

(Reprinted with amendments adopted on May 25, 2021)

FIRST REPRINT

S.C.R. 10

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SENATE CONCURRENT RESOLUTION NO. 10—SENATOR SPEARMAN

APRIL 29, 2021

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JOINT SPONSOR: ASSEMBLYMAN C.H. MILLER

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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.

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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.

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

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

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

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

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



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

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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

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

34 11. The environmental impacts of lithium production,  
35 including, without limitation, the extraction of lithium from brine  
36 and methods for avoiding or minimizing any such impacts  
37 including, without limitation, through siting, technological  
38 innovation 2nd large-scale spatial planning;

39 12. Challenges and opportunities relating to green hydrogen;

40 13. The reuse or recycling of lithium batteries; and

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

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



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

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

8 RESOLVED, That this resolution becomes effective upon  
9 adoption.

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