

The Role of the Oil Sector in Venezuela's Environmental Degradation and Economic Rebuilding

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THE ISSUE

Venezuela's oil sector currently sits at historic lows, both in terms of its production and its environmental impact. Decrepit pipelines and decaying refineries, unrestricted flaring of greenhouse gases, and government hostility toward environmental groups have all contributed to a growing crisis in one of the world's most biodiverse countries. While the Maduro regime often cites international sanctions as the cause of decline, Venezuela's oil sector woes are rooted in kleptocracy, incompetence, workforce mismanagement, and corruption dating back to the Chávez era. Even in a scenario of political transition, where sanctions relief would be on the table, it is unrealistic to assume that the ongoing environmental degradation caused by the country's crumbling oil sector would vanish automatically. Thus, questions of conservation and biodiversity protection should be elevated as key considerations in negotiations taking place between the opposition and the Maduro regime. The international community can do its part by elevating the voice of civil society actors within Venezuela and working to highlight the Maduro regime's disregard for the environment in the lead up to the United Nations Climate Change Conference.

INTRODUCTION

The grave consequences of Venezuela's environmental degradation can be felt in every corner of the country—and even the wider region. In the waterways near the Caribbean Sea, fishermen haul in oil-soaked catches from blackened boats. Recent satellite imagery provided by the National Aeronautical and Space Administration of Lake Maracaibo, one of the country's most ecologically diverse areas owing to its brackish waters, shows the body of water swirling with oil slicks.¹ Oil workers fear for their safety as decrepit infrastructure contributes to mounting problems. Within the Amazon, Indigenous communities and environmental activists contend with well-armed criminal groups expanding the practice of illegal mining.² While these challenges have been percolating for years, a combination of policy, corruption, incompetence, neglect, and criminal intent under President Nicolás Maduro has accelerated the onset of an acute environmental crisis in Venezuela.

Despite paying lip service to the ideals of “eco-socialism,” the regime in Caracas has presided over a significant decline in environmental standards. In 2016, for instance, Venezuela's state-owned oil company *Petróleos de Venezuela, S.A. (PDVSA)* announced it would stop reporting oil spills. That same year, Maduro announced the creation of the Orinoco Mining Arc, an expansive area in the south of the country that largely served as a legal patina for an uptick in illegal mining by criminal syndicates and guerrilla groups in this region.³ The United Nations has denounced the exploitation and abuses that take place in the Orinoco Mining Arc.⁴ Nongovernmental organizations (NGOs) and international bodies that have spoken out against this downward spiral have, in turn, been criticized and targeted by the Venezuelan government, which appears to have little interest in being held accountable for its ecological malfeasance.⁵

While the list of environmental challenges Venezuela faces runs the gamut from deforestation to chemical pollution to poaching and more, one of the most consequential challenges by far is the decrepit state of the country's oil sector. The Venezuelan petrostate has the dual burden of depending on oil for nearly 99 percent of its export revenue while simultaneously being unable to make necessary repairs to oil infrastructure or retain a skilled workforce thanks to years of mismanagement, corruption, and kleptocracy.⁶ Between 2010 and 2016, PDVSA self-reported more than 46,000 oil spills, a number that has likely increased since official reports stopped in 2016. Venezuela also ranks in the top seven countries in the world for gas flaring, the combustion of natural-gas byproducts that release major quantities of methane into the atmosphere.⁷

Currently, these problematic trends show few signs of abating. Indeed, Tareck El Aissami, Venezuela's minister of petroleum and of industries and national production, has announced a plan to more than double oil production to 1.5 million barrels per day by the end of 2021.⁸ While oil increases have been halting and inconsistent, any rapid increases in oil production under the Maduro regime—without concomitantly swift improvements in oil infrastructure—will only mean more spills, more flaring, and an even greater toll on the environment.

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Rising Venezuelan oil production is not solely the product of domestic policy, either. Venezuela is an increasingly viable partner in the eyes of companies such as the Chinese National Petroleum Corporation (CNPC), which has shown a disposition to return to Venezuela after a potential softening of the U.S. sanctions architecture. The push to increase oil production is likely to continue, as the two most probable political outcomes for Venezuela both feature a potential relaxation of international sanctions. In any political transition that hands over power to the Venezuelan opposition, the United States and the international community would likely taper off sanctions dramatically. Meanwhile, the removal of sanctions

serves as a powerful incentive for the Maduro regime to participate in its current negotiations in Mexico City with the Venezuelan opposition. Certainly, oil will remain a central facet of Venezuela's economy for the foreseeable future; a critical question remains whether the oil sector will continue on its downward trajectory toward greater ecological devastation or if Venezuela can chart a more environmentally sustainable course.

This brief proceeds in four parts. First, it sketches the decline in Venezuela's oil sector from the 1950s to today. Next, it details the severe and manifold environmental consequences of current Venezuelan oil production. It then outlines how oil would impact a possible political transition in Venezuela and what such a transition would mean for oil and the environment. Lastly, it concludes with a series of policy recommendations for how the United States can broach the tangled relationship between economic recovery, political transition, and environmental degradation.

THE DECLINE OF AN OIL POWERHOUSE

Venezuela has been producing oil commercially for over a century, and today the country possesses roughly 300 billion barrels of proven oil reserves—the largest in the world.⁹ However, Venezuela's oil production has undergone wild swings over the latter half of the twentieth century, shifting from record-high production in the early 1970s, with over 3.5 million barrels per day (bpd), to a precipitous decline through the 1980s and early 1990s, to once again eclipsing 3 million bpd in the late 1990s, to the current, paltry numbers of around 500,000 bpd.

In the decades following the discovery and commercial exploitation of oil in Venezuela, its production was largely the purview of foreign companies. In 1943, the government passed the Hydrocarbons Law, which required oil companies to turn over 50 percent of their profits to the Venezuelan state. During this period, Venezuela was the world's third largest oil producer, trailing only the Soviet Union and the United States. This gave the state an important source of income but, as in many petrostates, bound Venezuela tightly to the fluctuating global price of oil.¹⁰ However, the consequences of Venezuela's overreliance on oil rents became increasingly clear during the 1950s, when overproduction led to a steady decline in oil prices.

In response to the drop in prices, Venezuela banded together with fellow oil-producing economies to found the Organization of the Petroleum Exporting Countries (OPEC) in 1960. OPEC sought to manage the supply of

oil and prevent the kind of overproduction that tends to drive prices down. The organization proved successful; first it brought a modest rise in prices, then it exceeded all expectations in 1973. That year, a five-month embargo coordinated by OPEC against countries supporting Israel in the October War saw oil prices spike from around \$3 to \$12 per barrel.¹¹ Venezuela rode this boom to record the highest GDP per capita in Latin America throughout the 1970s, while then-president Carlos Andrés Pérez triumphantly announced the arrival of “La Gran Venezuela,” which would use oil wealth to further develop the nation. One of the first steps in this process was to decrease reliance on the operations of foreign oil companies, nationalizing the industry through the creation of PDVSA in 1976.

PDVSA by and large succeeded in producing oil, managing to reach a 2.3 million bpd output during its first four years of operation.¹² Yet elected officials proved far less capable when it came to realizing the dream of “La Gran Venezuela.” Several successive administrations turned a blind eye to corruption, while a multitude of state-owned enterprises provided ample opportunity for embezzlement, fueling Venezuela’s budding kleptocracy. Some estimates valued the total amount lost to corruption and mismanagement during these decades at over \$100 billion.¹³ President Pérez himself was removed from his second term by the Supreme Court after he was found to have embezzled nearly \$3 million. These scandals emerged even as PDVSA neared record-high levels of oil production of around 3.5 million bpd in 1997 and 1998. Venezuela’s failure during the late twentieth century to curb endemic corruption and reinvest oil revenues in building a more diversified economy set the stage for the oil industry’s downfall.

While the cracks in Venezuela’s oil industry were already visible in the 1990s, the policies of Hugo Chávez, who swept into power on a disruptive leftist agenda in 1999, exacerbated those cracks into gaping holes. Chávez initially sought to curb the country’s vulnerability to price fluctuations by reinvigorating OPEC to keep oil between \$22 and \$28 per barrel.¹⁴ However, opposition to Chávez’s authoritarian style of governance mounted. Following an attempted coup in 2002, thousands of workers went on strike, calling for new elections. PDVSA workers were heavily involved in this strike, dropping oil production to as low as 50,000 bpd. Chávez responded by firing around 18,000 PDVSA employees, nearly half of the company’s total workforce at the time, replacing them with retirees and regime loyalists.¹⁵ The consequences for PDVSA’s operations were grave: the strike and its aftermath

precipitated a large outflow of talent from the oil sector. After 2003, Venezuela would never again hit its oil production target of 3 million bpd.

Just four years later, Venezuela’s oil industry took another hit when Chávez ordered the expropriation of ExxonMobil and ConocoPhillips’ assets in 2007. These companies had been brought in to develop Venezuela’s Orinoco Belt, which contains vast but difficult-to-process, superheavy crude-oil reserves. The expropriation prompted a flight of foreign capital from Venezuela, leaving the country unable to access much of its heavy crude reserves efficiently.¹⁶ Furthermore, without foreign direct investment, Venezuela found it nearly impossible to update its oil infrastructure, leading to dilapidated pipelines and hazardous equipment that exacerbated the environmental toll of the country’s oil production.

Simultaneously, Venezuela under Chávez built a series of unsustainable economic ties with China, Russia, and Cuba. In the case of China and Russia, Venezuela racked up large amounts of debt. For instance, it has been the recipient of 45 percent of all Chinese policy-bank loans since 2005.¹⁷ Russian investment has been comparably lower and primarily related to military financing, although the oil company Rosneft has spent over \$1 billion on oil-field development in Venezuela as well.¹⁸ Without cash to pay down these debts, the Chávez administration was forced to dip into oil exports, and roughly a third of PDVSA’s oil production in 2012 was sent to China as repayment in kind. Oil exports were further diluted by Venezuela’s partnership with Cuba, which in pre-Covid-19 years received as much as 90,000 bpd of heavily discounted oil in order to circumvent U.S. sanctions.¹⁹ Squeezed by foreign creditors and facing a dramatic decline in domestic production, Venezuela found itself increasingly pushed into a corner with precious few exit strategies.

Nicolás Maduro, who ascended to the presidency in 2013 following Chávez’s death, continued many of his predecessors’ policies. Foreign debt grew steadily, and inflation began its precipitous climb from double to quadruple digits. When oil prices began to slide in 2014, ending with oil selling for under \$30 a barrel in 2015—a far cry from the record-setting \$140–\$180 per barrel that Chávez enjoyed and subsequently squandered—the negative trends assailing Venezuela’s economy came to a head.²⁰ A workforce gutted of technical and managerial expertise waged a losing battle against collapsing infrastructure that was already hemorrhaging oil into the surrounding environment. Production declined

precipitously from 2.5 million bpd in 2016 to 1.5 million bpd in 2018. By 2020, Venezuelan oil output had slid to 500,000 bpd, an overall loss in production of 3 million bpd from 1998 figures.²¹

Following Venezuela's presidential crisis and U.S. recognition of Juan Guaidó as constitutional interim president in January 2019, Venezuela found itself under an intensified sanctions regime. In contrast to previous targeted sanctions, the U.S. Department of the Treasury announced a sanctions effort against PDVSA as an entity.²² However, while the Maduro regime deflects blame and points to sanctions as the root of the oil sector's ills, the trends of corruption, kleptocracy, authoritarianism, and disregard for decrepit infrastructure all have legacies stretching back years, if not decades. The seeds of Venezuela's oil-sector destruction were sown by Chávez and watered by Maduro. Therefore, it does not follow that the removal of sanctions would swiftly resurrect an industry that had been struggling to stay upright years before their imposition.²³

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THE ENVIRONMENTAL IMPACT OF VENEZUELA'S OIL SECTOR

The consequences of Venezuela's crumbling oil infrastructure are both varied and severe. These include coastal spills that have proven devastating to marine biodiversity, as well as inland pipeline ruptures and unrestricted flaring that produces vast amounts of harmful gasses. Further compounding this environmental degradation is the Venezuelan government's and PDVSA's reluctance to share information regarding oil spills. This leaves local communities and international watchdogs to do the heavy lifting in reporting on environmental issues. Yet their cries often fall on deaf ears, as the government in Caracas remains unwilling or unable to fix major environmental risks in a timely or effective manner. The Maduro regime often prevents scientists and experts from accessing areas where spills have occurred and declines to report on cleanup methods—or indeed whether there was a cleanup effort at all.

The clearest manifestations of the sector's impact on the surrounding environment are oil spills. Many of these occur along the country's coastal refineries, where heavy crude oil is processed before it can be shipped out. In 2012, the large Amuay refinery exploded, sending a toxic fireball into the air for days. By the time the Chávez government tamed the fire, it was the largest refinery explosion in 15 years, killing nearly 50 people and injuring hundreds more.²⁴ In July 2020, an oil spill originating in the El Palito refinery leaked over 20,000 barrels into the water, spreading into the protected Morrocoy National Park, an ecologically rich area home to mangroves, coral reefs, and several endangered species.²⁵ The spill itself was not detected until August, when independent satellite reporting confirmed the existence of oil in the waters near Morrocoy. In late August, PDVSA announced it was taking steps to clean up the oil, but the company neither addressed the crumbling infrastructure that led to the spill nor invested in cleaning anything beyond beaches, allowing the oil that remained in the ocean to continue to circulate. In June 2021, an oil tank at Punta Cardón in Falcón State leaked through a crack in its base. Rather than repair it, the base was instead left to leak its contents—3.6 million liters of gasoline—over the course of nine days. The facility had not been checked since 2016, despite an order to perform biyearly maintenance.²⁶

The El Palito incident reflects a common pattern in Venezuela, especially among coastal spills. Just weeks later, an underwater pipeline in Río Seco burst and began spilling into local fishing grounds. The incident was first captured in a video posted to social media.²⁷ Again, PDVSA took no action until a protest organized by the fishing community elevated the issue and led to local beach cleanup efforts. Even after PDVSA intervened, the consequences for the local economy were disastrous. Oil either kills or contaminates nearby marine life, leading to a severe drop in the fishing upon which coastal economies largely depend. What fish they can catch tend to contain traces of hydrocarbons, sickening those who eat them and further detracting from the well-being of local communities. Spills have longer-lasting impacts as well, with NGOs and climate experts indicating many ways in which oil remains in the ecosystem long after visible signs of leakage vanish. Hydrocarbons can be deposited in the sediment on the ocean floor, where they can be released back into the water at a later date, while damage to coral reefs can have a domino effect on biodiversity that may take years to reverse. Indeed, the Morrocoy National Park is expected

to require at least 50 years to make a full recovery, assuming no future spills delay this further.²⁸ In all of these incidents, there is a disturbing pattern: the Venezuelan regime's desire to reopen refineries as soon as possible exacerbates the response, prevents lessons learned, and makes future catastrophes more likely to occur.

Inland, Venezuela also relies on an aging network of pipelines to move oil and liquified natural gas from wells to refineries—a challenge that is exacerbated by Venezuela's extra-heavy type of crude. In March 2021, an explosion along a key natural-gas pipeline ground oil production in 85 wells to a halt.²⁹ PDVSA itself estimates that around \$8 billion in investment would be necessary for updates to the pipeline infrastructure alone in order to return oil production to late 1990s levels.³⁰ In all likelihood, this is an underestimate, yet it reflects the undeniable fact that the Venezuelan government simply cannot afford, and chooses not to invest in, updating aging pipelines. And although PDVSA is no longer reporting spills, the head of Venezuela's Unitary Federation of Petroleum and Gas Workers estimates that oil spills are an almost daily occurrence in some states, painting a troubling picture as pipelines continue to degrade.³¹

At the oil wells themselves, a poisonous combination of poor infrastructure, lack of capital, and a drought of technical expertise has exacerbated the equally toxic problem of flaring. Flaring is a means to relieve pressure that builds up in the form of flammable natural gas during pumping. While a necessary safety measure in some cases to reduce the risk of explosions at oil wells, flaring is also a major source of greenhouse-gas emissions. As previously mentioned, Venezuela was the sixth largest flaring country in 2020, with the volume of flared gas rising despite dramatic losses in oil production.³² This is driven by the fact that Venezuela's energy sector has lost much of its capacity to collect and utilize natural gas, choosing to simply burn it off instead.³³ The carbon dioxide and methane released from unrestricted flaring have global implications, contributing to ocean warming and accelerating climate change.

Finally, while illegal mining has rightfully garnered much of the attention for its connections to organized crime, Venezuela's energy sector also fuels profitable smuggling networks, to the detriment of the country's most vulnerable residents. Prior to the collapse of the Venezuelan economy, government subsidies for gasoline created smuggling routes to neighboring Colombia and Guyana. On the eastern border, members of the

Warao Indigenous community were heavily implicated in the illegal gas trade with Guyana.³⁴ In northwest Venezuela, elements of the National Liberation Army, a Colombian guerrilla group, took over what was formerly an Indigenous-led cooperative meant to oversee the gasoline trade with Colombia.³⁵ Now, as Venezuela faces an acute petroleum shortage, smuggling routes have not disappeared; instead, in a twist of irony, desperate Venezuelans now look to Colombian gasoline to support everyday life.³⁶ Corrupt border police and entrenched criminal networks make Venezuela's borders porous, leading to rising violence that falls disproportionately upon the minority and underrepresented groups who find themselves at the bottom rungs of smuggling operations.

Despite a proud history of record levels of production, Venezuela's oil sector is in such a state of disrepair that desperate locals have resorted to converting PDVSA's crumbling equipment into scrap metal and selling it to survive.³⁷ Ultimately, the oil sector in Venezuela represents a large share of the responsibility for the country's current environmental crisis. While a future accord between the Maduro regime and opposition may prompt significant changes in oil production, there are few obvious exits from the industry's current vicious cycle, in which economic crisis fuels ever-expanding environmental degradation.

THE ROLE OF OIL IN ANY POLITICAL TRANSITION

Given the centrality of oil to Venezuela's economy, its future role under a potential power-sharing agreement deserves careful consideration. However, for the time being, ongoing negotiations between the Maduro regime and opposition have skirted this contentious issue, focusing mainly on upcoming regional elections and the rule of law. In a recent joint statement from the Mexico City talks, the parties announced their agreement on Covid-19 relief measures, as well as an agreement on Venezuela's disputed border with Guyana.³⁸ In these negotiations, the parties are attempting to find a middle ground between a government bent on seeing U.S. and EU sanctions lifted and an opposition demanding the release of all political prisoners and immediate presidential and national assembly elections.

While oil has thus far remained off the table in negotiations, it is worthwhile to consider the role of the Venezuelan oil industry—and PDVSA in particular—under two possible transition scenarios. If the opposition participates in upcoming elections and manages to win

several gubernatorial and mayoral campaigns, there could be a modest form of power-sharing agreement between the Maduro regime and opposition (though this is still unlikely to happen). Under this outcome, a member of Guaidó's Unitary Platform could be appointed to the Ministry of Industries and National Production or the Ministry of Popular Power of Petroleum. Although highly unlikely, an appointment to a central ministry would be a powerful signal of Maduro's willingness to meaningfully accommodate opposition demands. In the oil sector, this could also be grounds for removing major sanctions against PDVSA. There is good reason to doubt Maduro's willingness to sacrifice such a vital ministry; however, if it appears the quickest route to economic recovery, such a deal may become increasingly desirable.

The second transition scenario is the fall of Maduro's government, which the opposition has been working toward for several years. While this seems a remote possibility at the moment, if current negotiations lead to meaningful progress on the competitiveness, transparency, and integrity of elections, there may be hope in the future for the opposition to be electorally competitive. The Unitary Platform appears to enjoy some popularity in unofficial polls, but the opposition remains fractured between those wary of any participation in electoral politics and those seeking change from within.³⁹ If current trends are sustained, the Venezuelan opposition may deem the climate right to lead a full-fledged campaign in the 2024 presidential elections. Should this effort gain sufficient traction, opposition leaders might find themselves in a far stronger position to present themselves once again as the legitimate government. An opposition-led government would likely prompt an even more positive response from U.S. policymakers—and a dramatic lifting of sanctions and other punitive measures.

However, under either circumstance, the Venezuelan opposition is unlikely to inherit an oil sector capable of reviving the country's moribund economy. Even assuming sanctions relief and increased demand for oil lead to an uptick in production, PDVSA's structural challenges will not be resolved by a change in leadership alone. Especially with respect to the intersection of oil production and environmental degradation, Venezuela needs to attract large sums of foreign capital and development assistance to plug its leaking infrastructure.⁴⁰ Without these investments, increases in production risk exacerbating harmful practices such as unreported spills and gas flaring. In the same vein, sanctions relief would not revive the

presence of foreign oil companies still wary of Chávez-esque expropriations. Accordingly, foreign capital is especially unlikely to return in large amounts, especially under a scenario where the opposition is not fully in charge.

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Furthermore, Venezuela's prospects for an oil-driven economic recovery appear doubtful in the near term. Recent statements by OPEC show that the conglomerate expects oil demand to rise in 2022 after plunging due to the pandemic-induced constriction of global travel. Yet the emergence of new variants or outbreaks may cause this reopening to be slower than anticipated.⁴¹ A more long-term view envisages Venezuela struggling to attract outside investment. While plentiful, the majority of Venezuela's oil reserves are in the form of heavy crude, a variety that demands more time and labor to render usable. This means that investments in new oil fields require a high initial level of capital for specialized drilling and refining. Investors are likely to make this gamble only if they believe that PDVSA has the competence to maintain output, that it will remain faithful to its contractual obligations, and that oil prices will be high enough to make the initial investment profitable once production fully comes online. Neither the current political instability in Venezuela nor the global uncertainty surrounding the future of oil makes for an auspicious environment for such investment.

However, the forecast is not entirely bleak for Venezuela in a political-transition scenario. Easing restrictions on trade, for instance, would allow the country to import the diluents needed to refine its heavy crude oil into a more marketable form, picking up some of the slack in Venezuela's current oil supply, which has been hobbled by a lack of diluents to blend its crude.⁴² More access to diluents would improve the competitiveness of Venezuelan oil on the world market, where it will be able to trade more easily. Meanwhile, an opposition government more closely aligned with the United States may be able to negotiate more readily for debt relief to wean itself away from China, thereby freeing up more oil for export instead of repayment in kind.

Finally, a political transition could lead to progress on the environmental front, even without a total takeover of the oil industry by the opposition. Greater opposition influence within Venezuela's Ministry of Environment and Natural Resources, the Ministry of Industries and National Production, or the Ministry of Popular Power of Petroleum could reinvigorate these departments and lend desperately needed support to the country's struggling environmental NGOs. Straightforward policies such as more fastidious reporting of oil spills or new protective legislation for national parks could have an outsized effect in the country, which has long tried to sweep such issues under the rug.

POLICY RECOMMENDATIONS

There are several areas where Washington can continue pushing Venezuela in the right direction politically while making important strides to curb some of its worst environmental trends. While immediate gains might be achieved through diplomacy, the ecological crisis plaguing Venezuela has deep roots that demand a sustained effort to extirpate. In both the short and long term, the United States should:

- 1. Elevate the voice of civil society in current negotiations.** Venezuelan civil society groups have been some of the staunchest opponents of environmental degradation under Maduro. Because current negotiations have focused primarily on elections and constitutional questions, including the voices of environmental groups is particularly essential to putting these issues on the agenda in a substantive manner. Already, after the August round of talks in Mexico City, the Maduro regime and Venezuelan opposition declared they would adopt a consultative mechanism for civil society actors to make their voices heard.⁴³ The United States should closely monitor the adoption of such a mechanism and, together with the other nations party to these talks, encourage the presence of key environmental groups within Venezuela, especially those representing Indigenous peoples and other vulnerable groups. Beyond the Mexico City talks, the United States should highlight the work and reporting done by these groups within Venezuela, especially those leveraging satellite technology to piece together oil spills and other environmental catastrophes, to counter the Maduro regime's policy of denial and cover-ups. Creating a formal channel for environmental groups to contribute to talks also

ensures that future conversations surrounding the oil industry are not carried out in a vacuum.

- 2. Advocate for the creation of an independent regulator for PDVSA, especially in a political-transition scenario.** A major determinant of whether Venezuela's oil industry will be able to rebuild and grow in a sustainable fashion is PDVSA's ability to reform itself and become a reliable partner for foreign investment. The state-owned oil company has so far struggled to recover after its Chávez-era decimation, while its proximity to the Maduro regime means there are precious few mechanisms available for proper accountability. The Venezuelan government can take a major step toward fixing this problem by setting up an independent regulatory body to set oil-industry policy and keep the monopolistic power of PDVSA in check. There are adequate models to be found in neighboring Colombia and Brazil, where government hydrocarbon companies are responsible for day-to-day operations, but autonomous agencies can set policies with respect to foreign partnerships. A regulator in Venezuela, if properly supported, could act as a powerful signal of the country's reliability and openness to future joint business ventures—especially in a scenario of political transition, wherein increasing Venezuela's oil output would likely be an explicit goal of U.S. policy.⁴⁴ It can also be a tool for enhancing environmental accountability by taking over responsibility for reporting oil spills, flaring figures, and other climate-related data.
- 3. Encourage greater private investment in Venezuela and incentivize PDVSA talent to return, especially in a political-transition scenario.** The United States should recognize that, in a political transition, Venezuela's economic recovery will not be accomplished through the removal of sanctions alone. Instead, Washington would need to actively encourage private enterprises to lend their expertise and resources to building a stronger, healthier Venezuelan economy, especially in the hydrocarbons industry. Former PDVSA employees are scattered throughout the world, and incentives should be given for them to return to work in Venezuela—even if for a limited time only. Although confidence in PDVSA's ability to abide by contracts remains low, major oil companies' interest in Venezuela has not vanished. For instance, Chevron remains committed to its operations in Venezuela,

while CITGO stands to gain significantly from reopening trade with PDVSA.⁴⁵ In CITGO's case, the United States could encourage the company to make targeted investments to update pipeline infrastructure in Venezuela. If the United States does not back private-sector investment in PDVSA, state-owned oil companies in China and Russia are all too eager to pick up the slack, without guaranteeing any concern over the industry's environmental impact.⁴⁶ Thus, under a scenario wherein the sanctions regime is relaxed, the critical question is not whether Venezuela's oil sector will receive outside investment, but who the dominant partners with the new PDVSA will be. Furthermore, the United States should not limit itself to investment in the oil sector but engage with companies involved in ecotourism or sustainable mining practices to help diversify Venezuela's economy. These steps are contingent on the political situation within Venezuela and may take years to begin to bear fruit. However, it is because of this gradual nature that work on supporting private-sector investment needs to begin sooner rather than later. ■

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