SENATE CONCURRENT RESOLUTION NO. 10–SENATOR SPEARMAN

APRIL 29, 2021

JOINT SPONSOR: ASSEMBLYMAN C.H. MILLER

Referred to Committee on Legislative Operations and Elections

SUMMARY—Directs the Legislative Committee on Energy to conduct an interim study concerning the development of hydrogen, vanadium and lithium as energy resources in this State. (BDR R-523)

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EXPLANATION – Matter in ***bolded italics*** is new; matter between brackets [~~omitted material~~] is material to be omitted.

SENATE CONCURRENT RESOLUTION—Directing the Legislative Committee on Energy to conduct an interim study concerning the development of hydrogen, vanadium and lithium as energy resources in this State.

WHEREAS, It is the intent of this State to reduce the emissions of carbon dioxide in this State to levels commensurate with the levels established in the Paris Agreement; and

WHEREAS, The State Climate Strategy has identified that hydrogen technologies, including, without limitation, hydrogen fuel cell vehicles and hydrogen fueling stations, present opportunities to reduce carbon emissions in this State; and

WHEREAS, The hydrogen economy is predicted to rapidly expand across the globe and is currently valued at more than $100 billion annually; and

WHEREAS, Emerging hydrogen end-use applications, including, without limitation, in transportation, seasonal energy storage and the global energy trade, provide opportunities to enhance economic development in this State, which would provide such benefits as job creation and increased tax revenue; and

WHEREAS, There is a growing demand for lithium, including, without limitation, lithium batteries for use in electric and hybrid vehicles that present opportunities to reduce carbon emissions in this State; and

WHEREAS, The State Climate Strategy has identified that this State has the largest lithium prospects in the United States and the only active lithium mine in North America, and there is an opportunity to establish this State as an epicenter for, without limitation, lithium mining for batteries, advanced manufacturing of vehicles and battery recycling technology; and

WHEREAS, Emerging lithium end-use applications, including, without limitation, in batteries for vehicles, electronics, electric tools and grid storage applications, ceramics and glass, lubricating greases and polymer production, provide opportunities to enhance economic development in this State, which would provide such benefits as job creation and increased tax revenue; and

WHEREAS, The State Climate Strategy indicates that the increasing global demand for battery production prompted the mining industry to pursue new mineral extraction opportunities in this State, including, without limitation, the extraction of vanadium; and

WHEREAS, Vanadium has begun to play a pivotal role in the advancement of battery technology for electric and hybrid vehicles, which reduce carbon emissions in this State; and

WHEREAS, Vanadium is poised to play a pivotal role in the commercialization of renewable energy; and

WHEREAS, Federal land managers have launched an expedited permitting process for the first vanadium mine in the United States in this State; and

WHEREAS, According to the Washington Post, Nevada Vanadium plans to mine approximately 10 million pounds of vanadium per year, or about half of the overall vanadium in the United States, which could establish this State as the epicenter for vanadium-based technologies; and

WHEREAS, Emerging vanadium end-use applications, including, without limitation, in automotive applications for electric and hybrid vehicles, in energy storage applications for renewable and conventional energy applications and applications as an alloying element in various aspects of transportation, including automotive, aviation and aerospace, which provide opportunities to enhance economic development and diversification in this State, create jobs and increase tax revenue; and

WHEREAS, Encouraging the expansion of transportation powered by hydrogen fuel cells, vanadium flow batteries and lithium batteries may help decrease carbon emissions and improve air quality, which is associated with improved respiratory health for Nevadans, particularly economically disadvantaged Nevadans and communities of color; now, therefore, be it

RESOLVED BY THE SENATE OF THE STATE OF NEVADA, THE ASSEMBLY CONCURRING, That the Legislative Committee on Energy shall conduct an interim study concerning the development of hydrogen, vanadium and lithium as energy resources in this State, including, without limitation, the development of hydrogen, vanadium and lithium technologies, with the goal of achieving energy independence for the State and facilitating economic diversification in this State; and be it further

RESOLVED, That the study include a consideration of methods to increase opportunities for students in this State to study subjects related to hydrogen, vanadium and lithium and hydrogen, vanadium and lithium technologies at a community college, state college or university in this State; and be it further

RESOLVED, That, in conducting the study, the Legislative Committee on Energy shall partner or consult with representatives of the Nevada System of Higher Education, the elementary and secondary education system in this State, the National Renewable Energy Laboratory and the private sector, including, without limitation, the existing energy industries located in this State, and consider input provided by other stakeholders, including, without limitation, clean energy developers, nongovernmental organizations and professionals with expertise in the use of hydrogen, vanadium and lithium as energy resources and hydrogen, vanadium and lithium technologies; and be it further

RESOLVED, That, in conducting the study, the Legislative Committee on Energy shall partner or consult with representatives of the Nevada System of Higher Education to examine ways to improve the training of workers in emerging hydrogen, vanadium and lithium technologies, including, without limitation, ways to prepare workers to develop, construct, improve, maintain and repair facilities used in the production and use of hydrogen, vanadium and lithium as energy resources; and be it further

RESOLVED, That, as part of the study, the Legislative Committee on Energy may, if feasible, enter into a contract or other agreement with the University of Nevada, Reno, the University of Nevada, Las Vegas, or the Desert Research Institute for gathering data concerning the assessment and development of hydrogen, vanadium and lithium as energy resources and producing a cost-benefit analysis of hydrogen, vanadium and lithium as energy resources; and be it further

RESOLVED, That the study assess the feasibility of using hydrogen, vanadium and lithium as energy resources in this State for various applications including, without limitation, consideration of:

1. The potential for hydrogen, vanadium and lithium to enable the operation of zero-emission light-duty and medium-duty vehicles,

trucks, buses, locomotives, off-road equipment, aviation, industrial equipment and harbor and watercraft;

2. The optimal deployment of infrastructure for hydrogen fueling and vanadium and lithium battery charging that would support the acceleration of zero-emission vehicle adoption;

3. Opportunities for economies of scale in hydrogen utilization in commercial or industrial hubs that deploy multiple types of hydrogen, vanadium or lithium equipment;

4. Novel processes for extracting vanadium and lithium from rock and brine and the practicability of the application of those processes in this State;

5. The potential for using wastewater and wastewater treatment facilities for the production of hydrogen;

6. The potential for converting existing mines into resources for hydrogen, including, without limitation, by producing green hydrogen from water associated with inactive or abandoned mines;

7. Methods for incentivizing the use of hydrogen, vanadium and lithium as energy resources in this State;

8. Economic and regulatory barriers hindering the implementation of hydrogen, vanadium and lithium as energy resources, including, without limitation, whether policies incentivizing the development of hydrogen, vanadium and lithium as energy resources and hydrogen, vanadium and lithium technologies are comparable to policies incentivizing the development of other energy resources and technologies in this State;

9. Federal and nongovernmental grant opportunities that may be available for the purposes of developing hydrogen, vanadium and lithium as energy resources in this State;

10. The potential for using hydrogen microgrids, using lithium and vanadium batteries as energy storage for microgrids and coupling hydrogen, vanadium and lithium with distributed energy resources to strengthen the resilience of the electric power grid;

11. The environmental impacts of lithium production, including, without limitation, the extraction of lithium from brine and methods for avoiding or minimizing any such impacts including, without limitation, through siting, technological innovation and large-scale spatial planning;

12. Challenges and opportunities relating to green hydrogen;

13. The reuse or recycling of lithium batteries; and

14. Implementation of methods to protect the rights of indigenous people in this State, including the concept of free, prior and informed consent; and be it further

RESOLVED, That any recommended legislation proposed by the Legislative Committee on Energy must be approved by a majority

of the members of the Assembly and a majority of the members of the Senate appointed to the Committee; and be it further

RESOLVED, That the Legislative Committee on Energy shall submit a report of the results of the study and any recommendations for legislation to the Governor and the Director of the Legislative Counsel Bureau for transmittal to the 82nd Session of the Nevada Legislature; and be it further

RESOLVED, That this resolution becomes effective upon adoption.

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