

The Battle for Ukraine's Titanium

David Brennan - Newsweek

Western support for Ukraine over the past year has tied the U.S. and its European Union-NATO allies inextricably to Kyiv's fate. President [Vladimir Putin](#)'s second invasion of the country appears to have backfired, driving Ukraine deeper into the arms of the Euro-Atlantic community and cementing Kyiv's ambition for membership of the [EU](#) and [NATO](#).

Now, there is a nascent effort underway in the U.S. and allied nations to identify, develop, and utilize Ukraine's vast resources of a key metal crucial for the development of the West's most advanced military technology which will form the backbone of future deterrence against Russia and China.

Titanium is a lightweight yet strong metal used extensively in advanced military applications like fighter jets, helicopters, naval ships, [tanks](#), long-range missiles, and many others.

If Ukraine wins, the U.S. and its allies will be in pole position to cultivate a new conduit of titanium. But if Russia manages to seize the country's deposits and plants, Moscow will boost its global influence over increasingly strategic resource.
A Vital Commodity

The Interior Department has [classified titanium](#) as one of the 35 mineral commodities vital to U.S. economic and national security. But the U.S. still imports more than 90 percent of its iron ore, and not all from friendly nations.

The U.S. no longer holds titanium sponge in its National Defense Stockpile, and the last domestic producer of titanium sponge closed down in 2020. Ukraine is one of only seven nations producing titanium sponge, the basis for titanium metal. China and Russia—America's most prominent strategic rivals—are among this select group.

China produced more than [231,000 tons](#) of titanium sponge last year, according to the U.S. Geological Survey, making up 57 percent of global output. Next came Japan with 17 percent, and Russia with 13 percent. Kazakhstan produced almost 18,000 tons and Ukraine more than 4,000 tons.

Moscow's weaponization of energy resources has prompted fears in Washington, D.C. and other NATO capitals that the Kremlin may one day also freeze titanium exports, which would put aerospace and defense companies in a bind.

Western dependence on Russian titanium means the metal has so far escaped the [sanction campaigns](#) launched against Moscow by the U.S., EU, and their allies. Aerospace giant Boeing maintains its joint venture with Russia's VSMPO-Avisma—the world's largest titanium exporter—though froze orders following the invasion. Others, like Europe's Airbus commercial aircraft corporation, continue to source titanium from VSMPO.

A source with knowledge of the U.S. defense industry, who did not wish to be identified as they were not authorized by their employer to speak publicly, told Newsweek that titanium "is a key vulnerability."

"We're talking about our ability to produce more planes, we're talking about our ability to produce munitions. They all rely on titanium, and we've allowed ourselves to grow reliant on foreign suppliers for these things. Russia has previously been one of those primary suppliers."

National security experts and Ukraine advocates on The Hill are increasingly urging policymakers to look east. Last year's annual defense-spending bill ordered the State Department to investigate "feasibility of utilizing titanium sources from Ukraine as a potential alternative to Chinese and Russian sources."

"Ukraine has really significant deposits of rare earth minerals, and if we play our cards right could actually be a really attractive alternative to Russian and Chinese sources, which is where a lot of dependency currently is," one congressional staffer—who also requested anonymity as they were not authorized to speak publicly—told Newsweek.

"As there are increasing debates throughout the West about why it's in our interest to keep supporting Ukraine, I think this is one of the arguments that you're going to start hearing more."

Spoils of War

Russian President [Vladimir Putin](#) and his allies have offered a dizzying array of justifications for the ongoing invasion. Seizing Ukraine's titanium sponge is not one of the Kremlin's public goals, but would be a boon for Moscow.

Russia has relatively low levels of titanium mineral reserves, and in 2021 Ukraine was actually its main source of titanium imports, according to the [U.S. Geological Survey](#).

Most of the fighting has centered on eastern and southern Ukraine, home to trillions of dollars of mineral wealth. Russian forces seized [at least two](#) titanium ore sites in the opening months of the invasion.

Even before February's attack. Moscow looked to secure vital titanium resources through its corrupt web of oligarchs, officials, and intelligence assets in Ukraine.

Tycoon [Dmitry Firtash](#), now living in exile in Austria, was forced in 2021 to sell his 49 percent stake in the Zaporizhzhia Titanium and Magnesium Plant—Europe's only titanium sponge plant—having been accused of selling titanium to Russia for military use.

In January 2022, Firtash sold a Crimean titanium plant to the Russian Titan firm. [Andriy Brodsky](#), the CEO of Ukraine's Velta titanium-producing firm, told Newsweek the metal is vital to Russia's ongoing attacks.

"There is very high titanium content in the missiles which are flying into Ukraine almost every day," he explained. Moscow, he said, could be facing "a significant shortage of modern, high precision weapons" unless it can secure new titanium supplies.



Workers repair electricity cables at an industrial area following a morning Russian missile strike that left one person dead and two wounded on January 26, 2023 in Kyiv, Ukraine. Russia's assault on Ukraine has devastated the latter's economy and imperiled valuable natural resources like titanium. Roman Pilipey/Getty Images© Roman Pilipey/Getty Images

Winning improved access to Ukrainian titanium will help the U.S. in its simmering [conflict with China](#), which policymakers expect to dominate the 21st century.

Titanium, the source with knowledge of the defense industry told Newsweek, is needed to create the weapons that will help deter Beijing. "I think the Chinese have a very good understanding, unfortunately, about the U.S. defense industrial base and its vulnerabilities," they said.

The advocacy effort is picking up steam in Washington, D.C., the congressional staffer said, describing seeing "the light bulb go on" in conversations with lawmakers. "It's definitely niche and it definitely doesn't get the same attention as Ukraine's pressing military needs, but it is something that we intend to focus on."

Direct White House involvement might be needed to grease the wheels, the defense industry source said. "Nothing focuses the mind like a crisis, I think that's certainly the way the U.S. likes to do things."

"The conversations that are taking place at a low level sometimes take quite a bit of time to filter their way up to higher levels, and I think that's what's happening here...I think that the folks who are responsible for things like the Defense Production Act know that they need to figure out what to do about titanium."

"They know they need to look at things like the Ukrainian source. I don't think they've received a demand signal from the highest levels: the Secretary of Defense, the Secretary of State, and the White House."

Leveraging Ukraine

Ukraine faces a fearsome job of rebuilding the country and attracting Western investors as it looks to embed itself in the Euro-Atlantic community. Estimated reconstruction costs run as high as \$1 trillion; that number given by President [Volodymyr Zelensky](#) himself.

Kyiv hopes its titanium industry will be one plank to attract foreign money and the political protection that comes with it.

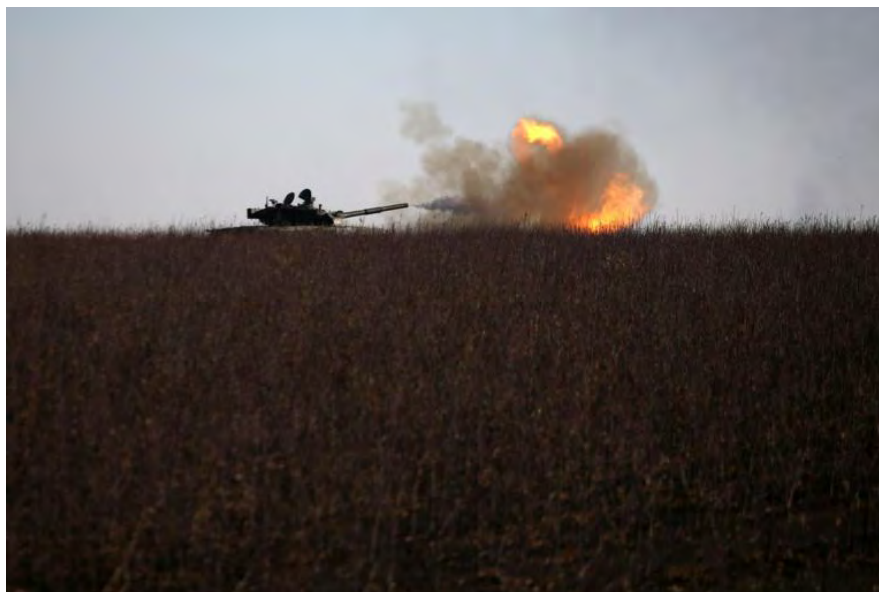
"We today have titanium and we have lithium, both are in great demand now and they're going to be even more in demand in the future," [Oleg Ustenko](#), an economic adviser to Zelensky, told Newsweek.

"My understanding is that the majority of these deposits are not even tapped. The business opportunities in this sector are really huge."

"It's important from the point of view of increasing stability in the global system and the global supply of those products. We do see our role not only within the EU, but also in terms of the world supply. I do believe that it's a really important role which might be played by Ukraine. But again, for that, we need to make sure that we are in postwar conditions."

Stephen Blank, a senior fellow at the Foreign Policy Research Institute and former professor of Russian studies at the U.S. Army War College, told Newsweek Ukraine could be delivering significant titanium to the West within months of the war's end, whenever that might be.

"They have to rebuild the entire country from top to bottom, which is actually a great opportunity for investors if you think about it," Blank added. Support from governments in Kyiv and Washington, D.C. will be needed to unleash the potential, he said.



A Ukrainian tank fires toward Russian position near the town of Bakhmut, Donetsk region on January 26, 2023, amid the Russian invasion of Ukraine. Russian occupation has deprived Ukraine of huge sums in infrastructure and resources. ANATOLII STEPANOV/AFP via Getty Images© ANATOLII STEPANOV/AFP via Getty Images

"The state's going to play a big role...you're going to need signals from governments that it's OK to invest." If Kyiv is supportive, "then you will see a tremendous spurt forward," Blank added.

Hamstrung by the war and ravaged by years of corruption, Ukraine's titanium industry is in desperate need of investment. Brodsky said Velta is among the firms looking for "strategic partners" to build new plants—either in Ukraine or abroad.

Velta is already working on a new facility in the Czech Republic to demonstrate its Velta Ti Process, which the company says can produce titanium metal powder at lower costs and vastly reduced environmental impact.

Brodsky said there is "great interest" among foreign investors and that the company hopes the Czech plant will be up and running by the fall and will prove that Velta's powder can be used to press, stamp or 3D print aerospace parts.

Similar facilities could be built in the U.S., he said. "It's evident to everyone that the U.S. needs to be secure in their titanium supply and needs to have something inland. It could be even both Ukraine and U.S., with Ukraine providing the technology."

"It definitely needs some investment and some serious attention on our part," the congressional staffer said. "But in the long term, it'll be worth it if we can create a sustainable supply from a friendly country like Ukraine."