



**Panel Summary: Energy Outlook in the Americas
October 24th, 2022**

Purpose: Analyze and discuss the strong links between Latin American oil exports and the United States. Panelists discussed the economic and security implications for the U.S. of a deteriorating relationship with Latin America's major oil exporters, including Brazil, Venezuela, Mexico, and emerging new oil exporter Guyana.

Executive Summary: On October 24th, 2022 a panel was held to discuss the energy outlook in Latin America. The panel was held by the Jack D. Gordon Institute for Public Policy and the Latino American Public Opinion Forum. The panel featured speakers from the Institute of the Americas, IPD Latin America, the Latin America Energy Program at Rice University, and the Global Energy Security Forum, consisting of a 90-minute panel.

Background: Venezuela produced around 2.85 million barrels a day when Nicolas Maduro assumed presidency in 2013. Petroleum prices plunged in the last quarter of 2014, even further through 2016 from about \$100 a barrel to \$25 a barrel. Crude output was negatively impacted by a perfect storm of low prices which really curtailed Petróleos de Venezuela, S.A. (PDVSA) ability to spend any capital expenditure (CAPEX). As climate change moves into the spotlight, Venezuela and LATAM as a whole must move towards renewables and other green energies. There are significant challenges ahead ranging from financial to social if Latin America is to meet its alternative energy goals and gain & maintain carbon neutrality.

Summary

Panel Participants: Jeremy Martin (Institute of the Americas), David Voght (IPD Latin America), Francisco Monaldi (Rice University), Benigna Leiss (Rice University), Edward Glab (Global Energy Security Forum)

Key Points

- Venezuelan Oil Sanctions: started off with limitations on financing and debt repayments and continued through to the inclusion of PDVSA and the Venezuelan Central Bank on OFAC SDN list
 - Forced a disorganized adjustment of PDVSA operating and trading activity, forcing production shut-ins as fewer tankers were available to lift crude and diluent supplied which was imported for heavy oil production in the Orinoco oil belt
 - US might consider a recalibration of sanctions, as policymakers realize that the original goal of sanctions (push a democratic transition) has not worked
- Environmental Consequences of Sanctions: Venezuela is currently flaring 2.5 billion cubic feet a day of natural gas, is the #7 globally in terms of gas flaring and venting, and the number one in terms of flaring intensity or amount of gas that is flared per barrel of oil produced



- Venezuela has 200 trillion cubic feet of natural gas reserves. Within three years Venezuela could produce enough to supply Trinidad's Atlantic LNG Train 1 at about 3.3 million tons per annum through both the Dragon offshore fields and through gas collection in the northeastern part of the country
- Imports and Exports: 95% of Venezuelan crude exports go to China at heavily discounted rates, there is value in creating optionality for Venezuela to divert crude from China to the Atlantic Basin
 - 68% of Venezuela's Orinoco oil belt production, which ranges from 400 to 500 barrels a day is produced with imported Iranian diluent
 - Iran provides in excess of 22 million barrels of condensate and light crude for both the purposes of blending extra heavy oil and for feedstock for Venezuela's refinery
 - Transparency: in transactions, being able to view exactly where cash flow is moving. minimizing shipping risk tankers
 - Majority of tankers leaving Venezuela currently leave with AIS or global positioning beacons off, creating environmental and maritime risk that could be mitigated with increased private sector participation
- Oil Production: Poor performance is attributed to a legacy of above ground risks in the in the sector, a mix of regulatory expropriation risks and mismanagement of the national oil companies
 - Brazil: has become the largest oil producer in Latin America, producing close to 3,000,000 barrels of oil per day
 - Guyana: produced around 110,000 barrels per day last year, currently producing upwards of 300,000, predicted to increase
 - Argentina: following the macro crisis of 2001, Argentina has had abysmal performance, despite their significant potential. Because of the development in Baka Muerta, there has been some leveling off of their production
 - Mexico: The Cantarell field depletion severely affected Mexico, production has not ever been able to replace reserves, and production has declined. Mexico's oil exploration was too late, too little, too late
- Cartelization of Critical Minerals: China dominates the lithium-ion battery supply, from the upstream all the way from the lithium deposit to manufacturing to the EV's themselves, involved in 60-80% of lithium-ion battery value chain

Actions/Deliverables

- Decarbonization: the overarching goal of energy transition
 - Globally 3/4 of the greenhouse gas emissions Are derived from the energy sector
 - We will see continued growth in wind and solar, and perhaps geothermal, offshore,



wind to reduce the emissions

- Critical Minerals: To reach net zero, there is a need for substantial quantities of critical minerals, around quadruple the current amount
 - Energy transition cannot happen without enormous amounts of critical rare Earth minerals like lithium, graphite, cobalt, nickel
 - Lithium: Only Argentina and Chile possess reserves, Bolivia's lithium is not reserved, as they don't have the current capabilities to extract it. Chile is 2nd largest producer of lithium in the world, Chile is 3rd
 - Opportunities to increase lithium being inhibited by above ground issues, the social license to operate because it's not just government regulation, there are legitimate real concerns from populations from citizens around what the impacts will be
 - Copper: necessary for electric vehicles, and in the transmission of electricity. Chile is #1 producer, Peru is 2nd
 - The context of what a massive expansion of mining is going to be necessary, and what's the carbon footprint going to be of that and what's going to offset it
- Renewable Energy:
 - Mexico produces 11.9. terawatt hours of generation with a capacity of 5.6 gigawatts for solar, Brazil and Chile are top producers of wind power, Brazil is a top produced of bio fuels
 - Green Hydrogen: could play a key role in reducing mining operation emissions
 - Sustainable Aviation Fuels: Produced from hydrogen. Latin America will have an opportunity a near term opportunity. When we talk about transport, we oftentimes don't think about air transport, but I think that's an area where Latin America can be impactful
- Future for Region: Latin America has a big role to play in the in the future in terms of increasing production
 - Guyana will likely be the largest oil producer per capita on Earth, surpassing Kuwait and the Emirates, stemming from discoveries by Exxon & Hess and CNOOC from China