Supply-Demand Issues for Minerals in “Green” Energy

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Public awareness of the potential for energy generation from “alternative” sources requires discussion of the mineral commodities needed for these technologies. The infrastructure requires mined materials, including imported strategic and critical minerals. Silica, copper, gallium, indium, selenium, cadmium, and tellurium are required for the dominant photovoltaic technologies. Silver and aluminum are necessary for “concentrating solar power” technology. Lithium, vanadium, manganese, and rare earth elements are key components of power storage, hybrid vehicle, and fuel cell applications. All these materials must be mined. At present, the U.S. is woefully dependent on import sources for most of these materials and demand is already squeezing prices. Domestic sources must be found and developed if energy independence is to be achieved using alternative sources.