

BOARD OF ADVISORS

Nigel Blackaby

Global Head,
International Arbitration Group,
Freshfields Bruckhaus Deringer

María José Cortés

Head of ESG,
Atlas Renewable Energy

Jeffrey Davidow

Senior Counselor,
The Cohen Group

Analia Gonzalez

Leader, Arbitration & Litigation,
Latin America, BakerHostetler

Jonathan C. Hamilton

Partner,
White & Case

Raul Herrera

Partner,
Corporate & Securities Practice,
Arnold & Porter

James R. Jones

Chairman,
Monarch Global Strategies

Jorge Kamine

Partner,
Corporate & Financial Services,
Willkie Farr & Gallagher

Craig A. Kelly

Senior Director,
Int'l Gov't Relations,
Exxon Mobil

Jorge León

Energy Economist,
BP

Jeremy Martin

Vice President, Energy & Sustainability,
Institute of the Americas

Larry Pascal

Chairman,
Americas Practice Group,
Haynes & Boone

R. Kirk Sherr

President,
Clearview Strategy Group

Daniela Stevens

Director, Energy, Climate Change &
Extractive Industries Program,
Inter-American Dialogue

Mark Thurber

Partner,
Hunton Andrews Kurth

Alexandra Valderrama

Director,
International Government Affairs,
Chevron

Vanessa Wottrich

Principal Analyst for Latin America,
Equinor

FEATURED Q&A

Is Chile Losing Ground to Other Lithium Producers?



Chile's lithium production slipped to second place in the world in 2017, and it is expected to fall to third place by 2028. // File Photo: Chilean Government.

Q Chile is home to the world's largest reserves of lithium, a mineral that is key to the energy transition. However, the South American country is currently the world's second-largest producer of lithium after Australia surpassed it in 2017, and Argentina is also expected to overtake Chile in lithium production by 2028, according to a recent forecast from JP Morgan. How important is lithium to Chile's economy? What are the biggest challenges for the sector, and why is the country losing ground to competitors? To what extent is the Boric government expected to support the sector? What lessons can Argentina learn from Chile's experience?

A Gal Luft, co-director of the Institute for the Analysis of Global Security in Washington: "In the early days of the oil industry, Azerbaijan was the world's biggest petroleum producer. But as demand for automotive fuel spiked, the country lost its hegemony to other producers, mainly in the Middle East. Chile is poised to meet a similar fate when it comes to its lithium. The country has already lost its number-one producer status to Australia and it is expected to slide even lower on the producers list as new projects are coming online in China, Argentina and elsewhere. The Chilean lithium industry scored a lot of headlines thanks to its role in the global green energy transition, but in reality, it is not a big player in Chile's economy, and it is not expected to ever become one. Lithium carbonate makes up barely 1 percent of Chile's export revenues. The industry faces many detractors and challenges. Environmental groups and the Indigenous population

Continued on page 3

TOP NEWS

OIL & GAS

Brazil Could Move to Privatize Petrobras Next Year: Bolsonaro

Brazilian President Jair Bolsonaro said the privatization of state oil company Petrobras could advance next year if he is re-elected in October.

Page 2

POWER SECTOR

Luma Energy Vows to Improve Service in Puerto Rico

Luma Energy, which operates Puerto Rico's electricity transmission and distribution system, vowed to dedicate more resources to improve service on the island. The U.S. territory has experienced persistent blackouts.

Page 3

OIL & GAS

Industry Officials Blast Colombia Tax Reform Plan

Colombian President Gustavo Petro's tax reform proposal would hurt the economy and the extractive sector, industry representatives said this week.

Page 2



Petro // File Photo: @petrogustavo via Twitter.

OIL & GAS NEWS

Brazil Could Move to Privatize Petrobras Next Year: Bolsonaro

Brazilian President Jair Bolsonaro said Aug. 26 that the privatization of state-owned oil company Petrobras could advance next year if he is re-elected in October, Reuters reported. Bolsonaro said he has given Brazil's Minister of Mines and Energy, Adolfo Sachsida, the "green light" to advance the proposal next year. Bolsonaro said he believes a privatization "would work out well." The president made the comments in an interview with local TV and radio



Bolsonaro // File Photo: Brazilian Government.

station Jovem Pan. Earlier this year, Bolsonaro's administration privatized state-run energy company Eletrobras through a public offering that reduced the government's voting equity interest to 45 percent, Opportimes reported. The move was part of the Investment Partnerships Program (PPI) that aims to increase the role of the private sector and private investment in infrastructure projects. Bolsonaro has long been suggesting that Petrobras could be privatized. In June, the company was included in the PPI for study, a first step toward a potential privatization, Reuters reported. Bolsonaro's principal rival in the Oct. 2 presidential election, former President Luiz Inácio Lula da Silva, has said he opposes privatizing Petrobras. Lula's campaign recently released a study of the oil and gas sector that called for reversing some refinery privatizations as part of an effort to boost the state oil company's refining capacity. Lula currently has around a 10-point lead over Bolsonaro in voter intentions in the first round,

according to polls aggregator PollingData. [Editor's note: See [Q&A](#) on Petrobras in the June 3 issue of the Energy Advisor.]

Mexico's Natural Gas Production Rises for Third Straight Month

Natural gas production in Mexico rose for the third straight month in July and was also up year-on-year, while oil production was down compared to the same month in 2021, Natural Gas Intelligence reported on Aug. 25, citing statistics from Mexico's National Hydrocarbons Commission. Natural gas production in July reached 4.1 billion cubic feet per day (bcf/d), compared to 4.04 bcf/d in June and 3.86 bcf/d in July 2021. Natural gas production by state oil company Pemex and private producers were both up, with Pemex accounting for more than 90 percent of production. As production has risen, imports have fallen some, with imported natural gas supplying 86 percent of the country's demand in April as compared to 92 percent a year earlier. Meanwhile, oil production dropped year-on-year to 1.62 million barrels per day (bpd) from 1.67 million bpd in July 2021. While Pemex's oil production in July was roughly similar to that of June, its production dropped year-on-year while private oil production was up nearly 50 percent compared to July 2021. Since taking office in 2018, Mexican President Andrés Manuel López Obrador has sought to encourage the prominence of Pemex in the country's oil sector. [Editor's note: See related [Q&A](#) in the Aug. 5 Energy Advisor.]

Industry Officials Blast Colombia Tax Reform Plan

The Colombian government's current tax reform proposal would hurt the economy and negatively affect extractive industries and tourism, representatives of the sectors said on Monday, Reuters reported. Shortly after taking office earlier this month, Colombian President

NEWS BRIEFS

Cuba Increases Fuel Imports in Wake of Fire at Matanzas Oil Terminal

Cuba has increased its imports of fuel from Europe and the Caribbean following the massive fire this month at the Matanzas super port, the country's main oil terminal, Reuters reported Aug. 25. Sixteen people were killed in the fire, which began when the facility was struck by lightning on Aug. 5. Cuba is also using ship-to-ship transfers and floating oil storage facilities following the terminal's partial destruction in the blaze. [Editor's note: See related [Q&A](#) in the Aug. 26 issue of the Energy Advisor.]

Mexico's Oil Processing Rose in July: Pemex

Mexican state oil company Pemex said Aug. 26 that oil processing at six refineries increased 15 percent in July as compared to the previous month, Reuters reported. However, the figure is below the target of 1 million bpd set by the government and Pemex for the end of 2022. Meanwhile, crude exports rose slightly, with production close to 1.7 million barrels per day (bpd), although that figure is also below the target of 1.9 million bpd for 2022. [Editor's note: See related [Q&A](#) in the June 17 issue of the Energy Advisor.]

Cuba Seeks to Double Output From Turkish Floating Power Plants

Cuban officials are in negotiations with Karpowership, a Turkish firm that provides electricity through shipboard generators, to double the company's power output in the Caribbean country, Reuters reported Wednesday, citing two people with knowledge of the discussions. The Turkish company already has five floating power generating facilities operating off Cuba's coastline, with a capacity of approximately 250 megawatts, the wire service reported. Karpowership is part of Karadeniz Holding.

Gustavo Petro proposed a reform aimed at increasing tax income by \$5.7 billion next year, or 1.7 percent of GDP, to finance social spending and anti-poverty programs, the Financial Times reported. To finance this, the bill would implement a new 10 percent tax on income earned when oil and coal—the country’s two main exports—exceed specified thresholds as well as raise taxes on corporate dividends, among other measures, Reuters reported. Francisco Lloreda, the head of the Colombian Petroleum Association, said Monday that the tax reform puts oil and gas projects and exploration at risk. He added that overall the measures could increase the oil sector’s tax burden from 65 to 80 percent. Likewise, Camilo Nariño, the head of the Colombian Mining Association (ACM), said the bill would hurt investment and job creation in the mining sector, while Paula Cortes, the president of the Colombian Travel Agency and Tourism Association, said proposed tax increases on package tours and airline tickets would hurt that sector. The Colombian government has said it is willing to negotiate the reform and earlier this week announced it would remove gold exports from the products subject to the new 10 percent tax, Mining.com reported.

POWER SECTOR NEWS

Luma Energy Vows to Improve Service in Puerto Rico

Luma Energy, which operates Puerto Rico’s electricity transmission and distribution system, on Aug. 24 said it would dedicate more resources to improve service on the island, the Associated Press reported. The U.S. territory has seen persistent power outages, and the company’s vow to improve service followed the Puerto Rican Senate’s launch of a hearing to scrutinize the commonwealth’s contract with Luma, which is a consortium made up by Canada’s Atco and Houston-based Quanta Services, the AP reported. Luma said Wednesday that it would bolster its response teams by 5 percent

FEATURED Q&A / Continued from page 1

are becoming increasingly agitated by the environmental impact of lithium production. The industry is increasingly being viewed as a liability rather than an asset. In addition, the idea of increasing mining royalties and even nationalization of key resources by a socialist government, while presently not on the agenda, is still in the public discourse, chilling investors’ appetite to partake in the future development of the industry. Many investors, including top Chilean producers SQM and Albemarle, are seeking greener pastures in neighboring Argentina, where the regulatory conditions appear to be more favorable. This may be misleading. Argentina is now desperate for foreign investment and may be more welcoming, but it too is expected to face similar problems as Chile. It is encouraged to proceed with caution, ensuring that the industry grows in a healthy pace and remains transparent and ecological. Rapid industry expansion is hugely risky. The sharp spike in electricity prices throughout the world could dampen demand for electric vehicles and reverse optimistic projections about a lithium boom, leaving enthusiastic lithium investors in Latin America with big holes in their pockets.”

A Carla Bass, Latin America editor at Argus Media: “The strategic and future importance of Chile’s lithium reserve outweighs its immediate economic contribution. Copper dominated all but a sliver of the entire mining industry’s 14.6 percent share of Chile’s GDP in 2021. Restrictive regulations have limited the number of lithium producers to two, while other countries have taken a more open approach to international investment. The Boric administration’s focus is on launching a national lithium company and creating value-added lithium products domestically. Chile will need a significant infusion of funding to do this. It has not ruled out public-private partnerships for the state firm, which could provide a boost. Yet, the new administration has tasked itself with

numerous priorities including writing a new constitution—even if lithium is also a focus—and it could struggle to maintain momentum. Argentina’s new energy minister, after several cabinet shakeups, is Flavia Royón, who in her previous post in Salta province worked to open development of lithium there to both domestic and foreign companies. This could help cement the sector in Argentina, although it faces additional economic challenges, including energy subsidies that could reach 3 percent of GDP this year. Argentina’s new reference prices for lithium carbonate could also deter investment, some industry groups warn, while Chile may offer preferential prices and guaranteed supply agreements for makers of value-added products. Mexico and Bolivia are striving for value-added approaches as well but are progressing slowly. Yet more competitors will eventually emerge, and Chile will need to be proactive for lithium to form a larger share of its economy.”

A James J. A. Blair, assistant professor in the Department of Geography and Anthropology at Cal Poly Pomona: “Chile is well known as a source not just of lithium but also copper, with mining contributing more than 60 percent of the country’s exports. However, a series of scandals, some involving litigation, have halted expansion of lithium mining. While some benefit-sharing agreements do exist, there has also been a lack of timely consultation of Indigenous communities. There have also been several controversies over corruption and data transparency, as well as widespread concerns over water depletion and wetland conservation. The reliance on brine evaporation as an extraction method for lithium mining has exacerbated conditions of ecological ‘exhaustion.’ There is an ongoing debate about how brine resources are connected to nearby lagoons, but scientists have already demonstrated that lithium mining is linked to declining local populations of two of the three

Continued on page 6

over the next month and also remove vegetation that covers 20 percent of the island's most critical transmission lines, as well as conduct more aerial inspections of transmission lines. Additionally, the company said it would hold more inspections of power substations after eight caught on fire over the past year. "We have made mistakes. We recognize our faults," said Duke Austin, Quanta Services' chief executive officer. Last week, the Coalition for Energy Thought, or COPE, a citizens' group that aims to promote understanding of options for the administration of Puerto Rico's electrical service, called for a protest against Luma outside of La Fortaleza, the governor's residence, El Nuevo Día reported.

POLITICAL NEWS

More Than 6.8 Mn Have Fled Venezuela Since 2014: Agencies

More than 6.8 million Venezuelans have fled their country since 2014, according to a tally by a group of United Nations Agencies, nongovernmental organizations, faith-based groups and others. As of August, Colombia has hosted the largest number of Venezuelans, at more than 2.4 million, while Peru has more than 1.2 million, Ecuador has 502,000 and Chile has 448,000, according to the Inter-Agency Coordination Platform for Refugees and Migrants From Venezuela. The number of people who have fled Venezuela amid the country's political and economic crises are on par with the 6.8 million who have fled Ukraine and the 6.6 million who have fled Syria, CNN reported Wednesday. "The United Nations confirmed that the number of displaced Venezuelans has reached 6.8 million people—tying with Ukraine for the largest refugee and migrant crisis worldwide, and surpassing Syria for the first time ever," said Rachel Schmidtke, a senior advocate at Refugees International, CNN reported. Some 150,000 Venezuelans returned home during the height of the Covid-19 pandemic, Al Jazeera reported, citing U.N. estimates.

Subscriber Notice

Offshore Wind Energy in LAC: Gauging Speed and Direction

SPEAKERS

<p>Thiago Barral President, Empresa de Pesquisa Energética</p>	<p>Mark Leybourne Senior Energy Specialist, World Bank</p>
<p>Ramón Fiestas Chair, Latin America Committee, Global Wind Energy Council</p>	<p>Leila Garcia da Fonseca Senior Research Manager, Power & Renewables, Wood Mackenzie</p>

MODERATOR

Daniela Stevens
 Director, Energy, Climate
 Change & Extractive Indus-
 tries Program, Inter-American
 Dialogue

Thursday, September 8 11 a.m. - 12 p.m. EDT

Inter-American Dialogue

To RSVP, click [here](#)

Envoy Meets With Maduro as Venezuela, Colombia Revive Ties

Colombia's new ambassador to Venezuela, Armando Benedetti, met Monday in Caracas with Venezuelan President Nicolás Maduro as the two countries re-established ties after a three-year break in relations, CNN reported. "At this hour I'm received by President Nicolás Maduro, to whom I present diplomatic papers as Colombia's ambassador in Venezuela. We talked about the urgency to revive friendship

ties that should have never been severed," Benedetti said in a posting on Twitter, along with several photos of him and Maduro. Venezuela's new ambassador to Colombia, Félix Plasencia, on Wednesday presented his credentials to Colombian Foreign Minister Álvaro Leyva, the Associated Press reported. The two countries have not had formal diplomatic relations since 2019 when then-Colombian President Iván Duque recognized Venezuelan opposition leader Juan Guaidó as Venezuela's interim president. The two new ambassadors arrived at their posts on Sunday, the Associated Press reported. The countries are also exploring closer military cooperation. [Editor's note: See related [Q&A](#) in the Aug. 17 issue of the Advisor.]

NEWS BRIEFS

Mexico's Interior Sec'y Apologizes to Relatives of Victims in 2011 Fire

Mexican Interior Secretary Alejandro Encinas on Wednesday apologized to relatives of people who died in a 2011 arson attack at a casino that killed 52 people, saying the government had been remiss in ensuring safety measures at the Casino Royale in Monterrey, the Associated Press reported. The Zetas drug cartel set the fire to enforce a demand for protection payments. A decade later, only five of the alleged attackers have been convicted, but on unrelated weapons charges involving the guns they were carrying at the time they were arrested, according to the AP.

Lula's Lead Ahead of Bolsonaro Narrows Before Brazilian Election: Poll

Former Brazilian President Luiz Inácio Lula da Silva's lead over incumbent President Jair Bolsonaro has narrowed ahead of Brazil's October election, the latest CNT/MDA poll said on Tuesday. Lula has 42.3 percent of voter support against 34.1 percent for Bolsonaro in first-round voting. Lula, who was president from 2003 to 2011, would win a second-round runoff against Bolsonaro with 50.1 percent of votes versus 38.8 percent for Bolsonaro, according to the poll.

Panama's President Signs Two Laws Allowing Use of Medical Cannabis

Panamanian President Laurentino Cortizo on Wednesday signed two new laws to allow the use of cannabis and its derivatives for medical and therapeutic uses, local newspaper La Estrella de Panamá reported. Panama has among the strongest cannabis regulations in the region, said Cortizo, adding that the new laws will help provide relief to "thousands of patients."

Violence Against Women, Girls Rises in Mexico: Survey

Violence against women and girls has increased over the past five years in Mexico, and more than 70 percent of the country's female population over 15 has experienced some type of violence, Mexico's statistics office said Tuesday in announcing the results of a new survey, Reuters reported. That percentage rose four points since the last time the survey was conducted in 2016. "Violence against women continues to be a challenge in the country and constitutes a public health problem," Graciela Márquez, the president of the statistics office, INEGI, told reporters. Reports of sexual violence increased at the highest rate in the survey, with half of the women polled reporting such incidents. "Mexico is living an undeniable crisis of gender violence and femicides that must be resolved urgently," Lisa Sánchez, the general director of Mexico United Against Delinquency, told the Dialogue's daily Latin America Advisor in a Q&A published Feb. 27, 2020.

ECONOMIC NEWS

IMF Approves New \$18.5 Billion Credit Line for Chile

The International Monetary Fund (IMF) announced on Monday that it had approved a two-year \$18.5 billion credit line for Chile, which will increase the country's reserves and help defend the peso's value in the face of global risks. The credit line is intended as "insurance against adverse scenarios" and will be treated as "precautionary" by Chilean authorities, the IMF said. Chile qualified for the flexible credit line (FCL) due to its "very strong economic fundamentals and institutional policy frameworks" as well as its track record and the government's commitment to maintain strong

policies moving forward, the IMF stated. Chile will be able to draw on the FCL funds at any time and with no conditions in order to address any possible balance of payment problems. At the same time, Chile announced the cancellation of its existing short-term liquidity line (SLL) of \$3.3 billion with the IMF. The Chilean central bank said the FCL will increase its available liquidity by more than 40 percent. It added that it had begun negotiating the credit line in July amid greater global uncertainty. Although Chile's economy has rebounded from the Covid-19 pandemic, the economy is facing a series of risks, including a possible global economic slowdown, commodity price shocks, a global tightening of financial conditions and the impacts of the war in Ukraine, the IMF said.

Colombian Gov't Plans to Increase Budget by \$2.28 Bn

Colombia's government will seek to raise its 2023 budget by \$2.28 billion, Finance Minister José Antonio Ocampo said on Tuesday, Reuters reported. The government of leftist President Gustavo Petro is proposing the largest budget in Colombia's history, at \$91.5 billion. Ocampo said the increase does not take into account funds that would be raised by Petro's controversial tax reform plan, which seeks to raise more than \$11 billion per year in tax revenue by 2026. "The possibility of increasing some spending in the budget will depend on the tax reform. That will be the focus of a bill to add to the budget which we will present next year," he said. Ocampo also revised Colombia's economic growth projections for next year down to 2.2 percent, from a previous estimate of 3.2 percent. Business leaders in the extractive industries and tourism sector in Colombia on Monday criticized Petro's tax plan, saying it would stifle growth. "Finance Minister Ocampo, like his predecessors, understands the structural flaws of the current tax system, but he will face the same obstacles as previous ministers in trying to fix them," Joydeep Mukherji, a managing director at S&P Global, told the daily Latin America Advisor in a Q&A published on July 29.

FEATURED Q&A / Continued from page 3

species of flamingo in the Atacama salt flat, suggesting that impacts could worsen as lithium mining expands. If the new constitution is approved in Chile, it could offer mechanisms for stronger monitoring and governance through specific articles related to mining and water. Chilean President Gabriel Boric has shown support for the sector by proposing the creation of a state lithium company that would partner with private firms to expand and offer more shared regional governance with Argentina, Bolivia and Mexico through a lithium association. As far as what lessons these countries could learn from Chile, Indigenous rights to free, prior and informed consent must remain paramount, and it may be prudent to be less reliant on brine evaporation as an extraction method, while instead encouraging faster, potentially more sustainable ways of obtaining lithium through battery recycling or direct lithium extraction, particularly in arid areas where brine deposits are connected to freshwater aquifers and fragile wetlands. Nonetheless, it is critical for freshwater use and brine disposal to be closely monitored and regulated."

A **Daniel Jimenez, partner at iLiMarkets in Santiago:** "Indeed, Argentina will overtake Chile in lithium production. Lithium legislation in Chile has been the biggest deterrent to the industry's development because the owner of a mining property is not the owner of any lithium resource found there. The miner would need to apply for a special exploitation license, which no privately owned company has yet been granted. So, the incentives to explore have not been there. This, added to populist proposals to nationalize lithium, creates perfect conditions not to invest. Finally, permitting is a nightmare in Chile, and it is becoming worse. In terms of the importance of lithium to Chile's economy, recent lithium prices have certainly changed things in a big way. During

the first half of 2022, SQM alone contributed more tax revenues and royalties than Codelco, the state-owned copper company. The biggest challenges for the sector, however, remain jurisdiction and permitting. Instead of supporting the sector, the Boric administration is planning to create a state-owned lithium company, which will most likely not develop anything in the next 10 years. Argentina should not try to learn any lesson from Chile's experience and should continue doing what it has done: treating lithium like any other mineral and allowing the industry to flourish."

A **Manuel Agosin, professor in the school of economics and business at the University of Chile:** "The problem is government policy. The current government wants to establish a state-owned lithium company without having the technical knowledge of how to extract and commercialize the sector. This is a rapidly moving story. Those who

“The government should try to extract as much value as it can from multinationals willing to enter the sector.”

— Manuel Agosin

don't get into the act soon are bound to be left on the sidelines. Having lithium is not enough. It is essential to go beyond ideology so that the Chilean people can benefit from this resource. Using lithium as a springboard to a new era of advanced manufacturing will not happen. Instead, the government should try to extract as much value as it can from multinationals willing to enter the sector."

The Advisor welcomes comments on its Q&A section. Readers can write editor Gene Kuleta at gkuleta@thedialogue.org.

LATIN AMERICA ENERGY ADVISOR

is published weekly by the
Inter-American Dialogue ISSN 2163-7962

Erik Brand

Publisher
ebrand@thedialogue.org

Gene Kuleta

Editor
gkuleta@thedialogue.org

Megan Cook

Reporter
mcook@thedialogue.org



Rebecca Bill Chavez, President
Bruno Binetti, Nonresident Fellow
Sergio Bitar, Nonresident Senior Fellow
Joan Caivano, Senior Advisor
Santiago Cantón, Director, Rule of Law Program
Kevin Casas-Zamora, Nonresident Senior Fellow
Julia Dias Leite, Nonresident Senior Fellow
Ariel Fiszbein, Director, Education Program
Sandra García Jaramillo, Nonresident Senior Fellow
Selina Ho, Nonresident Senior Fellow
Edison Lanza, Nonresident Senior Fellow
Nora Lustig, Nonresident Senior Fellow
Margaret Myers, Director, Asia Program
Manuel Orozco, Director, Migration, Remittances and Development Program
Xiaoyu Pu, Nonresident Senior Fellow
Jeffrey Puryear, Senior Fellow
Michael Shifter, Senior Fellow
Tamar Solnik, Director, Finance & Administration
Lisa Viscidi, Nonresident Senior Fellow

Latin America Energy Advisor is published weekly, with the exception of some major U.S. holidays, by the Inter-American Dialogue 1155 15th Street NW, Suite 800 Washington, DC 20005

www.thedialogue.org

Subscription inquiries are welcomed at ebrand@thedialogue.org

The opinions expressed by the members of the Board of Advisors and by guest commentators do not necessarily represent those of the publisher. The analysis is the sole view of each commentator and does not necessarily represent the views of their respective employers or firms. The information in this report has been obtained from reliable sources, but neither its accuracy and completeness, nor the opinions based thereon, are guaranteed. If you have any questions relating to the contents of this publication, contact the editorial offices of the Inter-American Dialogue. Contents of this report may not be reproduced, stored in a retrieval system, or transmitted without prior written permission from the publisher.