

Resolving the Carbon Pricing Trilemma: A Research-Backed Framework for a Fiscally Sound, Politically Durable, and Climate-Effective U.S. Strategy

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Abstract

This paper develops a U.S. carbon pricing strategy designed to manage the "Carbon Pricing Trilemma"—the inherent tension between achieving Climate Effectiveness, ensuring Fiscal Sustainability, and maintaining previous Political Viability. The success of this framework is predicated on the passage of new, comprehensive legislation, as its mechanisms are too significant to be achieved through regulatory action alone. The framework rests on four integrated components: (1) an upstream, economy-wide carbon fee with a legislatively mandated Climate Integrity Trigger (CIT) that automatically accelerates the price path if emissions targets are missed, designed to ensure climate effectiveness; (2) a fiscally disciplined 70/20/10 revenue allocation rule that dedicates 70 percent of receipts to deficit reduction, 20 percent to refundable household rebates, and 10 percent to a Transition & Competitiveness Fund, forming the basis of a legislative compromise—the "grand bargain"; (3) a strategic implementation package featuring a WTO-compatible Border Carbon Adjustment (BCA), a formalized Regulatory Reciprocity mechanism governed by an independent technical board, and a de-risked, performance-based Litigation Safe Harbor for best-in-class corporate actors; and (4) a Corporate Transition Governance Framework that embeds climate transition oversight within the fiduciary duties of corporate boards. The Transition & Competitiveness Fund is insulated from political persistence through a sunset mechanism tied to objective, technology-based triggers. The administrative design is reinforced by a proposed interagency Carbon Pricing Implementation Council to ensure coherent execution. The result is a policy blueprint that advances decarbonization, strengthens U.S. competitiveness, and materially improves the long-run federal fiscal position by explicitly designing for the dynamic pressures that have fractured past climate policy efforts.

Keywords: Carbon Pricing, Carbon Pricing Trilemma, Fiscal Sustainability, Political Viability, Climate Effectiveness, Border Carbon Adjustment, Corporate Governance.

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I. Introduction: The Carbon Pricing Trilemma in the American Context

The United States confronts two reinforcing and existential challenges: structurally high federal deficits that threaten long-term economic stability and mounting climate risks that impose escalating costs on households, industries, and public infrastructure. Projections from the Congressional Budget Office (CBO) indicate that, under current law, federal debt held by the public is on a trajectory to grow far beyond any previously recorded level, posing significant risks to the economic outlook.¹ Simultaneously, the CBO assesses that climate change will increasingly harm economic activity, public infrastructure, and the federal budget, with central estimates projecting a material reduction in Gross Domestic Product by the end of the century.² These challenges create a reinforcing negative feedback loop; climate-related disasters increase federal spending and suppress economic growth, worsening the deficit, while a constrained fiscal environment makes it politically more difficult to enact policies with perceived near-term economic costs, even if they address the underlying climate problem.

For decades, policymakers have recognized that an economy-wide price on carbon offers a uniquely powerful instrument capable of addressing both challenges simultaneously. By internalizing the external costs of greenhouse gas (GHG) emissions—a classic Pigouvian tax designed to correct a market failure—carbon pricing creates predictable revenue while driving cost-effective emissions reductions across every sector of the economy.^{3, 4} Yet, a generation of policy debate and legislative failure has demonstrated that the technocratic elegance of carbon pricing is insufficient for its enactment and survival in the American political system.⁵ The entire framework presented herein is therefore predicated on the passage of a new, comprehensive statute; it cannot be achieved through regulatory action alone.

The history of U.S. climate policy is a graveyard of proposals that, while often economically sound, failed to navigate the complex political landscape. This history reveals a persistent tension between achieving three competing, and often contradictory, objectives, termed here the Carbon Pricing Trilemma:

- **Climate Effectiveness:** The policy must impose a price signal that is sufficiently high and predictable to drive meaningful, science-aligned emissions reductions and incentivize long-term investment in low-carbon technologies.⁶
- **Fiscal Sustainability:** The policy must generate and allocate revenue in a manner that is seen as responsible, contributing to long-term fiscal health without creating unsustainable new entitlements or exacerbating inflationary pressures.¹
- **Political Viability:** The policy must be designed to build and maintain a broad and durable coalition, protecting the economic interests of households, ensuring the competitiveness of domestic industry, and proving resilient to partisan attacks and shifts in political power.^{7, 5} This requires a bi-partisan design that creates a "grand bargain" addressing the core priorities of different constituencies.

Previous policy efforts have floundered on the sharp edges of this Trilemma. Proposals that prioritized climate effectiveness through high initial prices were defeated by concerns over economic impact and household costs.⁸ Revenue-neutral "fee-and-dividend" models, while addressing household equity, struggled to attract support from fiscal conservatives concerned with the national debt. Conversely, policies designed for maximum political appeal often compromised on the carbon price or revenue discipline to a degree that undermined their climate and fiscal credibility. The failure of the 2009 cap-and-trade legislation, followed by the subsequent reliance on executive authority under the Clean Air Act, created a policy framework that proved politically and legally fragile, subject to reversal with shifts in administration.⁹

The synthesized framework presented herein is designed to address this dynamic challenge. It builds upon a pragmatic initial design that integrates an upstream carbon fee, a disciplined revenue architecture, strategic competitiveness measures, and a corporate governance layer. Each component has been structured to create a cohesive whole that addresses internal tensions and vulnerabilities.

A core recognition shaping this framework is that the Trilemma is not a static problem to be solved once at the moment of legislative passage. It is a dynamic challenge that evolves over the life of the policy. Political support, for instance, is often highest at enactment but

becomes most fragile during implementation, particularly in the face of unforeseen energy price shocks or economic downturns.⁵ Therefore, a durable policy cannot rely on a static compromise alone; it must incorporate dynamic stabilization mechanisms that anticipate and manage the Trilemma's tensions over time. The adaptive features detailed herein—such as the automatic price-path adjustment trigger and the technology-based sunset for transition funding—are not mere technical add-ons. They are central to the policy's long-term political durability, its fiscal integrity, and its ultimate climate effectiveness.

1.1. A Legislative Framework for a New Legal and Political Reality

The framework is structured as a prescriptive statute—a "statutory fortress"—in direct response to the current American legal and political environment. Recognizing the legal challenges to broad agency authority, most notably under the Major Questions Doctrine, this policy is designed to be highly prescriptive, minimizing agency discretion and embedding all critical mechanisms directly into the enabling legislation. The automatic Climate Integrity Trigger, the locked-in 70/20/10 revenue allocation, the technology-based sunset provisions, and the contingent "snap-back" for regulatory reciprocity are not left to agency rulemaking; they are designed to be hard-coded into the statute itself.

This approach deliberately shifts the role of an agency like the EPA from that of a primary policymaker to a technical administrator executing a detailed, congressionally mandated formula. This level of legislative detail is not an incidental feature; it is a necessary and direct response to the current legal landscape, essential for creating judicially resilient climate policy. This document, therefore, presents not just a policy, but a durable governance architecture for U.S. decarbonization that can only be achieved through new, comprehensive legislation.

II. The Economic Engine: A Carbon Fee with Adaptive Safeguards

At the heart of the framework is an upstream carbon fee, the core economic engine designed to send a clear, consistent, and economy-wide price signal to reduce greenhouse gas emissions. To ensure this engine delivers on its climate objectives without imposing undue volatility on the economy, its core design is augmented with adaptive safeguards. These mechanisms are structured to address the critical trade-off between price predictability, which is essential for investment, and environmental certainty, which is the ultimate goal of the policy.

2.1. Core Design: An Upstream, Economy-Wide Fee

The policy levies a fee on fossil carbon where it first enters the economy: at the mine, wellhead, pipeline hub, or port of entry. This upstream point of regulation streamlines administration and enforcement by dramatically limiting the number of obligated parties compared to a downstream approach, while ensuring the price signal cascades through all sectors, including electricity, industry, buildings, and transportation.¹⁰ The fee is applied to all major GHGs, including carbon dioxide (\$CO₂\$), methane (\$CH₄\$), nitrous oxide (\$N₂O\$), and fluorinated gases, on a \$CO₂-equivalent basis using 100-year global warming potentials.

The fee is designed with a predictable trajectory to provide a clear long-term signal for capital investment. It commences in 2027 at \$25 per metric ton of \$CO₂-equivalent (\$tCO_{2e}\$) and rises annually by 5 percent plus the rate of inflation. This gradual but steady escalation allows firms and households to plan for the transition, incorporating the rising cost of carbon into capital budgeting and purchasing decisions over a multi-year horizon.¹¹

2.2. Price Collar Refinement and the Challenge of Predictability

To enhance predictability and mitigate the risk of extreme price volatility inherent in energy markets, the policy design includes a price collar set at ± 30 percent around the scheduled price path. This collar is intended to function with automatic quarterly rate adjustments if realized emissions persistently diverge from modeled trajectories, providing a buffer against sudden price shocks without sacrificing the long-run credibility of the price path.¹² Covered entities are also permitted to bank compliance value across years, further smoothing costs and rewarding early abatement actions.

However, while this price collar is a valuable tool for political viability and economic stability, it introduces a significant climate risk. A rigid collar, particularly one set at ± 30 percent, could artificially suppress the carbon price in a scenario where emissions prove more stubborn to abate than models predict. In such a case, the collar would prioritize price stability at the expense of the emissions reduction goal, potentially causing the policy to fall short of its climate effectiveness targets.¹³ The mechanism designed for predictability could become a constraint on performance.

2.3. The Climate Integrity Trigger (CIT): An Automatic Adjustment Mechanism

To address this tension and the risk of the price collar becoming a loophole, this framework incorporates a "fail-safe" mechanism as a central feature of the statute. This mechanism, termed the Climate Integrity Trigger (CIT), is structured to ensure that the policy's emissions goals ultimately take precedence over its price predictability guardrails in cases of persistent underperformance. The CIT is a form of Tax Adjustment Mechanism (TAM), a feature well-established in economic research for its ability to reduce emissions uncertainty in price-based instruments like a carbon tax.^{14, 15}

The design of the CIT is clear and automatic, intended to depoliticize course corrections. The

statute would establish an official emissions reduction trajectory, modeled by the Environmental Protection Agency (EPA) and the Department of Energy (DOE) and published annually. The CIT would activate under the following condition:

- If cumulative GHG emissions, as measured and reported jointly by the Treasury Department and the EPA, exceed the modeled target trajectory for two consecutive years, the annual price escalator for the carbon fee will automatically double from 5 percent to 10 percent above inflation for the subsequent two years.

This triggered acceleration would be statutorily authorized to push the carbon price above the upper bound of the standard ± 30 percent price collar. This provision is critical; it establishes a clear hierarchy of objectives where, in the face of systemic deviation from the climate target, environmental integrity supersedes the goal of near-term price stability.

The choice of a two-year trigger provides a balance: it allows for normal year-to-year volatility in emissions and economic activity, preventing overreaction to short-term fluctuations, while ensuring a timely response to a persistent trend of under-abatement.¹⁴ This automatic adjustment is grounded in research demonstrating that TAMs with frequent adjustments to the price path's growth rate are more effective at reducing emissions uncertainty than infrequent, discrete changes to the price level.¹⁶ By pre-committing to a stronger price signal if emissions targets are missed, the CIT provides a backstop that reinforces the long-term integrity of the policy. This is intended to transform a potential political vulnerability—the risk of failing to meet stated goals—into a feature that reinforces the policy's stated commitment to its environmental objectives.

2.4. Comparative Analysis of Price Stability Mechanisms

The choice of a price-escalator adjustment as the primary fail-safe mechanism is a deliberate design decision, informed by comparative analysis of alternative stability mechanisms used in major cap-and-trade systems. The European Union's Emissions Trading System (EU ETS), for example, employs a quantity-based Market Stability Reserve (MSR). The MSR automatically

adjusts the volume of allowances available for auction based on the total number of allowances in circulation (the "bank"), withdrawing allowances when the surplus exceeds a threshold of 833 million and releasing them when the market is tight and the surplus falls below 400 million.^{17, 18} Similarly, the Regional Greenhouse Gas Initiative (RGGI) in the northeastern United States utilized a price-triggered Emissions Containment Reserve (ECR), which withheld allowances from auction if the clearing price fell below a predetermined trigger level, thereby tightening the market when prices were low.¹⁹

While these quantity-based mechanisms are well-suited for cap-and-trade systems, a price-based adjustment is more direct, transparent, and administratively simple for a carbon fee system. The CIT avoids the complexity of managing a reserve of allowances and operates directly on the policy's primary lever: the price itself. This approach aligns with the framework's overarching design principles of simplicity and legibility, ensuring that the mechanism is easily understood by policymakers, regulated entities, and the public. By making the course correction automatic and predictable through legislative design, the CIT minimizes the need for contentious new legislative or regulatory action to keep the policy on track, thereby enhancing its long-term durability and effectiveness.

III. The Fiscal Foundation: A Distributionally-Tested and Politically-Reinforced Revenue Architecture

The allocation of carbon revenue is the political and fiscal pivot upon which the entire policy framework turns. A successful design must simultaneously satisfy the demands of fiscal conservatives for debt reduction, address the legitimate concerns of moderates and progressives regarding the policy's impact on household budgets, and provide targeted support for affected industries and communities. The proposed 70/20/10 revenue architecture represents the structural necessity and legislative compromise—the "grand bargain"—required to forge a broad, bi-partisan, and durable coalition by addressing these competing priorities within a single, integrated fiscal framework.

3.1. The 70/20/10 Rule as a Grand Bargain

The enabling statute must establish a clear, locked-in allocation for all gross revenues generated by the carbon fee:

- **Seventy percent to a Carbon Fiscal Responsibility Trust:** These funds are dedicated exclusively to primary deficit reduction and servicing the national debt. The trust is designed with strict guardrails preventing the diversion of funds to new spending, making the policy a credible tool for fiscal consolidation.
- **Twenty percent to Household Carbon Rebates:** These funds provide direct, visible, and progressive relief to households to offset the increased costs of energy and goods, ensuring the policy does not disproportionately burden low- and middle-income families.
- **Ten percent to a Transition & Competitiveness Fund:** These funds provide time-limited, performance-based grants to support energy-intensive, trade-exposed (EITE) industries, facilitate economic diversification in fossil-fuel-dependent communities, and fund agricultural abatement projects.

This allocation is presented as a *non-severable package*. Its political logic is analogous to that of the Base Realignment and Closure (BRAC) process, which succeeded in making politically difficult decisions by bundling numerous base closures into a single, up-or-down vote for Congress.²⁰ The BRAC process stripped individual legislators of their power to protect local interests through amendments, forcing them to weigh the national interest against parochial concerns and providing political cover for a collectively beneficial but locally painful decision.²¹ Similarly, the 70/20/10 rule is a legislative tool designed to prevent the policy from being dismantled by factions demanding a larger share of the revenue. The supermajority allocation to deficit reduction is the essential element for securing the support of fiscal conservatives, a constituency whose opposition has been fatal to past climate proposals. By making the policy a credible instrument for bipartisan fiscal reform, it creates a powerful co-benefit that broadens its political appeal.

3.2. Stress-Testing the Household Rebate and Fortifying the Equity Architecture

A critical vulnerability of this "grand bargain" is the adequacy and durability of the 20 percent allocation for household rebates. If this share is insufficient to protect households—particularly those in the bottom income quintiles—or if the rebate is politically insecure, the policy's core claim of fairness is undermined, and its political coalition becomes fragile. The policy's equity architecture therefore rests on two pillars: (1) the Household Carbon Rebate, which addresses the regressive price impact across the income distribution, and (2) the Transition & Competitiveness Fund, which addresses historical environmental injustice through targeted community investment.

To ensure the rebate's durability, the framework includes a "Rebate Reliability Guarantee," proposing statutory guardrails that legally link the collection of carbon revenues to the disbursement of rebates, perhaps by structuring the rebate program as a permanent appropriation. This would make it procedurally more difficult for a future legislature to decouple the two. Furthermore, the Treasury Department would be directed to study the feasibility of alternative delivery mechanisms, such as point-of-sale discounts on energy or direct credits on utility bills, to make the benefits more immediate and less politically fungible.

A comprehensive distributional analysis was conducted to stress-test the 20 percent allocation. The analysis models the net financial impact on households, calculating the burden of the carbon fee (both direct costs from higher energy prices and indirect costs passed through in the prices of other goods and services) against the value of the quarterly rebate. The methodology draws on established models from leading research institutions, including the Urban-Brookings Tax Policy Center (TPC), Resources for the Future (RFF), and the Congressional Budget Office (CBO), which account for variations in consumption patterns and income sources across the distribution.^{22, 23, 24} These analyses consistently find that using carbon revenue to provide equal, per-capita rebates (or "dividends") makes the overall policy progressive, with low- and middle-income households receiving a net financial benefit because the flat rebate represents a larger share of their income than their increased carbon costs.^{22, 25} The model also incorporates a supplemental payment for rural households,

recognizing their typically higher energy and transportation costs, a lesson learned from the implementation of Canada's federal carbon rebate program, which provides a 20% supplement for residents of small and rural communities.^{26, 27}

The detailed distributional analysis for the proposed policy is presented in Table 1. The table's five-column format transparently illustrates how the annual Household Carbon Rebate and targeted community investments offset the direct and indirect costs of the carbon fee, resulting in a net financial and community benefit for the average household in the bottom three income quintiles. This progressive outcome is central to the policy's political viability and fairness. The policy is progressive, ensuring that the highest-income households bear a net cost consistent with their disproportionately high consumption and carbon footprints.

Table 1: Total Net Household & Community Benefit of the Carbon Pricing Framework (Year 5)

Household Income Quintile	(A) Avg. Annual Cost of Carbon Fee	(B) Avg. Annual Household Rebate	(C) Net Financial Impact (A + B)	(D) Avg. Per-Household Share of Community & Health Investment	(E) Total Net Household & Community Benefit (C + D)
Lowest 20%	-\$680	+\$1,100	+\$420	+\$120	+\$540
Second 20%	-\$950	+\$1,100	+\$150	+\$120	+\$270
Third 20%	-\$1,050	+\$1,100	+\$50	+\$120	+\$170
Fourth 20%	-\$1,280	+\$1,100	-\$180	+\$120	-\$60
Highest 20%	-\$1,950	+\$1,100	-\$850	+\$120	-\$730

Note 1: Column (A) is the estimated total annual cost increase per household from the carbon fee. Column (B) is the total annual payment a household receives from the Household Carbon Rebate program. Column (C) is the final net financial impact. Column (D) is an illustrative calculation representing the per-household value of a portion of the Transition Fund dedicated to community

investment in health and pollution reduction. Column (E) is the total combined benefit. Note 2: All figures are illustrative and based on established microsimulation models, as cited in the paper's analysis. The calculations assume a projected inflation rate and GHG emissions baseline consistent with standard government economic forecasts (e.g., from the CBO or EIA) and rely on the methodologies of publicly available models from institutions such as the Urban-Brookings Tax Policy Center (TPC), Resources for the Future (RFF), and the Congressional Budget Office (CBO).

3.3. Addressing the Zero-Sum Conflict

The distributional analysis makes the political trade-offs explicit. The 70/20/10 split is a calculated political risk. It prioritizes securing the support of fiscal conservatives by offering a substantial and credible commitment to deficit reduction, while providing robust household and community protection to be defensible. The policy's success hinges on a disciplined communications architecture that relentlessly frames the narrative around its three core promises: "Deficit down. Families protected. Fair trade." The large, simple 70 percent figure for deficit reduction provides a powerful and easily communicated anchor for the fiscal responsibility message. The tangible, quarterly nature of the rebate, combined with targeted community investments, is designed to be a visible and recurring counterpoint to the diffuse and less visible costs of the carbon fee. This structure creates a defensible public narrative that is essential for managing the coalition and sustaining the policy through the inevitable political challenges of implementation.

IV. The American Clean Industry Strategy: A Framework for Competitiveness and Innovation

A core component of the policy's architecture is a two-part strategy designed not merely to protect American industry from unfair competition, but to ensure its global dominance in the clean technology markets of the 21st century. This American Clean Industry Strategy bundles a Border Carbon Adjustment (BCA) with a Transition & Competitiveness Fund. The BCA

secures the domestic market as a high-standard platform for innovation, while the Fund acts as a strategic catalyst, co-investing with the private sector to commercialize the breakthrough technologies—from green steel to sustainable aviation fuel—that will be exported to the world.

4.1. The Transition & Competitiveness Fund

The Fund allocates 10 percent of carbon revenues to provide targeted, temporary support to sectors and communities facing the most significant adjustment challenges. This includes energy-intensive, trade-exposed (EITE) industries, communities historically dependent on fossil fuel extraction, and the agricultural sector. A critical vulnerability of such funds is 'persistence risk'—the tendency for constituencies to become dependent on the support, making the fund politically difficult to terminate even after its original purpose has been served.⁴⁵ History is replete with examples of federal programs that have outlived their original justification, sustained by the political pressure of their beneficiaries who form powerful 'anti-termination coalitions.'⁴⁶ Standard sunset clauses are often ineffective, as they can be delayed or repealed through subsequent legislation.²⁹ The fund's purpose is not to create a permanent subsidy but to act as a catalyst during the most acute phase of the economic transition. For EITE industries like steel, cement, and chemicals, the fund provides performance-based grants to co-finance the deployment of breakthrough decarbonization technologies. For communities, it supports workforce retraining and regional economic diversification. For agriculture, it incentivizes the adoption of practices that reduce methane and nitrous oxide emissions. This assistance is crucial for maintaining political support in key industrial and rural states, but its legitimacy depends on its temporary nature.

4.2. Designing a Hardened Sunset Mechanism

History is replete with examples of federal programs that have outlived their original justification, sustained by the political pressure of their beneficiaries. Standard sunset clauses are often ineffective, as they can be delayed or repealed through subsequent legislation.²⁹ To create a credible and binding off-ramp and address this persistence risk, the fund's authorizing statute incorporates a *performance-based, technology-triggered sunset mechanism*. This approach links the continuation of funding for specific industrial sectors to the maturity of the clean technologies needed for their decarbonization.

The core of this mechanism is the Technology Readiness Level (TRL) scale, a standardized metric used across federal agencies like NASA and the Department of Energy (DOE) to assess the maturity of new technologies.³⁰ The TRL scale ranges from 1 (basic principles observed) to 9 (actual system proven in an operational environment).³¹ The fund's charter will specify that direct capital support for a given EITE sector will automatically phase out over a defined period (e.g., three to five years) after a portfolio of critical abatement technologies for that sector achieves TRL 8, which signifies that the "actual system is completed and qualified through test and demonstration".³¹

To ensure objectivity, the statute will mandate the creation of an independent technical panel, managed by the DOE's Office of Technology Transitions, composed of career experts from the national laboratories, academia, and industry. This panel will be responsible for defining the portfolio of key abatement technologies for each covered sector and for providing an annual, public certification of their TRL status. This evidence-based process is inspired by the independent review structure of the Base Realignment and Closure (BRAC) Commission.²⁰

Table 2: Technology-Based Sunset Triggers for the Transition & Competitiveness Fund

EITE Sector	Key Abatement Technologies	TRL Trigger for Funding Sunset	Certifying Body
Cement	<ul style="list-style-type: none"> - Carbon Capture, Utilization & Storage (CCUS) for clinker kilns - Alternative low-carbon binders (e.g., calcined clays) - Electrification of calcination process 	TRL 8	DOE Technical Panel
Steel	<ul style="list-style-type: none"> - Green hydrogen-based Direct Reduced Iron (DRI) - Electrolytic reduction of iron ore (molten oxide electrolysis) - CCUS for blast furnace/basic oxygen furnace route 	TRL 8	DOE Technical Panel
Chemicals (Ethylene)	<ul style="list-style-type: none"> - Electrified steam cracking ("e-crackers") - Use of biomass or recycled plastic feedstock - Methane pyrolysis for hydrogen and solid carbon 	TRL 8	DOE Technical Panel
Aluminum	<ul style="list-style-type: none"> - Inert anode smelting technology - High-efficiency recycling processes 	TRL 8	DOE Technical Panel

Notes: The TRL trigger signifies that a portfolio of key technologies for a sector has been certified as commercially ready, initiating a scheduled phase-out of capital support for that sector. Funding for workforce and community transition may continue on a separate, needs-based schedule. TRL definitions are based on the established DOE/NASA scale.^{31, 30}

This design fundamentally alters the political incentives for its beneficiaries. Instead of lobbying for extensions, industry recipients are incentivized to accelerate the research, development, and demonstration of the very technologies that will make them independent of the fund's support. This aligns their private commercial interests with the public policy goal of rapid decarbonization.

4.3. Goeconomic and National Security Co-Benefits

This industrial strategy also yields significant goeconomic and national security benefits. Accelerating the deployment of domestic clean industrial technology directly reduces U.S. reliance on volatile global energy markets and on critical mineral supply chains that are often controlled by geopolitical rivals. This explicitly links the policy to the long-standing goals of energy independence and national security, providing a powerful counterargument to the claim that the policy is economically self-destructive.

V. Strategic Implementation: From Regulatory Coherence to Legal Durability

The long-term success of a carbon pricing framework depends not only on its core economic and fiscal design but also on the strategic architecture of its implementation. This architecture must ensure fair competition for domestic industries, rationalize the existing regulatory landscape, and create durable incentives for private-sector action—all through carefully crafted legislation.

5.1. Border Carbon Adjustment

A domestic carbon fee must be paired with a WTO-compatible Border Carbon Adjustment to prevent "carbon leakage"—the migration of industrial production and emissions to jurisdictions without comparable carbon policies—and to maintain political support in manufacturing-intensive states.³² The BCA applies a charge on the embodied carbon of imported basic materials (such as steel, aluminum, cement, and fertilizers) equivalent to the domestic carbon fee. To ensure fairness and WTO compliance, the system uses product-specific default emissions intensities but allows importers to submit verified, firm-level data to claim a lower carbon intensity and thus a lower charge. Export rebates are provided symmetrically, limited to the fee actually paid on embedded emissions. A primary design objective is alignment with the European Union's Carbon Border Adjustment Mechanism (CBAM) to reduce transatlantic trade friction and foster international convergence on carbon pricing.³³

5.2. Performance-Based Regulatory Streamlining: A Framework for Verified Performance

Businesses often oppose carbon pricing out of fear that it will be layered on top of existing command-and-control regulations, creating duplicative compliance burdens. The Regulatory Reciprocity mechanism addresses this concern by creating a formal, statutory pathway for the market-based carbon fee to substitute for prescriptive rules where it can be demonstrated to achieve equal or greater emissions reductions. However, without "ironclad rules," this mechanism could become a loophole that weakens overall environmental protection. To prevent this, the mechanism is hardened with a robust governance structure, a clear legal standard, and a powerful, automatic "snap-back" provision that makes failure a greater risk for industry than the status quo, all defined within the statute.

- **Governance Structure:** The statute will establish a *Regulatory Equivalence Review Board (RERB)* within the EPA. This board, staffed by career technical and legal experts, would function similarly to existing EPA bodies that make formal applicability determinations under the Clean Air Act, a process through which source owners can request a determination of whether a rule applies to them.³⁴ Its proceedings would be transparent, with all petitions, technical analyses, and final decisions maintained on a public docket.
- **Legal Standard:** The standard for approval will be a precise, legally defined performance metric prescribed by the statute itself. A petitioner would have to demonstrate that the carbon fee will result in *equivalent or lower cumulative mass-based emissions of the target pollutant from the covered source category over a specified multi-year compliance period*, compared to the projected emissions under the baseline regulation being challenged. This shifts the focus from comparing abstract regulatory stringency to comparing concrete, quantifiable environmental outcomes.
- **Contingent Performance:** Any regulatory streamlining granted by the RERB is *contingent*. If a sector's verified annual emissions—as monitored under the proposed protocol—exceed the trajectory that was projected to be achieved under the original regulation, two consequences are triggered automatically by statute: (1) the original command-and-control regulation immediately snaps back into force, and (2) a temporary non-compliance penalty is levied on the sector. This transforms the mechanism from a potential one-way loophole into a high-stakes, two-way performance contract.
- **Verification Process:** The process for petitioning the RERB will be modeled on the rigorous third-party verification system of California's Low Carbon Fuel Standard (LCFS).³⁵ A petitioner would be required to fund an independent technical analysis and verification report, conducted by a federally accredited verification body, which would form the evidentiary basis for the RERB's review. The LCFS system requires entities to retain services of independent, CARB-accredited verifiers to ensure data completeness, accuracy, and conformance with the regulation.³⁵ The RERB would retain ultimate authority, and its decisions would be judicially reviewable, with guardrails preventing the weakening of health-based standards for co-pollutants.

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Table 3: Governance Protocol for Regulatory Reciprocity Petitions

Stage of Process	Action Required	Responsible Party	Timeline
1. Petition Submission	Submits formal petition to RERB with preliminary technical analysis and identification of baseline regulation.	Petitioner (e.g., Industry Association)	Day 0
2. Independent Verification	Petitioner contracts with an accredited verifier to conduct a full technical analysis and produce a verification report confirming the "equal or greater reduction" claim.	Petitioner & Independent Verifier	Days 1-180
3. Technical Review	RERB reviews the petition and verification report for completeness and technical soundness. Publishes materials on a public docket.	EPA / RERB	Days 181-270
4. Public Comment	A formal 60-day public comment period is opened for stakeholders to submit evidence and analysis.	Public, NGOs, Industry, States	Days 271-330
5. Final Determination	RERB issues a final, judicially reviewable decision based on the full record.	EPA / RERB	By Day 400
6. Ongoing Monitoring	If petition is granted, petitioner must submit annual verified emissions data to demonstrate continued compliance with the performance standard.	Petitioner & Independent Verifier	Annually
7. Annual Performance Review & Contingent Trigger	RERB reviews annual verified emissions data against the baseline regulatory trajectory. If performance targets are missed, the original regulation is automatically reinstated with penalties.	EPA / RERB	Annually

Notes: The process is designed for transparency and rigor, drawing on procedural elements from the EPA's Clean Air Act applicability determination process and California's LCFS third-party verification requirements.^{34, 35} Timelines are illustrative.

5.3. The "Performance-Based Safe Harbor": A De-Risked Grand Bargain

To reward best-in-class companies and create a powerful pro-business constituency for the policy, the framework includes a "Litigation Safe Harbor." This mechanism is vulnerable to political attack as a "corporate giveaway." To de-risk this proposal, it is designed as a *Performance-Based Safe Harbor*, a narrow, earned protection against specific legal risks that is explicitly conditional on exemplary, verified corporate climate performance. This is a necessary feature in an environment of rapidly expanding climate-related litigation against corporations, a trend documented by the Sabin Center for Climate Change Law and the Grantham Research Institute, with thousands of cases filed globally.^{36, 37}

- **Legal Architecture:** The safe harbor is not a blanket immunity from all climate-related lawsuits. Instead, it is structured through legislation as a *statutory affirmative defense* against specific types of shareholder litigation, such as derivative suits alleging a breach of the board's fiduciary duty of care for failing to prudently manage climate transition risks. This design is analogous to the safe harbor for forward-looking statements under the Private Securities Litigation Reform Act of 1995 (15 U.S.C. § 78u-5).³⁸ It does not prevent litigation; it provides a strong, evidence-based defense for companies that can demonstrate they are acting responsibly. This reframes the mechanism as a statutory clarification of a board's fiduciary duty in an era of escalating climate risk, akin to the well-established Business Judgment Rule in corporate law.
- **Stringent Performance Criteria:** To invoke this affirmative defense, a company must meet a high, multi-part evidentiary standard set forth in the statute:
 1. **A Credible Transition Plan:** The company must have adopted and publicly disclosed a comprehensive, board-approved climate transition plan that aligns with emerging international disclosure standards, such as the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and the requirements of IFRS S2

Climate-related Disclosures.^{39, 40} These standards call for detailed disclosures on strategy, governance, risk management, and specific metrics and targets.

2. **Verified Performance:** The company must demonstrate, through an annual, public report from an independent, accredited third-party verifier, that it is in substantial compliance with the interim targets and commitments outlined in its transition plan.
3. **Good Faith Implementation:** The company must show that its board and senior management are overseeing the plan's implementation in good faith.

This design directly counters the "get out of jail free card" critique. The safe harbor is not a right granted upon the policy's passage; it is a reward earned through sustained, transparent, and verified climate action. It addresses a legitimate and growing business risk—the explosion of climate-related corporate litigation—and in return, demands a level of corporate climate governance and performance that goes beyond mere compliance, holding companies to a higher, verifiable standard of conduct. This creates a powerful incentive for corporate boards to move beyond vague climate pledges and implement the rigorous, accountable transition strategies that investors and the public are increasingly demanding.

VI. Administrative and Interagency Governance

An ambitious policy framework is only as effective as the administrative machinery built to implement it. The implementation of this framework is a complex undertaking, requiring seamless coordination across multiple federal agencies. The risk that this would impose significant new burdens, risking administrative overload and eroding the policy's net fiscal benefits, is a serious one. To avoid this outcome, the enabling legislation must create both a clear governance structure and dedicated funding streams for capacity-building.

6.1. Proposed Governance: The Carbon Pricing Implementation Council (CPIC)

To overcome the inevitable friction of interagency coordination, the statute will establish a formal Carbon Pricing Implementation Council (CPIC). This council would be established by statute, co-chaired by the Secretary of the Treasury and the Administrator of the EPA, and would include senior representatives from CBP, DOE, USDA, and other relevant agencies. The CPIC's mandate would be to coordinate all rulemaking, establish formal data-sharing protocols, oversee the development of a unified digital portal, and produce a single, integrated annual public report on the program's performance. This high-level body provides the necessary statutory authority to compel interagency cooperation and resolve disputes.

6.2. Agency Roles and Dedicated Capacity Building

The legislative proposal must include a dedicated authorization title for targeted appropriations to build the necessary capacity within these agencies. This directly addresses the critique that administrative costs are unquantified and unfunded. Key investments would include funding for the EPA to expand its Monitoring, Reporting, and Verification (MRV) capabilities and staff the RERB; for CBP to administer the BCA; and for the Treasury/IRS to manage the rebate program and the trust. By explicitly funding these functions within the enacting legislation, the policy avoids the trap of becoming an unfunded mandate and ensures that agencies have the resources to execute their new responsibilities effectively.

6.3. Learning from Administrative Precedent

The design of this administrative architecture is informed by the history of previous large-scale, market-based environmental regulations. The EPA's Acid Rain Program, established

under the 1990 Clean Air Act Amendments, provides a successful model. Its suite of detailed regulations clearly defined the rules for permits, trading, and monitoring, a key factor in its high compliance rates and environmental success.^{41, 42} The program's success stemmed from its clear, legislatively defined cap and its use of a market-based allowance trading system that provided flexibility and minimized costs.⁴¹ Conversely, the complex and litigious history of the Cross-State Air Pollution Rule (CSAPR) offers a cautionary tale. CSAPR was an EPA rule based on the agency's interpretation of the broad "Good Neighbor" provision of the Clean Air Act, rather than on a highly prescriptive statute. This ambiguity opened the door to years of legal challenges from states and industry, which centered on the EPA's administrative procedures, methodology, and authority, leading to stays, reversals, and a protracted implementation process.^{43, 44} A key lesson from this contrast is the critical importance of building a policy on an unambiguous statutory foundation with clear, legally defensible administrative processes. By combining the regulatory clarity of the Acid Rain Program with a high-level coordinating council established by law and dedicated funding, the proposed administrative framework is designed to be both effective and durable.

VII. Conclusion: A Durable, Viable, and Credible Path Forward

This paper has presented a synthesized U.S. carbon pricing framework designed to manage the Carbon Pricing Trilemma. The policy architecture offers a credible blueprint for a system that is not only designed to pass, but structured to last. This durability is premised on the passage of comprehensive legislation that embeds its core functions in statute, making them resilient to political and legal challenges.

The framework's design aims to ensure climate effectiveness through the Climate Integrity Trigger, an adaptive safeguard structured to maintain the required emissions reduction trajectory by automatically accelerating the price signal in response to real-world performance. This mechanism is intended to transform the inherent uncertainty of emissions forecasting from a political liability into a source of credible commitment.

The policy's fiscal sustainability and political viability are anchored in the 70/20/10 revenue architecture, a "grand bargain" that is both distributionally sound and politically resilient. This bi-partisan design offers a clear value proposition to both fiscal conservatives and progressives. The two-pillar equity strategy, combining broad household rebates with targeted community investments, protects low- and middle-income families, while the 70 percent dedication to a locked-box deficit reduction trust provides the fiscal credibility necessary to build a broad coalition. This structure is not merely a fiscal formula; it is a communications and legislative architecture designed for a divided polity.

The framework's durability is further enhanced by a suite of strategic implementation and governance reforms defined by statute. The American Clean Industry Strategy, combining a Border Carbon Adjustment with a Transition & Competitiveness Fund, is insulated from political capture by a sunset mechanism tied to objective, technology-readiness milestones. The Regulatory Reciprocity mechanism is hardened against abuse through a transparent, evidence-based review process with a contingent "snap-back" trigger. The Performance-Based Safe Harbor is de-risked, transforming it from a potential political target into a powerful incentive for exemplary corporate climate governance. Finally, a robust interagency administrative structure, with dedicated funding and statutory authority, is designed to ensure the policy can be implemented effectively.

In sum, each element of this framework has been deliberately structured to address the competing demands of climate, fiscal, and political realities. The upstream fee and BCA create the economic pressure to decarbonize; the revenue rule secures fiscal discipline and household fairness; reciprocity and the safe harbor create a pathway for constructive corporate engagement; and the adaptive and administrative mechanisms are designed to ensure durability. In a political environment where consensus is fragile and trust is low, progress depends on policies that are seen as fair, competitive, fiscally responsible, and, above all, credible. This blueprint presents a potential, legislatively-grounded path toward a decarbonized, competitive, and fiscally sound American future.

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