

Investor State Dispute Settlement and Net Zero Initiatives: Case Study of Germany's Coal Exit Auctions

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Abstract

This Comment provides a comprehensive legal analysis of the potential investor-state disputes arising from Germany's groundbreaking Coal Exit Act, which utilizes reverse auctions to phase out coal-fired power plants. The study investigates potential breaches of the Energy Charter Treaty (ECT), focusing on Article 10(1), the fair and equitable treatment clause, and Article 13(1), the expropriation clause. The reverse auction mechanism, when examined under ECT provisions, could be perceived as both a breach of fair and equitable treatment and an unlawful, indirect expropriation, substantially depriving investors of the value of their investments. The analysis also delves into Germany's possible defenses to a prospective claim, including jurisdictional objections, waiver clauses in buyout contracts, exceptions for necessary regulations in the ECT, and withdrawal from the ECT altogether. Findings suggest that investor-state claims can feasibly proceed in response to Germany's coal phase-out policy. Accordingly, policymakers should factor in the costs of Investor-State Dispute Settlement (ISDS) when estimating the cost-saving potential of reverse auctions as a means to phase out high emissions assets like coal-fired powerplants. The Comment concludes by proposing a more efficient buyout transaction structure that leverages carbon markets to enable comparable emissions reductions at a lower marginal cost of abatement and reduce the state's exposure to ISDS claims.

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I. INTRODUCTION

Coal-fired power plants are the largest contributors to global carbon emissions.¹ To meet the goals of the Paris Climate Accords and keep the rise in global temperatures below 1.5° Celsius, countries must retire these plants before the end of their operational lifespan and prevent additional coal extraction.² This ambitious target requires leaving approximately eighty percent of all coal reserves untapped.³

Recognizing the urgency of the situation, many governments worldwide have committed to phasing out coal and other high emissions assets in the power sector, such as refineries.⁴ Within the European Union (EU), countries have set several different timelines for phasing out coal, ranging from 2025 to 2040.⁵ These commitments underscore a shared understanding of the necessity to shift away from carbon-intensive energy sources towards more sustainable alternatives.

Implementing climate stabilization policies will likely turn coal power plants into “stranded assets,” or assets that lose significant value due to premature retirement before completing their operational lifespan.⁶ Meeting obligations under the Paris Accords could result in a staggering loss for the fossil fuel industry, estimated at \$15–17 trillion in devalued fossil fuel reserves and \$1.6–1.8 trillion in stranded power sector assets, encompassing refineries, pipelines, and power plants.⁷

¹ See *World Energy Outlook 2021*, INT’L ENERGY AGENCY (2022), <https://perma.cc/GUN2-96PD>.

² Robert Fofrigh et al., *15 Early Retirement of Power Plants in Climate Mitigation Scenarios*, ENVIRON. RES. LETT. 094064 (2020); Ryna Cui et al., *Quantifying Operational Lifetimes for Coal Power Plants under the Paris Goals*, 10 NAT. COMMUN. 4759 (2019); Vadim Vinichenko et al., *Historical Precedents and Feasibility of Rapid Coal and Gas Decline Required for the 1.5°C Target*, 4 ONE EARTH 1477, 1477–90 (2021); Joeri Rogelj et al., *Mitigation Pathways Compatible with 1.5°C in the Context of Sustainable Development*, in GLOBAL WARMING OF 1.5°C 93, 113 (Valerie Masson-Delmotte et al. eds., 2022), <https://perma.cc/CER6-R8SP>.

³ Christopher McGlade & Paul Ekins, *The Geographical Distribution of Fossil Fuels Unused when Limiting Global Warming to 2°C*, 517 NATURE 187, 187–90 (2015).

⁴ U.N. Climate Change Conference, *COP26: The Glasgow Climate Pact*, 7 (2021), <https://perma.cc/J8P2-954L>.

⁵ *Europe’s Coal Exit*, BEYOND FOSSIL FUELS (Sept. 28, 2023), <https://perma.cc/S8HD-FCAA>.

⁶ Ben Caldecott & James Mitchell, *Premature Retirement of Sub-Critical Coal Assets: The Potential Role of Compensation and the Implications for International Climate Policy*, 16 SETON HALL J. DIPL. & INT’L REL. 59, 59–69 (2014); Tyler Hansen, *Stranded Assets and Reduced Profits: Analyzing the Economic Underpinnings of the Fossil Fuel Industry’s Resistance to Climate Stabilization*, 158 RENEWABLE & SUSTAINABLE ENERGY REVIEWS 112144 (2022).

⁷ Kyla Tienhaara & Lorenzo Cotula, *Raising the Cost of Climate Action? Investor-State Dispute Settlement and Compensation for Stranded Fossil Fuel Assets*, IIED SMALL AND MEDIUM FOREST ENTER. SERIES 11 (2020); Deger Saygin et al., *Power Sector Asset Stranding Effects of Climate Policies*, 14 ENERGY SOURCES, PART B: ECON., PLAN., & POL’Y 99, 99–124 (2019).

Several mechanisms can cause asset stranding. Demand-side policies indirectly devalue assets through measures such as energy taxes and emissions standards, which decrease the demand for fossil fuels.⁸ Cap and trade mechanisms, by limiting total emissions, also negatively impact the efficiency of fossil fuel extraction and thus can contribute to the stranding of fossil fuel investments.⁹ On the supply side, policies like production taxes, export restrictions, and revocation of production licenses directly lead to asset stranding by limiting the return that investors can realize from their investments.¹⁰

Many of the assets that could face devaluation due to climate stabilization policies are owned by foreign investors and shielded by international investment agreements (IIAs).¹¹ These investment agreements typically take the form of treaties between net capital exporting and net capital importing states and set conditions upon host states' ability to regulate foreign investments. These treaties commonly include expropriation clauses that compel governments to compensate investors if their property is expropriated, similar to the takings clause in the Fifth Amendment of the United States Constitution.¹² Additionally, these international investment agreements often feature Investor-State Dispute Settlement (ISDS) provisions, granting foreign investors the ability to file claims against states that expropriate or otherwise deny fair treatment to their investments in international arbitration tribunals such as the International Center on the Settlement of Investment Disputes (ICSID) in Washington, D.C., or the Permanent Court of Arbitration (PCA) in the Hague.¹³ ISDS provisions in investment agreements help attract capital to host states by reassuring investors that a claim seeking compensation for wrongful interference with foreign investors' property will be adjudicated impartially.

Globally, 257 coal plants facing the risk of asset stranding are under clear foreign ownership.¹⁴ At least seventy-five percent (192 plants) of these

⁸ Achim Hagen et al., *The Interplay Between Expectations and Climate Policy: Compensation for Stranded Assets*, IAAE ENERGY F. 29 (2019).

⁹ *Id.*

¹⁰ *Id.*

¹¹ See Tienhaara & Cotula, *supra* note 7, at 6.

¹² Vicki Been & Joel C. Beauvais, *The Global Fifth Amendment? NAFTA's Investment Protections and the Misguided Quest for an International 'Regulatory Takings' Doctrine*, 78 N.Y.U. L. REV. 30, 54 (2003); HARRY BLUTSTEIN, *THE ASCENT OF GLOBALIZATION* 157–72 (2015); Matthew Porterfield, *State Practice and the (Purported) Obligation under Customary International Law to Provide Compensation for Regulatory Expropriations*, 37 N.C. J. INT'L L. & COM. REG. 159 (2011).

¹³ Kyla Tienhaara, *Regulatory Chill in a Warming World: the Threat to Climate Policy Posed by Investor-State Dispute Settlement*, 7 TRANSNAT'L ENT'L L. 229, 230–31 (2018).

¹⁴ Tienhaara & Cotula, *supra* note 7, at 7.

powerplants are protected by at least one treaty with an Investor-State Dispute Settlement (ISDS) provision.¹⁵

The Energy Charter Treaty (ECT) stands out as the most frequently invoked treaty in the history of the ISDS system.¹⁶ Drafted in 1994, the ECT was established to attract investments from developed Western countries into post-Soviet economies.¹⁷ Currently, the treaty has over 50 signatories and contracting parties, predominantly from Europe and Central Asia.¹⁸ ICSID has presided over many recent cases applying the ECT to climate stabilization policies intending to phase out high emissions assets, reflecting the tension between environmental policy objectives and investor protection under investment treaties.¹⁹ The mere threat of ECT action can deter states from implementing robust emission regulations due to perceived risks associated with the dispute resolution process.²⁰

The ECT is currently undergoing a process of modernization, primarily driven by endeavors to make the ISDS system more compatible with states' initiatives aimed at climate stabilization.²¹ Notably, a considerable number of

¹⁵ *Id.*

¹⁶ Fabian Eichberger, *ECT Modernisation Perspectives: No Winners: The Long End of the ECT Modernisation Process*, KLUWER ARBIT. BLOG (Apr. 8, 2023), <https://perma.cc/DR87-UTTM>.

¹⁷ Fabian Flues, *Coal Ransom: How the Energy Charter Treaty Drove up the Costs of the German Coal Phase-out*, POWERSHIFT 2 (2022), <https://perma.cc/H9YS-ZLEM>.

¹⁸ *The Energy Charter Treaty*, INT'L ENERGY CHARTER, <https://perma.cc/E4EF-ANGU>.

¹⁹ *Vattenfall AB and others v. Federal Republic of Germany*, ICSID Case No. ARB/12/12, Award, (Aug. 17, 2011) (environmental restrictions on coal plant); *Lone Pine Resources Inc. v. The Government of Canada*, ICSID Case No. UNCT/15/2, Notice of Intent to Submit a Claim to Arbitration, (Nov. 6, 2013) (ban on fracking gas); *TransCanada Corporation and TransCanada Pipelines Limited v. The United States of America*, ICSID Case No. UNCT/16/3, Notice of Intent to Submit a Claim to Arbitration, (Jan. 6, 2016) (cancellation of Keystone XL); *Rockhopper Italia S.p.A. and Rockhopper Mediterranean Ltd v. The Italian Republic*, ICSID Case No. ARB/17/14, Notice of Intent to Submit a Claim to Arbitration, (Sept. 19, 2017) (ban on offshore drilling exploration); *Vermilion Resources France SAS v. The French Republic*, ICSID Case No. ARB/17/23, Notice of Arbitration Submitted, (Dec. 18, 2017) (ban on fossil fuel extraction by 2040); *Westmoreland Coal Company v. The Government of Canada*, ICSID Case No. UNCT/18/1, Notice of Intent to Submit a Claim to Arbitration, (Jan. 30, 2018) (coal phase-out); *Uniper SE, Uniper Benelux Holding B.V. and Uniper Benelux N.V. v. Kingdom of the Netherlands*, ICSID Case No. ARB/18/4, Notice of Arbitration Submitted, (Mar. 4, 2019) (coal phase-out).

²⁰ See Tienhaara, *supra* note 13, at 229; Kyla Tienhaara et. al, *Investor-State Disputes Threaten the Global Green Energy Transition*, 376 SCIENCE 701 (2022); Laurens Ankersmit, *Withdrawal from Mixed Agreements under EU Law: the Case of the Energy Charter Treaty*, 7 EUROPE & THE WORLD (2023); see also Luke Eric Peterson, *All Roads Lead Out of Rome: Divergent Paths of Dispute Settlement in Bilateral Investment Treaties*, International Sustainable and Ethical Investment Rules Project, NAUTILUS INSTITUTE FOR SECURITY AND SUSTAINABLE DEVELOPMENT, 20 (2002), <https://perma.cc/YXM5-LCLY>.

²¹ See Eichenger, *supra* note 16; END FOSSIL FUEL PROTECTION, OPEN LETTER FROM CLIMATE LEADERS AND SCIENTISTS TO SIGNATORIES OF THE ENERGY CHARTER TREATY (ECT), <https://perma.cc/DVG6-8X42>.

states have chosen to withdraw from the ECT.²² The dynamics of these withdrawals underscore states' interests in adopting climate stabilization policies without incurring the costs of challenges to those policies brought under the ISDS system.

Reverse auctions have recently gained popularity as a mechanism to phase out high-emissions assets. In a reverse exit auction to phase out coal, a regulator collects bids from powerplant operators who are willing to retire their asset early and buys out the shareholders of the powerplant at the lowest market clearing price. Whereas bidders in a traditional auction compete against one another by placing higher bids above an increasing bid floor, bidders in a reverse auction compete by placing lower bids and face a declining bid ceiling.²³ Germany is the first country to implement exit auctions for the phase out of coal on a wide scale, providing a valuable case study on the exposure of reverse auctions to ISDS claims.²⁴ Some scholars argue that reverse auctions are less susceptible to ISDS claims because they compensate bidders with the fair market value of their asset.²⁵ Theoretically, fair compensation in these auctions is determined by the potential earnings sacrificed by not selling electricity over the remaining lifespan of the powerplant. However, the expected value of cash flows generated by a powerplant over its operational lifespan is difficult to estimate, highly uncertain and closely guarded private information.²⁶ By bidding in a competitive reverse auction, operators are required to disclose their expectations of the future cash flows from their assets, which regulators can aggregate to provide a market expectation.

However, analysis of the German coal exit auction suggests that reverse auctions to phase out high emissions assets may not avoid the costs of ISDS claims under the ECT.²⁷ Rather, when factoring in the costs of ISDS, exit auctions may prove to be more costly than other instruments that states can employ to phase out high emissions assets. Several claims have already been filed against

²² *Written Notifications of Withdrawal from the Energy Charter Treaty*, INT'L ENERGY CHARTER (Mar. 22, 2023; updated Sept. 1, 2023), <https://perma.cc/Z7N3-X7CF>.

²³ See Caldecott & Mitchell, *supra* note 6, at 66.

²⁴ See Sivilana Tiedman & Finn Muller-Hansen, *Auctions to Phase Out Coal Power Lessons Learned from Germany*, 174 ENERGY POL'Y 2 (2023).

²⁵ See Tienhaara & Cotula, *supra* note 7, at 4; Greg Muttitt & Sivan Kartha, *Equity, Climate Justice and Fossil Fuel Extraction: Principles for a Managed Phase Out*, 20 CLIMATE POL'Y 1024, 1024–42 (2020); Jesse Scott et al., *Coal Phase-Out in Germany: The Role of Coal Exit Auctions*, AGORA RESEARCH, 26–27 (June 2022), <https://perma.cc/953R-PNVA>; *Coal in Net Zero Transitions*, INT'L ENERGY AGENCY (Nov. 2022), <https://perma.cc/3V9D-E8KZ>.

²⁶ See Tiedman & Muller-Hansen, *supra* note 24, at 2; Lorenzo Pellegrini, *Institutional Mechanisms to Keep Unburnable Fossil Fuels in the Ground*, 149 ENERGY POL'Y 3 (2021).

²⁷ Bundesamt für Justiz, *Gesetz zur Reduzierung und zur Beendigung der Kohleverstromung*, <https://perma.cc/J6AM-JHJG>.

states utilizing reverse auctions to phase out power plants.²⁸ Notable legal actions following the Dutch coal phase-out and the German nuclear power phase-out illustrate the damages and delays that can erode the efficiency gains of reverse auctions.²⁹

This comment aims to contribute to the broader literature addressing the relationship between ISDS and climate stabilization policies. Policymakers may consider some of the theoretically more efficient alternatives outlined in this Comment when evaluating proposals for the modernization of or withdrawal from the ECT. Part II provides background information on the structure of Germany's coal phase out initiative, with a specific focus on the country's exit auction. Part III conducts an analysis of potential claims under the ECT that apply to several components of Germany's coal phase out initiatives, including and beyond the country's particular implementation of its exit auction. This section delves into claims under the ECT other than expropriation and applies various theories encompassing direct expropriation, indirect expropriation, and creeping expropriation. Part IV examines prospective defenses that Germany might present in response to hypothetical claims brought against its exit auction and broader phase out initiative. Part V assesses the viability of voluntary carbon markets as a more efficient policy alternative. Finally, Part VI presents the conclusions drawn from the analysis and suggests further avenues for research.

II. BACKGROUND

Germany initially laid out its plan to phase out coal in 2020 through its “Act to Reduce and End Coal-Fired Power Generation” (Gesetz zur Reduzierung und zur Beendigung der Kohleverstromung).³⁰ The act is intended to facilitate a coal exit (“Kohleausstieg”) to gradually phase out coal.³¹ The act intends to achieve a complete exit of anthracite by 2035 and a complete exit of lignite by 2038.³² Anthracite, or hard coal, has the highest carbon content and highest energy density of all types of coal.³³ Lignite, or brown coal, has a low carbon content and higher CO₂ emissions than hard coal.³⁴

²⁸ See Flues, *supra* note 17, at 3.

²⁹ *Id.*; Uniper SE, Uniper Benelux Holding B.V. and Uniper Benelux N.V., *supra* note 19; RWE AG and RWE Eemshaven Holding II BV v. Kingdom of the Netherlands, ICSID Case No. ARB/21/4.

³⁰ See Bundesamt für Justiz, *supra* note 27, at 25.

³¹ See Scott *et al.*, *supra* note 25, at 12.

³² *Id.*

³³ ENVTL. JUST. FOUND., COAL-POWERED CRISIS: THE COST OF GERMANY'S ENERGY U-TURN 4 (2023), <https://perma.cc/GA7K-PPHH>.

³⁴ *Id.*

Germany set out a nonbinding coalition agreement in 2021 that pronounces an “ideal” date to complete a coal exit in 2030.³⁵ However, recent events, including the EU’s sanctions on Russian Liquefied Natural Gas (LNG) following the war in Ukraine, have made it unlikely that Germany will achieve a complete coal phase out by 2030.³⁶

The German coal phase-out plan employs several strategies to encourage coal power plant operators to exit the industry. First, the plan outlines the phased withdrawal of hard coal and lignite through different mechanisms. For hard coal, the act introduces coal exit auctions, operational from 2020 to 2026, wherein operators can receive state support for early retirement of their units.³⁷ The German Federal Network Agency Bundesnetzagentur (BNetzA) is tasked with managing and publishing information about these auctions. For lignite, the plan establishes a fixed timeline of specified decommissioning dates and provides operators with negotiated compensation.³⁸

Second, the law establishes specific target capacities for both lignite and hard coal, with reductions scheduled in incremental steps for the years 2022, 2030, and 2038.³⁹ In 2022, Germany set a ceiling on national coal powerplant capacity of thirty gigawatts, comprised of fifteen gigawatts each for hard coal and lignite. However, Germany fell short of meeting this target. By the end of 2022, the total coal capacity stood at 36.4 gigawatts, exceeding the legislated limit by twenty percent.⁴⁰ This excess capacity was composed of 18.7 gigawatts for lignite production and 17.7 gigawatts for hard coal.⁴¹ The deviation from the target was attributed to an increase in coal consumption driven in part by the need to compensate for the reduction in Russian natural gas following sanctions imposed due to the conflict in Ukraine.⁴² Looking ahead, the law outlines a 2030 target with a ceiling of 17 gigawatts, composed of 8 gigawatts for hard coal and nine gigawatts for lignite⁴³. Ultimately, by 2038, the legislation aims for a complete phase-out, setting a 0gigawatt ceiling for both hard coal and lignite.⁴⁴

³⁵ *Id.* at 4.

³⁶ *Id.* at 11.

³⁷ *Id.*; see Tiedman & Muller-Hansen, *supra* note 24, at 2; Julian Wettengel, *Low Turnout in Germany’s Final Auction for Early Coal Power Plant Shutdowns*, CLEAN ENERGY WIRE (Aug. 19, 2023), <https://perma.cc/F7AT-PPPE>.

³⁸ See Tiedman & Muller-Hansen, *supra* note 24, at 2.

³⁹ See Scott et al., *supra* note 25, at 12; see ENVTL. JUST. FOUND., *supra* note 33, at 5.

⁴⁰ See ENVTL. JUST. FOUND., *supra* note 33, at 5.

⁴¹ *Id.*

⁴² *Id.*

⁴³ See Scott et al., *supra* note 25, at 11.

⁴⁴ *Id.*

Third, the Act to Reduce and End Coal-Fired Power Generation incorporates mechanisms to encourage early participation in auctions and discourage operators from holding out from the auction to extract a better price on their assets. These mechanisms include the forced closure of plants without compensation starting in 2030 for undersubscribed rounds of auctioning.⁴⁵ The closure order is determined by ranking coal power plants by the date of commercial operation. If a round of auctioning is undersubscribed, the oldest powerplants will be ordered to close first.⁴⁶ Additionally, each successive auction has a decreasing bid cap, further incentivizing early participation.⁴⁷

Furthermore, auction participation is intricately connected to other German and EU regulations, including the Emissions Trading Schemes (ETS) and the air quality standards.⁴⁸ The costs associated with emissions are presumed to be incorporated into coal power plant operators' bids. ETS, or cap-and-trade, imposes limits on greenhouse gas emissions, requiring companies to hold allowances for their emissions.⁴⁹ Similarly, air quality standards set limits on the permissible levels of pollutants, such as sulfur dioxide and nitrous oxide, from large coal-fired power plants.⁵⁰ These allowances depress the future earnings of a power plant by indirectly limiting the total amount of electricity that a powerplant can generate in a given time period.

After bids are placed, the capacity-weighted average bids and total cleared capacity are disclosed to the public; all other information remains sealed and confidential.⁵¹ Sealed bidding theoretically lowers the cost of a buyout because powerplant operators would have a strong incentive to place bids as close to their reservation price as possible in order to win the contract.⁵² This differs substantially from a reverse auction with unsealed bids, where sellers need only bid lower than the next lowest bidder to win the auction.⁵³

Germany operates its exit auction on a pay-as-bid basis, in which successful bidders receive compensation matching their bid amounts.⁵⁴ Pay-as-bid is typically contrasted with uniform pricing, in which all sellers receive the market clearing

⁴⁵ See Flues, *supra* note 17, at 6.

⁴⁶ *Id.* at 17.

⁴⁷ *Id.* at 26.

⁴⁸ See Scott et al., *supra* note 25, at 19.

⁴⁹ *Id.*

⁵⁰ Karolina Kuklinska et. al, *Air Quality Policy in the U.S. and the EU—A Review*, 6 ATMOSPHERIC POLLUTION RSCH. 133 (2015).

⁵¹ See Scott et al., *supra* note 25, at 14.

⁵² Tim Stobieriski, *Willingness to Pay: What it is & How to Calculate*, HARV. BUS. SCH. ONLINE (2020), <https://perma.cc/C5JE-JT4Q>.

⁵³ *Id.*

⁵⁴ See Scott et al., *supra* note 25, at 14.

price.⁵⁵ Pay-as-bid theoretically reduces the cost output to phase out coal powerplants because all infra-marginal bids—which are below the market clearing price—receive more than their bid prices under uniform pricing.⁵⁶ However, some research suggests that bidders will adjust their bidding strategy in pay-as-bid to match the expected market clearing price, leaving the empirical effect of pay-as-bid uncertain.⁵⁷

Bids are initially placed in terms of euros per megawatt (EUR/MW) of generating capacity but undergo adjustments to account for annual CO₂ emissions per MW (CO₂/MW) of net installed capacity. Accordingly, the winning bid is ranked based on the lowest bid on a Euros per ton of CO₂ (EUR/tCO₂) basis, not EUR/MW.⁵⁸ Bids are then further adjusted with a “grid factor” in order to account for the importance of the plant for the stability of the electrical grid.⁵⁹ Notably, however, BNetzA prohibited powerplant operators in Southern Germany from participating in initial auction rounds due to the importance of these plants for the electrical grid.⁶⁰ Grid factors are added after bids are cleared, and parties do not always know which power plants will receive a grid factor adjustment.⁶¹

Summarily, BNetzA computes an adjusted bid price (aBP_i) that is using the following formula:

$$aBP_i = (BP_i + k_i * g) / CO_{2i}$$

In this formula, the adjusted bid price (aBP_i) is the compensation claimed (BP_i) by the operator plus the grid factor (g) in EUR/MW terms times a marker (k_i), which classifies power stations into essential and non-essential plants, divided by the annual carbon dioxide emissions per megawatt of capacity averaged over the last three years (CO_{2i}).⁶² The result of this function is a price based on tCO₂ per megawatt of installed capacity, adjusted for the importance to the grid. However, despite the adjustments to the bid price, the ceiling price is an absolute value that does not get adjusted for emissions.⁶³

Growing research suggests this unique auction design has created misaligned incentives for powerplant operators and resulted in several unintended consequences. By defining emissions intensity as tCO₂/MWh of installed capacity

⁵⁵ Alfred Kahn et al., *Uniform Pricing or Pay-as-Bid Pricing: A Dilemma for California and Beyond*, 14 ELEC. J., 70 (2001).

⁵⁶ *Id.*

⁵⁷ *Id.*

⁵⁸ See Scott et al., *supra* note 25, at 14.

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ *Id.*

⁶² See Tiedman & Muller-Hansen, *supra* note 24, at 2.

⁶³ *Id.* at 9.

instead of tCO₂/MWh of generated electricity, the auction structure creates distinct incentives for different plant types.⁶⁴ Modern plants emit more CO₂ per unit of installed capacity because they are run more often, but they emit less CO₂ per megawatt hour because they are more efficient.⁶⁵ Accordingly, modern and efficient powerplant operators have a greater incentive to place bids for closure than do older, inefficient plants.⁶⁶ Additionally, unprofitable plants that would have otherwise exited the industry due to an inability to cover fixed costs have now extended their operations with the hope of securing a payout in an auction.⁶⁷ As a result, the three most modern plants in Germany successfully bid for closure during the first auction round, representing two-thirds of the quantity of coal-fired power plants selected for premature retirement.⁶⁸ A concern arises with the remaining power plants, which exhibit a carbon intensity 2 percent higher than the average carbon intensity of all eligible plants.⁶⁹

If less efficient plants are required to increase production in an energy crisis—analogueous to the ongoing crisis with Russian natural gas—there is a tangible risk of a net increase in emissions.⁷⁰ This concern is particularly pronounced in Germany, which is a net power exporter.⁷¹ Restrictions imposed on these plants' ability to sell their output domestically coupled with elevated prices may serve as a catalyst for an even greater supply of exports.⁷² This potential for heightened emissions following the coal exit auction introduces an additional layer of complexity to Germany's net power balance and challenges the nation's commitment to reducing carbon intensity.

While Germany's auction design does risk temporary emissions increases over the duration of the auction, the bid price adjustment mechanism may also create significant cost savings. By adjusting bid prices based on the installed capacity of generated capacity, the government encouraged competitive bidding among efficient powerplants in early auction rounds. In theory, this allowed the German government to acquire efficient, expensive powerplants for cheaper than they otherwise would have been acquired if bids were adjusted on a generated capacity basis. However, potential violations of the ECT may erode the policy's

⁶⁴ *Id.* at 9.

⁶⁵ Sugandha Srivastav & Michael Zaehring, *The Economics of Coal Phaseouts*, INST. FOR NEW ECON. THINKING 6 (Sept. 2023).

⁶⁶ *Id.*

⁶⁷ See Tiedman & Muller-Hansen, *supra* note 24, at 11.

⁶⁸ See Srivastav & Zaehring, *supra* note 65, at 6.

⁶⁹ See Tiedman & Hansen, *supra* note 24, at 11.

⁷⁰ *Id.*; Paola Andrea Yanguas-Parra et al., *Perspective: How a Short-Term Relapse to Coal Could Put Exporting Countries and Just Transition Processes at Risk*, 97 ENERGY RSCH. & SOC. SCI. 2 (2023).

⁷¹ Hans-Wilhelm Schiffer et al., *Taking Stock of the Energy and Climate Profile of Germany and the USA: New Potential for Cooperation*, 46 Z ENERGIEWIRTSCH, 159–74 (2022).

⁷² *Id.*

cost-effectiveness due to the expenses associated with mounting a defense and potentially paying damages in an investor-state dispute.

Today, over seventy-five countries have made explicit commitments to reduce their reliance on coal power, with a majority of these commitments stemming from member states within the EU.⁷³ 43 of these countries have already established specific phase-out dates.⁷⁴ These coal phase-out pledges collectively cover approximately seventeen percent of the global installed capacity of coal-fired power, paving the way for the premature retirement of roughly 7.5 percent of the total global coal capacity. These figures highlight the pressing need for analysis of the efficiency of the various instruments available to policymakers for phasing out coal.

III. INVESTOR'S POTENTIAL CLAIMS AGAINST GERMANY

In an investor-state dispute settlement proceeding against Germany, claimants could potentially raise multiple claims related to the ECT. These claims include but are not limited to a breach of Article 10(1) of the ECT, which obligates host states to provide fair and equitable treatment of foreign investments, and a breach of Article 13(1), which prohibits states from expropriating—or taking measures equivalent to expropriating—the property of foreign investors. This section addresses the possible construction of both of these possible claims.

A. Breach of Article 10(1): Fair and Equitable Treatment

Along with other standards, article 10(1) of the ECT obliges signatory states to provide fair and equitable treatment (FET) to foreign investors and their investments.⁷⁵ In some IIAs, the FET standard is comprised of autonomous, self-contained treaty language that does not refer to customary international law.⁷⁶

⁷³ *Coal*, INT'L ENERGY AGENCY (July 11, 2023), <https://perma.cc/JW6F-S4VE>.

⁷⁴ Vadim Vinchenko et al., *Phasing Out Coal for 2 °C Target Requires Worldwide Replication of Most Ambitious National Plans Despite Security and Fairness Concerns*, 18 ENVIRON RES. LETT. 4 (2023).

⁷⁵ Energy Charter Treaty, art. 10(1), Apr. 16, 1998, 2080 U.N.T.S. 100.

(“Each Contracting Party shall, in accordance with the provisions of this Treaty, encourage and create stable, equitable, favourable and transparent conditions for Investors of other Contracting Parties to make Investments in its Area. Such conditions shall include a commitment to accord at all times to Investments or Investors of other Contracting Parties fair and equitable treatment. Such Investments shall also enjoy the most constant protection and security and no Contracting Party shall in any way impair by unreasonable or discriminatory measures their management, maintenance, use, enjoyment or disposal. In no case shall such Investments be accorded treatment less favourable than that required by international law, including treaty obligations. Each Contracting Party shall observe any obligations it has entered into with an Investor or an Investment of an Investor of any other Contracting Party.”)

⁷⁶ ANDREW NEWCOMBE & LLUÍS PARADELL, LAW AND PRACTICE OF INVESTMENT TREATIES: STANDARDS OF TREATMENT 248–50 (2009).

However, Article 10(1) of the ECT specifies that in order to provide foreign investors with fair and equitable treatment, a host state must afford a minimum standard of treatment (MST) that is at least as favorable as required by international law.⁷⁷

There is currently no uniform test to determine fair and equitable treatment under customary international law.⁷⁸ However, tribunals typically look to several criteria to determine whether a host state's conduct constitutes fair and equitable treatment under international law.⁷⁹ Specifically, tribunals assess whether the host state violated the investor's reasonable and legitimate expectations at the time the investment was made, whether the state provided a stable and predictable legal and business framework for the investment, whether the state's conduct was transparent, and whether the state's actions were unreasonable or disproportionate, among other considerations.⁸⁰ When assessed against these factors, Germany's Act to Reduce and End Coal-Fired Power Generation appears likely to have breached the fair and equitable treatment clause for at least two reasons, each of which independently constitutes a breach of the FET standard. First, the act likely violated the reasonable and legitimate expectations of investors at the time the investment was made. Second, the act likely constituted an unreasonable and disproportionate action

1. Germany violated the reasonable and legitimate expectations of investors at the time of the investment.

When assessing whether a host state breached an investor's reasonable and legitimate expectations at the time of their investment, tribunals generally find that investors only expect risks associated with complying with the host state's domestic regulations as they existed at the time the investment was made.⁸¹ For

⁷⁷ *Id.*

⁷⁸ Diego Mejía-Lemos, *Article 10 Promotion, Protection and Treatment of Investments*, in COMMENTARY ON THE ENERGY CHARTER TREATY 150 (Rafael Leal-Arcas, ed., 2018); KAJ HOBÉR, THE ENERGY CHARTER TREATY: A COMMENTARY 1 (2020).

⁷⁹ ZOLTÁN VÍG, THE FAIR AND EQUITABLE TREATMENT IN THE ENERGY CHARTER TREATY (2021); Glamis Gold, Ltd. v. United States of America, UNCITRAL/NAFTA, Award, ¶ 22 (June 8, 2009).

⁸⁰ Electrabel S.A. v. Republic of Hungary, ICSID Case No. ARB/07/19, Decision on Jurisdiction, Applicable Law and Liability, ¶ 7.74 (Nov. 30, 2012); ESPF Beteiligungs GmbH, ESPF Nr. 2 Austria Beteiligungs GmbH and InfraClass Energie 5 GmbH & Co. KG v. Italian Republic, ICSID Case No. ARB/16/5, Award, ¶ 443 (Sept. 14, 2020).

⁸¹ ADC Affiliate Limited and ADC & ADMC Management Limited v. Republic of Hungary, ICSID Case No. ARB/03/16, Award, ¶ 423–24 (Oct. 2, 2006); Murphy Exploration & Production Company – International v. The Republic of Ecuador, PCA Case No. 2012-16, Partial Final Award, ¶ 247–49 (May 6, 2016); Crystallex International Corporation v. Bolivarian Republic of Venezuela, ICSID Case No. ARB(AF)/11/2, Award, ¶ 543, 546–47 (Apr. 4, 2016); Gold Reserve Inc. v. Bolivarian Republic of Venezuela, ICSID Case No. ARB(AF)/09/1, Award, ¶ 570 (Sept. 22, 2014); Técnicas Medioambientales Tecmed S.A. v. The United Mexican States, ICSID Case No. ARB(AF)/00/2, Award, ¶ 154 (May 29, 2003).

example, in *Sempra v. Argentina*, an ICSID tribunal found that host states must treat foreign investments “in a manner such that it will not affect the basic expectations that were taken into account by foreign investor to make the investment.”⁸² Similarly, in *CME Czech Republic B.V. v. The Czech Republic*, a tribunal found a breach of the fair and equitable treatment (FET) standard by the host state’s “evisceration of the arrangements in reliance upon which the foreign investor was induced to invest.”⁸³ Accordingly, tribunals insulate investors from regulatory risks that an investor could not reasonably expect to assume or anticipate when making an investment decision.

Investor-state tribunals only recognize investors’ expectations as legitimate if the expectations are based on an explicit or implicit assurance provided by a host state. Explicit assurances are clear, direct commitments or representations made by the government to investors.⁸⁴ These may come in the form of written agreements, official statements, or even specific laws and regulations that create a legitimate expectation for investors.⁸⁵ Implicit assurances, on the other hand, may be less overt but still arise from the government’s conduct, consistent practices, or a context that reasonably leads investors to anticipate certain treatment or conditions.⁸⁶

While the FET standard does not require investors to assume all of the risks of changes in the host states’ regulatory regime, it also does not deprive host states of the right to modify their regulations after an investment has been made. For example, in *Plama v. Bulgaria*, a tribunal held that Bulgaria did not frustrate the reasonable expectations of investors or breach its obligations under Article 10(1) of the ECT when it amended its environmental laws after the claimant had invested in an oil refinery.⁸⁷ In reaching its finding, the tribunal placed significant weight upon the fact that Bulgaria never made any representations that its environmental legislation would remain frozen and that its existing environmental

⁸² *Sempra Energy International v. Argentine Republic*, ICSID Case No. ARB/02/16, Award, ¶ 298 (Sept. 28, 2007).

⁸³ *CME Czech Republic B. V. v. The Czech Republic*, UNCITRAL, Partial Award, ¶ 611 (Sept. 13, 2001).

⁸⁴ *Ioan Micula et al. v. Romania*, ICSID Case No. ARB/05/20, Award, ¶ 669 (Dec. 11, 2013) (“[t]here must be a promise, assurance or representation attributable to a competent organ or representative of the state, which may be explicit or implicit”); *see* *Gold Reserve Inc.*, *supra* note 81, ¶ 571 (“[t]he investor’s legitimate expectations are based on undertakings and representations made explicitly or implicitly by the host State”); *Novenergia II—Energy & Environment (SCA) (Grand Duchy of Luxembourg)*, *SICAR v. The Kingdom of Spain*, SCC Case No. 2015/063, Final Award, ¶ 650 (Feb. 15, 2018) (“[a] multitude of arbitral tribunals have established that undertakings or assurances can be explicit or implicit”).

⁸⁵ *Id.*

⁸⁶ *Id.*

⁸⁷ *Plama Consortium, Ltd. v. Republic of Bulgaria*, ICSID Case No. ARB/03/24, Award, ¶ 194 (Aug. 27, 2008).

laws did not provide any assurance that investors would be exempt from obligations to clean up past environmental damages.⁸⁸

Given these requirements, it appears likely that The Act to Reduce and End Coal-Fired Power Generation frustrated the legitimate expectations of investors for at least two reasons. First, the government shifted its stance on the timeline for the phase out of coal, contradicting an explicit representation that investors relied upon when making their investments in coal-fired powerplants. The German government initially permitted coal plants to run indefinitely, then set a mandatory phase out date of 2038, then again reduced the timeline for phase out to 2030.⁸⁹ Unlike in *Plama*, the government made an express assurance about the timetable for a phase out that an investor could reasonably expect to rely upon when making capital allocation decisions. An investor may have had a legitimate expectation that they would be able to extract value from the coal plant through 2038 when making an investment, which the rapid change in the phase out timeline would have frustrated. Second, the government violated its representations regarding irrevocable permits for coal powerplants. Irrevocable permits are licenses to operate that extend indefinitely. The government initially granted irrecoverable permits to operate coal-fired powerplants, which an investor may have considered to be an objective assurance that they could operate a coal-fired powerplant indefinitely. The subsequent prohibition on using these permits could be seen as a significant and unanticipated change in the regulatory framework, which could have further frustrated the reasonable and legitimate expectations.⁹⁰

2. Germany acted in an unreasonable and disproportionate manner.

Tribunals typically interpret unreasonableness and disproportionality standards as requiring the government's actions to be narrowly tailored to its policy objectives, which in turn requires proof that the government lacked other, less intrusive measures.⁹¹ This implies that the state must carefully calibrate its actions to achieve its goals without causing unnecessary harm or imposing a disproportionately heavy burden on specific parties. The German Act to Reduce and End Coal-Fired Power Generation arguably may not be narrowly tailored to the government's interest in emissions reduction because the potential inefficiencies in emissions reductions created by the auction design, the potential

⁸⁸ *Id.* ¶ 219–20.

⁸⁹ See ENVTL. JUST. FOUND., *supra* note 33, at 3.

⁹⁰ Ryan Rafaty et al., *Revoking Coal Mining Permits: An Economic and Legal Analysis*, 20 CLIMATE POL'Y 980, 980–96 (2020).

⁹¹ AES Corporation and Tau Power B.V. v. Republic of Kazakhstan, ICSID Case No. ARB/10/16, Award, ¶ 407 (Nov. 1, 2013); Ioan Micula et al., *supra* note 84, ¶ 525.

for carbon leakage, and the capacity mix of the energy transition indicate that less intrusive alternatives would more efficiently achieve the government's interest.

Germany's exit auction may not have been narrowly tailored to its goal of reducing emissions. First, in terms of auction design, the evaluation of bids is based on tCO₂/MWh of installed capacity rather than tCO₂/MWh of generated capacity.⁹² This approach incentivizes the most efficient and least emissions-intensive plants to cease operations before the less efficient, more energy-intensive ones.⁹³ The approach was likely adopted to reduce the costs associated with phasing out coal production. However, the alternative of adjusting bids for tCO₂/MWh of generated capacity instead of installed capacity might have more efficiently reduced emissions. The existence of this possible alternative suggests that the auction may not have been narrowly tailored to the government's interest in emissions reduction.

Evaluating bids based on installed rather than generating capacity could even increase emissions in the case of an energy crisis. This risk was demonstrated by Germany's need to increase production from its remaining, less efficient coal power plants in response to the energy shortage created by Russia's invasion of Ukraine.⁹⁴ Further escalation of energy generation from more emission-intensive sources could counteract the intended emissions reductions, suggesting that the policy places a disproportionate burden on the coal industry for minimal reductions in emissions. This additional risk of heightened emissions further suggests that Germany's exit auction might not be narrowly tailored to its goal of reducing emissions.

Second, the potential for carbon leakage created by the act bears upon the narrow tailoring of the policy to the German government's interest in emissions reduction. Carbon leakage refers to a scenario in which a country reduces emissions by diverting its emissions to other countries through international trade.⁹⁵ In the context of the German coal phase out, the act may have inadvertently incentivized Germany to increase its gas imports or imports of coal-fired power from other jurisdictions as a means to offset the reduced power generation capacity resulting from coal plant closures.⁹⁶

Third, the act's capacity mix further reduces the likelihood that the policy was narrowly tailored to its goal of reducing emissions. This legislation

⁹² See Tiedman & Muller-Hansen, *supra* note 24, at 2.

⁹³ See Srivastav & Zaehring, *supra* note 65, at 6.

⁹⁴ See ENVTL. JUST. FOUND., *supra* note 33, at 5.

⁹⁵ Shasha Yu et al., *Carbon Leakage and Low-carbon Performance: Heterogeneity of Responsibility Perspectives*, 165 ENERGY POL'Y 1 (2022).

⁹⁶ See Schiffer et al., *supra* note 71; see also Elias Althoff et al., *Climate-Neutral Power System 2035. How the German Power Sector can Become Climate-Neutral by 2035*, AGORA ENERGIEWENDE 7 (2020), <https://perma.cc/2649-5LQX>.

predominantly places a substantial emissions reduction burden on the coal industry while concurrently relying on natural gas to address the intermittency challenges posed by renewable energy sources.⁹⁷ This allocation of responsibilities for emissions reduction may be viewed as an unreasonable and disproportionate approach, where one sector shoulders a significant burden while another remains relatively unaffected.

In response to a claim of breach of the FET standard in Article 10(1) of the ECT, German respondents may argue that a tribunal is not appropriately situated to substitute its judgment for the state's when evaluating whether a policy was narrowly tailored to its policy goal. Investment tribunals tend to lack information-gathering capabilities on par with that of states and have less relevant subject matter expertise.⁹⁸ For example, in *Ioan Micula et al. v. Romania*, an ICSID tribunal found that the host state was most institutionally competent to compare policy alternatives to select the least intrusive means of accomplishing their intended goals.⁹⁹ Tribunals may have an even greater obligation to defer to states' policy judgments in situations where states make factual determinations in expert-driven, technical, and scientific domains.¹⁰⁰

However, deference to factual judgments made by states is not ironclad in investment arbitration, and the very purpose of investment arbitration can be antagonistic to principles of deference.¹⁰¹ Host states offer investment arbitration as an alternative to domestic litigation to provide a neutral dispute resolution forum where foreign investors can retain confidence that their status as an alien

⁹⁷ See Elias Althoff et al., *supra* note 96, at 7.

⁹⁸ Raymond Yang Gao, *What Are We Talking About When We Talk About Deference in Investment Treaty Arbitration?*, 13 J. INT'L DISP. SETTLEMENT 496 (2022).

⁹⁹ Ioan Micula et al., *supra* note 84, ¶ 826 (“It is not for this Tribunal to say what would have been the right decision (i.e., possibly shortening the period or diminishing in other ways the obligations imposed upon the investors).”).

¹⁰⁰ *Chemtura Corp. v. Government of Canada*, UNCITRAL/NAFTA, Award, ¶ 2 (1976) (noting that it is not the purpose of a tribunal to “second-guess the correctness of the science-based decision-making of highly specialized national regulatory agencies.”); *Philip Morris Brands Sàrl et al. v. Oriental Republic of Uruguay*, ICSID Case No. ARB/10/7, Award, ¶ 418 (July 8, 2016) (“The present case concerns a legislative policy decision taken against the background of a strong scientific consensus . . . Substantial deference is due in that regard to national authorities’ decision . . . The fair and equitable treatment standard is not a justiciable standard of good government, and the tribunal is not a court of appeal . . . In one sense an 80% requirement is arbitrary in that it could have been 60% or 75% or for that matter 85% or 90%. Some limit had to be set, and the balance to be struck between conflicting considerations was very largely a matter for the government.”); *Methanex Corp. v. United States*, UNCITRAL/NAFTA, Award, ¶ 101–02 (1976) (noting that a host states’ fact finding represented a “a serious, objective and scientific approach to a complex problem . . . is possible for other scientists and researchers to disagree in good faith with certain of its methodologies, analyses and conclusions . . . such disagreement, even if correct, does not warrant this Tribunal in treating it as part of a political sham”).

¹⁰¹ Johannes Hendrik Fahner, *From Dispute Settlement to Judicial Review? The Deference Debate in International Investment Law*, in *EVOLUTION IN DISPUTE RESOLUTION: FROM ADJUDICATION TO ADR?*, 72 (Michael Duchateau et al. eds., 2016).

to the legal, political, and cultural environment of the host state will not be used against them.¹⁰² States provide this guarantee of impartial adjudication to foreign investors in exchange for the expected benefits of foreign investment.¹⁰³ Viewed in this light, deference appears contrary to the goals of investment arbitration because it limits the impartiality of the tribunal by affording extra weight to the view of the host state.¹⁰⁴

Accordingly, a tribunal may take advantage of its wide discretion in regulating evidentiary procedure and choose not to accord unqualified deference to the German government's factual determinations related to its phase-out policy.¹⁰⁵ Many similarly situated tribunals have chosen to afford less than absolute deference to state's interpretations of law and determinations of fact.¹⁰⁶ For example, in *Técnicas Medioambientales Tecmed SA v. Mexico*, a tribunal reviewed the Mexican government's revocation of a license to operate a landfill violated the US-Mexico BIT.¹⁰⁷ The tribunal held that the deference due to Mexico's findings of fact and law did not prohibit the tribunal from examining whether the actions of the state were narrowly tailored to their goals.¹⁰⁸ In reaching its holding, the

¹⁰² *Id.*

¹⁰³ Kassi D. Tallent, *The Tractor in the Jungle: Why Investment Arbitration Tribunals Should Reject a Margin of Appreciation Doctrine*, in INVESTMENT TREATY ARBITRATION AND INTERNATIONAL LAW, 137–69 (Ian Laird & Todd Weiler eds., 2010).

¹⁰⁴ Sarah Vasani, *Bowing to the Queen: Rejecting the Margin of Appreciation Doctrine*, in INVESTMENT TREATY ARBITRATION AND INTERNATIONAL LAW, 111–35 (Ian Laird & Todd Weiler eds., 2010).

¹⁰⁵ See ICSID Arbitration Rules, rule 34 (2006); UNCITRAL Arbitration Rules (2010), art 17.

¹⁰⁶ Renta 4 S.V.S.A, Ahorro Corporación Emergentes F.I., Ahorro Corporación Eurofondo F.I., Rovime Inversiones SICAV S.A., Quasar de Valores SICAV S.A., Orgor de Valores SICAV S.A., GBI 9000 SICAV S.A. v. The Russian Federation, SCC No. 24/2007, Award, ¶ 179 (2007) (“When agreeing to the jurisdiction of international tribunals, states perforce accept that those jurisdictions will exercise their judgment . . .”); Enron Corp. and Ponderosa Assets, LP v. Argentine Republic, ICSID Case No. ARB/01/3, Award, ¶ 340 (May 22, 2007) (“Judicial determination of the compliance with the requirements of international law in this matter should not be understood as if arbitral tribunals might be wishing to substitute for the functions of the sovereign State, but simply responds to the duty that in applying international law they cannot fail to give effect to legal commitments that are binding on the parties and interpret the rules accordingly.”); *Técnicas Medioambientales Tecmed SA v. Mexico* (2003), ICSID Case No. ARB (AF)/00/2P, Award, (May 29, 2003).

¹⁰⁷ See *Técnicas Medioambientales Tecmed*, *supra* note 81, ¶ 35–40.

¹⁰⁸ *Id.* ¶ 122.

(“Although the analysis starts at the due deference owing to the State when defining the issues that affect its public policy or the interests of society as a whole, as well as the actions that will be implemented to protect such values, such situation does not prevent the Arbitral Tribunal, without thereby questioning such due deference, from examining the actions of the State . . . to determine whether such measures are reasonable with respect to their goals, the deprivation of economic rights and the legitimate expectations of who suffered such deprivation. There must be a reasonable relationship of proportionality between the charge or weight imposed to the foreign investor and the aim sought to be realized by any expropriatory measure.”)

tribunal noted that because foreign investors lack political rights in the host state, the tribunal is entitled to apply a more searching review of the host state's findings of both fact and law.¹⁰⁹ In general, investment arbitration tribunals are more likely to adopt an approach to deference that emulates *Tecmed* instead of *Micula*; a broad survey of investment awards found that the arbitrators tend to “assert explicitly or implicitly an expansive role for themselves to decide whether the choices and conduct of another decision-maker were correct.”¹¹⁰

German respondents may also point to the early 20th century case *L.F.H. Neer and Pauline Neer (U.S.A.) v. United Mexican States* to argue that its coal phase out and exit auction do not breach the FET standard.¹¹¹ In *Neer*, the United States claimed that Mexico violated a minimum standard of treatment of foreign nationals by failing to investigate the murder of an American citizen. The tribunal found that Mexico's conduct did not violate the minimum standard of treatment because it did not meet a standard of bad faith and egregious action necessary to violate the minimum standard of treatment under customary international law.¹¹² Accordingly, Germany may argue that it did not violate the minimum standard of treatment incorporated in the FET standard of the ECT because its coal phase out was not targeted at foreign investors and thus evinces neither willful discrimination nor blatant disregard for international law.

However, tribunals have since confined *Neer* to its facts.¹¹³ *Neer* concerned the state's response to criminal acts of private parties that victimize foreigners, not the treatment of foreign investor's property by the state itself.¹¹⁴ Tribunals have

¹⁰⁹ *Id.* ¶ 47.

(“The foreign investor has a reduced or nil participation in the taking of the decisions that affect it, partly because the investors are not entitled to exercise political rights reserved to the nationals of the State, such as voting for the authorities that will issue the decisions that affect such investors.”)

¹¹⁰ Gus van Harten, SOVEREIGN CHOICES AND SOVEREIGN CONSTRAINTS: JUDICIAL RESTRAINT IN INVESTMENT TREATY ARBITRATION 17 (2013); Gus van Harten, *Judicial Restraint in Investment Treaty Arbitration: Restraint Based on Relative Suitability*, 5 J. INT'L DISP. SETTLEMENT 5, 5–39 (2014).

¹¹¹ *L.F.H. Neer (U.S. v. United Mexican States)* 4 R.I.A.A. 60, 61–62 (1926) (holding that a state's conduct “should amount to an outrage, to bad faith, to willful neglect of duty or to an insufficiency of governmental action so far short of international standards that every reasonable and impartial man would readily recognize its insufficiency”).

¹¹² *Id.*

¹¹³ See NEWCOMBE & PARADELL, *supra* note 76 (noting that *Neer* has never been cited in the entire history of Iran-US Claims Tribunal).

¹¹⁴ See, e.g., *Mondev International Ltd. v. United States*, ICSID Case No. ARB(AF)/99/2, Award, ¶ 115 (Oct. 11, 2002).

(“ . . . the *Neer* case, and other similar cases which were cited, concerned not the treatment of foreign investment as such but the physical security of the alien . . . there is insufficient cause for assuming that provisions of bilateral investment treaties . . . while incorporating the *Neer* principle in respect of the duty of protection against acts of private parties affecting the physical security

since acknowledged that the customary law surrounding minimum standards is constantly evolving and presently can be violated by acts that do not shock the judicial conscience.¹¹⁵ Other tribunals have expanded the scope of the FET without modifying the Neer test by finding that a greater number of activities outrage and offend the sensibilities of the contemporary international community.¹¹⁶ As such, German or other prospective respondents are unlikely to find significant protection from breach of FET claims under the Neer standard.

B. Breach of Article 13(1): Expropriation

Article 13(1), prohibits both direct expropriation of property and measures tantamount to the expropriation of property, commonly referred to as indirect expropriation.¹¹⁷ This provision prohibits states from nationalizing, expropriating, or taking measures equivalent to nationalization and expropriation, except where the expropriation is¹¹⁸ (i) in the public interest, (ii) not discriminatory, (iii) carried out under due process of law, and (iv) accompanied by the payment of prompt, adequate and effective compensation. Accordingly, assessing whether Germany's phase out of coal breached Article 13(1) of the ECT requires analysis of two crucial questions. First, does the phase out of coal constitute expropriation? Second, assuming the phase out is an expropriation, is it a legal expropriation?

1. Is Germany's phase out of coal a form of expropriation?

Expropriation can occur directly or indirectly.¹¹⁹ Direct expropriation refers to the physical occupation or seizure of an investor's property by a host state. Indirect expropriation, on the other hand, refers to state measures that

of aliens present on the territory of the State, are confined to the Neer standard of outrageous treatment where the issue is the treatment of foreign investment by the State itself")

¹¹⁵ ADF Group Inc. v. United States of America, ICSID Case No. ARB(AF)/00/1, Award, ¶ 181 (Jan. 9, 2003) ("There appears no logical necessity and no concordant state practice to support the view that the Neer formulation is automatically extendible to the contemporary context of treatment of foreign investors and their investments by a host or recipient State").

¹¹⁶ See Glamis Gold, Ltd., *supra* note 79, ¶ 22.

("A breach may be exhibited by a "gross denial of justice or manifest arbitrariness falling below acceptable international standards;" or the creation by the State of objective expectations *in order to induce investment* and the subsequent repudiation of those expectations...although the standard for finding a breach of the customary international law minimum standard of treatment therefore remains as stringent as it was under Neer; it is entirely possible that, as an international community, we may be shocked by State actions now that did not offend us previously.")(emphasis in original).

¹¹⁷ Energy Charter Treaty, *supra* note 75, at art. 13(1).

¹¹⁸ *Id.*

¹¹⁹ NIGEL BLACKBAY & CONSTANTINE PARTASIDES, REDFERN AND HUNTER ON INTERNATIONAL ARBITRATION 471 (6th ed. 2015).

substantially deprive investors of the use and value of the asset, even though the investor retains formal title.¹²⁰ Indirect expropriations can occur in a variety of ways, including “creeping” expropriations, where a series of host state actions accumulate to a substantial deprivation of the use and value of an investor’s asset.¹²¹ When closely analyzed, Germany’s phase out of coal appears unlikely to constitute a direct expropriation but may constitute an indirect or creeping expropriation.

a) Is Germany’s phase out of coal a direct expropriation?

Direct expropriations entail a host state’s physical seizure or occupation of property to transfer title from the property owner to the host state.¹²² The defining feature of a direct expropriation is the forcible transfer of the property rights of a private person to the host state.¹²³ The requirements of physical seizure and forcible transfer make findings of direct expropriations exceedingly rare in the 21st Century.¹²⁴

Accordingly, it is highly improbable that the claimants in this case could successfully allege a direct expropriation. The German government did not physically seize any assets or occupy any territory; rather, the claimants voluntarily transferred title in their assets by participating in the exit auction. This element of voluntary transfer, initiated by the claimants themselves through their bids, distinguishes it from the characteristics of a direct expropriation, where ownership is forcibly taken by the host state.

b) Is Germany’s phase out of coal a form of “indirect expropriation”?

Tribunals have interpreted “measures equivalent to expropriation,” or indirect expropriation, in line with US jurisprudence around “regulatory takings.”¹²⁵ For example, the tribunal in *Middle East Cement v. Egypt* found that a

¹²⁰ OECD, “*Indirect Expropriation*” and the “*Right to Regulate*” in *International Investment Law*, OECD Working Paper on International Investment, No. 2004/4 (Sept. 2004), <https://perma.cc/SQG8-EP6C>.

¹²¹ Been & Beauvais, *supra* note 12.

¹²² JOHANNE M. COX, EXPROPRIATION IN INVESTMENT TREATY ARBITRATION 44 (Loukas Mistelis ed., 2019).

¹²³ L. Yves Fortier & Stepher L Drymer, *Indirect Expropriation in the Law of International Investment: I Know It When I See It, or Caveat Investor*, 19 ICSID REV.- FOREIGN INV. L. J. 297 (2004).

¹²⁴ Christoph H Schruer, *The Concept of Expropriation under the ECT and Other Investment Protection Treaties* in INVESTMENT ARBITRATION AND THE ENERGY CHARTER TREATY, 3 (Clarisse Ribeiro ed., 2005); Brigitte Stern, *In Search of the Frontiers of Indirect Expropriation*, in CONTEMPORARY ISSUES IN INTERNATIONAL ARBITRATION AND MEDIATION: THE FORDHAM PAPERS, 29 (Arthur Rovine ed., 2007).

¹²⁵ Andrei Konoplyanik & Thomas Wälde, *Energy Charter Treaty and its Role in International Energy* (2006), 24 J. ENERGY & NATURAL RESOURCES L. 523, 534 (2006); Thomas Wälde, *Arbitration in the Oil, Gas and Energy Field: Emerging Energy Charter Treaty Practice*, 1 TRANSNAT’L DISP. MGMT. 2, 26 (2004).

governmental decree prohibiting the import of cement was an indirect taking of the claimant's import licenses.¹²⁶

To test whether a state measure constitutes an indirect expropriation under the ECT, tribunals typically test whether a state's measure "substantially deprives" an investor of the value of their investment.¹²⁷ The substantial deprivation test is consistent with The Convention Establishing the Multilateral Investment Guarantee Agency of 1985, which describes indirect expropriations as "any action . . . or omission attributable to the host government which has the effect of depriving the holder of a guarantee of his ownership or control of, or a substantial benefit from, his investment."¹²⁸ To constitute a substantial deprivation, tribunals generally require that an expropriative measure prevent an investment from generating a commercial return.¹²⁹ This differs significantly from other investment treaties, which may require the elimination of "all or nearly all" of an investment's value to find expropriation.¹³⁰

Several tribunals have found that situations similar to the German coal phase-out constitute a substantial deprivation. For instance, In *Eco Oro v. Colombia*, the tribunal found that the loss of a "potential right to exploit" constituted a "substantial deprivation" to a degree that "is capable of being considered to be a substantial deprivation, such as to amount to an indirect expropriation."¹³¹ Similarly, in *Casinos Austria v. Argentina*, the tribunal found that revoking the claimants' gaming license, which still had 17.5 years to run, amounted to a "substantial deprivation."¹³² In the case of *Abnegoa v. Mexico*, the tribunal concluded that Mexico had substantially deprived claimants of their investment in

¹²⁶ Middle East Cement Shipping and Handling Co. S.A. v. Arab Republic of Egypt, ICSID Case No. ARB/99/6, Award, ¶ 107 (Apr. 12, 2002).

¹²⁷ Pope & Talbot v. Canada, Award, (June 26, 2000) 7 ICSID Reports 69; *see also* Electrabel S.A., *supra* note 80, ¶ 6.62; InfraRed Environmental Infrastructure GP Limited et al. v. Kingdom of Spain, ICSID Case No. ARB/14/12, Award, ¶ 505 (Aug. 2 2019); Hydro Energy 1 S.à r.l. and Hydroxana Sweden AB v. Kingdom of Spain, ICSID Case No. ARB/15/42, Decision on Jurisdiction, Liability and Directions on Quantum, ¶ 531 (Mar. 9, 2020); Mohamed Abdel Raouf Bahgat v. Arab Republic of Egypt I, PCA Case No. 2012-07, Final Award, ¶ 221 (Dec. 23, 2019); Metalclad Corporation v. United Mexican States, ICSID Case No. ARB(AF)/97/1, Award, ¶ 103 (Aug. 30, 2000); *see* Técnicas Medioambientales Tecmed, S.A., *supra* note 81, ¶ 115.

¹²⁸ *See* Schruer, *supra* note 124, at 4.

¹²⁹ Burlington Resources Inc. v. Republic of Ecuador, ICSID Case No. ARB/08/5, Decision on Liability, ¶ 397–98 (Dec. 14, 2012); Metalclad, *supra* note 127, ¶ 113.

¹³⁰ *See* Tienhaara, *supra* note 13, at 246.

¹³¹ Eco Oro Minerals Corp. v. Republic of Colombia, ICSID Case No. ARB/16/41, Decision on Jurisdiction, Liability and Directions on Quantum, ¶ 634 (Sept. 9, 2021).

¹³² Casinos Austria International GmbH and Casinos Austria Aktiengesellschaft v. Argentine Republic, ICSID Case No. ARB/14/32, Award, ¶ 353–54 (Nov. 5, 2021).

a waste management plant by canceling its license.¹³³ Furthermore, in *Saar Papier v. Poland*, the tribunal ruled that Poland’s prohibition on importing waste paper could be seen as a substantial deprivation of the investment in a factory built for processing such materials.¹³⁴

Comparing the Coal Exit Act with these cases suggests that the German coal phase out could reasonably be interpreted as resulting in a significant deprivation for investors in the coal industry. When investors invested in coal-fired powerplants in Germany, they likely expected to use their license for the generation and sale of electricity from coal for the entire useful life of the powerplant.¹³⁵ However, the German government’s plan to phase out coal by tapering off the number of permits to generate electricity from lignite and anthracite prevented investors from exploiting powerplants for their intended useful life and turned investments in coal powerplants into stranded assets.¹³⁶

c) Is Germany’s phase out coal a “creeping” expropriation?

Creeping expropriations refer to a series of events that may not amount to an expropriation when considered independently, but whose cumulative impact results in de facto expropriation.¹³⁷ The creeping expropriation doctrine protects investors from gradual encroachment on their property rights. As the tribunal in *Siemens v. Argentina* explained, “creeping expropriation refers . . . to steps that eventually have the effect of an expropriation.”¹³⁸ The creeping expropriation doctrine allows investors to vindicate their rights in situations where no discrete government action alone qualifies as a substantial deprivation, but the accumulation of a series of government actions collectively amounts to a substantial deprivation.

If claimants cannot establish that the Act to Reduce and End Coal-Fired Power Generation substantially deprived them of their property rights, they might be able to establish such a claim through a theory of “creeping” expropriation. To do so, claimants could point to a series of events that transpired before and after the exit auction that cumulate to substantial deprivation. Specifically, investors in coal plants in Germany can argue that the German state’s actions before the exit auction cumulatively devalued the investor’s property to an extent that it became economically rational to bid in the exit auction to be bought out. In their claim,

¹³³ *Abengoa, S.A. y COFIDES, S.A. v. United Mexican States*, ICSID Case No. ARB(AF)/09/2, Award, ¶ 610 (Apr. 18, 2013).

¹³⁴ *Saar Papier Vertriebs GmbH v. Poland*, UNCITRAL, Award, ¶¶ 87, 89 (Oct. 16, 1995).

¹³⁵ Miriam Breitenstein et al., *Stranded Asset Risk and Political Uncertainty: The Impact of the Coal Phase-Out on the German Coal Industry*, 43 ENERGY J. 5, 29 (2022).

¹³⁶ See Scott et al., *supra* note 25, at 12.

¹³⁷ See Schruer, *supra* note 124, at 36.

¹³⁸ *Siemens A.G. v. The Argentine Republic*, ICSID Case No. ARB/02/8, Award, ¶ 263 (Jan. 17, 2007).

claimants would need to demonstrate that the actions preceding the auction and the auction itself, though insubstantial yet non-negligible when viewed in isolation, result in a substantial deprivation of the value of the investment when accumulated over time.

Investors could point to several events to establish a series of events that accumulate to establish a “substantial deprivation.” First, the German government’s shifting timeline may contribute to the accumulation of a substantial devaluation. The initial deadline set in 2038 devalued their coal investments significantly by limiting the future cash flows that the investors could extract from the asset.¹³⁹ Recent studies estimate that the 2038 phase out timeline cost German investors 2.6 billion euros in stranded assets.¹⁴⁰ Second, investors could further argue that the mandatory closure of powerplants in 2030 even further lowered the value of their investment.¹⁴¹ Third, investors could point to the series of auction rounds, which were designed to reduce total paid-out compensation with sealed bids, pay-as-bid pricing, and decreasing bid caps, as a set of government actions that lowered the value of their asset by forcing them to bid underneath the ceiling instead of placing bids equivalent to the fair market value.¹⁴²

Additionally, investors could point to emissions trading systems as an event in a series that led to a substantial devaluation. Emissions trading systems limit the overall volume of emissions by creating an annually decreasing cap on the number of emissions allowed within a particular jurisdiction.¹⁴³ In the EU, new emissions allowances are allocated via auction.¹⁴⁴ Because a powerplant must purchase and use allowances in order to emit, emissions trading systems effectively force coal-fired powerplants to pay for their CO₂ emissions. The cost of carbon increases with the decreasing cap on emissions, thus gradually lowering the profitability of coal-fired powerplants and reducing the value of the asset.¹⁴⁵

By lowering the net present value of coal powerplants, emissions trading systems also reduce the amount the government would have to pay to phase out a powerplant.¹⁴⁶ A German powerplant operator may thus find it rational to participate in an exit auction because they would otherwise be forced to exit the industry early due to growing variable costs in the form of increasing carbon

¹³⁹ See ENVTL. JUST. FOUND., *supra* note 33, at 5.

¹⁴⁰ See Breitenstein et al., *supra* note 135.

¹⁴¹ See ENVTL. JUST. FOUND., *supra* note 33, at 5.

¹⁴² See Flues, *supra* note 17, at 17.

¹⁴³ Smaranda Sgarciu, *How CO₂ Prices Accelerate Decarbonisation—The Case of Coal-Fired Generation in Germany*, 173 ENERGY POL’Y 1–2 (2023).

¹⁴⁴ *Id.*

¹⁴⁵ *Id.*

¹⁴⁶ See Scott et al., *supra* note 25, at 19.

prices.¹⁴⁷ Though there are significant complications in attributing the creation of the EU ETS to the Federal Republic of Germany, investors could point to Germany’s national emissions trading scheme—which recently added coal to its list of covered industries—as a potential component of a creeping expropriation claim.¹⁴⁸

2. Assuming the phase-out is an expropriation, is it a lawful expropriation?

To be lawful, an expropriation must be (i) in the public interest, (ii) non-discriminatory, (iii) carried out under due process of law and (iv) accompanied by the payment of prompt, adequate, and effective compensation. The German coal exit auction likely only runs afoul of the requirement that expropriation be carried out in the public interest and the requirement that expropriation be accompanied by payment of prompt, adequate, and effective compensation.

a) *Was Germany’s expropriation of coal compatible with the public interest requirement?*

Germany likely has a legitimate public interest to fulfill its obligations under international climate law.¹⁴⁹ In *RWE and Uniper v. The Netherlands Ministry of Climate and Energy*, the Hague district court denied compensation to RWE and Uniper, two German energy companies, for the Dutch phase out of coal on the grounds that the government had a legitimate interest in meeting its international law obligations to remediate climate change.¹⁵⁰

However, tribunals have interpreted the public interest standard to require that any expropriation must be narrowly tailored to the purpose that it seeks to achieve. Tribunals typically test this narrow tailoring requirement by assessing whether the measure is proportionate to, has close nexus with, and whether there were less restrictive alternatives to the deprivation caused to the investor.¹⁵¹ The German coal exit auction appears to lack narrow tailoring for similar reasons as discussed in Article 10(1) above. These reasons include the bid price adjustment

¹⁴⁷ See Sgarciu, *supra* note 143, at 8–14.

¹⁴⁸ *German National Emissions Trading Scheme*, INT’L CARBON ACTION P’SHIP (2024), <https://perma.cc/5KZ5-8JMJ>.

¹⁴⁹ See *RWE and Uniper v. The Netherlands Ministry of Climate and Energy*, C-09-608588-HA ZA 21-245, ECLI:NL:RBDHA:2022:12635 (2022).

¹⁵⁰ *Id.*

¹⁵¹ See *Técnicas Medioambientales Tecmed, S.A.*, *supra* note 81, ¶ 122 (“[t]here must be a reasonable relationship of proportionality between the charge or weight imposed to the foreign investor and the aim sought to be realized by any expropriatory measure”); *Vestey Group Ltd v. Bolivarian Republic of Venezuela*, ICSID Case No. ARB/06/4, Award, ¶ 296 (Apr. 15, 2016) (“the idea is to determine whether the measure had a reasonable nexus with the declared public purpose or in other words, was at least capable of furthering that purpose”).

being based on installed capacity rather than generating capacity, concerns about carbon leakage, and the composition of the capacity mix.

b) Was Germany's expropriation of coal plants accompanied by fair, adequate, and effective compensation?

The requirement for fair compensation typically requires application of the Hull formula, developed by US Secretary of State Cordell Hull, who declared that expropriation requires payment of “prompt, adequate and effective” compensation.¹⁵² Tribunals have applied the Hull formula to require the fair market value of the investment expropriated immediately before the expropriation, paid in a freely convertible currency on the basis of the market rate of exchange, including interest until the date of payment.¹⁵³

Fair Market Value (FMV) has been defined as the price at which a buyer and seller would conclude an arm's length transaction.¹⁵⁴ The fair market value of an income-producing asset, like a powerplant, is most commonly calculated by discounting the future cash flows of the asset.¹⁵⁵ Tribunals have also found that the application of FMV as a valuation methodology is conditional upon a fair exchange, which in turn requires that neither party may be under duress and that both parties have adequate information regarding all relevant circumstances of the purchase.¹⁵⁶ In the circumstance that FMV cannot be certainly estimated, tribunals often award the book value of an asset.¹⁵⁷

In addition to determining the appropriate valuation methodology, tribunals must also determine the specific point in time when the valuation should occur. If the expropriation is lawful, the claimant is owed the value of the asset at the point in time just before the expropriation occurred.¹⁵⁸ If the expropriation is not lawful, then the defendant is owed the market value of the asset at the time of the tribunal's judgment because the asset should have been the property of the claimant the entire time.¹⁵⁹

¹⁵² See BLACKABY & PARTASIDES, *supra* note 119, at 492.

¹⁵³ *Id.*

¹⁵⁴ *Id.* (citing SERGEY RIPINSKY & KEVIN WILLIAMS, DAMAGES IN INTERNATIONAL INVESTMENT LAW 183–86 (2008)).

¹⁵⁵ *Id.* (citing WORLD BANK, GUIDELINES ON THE TREATMENT OF FOREIGN DIRECT INVESTMENT, Guideline IV (6)).

¹⁵⁶ Starrett Housing Corporation et al. v Iran, Iran–United States Claims Case No. 314-24-1, Award, (Aug. 14, 1987).

¹⁵⁷ See, e.g., Karaha Bodas Co. LLC v Perusahaan Pertambangan Minyak Dan Gasi Bumi Nehara, UNCITRAL, Award, (Dec. 18, 2000); Himpurna California Energy Ltd v PT PLN, UNCITRAL, Award, (May 4, 1999).

¹⁵⁸ CHARLES BROWER, JUDGING IRAN: A MEMOIR OF THE HAGUE, THE WHITE HOUSE, AND LIFE ON THE FRONT LINE OF INTERNATIONAL JUSTICE 125 (2023).

¹⁵⁹ *Id.*

FMV would likely be an inappropriate measure to assess the adequacy of the compensation the German government provided to coal powerplant operators for several reasons. First, the sellers of coal powerplants were likely under duress due to the government-imposed phase out of all of their assets, which forced the sellers to accept a below-market price in order to cover their losses.¹⁶⁰ Second, sellers of coal powerplants lacked adequate information about the transaction because the initial bids were confidential and the parties would not know whether their plants would receive a grid factor adjustment.¹⁶¹ Accordingly, book value would provide a more appropriate measure of the coal powerplant's value.

When measured by book value, owners of stranded assets are definitionally undercompensated. A stranded asset is an asset that loses significant value because the asset cannot be used for the entirety of its intended lifespan.¹⁶² Accordingly, German powerplant owners should be compensated for the loss in carrying value as a result of the reduced useful life of their powerplants.

However, even if the value of their assets was measured by fair market value, German coal powerplant operators were likely still undercompensated. Germany's actions prior to the auction devalued the coal powerplant operators' assets to a point that it would be rational to bid in the phase out auction, and the auction itself adjusted operators' bids to be below the true value of the future cash flows of the powerplants. Accordingly, the phase-out failed to value the assets at their fair market value at the onset of the expropriation, marked by the initial event in the series of expropriative actions leading to a substantial deprivation, nor did it value the assets at their fair market value at the time of the auction.

IV. GERMANY'S LIKELY DEFENSES AGAINST INVESTORS' POTENTIAL CLAIMS

Germany is likely to present several defenses concerning jurisdiction, voluntary waivers of investors' rights to bring ISDS claims, exceptions outlined in Article 24 of the ECT, and the EU's withdrawal from the ECT. However, it is improbable that any of these defenses will succeed in defeating a potential expropriation claim.

A. Jurisdictional Objections to Investors' Claims

The ECT excludes cases in which investors sue their own country of origin.¹⁶³ However, this requirement likely will not cause claimants to lose their claims on jurisdictional grounds.

¹⁶⁰ See *Starrett Housing Corporation et al.*, *supra* note 156.

¹⁶¹ See *Scott et al.*, *supra* note 25, at 14.

¹⁶² See *Caldecott & Mitchell*, *supra* note 6.

¹⁶³ See *BROWER*, *supra* note 158, at 4.

The two largest producers of electricity from coal in Germany are Lausitz Energie AG (LEAG) and Rheinisch-Westfälisches Elektrizitätswerk (RWE).¹⁶⁴ The owners of LEAG would be permitted to bring a claim because the company is owned by Energetický a Průmyslový Holding (EPH) located in the Czech Republic and the PPF investment fund located in the United Kingdom.¹⁶⁵

Rheinisch-Westfälisches Elektrizitätswerk (RWE), however, is a German company located in Rhineland, so it may face obstacles in bringing its claim.¹⁶⁶ However, RWE can circumvent the restriction in two key ways. First, foreign shareholders in the company may also be able to independently bring a claim against Germany.¹⁶⁷ Many tribunals have recognized the rights of foreign shareholders, including minority shareholders, to initiate investment arbitration claims if they believe a host state's conduct is incompatible with an IIA.¹⁶⁸ Tribunals' jurisdiction over such claims appears even clearer where the IIA defines a share in a company as a protected "investment," which the ECT does.¹⁶⁹

Second, the company may be able to file an ECT claim by using a foreign subsidiary, or "letterbox" company to initiate claims against home countries.¹⁷⁰ Several arbitral tribunals have upheld the legality of restructuring under a letterbox company to regain jurisdiction. In *Perenco v. Ecuador*, the tribunal accepted jurisdiction for a claim invoked under the France-Ecuador Bilateral Investment Treaty (BIT), which grants standing to non-French entities so long as they are controlled by French shareholders. In *Perenco*, French shareholders did not acquire shares in the claimant entity until after they decided to initiate arbitration.¹⁷¹ Similarly, in *Waste Management II v. Mexico*, the tribunal evaluated a NAFTA claim raised by an American Waste Management services provider owned by a holding company incorporated in the Cayman Islands. The tribunal upheld jurisdiction

¹⁶⁴ *RWE Must Watch its Leading Role in German Power Market, Cartel Office Says*, REUTERS (Aug. 9, 2023), <https://perma.cc/H44P-6Z6Q>.

¹⁶⁵ *See* Flues, *supra* note 17, at 3.

¹⁶⁶ Rheinisch-Westfälisches Elektrizitätswerk Aktiengesellschaft, *Historie*, RWE.COM (2023), <https://perma.cc/G3LS-7TQ9>.

¹⁶⁷ Amandine Van Den Berghe & Ida Westphal, *The German Lignite Phase-Out Contract and Investment Arbitration*, CLIENT EARTH 8 (2020).

¹⁶⁸ *Id.*

¹⁶⁹ Abby Cohen Smutny, *Claims of Shareholders*, in INTERNATIONAL INVESTMENT LAW FOR THE 21ST CENTURY: ESSAYS IN HONOUR OF CHRISTOPH SCHREUER, 363–76 (Christina Binder et al. eds., 2009).

¹⁷⁰ *Id.*

¹⁷¹ *Perenco Ecuador Ltd. v. Republic of Ecuador*, ICSID Case No. ARB/08/6, Decision on Remaining Issues of Jurisdiction and Admissibility, ¶ 528 (Sept. 12, 2014).

notwithstanding the intermediary companies between the claimant and the investment.¹⁷²

The German government may also attempt to divest an arbitral tribunal of jurisdiction by applying the European Court of Justice's (ECJ) recent decision in *Slovak Republic v. Achmea*, which held that intra-EU investor-state arbitrations are incompatible with EU law.¹⁷³ Subsequent cases before the ECJ—namely *Komstroy v. Moldova*—have applied the holding in *Achmea* to prohibit intra-EU ECT claims.¹⁷⁴

However, these cases are unlikely to impact the ability of claimants to file claims against Germany for at least two reasons. First, arbitral tribunals regularly ignore the ECJ's jurisdiction and consider themselves competent.¹⁷⁵ After *Achmea*, fifty-six tribunals continued arbitration over objections grounded in the ECJ's position.¹⁷⁶ ICSID tribunals have already distinguished the ECJ's decision in *Komstroy* to uphold jurisdiction in intra-EU ECT disputes.¹⁷⁷ Most intra EU-ECT arbitrations are administered through ICSID as opposed to ad-hoc proceedings through the PCA or the Stockholm Chamber of Commerce (SCC).¹⁷⁸ If subsequent ICSID tribunals similarly disregard *Komstroy*, states would have little ability to decline the enforcement of intra-EU ECT awards because the ICSID convention imposes a binding obligation upon all member states to automatically recognize and enforce ICSID awards without any national appellate review.¹⁷⁹

Second, the ECT permits letterbox lawsuits, which would allow investors to funnel investments into jurisdictions outside of the EU where they can vindicate their rights under the ECT and file an investor-state claim.¹⁸⁰

¹⁷² Waste Management II v. United Mexican States, ICSID Case No. ARB/(AF)/00/3, Award (Apr. 30, 2004).

¹⁷³ Case C284/16, *Slovak Republic v Achmea BV*, ECLI:EU:C:2018:158 (Mar. 6, 2018).

¹⁷⁴ Case C741/19, *Republic of Moldova v Komstroy*, LLCECLI:EU:C:2021:655 (Sept. 2, 2021), <https://perma.cc/5JCP-RVKE>.

¹⁷⁵ See Flues, *supra* note 17, at 5.

¹⁷⁶ Stan Putter, *The Netherlands Coal Phase-Out and the Resulting (RWE and Uniper) ICSID Arbitrations*, KLUWER ARBIT. BLOG (2021), <https://perma.cc/4FK3-J2GE>.

¹⁷⁷ Terfè Gerotto, *ICSID Tribunal Upholds Jurisdiction over an Intra-EU Dispute*, INV. TREATY NEWS (Apr. 2, 2023), <https://perma.cc/96R5-MPDF>.

¹⁷⁸ International Energy Charter, *Energy Charter Treaty: List of Cases*, ENERGYCHARTERTREATY.ORG (2022), <https://perma.cc/A7R5-728N>.

¹⁷⁹ Francesco Sorace, *Enforcing an ICSID Award Issued in an Intra-EU Investment Arbitration: An Italian Law Perspective*, 3 ITALIAN REV. INT'L & COMPAR. L. 88 (2023).

¹⁸⁰ See *Moldova v. Komstroy*, *supra* note 174.

B. Waivers of Rights to File ISDS Claims

The contract the German government offered to buy out coal companies contains several clauses that force companies to waive their right to bring ISDS claims. Section 23 of the contract stipulates that “companies shall refrain from using any form of legal remedy whatsoever and on any basis whatsoever to challenge measures taken on the basis of the coal phase-out law,” and that “companies waive any legal remedies of any kind and on any basis whatsoever against the obligations arising from this contract.”¹⁸¹ The subsequent section of the contract, § 24, extends this prohibition on the use of legal remedies to any legal remedies under international investment law before international arbitration tribunals, and applies the prohibitions to cover both the company and its subsidiaries.¹⁸²

However, this waiver is unlikely to frustrate investor’s claims for two reasons. First, the contract can only bind the company, it cannot bind the shareholders of the company.¹⁸³ Accordingly, foreign shareholders can initiate claims against Germany under the ECT if they qualify as a foreign investor under the treaty.¹⁸⁴ ECT art.1(6) defines “investment” as “shares, stock, or other forms of equity participation in a company or business enterprise.”¹⁸⁵ This definition almost certainly includes foreign investors in high emissions assets such as coal-fired powerplants and thus permits foreign shareholders to bring claims against Germany in response to the coal phase out.

The waiver is not an absolute forfeit of rights, it is consideration for compensation provided by the government. Section 23(5) provides that a company will have to pay legal fees of the FRG if they violate obligations under § 23 and file an investor-state claim.¹⁸⁶ Section 24(5) stipulates that the consequence of failing to comply with the waiver clause is the stop of all compensation payments.¹⁸⁷ As such, coal-fired powerplants can choose to forfeit

¹⁸¹ See De Berge & Westphal, *supra* note 167, at 8.

¹⁸² *Id.* § 24 of the contract reads

“The companies waive their right to seek legal remedies under international investment law before international arbitration tribunals or to initiate corresponding arbitration proceedings against the Federal Republic of Germany arising out of or relating to rights and obligations under this contract and/or coal phase-out law. This obligation extends in particular to arbitration proceedings arising from or relating to rights under the Energy Charter Treaty, to the rights of the companies and the enterprises they control . . .”.

¹⁸³ See Tienhaara & Cotula, *supra* note 7, at 6.

¹⁸⁴ *Id.*

¹⁸⁵ *Id.*

¹⁸⁶ See De Berge & Ida Westphal, *supra* note 167, at 10.

¹⁸⁷ *Id.*

additional compensation payments in exchange for the vindication of their right to file investor-state claims against Germany in response to the coal phase out law.

C. Exceptions under Article 24(2) of the Energy Charter Treaty

Article 24(2) of the ECT contains three exceptions to the investor-state dispute settlement mechanism. The exceptions provide that no provision of the treaty shall preclude a contracting party from adopting any measures that are (i) “necessary to protect human, animal or plant life,” (ii) “essential to the acquisition or distribution of Energy Materials and Products in conditions of short supply arising from causes outside the control of that Contracting Party . . .” or (iii) “designed to benefit Investors who are aboriginal people or socially or economically disadvantaged individuals or groups or their Investments . . .”¹⁸⁸

Article 24(3) of the ECT contains additional exceptions for the following measures that a state considers “necessary.”¹⁸⁹ The provision specifies that necessary measures relating to (i) “the protection of its essential security interests,” (ii) “the implementation of national policies respecting the non-proliferation of nuclear weapons or other nuclear explosive devices” or (iii) “the maintenance of public order.”¹⁹⁰

These provisions pose no barrier for a claimant alleging unlawful expropriation because Article 24(1) of the ECT explicitly states that “this article shall not apply to articles 12, 13, and 29.”¹⁹¹ As such, the exceptions are unhelpful as a defense to an expropriation claim brought under Article 13 of the ECT.

Moreover, Article 24 is unlikely to provide a robust defense against claims alleging violations of the fair and equitable treatment provisions under Article 10 of the ECT. Germany may argue that efforts to reduce emissions can be argued to fall under measures “necessary to protect human, animal, or plant life” under Article 24(2)(i) and may be deemed necessary for “the protection of its essential security interests” as under Article 24(3)(iii).

However, an interpretation of the ECT that allows states to sidestep their treaty obligations in the context of climate change prevention would undermine the very purpose of the treaty and effectively render it non-operational. The ECT intends to provide a uniquely ‘high level’ of investor protection compared to other treaties because energy investments are particularly susceptible to regulatory

¹⁸⁸ Energy Charter Treaty, *supra* note 75, at art. 24(2).

¹⁸⁹ *Id.* at art. 24(3).

¹⁹⁰ *Id.* at art. 24(3).

¹⁹¹ *Id.* at art. 24(1).

instability.¹⁹² If article 24(2)(ii) exempts governments that phase out high emissions assets from any claim under the ECT, then energy investments would receive no protection at all, much less the ‘high level’ or protection that the ECT intended to provide. Accordingly, an arbitral tribunal is likely to adopt a narrow interpretation of articles 24(2) and 24(3) that excludes climate stabilization policies in order to interpret the ECT in a manner consistent with its objective to provide a ‘high level’ of investment protection.¹⁹³

D. The Application of the EU’s Withdrawal from the ECT

Germany may argue that its withdrawal from the ECT on December 21, 2023 may immunize the country from any additional claims under the ECT.¹⁹⁴ However, withdrawing from the treaty does not eliminate the ability for foreign investors to use the treaty to bring claims for losses under the ECT. Article 45(3) of the ECT includes a sunset clause that extends the applicability of investment protections for an additional twenty years after withdrawal.¹⁹⁵ For example, Rockhopper—an investor based in the UK—was able to file a claim against Italy under the ECT for prohibiting oil drilling even after Italy withdrew from the treaty.¹⁹⁶ Therefore, withdrawal from the treaty is unlikely to support Germany’s defense because the ECT grandfathers in protection for energy investments until at least 2040.¹⁹⁷

V. CARBON OFFSETS AS AN EFFICIENT ALTERNATIVE

A. Germany’s Policy Compromise

When crafting its phase-out policy, Germany grappled with two critical balancing acts. First, it had to weigh the financial burden of climate action against the desired emissions reductions. On one side of the spectrum, a market-based mechanism could have been pursued, incurring minimal costs and taking a slower approach to phasing out coal power plants. Conversely, a command-and-control

¹⁹² Energy investments are capital intensive and have decades long operating horizons, thus requiring a lengthy period of long-term financial commitment to achieve a desirable return on investment. See, e.g., *G8 Energy Ministerial Meeting on “The World Energy Future Communiqué”*, Moscow, Russian Federation 2 (Apr. 1, 1998).

¹⁹³ Thomas. Wälde, *In the Arbitration under Art. 26 Energy Charter Treaty (ECT); Nykomb v The Republic of Latvia—Legal Opinion*, 2 *TRANSNAT’L DISP. MGMT.* 23 (2005).

¹⁹⁴ Aida Bektasheva, *Withdrawal from the Energy Charter Treaty Without its Modernization, or Modernization of the ECT Treaty Without Withdrawal by EU Members: What is the Impact of the Two Scenarios?*, *INT’L L. BLOG* (June 29, 2023), <https://perma.cc/6MCU-MXLZ>.

¹⁹⁵ *Id.*

¹⁹⁶ *Id.*

¹⁹⁷ Tibisay Morgandi & Lorand Bartels, *Exiting the Energy Charter Treaty Under the Law of Treaties*, 34 *KING’S L. J.* 145, 145–69 (2023).

emissions reduction strategy could have been employed, offering rapid emissions reductions at a higher cost. Second, in its effort to minimize expenditures, the German government had to find an equilibrium between the up-front payments made to coal operators and the risk of facing more substantial damages in investor-state dispute settlement. On one extreme, Germany could have chosen to generously compensate power plant operators, incurring significant initial costs while eliminating the potential risks and expenses associated with investor-state dispute settlement. On the other end of the spectrum, it could have opted for lower compensation, bearing the risk of substantial financial liabilities should an investor-state claim be initiated.

Germany's approach to coal phase-out auctions reflects the delicate balance between environmental goals and financial considerations. The design of these auctions signals the German government's intention to reduce costs by both extending the timeline for emissions reductions and shouldering the risks associated with investor-state disputes. A significant indication of this cost-saving strategy is found in the auction structure, including the bid price adjustment mechanism, the sealed bids, and the pay-as-bid structure.

The adjustment of bid prices by the Federal Network Agency (BNetzA) was based on installed capacity rather than generating capacity, which encouraged more efficient power plants to participate in earlier auction rounds.¹⁹⁸ This, in turn, facilitated competitive bidding that drove down prices among modern, highly efficient powerplants.¹⁹⁹ Consequently, expensive, efficient powerplants could be purchased for cheaper than they otherwise would have been purchased for had the bid prices been adjusted in terms of tCO₂ per unit of generated capacity instead of tCO₂ per unit of installed capacity.²⁰⁰ This method served as a powerful cost-saving tool, especially in light of the government's operation under considerable uncertainty. The level of uncertainty is amplified in undersubscribed auctions where there is insufficient competitive pressure to drive bids closer to an operator's reservation price, reflecting the estimated revenue from operating the business.

Additionally, the sealed, "pay as bid" approach, suggests an intention to drive down costs. Sealed bids incentivize bidders to place bids close to their minimum willingness to sell in order to improve their chances of winning the auction.²⁰¹ Pay-as-bid, though its exact impact remains uncertain, would theoretically reduce costs by paying infra-marginal bidders with their bid price, instead of the market clearing

¹⁹⁸ See Tiedman & Muller-Hansen, *supra* note 24, at 2.

¹⁹⁹ See Srivastav & Zaehring, *supra* note 65, at 6.

²⁰⁰ *Id.*

²⁰¹ See Sobieriski, *supra* note 52.

price.²⁰² These mechanisms, collectively, highlight Germany's effort to align its environmental objectives with financial prudence in the coal phase-out auctions.

B. A More Efficient Alternative: Voluntary Carbon Markets

By harnessing carbon markets, Germany could have achieved a swifter reduction in emissions at a significantly reduced cost and with a far lower risk of incurring investor-state dispute claims. Specifically, Germany could have created an exchange for powerplants to be traded for carbon credits or engaged in arbitrage by purchasing the powerplants for value in terms of electricity and selling the powerplants for their value as a carbon offset.

The proposed alternative would be more economically efficient because it would enable Germany to achieve equivalent emissions reductions in the power sector at a lower marginal cost of abatement. Because coal is the most emissions-intensive source of power, using offsets to phase out coal would permit the German economy to achieve a greater total output for the same amount of emissions.²⁰³ Using coal as an offset would thus lower marginal abatement costs by enabling Germany to achieve greater reductions in emissions per unit of production in the power sector. Part A of this section provides relevant background on the market for trading carbon credits. Part B describes a hypothetical buyout structure using carbon markets that would be more efficient than Germany's reverse auction. Part C compares the advantages and disadvantages of the proposal.

1. Introduction to carbon markets.

Carbon markets are markets in which participants exchange carbon credits to offset their carbon footprint.²⁰⁴ The global carbon market is divided into two major sectors, the compliance market, valued at nearly \$1 trillion, and the voluntary market, valued at close to \$5 billion.²⁰⁵ The value of the compliance market is measured by the total value of carbon credits issued by sovereign entities

²⁰² See Kahn et al., *supra* note 55.

²⁰³ Melissa Denchak, *Fossil Fuels: The Dirty Facts*, NRDC (June 1, 2022), <https://perma.cc/92FC-26EK>; *Sources of Greenhouse Gas Emissions*, U.S. ENVTL. PROT. AGENCY (2021), <https://perma.cc/K5W9-N8RF>.

²⁰⁴ Raphael Calel, *Carbon Markets: A Historical Overview*, 4 WILEY INTERDISCIPLINARY REVIEWS: CLIMATE CHANGE 107–119 (2013).

²⁰⁵ Daedal Research, *Global Carbon Credit Market: Analysis by Traded Value, Traded Volume, Segment, Project Category, Region, Size and Trends with Impact of COVID-19 and Forecast up to 2028*, RSCH. & MKTS. (2023); Anders Prosborg-Smith, *The Voluntary Carbon Market Is Thriving*, BCG (2023), <https://perma.cc/2EKC-34K5> (In 2021, the compliance market had a value of \$850 billion and the voluntary market had a value of \$2 billion.).

as part of Emissions Trading Systems (ETS).²⁰⁶ The voluntary market is measured by the value of carbon credits issued by private certification organizations for participation in an emissions reduction project, such as the creation of a forestry reserve or the sequestration of carbon.²⁰⁷ Private entities, including corporations and individuals, purchase carbon credits on the voluntary carbon market to claim they produce net zero emissions while still emitting an equivalent or greater amount. Within voluntary markets, offsets are typically classified as either avoidance offsets, which prevent further emissions, or removal offsets, which sequester greenhouse gases from the atmosphere.²⁰⁸ Despite its growth, the voluntary market currently faces significant controversy, as credits are difficult to verify, potentially duplicative, and expensive to maintain.²⁰⁹

Carbon credits purchased on a voluntary market can count towards emissions reductions in compliance markets.²¹⁰ Under Article 6 of the Paris Agreement, credits purchased in one carbon market can count as a “corresponding adjustment” (CA) to the baseline level of emissions in another market.²¹¹ China, South Korea, and New Zealand permit the use of voluntary offsets to fulfill compliance obligations, but set restrictions such as geographic origin, origination date, and quantity that can be used.²¹² However, many scholars agree that an expansion of public regulation oversight is needed to improve the efficiency and acceptance of CAs.²¹³

2. Applying carbon markets for a more efficient transaction.

Instead of purchasing and retiring the powerplant itself, the German government could serve as a broker or intermediary to facilitate the sale of the powerplant as a carbon offset to a third party on voluntary carbon markets. Alternatively, the government could purchase the asset for the value of the cash flows generated by the sale of electricity and then resell the powerplant for its value as a carbon offset in arbitrage. This transaction would be feasible and profitable so long as the value of the future cashflows of a coal powerplant generated from the sale of electricity is lower than the value of the plant as a

²⁰⁶ Hanna-Mari Ahonen et al., *Governance of Fragmented Compliance and Voluntary Carbon Markets Under the Paris Agreement*, 10 *POLITICS & GOVERNANCE* 235 (2022).

²⁰⁷ *Id.*

²⁰⁸ Brian Dimarino & Taylor Wright, *Carbon Market Principles*, JPMORGAN CHASE & CO. 4 (2022), <https://perma.cc/2C78-3FLV>.

²⁰⁹ Geoff Wells et al., *Confronting Deep Uncertainty in the Forest Carbon Industry*, 382 *SCIENCE* 42 (2023).

²¹⁰ Stephanie La Hoz Theuer, *Offset Use Across Emissions Trading Systems*, *ICAP* 18 (2023), <https://perma.cc/MKA3-R7YD>.

²¹¹ *See* Ahonen et al., *supra* note 206, at 236.

²¹² *Id.*

²¹³ *See* Ahonen et al., *supra* note 206, at 237–38; Melvin Tjon Akon, *The Role of Market Operators in Scaling Up Voluntary Carbon Markets*, 18 *CAP. MKTS. L. J.* 2 (2023).

carbon offset, measured by the market price of one ton of avoided CO₂ emissions. If the price of one ton of avoided CO₂ emissions is high enough, a rational, self-interested coal powerplant operator would cease operation of the plant as an energy source and sell the plant as a carbon offset on the voluntary carbon market.

While developing a comprehensive model for the proposed transaction is outside the scope of this paper, a preliminary assessment suggests that this approach is both financially viable and practical. Although the exact figures remain confidential, estimates indicate that Germany paid between €627 million and €729 million at the auction.²¹⁴ When converted to U.S. dollars using the 2022 average exchange rate of 1.05 EUR/USD, this translates to approximately \$658.5 million to \$765.5 million.²¹⁵

The power plants that received awards to phase out had an average historical annual emission of 30.7 million tons of CO₂.²¹⁶ If these plants did not receive awards to phase out, they would have emitted approximately 509 million tons of CO₂.²¹⁷ If the same amount of power generation were to be replaced by an average German power plant, the resulting emissions would be reduced to 226 million tons of CO₂.²¹⁸ Consequently, the emissions reduction achieved through this approach would be approximately 283 million tons of CO₂.²¹⁹ At a price between \$2.3 to \$2.7 per tCO₂ of avoided emissions, a German coal powerplant operator would be indifferent between selling their plant as a carbon offset on the voluntary carbon market and selling the plant in an exit auction.

Carbon prices already exceed this breakeven point. The average price per ton of carbon across all carbon markets is \$6 USD/tCO₂.²²⁰ The price range for comparable offsets in voluntary carbon markets are average of around \$10 per ton of CO₂.²²¹ At such prices, shutting coal powerplants down and reselling them as a carbon offset would become far more profitable than using coal powerplants to sell electricity.

²¹⁴ See Tiedman & Muller-Hansen, *supra* note 24, at 6.

²¹⁵ Internal Revenue Serv. *Yearly Average Currency Exchange Rates*, IRS.GOV (2024), <https://perma.cc/Q2CV-YJUX>.

²¹⁶ See Tiedman & Muller-Hansen, *supra* note 24, at 5.

²¹⁷ *Id.*

²¹⁸ *Id.*

²¹⁹ *Id.*

²²⁰ Simon Black et al., *More Countries Are Pricing Carbon, but Emissions Are Still Too Cheap*, IMF (2022), <https://perma.cc/SFN8-4M5P>.

²²¹ Allied Offsets, *CDR Market Update: October 2023* (2023), <https://perma.cc/K3FP-LYAQ>.

C. Comparing Policy Options

1. The advantages of using voluntary carbon markets.

Theoretically, the proposed transaction represents a more efficient compromise between the competing policy goals facing the German government and other governments that intend to phase out coal. By utilizing voluntary carbon markets, the German government could fully transform its coal industry into a carbon offset, which would unlock equivalent emissions reductions at a much lower abatement cost. This efficiency is achieved by shifting part of the cost of emissions reduction from the public sector to the private sector, enabling private companies to acquire shares of coal power plants as carbon offsets.

First, the proposal would lower the up-front cost paid to coal powerplant operators. As a broker, the government would pay only the transaction costs of searching for buyers and connecting them with powerplants as sellers. As a purchaser and reseller in an arbitrage opportunity, the government could even make a positive return, which could be reinvested in renewable energy to further the green transition.

Second, the proposed transaction would avoid the costs of ISDS. As a broker, the government would significantly reduce its exposure to an ISDS claim by removing itself from a significant part of the transaction. By reducing state involvement in the phaseout of coal, the government would limit its exposure to investor-state claims, which definitionally requires the existence of a state action that adversely impacts a claimant. As a purchaser, the government could assume some risk of overpayment because the government would break even or realize a return by reselling the asset on voluntary carbon markets. By paying a slight premium above the market value, the government could eliminate the risk of an investor-state claim while still driving down the cost of a phase out.

Scholars that have previously assessed such a proposal have often dismissed because of the low price of a ton of carbon.²²² At a low price, the value of the asset in terms of its cash flows from generating electricity would far exceed the value of the asset as a carbon offset. However, the price of carbon has grown substantially in recent years, prompting many institutions to reconsider the feasibility of such a transaction.

Several scholars and institutions have also proposed that sovereigns compensate coal powerplant operators with carbon credits.²²³ Compensating

²²² Caldecott & Mitchell, *supra* note 6.

²²³ Asia-Pacific Network of the Glasgow Financial Alliance for Net Zero, *Financing the Managed Phaseout of Coal-Fired Power Plants in Asia Pacific*, GLASGOW FIN. ALL. FOR NET ZERO (2023); The Monetary Authority of Singapore & McKinsey & Company, *Accelerating the Early Retirement of Coal-fired Power Plants Through Carbon Credits*, MONETARY AUTH. SINGAPORE (2023), <https://perma.cc/B9QK->

powerplants with carbon credits is inferior to a buyout of powerplant with liquid currency followed by a secondary transaction to convert the powerplant into its value in terms of carbon credits for two reasons. First, compensating coal powerplant operators with carbon credits is likely an unlawful expropriation and would fully incur the costs of ISDS because most tribunals apply the Hull formula to require compensation in a freely convertible currency, which carbon credits are not.²²⁴ Second, compensation by carbon credits would not reduce the up-front costs of a buyout. If the value of a powerplant as a carbon offset is greater than its value as an income-generating asset, then it would be more costly to compensate the powerplant in terms of its value as an offset. Even if the sovereign can issue new carbon credits, doing so would not transfer costs from the public sector to the private sector, and thus would still be net more costly than a buyout of a powerplant with liquid currency followed by a secondary transaction to convert the powerplant into an offset.

The proposed use of voluntary carbon markets would also provide several ancillary benefits. First, the structure would reduce information asymmetry between the government and operators. Buyouts of coal powerplants are highly uncertain because they require regulators to estimate closely guarded information regarding a powerplant's expected future cash flows from the sale of electricity.²²⁵ The government must thus use mechanisms like auctions to force disclosure of information to avoid the risk of either severely overpaying the operator, and resulting in a windfall to the coal industry, or underpaying the operator and risking future investor-state disputes. Carbon markets, however, are relatively thick and have transparent prices.²²⁶ By relying on verifiable market prices of a ton of avoided CO₂ emissions for comparable offsets, the government can avoid the uncertainty associated with estimating the future cash flows of electricity sales from a coal powerplant.

Second, the use of coal powerplants as carbon offsets may offer a more verifiable offset, which would command a premium in the voluntary carbon offset market. Credits issued on the voluntary market suffer from a lack of credibility as several offsets have recently been found to have overstated emissions

G5SA; Liang Lei, *Carbon Credits for Coal Power Phaseout Offer up Both Money and Complexity*, ECOBUSINESS (2023), <https://perma.cc/7MCA-ASRJ>; Gold Standard for the Global Goals, *Methodology Concept: Early Phase-out of Coal Fired Thermal Power Plants and their Replacement with Green-field Renewable Energy Generation Plants*, GOLD STANDARD (2023).

²²⁴ See BLACKABY & PARTASIDES, *supra* note 119, at 492.

²²⁵ See Tiedman & Muller-Hansen, *supra* note 24, at 2; Pellegrini, *supra* note 26.

²²⁶ Daedal Research, *Global Carbon Credit Market: Analysis by Traded Value, Traded Volume, Segment, Project Category, Region, Size and Trends with Impact of COVID-19 and Forecast up to 2028*, RSCH. & MKTS. (2023); Prosborg-Smith, *supra* note 205 (In 2021, the compliance market had a value of \$850 billion and the voluntary market had a value of \$2 billion.).

reductions.²²⁷ Providing verifiable carbon credits would fill a needed gap in carbon markets and would thus likely command significant market demand, including from outside investors.

2. The disadvantages of using voluntary carbon markets.

The proposal also incurs several risks. One of the potential risks associated with the proposed transaction is the volatility in carbon market prices. If the prices of carbon offsets experience significant fluctuations, the government may face the risk of incurring losses. Recent drops in carbon market prices have raised concerns in this regard, as they could impact the overall feasibility and profitability of the transaction. However, it is essential to note that even in the event of losses due to carbon price volatility, these losses are likely to be less substantial than the costs associated with buying out a power plant. Furthermore, it is important to consider that the electricity market itself is characterized by price volatility, which is exemplified by recent events, such as the situation in Ukraine.²²⁸

Another risk to be considered is the inability to reactivate power plants that have been shut down. Governments may wish to retain these power plants as reserves to address potential energy crises in the future. This risk manifested in Germany, where phased-out power plants were temporarily brought back online due to an unexpected shortage of Russian LNG. While maintaining power plants as a reserve has its advantages, it also involves potential costs and operational complexities. This risk should be weighed against the benefits and cost savings associated with using carbon offsets as an alternative to traditional power plant buyouts, further emphasizing the need for a careful and well-considered strategy when implementing such a transition.

VI. CONCLUSION

Germany's reverse auction to phase out coal powerplants likely breaches the ECT. Policymakers should consider alternatives to a traditional exit auction to avoid facing delays and damages following ISDS claims. Accordingly, the costs of investor-state dispute settlement should be factored into an analysis of the costs of phasing out high emissions assets via exit auctions.

Germany's coal phase out likely breached Article 10(1) of the Energy Charter Treaty, the fair and equitable treatment standard, by frustrating the legitimate, objectively reasonable expectations of foreign investors in coal-fired powerplants. Such a claim may face difficulty overcoming the exceptions contained in Article 24 of the ECT. Article 24 exempts claims made against states for actions that are necessary to "protect human, animal or plant life" or are necessary to "the

²²⁷ Wells et al., *supra* note 209.

²²⁸ ENVTL. JUST. FOUND., *supra* note 33.

protection of its essential security interests.” Reducing the effects of climate change may constitute such a necessary measure, but an arbitral tribunal is likely to adopt a narrower interpretation of Article 24 that excludes climate stabilization policies.

Germany very likely breached the expropriation clause in Article 13(1) of the ECT. The exit auction was almost certainly not a direct expropriation, but the mechanics of the auction bidding process likely made the auction a form of indirect expropriation that “substantially deprived” investors of the fair market value of their investment. If the auction alone was not a substantial deprivation, a “creeping expropriation” theory may extend the timeline of expropriation such as to establish a “substantial deprivation.”

Moreover, the expropriation by Germany may be deemed an unlawful expropriation because it appears not to have been narrowly tailored to its public interest justification, primarily due to flaws in the auction design. Additionally, investors may not have received adequate compensation, contributing to the determination of unlawful expropriation, and potentially increasing the damages owed to the claimants.

Germany’s possible defenses are likely to be unpersuasive to an arbitral tribunal. Jurisdictional defenses will likely fail because investors from other states and even those within Germany could raise claims, and the EU’s prohibition on intra-EU investment arbitration is unlikely to lead to the dismissal of claims on jurisdictional grounds. The waiver clause, which aims to prevent claims, may also face challenges as it cannot bind shareholders, and investors can potentially accept damages for breaching the waiver clause by launching a claim. Exceptions for the protection of the environment and national security in Article 24 explicitly do not apply to expropriation claims and are unlikely to be interpreted by arbitral tribunals to include climate stabilization policies. Finally, withdrawal from the ECT provides little benefit because the treaty’s sunset clause protects investments for an additional twenty years after a state’s withdrawal.

Germany can theoretically achieve a similar emissions reduction at a lower cost and with lower risk of giving cause to investor-state claims by utilizing voluntary carbon markets to turn coal powerplants into carbon offsets. This proposal would reduce upfront costs and potentially generate positive returns through arbitrage by shifting the cost of emissions reductions to the private sector. However, it carries risks related to the volatility of carbon market prices and the inability to reactivate powerplants as reserves in cases of energy crises.

Given Germany’s policy choices that have already transpired, investors in coal powerplants in Germany can likely bring a successful claim to recover the value of their assets that were stranded because of Germany’s phase out of coal. The analysis in this Comment may provide valuable insight to policymakers and investors evaluating coal phase out plans in various jurisdictions, such as Canada, China, Japan, Korea, the U.K., and the U.S. This Comment may provide valuable

insights into the potential legal implications of these auctions within a global context.