses offered in-person or virtual
- CEU Accreditation offered through Purdue University

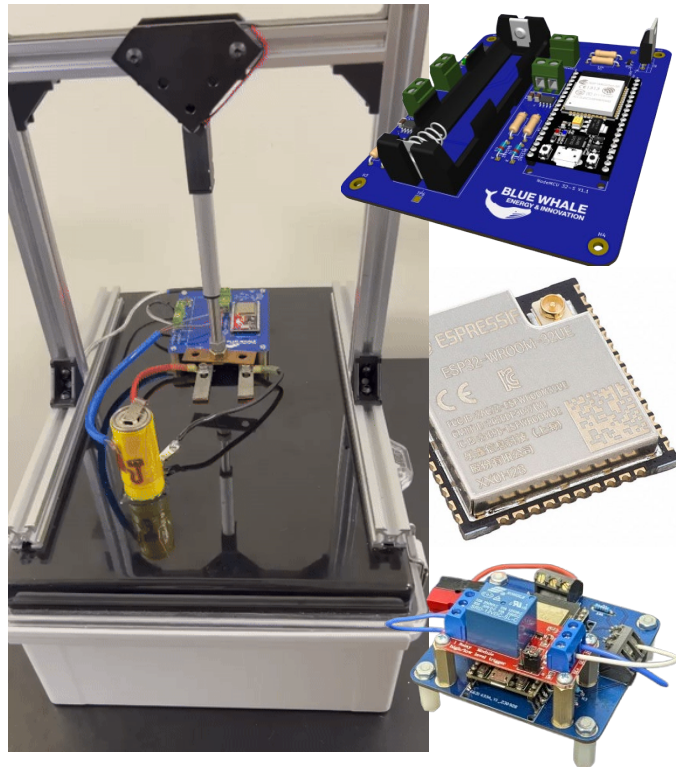


GREENFIELD, IN

BW ENERGY & INNOVATION

Specializing in Novel, Complex Test Requirements

- From designing custom PCB for a client with niche needs to developing a custom LIN communication board to interface with cyclers.

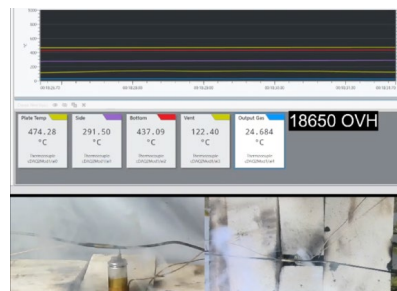


Comprehensive, Rigorous Testing with Reliable Test Data

- BWEI specializes in comprehensive abuse testing up to 5kWh modules:
 - Mechanical
 - Nail penetration
 - Electrochemical
 - Thermal cycle/thermal shock
 - Overcharge
 - Overheat
 - & more



- Offers comprehensive data reports with customized testing solutions.



Testing & Grading of End-Of-Life Packs

- EOL state of health testing for packs, modules, cells
- Service model for recalls or EOL determination for warranty batteries
- EIS testing



Grading (Capacity Basis)	EV Range/ESS Power/Energy
100%	Varies
90% Service Quality ~	
80% 10-15 years	
70%	
60% Unknown Life Left	Customer Accepts
50%	Customer Issues
40% Can't Power a Car	Customer Doesn't Buy
30%	
20%	
10% Rapid Failure Poss.	
0%	





Thank You

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