THE ISSUE

Natural gas is the predominant fuel source in Mexico. However, years of reliance on the United States for cheap, plentiful gas imports has prevented Mexico from capturing the potential of its domestic gas industry. This exposes Mexico to risks in the form of geopolitical distortions and unexpected disruptions in U.S. supply. It also exacerbates inequalities between northern and southern states as high energy prices in the latter serve as deterrent for businesses and investors. This brief breaks down the intersection of energy security, natural gas, nearshoring, and migration, and outlines areas for Mexico to cooperate with the United States on bolstering its domestic energy sector.

MEXICO’S FRAGILE STATUS QUO

In February 2021, Winter Storm Uri swept across North America, bringing extreme cold to the south-central United States. Subzero temperatures in Texas caused widespread power outages, leaving millions without heat and at risk of injury and even death. The storm’s effects did not stop north of the border. Surging domestic demand for heat and power in the United States caused a reversal in the flow of natural gas going to Mexico. In the span of a few days, U.S. gas exports to Mexico plunged from 6 billion cubic feet per day (cf/d) to slightly under 3.5 billion cf/d. Coupled with Mexico’s lack of storage capacity, states throughout the north of the country were plagued by fuel shortages and power outages of their own. Amid the below-freezing temperatures generated by the winter storm, at least 14 people in Mexico died from exposure.

The storm underscored Mexico’s precarious situation when it comes to energy security, and especially natural gas, which currently comprises 48 percent of the country’s energy matrix and is the country’s largest single fuel source. While consumption has risen steadily, Mexico has underinvested in domestic production and grown rapidly reliant on U.S. exports to meet around 70 percent of its domestic demand. Some industries, especially those near the U.S.-Mexico border, are almost entirely dependent on imports to sustain their operations. This dependency is especially notable in light of the stated “energy sovereignty” policy of President Andrés Manuel López Obrador (AMLO), which has led Mexico to reject investment by foreign companies and pour money into the state-owned oil company, Pemex.

Such vulnerabilities in Mexico’s energy ecosystem pose life-threatening challenges for Mexican citizens. They also systematically disadvantage areas in Mexico that cannot benefit as much from cheap U.S. imports, such as in southern states where large gaps in economic development persist. While Mexico boasts high levels of energy security overall, approximately 1.5 million people remain without electricity, and segments of
the population, especially in rural areas, struggle with access to affordable, reliable energy. Amid global supply disruptions and the accelerating transition toward cleaner fuel sources, Mexico’s current model is at risk of becoming untenable.

Both Winter Storm Uri and the upheaval in global energy markets that came in the wake of Russia’s invasion of Ukraine underscore this reality. The latter prompted a spike in gas prices the world over, and even Mexico, whose well-developed oil industry makes it relatively resilient to fluctuations in global supply, was forced to pare back fuel subsidies in certain regions. Meanwhile, as governments and businesses increasingly seek out greener fuel sources, AMLO’s current coal- and oil-based strategy for achieving energy sovereignty risks denying Mexico important investments and missing the unprecedented opportunity offered by nearshoring. Over the long term, Mexico will need to tap into its considerable potential in the field of renewables, but this will not be sustainable if private investment is excluded from Mexico’s energy sector. One starting point for Mexico to begin the long process necessary to achieve a cleaner, more efficient, and more secure energy mix is to exploit its considerable natural gas potential.

While still a fossil fuel, natural gas produces fewer emissions than coal or oil and can serve as a crucial part of the energy transition while Mexico brings more renewable energy capacity online. Furthermore, even after a decade of falling production, existing companies and public-private partnerships hold the potential to expand Mexico’s domestic gas sector, including by increasing production and realizing new opportunities.

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### THE STAKES

Geopolitical and climate change hazards have reiterated energy’s role as an essential component of national security. More than ever, energy security is intertwined with the prosperity and development of entire countries, and it should be appraised as a component of regional

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**Figure 1: Investment in Renewable Energy**

USD, billions

![Figure 1: Investment in Renewable Energy](https://www.bloomberg.com/news/articles/2022-01-26/investment-in-mexican-green-energy-drying-up-trade-groups-warn)

stability and human development. In the case of North America, energy security intersects with three critical issue areas for both Mexico and the United States: (1) nearshoring, (2) economic development in Mexico’s south, and (3) addressing the root causes of irregular migration.

**NEARSHORING**

The relocation of business operations from Asia to the Western Hemisphere is a necessary step to ameliorate the risks of supply chain disruptions. Geopolitical changes have stressed the necessity of new supply chain resilience. With a 3,100-kilometer border, 40 border crossings, and the third most airports in the world, Mexico is in a privileged position to benefit from the relocation of manufacturing and production capacities and the massive changes in world trade that have followed the Covid-19 pandemic. In addition to geography, Mexico’s relative advantages for attracting U.S. businesses include established trade relations, a young working population, shared time zones, a growing domestic consumer market, an integrated culture, and bilateral trade agreements with the United States.

Yet Mexico and the broader North American community are at an inflection point when it comes to nearshoring. Although the Inter-American Development Bank (IDB) estimates that nearshoring could open $35.3 billion annually in new export opportunities, Mexico’s government has been slow and hesitant to capitalize on this potential. Mexico still needs to devise a comprehensive strategy to prepare for the shifts in global trade that will characterize the coming era. But despite the lack of a strategy and the shortcomings and unreliability of Mexico’s domestic judicial system and legal framework, some foreign businesses have nevertheless opted to sustain investments in the country, given the existing commitment to the legal provisions established in the United States-Mexico-Canada Agreement (USMCA). The USMCA stands out as one of the most modern trade agreements and has benefited all parties through its provisions on labor rights, protection of intellectual property, and dispute resolution mechanisms. Nearshoring would not be possible without the existing trade agreement, but legal considerations are not enough to seize the nearshoring opportunity in its entirety.

Energy reliability in particular will be fundamental to Mexico taking advantage of the nearshoring movement, as companies will only relocate their operations if they are assured access to constant and affordable power, especially in energy-intensive industries such as the manufacturing or automotive sectors. Mexico should modify the public sector’s role in the energy market. Mexican state-owned energy companies—specifically Pemex and the Federal Electricity Commission (CFE)—have a poor track record when it comes to the technology, know-how, and financial resources needed to bridge the gap for the energy requirements of nearshoring or to provide companies and communities with clean energy. This is partly because Mexico has underinvested in its energy sector; for instance, Morgan Stanley estimates that Mexico will need $40 billion in incremental spending on energy alone to meet the demands of nearshoring over the next five years.

**SOUTHERN MEXICO**

For contemporary and historical reasons, southern Mexican states have lagged their northern counterparts economically. The south has a geographical disadvantage that has been aggravated by political carelessness. Chiapas and Oaxaca alone are home to 14 of the 15 poorest municipalities in Mexico.

A recent study that measures the comparative advantages of states to attract foreign direct investment (FDI) showed a stark division between competitiveness between Mexico’s southern and northern states. The state of Guerrero has been in last place for more than 10 years, while Oaxaca and Chiapas also rank near the bottom. FDI to the central and northern regions represents 88.9 percent of the national total, with the south receiving just one of every 10 dollars invested in Mexico. Virtually any metric of economic or human development reveals glaring inconsistencies between southern states and the rest of Mexico. A person living in Chiapas, for instance, earns an average monthly wage of MXN 5,209 ($306.41), while someone in Baja California Sur earns more than twice that, or MXN 12,934 ($760.81) on average. Meanwhile, life expectancy in the state of Guerrero is 73.6 years on average, compared to 76.8 years in Mexico City.
Logistically, states farther from the U.S.-Mexico border face an uphill battle in attracting companies interested in nearshoring. However, geography alone does not account for this divide. One study from the Bank of Mexico found that companies faced disproportionate obstacles to obtaining loans for investments in the south compared to the north and northeast regions of the country. For the south to benefit from nearshoring, the government and private sector should implement targeted policies and efforts, including addressing specific barriers, such as inadequate infrastructure, the insufficiently skilled labor force, and access to dependable energy sources. Southern states need to also offer advantages to encourage FDI and counteract the natural appeal of northern and central states.

Migration is a contentious topic in both the United States and Mexico, with much of the focus centering on growing northward flows from El Salvador, Guatemala, and Honduras—otherwise known as the Northern Triangle. In FY 2022, U.S. Customs and Border Patrol reported more than half a million encounters with individuals from Northern Triangle countries. Asylum applications have also spiked in Mexico, with a record 130,000 filed in 2021, the majority of which also come from individuals originating in the Northern Triangle.

Both the United States and Mexico claim to have aligned their aims in seeking to address the “root causes” of migration through economic development. The U.S. Agency for International Development and the Mexican Agency of International Cooperation for Development, for instance, entered into a partnership working in the Northern Triangle to expand access to AMLO’s signature Sembrando Vida and Jóvenes Construyendo el Futuro social programs. Yet these policies have not been successfully implemented or designed and have, therefore, had limited influence on irregular migration. The causes of migration are far more complex than the lack of economic opportunity and instead include a range of factors such as forced displacement,
political persecution, organized crime, and climate change. For example, the Northern Triangle countries are some of the most climate-vulnerable regions in the world; extreme weather events can displace tens of thousands, as seen in the aftermath of Hurricanes Eta and Iota, which struck the region in late 2020.

Broader engagement of the private sector and expansion of nearshoring efforts in Central America are necessary to address the root causes of irregular migration and displace palliative measures with debatable efficacy. To its credit, the United States has recognized this with the launch of the Partnership for Central America, seeking to leverage key private enterprises in fostering new economic opportunities for the region. More remains to be done, however, to create an enabling environment for sustained economic growth and investment.

The above issues will surely draw attention as both the United States and Mexico gear up for presidential elections in 2024. As candidates begin to prepare their platforms, they would do well to critically examine the potential of a more integrated energy policy.

**ENTER NATURAL GAS**

Any such energy strategy should give careful consideration to the role played by natural gas, which for the past five decades, has grown steadily, emerging as a critical energy source around the world. Gas offers two primary advantages when it comes to the energy transition. It emits just half as much carbon dioxide as coal, and in many cases, it is cheaper than either coal or oil as a power source. The United States is an instructive case study in how these two advantages can combine to deliver important benefits. According to the U.S. Energy Information Agency, from 2005 to 2019, carbon dioxide emissions in the United States declined by about 30 percent, largely from the shift in U.S. energy generation from coal to gas. In Mexico, demand for natural gas has climbed steadily, from making up just over 20 percent of the country’s energy mix in 1971, to nearly half in 2020. Combined-cycle terminals, which use gas and steam turbines to generate power, now provide more than 60 percent of the electricity consumed in Mexico.

Demand for natural gas in Mexico is expected to peak by 2032, and remain the preponderant source of energy generation well into the 2040s. For several industries, gas is also likely to remain or grow as a fuel stock of choice, owing to its abundance and cost-effectiveness relative to other energy sources. Some of Mexico’s most important industries, including automobiles, aerospace, and medical devices, are all heavy consumers of natural gas not only as a source of power but also directly for manufacturing gas-based petrochemicals. Other sectors, including textiles and light manufacturing, as well as new opportunities from telecommunications to e-commerce and other digital-first businesses, also require renewed investment in energy transmission, where natural gas can be an important player.

With respect to renewables, natural gas itself represents an important feedstock for hydrogen, especially blue hydrogen. Blue hydrogen is produced by mixing gas and steam, alongside carbon capture and storage, to form a net-zero source of energy. The United States has made significant progress on blue hydrogen owing to its abundance of natural gas resources and preexisting infrastructure. The 2021 Infrastructure Investment and Jobs Act (IIJA) appropriated $8 billion for the development of regional clean energy hubs and received over 20 proposals, with the majority of these seeking to build or expand upon blue hydrogen production. The U.S. experience can serve as an instructive case in how gas-rich countries can shift their hydrocarbon industries from a low-emission framework to a no-emission framework. Some of the common uses of hydrogen, such as industrial manufacturing and long-haul transportation, should be of interest to Mexico as well. Nevertheless, Mexico’s blue hydrogen opportunity is likely still some years away and will require the country to first build up its gas production and distribution capacity before it can think about expanding into hydrogen hubs.

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Indeed, Mexico’s domestic natural gas potential is far greater than its current means. From 2010 to 2021, gas production in Mexico decreased by approximately 50 percent. The country made up for this shortfall by increasing imports, which today account for 70 percent of domestic consumption. This lopsided arrangement would seemingly fly in the face of AMLO’s rhetoric, but Mexico’s import dependency on the United States has only increased since he took office. This is most likely because political and economic resources are concentrated in the oil industry and Pemex, delaying necessary investments in the natural gas industry.

Finally, energy projects require long-term certainty and a friendly environment for businesses that can survive unscathed through ideological and regulatory differences between federal administrations. This was perhaps most notable in the oil sector where AMLO shortly after his election announced an audit of 100 contracts signed by foreign oil companies and the previous administration of Enrique Peña Nieto. Gas and renewables investors were not spared either, with the CFE declaring in 2019 that privately owned pipeline builders would need to renegotiate their contracts with the government to remain in operation. Gas exploration projects in the Burgos Basin, one of Mexico’s largest accessible shale gas fields, also struggled with regulatory red tape and contracting challenges. Many existing energy projects have nevertheless continued apace, yet the progress on the ground has not been able to dispel perceptions of uncertainty making it difficult for many operators to justify their work in Mexico or raise additional capital. Meanwhile, AMLO’s efforts to develop solar power through the so-called “Plan Sonora” and tap into Mexico’s lithium reserves have moved at a glacial pace, while private investment in renewables has tumbled precipitously.

MEXICO AND U.S. GAS

Mexico has important natural gas reserves—primarily concentrated in the east of the country and the Gulf of Mexico—but the government has not deployed the requisite business models, investments, or equipment to exploit these reserves through its state-owned companies. The lack of planning to develop national gas production has been further exacerbated by the exponential growth in supply of highly competitive U.S. natural gas since the 2000s.

While around 4 million natural gas wells have been drilled in the United States, Mexico has less than 1 percent of that capacity, or only roughly 32,000 wells. When the United States transitioned from being a net importer of natural gas to the world’s biggest producer, the low prices created a major dependency in Mexico. U.S. imports were, and continue to be, in some ways, a mutually beneficial arrangement between Mexico and the United States. The abundance of natural gas in the Permian Basin, coupled with its sophisticated distribution infrastructure, makes Texan gas exports among the cheapest and most competitive options available to Mexico. Yet the convenience of this natural market should not impede Mexico from designing a more ambitious and resilient future for its energy supply. Indeed, even cheap gas suffers from diminishing returns the longer it must travel to reach end users, a feature which, together with the lack of pipeline infrastructure, exacerbates the high energy prices reported in southern Mexico.

Mexico’s reversal of the 2013 constitutional reform to the energy sector also represents a potential factor in the country’s slow uptake of natural gas. AMLO’s prioritization of the state-owned CFE over private investments in clean energy has created long-term consequences that have discouraged investment, especially relative to conditions in countries such as Chile and Colombia that want to position themselves as pioneers in the energy transition.

Pemex, for its part, has long been pulled in opposite directions by political considerations and the technical decisions that should prevail in a company. As with many state-owned enterprises, ideological and political considerations have prevailed for most of Mexico’s history, with huge resources directed to these companies with at-times dubious returns.

Today, Pemex is the world’s most indebted state-owned oil company. Analysts differ on whether it is even possible to rescue the company altogether or if it would be better to officially declare bankruptcy and liquidate its assets. The federal government is increasing its support to Pemex, amounting to $49 billion in assistance since AMLO took office, for the company to pay off its mounting debts. The government is assuming Pemex’s debt and risks...
as liabilities, and in July, Fitch Ratings Inc. downgraded Pemex’s rating outlook from “stable” to “negative” due to recent accidents in oil fields as well as the company’s financial instability and inability to pay its debts. The debate about public support to Pemex will likely arise again as the presidential election in 2024 approaches; the company’s financial situation frustrates efforts to direct the necessary resources to clean energy and gas production and reduce dependency on foreign energy. Given the current scenario, Pemex is not ready to invest and develop natural gas production in a sustainable and efficient manner. The company’s gas production fell nearly 30 percent between 2011 and 2021, while its participation in flaring at its oil wells, and degraded credit rating all suggest the company lacks the incentives and ability to significantly boost gas production on its own. In spite of modest growth in gas production in recent years, Pemex’s more profitable oil sales currently outweigh and overshadow the potential long-term benefits of natural gas. Instead, the participation of the private sector is necessary to promote and increase energy security and economic development. The lack of investment in other sources of energy has created another limiting factor: Mexico’s low storage capacity. Mexico only has enough storage across three facilities for natural gas to meet 2.4 days’ worth of demand. The lack of storage makes the country vulnerable to sudden shifts in both demand and supply. By contrast, countries such as Germany, Austria, and Spain all surpass 34 days of storage capacity. Recent system shocks to world energy markets have made it clear that it is unsafe to rely on a single energy supplier, even if the provider is an allied country. Diversifying energy production and supplies is beneficial to all parties in an integrated economy, as it creates a more stable and resilient future. Increasing energy security through the smart development and diversification of the natural gas industry opens opportunities in other policy areas. Bringing in both Mexico and Canada, the latter of which possesses prodigious natural gas reserves of its own, to the gas export market can help better meet European demand and reduce the potency of Putin’s energy warfare. With the correct planning and investment as well as efficient operations, Mexico could also provide affordable gas exports to Central America and help address the root causes of underdevelopment and migration.

Figure 2: Divergence between Natural Gas Utilization and Production
All figures in Terajoules (TJ)

INTERSECTIONALITY

Energy security lies at the crossroads of several key challenges facing North and Central America. In particular, the following important policy areas stand to benefit significantly from the development of policies to expand access to reliable and affordable power:

ENERGY AND NEARSHORING

Mexico’s ability to provide reliable and cost-effective energy stands out as a threshold condition for nearshoring to take off, and one where the country currently appears to be lagging. Especially as companies increasingly adopt environmental and social governance (ESG) standards for their operations, the Mexican government’s current prioritization of oil above all other energy sources has dampened interest in nearshoring.

Improving natural gas access and storage capacity will be essential to increasing Mexico’s ability to absorb and attract nearshoring investments, as well as restore investor confidence in the energy sector. First and foremost, natural gas will allow Mexico to better leverage its existing advantages in key manufacturing sectors, as well as potentially break into new markets such as (highly energy-intensive) semiconductor manufacturing. Natural gas, as a cleaner fuel source than coal or oil, also aids Mexico’s progress in the energy transition, including as a potential avenue for the eventual development of blue hydrogen hubs throughout the country. This is particularly beneficial for corporations trying to seize nearshoring opportunities that need to consider environmental regulations and standards such as carbon emissions certifications. The benefits of nearshoring can, in turn, pay dividends for the United States and Canada in the form of more secure supply chains, closer North American economic integration, and more reliable business partnerships. Emphasizing natural gas also carries the potential to reset North American relations on energy policy, which have been clouded by USMCA disputes and formal consultations over AMLO’s regressive energy reforms and disregard for the rule of law. A fresh perspective on energy policy, focusing on the potential of natural gas, presents a chance to cultivate a shared interest between the two countries. Energy goals should build around collaboration and mutual benefits rather than cause tension and division in regional relationships.

However, energy is just one of many existing barriers to harnessing the benefits of nearshoring. The reallocation of supply chains also requires building confidence through stable regulatory frameworks. Unpredictable legal systems increase risks for investors; as Guillermo Garcia Sanchez, a law professor at Texas A&M University, notes, “Companies had to sit down and negotiate directly with the president, and no one knows what the rules are.” This instability, enhanced by prevailing political rather than technical considerations, needs to be undone to reverse the uninviting climate for foreign investment in Mexico. Under the same concern, the president of Coparmex, the Mexican business chamber, recently highlighted how investors from countries such as Canada, Germany, Spain, and the United States are withholding an estimated $35 billion in investment until Mexico’s legal framework is clear and represents fewer risks.

The recent clashes between the United States and Canada over AMLO’s energy reforms have added further uncertainty at a time when stability is sorely needed. North American trade and investment have also been damaged by seizures of business properties or eminent domain processes, including the recent expropriation of a private rail line by the Mexican armed forces, which discourage significant foreign investment by increasing the risks of long-term investment in Mexico.

Since 2018, legal reforms have severed the power of autonomous technical government agencies, such as the Energy Regulatory Commission (CRE), reducing the private sector’s role in the energy transition and Mexico’s efforts to reduce reliance on fossil fuels. The reversal of Mexico’s 2013 energy reform, which opened the energy market in Mexico to private participation, will be hard to undo and will require significant political will to reverse. Moreover, the results of the last few years have made clear that despite salutary efforts by the National Hydrocarbons Commission (CNH) to reduce regulatory complexity, additional, responsible involvement from the private sector is essential.

Finally, as in most countries, the economy is never wholly separate from security. Rising levels of insecurity linked to organized crime present significant challenges to nearshoring, as the alarming levels of violent crime threaten all policies aimed at attracting foreign investment and tarnish Mexico’s reputation internationally.
Mexico has recorded over 156,000 homicides since December 2018, with AMLO’s term poised to become the bloodiest in Mexico’s history. Organized crime is an additional factor that companies need to consider when making decisions to reallocate operations. One especially troubling development for businesses engaged in two-way trade is the increasing number of cargo-truck robberies. Since the start of the present administration, over 76,599 truck hijackings have been recorded—an average of 50 incidents every day. Dealing with these risks results in increased expenses for businesses, such as utilizing toll roads, obtaining costly insurance, and hiring private security.

Such insecurity also challenges efforts to develop the reliable energy supply needed to support nearshoring. Criminal enterprises have expanded significantly into fuel theft, or huachicoleo. AMLO made the fight against huachicoleo a priority during the start of his administration, shutting down pipelines and dispatching the military to guard strategic sections. While the government subsequently reported substantial reductions in fuel theft, these gains have reversed as pressure has decreased. Pemex reported that losses to huachicoleo tripled in the third trimester of 2022 compared to the previous year. Additionally, an unintended consequence of this strategy is that criminal gangs switched from oil to natural gas theft, where theft increased up to 126 percent in 2022.

Timeframes are critical when it comes to nearshoring. Mexico has a window of opportunity that will not remain open indefinitely. Security, operational, and regulatory risks are part of what companies need to balance when making decisions to invest in Mexico. Foreign companies should not be left on their own if Mexico wants to fully capitalize on the potential for nearshoring. Business operations are being threatened by energy security issues, regulatory risks, and increasing violence. A more comprehensive nearshoring plan for North America, therefore, remains sorely needed.

ENERGY AND SOUTHERN MEXICO
AMLO’s efforts to narrow this widening gap for southern Mexico have not delivered results. In some instances, these efforts have even deepened distrust among foreign investors due to AMLO’s ideological motivation to pursue infrastructure projects in the region despite technical and financial concerns. Megaprojects such as the Maya Train and Isthmus of Tehuantepec Interoceánic Corridor (GIIT) have faced staunch local opposition and appear unlikely to deliver the transformative change they promise. The Dos Bocas oil refinery in the state of Tabasco deserves an especially close examination; while it is intended to be a legacy-defining initiative in AMLO’s home state, the refinery faces cost overruns, delays in construction, as well as environmental and labor concerns.

Fully realizing the economic potential of southern Mexico requires the participation of the private sector. Megaprojects and public sector funding can have an impact, but they are no substitute for the kinds of sustained, diversified, and large-scale investment the private sector can bring to bear. A welcoming atmosphere for private enterprises, legal certainty, security, and the rule of law are necessary building blocks for a more integrated and prosperous southern Mexico.

Unequal access to energy, and especially natural gas, worsens and sustains the disparities between Mexico’s northern and southern regions. While northern states benefit from more pipeline infrastructure and cheap imports from the United States, just one major pipeline exists between Yucatán and Campeche. This conduit, the Mayakán Pipeline, is currently capable of transporting just 250 million cf/d, but the energy demand of the Yucatán peninsula is estimated to reach as high as 900 million cf/d.

Additionally, AMLO’s policy of focusing on oil projects to spur economic growth in the south will not lead to the necessary structural changes to address multifaceted underdevelopment. Despite the substantial public investments, government projects like the Dos Bocas refinery will become less and less relevant over time, sustaining fewer and fewer jobs as the region transitions to clean energy. Without more ambitious projects to address energy insecurity in southern Mexico, geographic realities will continue to represent pressing obstacles to attracting investment.
ENERGY AND MIGRATION

The Northern Triangle countries boast some of the highest electricity prices in Latin America, deterring nearshoring and leaving substantial parts of the countries without reliable access to power. These Northern Triangle countries have invested significantly in hydropower as a means of shoring up domestic energy security, but growing water insecurity may disrupt the reliability of hydropower going forward. In recognition of this challenge, all three of the Northern Triangle countries have taken steps to incorporate gas into their electrical mixes in recent years, primarily relying on the United States for imports.

Expanding Mexico’s domestic production can also carry implications internationally, especially for the Northern Triangle countries. El Salvador, Guatemala, and Honduras all suffer from overreliance on U.S. imports, with El Salvador ranking as the most energy-insecure country in Central America, according to the Economic Commission for Latin America and the Caribbean. While Central America has made strides under the Electricity Interconnection System for the Countries of Central America (SIEPAC), it suffers from low investment in transmission infrastructure, as well as mounting challenges from climate change and extreme weather, which disrupt steady access to energy. In 2019, the U.S. International Development Finance Corporation (DFC) announced more than $600 million in investment to help develop a pipeline that would circulate natural gas throughout southern Mexico, Guatemala, El Salvador, and Honduras; however, the future of this project appears to
be uncertain as the Biden administration looks to pull away from investments in fossil fuels entirely.

Stable energy sources are, therefore, necessary to attract investment and business to southern Mexico and the Northern Triangle alike. A joint effort between the private and public sectors to develop the natural gas industry in southern Mexico could, therefore, have important ramifications for social development and migration.

Investment in the modern energy industry in southern Mexico can help replace the current suboptimal cash-transfer programs with well-paid jobs that foster technical skills in the working population and create financial inclusion in a region deeply affected by longstanding problems with informal labor. For example, Guerrero, the state ranked the lowest in competitiveness to attract FDI for the past 11 years, showed the highest rate of net migration in 2023, with \textbf{0.8 percent of the population} migrating. Formal employment opportunities come with benefits such as social security, healthcare, and protection under labor laws.

In the immediate future, the above factors suggest that there are few substitutes for bolstering Mexico's domestic natural gas capacity if the country is to seize upon opportunities related to nearshoring, reduce economic imbalances between north and south, and respond to the root causes of irregular migration.

**POLICY RECOMMENDATIONS**

Gas alone will not solve Mexico’s energy challenges. However, taking a holistic approach to Mexico’s natural gas sector can help produce a number of avenues through which the country can fortify energy security for its citizens, improve competitiveness, and help contribute to the global energy transition. A comprehensive approach to strengthen Mexico’s natural gas industry should, therefore, consider the following five areas: production, distribution, storage, export, and transition.

- **Production**: A critical step toward realizing Mexico’s natural gas potential lies in bringing additional production online. In this regard, Mexico should renew the \textbf{bidding rounds} for hydrocarbons. Implemented following the 2013 energy reform, the bidding round process saw companies put forth proposals to the CNH for the rights to develop oil and gas fields. The bidding rounds were credited by proponents with opening Mexico's hydrocarbon sector up to greater private investment and helping improve transparency in the awarding of contracts. Upon taking office, AMLO canceled the bidding rounds process in favor of allocating greater resources and concessions to Pemex in the interest of Mexican energy sovereignty. While Pemex is likely to remain the predominant actor in the oil space, a resumption of the bidding process for natural gas specifically could help attract much-needed private sector interest in drilling new wells and tapping into Mexico’s gas reserves. Pemex could also enter into public-private partnerships to further develop new gas fields in the \textbf{south of the country}, such as the Ixachi field in Veracruz and the Quesqui and Pokche fields in Tabasco, to help bring additional production closer to consumers and improve the efficiency of Mexico’s energy infrastructure across the board.

- **Distribution**: As new domestic production ramps up, Mexico will need to fortify its pipeline networks throughout the country. Here as well, southern Mexico should be a priority, with new gas pipelines promising to help bring down the cost of energy in these states and create more attractive nearshoring opportunities. Mexico’s National Center for Natural Gas Control (Cenegas) should launch a new tender for private investment aimed at spurring investment in the south and southeast. Public-private partnerships will be key here as well, especially in order to navigate the local and community responses to developing additional pipeline infrastructure. Ensuring open and informed consultations with the communities affected by these developments will be vital to their success. Existing energy distribution projects such as the \textbf{Southeast Gateway}, intended to provide gas to the industrial zones located along the CIIT, should also receive renewed attention. Indeed, to the extent AMLO has staked his legacy on bringing new economic opportunity to Mexico’s south, he would do well to bring these pipeline projects to a swift conclusion before the end of his term.

- **Storage**: Storage capacity is a vital link in Mexico’s overall energy security and the ability of its grid to weather disruptions domestically or in relation to U.S. imports. Progress has been made recently, such as
Cenegas announcing its first ever tender for a strategic gas storage project in June 2023 at the Jaf field. If brought online, the Jaf project could offer as much as 17 billion cubic feet of storage, or enough to meet domestic gas consumption for four days. The awarding of this tender should come swiftly and be followed up with subsequent projects to bring additional capacity to bear. The Brasil field in Tamaulipas, for instance, has already been identified as another area with even greater storage potential located close to much of the gas-hungry industries in northern states. The United States and Canada, for their part, should seek to bolster technical cooperation with Mexico in identifying possible subterranean gas storage locations. These efforts could in turn build upon the agreements made at the 2023 North American Leaders Summit (NALS) to fortify geological information sharing and mapping for critical minerals, expanding such efforts to include identification of potential gas storage sites.

- **Export:** Amid global disruptions to the energy market, LNG exports stand out as one of the potential high-growth sectors for Mexico’s domestic gas industry. Europe stands out as a region looking for new suppliers to offset dependency on Russia and reduce Putin’s influence. While the United States has reoriented large portions of its exports to plug the gaps in European energy supply, leveraging North America as a bloc could help offer a more diverse supply and provide additional resources to improve energy resiliency. Southeast Asia also stands out as another region seeking new natural gas sources to fortify its own industrial development, and another potential market for Mexican LNG. This is doubly important as U.S. gas export terminals are predominantly clustered around the gulf coast, leaving the Pacific open for projects like the Costa Azul terminal in Baja California to give Mexico a competitive advantage in the LNG gas export market. Finally, within the Western Hemisphere itself, Mexico can play a vital role in supplying gas to the Northern Triangle. To do this, the United States should encourage the integration of southern Mexico with the SIEPAC. The DFC can also provide funding to support completion of a pipeline connecting Mexico with the Northern Triangle countries to fortify energy security and unlock the region’s ability to attract greater nearshoring investment.

- **Transition:** Natural gas may provide a boon to Mexico’s development in the short and medium term, but renewables ultimately will help lock in these gains over the long term. One avenue for Mexico to pursue could be reinvesting savings from cheap natural gas into developing additional renewables infrastructure. In southern Mexico, which has significant potential for coastal wind and solar power, natural gas investments should go hand-in-hand with renewables as a means to expand energy security more rapidly and further enhance the attractiveness of southern states for nearshoring. In addition, implementation of the North American hydrogen market discussed in the NALS may also provide incentives for Mexico to begin developing its own hydrogen hubs, though such projects ought to be tempered with the understanding that domestic gas production, transportation, and storage will all need to be scaled up before blue hydrogen initiatives can rise to sufficient economies of scale.

For Mexico to obtain energy security, capture nearshoring investments, and unlock the potential of its southern states, it will need to develop its natural gas resources. For the United States to reset the conversation on energy policy, foster more resilient supply chains, and address the root causes of migration, it too should encourage a more robust domestic energy sector in its southern neighbor. For both countries, engagement on natural gas represents just part of the puzzle, but nevertheless a piece that unlocks several opportunities that would otherwise remain hidden.
Ryan C. Berg is director of the Americas Program and head of the Future of Venezuela Initiative at the Center for Strategic and International Studies (CSIS) in Washington, D.C. Emiliano Polo is an intern with the CSIS Americas Program. Henry Ziemer is a research associate with the CSIS Americas Program.

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