



United States Government Accountability Office  
Washington, DC 20548

June 27, 2006

The Honorable Richard G. Lugar  
Chairman, Committee on Foreign Relations  
United States Senate

Dear Mr. Chairman:

The United States imports about 13 million barrels of crude oil and refined petroleum products each day, or about 65 percent of its total daily consumption. Venezuela is the world's eighth largest crude oil exporter and supplies about 1.5 million barrels per day of crude oil and refined petroleum products, such as gasoline and fuel oil, to the U.S. market, comprising about 11 percent of current U.S. imports. In addition, Venezuela ranks among the top 10 countries in the world in the size of its proven oil reserves—oil that has been proven to exist in the ground and could be produced. Venezuela is also one of the founders and an influential member of the Organization of the Petroleum Exporting Countries (OPEC), whose 11 members control over three-quarters of the world's total oil reserves and can greatly affect world oil prices. Consequently, Venezuela is a key player in the future energy security of the United States and the world.

Most of Venezuela's crude oil that is not consumed domestically in Venezuela is exported to the United States. The United States is a natural market for Venezuelan oil because it is so close—about 5 days by tanker to the U.S. Gulf Coast compared to about 30 to 40 days for supplies coming from the Middle East. Moreover, Venezuela's national oil company, Petroleos de Venezuela S.A. (PDVSA), wholly owns five refineries in the United States and partly owns four other refineries in the United States and U.S. Virgin Islands, either through partnerships with U.S. companies or through PDVSA's U.S. subsidiary, CITGO, Inc. These refineries are unusual in their capacity to refine large volumes of the heavy, sour (high-sulfur) crude oil that constitute a large part of Venezuela's oil exports.

Political strife within Venezuela and political tension between Venezuela and the United States have caused concern about the stability of Venezuelan oil production and exports to the United States. The election of Hugo Chavez as President of Venezuela in 1998 signaled a major change in how the Venezuelan government views the country's oil industry. For example, the government took steps to shift managerial authority for

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Venezuela's oil resources from PDVSA to the Venezuelan Ministry of Energy and Petroleum. The government also changed the way it deals with foreign companies—it raised the maximum royalty rates paid by foreign oil companies from 16-2/3 to 30 percent, established a new “extraction tax,” raised income taxes for those companies, and instituted provisions requiring joint ownership structures with majority shares for PDVSA. Opposition to the new government culminated in a general strike that lasted from December 2, 2002, until February 2, 2003, and virtually shut down the oil sector of the economy. This strike temporarily decreased world oil supplies by about 2.3 million barrels per day, or about 3.0 percent of total world daily oil supply, and reduced oil exports to the United States by about 1.2 million barrels per day—equivalent to about 11 percent of total U.S. oil imports at the time. More recently, in April 2006, Venezuela seized two oil fields operated by two foreign oil companies because the companies did not comply with new rules unilaterally imposed by the Venezuelan government.

Instability in Venezuela's oil sector exists in a broader context of a tightening global oil supply and demand balance. Surplus global oil production capacity—the amount by which oil production could be increased immediately without additional investment—was as high as 5.6 million barrels per day in 2002, but has since decreased to only about 1 million barrels a day; Saudi Arabia provides most of this surplus capacity. Meanwhile, demand for crude oil is growing rapidly in China and other countries. Market tightness, along with the fact that much of the world's supply of oil is in relatively unstable regions, may make the global oil market increasingly susceptible to short-term disruptions and lead to higher and more volatile oil prices. In this context, instability of oil supply from any significant individual oil-producing country can create oil price volatility, which can cause an economic slowdown. Studies of past oil supply disruptions indicate that sudden increases in oil prices can contribute to inflationary pressure and economic slowdowns. In extreme cases, such as the large oil price increases associated with the Arab oil embargo and Iranian revolution in the 1970s, these high prices were associated with severe economic recessions.

Four U.S. government agencies have significant involvement in implementing U.S. energy security policy regarding Venezuela.

- The Department of Energy's (DOE) Office of Policy and International Affairs establishes and implements U.S. international energy policy, and is responsible for monitoring and analyzing world energy market developments and the international political, economic, and strategic

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factors that influence these developments; managing relevant bilateral energy relationships; and ensuring protection of U.S. interests in bilateral and multilateral treaties and obligations that affect energy services, commodities, and technology. Also, according to DOE officials, the office holds dialogues with energy producers, monitors national and global energy security, and serves as the U.S. lead in coordinating oil supply disruption-response issues and measures with the International Energy Agency. The Office of Fossil Energy works with various countries through bilateral agreements to identify areas of mutually beneficial collaboration in promoting and developing fossil energy technologies. These agreements also facilitate relationships that may lead to commercial development. The Office of Fossil Energy also manages the U.S. Strategic Petroleum Reserve, which is a U.S. stockpile of about 700 million barrels of light crude oil maintained by the federal government for use in the case of a major disruption of oil supplies to the United States. DOE is also responsible for collecting and analyzing data and information through its Energy Information Administration (EIA).

- The Department of State's Office of International Energy and Commodity Policy is responsible for coordinating U.S. international energy policy, participating in dialogue with energy producers, and monitoring national and global energy security. The Department of State and DOE, in conjunction with other stakeholders, advise the National Security Council on energy security issues, including the potential impacts of oil supply disruptions on the U.S. economy and on possible actions that could mitigate these impacts.
- The Department of Commerce's Office of International Trade Administration plays a role in advising U.S. business interests seeking to invest in Venezuela's oil sector.
- The Office of the U.S. Trade Representative and Department of State co-lead the negotiations of bilateral and multilateral treaties, which may contain specific aspects that affect energy security, trade, and investment.

Until the strike in the winter of 2002–2003, the United States and Venezuela had steady diplomatic contacts with respect to oil. Since then, the relationship between the two countries has become strained. On several recent occasions, Venezuela's President has threatened to stop exporting Venezuelan oil and refined petroleum products to the United States. He also has made statements regarding the possible sale or closure of Venezuela's refinery interests in the United States. Furthermore, Venezuelan officials have repeatedly made statements that they are trying to develop new markets for their crude oil.

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In the context of effects on U.S. oil supplies, we addressed the following questions: (1) How has Venezuela's production of crude oil and exports of crude oil and refined petroleum products to the United States changed in recent years, and what are the future prospects? (2) What are the potential impacts of a reduction in Venezuelan oil exports, a Venezuelan embargo on oil exports to the United States, or sudden closure of Venezuela's refineries in the United States? (3) What is the status of U.S. government programs and activities to ensure a reliable supply of oil from Venezuela and to mitigate the impacts of a supply disruption?

We used a number of methodological techniques to address these questions. To address the first objective, we reviewed studies and analyses of the Venezuelan oil sector and its history and met with officials of numerous U.S. oil companies and other oil companies, industry experts, and federal agency officials. In addition, we visited Venezuela and met with the U.S. Ambassador and embassy staff; Venezuela's Minister of Energy and Petroleum; PDVSA officials, including the president of the company and a number of board members and senior managers; the Venezuelan Auditor General; members of the financial community; and other individuals with expertise in the Venezuelan oil sector. Both in the United States and in Venezuela, we spoke with numerous former PDVSA employees, executives, and directors, and oil company officials. We also collected, evaluated the reliability of, and analyzed data on Venezuelan production, consumption, and exports of oil and petroleum products. The sources of our data include U.S. government agencies, especially the EIA; the Venezuelan government and PDVSA; and other international and private sources. We deemed these data to be reliable for the purposes of addressing our objectives. Finally, we reviewed PDVSA's plan to expand oil production, and collected oil industry officials' and experts' views on the likely implementation of that plan.

Regarding the second objective, we reviewed studies of oil disruptions, including studies of the impacts of the Venezuelan strike. We also analyzed current conditions in the world oil market to evaluate what might occur if a similar disruption occurred today. Further, we evaluated the potential impacts of several different scenarios involving reductions in Venezuela's oil production or exports to the United States—(1) a sudden and severe drop in Venezuelan oil exports from the world market, (2) a sudden diversion of oil from the United States to other markets through an embargo, and (3) the closure by Venezuela of its wholly-owned U.S.-based refineries. Regarding the first scenario, we asked a DOE contractor at the Oak Ridge National Laboratory to use an economic oil-disruption model to analyze the impacts of a hypothetical Venezuelan oil disruption on world

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oil prices and on the U.S. gross domestic product (GDP).<sup>1</sup> For this analysis we constructed a hypothetical disruption scenario similar to the one that actually occurred during the Venezuelan oil strike in the winter of 2002–2003, but using assumptions regarding market and economic conditions closer to those that prevailed at the time of the analysis (late 2005). We also analyzed data from private entities and met with numerous industry experts in Venezuela and the United States; officials in the Departments of State and Commerce; DOE officials; and officials in the International Energy Agency to determine the impact of potential oil supply disruptions.

To address the third objective—identifying the status of programs and activities to ensure a continued supply of oil and to mitigate a disruption of imports of crude oil and refined petroleum products from Venezuela—we met with officials at the Departments of State and Commerce, DOE, and the Office of the U.S. Trade Representative. We also talked to oil company officials. In addition, we spoke with Venezuelan officials and U.S. embassy staff in Venezuela. This report focuses on federal programs and activities related to U.S. energy security. Diplomatic and political actions that may impact U.S. energy security may be undertaken for a multitude of foreign policy goals that are beyond the scope of this report. Therefore, our assessment of programs and activities related to energy security is not an evaluation of the U.S. government’s approach to these broader goals.

To obtain the official Venezuelan government position on questions relating to all three objectives, we made arrangements with the Venezuelan Embassy in Washington, D.C., for an official spokesperson.

A more detailed description of the scope and methodology of our review is presented in appendix I. We performed our work between March 2005 and May 2006, in accordance with generally accepted government auditing standards.

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## Results in Brief

Venezuelan oil production has fallen since 2001, but exports of crude oil and refined petroleum products to the United States have been relatively

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<sup>1</sup>GDP is a quantifiable measure of a country’s total income for a given year. A sudden loss of crude oil would, all else remaining equal, harm the economy by increasing petroleum product prices, resulting in higher costs and lower employment. However, as will be discussed later in this report, the United States and other oil-consuming countries may take steps to mitigate the impact of a disruption, including using strategic petroleum reserves.