



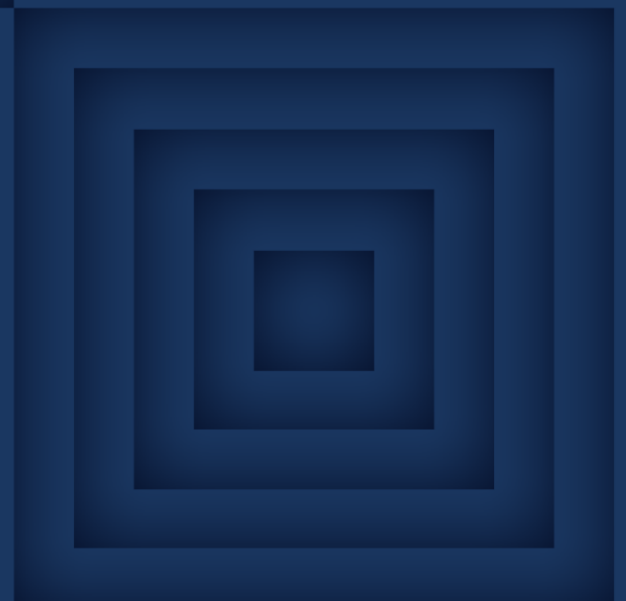
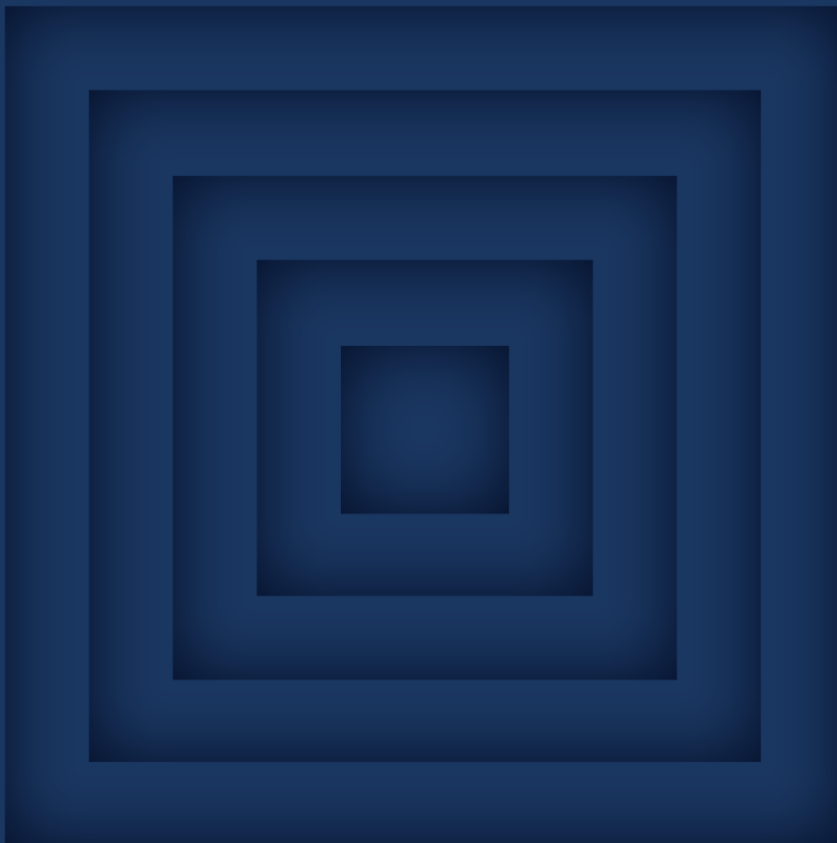
The Hague Centre
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The U.S. Defense Production Act

Why America needs to do more if it wants to secure a steady supply of critical minerals

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The United States Defense Production Act (DPA) is the main tool at the disposal of the President of the United States to steer economic activity toward U.S. national defense priorities. The law gives the President the power to order companies to produce goods and supply services necessary to support national security. On 31 March President Biden signed an executive order to invoke the DPA to alleviate shortages of critical minerals needed for defense and energy purposes. What does this mean for players in the critical minerals supply chain, and will it help the U.S. government to close the gap with industry leader China and gain more control of its own critical minerals supply chain?

War origins

Passed in 1950 at the start of the Korean War, the DPA was modeled after the War Powers Act that helped mobilize the economy during World War II. By invoking the DPA, the President and six cabinet members can require public and private entities to prioritize their (business) activities and accept purchase contracts for critical goods and services that the U.S. government needs to serve national security purposes.¹ The law has been adapted over the past 70 years to respond to other types of challenges to U.S. national security besides war such as natural disasters, pandemics, threats to U.S. energy security and terrorism. The DPA can also be invoked to help U.S. allies. This last feature is significant as no single country can secure a steady supply of critical minerals (or processed chemicals) without having international alliances with other players in the supply chain. Priority orders can also be placed by one of the six departments on behalf of foreign governments if the activities of these foreign governments are considered critical to U.S. national security.

The DPA has been reauthorized by Congress 53 times since its inception, most recently in 2018 and is scheduled to expire in 2025.

Significant but not extraordinary

The DPA is a significant tool in the President's toolbox because it grants the President a broad set of powers including the ability to ration (consumer) goods, set and cap prices for materials deemed critical for US national security, set wages in critical industries and demand

private companies to help secure supply chains for critical materials. The DPA is not only invoked in times of imminent, clear, and present danger. Although the DPA has war origins, the law is used each year by the six departments to place priority contracts. Unsurprisingly the department of defense (DoD) places the largest number of contracts under the DPA; some 300,000 contracts each year. But the act has also been used for civilian purposes. A well-known example is President Trump's order of ventilators with General Motors during the COVID-19 pandemic. There are also less dramatic and lesser-known examples such as the placement of seven contracts by the Census Bureau in 2019 to acquire network servers and other telecommunication equipment to prepare for the 2020 U.S. national census.

The link with critical minerals

With the ratification of the Paris Climate Agreement during CoP21, the United States together with other major economic powers like China and the EU committed to significantly reduce the emissions of greenhouse gases with the aim to keep global warming at a maximum of 1.5°C - 2°C. Reducing greenhouse gases requires a significant expansion of clean energy systems which in turn requires major investments in renewable energy sources like solar, wind and hydropower and by introducing more energy storage solutions in heavy emitting sectors like transportation. Most of the green energy sources require critical minerals for their production. Energy storage solutions for instance require lithium, nickel, cobalt, manganese and graphite and not just in their raw form. These minerals

services, the secretary of transportation, and the secretary of commerce.

¹ Congress has granted the president the ability to delegate his powers to six cabinet members being: the secretary of defense, the secretary of agriculture, the secretary of health and human

need to be processed first before they can be deployed in end-applications like a lithium-ion battery. The demand for these minerals will rise as the investments in green and renewable energy sources rises. Many of these minerals also play an important role in other sectors deemed critical by the U.S. government. Cobalt for instance is used in making superalloys, a key material to produce jet engines and other components for the aerospace and defense industry. Therefore, the projected sharp increase in demand for critical minerals to meet the rising deployment of green energy tech will come on top of the already existing demand for other critical sectors. Today, the U.S. does not process any of the minerals it needs to produce applications that it deems critical to its national security. Although the exact percentage varies per critical mineral, it is fair to say that in average at least 70% of the processing of critical minerals in the world takes place in China. Which leaves the U.S. and other countries exposed to supply chain risks. By invoking the DPA to alleviate shortages of critical minerals needed for defense and energy purposes, the Biden Administration aims to make the U.S. less dependent on a single country and build a critical minerals supply chain that it can control. Controlling that supply chain means, in effect, controlling your own destiny.

How can the DPA contribute to closing the gap with China?

The DPA consists of three sections and each of these sections has the potential to contribute to closing the gap with China in its own way. *Section I* authorizes the President to force private businesses to prioritize contracts for materials deemed necessary for national defense, regardless of any loss incurred on their business. This section also allows the President to designate materials to be prohibited from hoarding or price gouging. Any person who performs an act or willfully fails to perform any act required under this section may be fined or imprisoned for up to one year (or suffer a combination of both). *Section I* therefore effectively allows the U.S. government to step into the market and seize control of the production and allocation of materials it imminently requires for national security

purposes. *Section II* authorizes the President to establish a regulatory and administrative framework to allocate materials, services and facilities to promote national defense interests. New regulation, executive orders or entire new government agencies can see the light under this section to speed up the re-allocation and production expansion of critical minerals. *Section III* finally, grants the President the authority to invoke various financial measures such as loans, loan guarantees, purchases and purchase commitments to support projects in the critical minerals supply chain. The main purpose of *Section III* is to increase critical minerals production capacity and significantly reduce the cost to bring new projects to production, especially when these projects involve state-of-the-art but unproven technology. The initial focus of *Section III* is home based projects but the DPA can also be invoked to support projects based in allied countries.

What does this mean for players in the critical minerals supply chain?

For players in the critical minerals supply chain, *Sections I* and *III* can instantly create opportunities. *Section I* for instance, enables the Department of Energy (DoE) and the DoD to build a national stockpile for critical minerals such as lithium, nickel, cobalt and graphite. As with the Strategic Petroleum Reserve (SPR) the government can force private parties to allocate a certain percentage of their storage capacity for national security purposes. In theory, this could lead to the development of a strong U.S. based midstream sector for critical minerals. Firms specialized in providing technical and financially engineered solutions for material storage can benefit from the need to increase storage capacity. *Section III* on the other hand, looks to give innovative projects a gentle push to accelerate to commercial production. Projects that either (i) rely on early stage and generally unproven technology or (ii) extract critical minerals as a by-product from more conventional (mining) activities seem to have the interest of the U.S. government. Lithium Americas' Thacker Pass project which targets the production of battery quality lithium chemicals from sedimentary deposits (i.e. clay) is an example of a

project that fits the first category of projects. By providing loans or loan guarantees to the sponsors of such a project, the DoE effectively would de-risk the project economics which in theory should make it more attractive for private investors to co-fund the project. Rio Tinto's waste-to-lithium carbonate project in Boron, California is an example of a project that would fit the second category. The project recycles tailings resulting from 90 years of mining activity in the area. The project's demonstration plant will allow Rio Tinto and the DoE to qualify the lithium carbonate produced.

Does the DPA solve all of America's supply chain challenges?

No, it does not. Not on a standalone basis at least. Combined with some of the initiatives announced under the Biden Administration's *Infrastructure Investment and Jobs Act* which was passed last year, then the U.S. might manage to control (larger portions of) its supply chain for critical minerals. According to the United States Geological Survey (USGS), the U.S. has only explored 12% of federal lands for the presence of critical minerals resources. That means the country is missing out on opportunities to explore for and mine critical minerals at home. Fortunately, organizations like the USGS will get financial support under the *Infrastructure Investment and Jobs Act* to speed up the geological mapping of critical mineral resources in the U.S. But it is not the lack of (discovered) resources that has caused the U.S. to fall behind China in the critical minerals supply chain. It is the lack of a coordinated effort to develop what is called 'Open Strategic Autonomy'. Something the EU aspires to achieve as well. Open Strategic Autonomy is the ability to act autonomously, to rely on one's own resources in key strategic areas and to cooperate with partners whenever needed. With similar targets set on both sides of the Atlantic there should be a clear incentive for European and American policymakers to maximize efforts to build a joint supply chain, unencumbered by the dominance of one single country.

Today there are about 36 different federal laws and regulations governing the permitting process for mining in the U.S.² These 36 different laws come on top of the mining and environmental regulations that each individual state has on its own level. Bringing a mine to commercial production takes an average of seven years from the day an ore body has been discovered. Ramping up production to reach maximum (nameplate) capacity takes even longer (approximately 3 years from start of production). The longer the permitting procedures are, the longer it will take the U.S. to become a significant producer of critical minerals and take more control of its own destiny. Some industry experts are of the opinion that the U.S. and the EU should focus on building processing capacity instead of mining capacity, given today's public scrutiny vis-à-vis mining projects in the West. But do we really want to give up on mining in the West? The 20th century saw the birth of an economic system that is built on petroleum products. The 21st century will mark the era of chemical compounds such as lithium hydroxide and nickel sulfate, to propel the transition to cleaner energy systems. Do we then really wish to become dependent solely on foreign producers for the supply of the minerals that comprise the feedstock for these chemical compounds, essentially repeating the mistakes we made in the 20th century during the age of petroleum products?

Only a wholistic approach that combines (i) an overhaul and decluttering of mining and environmental regulation with (ii) a permanent campaign to raise the public's awareness of the strategic importance of mining and processing, (iii) close collaboration with allies and (iv) swift actions by the government's executive branch under the DPA will enable the U.S. and its allies to control their energy security and play a prominent role in the energy transition.

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² <https://hcss.nl/news/how-fast-can-the-biden-administrations-infrastructure-law-build-back-america/>