

# Max Power Advances Direct Lithium Extraction (DLE) Technology With Lawrence Berkeley National Laboratory

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VANCOUVER, Aug. 21, 2023 - [MAX Power Mining Corp.](#) (CSE: MAXX; OTC: MAXXF; FSE: 89N) ("MAX Power" or the "Company") is pleased to report significant early progress in its co-operative research and development agreement (CRADA) with Lawrence Berkeley National Laboratory (Berkeley Lab, LBNL), a California-based U.S. Department of Energy laboratory managed by the University of California, to develop state-of-the-art direct lithium extraction (DLE) technologies for brine resources (refer to May 15, 2023 news release).

Dr. Brett Helms and Dr. Michael Whittaker, two pre-eminent American research scientists at Berkeley Lab working in collaboration with MAX Power, are leading potential groundbreaking technology development focused on novel pre-treatment methods and a membrane-based approach to lithium extraction from a diverse range of brine resources in the United States and Canada (see video interview links with Helms and Whittaker included in this news release). Simultaneously, MAX Power is advancing a potential district-scale lithium brine/claystone project at the Willcox Playa in Arizona, southeast of Phoenix.

MAX Power and LBNL are incorporating innovative methods and novel materials into the DLE process to help unlock lower grade and challenging brine resources, lower production costs, and allow for higher throughput as an effective alternative to existing methods.

## Highlights:

- The technology approach is focussed on a two-step DLE process that combines omnisolute pre-treatment with permselective extraction using novel polymer membranes;
- The pre-treatment techniques involve electrokinetic control over a range of inputs. The goal is to allow for a diverse brine pre-treatment for a wide variety of resource compositions;
- The project is utilizing new polymer membranes that feature ion-solvation cages to enable permselective transport of ions at a high rate to extract lithium from pre-treated brine.

Dr. Helms, co-founder of two deep tech Bay Area start-ups and award winner of the 2022 World Materials Forum's start-up challenge, stated, "A key to our success at this stage comes from the polymers having the ability to passively and selectively concentrate lithium. We see significant opportunities for the membrane-based approach we're developing to offer advantages over existing approaches, in particular higher throughput with respect to volume. This is particularly important for brine resources, where the amount of lithium may be low."

Mr. Rav Mlait, MAX Power CEO, commented: "Our partnership with Berkeley Lab has allowed MAX Power to develop new processes in the rapidly growing technology side of the booming lithium sector. Lithium production from DLE is expected to grow 12-fold by 2032, accounting for about 15% of total supply, according to Benchmark Mineral Intelligence. Lithium extraction from battery recycling also has outstanding potential. With a lithium asset in Arizona, a lithium extraction technology component in California, and increasingly exciting hard rock lithium discovery opportunities in Quebec, MAX Power has carved out a niche for itself in this growing sector."

## Video Interview - Dr. Brett Helms

Dr. Helms' research program at Berkeley Lab is devoted to materials discovery and development to solve outstanding challenges in energy and sustainability, including membranes for efficient ion separations

relevant to resource extraction, refining, and circularity. He is co-founder of Bay Area start-ups Sepion Technologies and Cyklos Materials. At Cyklos, his award-winning innovations in PDK circularity have been featured in print, radio, television, on the web. Dr. Helms is a Kavli Fellow (2019) and co-inventor on more than 30 patents on performance polymers. He is deeply committed to solving problems in energy and sustainability through the development of better materials and lower-carbon manufacturing processes.

Link to interview: <https://vimeo.com/855794138?share=copy>

Video Interview - Dr. Michael Whittaker

Dr. Whittaker is a research scientist in the Energy Geoscience and Materials Science Divisions at Berkeley Lab. He is also co-founder and Director of the Lithium Resource Research and Innovation Center (LIRRIC) (<https://lirric.lbl.gov/>). Berkeley Lab established LIRRIC to power lithium innovation and guide research and development into lithium extraction technologies so that science breakthroughs lead to the greatest economic and environmental benefits. He is Principal Investigator of the Minerals for Energy Storage (MINES) Project, and Group Leader of the Living Minerals Team (<https://livingmineral.lbl.gov/>).

Link to interview: <https://vimeo.com/855784644/e2e4c97a8c?share=copy>

About MAX Power

MAX Power is a dynamic exploration stage resource company targeting domestic lithium resources to advance North America's renewable energy prospects. MAX has also entered into a cooperative research and development agreement with the University of California Lawrence Berkeley National Laboratory (LBNL) to develop state-of-the-art direct lithium extraction (DLE) technologies for brine resources.

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Photos accompanying this announcement are available at

<https://www.globenewswire.com/NewsRoom/AttachmentNg/27efa934-fd47-4645-add3-b0b48694cf25>

<https://www.globenewswire.com/NewsRoom/AttachmentNg/3fab025c-b92f-47cd-8b35-9d8de3003a08>

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