The Strategic Minerals Maze

by Charles Ebinger

The United States imports more than 50 percent of its needs for over two dozen minerals deemed of either "strategic" or "critical" importance to U.S. national defense. Three at the top of the list — chromium, manganese, and platinum — are obtained in large part from South Africa, and much of a fourth (cobalt) is exported from landlocked countries in the region through South Africa's transport system and ports. While there is no clear agreement among U.S. government agencies about which minerals are "strategic" and which are "critical," the term "strategic" generally refers to those minerals on which the United States is primarily import-dependent while "critical" refers to those minerals which do not have readily available substitutes in the event of a disruption.

In recognition of its minerals vulnerability, the United States has since 1947 maintained a strategic stockpile of minerals and materials deemed vital to support U.S. defense, industrial, and essential civilian requirements during a prolonged military conflict or declared national emergency. Use of the defense stockpile to alleviate supply shortfalls or price increases that negatively impact on civilian consumers is not authorized in the absence of a declared national emergency.

In theory, the United States has other policy options for dealing with an import disruption besides drawing down the National Defense Stockpile. The workability of these options would depend on the degree of the disruption, its duration, the precrisis market status of the commodity in question, and the reasons for the disruption. The options include switching to domestic production, conservation, mineral substitution, recycling or technological research and innovation leading to enhanced mineral production, and/or the development of alternative materials technology (e.g., fiber optics as a substitute for copper). The problem with each of these policy instruments is cost and, in some cases, long lead times. Another possible approach would be the creation of a second materials stockpile specifically for use by the civilian sector; however, industrial users have expressed concern that the existence of such a stockpile might cause market distortions.

Aside from the existence of the stockpile, however, the United States has no unified strategic minerals policy. Decision making about strategic minerals is the shared responsibility of a complex assortment of U.S. government agencies with differing jurisdictions and priorities. While the Federal Emergency Management Agency (FEMA) is the lead agency responsible for coordinating mineral stockpile policy, the General Services Administration (GSA) administers the stockpile and Congress funds it. The Departments of Defense, Interior, Energy, and Commerce, along with the National Aeronautics and Space Administration (NASA), have important research responsibilities. Other federal departments and regulatory agencies also are involved indirectly through taxation policies, regulation of commerce, environmental protection, federal lands management, antitrust enforcement, patent policy, foreign affairs and trade policy, and in other ways. In the Congress, at least six key committees and 15 or more subcommittees have statutory authority over some aspect of minerals policy.

The Current U.S. Policy Debate

The long-standing debate on minerals and materials security entered its present phase in 1980-81, when both the House Armed Services Committee and the Department of Defense’s Defense Science Board issued reports concluding that the United States lacked effective policy instruments for addressing vital minerals issues and warned that new measures had to be taken to insure adequate domestic minerals production to support defense and other national security needs. A key conclusion of the Defense Department report was that material supply problems could occur not only as the result of supply curtailments or rapid mineral pricing
changes but also from technological innovations requiring the development of new materials.

These reports set off a storm of controversy, especially with regard to the question of whether or not existing National Defense Stockpile policies adequately reflected changes occurring in the U.S. industrial base — which was not only dangerously vulnerable to a cutoff of mineral imports but was also failing to maintain manufacturing capabilities in such key areas as machine tools and steel. Increasingly, critics of the National Defense Stockpile argued that the nature of the resources needed in the stockpile had changed qualitatively rather than just quantitatively.

It was in response to this concern about the degree of U.S. vulnerability to disruptions of vital minerals supplies that the Congress in 1980 enacted the National Materials and Minerals Policy, Research, and Development Act (Public Law 96-479). The legislation was designed to encourage coordinated executive branch decision making, and gave high priority to substitution, recycling, conservation, and domestic mineral production as key ingredients in any U.S. minerals policy.

Public Law 96-479 focused special attention on "strategic minerals" and called upon the White House to submit a "program plan" for bringing into being an effective national minerals policy. In April 1982, President Reagan announced a National Materials and Minerals Program Plan, which placed responsibility for coordination of national materials policy with the Cabinet Council on Natural Resources and the Environment. Jurisdiction over research and development coordination not involving policy questions was lodged with an interagency Committee on Materials (COMAT), under the direction of the White House Office of Science and Technology Policy (OSTP).

While the intent of these steps was to improve policy coordination, in reality the new structure created more problems than it resolved. A General Accounting Office (GAO) report noted that not even all the agencies with significant materials responsibilities were represented on the Cabinet Council. In other cases, said the GAO, some agencies continued to make policy decisions without Cabinet Council clearance.

The GAO also criticized both the Department of the Interior (DOI) and the Department of Defense (DOD) for failing to meet their reporting requirements under the act. DOI responded to the GAO by stating that it did not believe it was necessary to quantify the magnitude or degree of vulnerability in a given nonfuel minerals market.

Other critics noted that the institutional structure did not establish, as mandated in the legislation, a mechanism or a budget for a continuing analysis of long-range mineral problems and prospects. Moreover, little attention was given to effecting a long-range research and development (R&D) strategy as called for in the act, nor did the president's plan give serious attention to the role that recycling, substitution, and conservation could play in a national materials strategy. Instead, the White House plan focused primarily on minerals availability issues associated with domestic and political and regulatory squabbling over access to federal lands and on relatively superficial modifications of stockpile management. This is said to have "outraged" some National Security Council (NSC) members who believed the existing stockpile needed a "total overhaul." The NSC, apparently supported by elements of the Department of the Interior, argued that higher priority should be given to R&D issues and especially to the question of whether highly sophisticated defense items made from "strategic" materials should be stockpiled rather than the minerals themselves.

At the same time, elements of the domestic mining industry, supported by a second school of thought in the Department of the Interior and by conservatives in the foreign policy community, took the position that the future of southern Africa was so uncertain as to necessitate urgent action on opening up federal lands to mining. This coalition, with a vested interest in domestic minerals production, tended to downplay the possible utility of substitution, recycling, and conservation.

While the president's plan was castigated for focusing too much on national security and too little on the need for serious consideration of how shortfalls in strategic materials might affect either domestic economic well-being or industrial production, in retrospect it would seem that the real weakness was that the plan did not elucidate the ongoing debate about the degree of U.S. vulnerability to a denial of mineral resources from southern Africa.

This is not to imply that some U.S. government agencies did not continue to pursue R&D activity or to launch their own inquiries into the seriousness of the issue. Rather, what occurred was a series of ad hoc policy moves that further clouded an already murky issue.

In April 1984, for example, Secretary of the Interior Judge William Clark established a National Strategic Materials and Minerals Program Advisory Committee chaired by Admiral William Mott (the Mott Committee), composed of representatives of natural resource producers, manufacturers, consumers, the engineering community, environmentalists, academia, the private sector, and state governments. The committee's mandate was to examine the intent of Congress in enacting the 1980 minerals law and to assess whether the 1982 plan submitted by the president had adequately addressed the concerns of Congress.

More specifically, the committee was directed to identify any barriers blocking full implementation of the presidential plan and to recommend actions to overcome these barriers; to identify existing or potential deficiencies in the availability of strategic and critical minerals and materials; to develop the capability to produce data on reserves, resources, production, and consumption for use in policymaking; to determine the extent of regulatory policies or other policy-related factors that might militate against an assured supply of these materials; to develop recommendations for rectifying these factors; and to review completed and proposed stockpile transactions and carry out analyses to assess their impact on the suitability of the stockpile to meet its
intended purposes.

The committee narrowed the scope of its deliberations to four broad areas of inquiry: (1) public lands, (2) international trade, (3) domestic processing, and (4) the National Defense Stockpile. Meanwhile, the committee made a number of recommendations regarding U.S. mineral imports from southern Africa. It suggested that the United States keep mineral trade with South Africa open and not engage in politically motivated embargoes, arguing that U.S. sanctions on Rhodesian chrome in the 1970s had devastated the competitiveness of the U.S. ferrochrome business by raising the cost of chrome feedstock. In addition, the Mott Committee took a strong position against U.S. government support of multilateral agency loans to aid increased foreign production of any "strategic commodity" in cases where such a production increase might create serious imbalances in supply and demand for that commodity, placing further strain on the competitive position of U.S. producers. Such a policy could have momentous implications for a host of African mineral producers, whose mineral supplies (e.g., uranium) undercut the competitiveness of U.S. producers.

Finally, the Mott Committee proposed that the National Defense Stockpile be operated by a government corporation concerned only with maintaining an adequate supply of strategic and critical materials, and rejected using stockpile commodity transactions for economic or budgetary purposes.

Adding further to the maze, President Reagan, as directed under the National Critical Materials Act of 1984, authorized the establishment of a National Critical Materials Council "under and reporting to" the Executive Office of the President to advise and assist him in formulating critical materials policies. A key mandate of the Council is to develop a "national federal program" for advanced materials research and technology and to stimulate innovation and technology utilization in basic and advanced materials industries.

It was stipulated that the Council would be composed of three members, appointed by the president and subject to Senate confirmation. The Council's three principal areas of responsibility, spelling out the basic mandate, would be: (1) to assist in establishing responsibilities, coordination, and implementation in connection with critical materials policy, (2) to bring materials issues deemed critical to the nation's economic and strategic well-being before the president, Congress, and the American people, and (3) to establish an ongoing dialogue with the private sector on all matters related to strategic and critical materials.

To date, this Council has hardly gotten off the ground. While its members have been designated, substantive work is at a standstill pending formal Senate approval of the nominees and the resolution of deep-seated conflicts both within the administration and outside over the direction of U.S. minerals and materials policy.

A Flurry of Studies
In May 1985, an interagency task force representing Commerce and DOD traveled to South Africa for "the purpose of gaining first-hand knowledge of the current status and outlook of the South African minerals industry." The findings were then to be utilized to evolve "a more effective interagency approach for the monitoring and assessment of U.S. minerals and materials dependency patterns and the potential impact of disruptions in the supply from primary foreign sources such as the Republic of South Africa."

The conclusions of the mission, published in July 1985, generated renewed debate over the importance of South African mineral dependency for U.S. national security. Some of the mission's major findings were:

- The maintenance of free market access to manganese, vanadium, chromium, platinum metals, gold, feroalloys and cobalt produced in and/or shipped through South Africa is vital for the continuing U.S. defense buildup and for industrial preparedness in the event of a national security emergency.
- The recent rapid decline of the U.S. mining and mineral processing industry base, together with concurrent pressures to reduce the U.S. stockpile of strategic and critical materials, has led to the reality of growing potential leverage for South Africa over the U.S. economy.
- In contrast to the Soviet Union, which is virtually self-sufficient in strategic and critical minerals and materials, the U.S. and its allies must confront an increasingly complex and vulnerable system of production and distribution. The implications of these new realities for assessing the strategic balance and for formulating national security strategic policies and programs for the U.S. and its allies are profound.

While the Commerce/DOD study was viewed in some quarters as a defense for greater support of a beleaguered South African regime confronted by complex political problems, the study takes on a different light.

### Proven World Reserves of Selected Strategic Minerals

<table>
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<tr>
<th>Mineral</th>
<th>Total World Reserves</th>
<th>Percent of Total World Reserves</th>
<th>Country</th>
<th>Percent</th>
<th>Total World Reserves</th>
<th>Percent of Total World Reserves</th>
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<tbody>
<tr>
<td>Platinum</td>
<td></td>
<td></td>
<td>South Africa</td>
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<td>South Africa</td>
<td>70.8</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>United States</td>
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<td>Australia</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Other</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Other</td>
<td>0.2</td>
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<tr>
<td>Chromium</td>
<td></td>
<td></td>
<td>South Africa</td>
<td>83.6</td>
<td>Cobalt</td>
<td>31.5</td>
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<td></td>
<td></td>
<td></td>
<td>Zimbabwe</td>
<td>11.0</td>
<td>Zambia and Zambia</td>
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<td></td>
<td></td>
<td></td>
<td>USSR</td>
<td>1.9</td>
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<td></td>
<td></td>
<td></td>
<td>Other</td>
<td>23.3</td>
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Sources: U.S. Bureau of Mines and the U.S. Department of Commerce
when the recommendations are examined in their totality.

The study suggests consultation with the private sector on the economic dynamics of the demand side of the market for various strategic minerals. It urges an examination of possible alternative world sources of strategic minerals and calls for greater interagency policy coordination led by the Commerce Department. Finally, the study calls on the United States, Western Europe, and Japan to coordinate their strategies and policies to maintain open access and free markets for essential critical and strategic minerals and materials.

Meanwhile, the congressional Office of Technology Assessment (OTA) published a study of its own, Strategic Materials: Technologies to Reduce U.S. Import Vulnerability, in May 1985. OTA's central conclusion was that there is no single generic approach to reducing materials import vulnerability; instead, different actions have to be taken for each key metal. OTA argued that any overall strategy to reduce U.S. reliance on dependable sources of strategic materials should be based on an amalgam of three technical approaches: (1) increasing the number of world sources of strategic metals by seeking and developing promising deposits outside of southern Africa and the Soviet bloc; (2) decreasing the demand for strategic metals by implementing improved manufacturing processes and by recycling strategic materials from scrap and waste; and (3) identifying and testing substitute materials for current applications and developing new materials with reduced strategic material content for future applications.

OTA's conclusions were at sharp variance with those of still another independent report, Natural Resources in Soviet Foreign Policy by John R. Thomas (Agenda Paper No. 15, New York: National Strategy Information Center, Inc., 1985). Dr. Thomas, a Soviet affairs specialist with the Department of State, argued that a central goal of Soviet foreign policy was to deny or disrupt Western and Japanese access to Third World natural resources.

Debate in the national security community was further polarized in July 1985 when President Reagan, acting on the advice of the National Security Council, but in opposition to three Cabinet departments (Defense, Interior, and Commerce), proposed a major reduction in the National Defense Stockpile. Taking the position that the Carter administration had significantly overestimated the amount of materials that would be needed to fight a three-year conventional war, President Reagan proposed trimming the stockpile's envisaged size from $16.3 billion in materials to $6.6 billion. The White House press release stated that today's high-technology military hardware was less "material intensive" and so a smaller stockpile would suffice. Inquiries to the NSC (which has not released its report on strategic minerals to Congress) concerning whether or not the "economic" impact of potential mineral supply disruptions had been taken into consideration in the NSC analysis received the response that all discussion of this issue was embargoed.

It appears that the press release on the proposed reduction of the stockpile generated such adverse reactions on Capitol Hill that the White House subsequently asked the Office of Management and Budget (OMB) to reaffirm that a minerals supply curtailment would not jeopardize the U.S. economy. To the consternation of the administration, however, OMB's report disagreed with the NSC's conclusions and was itself "embargoed." In turn, the Congress has added to the confusion by refusing to allow the GSA to follow through on the administration's proposal until appropriate congressional committees have had an opportunity to review the long-awaited NSC report.

Some Conclusions

While heated debate continues on the strategic minerals issue, several conclusions can be drawn: (1) The United States needs a well-coordinated and articulated minerals program with clearly defined policy goals. Today's ad hoc policymaking will not suffice. (2) The formulation of a coherent national minerals policy is hampered by the involvement of too many bureaucracies with diverse statutory responsibilities in the policymaking process. (3) A key source of the present confusion over strategic minerals is the fact that economic vulnerabilities and national security vulnerabilities (which often are not approached in an integrated way in minerals debates) may be different both qualitatively and quantitatively. (4) Movement toward coherent minerals policymaking is also impeded by the undue influence of political ideology, with believers in a Soviet grand "strategic design" targeting southern Africa squaring off against those who view the West's minerals vulnerability in less apocalyptic terms. (See, for example, "Some Observations on U.S. Security Interests in Africa" by Noel C. Koch in CSIS Africa Notes no. 49, November 19, 1985.) (5) The issue of U.S. vulnerability to disruptions of the flow of minerals from South Africa cannot be addressed in the absence of broader U.S. policy goals in the region and a clear perception of the potential conflict between short- versus long-term U.S. interests. (6) While the OTA report has its faults, the issues it raises about U.S. dependence on southern African resources deserve serious consideration by the Congress and the administration.


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