

**Representative Melissa G. Ballard** proposes the following substitute bill:

**CONCURRENT RESOLUTION REGARDING IMPROVING AIR  
QUALITY THROUGH ENHANCED ZERO EMISSION RAIL**

2022 GENERAL SESSION

STATE OF UTAH

**Chief Sponsor: Melissa G. Ballard**

Senate Sponsor: David P. Hinkins

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**LONG TITLE**

**General Description:**

This concurrent resolution addresses improving air quality through encouraging rail development and zero emission technology deployment.

**Highlighted Provisions:**

This resolution:

- ▶ addresses air quality and its impacts in the state;
- ▶ describes solutions to reduce air pollution;
- ▶ describes the rail transportation impact on air quality;
- ▶ acknowledges the role of certain governmental agencies in the shift of freight traffic to rail;
- ▶ highlights that technology solutions, including information and communications technology and zero emission locomotives, can further reduce rail emission impacts;
- ▶ provides that a hydrogen fuel cell-electric system is an example of a zero emission engine technology;
- ▶ addresses funding and innovative procurement solutions;
- ▶ encourages the phased replacement of existing locomotives used in railroad and



26 industrial plant switching services in nonattainment areas in the state with zero emission  
27 locomotives; and  
28       ▶ encourages the transition of rail transportation in general to zero emission  
29 locomotives.

30 **Special Clauses:**

31       None



33 *Be it resolved by the Legislature of the state of Utah, the Governor concurring therein:*

34       WHEREAS, Utah continuously demonstrates the state's commitment to and interest in  
35 the state's air quality;

36       WHEREAS, good air quality is a vital component of the economy and human health in  
37 Utah and research conducted by Utah universities shows the harmful impacts of air pollution  
38 on human health, with the greatest negative impact on the health of children, the elderly, and  
39 those with compromised immune systems;

40       WHEREAS, for example, exposure to direct small particulate matter exacerbates  
41 asthma, increases the risk of cancer, and leads to acute respiratory symptoms, bronchitis,  
42 chronic obstructive pulmonary disease, heart attacks, nervous system effects, lost work days,  
43 and premature death;

44       WHEREAS, there is now a broad range of technologically and economically viable  
45 solutions to significantly reduce air pollution and ensure that future economic and population  
46 growth does not compromise air quality;

47       WHEREAS, embracing zero emission technologies will help grow our state's robust  
48 clean technology sector;

49       WHEREAS, as of 2017, railroad transportation contributed 9.2% of NOx and 1.4% of  
50 the PM2.5 along the Wasatch Front;

51       WHEREAS, while comparable data is not available for the trucking sector or all freight  
52 railroad operations in the state, as of 2017 the Division of Air Quality found that locomotives  
53 used for short line, industrial plant, and switch engine operations contributed 3.4% of NOx and  
54 0.16% of PM2.5 of the total Wasatch Front inventory of emissions, equivalent to  
55 approximately 1,828 tons of NOx and 19 tons of PM2.5;

56       WHEREAS, in addition to significant numbers of heavy haul freight locomotives

57 operating in and through the state, as of 2017 there were approximately 63 short line  
58 locomotives, industrial plant locomotives, or switch engines operating in Utah;

59 WHEREAS, the majority of the short line locomotives, industrial plant locomotives,  
60 and switch engines operating in Utah are legacy platforms certified to the United States  
61 Environmental Protection Agency as meeting Tier 0 or Tier 0+ emission standards, and almost  
62 all emissions from these locomotives occur within two of Utah's PM2.5 nonattainment areas  
63 based on the United States National Ambient Air Quality Standards;

64 WHEREAS, under the federal Clean Air Act, an area where air pollution levels  
65 persistently exceed a National Ambient Air Quality Standard may be designated as a  
66 "nonattainment" area by the United States Environmental Protection Agency;

67 WHEREAS, designation as a nonattainment area requires the development of a State  
68 Implementation Plan with increasing mandatory requirements if the area does not return to  
69 attainment within prescribed timelines, and may result in the imposition of a Federal  
70 Implementation Plan and sanctions that could impact the availability and use of federal  
71 highway funds;

72 WHEREAS, the Utah Department of Transportation, other agencies of the state, and the  
73 Utah Inland Port Authority, a political subdivision of the state, can play a vital role in  
74 accelerating the modal shift of freight traffic to rail, helping to meet health and air quality  
75 goals;

76 WHEREAS, the Utah Inland Port Authority anticipates assisting in the reduction of  
77 trucks from the road and the modal shift to rail, while using the regulatory sandbox to test new  
78 freight movement and cargo handling equipment at the inland port to increase use of zero  
79 emission vehicles;

80 WHEREAS, to complement accelerating this modal shift to rail, a broad spectrum of  
81 technologies, including information and communications technologies that enable more  
82 efficient rail operation reducing fuel use and emissions, and entirely new locomotive power  
83 technologies such as hydrogen fuel cell-electric and battery-electric, must be encouraged and  
84 supported to further decrease total freight section emissions, including freight rail emissions;

85 WHEREAS, hydrogen especially is an attractive alternative fuel as hydrogen does not  
86 contain carbon and when used in fuel cells produces zero emissions;

87 WHEREAS, hydrogen either for onboard energy storage or as part of a hybrid

88 propulsion system provides a viable option in the future for zero emission engines in short line  
89 locomotives, industrial plant locomotives, and switch engines operated in the state, and in the  
90 future, also for heavy-haul freight locomotives operating in and through the state;

91 WHEREAS, infrastructure for hydrogen is continuing to expand in the state;

92 WHEREAS, funding support and innovative procurement solutions made available  
93 through the Utah Department of Transportation and the Utah Inland Port Authority can assist  
94 private sector operators of short line locomotives, industrial plant locomotives, and switch  
95 engines with transitioning to zero emission technologies, including for freight rail, that can  
96 materially increase the state's air quality; and

97 WHEREAS, substantial federal funding is expected to be available to support this  
98 transition, and the Utah Department of Transportation and the Utah Inland Port Authority  
99 should maximize their efforts to secure the federal funding to facilitate deployment of zero  
100 emission technologies, including freight rail, that can materially increase the state's air quality:

101 THEREFORE, BE IT RESOLVED that the Legislature of the state of Utah, the  
102 Governor concurring therein, encourages the introduction of new zero emission locomotives  
103 operated by short line locomotives, industrial plant locomotives, and switch engines in  
104 nonattainment areas, a continued shift of freight transportation growth to rail to help meet the  
105 state's air quality goals, phasing out legacy locomotive engines in short line, industrial plant,  
106 and switch engine rail service in nonattainment areas in the state, and phasing in the use of zero  
107 emission engines, including hydrogen fuel cell-electric systems as follows:

108 • at least one demonstration project of a short line locomotive, industrial  
109 plant locomotive, or switch engine using a zero emission engine by  
110 2025;

111 • 25% of short line locomotives, industrial plant locomotives, and switch  
112 engines use a zero emission engine by 2030;

113 • 40% of short line locomotives, industrial plant locomotives, and switch  
114 engines use a zero emission engine by 2035;

115 • 80% of short line locomotives, industrial plant locomotives, and switch  
116 engines use a zero emission engine by 2040; and

117 • 100% of short line locomotives, industrial plant locomotives, and switch  
118 engines use a zero emission engine by 2050.

119           BE IT FURTHER RESOLVED that the Legislature and the Governor encourage, in  
120 addition to short line locomotives, industrial plant locomotives, and switch engines all rail  
121 transition to zero emission technologies, including commuter rail, passenger rail, and long haul  
122 freight rail.