

House Concurrent Resolution No. 40

97TH GENERAL ASSEMBLY

INTRODUCED BY REPRESENTATIVES SCHATZ (Sponsor), BARNES, FREDERICK, KORMAN, RIDDLE, SCHARNHORST, HOUGHTON, ELMER, HINSON, HOUGH, REDMON, WHITE, DAVIS, SOMMER, BERRY, KELLY (45), HAMPTON, NEELY, CURTMAN, WIELAND, MCGAUGH, WOOD, GANNON, PFAUTSCH, LANT, KOENIG, PIKE, LYNCH, FITZWATER, FRANKLIN AND HICKS (Co-sponsors).

6235H.011

2 **WHEREAS**, the United States and the world find themselves dependent on China for
3 a group of minerals and metals known as “Rare Earth Elements” (REEs) that are critical to many
4 commercial, environmental, and defense applications; and

5 **WHEREAS**, REEs represent the only known bridge to the next level of improved
6 performance in the material properties for many metallurgical alloys, electrical conductivity,
7 radio-active shielding, and instrument sensitivity; and

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9 **WHEREAS**, thorium is a naturally occurring companion element to the REEs which can
10 be extracted as a by-product of rare earth mining at no additional expense and without creating
11 additional mining waste; and

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13 **WHEREAS**, thorium can be used as a highly effective, non-polluting fuel in a fission
14 power plant (Molten Salt Reactor; MSR) because it is a slightly radioactive material, five
15 hundred fifty times more abundant than uranium-235 needed for nuclear power; and

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17 **WHEREAS**, thorium is not harmful except through extreme long-term exposure or
18 unless it is inhaled as a very fine dust; and

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20 **WHEREAS**, thorium emits alpha rays which have no penetrating strength and cannot
21 pass through human skin or thin plastic film; and

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23 **WHEREAS**, thorium emits less harmful radiation than sunlight, radon from a gas stove
24 top, potassium in a banana, X-rays, frequent air travel, and TSA full body scans; and

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26 **WHEREAS**, the United States has two permitted world-class rare earth mines – the Pea
27 Ridge Mine in Washington County, Missouri, and the Mountain Pass Mine in California; and

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29 **WHEREAS**, Missouri’s Pea Ridge Iron Ore Mine has all sixteen of the recoverable
30 REEs and would produce rare earths as a by-product of iron ore mining. Mountain Pass,

31 currently the only operating U.S. rare earth mine, only has eight of the sixteen recoverable REEs,
32 will be shipping all of its high value rare earths to China for refining; and

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34 **WHEREAS**, the United States has no refining facilities to process the rare earths from
35 the Pea Ridge Mine or manage the thorium by-product; and

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37 **WHEREAS**, other U.S. mining operations, like Pea Ridge, have a history of dumping
38 valuable rare earths into tailings lakes because no rare earth refining and thorium storage
39 facilities currently exist; and

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41 **WHEREAS**, the amount of rare earth dumping in the U.S. mining industry alone, due
42 to thorium disposal vs. thorium storage options, exceeds U.S. demand by as much as five
43 hundred percent; and

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45 **WHEREAS**, by aggregating all available rare earths into a single facility the U.S. can
46 end China's monopoly control and safe storage of thorium; and

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48 **WHEREAS**, this facility could offer guaranteed rare earth supply contracts to technology
49 companies currently forced to relocate to China for guaranteed supply contracts, this centrally
50 located facility could attract technology companies and manufacturers of high value goods into
51 the region; and

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53 **WHEREAS**, this centralized rare earth facility could pass all of the thorium liabilities
54 to a thorium bank, a separate entity charged with safe storage and the authority to develop uses
55 and markets for thorium, including energy; and

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57 **WHEREAS**, this thorium bank could commercially develop the thorium MSR; and

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59 **WHEREAS**, this reactor technology was developed and proven in U.S. National
60 Laboratories during the 1950s to the late 1960s; and

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62 **WHEREAS**, President John F. Kennedy requested a report from Glenn Seaborg, acting
63 as Head of the Atomic Energy Commission, about the future of U.S. nuclear energy policy in the
64 context of a broader national energy policy based on sustainability. In his letter to the president
65 and in the Atomic Energy Commission report entitled "CIVILIAN NUCLEAR POWER ... a
66 Report to the President - 1962" the commission called for the ultimate transition from the
67 prevailing forms of nuclear power to the thorium MSR; and

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69 **WHEREAS**, a thorium reactor does not require carbon-based fuels, does not emit any
70 greenhouse gasses, does not need water for cooling, requires minimal setbacks and minimal
71 space to create hundreds of megawatts of energy that can be distributed near or within load-
72 consuming areas, and eliminates the need to construct large-scale energy projects that interfere
73 with the natural environment due to its abundance thorium would not require any direct mining

74 and could supply the world's energy needs from current mining waste for thousands of years, and
75 thorium reactors would have less environmental impact than any alternative source of energy,
76 including coal, natural gas, ethanol, wind or solar; and

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78 **WHEREAS**, a thorium MSR could utilize nearly one hundred percent of all available
79 energy from its nuclear fuel, resulting in less than one percent of the fuel becoming spent fuel
80 – also called nuclear waste; and

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82 **WHEREAS**, current civilian LWR technology utilizes less than three percent of the
83 available energy from its nuclear fuel, resulting in the creation of hazardous trans-uranic fission
84 products that contaminate all of the fuel, resulting in the accumulation of over seventy-seven
85 thousand tons of spent fuel; and

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87 **WHEREAS**, the United States Congress, the Department of Energy and the Nuclear
88 Regulatory Commission have failed to develop an agreeable storage site or any long-term plan
89 for the remediation of spent fuel; and

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91 **WHEREAS**, while the waste of a uranium powered plant is toxic for more than one
92 hundred thousand years, the spent fuel that is produced by a thorium powered plant is benign in
93 less than three hundred years; and

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95 **WHEREAS**, a thorium MSR power plant can be used to burn current stockpiles of
96 nuclear waste – utilizing the ninety-seven percent energy availability to create energy while
97 transmuting the hazardous fission products into safe, stable, short lived isotopes and even useful
98 isotopes, thus greatly reducing the amount of spent fuel requiring geologic storage; and

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100 **WHEREAS**, thorium MSR power plants cannot “melt down”, blow up, or produce
101 widespread radioactive release; and

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103 **WHEREAS**, thorium cannot be used to make nuclear weapons, thorium does not require
104 any enrichment for energy use, and there is enough thorium in the United States alone to power
105 the country at its current energy level for more than ten thousand years; and

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107 **WHEREAS**, a thorium power plants can substitute or supplement aging power
108 generating facilities and utilize existing turbine technologies without the need for laying a new
109 grid; and

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111 **WHEREAS**, through the development of a centralized rare earth refinery cooperative
112 facility, the region could lead the free world in rare earth refining, metallurgy, component
113 manufacturing and advanced technologies providing the only alternative to sourcing rare earth
114 products from China by forced relocation of related technology facilities inside China; and

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116 **WHEREAS**, through the development of a centralized thorium bank all thorium by-
117 products resulting from rare earth production can be managed and controlled in an
118 environmentally safe manner; and

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120 **WHEREAS**, China's monopoly on production of REEs is poised to capture all emerging
121 technologies and manufacturing facilities from around the world, in exchange for supply
122 contracts; and

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124 **WHEREAS**, Molycorp's integration into China's monopoly shows that China's National
125 Industrial Policy cannot be challenged by private investment alone. The United States must
126 develop a national domestic centralized rare earth refinery to survive; and

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128 **WHEREAS**, absent any new production, Asia will soon consume one hundred percent
129 of the world's production of REEs; and

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131 **WHEREAS**, unless the United States Congress creates a centralized rare earth refinery,
132 China will continue to dominate the full value chain of rare earths, our rare earths will be sent
133 to China for processing and they will not come back for use in the United States; and

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135 **WHEREAS**, unless the United States Congress ensures that the rare earth cooperative
136 can pass all thorium and related actinide liabilities to a thorium bank, private investors will not
137 fund the rare earth cooperative and these resources will continue to be dumped into the
138 environment; and

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140 **WHEREAS**, unless the United States Congress empowers a thorium bank to develop
141 uses and markets for thorium, including energy, China will lead the world in the commercial
142 development of this U.S.-based technology and further undermine our economy and national
143 security; and

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145 **WHEREAS**, with its Pea Ridge Mine, central location inside the U.S., Mississippi River
146 access to the rest of the world, Missouri is an ideal location for the centralized rare earth refinery,
147 making the midwest region the primary producer of rare earths outside of China, and the U.S.
148 the new high tech center for companies from around the world:

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150 **NOW, THEREFORE, BE IT RESOLVED** that the members of the House of
151 Representatives of the Ninety-seventh General Assembly, Second Regular Session, the Senate
152 concurring therein, hereby:

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154 1) Strongly support the development of a centralized REE refinery, as this will assist the
155 Pea Ridge Mine in Washington County, Missouri, and many other U.S. mines rationally utilize
156 rare earth resources historically disposed of due to thorium, with the object of ending China's
157 rare earth monopoly, attracting technology and jobs to the region, and enhancing U.S. national
158 security; and

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160 2) Strongly urge the United States Congress to support the creation of a thorium bank that
161 is fully authorized to store the thorium by-products related to rare earth production and develop
162 uses and a market for thorium, including energy so as to challenge China's development of
163 thorium energy; and

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165 3) Strongly support any legislation establishing a national rare earth refinery cooperative
166 to combat the strong-arm tactics of the Chinese government and protect the United State's
167 national defense, intellectual property, and economic interests; and

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169 **BE IT FURTHER RESOLVED** that the Chief Clerk of the Missouri House of
170 Representatives be instructed to prepare a properly inscribed copy of this resolution for the
171 Majority and Minority Leaders of the United States Congress and each member of the Missouri
172 Congressional Delegation.

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