XXXIII

LA JOLLA

· ENERGY CONFERENCE ·

SUMMARY REPORT

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INTRODUCTION

The XXXIII La Jolla Energy Conference held on October 16-17 brought together experts and leaders to explore the pressing challenges and transformative opportunities facing the energy industry today. Again this year, the agenda was designed in our hallmark fashion to foster “big debates” and “deep dive” discussions aimed at shaping critical issues and understanding the evolving trends facing Latin America and the Caribbean's energy landscape.

Panel discussions focused on navigating energy, economic, financial, and social transformations essential to achieving a sustainable future. The pathway to decarbonization and Net Zero targets underscored the vital roles of natural gas, low-carbon technologies, and innovative solutions, with insights into how each can contribute to a realistic yet ambitious energy transition. Attendees also examined the geopolitical dynamics and importance of regional integration and collaboration, essential for addressing the cross-border nature of energy needs and climate goals. Not surprisingly, the role of China also cropped up repeatedly.

Electrification was another central topic, with discussions on infrastructure, data centers, AI, and nearshoring as key enablers. Industry leaders discussed the technological, financial, and regulatory frameworks needed to support this shift, highlighting financing options and policy innovations aimed at ensuring energy security and supporting climate objectives.

This report captures highlights and synthesizes the main discussion points that made this year’s La Jolla Energy Conference a fertile ground for exchanging ideas, fostering partnerships, and advancing actionable strategies for the future of energy.

Opening Keynote Address

Robert M. Persaud, Foreign Secretary, Ministry of Foreign Affairs and International Cooperation of the Co-operative Republic of Guyana formally opened this year's conference with a keynote address. His remarks sought to highlight the critical balance between fostering international development and ensuring environmental sustainability, with the case of Guyana, one of the world's fastest-growing economy.

Foreign Secretary Persaud underscored how, despite Guyana's recent discovery of oil and its emerging role as a major producer, the country remains committed to sustainable practices. Since the restoration of democracy in 1992, Guyana has worked to improve its citizens' livelihoods while advancing environmental protection through initiatives like the Low Carbon Development Strategy (LCDS), originally launched in 2009 and significantly expanded in 2022.

Guyana's abundant forest coverage, which accounts for over 6% of the country's landmass, plays a pivotal role in climate change mitigation as the nation is recognized as a carbon sink. In February 2024, the country achieved a significant milestone by using carbon credits in global emissions reduction programs for the aviation industry. Additionally, Guyana has committed to doubling its protected areas by 2025 and launched a Global Biodiversity Alliance to enhance its environmental commitments.

As a coastal nation vulnerable to rising sea levels and agricultural risks, Guyana is actively pursuing renewable energy. The goal is to supply 70% of the country's energy needs through a mix of natural gas, solar, wind, and biomass. In addition to this, two hydroelectric projects and a gas-to-energy pipeline project are on the horizon, aiming to reduce energy costs by 50% and cut reliance on external resources. These projects are seen as crucial steps in nurturing the country's energy transition while providing job opportunities and boosting local capacity.

Transparency and adherence to international environmental standards are central to Guyana's approach he was keen to note. While energy demand is expected to rise by 50% by 2050, the country is determined to find a path that ensures both energy security and environmental sustainability.

He also shared insights as to the potential role and importance of the Guyanese diaspora community for the country's continued economic development and outlook.
In closing, Foreign Secretary Persaud set forth that Guyana has positioned itself as a key player in the global energy conversation. As noted, "There will be no conversation on sustainable energy without Guyana being part of that conversation." The country aims to demonstrate how development and sustainability can coexist, setting an example for other nations facing similar challenges.

LA JOLLA CONFERENCE “THE BIG DEBATES”

Decarbonization and Net-Zero Reality Check: Too Fast, Too Soon?

The first "Big Debates" session centered around the challenges and complexities of achieving net-zero targets, with a focus on whether the energy transition is moving "too fast, too soon." The discussion focused on the obstacles to decarbonization, such as insufficient investment in new technologies, the lack of large-scale infrastructure upgrades, challenges in data collection and reporting as well as discussing the importance of creating a more integrated, coordinated, regional approach to tackling climate change. The panel also highlighted the environmental impact of resource extraction and the resistance to climate change measures, making clear that while the urgency of the energy transition is recognized, practical hurdles remain.

One of the recurring themes of the panel was the debate over the pace of the energy transition. Panelists agreed that while accelerating decarbonization is necessary, moving too fast can be harmful. A rapid shift without proper planning and foundational support may lead to volatility and disruptions in the existing energy supply. Ensuring a stable transition is crucial to avoid potential supply shortages and maintain consistent energy availability as new renewable sources are gradually integrated.

Additionally, the gap between global ambitions and regional realities was emphasized, particularly in Latin America, where energy transition efforts are hindered by inadequate infrastructure and uneven adoption of technologies like electric vehicles (EVs). There was agreement that, despite the challenges, Latin America has significant potential in the energy transition, especially with renewable energy resources and the potential for green hydrogen production.

The discussion also touched on the multidimensional nature of the energy transition, emphasizing that there is no one-size-fits-all solution. Different regions and industries require tailored strategies, and collaboration across sectors is vital. This is particularly the case across the extremely diverse region of Latin America and the Caribbean. Panelists advocated for a technology-neutral approach that allows for a mix of energy sources, with particular attention to the total cost of ownership (TCO) for each technology and its respective business models.

Regarding the role of hydrocarbons, panelists acknowledged that reducing coal usage is critical, as emphasized by the IPCC reports. While coal's role is expected to diminish, oil and gas will remain integral to the transition in the near term, especially given the complexity of creating a renewable-based energy system that can meet the growing demand. The need for better coordination between sectors was also noted, as moving forward requires synchronized efforts across transportation, conversion capabilities, and final energy demand.

Finally, the panel addressed the issue of climate change adaptation, particularly in regions like Latin America that contribute little to global emissions but face significant climate impacts. Funding for adaptation remains a major challenge, as the financial mechanisms promised in the past have not been delivered, leaving many regions unable to access the necessary resources. While mitigation projects receive more attention and funding, adaptation efforts are still lagging behind. The panelists highlighted the importance of identifying regional opportunities and specific corridors to make the energy transition more feasible and effective.

Electrons and Molecules: A Dual Currency for Latin American Integration

The second "Big Debates" session focused on electrons and molecules as a dual currency for Latin America. This region is, in many ways, at the center of the global shift in both energy demand and supply. However, China is also playing an increasing role as Latin America's largest investor and supplier of renewable materials. Critical minerals for the green energy transition are even more geographically concentrated than fossil fuels, and China is dominating not only many of these raw material supplies, but also up to 2/3 of the processing and refining. Furthermore, China is willing to construct energy infrastructure on accelerated timelines unmatched by Western investment for many Latin American countries. Control of these strategic energy systems and supply chains is a paramount concern given Russia's invasion of Ukraine, a new iteration of war in the Middle East, and Chinese aggression toward Taiwan. These realities present Latin America with both risks and opportunities in the evolving energy sector.

A recurring theme of this debate was the need for greater integration despite significant regional diversity in capacity, resources, and politics. In the wake of a 25 year "golden age" 1991-2016 of trade expansion and global economic efficiency, the panelists now see a geoeconomically fragmented world harming Latin American interests and development prospects.

Panelists suggested that the EU's advanced integration example is admirable though not entirely applicable or feasible for Latin America due to the latter's lagging levels of development, weak middle class, and high poverty rates. Additionally, scarred relationships between Latin American states (especially Chile-Bolivia, Peru-Ecuador, etc.) continue to impede such integration. Certain states like Argentina, Chile, Uruguay, and Costa Rica nearly resemble European nations in their levels of development, while others struggle to provide basic services to their citizens.

Current geopolitical and economic conditions are challenging for regional integration, as seen in the weakening of even the most integrated systems of cooperation and interdependence within the EU. These challenges, however, should not deter Latin America from pursuing integration and the associated benefits of lowers costs and increased efficiency, especially on infrastructure. Common regulatory frameworks and market rules create an economic landscape amenable to foreign investment. Even with this foundation, all speakers recognized that a plurality of heterogeneous energy transitions are needed to accommodate just and inclusive solutions across the Latin American region.

The panelists also stressed the unjust nature in many cases as to how the Global North is imposing environmental and energy transition policy on Latin America. Global North states have been the greatest greenhouse gas emitters for the past century and are responsible for many of the present-day impediments to Latin American development.

Today, the most severe impacts of climate change are felt by the Global South, as seen through the unprecedented El Niño effects, droughts, floods, and wildfires throughout Latin America in the past year. According to the panel, Latin America today only accounts for 5% of total greenhouse gas emissions despite only counting 8% of the population. It also boasts the cleanest energy matrix of any region on the planet. Latin America is doing its part despite lacking the scale of resources available to regions like the EU. Various panelists agreed that development is the primary priority and clean energy goals should complement, not detract, from that aim.

In summary, “Net Zero” should be treated as a “compass rather than the final destination”.

SPOTLIGHT SESSIONS

Regional Geopolitics: Collaboration or Fragmentation

Panelists noted that Latin America is unlikely to return to its pre-pandemic economic levels, which increases global competition and conflict complexity. Despite this, Latin America holds a unique advantage due to lower levels of inter-country conflict compared to other regions, presenting many opportunities for growth.

Meanwhile, China’s growing interest in Latin America stems from the region’s economic potential, particularly in commodities and manufacturing. By promising economic prosperity, China minimizes concerns that foreign investors might have, thereby creating a strong dependency on Chinese investments. This dependency is becoming so pronounced that China’s agricultural policies could eventually have a greater impact on Brazilian markets than Brazil’s own policies. Additionally, China may leverage trade deals to promote the use of its currency as part of its broader global strategy, making Latin America a key partner.

At the same time, panelists highlighted that the U.S. has not been as engaged with Latin America due to conflicts and concerns in other regions, leaving room, in their opinion, for China to step in with investments that come with minimal strings attached.

Panelists contended that in many ways the U.S. is failing to recognize Latin America’s potential beyond commodities. The region holds significant mineral resources crucial for the energy transition, and there is vast potential for manufacturing growth. While China has capitalized on this, the U.S. has, in their view, too often been sidetracked or diverted by issues like organized crime and drug trafficking, inhibiting investments. However, near-shoring partnerships with Mexico and other Latin American countries should offer opportunities for the U.S., though China also casts a shadow over many of key supply chains.

Looking ahead to the U.S. election, the panelists suggested that China might favor a Trump victory due to his focus on bringing industry back to the U.S., which would open further international opportunities for China as the U.S. withdraws from global markets.

On the political front, the panelists predicted fewer leftist "pink tides" in Latin America. Both right- and left-wing political leaders are eroding national programs, particularly through the judicial system, weakening democracy and fragmenting internal politics. This issue is impacting societies and institutions across the region.

The panelists concluded by discussing the lack of collaboration among Latin American countries, particularly on climate action. While the region has significant potential to lead climate initiatives, there is skepticism about whether Latin American nations can unite to tackle the energy transition effectively. Despite the challenges, the climate crisis could drive more regional cooperation in the future.

Electrification Outlook: Feeding the Beast?

The panelists discussed the sustained demand for large-scale energy consumers, fueled by policies like the Inflation Reduction Act and growing renewable investments in regions like Brazil. Artificial intelligence (AI) emerged as another factor, with Microsoft predicting AI will consume substantial energy by 2035. AI adoption is outpacing efficiency improvements, prompting questions about its sustainability.

Since 2020, global demand has risen rapidly, challenging renewable generation to keep pace. Data centers, driven by the reliability of tech giants like Google and Apple, attract heavy investment due to their risk-adjusted returns, yet strain an already overburdened grid. While utilities once supported 60-megawatt plants, demand has ballooned with data centers now requiring up to 500 megawatts. Panelists also noted the unprecedented surge in power demand and the limitations of natural gas plants, especially in high-density areas.

Co-located storage was discussed as a solution to curtail energy waste, but panelists noted that most curtailment results from transmission shortages. Suggestions included flexible energy pricing and using excess power for pumped hydro and battery storage.

In Latin America, renewables have met rising energy demand effectively, driven by low costs and decarbonization policies. In 2023, over 75% of new generation in the region came from non-hydro renewables, yet obstacles such as transmission constraints and political shifts persist. Chile exemplifies the growing role of battery storage in stabilizing renewable energy through 24/7 contracts and investments, but region-wide challenges remain due to renewable intermittency.

In places like Chile, with 3-4 GW of storage capacity, investing in grid updates and adopting flexible pricing could mitigate issues like negative pricing. Short-term batteries help, but a cultural shift towards daytime energy usage is essential. The panel also emphasized consumer education, with examples from Latin America illustrating the challenge of dynamic pricing in regions with subsidized electricity rates.

A significant challenge is that renewable generation sites are often far from consumption centers, necessitating costly transmission lines. High-voltage infrastructure is essential to connect renewable projects to the grid profitably. Some panelists highlighted the need for centralized coordination by grid operators, suggesting that guarantees for transmission projects could improve outcomes. Data center siting also impacts grid demand, with Amazon's Playa Blanca facility serving as a notable example.

The discussion concluded with an exploration of hydrogen's potential for energy storage and the barriers to nuclear expansion. While small modular reactors (SMRs) were discussed, the consensus was that nuclear would play a limited role in meeting future energy demand in the region. Instead, the focus should remain on improving grid coordination, fostering cross-border collaboration, and advancing renewables to address escalating global energy needs.

Whither Big Oil: Technology and Innovation for Low Carbon Solutions

How new technologies are influencing development of low-carbon solutions opened the session. A panelist emphasized carbon capture and storage (CCS) and low-carbon oil production as key to the energy transition, supported by renewable natural gas and hydrogen. Another panelist, however, challenged this, suggesting that “low-carbon oil and gas” could be considered an oxymoron. He argued that the industry should focus on fugitive emissions, proposing satellite imaging and drones for emissions tracking, and pushing for fuel switching rather than decarbonizing fossil fuels.

The conversation shifted to energy poverty, with one panelist highlighting the challenge of ensuring reliable energy access for over a billion people without electricity while advancing efforts to reduce emissions of the oil value chain. Another panelist contended that oil and gas are essential to the energy mix, though agreed on the need to reduce methane emissions. Small-scale nuclear also came up as a low-carbon alternative, though the challenges of permitting and competition with other technologies were acknowledged. The panelists stressed the need for a comprehensive approach to the energy transition, with diverse technology and policy support.

On increasing renewables, one speaker detailed project development in California of hydrogen production and renewable natural gas initiatives, stressing policy's role in supporting electrification. The panel discussed the Oil and Gas Climate Initiative (OGCI), a coalition focused on reducing industry emissions through incentives (the "carrot") or regulatory mandates (the "stick"). Opinions varied on which approach works best, with the U.S. Inflation Reduction Act (IRA) as an example of funding-driven incentives for low-emission projects like hydrogen and CCS.

Focusing on Latin America, the panel noted Brazil’s low carbon intensity per GDP, achieved through large-scale projects and low-cost production, positioning it as a renewable energy leader. Public policy, like carbon taxes and emission trading systems, was highlighted as essential for Latin America’s renewable push. In Guyana, oil revenues are being strategically invested to fund the energy transition, though fiscal and skillset limitations present challenges across the region.

Carbon capture and storage (CCS) was a major discussion point, with one panelist likening it to waste management, viable only if carbon is priced. While CCS has potential for industries like cement and steel, concerns were raised over its limited effectiveness, high costs (up to $1,000 per ton), and uncertain scalability. An analysis revealed that CCS could address only 15% of emissions needed to limit global warming to 2 degrees, challenging its viability as a climate solution. Nonetheless, there is ongoing development in Brazil and Saudi Arabia, with the hope that costs might eventually fall to $30-$40 per ton to sustain a carbon market.

Geopolitics and resource nationalism were also key points, with OPEC countries investing heavily in low-carbon technologies. Russia’s energy transition challenges and Latin American nations’ investor-dependency highlighted the complexity of transitioning for oil-exporting economies. Guyana was praised for balancing oil development with low-carbon ambitions.

Low Carbon Fuels: Moving from Green Premium to Green Bonus

The panel discussion focused on the challenges and solutions for scaling low-carbon fuels, with an emphasis on the urgent need to achieve Net Zero emissions by 2050. The conversation revolved around various alternative fuels such as biofuels, green ammonia, and hydrogen, and how to make them competitive with conventional fuels. Key challenges include high production costs, regulatory hurdles, and the lack of standardized carbon accounting.

Heavily debated was the question of how to make alternative fuels more competitive. Hard-to-abate sectors such as shipping, aviation, and heavy industry were identified as key targets for decarbonization. Sustainable aviation fuels (SAF), for example, can currently be blended up to 6%, with a goal of reaching 70% by 2050. Brazil is already requiring that 10% of domestic flights use SAF. However, the panelists argued that reducing CO2 emissions is even more important than focusing solely on alternative fuel adoption. Subsidies, carbon taxes, and incentives were deemed essential to lowering costs and ensuring energy security.

The concept of using "carrots and sticks"—incentives and mandates—was a recurring theme. Brazil, for instance, has long used biofuel mandates for energy security, aiming to increase its biofuel mix to 35%. However, the panelists agreed that the real challenge is establishing international agreement on carbon accounting. Currently, carbon intensity calculations vary widely depending on inputs, making it difficult to prove the economic viability of low-carbon projects and secure final investment decisions (FID). Without standardized carbon accounting, carbon reductions remain ambiguous and hinder progress.

Uruguay's energy transition was highlighted as a successful example of long-term planning. The country has been working to decarbonize since the 1970s and is now well-positioned to scale up low-carbon fuel production. The panelists emphasized the importance of policies that encourage investment in renewable energy, biofuels, and other low-carbon solutions. Uruguay's resources, such as land and wind capacity, make it an ideal candidate for expanding its renewable energy infrastructure. However, the country still faces regulatory challenges that need to be addressed for full decarbonization, particularly in heavy industries and transport.

One panelist discussed reshaping the narrative around low-carbon fuels, moving away from competition with oil and gas and instead focusing on how these fuels can help stabilize the market and attract a broader range of customers.

The need for global collaboration and breaking down silos between industries, regulators, and policymakers was seen as a critical factor for success. The panelists called for technological agnosticism and collective action to address carbon accounting, financing, and scalability challenges. They also pointed out the lack of uniformity in global biofuel policies, with discussions often focused on new incentives rather than addressing the high costs involved.

Frustration with current biofuel solutions was palpable, with one panelist criticizing the idea of blending small amounts of vegetable oil with petroleum as a way to meet carbon reduction targets. Brazil’s example of using higher blends of biofuels was cited as a model for more significant carbon reductions. Overall, the panel concluded that the industry must prioritize integrating policies and improving communication to drive the adoption of low-carbon fuels at scale.

DAY 2

Opening Keynote Address

Laura Lochman, Principal Deputy Assistant Secretary with the Bureau of Energy Resources at the U.S. Department of State, delivered the opening keynote address on the second day of the La Jolla Energy Conference. She highlighted two major forces reshaping global energy: geopolitical conflicts, particularly in Ukraine and the Middle East, and the ongoing climate crisis. These issues have caused significant ripple effects across energy markets, emphasizing the urgency of energy security.

PDAS Lochman discussed the U.S. commitment to supporting Central and Latin America's energy transition, especially by building critical mineral supply chains and providing regulatory guidance for clean hydrogen in Brazil, Chile, and Colombia.

The war in Ukraine has led the U.S. to spearhead an international effort to rebuild energy infrastructure there, especially as Ukraine prepares for a challenging winter. The conflict in the Middle East also threatens to disrupt energy markets, while recent climate disasters—like historic floods in Brazil and hurricanes in the southeastern U.S.—reveal the need for climate adaptation and resilience in energy systems.

Lochman noted that fast-growing energy producers in Latin America, such as Guyana and Argentina, play vital roles in stabilizing energy markets. Natural gas-rich countries like Peru and Trinidad and Tobago also serve as key allies. The U.S. aims to be the preferred partner for clean energy technology and is advancing partnerships across the region.

The U.S.-Chile dialogue on lithium and hydrogen, along with various Memorandums of Understanding (MoUs) for critical mineral projects, illustrate these efforts. The U.S. Power Sector Program is further supporting Brazil's hydrogen and grid operations, and regional training programs target Caribbean utilities and regulators.

Through the Minerals Security Partnership, the U.S. is diversifying critical mineral supply chains, with over 30 projects underway globally. Lochman emphasized that the clean energy transition represents a trillion-dollar market opportunity, with Latin America poised to lead.

In closing, Lochman highlighted U.S. efforts with Argentina to integrate critical minerals into U.S. supply chains. She also stressed the importance of early dialogues with Mexico's new administration to explore renewable energy partnerships and reiterated the U.S.'s approach to incentivizing democratic transition in Venezuela through diplomatic effort.

Liquefied Natural Gas (LNG) and Natural Gas Plenary: Rethinking the Role of Natural Gas for Accelerating Decarbonization

In this session, experts examined how natural gas and LNG can support decarbonization and address growing power demands in Latin America, while also highlighting emerging investment opportunities and challenges in the region. Natural gas was emphasized as a critical transitional fuel, capable of ensuring reliable power during peak demand periods—often exacerbated by climate-related events such as extreme weather and drought. Natural gas, particularly LNG, is increasingly called upon to supplement hydroelectricity during water shortages, as seen in Brazil, and provides a flexible backup for the region's growing reliance on renewable energy until battery storage technologies become more scalable.

The speakers discussed Latin America's rising power demands, driven by economic growth, demographic shifts, and emerging energy-intensive industries like AI and data centers. As GDP and population continue to grow, so does the need for reliable energy sources to power these sectors. Natural gas and LNG's role in hard-to-abate sectors, such as shipping and heavy industry, was also explored. With sectors like marine bunkering and container shipping moving towards cleaner fuels, LNG is positioned as a viable alternative to traditional fuels, particularly in the cruise and container ship industries. However, building the necessary infrastructure for LNG will depend heavily on the regulatory landscape in each country.

The session also touched on the investment landscape, with a particular focus on North America. Several companies have invested significantly in natural gas as well as LNG infrastructure, allocating billions between the U.S. and Mexico to support project growth in both countries. This demonstrates the importance of stable policies across administrations and the long-term potential of cross-border collaboration.

Argentina's economic reforms, including the "Régimen de Incentivo para Grandes Inversiones" (RIGI), are geared towards attracting private investment in energy by reducing taxes and import fees, and making it easier for foreign investors to access capital markets. The reforms are part of a broader move by Argentina's new administration to cut state intervention and foster a market-driven economy, all while aiming to achieve fiscal stability.

Natural gas also plays a strategic role in the ongoing geopolitical shifts impacting global energy markets. The Panama Canal has posed logistical challenges for North American LNG exports to reach the Asia and the Pacific Basin, but this has been partially alleviated by the geopolitical shift following the Russia-Ukraine conflict, which has redirected Europe's demand towards LNG imports. As a result, Latin American countries like Argentina are increasingly looking to export natural gas and LNG as part of their economic strategies, contingent on completing essential infrastructure and enacting favorable regulatory policies. Argentina's recent MoUs with international companies aim to boost LNG export capacity, reinforcing its role as a key supplier in the region.

The importance of methane management in natural gas and LNG operations and the complete value chain was also highlighted. Efficiently managing methane emissions not only reduces environmental impact but also offers financial incentives. Improper management of methane represents both a loss of potential energy and a financial setback, pushing companies to prioritize advanced methane detection and reduction strategies, including potential rewards or penalties tied to emission levels. It marries economic and environmental stewardship.

As Latin America continues to transition towards a cleaner energy landscape, LNG and natural gas will continue to play critical roles, bridging the gap between current infrastructure and increased deployment of renewables and low carbon sources on the path to Net Zero.

Camisea at 20: Leveraging Lessons Learned for Peru's Energy Future

The Camisea Project is a seminal project that has had an important impact on Peru's energy landscape as well as broader economic implications. The project has played a crucial role in transforming the country's energy matrix, with natural gas now accounting for approximately 40% of Peru's energy consumption. By displacing a significant amount of imported fuels, this shift has resulted in substantial savings for consumers, estimated at around $180 billion, which is especially vital given the country's current fiscal challenges.

A key theme of the discussion was the urgent need to improve Peru's regulatory framework to facilitate investments in both oil and gas and renewable energy. While the Camisea project has demonstrated its economic potential, inefficiencies and corruption have historically hindered infrastructure development. Enhancing the licensing process was identified as a critical step to attract much-needed investments, particularly in the proposed offshore development model.

The conversation also highlighted the promising gas reserves in the Madre de Dios region, and the need to align frameworks more effectively to unlock investment opportunities in this region.

Strategies to increase the supply of natural gas for industrial applications, especially in the petrochemical sector, emerged as a focal point. Given that using natural gas is often more economical than oil, there was recognition of the potential for expanding its use in transportation, where it currently accounts for only 17% of fuel consumption. Government subsidies were proposed as a viable means to incentivize a shift from oil to gas, reflecting the necessity of supportive policies.

Geographic distribution of oil and gas reserves was another important aspect of the discussion. While oil extraction has been occurring in the northwest since the 1850s, vast portions of the territory remain unexplored, presenting significant future investment opportunities. However, logistical challenges in jungle regions were noted, particularly due to reduced rainfall affecting river navigation and the transportation of oil to refineries.

The session also addressed Peru's energy future in the context of its commitment to net-zero goals. Plans for increased investment in geothermal and hydrogen technologies were highlighted, alongside an acknowledgment of the need for a more advanced regulatory framework. Insights from neighboring countries like Colombia and Uruguay were viewed as potential learning opportunities to enhance Peru's energy landscape.

In summary, the session highlighted the complexities of Peru’s energy future, illustrating that while challenges exist, there are substantial opportunities to leverage the lessons learned from the Camisea project for fostering a more sustainable and prosperous energy environment.

Finance and Investment Plenary: How to Move from Billions to Trillions to Deliver Low-Carbon Solutions

Considering the massive financing requirements deemed necessary, panelists explored mechanisms that could scale up green energy investments from billions to trillions. Key topics included the phasing out of fossil fuel subsidies, the integration of climate externalities into financial markets, and the challenge of addressing green premiums. While consumers in many cases are increasingly willing to pay a premium for green energy, the discussion highlighted that investors remain cautious, focusing on financial risks and returns.

The panel emphasized the importance of decarbonizing energy demand, such as focusing on energy efficiency and renewable solutions in sectors like transport and buildings. Decarbonizing demand is seen as a more promising pathway for large-scale emissions reductions than focusing on energy supply alone. This aligns with a broader push from private sector companies to reduce their carbon footprints, with firms willing to explore decarbonization even if it comes with short-term financial trade-offs. Investment in technology development was seen as crucial to accelerate this transition, potentially lowering costs and enabling faster adoption of clean technologies.

Government policies and financial incentives were central to the discussion. The panel stressed the need for a balanced mix of incentives and regulations, including carbon pricing and tax breaks, to level the playing field between clean and fossil energy sources. Pricing mechanisms, such as carbon markets, were identified as the most effective way to internalize the costs of emissions, though political challenges remain, particularly in developing countries with limited fiscal space. The Resilience and Sustainability Trust at the International Monetary Fund was highlighted as a critical tool in helping countries implement climate policies and attract private sector investment for low-carbon projects.

A proposal for a Latin American Negotiating Group (LANG) was also set forth, aiming to unify Latin American countries in United Nations negotiations on climate finance. This regional coalition would strengthen the bloc's bargaining power in securing international funding for adaptation and mitigation projects. A key point was that for every $1 spent on adaptation, up to $7 could be saved in future disaster-related costs, making a strong economic case for resilience investments.

The role of the private sector in financing the energy transition was also a major focus. While there is growing interest in sustainable investments, the financial models must still offer a viable return on investment. Some companies are willing to accept lower returns in the short term to support long-term sustainability goals. Public-private partnerships and innovative financing mechanisms were discussed as ways to de-risk investments and bring more capital into green projects, especially in emerging markets.

The panel also highlighted the need to modernize regulatory frameworks to keep pace with technological advancements. The energy storage sector, for example, is moving faster than current regulations can accommodate. Updating these frameworks to reduce investment risks and better support innovation was deemed critical to unlock the scale of financing required for the transition.

The good news is, as the panelists noted, that globally in 2024 we have indeed moved from billions to trillions. But focusing on Latin America, the panel underscored that the same progression from billions to trillions in green energy investments is also feasible albeit in a slightly longer horizon. The panelists agreed it would be about 10-15 years and ultimately will be driven by a combination of policy innovation, private sector engagement, and technological breakthroughs.

The session focused on key insights from President Claudia Sheinbaum's inaugural remarks and legislative efforts underway even prior to her taking office on October 1 with regards to impact and implications for the future trajectory of Mexico's energy sector. The administration is poised to bolster Pemex, the state-owned oil company, while acknowledging the critical role of the private sector in expanding the energy market. It is evident that Mexico must embrace private investment to foster a thriving energy landscape, as approximately 46% of the country's new energy capacity will come from private initiatives.

However, it was noted that to ensure energy security and sovereignty, especially in gas production, Mexico needs to create a welcoming environment for private players. Gas production poses specific challenges, as it is generally less profitable than oil, complicating efforts to engage private investment. The administration's willingness to streamline the permitting process for private companies is essential to overcoming historical inefficiencies and bureaucratic hurdles that have hindered development.

One of the main concerns raised was the vagueness often found in proposed legislation. It will be crucial to further understand the details of the bills and implementing legislation that has yet to be finalized. For instance, recent legislative proposals suggesting that Pemex and CFE will not seek profits lack clarity, leading to uncertainty about their practical implications. Investors need definitive frameworks to gauge risks, and the ambiguity surrounding current legislation could deter potential commitments.

Additionally, regulatory agencies, which once operated with a degree of autonomy, have faced constraints in recent years due to budget control by the ministry. This shift has resulted in a loss of independence in regulatory oversight, complicating the implementation of policies and leading to unpredictable outcomes. Moreover, their "disappearance" per the current legislation remains under debate and final outcome and impacts demand further assessment in the weeks and months to come.

In this context, Sheinbaum's assertion that "anything that doesn't harm us is positive" reflects a cautious approach to assessing new initiatives. While proposals such as electricity auctions could be beneficial for both the industry and the country, substantial participation from the private sector is critical to achieving clean energy goals.

The contrast between pragmatism and ideology is a significant hurdle for attracting investment in Mexico's energy sector. Some policymakers appear to believe that simply expressing interest in private investment will revive the sector, a notion the speaker characterized as overly simplistic. There is skepticism about the government's willingness to enhance transparency, an essential factor in building investor confidence. Without a commitment to clear and accountable practices, Mexico risks attracting undesirable investments, which could undermine its energy independence.

Overall, the discussion underscored the importance of credibility in Mexico's energy strategy. Stakeholders remain wary of how well the government understands the challenges it faces in meeting the ambitious energy targets set forth by President Sheinbaum. Building investor confidence will require genuine efforts toward transparency and a commitment to facilitating private sector participation.

In summary, while Mexico's energy landscape holds promise for private investment, achieving meaningful progress will necessitate concerted efforts to create a regulatory environment conducive to investment and collaboration. Only through fostering a transparent and responsive framework can Mexico unlock the potential of its energy sector and ensure a sustainable energy future. The development and implementation of the new administration's "National Energy Plan" will be important to monitor.

Brazil, G20, and Energy Outlook

The session focused on Brazil's evolving energy landscape, particularly in light of the country's upcoming leadership roles in international conferences. Brazil is set to host the G20 Leaders' Summit in November and the COP30 conference in 2025, signaling its intent to position itself as a leader in the global energy transition and a champion of green initiatives.

The organization of the G20 Summit – which has included a series of preparatory meetings, working groups and sessions throughout the year - is guided by three central priorities aimed at fostering a just and sustainable world:

- Social Inclusion: Addressing hunger, poverty, and inequality.
- Economic Inclusion: Promoting equitable economic growth.
- Global Reform: Advocating for systemic changes at the international level.

To facilitate these priorities, Brazil has established various working groups focusing on critical issues such as anti-corruption, trade and investment, digital economy, education, women's empowerment, and environmental sustainability. These groups have been actively collaborating throughout the year to develop innovative perspectives on sustainable fuels and other energy-related topics.

Brazil's unique position provides an opportunity to include areas for discussion at the G20 that were overlooked in 2022, particularly regarding social inclusion. This aspect is essential for the Global South's success in new initiatives, especially in the context of energy insecurity and equity. The aim is to ensure that the energy transition is inclusive and does not leave anyone behind, addressing the challenges faced by those with limited access to energy.

The conversation highlighted the need for consensus on various initiatives, such as promoting clean cooking solutions. Despite the urgency of the issue—over 2 billion people lack access to clean cooking—political and bureaucratic obstacles hindered agreement on action. Similarly, there was contention around the acceptance of infrastructure utilizing green natural gas, as differing capabilities and resources among countries lead to varied paths for energy transition.

Financing the energy transition emerged as a significant priority, with a focus on how to allocate capital effectively to support diverse energy strategies. This topic is expected to be central in discussions at COP30 in 2025, reopening debates on financing mechanisms and approaches.

There is a proposal for strengthening countries' abilities to plan their energy transitions. The phrase “energy planning” rather than simply “plans” reflects an understanding that different nations have unique needs and contexts that require tailored solutions. This includes addressing carbon accounting and establishing clear definitions of sustainable fuels to create a level playing field for developing countries.

The inevitability of the energy transition was acknowledged, along with the complexities of achieving consensus among 20 diverse nations on pressing global challenges. A disparity exists between countries with abundant resources, like oil, and those without, raising ethical questions about the fairness of restricting exploration and investment opportunities for emerging economies.

The discussion also addressed the pressing reality of climate change and its impact on energy production, particularly concerning Brazil’s reliance on hydropower. Ongoing droughts have raised concerns about future energy security, leading to potential solutions such as developing battery technologies, nuclear energy, and natural gas with carbon capture. Emphasizing the necessity of diversifying energy sources instead of relying solely on one form of energy is critical.

The session highlighted Brazil’s commitment to establishing itself as a key player in the international energy transition discourse. By prioritizing social inclusion, fostering innovative financing strategies, and encouraging diverse energy solutions, Brazil aims to navigate the complexities of its energy future while ensuring that all communities benefit from the global shift towards sustainability.

Colombia's Energy Outlook: What is Required to Return the Sector to a more Positive Cycle?

The session delved into the critical challenges and potential solutions for the country's energy sector, especially under the leadership of President Petro. Colombia holds a significant position in Latin America, being the third most populous country and one of the top five oil-producing nations in the region. However, recent policy changes, including the suspension of oil and gas bid rounds and an increase in taxes, have cast a shadow over its investment climate. The conversation emphasized how these shifts have led to a substantial decline in foreign investment, as well as the national oil company, Ecopetrol, notably scaling back its drilling activities.

A major concern discussed was the looming natural gas crisis, as Colombia's reserves are projected to last only 5-6 years. The panelists stressed the urgency of finding immediate alternatives to address this potential shortage. Options like importing liquefied natural gas (LNG) and converting existing pipelines were highlighted, reinforcing the need for proactive measures to avert a looming energy crisis. The country's dependence on hydropower, which accounts for about 70% of its energy generation, further complicates the situation as climate-related disruptions threaten the reliability of this resource.

Investment uncertainty was a central theme of the discussion. Delays in renewable energy projects, particularly in wind energy, were identified as significant obstacles to Colombia's transition to low-carbon energy sources. The permitting process has become increasingly complicated, resulting in frustration among stakeholders. Moreover, the panel noted the challenges surrounding community engagement and public consultations, which often do not reflect the realities on the ground. This disconnect has led to protests from communities regarding the misallocation of royalties and demands for greater corporate accountability.

Legal and regulatory challenges were also discussed. Panelists argued that the judiciary in Colombia is increasingly influencing energy policy, thereby creating an unpredictable environment for investors. The panel suggested several measures to navigate these complexities, including reducing regulatory barriers and encouraging companies to assert their rights in court. By doing so, the panelists believe that companies could better defend their interests and contribute to a more stable investment climate.

To conclude the session, the panelists proposed a series of immediate actions to enhance Colombia's energy outlook:

- Streamline Regulations: Less regulation and more effective development processes can create a more inviting atmosphere for investment.
- Empower Companies: Companies must be encouraged to assert their rights in court to better navigate legal challenges and protect their interests.
- Measure Results: Mechanisms for measuring outcomes and understanding the realities of the energy landscape is crucial for informed decision-making.
- Invest in Infrastructure: A successful energy transition hinges on improving transmission infrastructure and creating redundancy within energy systems, ensuring reliability and efficiency.
- Build Investor Confidence: Reinforcing the importance of the rule of law and illustrating the connection between energy investments and GDP growth are essential for fostering investor certainty.

The panel highlighted Colombia's unique energy challenges, emphasizing the necessity for tailored, collaborative solutions that engage local communities and address regulatory hurdles. Ultimately, these strategies are vital for Colombia to navigate its energy transition effectively, ensuring that it remains a key player in Latin America's energy landscape while safeguarding its economic future.

Critical Minerals

The session explored the essential role of critical minerals in enabling the energy transition. Panelists emphasized that achieving an energy transition is impossible without critical minerals, as mining is foundational to nearly every aspect of modern life. Demand for these minerals is projected to surge sixfold by 2050, driven by the global push toward net-zero goals.

Despite significant investments in electric vehicles (EVs) and gigafactories, the U.S. remains heavily reliant on China for processing and refining essential minerals like lithium, cobalt, and nickel. The need for the U.S. to enhance its domestic mining and processing capabilities was highlighted as a critical step in reducing dependence on foreign supply chains and securing a vital role in the energy transition.

While uncertainties surrounding lithium pricing persist, the discussion highlighted that substantial investments in infrastructure, regulatory reform, and community engagement are vital for the U.S. to emerge as a leader in the energy transition. Securing the entire supply chain—from extraction to processing—was deemed essential for reducing dependence on China and fostering a more sustainable future.

The discussion shifted to the promising opportunity in California's Salton Sea region, known for its vast lithium deposits, estimated to be sufficient to power approximately 375 million electric vehicles. California has invested significantly in necessary infrastructure, providing tax incentives and supporting research and development for innovative extraction technologies. However, skepticism persists among local communities that have witnessed previous industries fail to deliver promised economic benefits. In response, the state has implemented a lithium excise tax, allocating 80% of the revenue to local communities and 20% toward environmental restoration efforts around the shrinking Salton Sea.

Expertise in subsurface engineering and large-scale project development was discussed in relation to enhancing sustainable and efficient lithium extraction methods. Insights into Argentina's lithium industry, which primarily relies on evaporation ponds—a process that is both resource-intensive and time-consuming—were shared. The growing interest in sustainable methods, such as Direct Lithium Extraction (DLE), was highlighted for its potential to recover more lithium while significantly reducing water usage, a critical concern in many lithium-rich regions. Argentina and Chile are pursuing public-private partnerships and regulatory policies to promote a more efficient and controlled approach to lithium extraction.

There was consensus across the panel on the dual challenges of balancing environmental sustainability with economic growth in the critical minerals sector. The pressing need for advanced technologies that minimize environmental impacts while meeting escalating demand was agreed upon. Additionally, the importance of engaging local communities in decision-making processes was emphasized to ensure sustainable development.

In summary, the session illuminated the critical intersections of mining, energy policy, and community engagement, emphasizing the essential role of critical minerals in achieving a sustainable energy transition while addressing the complexities of local and global supply chains.

Final Thoughts

This year's La Jolla Energy Conference once again proved to be a crucial platform for addressing significant issues and evolving policies shaping the energy future of Latin America and the Caribbean. While our unique setting and ambience also remains key to facilitating business relationships and exchanges year after year.

This year's agenda encouraged insightful dialogue on essential topics, from decarbonization pathways and Net Zero ambitions to regional integration and the infrastructural challenges of electrification. Experts discussed the vital roles of natural gas, technological advancements, and financing solutions in achieving sustainable energy transitions. The transformation and pace of change and innovation were roundly and hotly debated.

The conference's discussions and sessions created a fertile environment for collaborative solutions and actionable strategies, reflecting the conference's ongoing commitment to supporting a secure, sustainable energy future.

We thank all participants for their contributions!

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