Infrastructure Economic Consulting

InfraEcon Insights

Colombia's Infrastructure Crisis: How Policy Interventions Undermine Security and Investment in the Sector[i]

1. Introduction

This InfraEcon Insights analyses the latest regulatory developments in Colombia's infrastructure sector, with a focus on energy and transportation, and their implications for investors. The analysis covers transportation sector pressures, energy market interventions, and their cumulative impact on Colombia's investment climate and international arbitration exposure. This note demonstrates InfraEcon's expertise in Colombia's evolving policy environment and its ability to evaluate and advise on potential investment claims.

Colombia's infrastructure reforms since the 1990s have fostered competition, attracted significant private capital, and driven infrastructure growth. Yet, recent measures—such as highway toll freezes and proposals to restructure the regulatory commissions or cap on spot-market energy sales for hydroelectric and renewable generators—mark a shift toward politically motivated interventions.

These regulatory policy changes in infrastructure coincide with Colombia's deteriorating energy security: projected electricity supply deficits starting in 2027-2028 and gas sector collapse driving the country from self-sufficiency to 24% import dependency. Government interventions justified by energy security concerns paradoxically undermine investment incentives needed to resolve these very crises while weakening independent regulatory institutions like CREG. These measures risk distorting markets, undermining project economics, and elevating arbitration exposure. Regional trends in Mexico and Peru demonstrate how political considerations can supersede economic efficiency, imposing tangible costs on investors.

2. Market Liberalization Legacy: The 1990s Foundation

Laws 142 & 143: Regulatory Framework Foundations

To understand the current shifts, it's essential to review the foundational market liberalization of the 1990s. Colombia's modernization began with Laws 142 and 143 of 1994, which dismantled state monopolies and introduced competitive frameworks in the energy, transportation, and telecommunications sectors. Establishing independent regulators, such as the Energy and Gas Regulation Commission (CREG), insulated decisions from political pressures, fostering transparency and regulatory predictability that are essential for long-term investment.

These reforms increased installed power capacity from 10.1 GW to 17.3 GW by 2020, while service reliability improved by over 60% through reductions in outage frequency[ii]. In transportation, Public-Private Partnerships (PPPs) enabled nearly 10,000 km of primary roads and attracted 13.6 times more private

investment between 2002 and 2019. Industry analysts note that reforms successfully transformed stagnant state monopolies into dynamic competitive markets, particularly in telecommunications and electricity generation.

3. Transportation PPPs Under Pressure

3.1 PPP Success and Metrics: 2010-2022

Colombia's Fourth Generation Road Concession Program (4G) required an estimated $26 billion for 8,100 kilometers of roads, with over $14 billion expected to be mobilized through public-private partnerships between 2011 and 2020[iii]. This approach enabled the construction of nearly 10,000 km of primary roads between 2012 and 2022, which would have been impossible through public works alone, given Colombia's fiscal constraints. Rigorous value-for-money analyses validated PPPs' superiority over public works by quantifying lifecycle cost savings and risk transfer benefits. Debt-market discipline ensured fiscal prudence, while substantial private equity contributions safeguarded project completion and maintenance.

3.2 Toll Freezes: Risks and Triggers for Disputes

Recent toll rate freezes and a governmental pivot toward traditional public works threaten over $8 billion in planned PPP commitments for 2023–2025[iv]. Industry estimates indicate freezes could reduce project returns by 15–20%, making several concessions financially untenable. This policy reversal undermines Colombia's credibility in honoring contract terms and increases the risk of concessionaire-initiated disputes under domestic agreements and international arbitration.

The tariff freeze instituted by the Colombian government early in 2025 exemplifies this risk[v]. The measure instituted a six-month freeze on scheduled toll increases across key highway concessions—including segments of the Bogotá–Medellín and Cali-Buenaventura corridors—to alleviate rising transport costs during an economic slowdown[vi]. Rather than adhering to contractually defined inflation-linked adjustments, the authorities deferred all tariff hikes and promised compensation mechanisms that have yet to be specified. Concessionaires invoked "Change in Law" and tariff-adjustment provisions. They signaled potential arbitration under Colombia's PPP framework, contending that the measure undermines contractual stability and revenue assurances. While formal claims have not been publicly filed, financial analysts note that this kind of measures undermines market confidence and warn that this freeze illustrates how politically driven toll interventions can provoke investor-state disputes and elevate fiscal exposure.

Therefore, transportation sector challenges parallel those emerging in the energy sector as showed in the next section, demonstrating how incremental policy changes erode investor confidence across infrastructure sectors.

4. Energy Sector under Siege: Market Interventions and Dual Crisis

4.1. Legacy of Competitive Markets

Following 1994, Colombia's energy sector introduced competition across generation, transmission, and distribution. CREG's tariff-setting mechanism and the deregulation of gas wellhead prices, modeled after UK reforms, attracted new entrants and diversified supply sources. The Cartagena regasification terminal further integrated Colombia with global gas markets, lowering import costs and enhancing supply security.

4.2. Spot Market Caps: Economic Impact and Mechanics

In 2024, the Ministry of Mines and Energy proposed capping the spot-market sales of hydroelectric and renewable generators at 5% of their capacity, compelling the remainder to enter long-term contracts. This cap limits generator nominations in daily spot-market auctions, reducing exposure to higher real-time prices driven by scarcity and peak demand, with penalties for oversubscription. This intervention occurs as Colombia faces an unprecedented dual-sector energy crisis: projections show electricity reserve deficits of 4-6% by 2027-2028, while the country lost its gas self-sufficiency in late 2024, with imports rising from 8% to 24% of total supply.

The proposal creates three major distortions. First, it prevents efficient **price formation** by artificially restricting spot market participation for specific technologies. The IEA's *World Energy Outlook 2023* highlights that such interventions can exacerbate price volatility and raise average wholesale prices in the medium term, undermining the reliability of

marginal-cost signals. Second, it creates **discriminatory investment impacts,** disproportionately affecting renewable energy projects that rely on spot market revenues during initial operation years. Finally, it generates **market inefficiencies by f**orcing generators into long-term contracts, regardless of market conditions, eliminating flexibility and preventing efficient resource allocation.

These inefficiencies are compounded by the absence of standardized electricity futures markets, forcing reliance on illiquid bilateral contracts with limited price discovery. The proposal exacerbates existing distortions, where renewable plants receive reliability payments originally intended for firm capacity, thereby displacing thermal generators that provide grid stability.

The fundamental contradiction of the proposed capping measure lies in justification versus effects. While presented as addressing energy security concerns, the cap reduces revenue streams precisely when Colombia requires substantial new generation capacity to close projected deficits—a policy paradox where interventions designed to manage crises deter essential private investment.

The economic consequences of a cap are substantial. Analysis of a representative 300 MW hydroelectric plant and a 100 MW Solar project shows.

Metric	300 MW Hydro Plant	100 MW Solar Project
Annual Generation	1,314,000 MWh (50% CF)	192,720 MWh (22% CF)
Pre-Cap Spot Sales	525,600 MWh (40%)	115,632 MWh (60%)
Post-Cap Spot Sales	65,700 MWh (5%)	9,636 MWh (5%)
Revenue Loss ($M/yr)	$8.05[vii]	$3.36[viii]
NPV Reduction ($M)	$138	$17
IRR Change	12.8% → 9.6%	~30% relative drop
Debt Tenor Extension	+4–5 years	+2–3 years

Reduced spot-market revenues shrink cash flows, lower coverage ratios, and extend debt schedules. A $600 million hydro plant loses $138 million in NPV, while a $100 million solar farm loses $17 million - demonstrating that seemingly simple regulatory adjustment constitutes a material impact on investment economics, potentially triggering investor protection claims[ix].

4.3. Gas Sector Collapse: A Case Study in Policy-Driven Disinvestment

Colombia's gas sector demonstrates how fiscal and regulatory pressures systematically undermine domestic production. The transition from self-sufficiency to import dependency illustrates the consequences of policies prioritizing immediate revenue extraction over investment incentives.

Escalating fiscal burdens triggered sharp declines in exploration, with annual gas well drilling falling from 110-130 wells during 2010-2014 to just 34 wells in 2024—a drop of over 70%[x]. The production collapse coincided with tax reforms that increased government revenue participation from 63% to over 80%, fundamentally altering project economics and compressing returns below the investment thresholds. The consequences materialized in late 2024 when Colombia lost gas self-sufficiency, with import dependency rising from 8.1% in 2023 to 23.8% in 2024[xi].

The decline creates cascading effects across Colombia's energy matrix, forcing a greater reliance on electricity generation while the power system faces projected deficits starting in 2027-2028. This interdependency amplifies electricity market intervention risks, as the country can no longer rely on gas-fired generation as flexible backup during shortages. The departure of six major international companies from Colombia in 2024-2025, including ExxonMobil, Shell, and Chevron, signals a broader erosion of confidence extending beyond the gas sector to the entire hydrocarbon sector.

4.4. Energy Communities: Governance Risks Without Financial Stakes

Another concerning policy development is the establishment of "energy communities," defined as rural community groups that would receive governance participation in energy companies without corresponding equity contributions or financial responsibilities. Unlike similar concepts in Europe, where energy communities function as

cooperative investment vehicles with transparent governance and equity structures, the Colombian proposal lacks these safeguards.

Analyses from governance experts warn that introducing stakeholders without financial responsibility into corporate decision-making may create principal-agent problems, where the interests of the agent (in this case, community groups) do not align with those of the principal (the energy company) and could increase transaction costs in infrastructure concession agreements. Moreover, the ambiguity surrounding these entities' rights and responsibilities creates significant regulatory uncertainty for existing energy market participants.

5. Impact on Investment & Arbitration Risk

5.1. Creeping Expropriation Through Regulatory Changes

The cumulative effect of Colombia's policy changes constitutes what international investment law recognizes as "creeping expropriation" – the gradual erosion of investment value through multiple regulatory channels rather than direct takings. These measures operate through:

- Direct financial impact through reduced revenues or increased costs
- Adjustment of competitive market conditions that affect some participants
- Introduction of governance requirements that dilute investor control
- Creation of regulatory uncertainty that increases risk premiums
- Systematic payment defaults that create cash flow stress exemplified by the COP$ 7.65 trillion government debt to energy companies accumulated by March 2025[xii].

Erosion operates through two interconnected mechanisms: direct policy interventions and the systematic weakening of independent regulatory institutions. Recent attempts to restructure CREG by including user representatives and workers represent a fundamental departure from technocratic independence. Government interference in wholesale electricity price formation—without apparent legal authority—exemplifies regulatory capture that prioritizes political considerations over market efficiency.

This institutional degradation creates self-reinforcing cycles where compromised regulators become less capable of resisting future political pressures. Industry studies suggest that the combined effects could reduce foreign direct investment by 30-50% over multiple years, as evidenced by the departure of six major international companies—including ExxonMobil, Shell, and Chevron—from Colombia between 2024 and 2025. These policy and institutional changes translate into several billion dollars of foregone capital, with downstream impacts on economic growth, employment creation, and Colombia's energy transition objectives.

5.2. Bilateral Investment Treaty Implications

Colombia has signed over 20 bilateral investment treaties (BITs) with major capital-exporting countries, creating significant international legal exposure for regulatory measures that discriminate against foreign investors or substantially impair their investments. Recent precedent from similar cases suggests that regulatory changes targeting specific sectors or technologies may violate fair and equitable treatment standards, even when implemented through ostensibly legitimate regulatory processes.

The International Centre for Settlement of Investment Disputes (ICSID) has awarded significant damages in comparable cases involving regulatory changes in renewable energy. For example, in *Eiser Infrastructure Limited and Energía Solar Luxembourg S.à r.l. v. Kingdom of Spain* (ICSID Case No ARB/13/36)[xiii], investors were awarded €128 million in compensation for regulatory changes that undermined the economic basis of their investments[xiv].

Based on these precedents, Colombia faces substantial financial exposure. If just 25% of affected foreign investors pursued claims under applicable bilateral investment treaties (BITs), the government could face arbitration claims totaling $1.5-2 billion, excluding legal costs and potential reputational damage to the investment climate.

6. Regional Crisis Pattern: Colombia in Global Investment Context

Colombia's policy shifts reflect broader regional trends. Mexico's 2021 Electricity Law prioritized state-owned generation over private renewable energy projects, resulting in stranded investments and multiple claims under bilateral investment

treaties (BITs). Similarly, Peru's renegotiation of infrastructure concession terms between 2020 and 2023 triggered capital flight, resulting in a decline of around 40% in infrastructure investment.

Colombia illustrates a particularly destructive variant: parallel sectoral crises that reinforce policy intervention cycles. The country simultaneously faces electricity deficits starting in 2027-2028 and a collapse of the gas sector, with drilling activity down by over 70%, driven by fiscal and regulatory pressures. Rather than addressing the underlying policy causes, the government responds with market interventions, such as the proposed spot market caps for electricity and continued restrictions on gas exploration. This situation demonstrates how governments can create multiple, simultaneous sectoral crises through policy choices and then use each crisis to justify further interventions across the energy matrix, eroding market confidence.

These developments have eroded regional investment confidence [xv]. According to the Global Arbitration Review's 2024 survey, state–investor disputes in infrastructure reached a five-year high, with more than 50 new BIT cases filed in 2023. Meanwhile, global infrastructure funds report reallocating portfolios away from Latin American projects toward more predictable markets in Southeast Asia and Europe.

For Colombia specifically, this regional context amplifies the importance of policy consistency. As companies reduce regional exposure, competition for remaining investment intensifies, making regulatory predictability critical for attracting necessary infrastructure investments.

7. Crossroads: Policy Choices and Investment Consequences

Colombia's infrastructure sector stands at a pivotal crossroads. Over the past three decades, market-oriented reforms have driven substantial private investment, service improvements, and competitive development. Recent policy shifts systematically depart from these foundations: gas sector pressures collapsed domestic production by over 70%, electricity market interventions contradict energy security objectives, and efforts to restructure independent regulators signal broader institutional capture. These parallel crises reflect policy choices, creating a self-reinforcing cycle in which interventions generate problems that justify further market interference.

These measures could reduce foreign direct investment by tens of percent over five years, representing billions of dollars in foregone investments [xvi]. Simultaneously, investor-state arbitration under Colombia's bilateral investment treaties exposes the government to claims potentially totaling USD 1.5–2 billion, excluding legal fees and reputational costs.

However, Colombia can align social objectives with economic imperatives by addressing the underlying causes of its crisis rather than implementing counterproductive interventions. This requires reversing measures discouraging gas exploration, creating technology-neutral electricity market mechanisms, and restoring CREG's independence from political interference.

In an era of selective global capital flows, jurisdictions offering clarity will secure disproportionate infrastructure funding. Colombia's decisions in the coming months will determine its attractiveness to international investors and broader economic competitiveness.

Infrastructure Economic Consulting and its affiliates provide specialized support to infrastructure investors worldwide. We analyze the unique circumstances of each investment and deliver actionable insights tailored to your specific situation. Our economic and regulatory expertise allows us to precisely quantify potential damages and develop effective remedies when contract breaches or adverse actions threaten your investments.

For investors affected by regulatory interventions, InfraEcon offers:

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- Economic Damage Quantification
- Expert Witness Services
- Regulatory Impact Analysis

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[i] Regarding the Colombian energy sector issues, this InfraEcon Insights note relies in part on Benavides, J. (2025). Estrategia 2026-2030 para electricidad y gas natural en Colombia. Fedesarrollo (Colombia).

[ii] Unidad de Planeación Minero Energética (UPME). (2022). *Plan Energético Nacional 2022–2035: Balance y Perspectivas del Sector Energético Colombiano*. UPME. Available at: https://www.upme.gov.co/PlaneacionNacional/PlanEnerg%C3%A9ticoNacional_2022-2035.pdf

[iii] World Bank. (2019). Colombia: Connecting People to Markets, Jobs, Opportunities. World Bank Group. Available at: https://www.worldbank.org/en/about/partners/brief/colombia-connecting-people-to-markets-jobs-opportunities ↩

[iv] Cámara Colombiana de Infraestructura (CCI). (2024). *Impact Assessment of Recent Policy Shifts on Transportation Infrastructure Investment in Colombia*. CCI, Bogotá.

[v] In 2019 the Colombian government also introduced a tariff freeze on the Bogotá–Girardot concession. The investor initiated arbitration against the Stat arguing breaches of contractual stability. This example highlights how politically motivated policies can trigger investment-state proceedings.

[vi] BNamericas, "Colombia to freeze tolls at 8 plazas for 6 months," Jan. 24, 2025, available at https://www.bnamericas.com/en/news/colombia-to-freeze-tolls-at-8-plazas-for-6-months?utm_source=chatgpt.com

[vii] Based on $70/MWh spot price, 25% premium over contract price, and 459,900 MWh sales loss.

[viii] Based on $31.7/MWh effective price differential and 106,000 MWh reduction.

[ix] Colombia's electricity market has experienced significant price increases, with average electricity prices rising from $146/MWh in 2022 to $165/MWh in 2023, representing a 135% increase over the $70/MWh baseline used in this analysis. Since 2017, prices have fluctuated between $118-165/MWh indicating ongoing market volatility. This elevated price environment suggests that revenue impacts from the proposed 5% cap would be more severe than calculated, as generators would lose access to higher-value spot market opportunities during periods of supply-demand tightness

[x] Agencia Nacional de Hidrocarburos (ANH). (2024). *Estadísticas de Perforación y Actividad Exploratoria 2010-2024*. ANH, Bogotá

[xi] UPME, Plan de Expansión de Generación 2023-2037; gas import dependency calculations based on national energy balance data

[xii] In the second quarter of 2025 the Colombian government only paid COP$ 2.5 trillion to energy companies following legal pressure from oversight bodies, leaving substantial arrears that create systematic cash flow stress across the sector.

[xiii] International Centre for Settlement of Investment Disputes (ICSID). (2017). *Eiser Infrastructure Limited and Energía Solar Luxembourg S.à r.l. v. Kingdom of Spain*, Case No. ARB/13/36. Available at: https://icsid.worldbank.org/cases/case-database/case-detail?CaseNo=ARB%2F13%2F36.

[xiv] As of early 2025, Spain has faced about 51 investor–State arbitration claims under the Energy Charter Treaty relating to its renewable-energy regime. Eight of these remain pending, and to date roughly €1.5 billion has been ordered paid in settled awards.

[xv] In Colombia, tax reforms increased the government's share of oil and gas project revenues from 63% to over 80%, while annual gas exploration activity collapsed from 110-130 wells annually (2010-2014) to just 34 wells in 2024.

[xvi] United Nations Conference on Trade and Development (UNCTAD). (2024). *World Investment Report 2024: Towards Sustainable and Inclusive Investment*. Available at: https://unctad.org/system/files/official-document/wir2024_en.pdf