CALIFORNIA ALTERNATIVE ENERGY AND ADVANCED TRANSPORTATION FINANCING AUTHORITY

List of Emerging Strategic Industries under the Sales and Use Tax Exclusion Program Pursuant to California Code of Regulations Title 4, Division 13, Section 10031(m)

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SUMMARY

The Executive Director has developed a list of Emerging Strategic Industries[1] under the Sales and Use Tax Exclusion ("STE") Program pursuant to California Code of Regulations Title 4, Division 13, Section 10031(m). These industries include activities associated with the development, exploration, and production of lithium within California's "Lithium Valley" that the Executive Director has identified as having a potentially significant impact on the State's environmental goals or economy, the advancement of which are in the public interest, and which advance the purposes of the program.

BACKGROUND

STE Program Regulations - Emerging Strategic Industry

Section 10031(m) of the program's regulations defines Emerging Strategic Industry as an innovative industry, technology or product that may be identified by the Executive Director as having a potentially significant impact on the State's environmental goals or economy, the advancement of which are in the public interest, and which advance the purposes of the program.

Section 10031(m) also states the Executive Director may from time to time develop or add to a list of Emerging Strategic Industries, which will be identified by North American Industry Classification System (NAICS) code (or its equivalent) or by description of the product or manufacturing process. The list of these industries will be publicly posted on the Authority's website. No list of Emerging Strategic Industries has been developed in the past.

An Applicant may earn up to 40 points in the Application scoring if the Applicant's industry is in an Emerging Strategic Industry.[2] Additionally, an Applicant will earn 75 points in the competitive criteria scoring if the Applicant's industry is in an Emerging Strategic Industry once the modified regulations approved by the Board at the October 19, 2021, Board meeting become effective for the 2022 calendar year's Applications.

[1] All capitalized terms not defined in this document are defined in the Sales and Use Tax Exclusion Program's statutes and regulations.
[2] California Code of Regulations Title 4, Division 13, Section 10033(c)(5)(D).

California's Lithium Valley and Lithium Battery Manufacturing

Lithium, a metal required to produce batteries in electric vehicles and computer electronics, is critical to California's efforts to reduce fossil fuel emissions and sustain a clean energy economy. California holds underutilized sources of lithium that could potentially serve a large portion of global markets' growing demand for lithium batteries. Currently, 71% of the global production of lithium is used in lithium batteries.[3] California has the lithium reserves to aid the U.S. in becoming a global producer of lithium and provide an in-state supply chain for domestic markets of zero-emission vehicles (ZEVs) and clean energy storage.

The electric vehicle market continues to grow. Globally, consumers spent $120 billion on electric car purchases in 2020, resulting in a 41% increase in sales from 2019.[4] The International Energy Agency estimates annual battery demand to grow twenty-fold by 2030 to keep pace with global ZEV markets.[5] To maintain projected growth, lithium supply chains will require an increase in the beneficiation or extraction of lithium from mineral deposits, the processing of lithium compounds, and the manufacturing of lithium cathodes for batteries.

The vast majority of lithium is currently produced in Argentina, Chile, China, and Australia. Furthermore, China currently has an 80% share of global lithium battery manufacturing. Only one operation in the U.S. is currently producing lithium, a brine extraction operation in Nevada.[6] Likewise, the U.S. only has one manufacturer, Tesla, producing lithium batteries on a commercial scale.

To meet the growing demand for lithium batteries domestically, companies in California are developing Direct Lithium Extraction (DLE) technologies to tap into lithium reserves in Imperial County's geothermal brines, known as Lithium Valley. California also has other potential sources for lithium, including tailings of mining operations, oil field brines, and other sedimentary and hard rock deposits. California officials estimate that, once developed, Lithium Valley could supply up to 600,000 tons of lithium per year[7] – which would account for one-third of current global demand.[8]

California and the U.S. government have designated the advancement of domestic lithium production as a key component to the nation's economy and national security and in its efforts to combat the effects of climate change. In 2017, Presidential Executive Order No. 13817 listed lithium as a critical mineral essential to the nation's economic and national security.[9] In 2020,

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[3] U.S. Geological Survey, "Mineral Commodity Summaries" (2021) https://pubs.usgs.gov/periodicals/mcs2021/mcs2021.pdf.
[4] International Energy Agency, "Global EV Outlook 2021" https://iea.blob.core.windows.net/assets/ed5f4484-f556-4110-8c5c-4ede8bcba637/GlobalEVOutlook2021.pdf.
[5] *Id.*
[6] U.S. Geological Survey, "Mineral Commodity Summaries" (2021) https://pubs.usgs.gov/periodicals/mcs2021/mcs2021.pdf.
[7] Lithium Valley Commission Meeting, July 29, 2021, https://efiling.energy.ca.gov/getdocument.aspx?tn=239067.
[8] New Energy Nexus, "Building Lithium Valley" (2021) https://efiling.energy.ca.gov/GetDocument.aspx?tn=237271&DocumentContentId=70453
[9] Presidential Executive Order (2017) No.13817, https://www.federalregister.gov/documents/2017/12/26/2017-27899/a-federal-strategy-to-ensure-secure-and-reliable-supplies-of-critical-minerals.

Presidential Executive Order No. 13953 expressed the nation's intent to secure a domestic supply of critical minerals, including lithium.[10] In California, SB 100 (De León, Ch. 312, Statutes of 2018) set a 2045 goal to reach 100% renewable and zero-carbon energy for electric retail sales to end-use costumers and state agencies. California has joined 14 other states and the District of Columbia in committing to work collaboratively to advance and accelerate the market for electric medium- and heavy-duty vehicles and ensure that 100% of all new medium- and heavy-duty vehicle sales be ZEVs by 2050 with an interim target of 30 percent zero-emission vehicle sales by 2030.[11] In 2020, Governor Newsom set a 2045 goal for all sales of new passenger vehicles to be ZEVs.[12] To meet the demand for lithium that will accompany growth in California's ZEV market, the legislature created the Lithium Valley Commission to provide guidance on economic and environmental considerations for the development of lithium reserves in Imperial County.[13] These state and federal efforts set an expectation that California will emerge as a key domestic provider of lithium.

The development of DLE technologies provides a window of opportunity for California to establish a domestic lithium supply chain to produce lithium batteries on a global scale. Incentive programs such as the STE Program can help to attract investments to upstream operations in a domestic lithium supply chain. CAEATFA is developing a list of Emerging Strategic Industries to assist in this effort and in support of the STE Program's goals of promoting California-based manufacturing and jobs and reductions in greenhouse gas emissions and air pollution. Lithium production can help promote these goals by providing a critical component for the production of ZEVs and storage for California's electric grid as it transitions away from dirty fossil fuels to zero-emission electricity generation. An in-state lithium supply chain also has the potential to support job growth, especially in Imperial County where Lithium Valley's reserves could potentially offer relief to a region with one of California's highest unemployment rates.

The following designated industries are innovative industries that will have a potentially significant impact on the State's environmental goals and economy, the advancement of which are in the public interest, and which advance the purposes of the STE Program. The List of Emerging Strategic Industries support the development of an in-state lithium supply chain by incentivizing the development of the beneficiation or extraction of lithium, the processing of battery-grade lithium compounds, and the production of lithium batteries.

[10] Presidential Executive Order (2020) No. 13953, https://www.federalregister.gov/documents/2020/10/05/2020-22064/addressing-the-threat-to-the-domestic-supply-chain-from-reliance-on-critical-minerals-from-foreign.
[11] Multi-State Medium- and Heavy-Duty Zero Emission Vehicle Memorandum of Understanding (2020) https://www.nescaum.org/documents/multistate-truck-zev-governors-mou-20200714.pdf
[12] California Governor (2020) Executive Order N-79-20, https://www.gov.ca.gov/wp-content/uploads/2020/09/9.23.20-EO-N-79-20-Climate.pdf.
[13] AB 1657 (Garcia, Ch. 271, Statutes of 2020).

LIST OF EMERGING STRATEGIC INDUSTRIES

Product	NAICS
Lithium compounds	325180
Geothermal steam	221330
Lithium batteries, storage	335911
Lithium batteries, primary	335912