Biography: Mr. Lifton is a founding Principal of Technology Metals Research, LLC, consultant, author, and lecturer on market fundamentals of the ‘technology metals’, a term he coined to describe strategic rare metals whose electronic properties make our technological society possible, including rare earths, lithium and most of the rare metals. As a physical chemist, he specialized in high-temperature metallurgy; as a researcher, he became a manufacturing and marketing executive, then a metal trader specializing in the field of technology metals and of rare metals. With 55+ years in the industry, he advises OEMs and global institutional investment firms on natural resource issues that impact proposed business models or high-volume manufacturing plans for the mass market. He presently does due diligence consulting for institutional investors probing opportunities in which availability of rare and technology metals is a deterministic factor to assess the probability of commercial success in metals’ mining, refining, fabricating and marketing ventures. He is a Senior Fellow at Institute for Analysis of Global Security, member numerous professional societies, and frequent speaker at professional and industry events on the markets for technology metals and materials and on the use of new and newly applied technologies to the extraction, refining, and fabrication of rare metals and materials.

“The sustainability of the critical technology metals and materials supply for the electrification of motor vehicles”

Abstract: The emphasis among sector analysts of the security of the supply of the critical lithium ion battery cathode materials, nickel and cobalt, has obscured the role of other critical metals necessary for the production of electrified vehicles, EVs. Surprisingly, for example, the secure supply of lithium seems to be taken for granted; this is not at all true. Most overlooked of the “EV Materials” critical to mass production are magnet rare earths, neodymium, praseodymium, dysprosium, and terbium. I will show that it would be miraculous, for the necessary amounts of the critical EV Materials to be available on the stated schedule of the global marketplace. Even more discouraging is that the rare technology metals supply is not sustainable without an immediate industry-wide commitment to recycling. The stark difference between Western and Chinese approaches to the problem of sustaining the supply of critical metals and materials for EVs can no longer be ignored as the Chinese domestic economy now absorbs more than half of the global supply of critical materials for EVs. Any Western production of EVs will be limited by the quantity of new production of critical materials, under non-Chinese control, augmented by recycling of end of life consumer scrap, industrial “waste,” and perhaps a supply from new technologies for extracting critical EV materials’ values from low grade ores or tailings.