Latin America's Critical Minerals—An Indispensable Component of Alternative Energy

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In the wake of COP28, the UN Global Climate Change Conference, countries across the globe continue to advance the agenda to decarbonize the planet and increase efforts to harness alternative energy as an alternative—if not a replacement—of fossil fuels.

In the quest to develop and implement clean energy, critical minerals (also known as rare earth elements) occupy a central role—one where one region's contribution is indispensable, namely Latin America.

Indisputably, the world is shifting its energy mix to one that is greener but one that will take lots of mining resources. Without mining, energy transformation will not possible.

The demand for clean energy technology means that over 3 billion tons of minerals and metals will be required in the year ahead. From 2017 to 2022, demand from the energy sector was the main factor behind a tripling in overall demand for lithium, a 70% jump in demand for cobalt, and a 40% rise in demand for nickel.

By 2050 the production of critical minerals such as graphite, lithium and cobalt could increase by 500%. The demand for rare earth elements has grown exponentially in recent years, China being the largest producer and consumer. Inarguably, there is a global need to find new deposits that allow for a constant and stable supply.

According to the International Energy Agency (IEA) the energy sector's demand for minerals may increase by 6 times and demand from low carbon energy generation sector will triple. The U.S. Geological Survey has designated critical minerals essential to economic and national security of the U.S. and DOD has identified more than 250 strategic and critical materials. Meanwhile, the EV fleet will grow at least ten-fold by 2030 to 250 million according to the IEA.

As for the mining and processing landscape of critical materials, it geographically concentrated with a select group of countries in a dominant role: Australia, Chile, China, Congo, Indonesia and South Africa.

Regarding Latin America's role, the region is an established producer of a number of minerals essential for clean energy technologies, most notably lithium for batteries. Copper and silver are also vitally important, and Chile, Peru, Brazil, Mexico, Bolivia and Argentina are the key producers in the region of these critical elements. LatAm currently supplies 40% of the world's copper and 35% of the world's lithium and also produces large quantities of graphite, nickel and manganese.

It is important to note that metals are often easier to extract in Latin America than elsewhere. While the region's roads and ports may not be up to par in a great many instances, infrastructure is not as bad as in many mining regions in Africa and parts of Asia.

Colombia provides an excellent example. The nation is blessed with rich deposits of minerals and other energy resources, nickel and gold in particular but also platinum, silver, copper, iron ore and bauxite. Colombia's goal for 2030 is to double the production of gold from mining titles, multiply copper production by six and generate investments of over $5 billion.

Nickel is especially attractive for mining investment as the government seeks to create up to 30 new mining areas nationwide along with a new mining law to support SMEs. US demand for nickel is growing and three deposits each in Córdoba and Antioquia are most promising. The U.S., China and Europe utilize the nickel to produce stainless steel products.

How should mineral- and metal-producing countries of Latin America proceed with policies and operations to exploit, process and strengthen their natural resources supply chain?

A year ago, the Woodrow Wilson International Center for Scholars produced *The Mosaic Approach*, a policy report that presents a multidimensional strategy for strengthening America's critical minerals supply chain. An identical report should be produced on Latin America. What we know for sure is that Latin America needs transport infrastructure, roads and construction, electrical infrastructure, and industrial minerals for consumer products.

Develop local processing and manufacturing as Argentina intends to do with lithium. Chile, Grazil and Peru are best positioned to do so.

While most governments across the region have pledged to improve the sustainability of their mining sectors they must also take measures through their legislative and executive branches of government to ensure input from civil society and environmental groups and ascend to global standards and practices in that regard.

The marvel of critical minerals is that they could drive a sustainable development boom in Latin America with abundant reserves, new technologies and disruptive innovation leading the way. Recognizably there are challenges along the way such as a sluggish regional growth rate, low foreign investment (13%-19% is in mining) and, in the case of Chile, increases in tax rates on the mining sector along with cumbersome bureaucratic procedures.

Nevertheless, the positives outweigh the negatives. To cite two, there is the abundant availability of clean energy resources for hydropower, solar, and wind, giving the region a competitive advantage for building a low-carbon mining sector. Additionally, one should not the U.S. Inflation Reduction Act that from 2027 that 80% of the market value of critical minerals used to make EV batteries must be extracted or processed in the U.S. or one of the countries where the U.S. has an FTA—Chile, Peru, and Mexico.

In sum, critical minerals are an indispensable component of alternative energy. The transition from fossil fuels to renewable is bright. It's now up to government, the private sector and supporting institutions to do their parts achieve success for people and the planet.

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