ARTICLES

Coal Phase Out and Foreign Investment Protection: Tackling China's Global Carbon Footprint

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ABSTRACT

As the most carbon-intensive source of electricity, coal-fired power generation is incompatible with international climate change mitigation efforts. The international community therefore agreed to transition away from coal to achieve net-zero emissions by 2050 and remain within the temperature limits set under international law. However, phasing out existing coal power stations can conflict with international investment protection treaties. Recent arbitration claims against the United States, Canada, and European countries show how foreign investors can challenge climate measures before international tribunals and threaten to paralyze the ambitious actions needed to address climate change.

As a key financier of coal power infrastructure, China plays a crucial role in the global transition away from coal. Besides China's domestic reliance on coal, its companies have heavily invested in coal power overseas, particularly in Asia. Taking into account the threat of investment arbitration to climate regulation, a crucial question therefore is whether foreign investors, for example from China, could slow down Asia's energy transition by challenging coal phase-out decisions before international arbitration?

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To answer this question, this article examines the protection that China's investment treaties offer to its overseas coal plants, and scrutinizes the environmental exceptions included in these treaties to safeguard states' right to regulate. Based on recent arbitral practice, the analysis demonstrates the limited effectiveness of these environmental exceptions in neutralizing arbitration challenges against phase-out decisions. Given the unpredictable interpretation of environmental exceptions by arbitral tribunals, the article emphasizes the need to exclude coal power from international investment protection. It also points to the role of home state governments in addressing the carbon footprint of the investments made by their nationals abroad. By enjoining Chinese investors to strictly comply with the environmental laws of the states where they invest, the "host country" principle governing China's regulation of its overseas investments could help address the obstacle of foreign investment protection to coal phase out.

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INTRODUCTION

As one of the main sources of greenhouse gas (GHG) emissions,[1] coal-fired power generation is incompatible with the emission reductions needed to remain within the temperature limits set under international climate law.[2] According to the International Energy Agency, coal power installations, unabated with carbon capture and storage, must be phased out by 2040 in order to limit global warming to 1.5°C and transition to net-zero emissions in the global energy sector by 2050.[3] The importance of addressing the climate problem caused by coal power is now reflected in the international climate regime. In December 2023, the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement recognized the need for "accelerating efforts towards the phase-down of unabated coal power," and "transitioning away from fossil fuels in energy systems . . . so as to

1. Int'l Energy Agency [IEA], *Greenhouse Gas Emissions from Energy Data Explorer – Power Generation,* IEA (Aug. 2, 2023), https://perma.cc/Q6EU-3LBQ ("in 2021 electricity and heat generation were responsible for nearly 44% of global CO_2 emissions from fuel combustion, with coal plants emitting around 73% of the associated emissions"); *see also* IEA, COAL IN NET ZERO TRANSITIONS: STRATEGIES FOR RAPID, SECURE AND PEOPLE-CENTRED CHANGE 22 (World Energy Outlook Special Report 2022); Michael Jakob et al., *The Future of Coal in a Carbon-Constrained Climate*, 10 NAT. CLIMATE CHANGE 704 (2020).

2. Paris Agreement to the United Nations Framework Convention on Climate Change (Dec. 12, 2015), T.I.A.S. No. 16-1104, 3156 U.N.T.S., art. 2.1(a) (establishing the objective of "holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels") [hereinafter Paris Agreement].

3. IEA, NET ZERO ROADMAP: A GLOBAL PATHWAY TO KEEP THE 1.5°C GOAL IN REACH – 2023 UPDATE 16–17, 55, 79–81, 92 (2023).

achieve net zero by 2050 in keeping with the science."[4] In 2023, 75 countries had already made "specific plans to phase-out unabated coal or not develop new coal-fired power plants."[5]

China plays a crucial role in the transition away from coal.[6] It is the largest emitter of GHG emissions and the main consumer of coal, producing more than 60% percent of its electricity in 2022 on this basis.[7] Besides its role in China's domestic electricity supply, coal power also represents a substantial share of Chinese overseas energy investments, particularly in Asia.[8] These overseas investments generate GHG emissions equal to an industrialized country (e.g., Spain) and must therefore be mitigated as part of the global effort to address climate change.[9] In 2021, China pledged not to build new coal power plants overseas.[10] In parallel, a number of Asian countries hosting Chinese coal power investments announced plans to transition to net-zero emissions, and phase out their coal power capacity;[11] however, requiring the early closure of existing coal

4. United Nations Framework Convention on Climate Change, First Global Stocktake, Proposal by the President, Draft decision -/CMA.5, FCCC/PA/CMA/2023/L.17/, arts. 28(b)–(d), https://perma.cc/35EW-8NNW [hereinafter UNFCCC]; *see also* UNFCCC, Glasgow Climate Pact, Decision 1/CMA.3, FCCC/PA/CMA/2021/10/Add.1 (Nov. 13, 2021), art. 36, https://perma.cc/8QGM-TZ2C.

5. IEA, COAL IN NET ZERO TRANSITIONS, *supra* note 1, at 53, 168. More than 70 countries formally incorporated net-zero targets into their regulatory framework. *See* NET ZERO TRACKER, DATA EXPLORER: NET ZERO TARGET STATUS BY NATIONS, https://perma.cc/9RMU-LAFY; Katharine Sanderson, *Net-Zero Carbon Pledges are Growing – Are they Serious?*, 618 NATURE 893.

6. Zhu Liu et al., *Challenges and Opportunities for Carbon Neutrality in China*, 3 NAT. REV. EARTH ENVIRON. 141 (2022); Gang He et al., *Enabling a Rapid and Just Transition away from Coal in China*, 3 ONE EARTH 187 (2020).

7. IEA, WORLD ENERGY OUTLOOK 2023, 236, 239 (2023).

8. On China's role as main financier of coal power investments, *see, e.g.,* Kelly S. Gallagher et al., *Banking on Coal? Drivers of Demand for Chinese Overseas Investments in Coal in Bangladesh, India, Indonesia and Vietnam*, 71 ENERGY RES. & SOC. SCI. 1, 2 (2021); GLOBAL ENERGY MONITOR, GLOBAL COAL PROJECT FINANCE TRACKER, INTERACTIVE MAP, https://perma.cc/38P4-PANQ (last visited Jan. 28, 2024); PENG REN ET AL., CHINA'S INVOLVEMENT IN COAL-FIRED PROJECTS ALONG THE BELT AND ROAD 4, 7 (Glob. Env't Inst., May 2017).

9. David Stanway, *Emissions from China-Invested Overseas Coal Plants Equal to Whole of Spain – Research*, REUTERS, (Oct. 25, 2022), https://perma.cc/K2AS-DB9M; *China's Global Power Database Overview by Capacity – Global (2000-2022) – Coal (2022)*, BU GLOBAL DEV. POL'Y CTR. (2022), https://perma.cc/38P4-PANQ. In 2022 alone, China's overseas coal power investments amounted to 8.68 gigawatts (GW) equating to 48.23 million tons of annual CO_2 emissions. In Asia, the Chinese-invested coal power capacity amounted to 3.88 GW, equating to 18.25 million tons of annual CO_2 emissions.

10. UN AFFAIRS, *China Headed Towards Carbon Neutrality by 2060; President Xi Jinping Vows to Halt New Coal Plants Abroad*, UN NEWS (Sept. 21, 2021), https://perma.cc/U7HF-DQ55; *see also* Tom LaTourrette et al., CHINA'S ROLE IN THE GLOBAL DEVELOPMENT OF CRITICAL RESOURCES: CASE STUDIES IN COAL POWER, ELECTRICITY TRANSMISSION, AND SEABED MINING (RAND Corporation, Research Report 2022); Quirin Schiermeier, *China's Pledge on Overseas Coal – By the Numbers*, 598 NATURE 20, 21 (2021).

11. *See, e.g.,* Joint Statement by the Government of the Republic of Indonesia (GOI) and the Governments of Japan, the United States of America, Canada, Denmark, the European Union, the Federal Republic of Germany, the French Republic, Norway, the Republic of Italy, and the United Kingdom of Great Britain and Northern Ireland (together the "International Partners Group" or IPG) Pmbl. Rec. 3, (Dec. 15, 2022) [hereinafter JETPI]; Political Declaration on establishing the Just Energy

investments would expose Chinese investors to large stranded costs for which they could seek compensation before international arbitration.[12]

As states intensify their climate change mitigation efforts, international investment law—protecting foreign investors, e.g., against expropriation and allowing them to directly sue states before arbitration—is increasingly being criticized for constraining climate regulation.[13] Arbitration claims against the United States,[14] Canada,[15] and European states[16] illustrate how foreign investors make use of investment treaties to oppose the forced closure of their carbon-intensive assets. Could Chinese overseas investors slow down the transition away from coal by challenging the forced closure of their carbon-intensive installations before international arbitration?

Building on the robust scholarship on environmental protection and states' "right to regulate in international investment law,"[17] legal and policy scholars have started to examine the obstacles that investment treaties can pose to the phasing out of foreign-controlled fossil assets.[18] Based on the "regulatory chill"

Transition Partnership with Viet Nam, arts. 6, 8, 13 (Dec. 14, 2022), https://ec.europa.eu/commission/presscorner/detail/en/statement_22_7724 [hereinafter JETPV].

12. Analysts estimate the phasing out of Chinese overseas coal power to result in stranded assets amounting to 50 bn USD; *See* David Stanway & Joe Brock, *China's Overseas Coal Power Retreat Could Wipe Out $50 Bln of investment*, REUTERS, Sept. 22, 2021, https://perma.cc/Y7C9-7RM2. More generally, on compensation for fossil phase-out decisions, *see* Anatole Boute, *Investor Compensation for Oil and Gas Phase out Decisions: Aligning Valuation Methods to Decarbonization*, 23 CLIMATE POL'Y 1087–1100 (2023); Oliver Hailes, *Unjust Enrichment in Investor–State Arbitration: A Principled Limit on Compensation for Future Income from Fossil Fuels*, 31 REV. COMP. EUR. & INT'L ENV'T L. 1–13 (2022).

13. Kyla Tienhaara et al., *Investor-State Dispute Settlement: Obstructing a Just Energy Transition*, 23 CLIMATE POL'Y 1197-1212 (2023); Kyla Tienhaara et al., *Investor-State Disputes Threaten the Global Green Energy Transition*, 376 SCIENCE 701–03 (2022); Oliver Hailes & Jorge E. Viñuales, *The Energy Transition at a Critical Juncture*, 26 J. INT'L ECON. L. 627, 637 (2023).

14. *TransCanada Corporation and TransCanada PipeLines Limited v. United States of America*, ICSID Case No. ARB/16/21, Request for Arbitration (June 24, 2016).

15. *Westmoreland Mining Holdings, LLC v. Canada*, ICSID Case No. UNCT/20/3, Final Award (Jan. 31, 2022) [hereinafter *Westmoreland v. Canada*].

16. *Uniper SE, Uniper Benelux Holding B.V. and Uniper Benelux N.V. v. Kingdom of the Netherlands*, ICSID Case No. ARB/21/22, Claimants' Memorial (May 20, 2022) [hereinafter *Uniper v. the Netherlands*]; *RWE AG and RWE Eemshaven Holding II BV v. Kingdom of the Netherlands*, ICSID Case No. ARB/21/4, Claimants' Memorial (Dec. 18, 2021) [hereinafter *RWE v. the Netherlands*]; *Rockhopper Italia S.p.A., Rockhopper Mediterranean Ltd, and Rockhopper Exploration Plc v. Italian Republic*, ICSID Case No. ARB/17/14, Final Award (Aug. 23, 2022) [hereinafter *Rockhopper v. Italy*].

17. CATHERINE TITI, THE RIGHT TO REGULATE IN INTERNATIONAL INVESTMENT LAW (2014); *see also* JORGE E. VIÑUALES, FOREIGN INVESTMENT AND THE ENVIRONMENT IN INTERNATIONAL LAW (2012); KYLA TIENHAARA, THE EXPROPRIATION OF ENVIRONMENTAL GOVERNANCE: PROTECTING FOREIGN INVESTORS AT THE EXPENSE OF PUBLIC POLICY (2009).

18. *See, e.g.,* Sandrine Maljean-Dubois, Hélène Ruiz-Fabri & Stephan W. Schill, *International Investment Law and Climate Change: Introduction to the Special Issue*, 23 J. WORLD INV. & TRADE 737–45 (2022) (introducing the climate-investment law tension); Alessandra Arcuri, Kyla Tienhaara & Lorenzo Pellegrini, *Investment Law v. Supply-Side Climate Policies: Insights from Rockhopper v. Italy and Lone Pine v. Canada*, INT. ENV'T AGREEMENTS 1–24 (2024) (examining the obstacles to supply-side climate regulation posed by international investment treaties).

theory, scholars argue that the threat of investment treaty claims against climate regulation could dissuade governments from adopting ambitious emission reduction measures.[19] Proposals of investment treaty reforms have been made to safeguard states' regulatory powers through climate-specific exceptions.[20] How Chinese investment treaties address environmental sustainability is a question that has also generated notable academic interest within the broader debate on environmental protection and investment law.[21] With China's increasing international economic influence, and its ambition to participate in the shaping of the international economic regime,[22] scholars have sought to understand China's position on the investment-environment tension.[23]

However, an unanswered question in the existing scholarship is whether Chinese investment treaties constitute an obstacle to climate regulation, and more specifically, a constraint to the closure of Chinese coal power assets abroad. Given China's role as one of the main financiers of coal power investments, international efforts to transition away from coal depend, to some extent, on China's approach to the protection of its overseas investments in carbon-intensive assets. More generally, climate-related disputes concerning Chinese overseas infrastructure projects serve as relevant testing ground for the effectiveness of recent treaty reforms in addressing the tension between climate regulation and investment

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19. Kyla Tienhaara, *Regulatory Chill in a Warming World: The Threat to Climate Policy Posed by Investor-State Dispute Settlement*, 7 TRANSNAT'L ENV'T L. 229–50 (2018); *see also* Caroline Moehlecke, *The Chilling Effect of International Investment Disputes: Limited Challenges to State Sovereignty*, 64 INT'L STUD. Q. 1–12 (2020) (nuancing the "regulatory chill" effect of investment disputes).

20. Joshua Paine & Elizabeth Sheargold, *A Climate Change Carve-Out for Investment Treaties*, 26 J. INT'L ECON. L. 285–304 (2023); Amelia Keene, *The Incorporation and Interpretation of WTO-Style Environmental Exceptions in International Investment Agreements*, 18 J. WORLD INV. & TRADE 62, 69 (2017); Crina Baltag, Riddhi Joshi & Kabir Duggal, *Recent Trends in Investment Arbitration on the Right to Regulate, Environment, Health and Corporate Social Responsibility: Too Much or Too Little?*, 38 ICSID REV. 381, 398–402, 406, 412 (2023).

21. *See, e.g.,* Kun Fan, *A Review of China's Sustainable Development Goals through International Investment Agreements*, 3 ICC DISPUTE RESOLUTION BULLETIN 29, 30–37 (2022); Xu Qian, *Investment for Green Growth: An Analysis of the CAI Environmental Provisions*, 23 J. WORLD INV. & TRADE 628, 635–41 (2022); Manjiao Chi, *The 'Greenization' of Chinese Bits: An Empirical Study of the Environmental Provisions in Chinese Bits and its Implications for China's Future Bit-Making*, 18 J. INT'L ECON. L. 511, 511–17 (2015).

22. *See, e.g.,* Heng Wang, *Selective Reshaping: China's Paradigm Shift in International Economic Governance*, 23 J. INT'L ECON. L. 583–606 (2020); Gregory Schaffer & Henry Gao, *A New Chinese Economic Order?*, 23 J. INT'L ECON. L. 607 (2020); Guiguo Wang, *China's Practice in International Investment Law: From Participation to Leadership in the World Economy*, 34 YALE J. INT'L L. 575, 575–84 (2009).

23. *See, e.g.,* Kezhen Su & Wei Shen, *Environmental Protection Provisions in International Investment Agreements: Global Trends and Chinese Practices*, 15 SUSTAINABILITY 1–34 (2023); Ming Du, *Explaining China's Approach to Investor-State Dispute Settlement: A Contextual Perspective*, 28 EUR. L.J. 281 (2022); Qingjiang Kong & Kaiyuan Chen, *ISDS Reform in the Context of China's IIAs*, 36 ICSID REV. 617, 627–29 (2021).

protection.[24] This article contributes to the literature on investment law and climate change by examining the protection of Chinese coal power investments abroad, with a focus on Indonesia, Vietnam, the Philippines, and Pakistan—the main hosts of Chinese overseas coal projects.

Our analysis shows how China's investment treaties could, in theory, provide legal grounds to its investors to challenge coal phase-out decisions. At the same time, recent arbitral practice indicates that the environmental exceptions included in Chinese investment treaties could be of limited effectiveness in safeguarding states' right to transition away from coal. Drafting climate-specific exceptions that would effectively protect states' right to close down carbon-intensive assets is a challenging task. Taking this challenge into account, the article emphasizes the importance of investment treaty reforms excluding coal power from international investment protection. It also points to the role of the home state government, i.e., China, in addressing the carbon footprint of its overseas investments. By enjoining its companies to strictly comply with the environmental rules of host states, China's domestic regulation of its overseas investments could help align investment protection and climate change mitigation.

To provide the necessary context to the subsequent legal analysis, the article first introduces in Section I the carbon intensity of China's overseas coal power investments and the phase-out plans of selected host jurisdictions. Section II examines how Chinese investors could, in theory, oppose the closure of their installations based on China's international investment treaties. Section III evaluates whether environmental exceptions in Chinese investment treaties could effectively fend off investor claims against phase-out decisions. Finally, Section IV explores alternative ways of neutralizing the threat of investment arbitration.

I. THE CARBON FOOTPRINT OF CHINESE OVERSEAS INVESTMENTS

Coal-fired power generation represents the largest share of Chinese overseas investments in the electricity sector.[25] In Asia, Indonesia, Pakistan, Vietnam, and the Philippines have been the greatest recipients.[26] These investments contribute to the host states' security of electricity supply but also complicate domestic and international climate change mitigation efforts. Recently announced plans to phase down, and eventually phase out, coal power would result in the stranding

24. *See* Sanja Bogojević & Mimi Zou, *Making Infrastructure 'Visible' in Environmental Law: The Belt and Road Initiative and Climate Change Friction*, 10 TRANSNAT'L ENV'T L. 35 (2021) (examining the climate-related legal frictions arising from China's cross-border infrastructure projects).

25. Boqiang Lin & François Bega, *China's Belt & Road Initiative coal power cooperation: Transitioning toward low-carbon development*, 156 ENERGY POL'Y 1, 4 (2021); Gallagher et al., *supra* note 8, at 1–2.

26. Oyintarelado Moses, *Shining a Light on China's Support for Power Plants in Belt and Road Initiative Countries in Africa and Asia*, BU GLOBAL DEV. POL'Y CTR. (Aug. 16, 2022), https://perma.cc/H9BG-KGZT; Ren et al., *supra* note 8, at 4, 7.

of existing Chinese investments, potentially leading to substantial compensation claims.

This section introduces China's coal power investment in Asia's key host jurisdictions and their respective coal phase-out measures. It examines the carbon impact that these coal power investments create for the host states, and contextualizes the risk of investment arbitration that can result from state measures directed at addressing this carbon impact.

A. INDONESIA

Benefiting from large coal reserves, Indonesia generates more than 60% of its electricity from coal sources.[27] It is the fifth largest coal consumer and the eighth largest GHG emitter globally.[28] As of July 2023, the country had more than ninety operational coal-fired power plants, amounting to 45.3 gigawatts (GW) total installed capacity, and almost twenty additional plants under construction.[29] Taking into account the average age of 13 years of coal power plants in Indonesia and a technical lifetime of 45 years, existing plants could operate for more than 30 years.[30]

Chinese investments, mainly by Chinese state-owned companies, have made an important contribution to the development of Indonesia's coal power capacity.[31] These investments cover a total of 18 power plants,[32] many of which are subcritical units, characterized by higher carbon intensity, and thus higher GHG emissions.[33]

China's development banks (China Development Bank and Export-Import Bank) have played a key role in the financing of these projects.[34] In a first stage, Chinese companies participated in the development of Indonesia's coal power

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27. IEA, ENHANCING INDONESIA'S POWER SYSTEM: PATHWAYS TO MEET THE RENEWABLES TARGETS IN 2025 AND BEYOND 6, 10, 14, 23 (2022).

28. IEA, COAL MARKET UPDATE: July 2023, https://perma.cc/9LM3-AFW3; John Geddie, *Indonesia Could Phase Out Coal by 2040 with Financial Help, Finmin Says*, REUTERS, (Nov. 3, 2021), https://www.reuters.com/world/asia-pacific/indonesia-could-phase-out-coal-by-2040-with-financial-help-minister-2021-11-02/.

29. GLOBAL ENERGY MONITOR, GLOBAL COAL PLANT TRACKER, COAL-FIRED POWER STATIONS BY COUNTRY: INDONESIA (Jan. 2024) https://perma.cc/D6XR-DU5B.

30. IEA, COAL IN NET ZERO TRANSITIONS, *supra* note 1, at 61–62.

31. *See* Ryna Cui et al., *How an Accelerated Coal Transition in Indonesia May Affect Chinese Developers*, 13–14 (Center for Global Sustainability, University of Maryland & Institute for Essential Services Reform, Mar. 2023); *see also* Angela Tritto, *China's Belt and Road Initiative: From Perceptions to Realities in Indonesia's Coal Power Sector*, 32 ENERGY STRATEGY REV. 1, 3–9 (2021).

32. *See* Cui et al., *supra* note 31, at 13.

33. Kevin P. Gallagher, *China's Global Energy Finance: Poised to Lead*, 40 ENERGY RES. SOC. SCI. 89, 89–90 (2018); *see also* Lixia Yao et al., Policy Brief 23, *China-Indonesia Coal Relationship: A New Phase Under the Belt & Road Initiative*, ENERGY STUD. INST. (May 10, 2018).

34. Elrika Hamdi & Putra Adighuna, *Indonesia Wants to Go Greener, but PLN is Stuck with Excess Capacity from Coal-Fired Power Plants: It's Time for Japanese and Chinese Investors to Step Up and Be Part of the Solution*, IEEFA 2 (Nov. 2021); Gallagher, *supra* note 33, at 89–90; Tritto, *supra* note 31, at 8.

sector through construction contracts before undertaking direct investments in coal power stations, e.g., as part of tenders by Indonesia's State Electricity Corporation (Perusahaan Listrik Negara) or project execution in industrial parks.[35]

In 2022, Indonesia introduced a ban on the development of new coal power plants and committed to accelerating the closure of coal power plants operated by state-owned and independent power producers,[36] aiming to achieve net-zero emissions "by 2060 or sooner"[37] and to phase out coal power by 2050.[38] The latter could be achieved earlier with international technical and financial support, such as through the Just Energy Transition Partnership, an initiative supported by all G7 members as well as Denmark and Norway, to fund Indonesia's transition away from coal.[39] The early retirement of coal power plants is deemed "crucial to bringing forward Indonesia's ambition for energy transition"[40] and will proceed in stages.[41] From a peak of 290 megatons to be reached in 2030, Indonesia aims to reduce the GHG emissions from its coal-fired power plants by approximately one-fifth by 2030 and one-third by 2040.[42] This strategy is expected to result in over USD 5 billion worth of stranded assets for Chinese investors between 2022 and 2045.[43]

B. VIETNAM

Coal is also the main source of electricity production in Vietnam, accounting for more than 38% of the country's electricity generation.[44] Coal power

35. Tritto, *supra* note 31, at 4–5, 8; *see also* Ren et al., *supra* note 8, at 4; Lihuan Zhou et al., *Moving the Green Belt and Road Initiative: From Words to Actions*, WORLD RES. INST. & BU GLOBAL DEV. POL'Y CTR. (Working Paper, Oct. 2018).

36. 'Presidential Regulation No. 112 of 2022 on Accelerated Development of Renewable Energy for Electricity Supply' (Sept. 13, 2022) [Peraturan Presiden 112-2022 Percepatan Pengembangan Energi Terbarukan untuk Penyediaan Tenaga Listrik] [hereinafter Presidential Regulation No. 112].

37. Republic of Indonesia, Enhanced Nationally Determined Contribution 4 (2022), https://perma.cc/PM82-N8SG.

38. Presidential Regulation No. 112, *supra* note 36; *see also* CLIMATE ACTION TRACKER, INDONESIA: POLICIES & ACTION, https://perma.cc/N2VR-XQBU (last visited Jan. 28, 2024). In April 2023, Indonesian President Joko Widodo reiterated that "all Indonesian coal plants would be closed by 2050." Dewi Safitri, *Part Three: Indonesia to Close Coal Plants by 2050 – But How?*, EARTH JOURNALISM NETWORK (Sept. 6, 2023) https://earthjournalism.net/stories/part-three-indonesia-to-close-coal-plants-by-2050-but-how.

39. JETPI, *supra* note 11, art. 3.xi; JETPI, Comprehensive Investment and Policy Plan 2023, 1, 2, 3, 7, 9, 10, 56, 135, 236 [hereinafter JETPI-CIPP]; *see also* CLIMATEWORKS CTR., ENERGY TRANSITIONS IN VIETNAM AND INDONESIA: BUILDING BLOCKS FOR SUCCESSFUL JUST ENERGY TRANSITION PARTNERSHIP 7 (May 2023).

40. JETPI-CIPP, *supra* note 39, at 4, 163.

41. Norman S. Bisset et al., *Indonesia: PLN's New 2021-2030 Business Plan – High Hopes and 'Greener' Projects*, GLOBAL COMPLIANCE NEWS, (Oct. 23, 2023) at 4, https://perma.cc/5ANP-PYNC.

42. JETPI-CIPP, *supra* note 39, at 2, 8, 37, 43, 84, 87, 241.

43. Cui et al., *supra* note 31, at 3, 12.

44. Socialist Republic of Viet Nam, Resource Mobilization Plan Implementing Viet Nam's Just Energy Transition Partnership (JETP) 113 (Nov. 2023) [hereinafter JETPV-RMP]; Hannah Ritchie et al.,

generation has been increasing at an average annual rate of 19% in the past decade, the fastest growth in Southeast Asia.[45] With thirty-nine operating coal-fired power plants amounting to more than 25 GW, Vietnam's coal power capacity ranks 12th globally and second in Southeast Asia, second only to Indonesia.[46]

China has played a major role in this development. With over USD 7 billion investments in 15 operating coal-fired power plants and more plants under construction, China is the main foreign investor in coal power generation in Vietnam.[47] Like in Indonesia, Chinese coal power investments in Vietnam have benefited from financing through China's development banks. The contractual basis of these projects has often consisted of Build-Operate-Transfer agreements, whereby foreign companies carry out the construction and operate the plant for a certain duration (often up to 25 years), before transferring operational control to domestic companies.[48]

Vietnam committed to achieving net-zero emissions by 2050 and pledged to "transition away from unabated coal power generation . . . in the 2040s (or as soon as possible thereafter)."[49] Vietnam's 2023 National Climate Strategy calls "for a gradual transition from coal-fired electricity to cleaner energy sources, reducing the share of fossil fuel energy sources, not developing new coal-fired power projects after 2030, while gradually reducing coal power capacity after 2035."[50]

Share of Electricity Generated by Coal: Vietnam, EMBER – YEARLY ELECTRICITY DATA (2023); EMBER & ENERGY INST., *European Electricity Review* (2022); EMBER & ENERGY INST., OUR WORLD IN DATA, *Statistical Review of World Energy*, https://perma.cc/B9T7-9DFQ (last updated Dec. 12, 2023).

45. Thang Nam Do & Paul J. Burke, *Phasing Out Coal Power in a Developing Country Context: Insights from Vietnam*, 176 ENERGY POL'Y 1, 1–2 (2023).

46. JETPV-RMP, *supra* note 44, at 83; GLOBAL ENERGY MONITOR, GLOBAL COAL PLANT TRACKER, COAL-FIRED POWER STATIONS BY COUNTRY: VIETNAM (Jan. 2024) https://perma.cc/D6XR-DU5B.

47. Thanh Dat, *China Funds Coal Away from Home*, VIETNAM INVESTMENT REV. (Dec. 27, 2017), https://perma.cc/K5FP-37RJ; Gallagher et al., *supra* note 8.

48. *See, e.g.,* Sample Build-Operate-Transfer (BOT) Contract between the Ministry of Industry and Trade of the Socialist Republic of Vietnam (MOIT) and Foreign Side for BOT Power Project of Coal-Fired Thermal Power Facility, art. 6, https://perma.cc/9FE5-NAHJ; *see also Zong Touzi 17.55 Yi Meiyuan! Yuennan Yong Xin Yi Qi BOT Dianchang Xiangmu Shou Tai Jizu Shixian Man Fuhe Fadian* (总投资17.55亿美元！越南永新一期BOT电厂项目首台机组实现满负荷发电) [Total Investment of USD1.755 billion! Vietnam's first BOT power plant project Vinh Tan Phase I achieved full load power generation] POLARIS POWER (May 4, 2018), https://news.bjx.com.cn/html/20180504/895578.shtml; Song Da 5 Joint Stock Company, *Chinese Investments Flowing in Vietnam's Thermal Power Plants*, Song Da 5 Joint Stock Company (Jan. 23, 2019), https://perma.cc/5LA8-RT6S.

49. Prime Minister's Decision No. 896/QD-TTg Approving the National Strategy for Climate Change Until 2050 (July 26, 2022) [hereinafter Decision No. 896/QD-TTg]; Prime Minister's Decision No. 500/QD-TTg Approving the National Electricity Development Planning of 2021-2030 and Vision for 2050 (May 15, 2023) [hereinafter National Power Development Plan VIII]; *see also* United Nations Climate Change Conference UK 2021, Global Coal to Clean Power Transition Statement, art. 2 (Nov. 4, 2021), https://perma.cc/UQ66-GZ87; Nam Do & Burke, *supra* note 45, at 1, 5.

50. Decision No. 896/QD-TTg, *supra* note 49; *see also* CLIMATE ACTION TRACKER, *Viet Nam: Net Zero Targets*, https://perma.cc/Q9BT-MLAL (last visited Jan. 28, 2024).

Similarly to Indonesia, Vietnam entered into a Just Energy Transition Partnership to achieve net-zero by 2050, based on "Vietnam's strong, quantifiable targets to peak emissions by 2035 and its intention to bring that date forward to 2030."[51] To reach this goal, Vietnam and its international partners emphasized "the importance of the transition away from unabated coal fired power," and noted "Vietnam's intent to negotiate the decommissioning of coal-fired power stations."[52] Vietnam's coal power plants being among the youngest globally, with an average of only eight years old,[53] the early retirement of these coal power plants will generate high stranded costs.

C. THE PHILIPPINES

The Philippines generates more than 60% of its electricity from coal.[54] It has 30 operating coal power plants with a total installed capacity of 12.4 GW, and 22 proposed plants equating to an additional 13 GW.[55] China's funding amounts to a total of 3.54 GW coal power capacity, of which 2.34 GW are committed and 1.2 GW proposed.[56] These projects chiefly involve Engineering-Procurement-Construction contracts and China-funded loans.[57]

In 2020, the Philippines Government adopted a moratorium on new coal power plants but allowed those already under development to proceed.[58] It further encouraged a "voluntary early and orderly decommissioning or repurposing of existing coal-fired power plants."[59] Committing to 50% renewables by 2040, the Philippines also estimates that coal power generation will decrease to 24% by 2040.[60] The Philippines has not concluded a Just Energy Transition Partnership

51. JETPV, *supra* note 11, arts. 1, 5.

52. *Id*., arts. 8, 13.

53. IEA, COAL IN NET ZERO TRANSITIONS, *supra* note 1, at 61–62.

54. Gavin Maguire, *Philippines Set to Go from Renewable Laggard to Leader in SE Asia*, REUTERS (Mar. 14, 2023),https://www.reuters.com/markets/commodities/philippines-set-go-renewable-laggard-leader-se-asia-2023-03-14/; *see also* Republic of the Philippines, Dep't of Energy, 2022 PHILIPPINE ENERGY SITUATIONER 14 (2023).

55. Christine Shearer et al., *China at a Crossroads: Continued Support for Coal Power Erodes Country's Clean Energy Leadership*, IEEFA 18 (Jan. 2019); Republic of the Philippines, Dep't of Energy, List of Existing Power Plants as of November 2023, https://perma.cc/H5JU-FW3P (last updated Jan. 15, 2024); *see also* Leilani Chavez, *Philippines Declares No New Coal Plants – But Lets Approved Projects Through*, MONGABAY (Nov. 5, 2020), https://perma.cc/U88C-8ZVL; STATISTA RSCH. DEP'T, *Installed Capacity of Coal Power Plants in the Philippines from 2012 to 2022* (July 3, 2023), https://perma.cc/X5TE-ZQAE.

56. STATISTA RSCH. DEP'T, *supra* note 55.

57. *See, e.g.,* Lihuan Zhou et al., *supra* note 35.

58. Republic of the Philippines, Dep't of Energy, Advisory on the Moratorium of Endorsements for Greenfield Coal-Fired Power Projects in Line with Improving the Sustainability of the Philippines' Electric Power Industry (Dec. 22, 2020), https://perma.cc/KT52-ZC6B; Hannah Alcoseba Fernandez, *Philippines Announces Moratorium on New Coal Power*, ECO-BUSINESS (Oct. 28, 2020), https://perma.cc/4426-X2SW.

59. Republic of the Philippines, Dep't of Energy, Statement of Support Accelerating Managed and Just Coal Phasedown (Dec. 5, 2023), https://perma.cc/Z3PW-QRPJ.

60. Seth O'Farrell, *Chinese Energy Investors Pile into the Philippines*, FDI INTELLIGENCE (Jan. 13, 2023), https://perma.cc/RJK7-NWCT.

yet; however, it has signed the COP26 Global Coal to Power Transition Statement[61] and is part of the Asian Development Bank's Energy Transition Mechanism, aiming to refinance coal power plants to accelerate their retirement.[62]

D. PAKISTAN

Pakistan has also relied on coal to address its dire decades-long energy crisis faced by 40 million people without access to electricity.[63] In 2022, Pakistan had 6.3 GW installed coal power capacity[64] in eight operational facilities, of which seven were sponsored by China.[65] Coal combustion generated more than 27% of the country's total energy-related emissions.[66] Chinese investments are the main contributor to the construction of coal power projects in Pakistan, chiefly under the China-Pakistan Economic Corridor, which is part of China's Belt and Road Initiative.[67] China's investments in Pakistan's coal power infrastructure are predominantly greenfield types, with Chinese companies executing and/or sponsoring the projects[68] through Engineering-Procurement-Construction contracts and loans from Chinese policy banks.[69]

At the 2020 Climate Ambition Summit, Pakistan's Prime Minister pledged that there would be "no new coal-fired power."[70] The Pakistan government

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61. United Nations Climate Change Conference, Global Coal to Clean Power Transition Statement (Nov. 4, 2021), https://perma.cc/3QWP-9WY3.

62. Kris Crismundo, *ADB Stands Ready to Help PH in Clean Energy Transition*, PNA (June 14, 2023), https://perma.cc/ZL8U-BQPH; *see also Energy Transition Mechanism*, ASIAN DEV. BANK, https://perma.cc/FL65-YVTM (last visited Jan. 28, 2024).

63. MUHAMMAD ASIF, ENERGY CRISIS IN PAKISTAN: ORIGINS, CHALLENGES, AND SUSTAINABLE SOLUTIONS (2011); IEA, PAKISTAN, https://perma.cc/Y4QV-ZWKX (last visited Jan. 28, 2024); Rishikesh R. Bhandary & Kelly S. Gallagher, *What Drives Pakistan's Coal-Fired Power Plant Construction Boom? Understanding the China-Pakistan Economic Corridor's Energy Portfolio*, 25 WORLD DEV. PERSP. 1, 3 (2022).

64. GLOBAL ENERGY MONITOR, GLOBAL COAL PLANT TRACKER, COAL-FIRED POWER STATIONS BY COUNTRY: PAKISTAN (Jan. 2024), https://perma.cc/D6XR-DU5B.

65. Ziying Song et al., *Sunrise and Sunset – Accelerating Coal Phase Down and Green Energy Deployment, in* PAKISTAN: AN ANALYSIS OF THE POLITICAL ECONOMY 6 (Green Fin. & Dev. Ctr., FISF Fudan Univ., Aug. 2023).

66. Hannah Ritchie & Max Roser, OUR WORLD IN DATA, *Pakistan: CO2 Country Profile, Pakistan: What Share of CO_2 Emissions Are Produced from Different Fuels? CO_2 emissions by fuel or industry type, Pakistan*, GLOBAL CARBON BUDGET (2023), https://perma.cc/Y9M8-6TXE (last updated Dec. 12, 2023).

67. CPEC SECRETARIAT, *Energy Projects Under CPC*, https://perma.cc/6K54-SPCH (last visited Jan. 28. 2024); *see also* Christoph Nedopil, *China Belt and Road Initiative (BRI) Investment Report 2023 H1 – The First Ten Years* 13–14 (Green Fin. & Dev. Ctr., FISF Fudan Univ., July 2023); Shahzad Kouser et al., *Uncovering Pakistan's Environmental Risks and Remedies under the China-Pakistan Economic Corridor*, 27 ENV'T SCI. POLLUTION RES. 4661, 4662 (2020).

68. BU GLOBAL DEV. POL'Y CTR., *China's Global Power Database, Overview by Deal Type and Technology: Coal*, https://perma.cc/9PYP-HJP4 (last visited Jan. 28, 2024).

69. CPEC SECRETARIAT, *Energy Projects Under CPC*, https://perma.cc/6K54-SPCH (last visited Jan. 28. 2024); *Pakistani Coal Power Plant Signs Loan Contract with Chinese Banks*, XINHUA (Oct. 25, 2017), https://perma.cc/42SY-P7PG.

70. Simon Nicholas, *IEEFA: Pakistan announces 'no new coal-fired power*, IEEF (Dec. 14, 2020), https://perma.cc/6RDB-NGSU.

further vowed to reach 30% renewable energy generation by 2030 and initiated a related contract renegotiation process with Chinese investors.[71]

E. PHASING OUT COAL POWER

Chinese overseas investments in coal power have largely been driven by the energy security dilemmas faced by host countries to meet rapid demand growth and keep their electricity systems in balance.[72] Until recently, coal power generation was considered the cheapest and most cost-effective power generation method for emerging economies.[73] This mode of electricity production also fitted the important coal base of the host states.[74] Chinese coal power plants were considered more competitive, with faster construction and funding.[75] Securing energy access at least cost and ensuring electricity supply thus prevailed over climate change mitigation and local environmental concerns.[76]

Coal power investments now represent a carbon liability for the host states. Local governments have raised alarms about air, soil, sediment, and water pollution, impacts on aquaculture and agriculture, including fisheries and crops, as well as on human, plant, and animal life.[77] For instance, beyond contributing to GHG emissions, coal combustion may contribute to respiratory, cardiovascular, and neurological diseases due to emissions of sulphur dioxide (SO_2), nitrogen oxides (NOx), particulate matter (PM), heavy metals, such as lead, arsenic, cadmium, and mercury in acid rain, smog, haze, as well as fly and bottom ashes.[78] Such effects may be higher in Indonesia, Pakistan, Vietnam, and the Philippines, where existing power plants often burn subquality coal and lack flue gas treatment equipment to remove SO_2.[79]

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71. Bhandary & Gallagher, *supra* note 63, at 5.

72. Gallagher et al., *supra* note 8, at 6 (arguing that "the strongest driver of recipient country demand for Chinese-based coal plants is their own domestic policy," not China's domestic policies).

73. *Id*.

74. China's key destination countries have significant coal reserves, with 34.87 billion tons in Indonesia, and 3.36 and 3.06 billion tons in Vietnam and Pakistan respectively; *See* Hannah Ritchie et al., OUR WORLD IN DATA, *Coal Reserves (2020), Statistical Review of World Energy* (2023), https://perma.cc/W2AR-J8V3 (last updated Dec. 12, 2023).

75. Gallagher et al., *supra* note 8, at 6.

76. Vera Schulhof et al., *The Belt and Road Initiative (BRI): What Will it Look Like in the Future?*, 175 TECH. FORECAST SOC. CHANGE 1, 8 (2022) (explaining how countries may opt for straightforward and expeditious energy investments like coal power generation rather than a long-term energy plan based on sustainability); *see also* Gallagher et al., *supra* note 8, at 6.

77. Muhammad E. Munawer, *Human Health and Environmental Impacts of Coal Combustion and Post-Combustion Wastes*, 17 J. SUSTAINABLE MIN. 87, 93 (2018); Lin & Bega, *supra* note 25, at 6; Gallagher et al., *supra* note 8, at 6.

78. *See, e.g.,* JongRoul Woo et al., *Reducing Environmental Impact of Coal-Fired Power Plants by Building an Indoor Coal Storage: An Economic Analysis*, 16 ENERGIES 2 (2023); Munawer, *supra* note 77, at 87, 87–89 (2018); US ENERGY INFO. ADMIN., COAL EXPLAINED: COAL AND THE ENVIRONMENT, https://perma.cc/T8NZ-7EAS (last updated Nov. 16, 2022).

79. Christopher Oberschelp et al., *Global Emission Hotspots of Coal Power Generation*, 2 NAT. SUSTAIN. 113-121 (2019).

To transition to net-zero emissions, countries would need to cancel new coal power projects. Meanwhile, existing plants would need to cease operations, retire early, be repurposed, replaced with renewables, retrofitted to low-carbon alternatives, or equipped with carbon capture and storage by 2050.[80] Closing down these installations would considerably decrease global GHG emissions.[81] Phasing out—or at least "phasing down"—coal is now recognized as key part of the net-zero transition of major recipients of Chinese coal power investments, with several international initiatives (in particular the Just Energy Transition Partnerships and the Energy Transition Mechanism) aiming to expedite this transition.

Investments in coal power are on average relatively recent (eight years old in Vietnam, less than ten years old in the Philippines, and 13 years old in Indonesia).[82] Accordingly, closing these facilities down by 2040 to achieve net-zero emissions by 2050[83] would amount to several billions of lost assets for investors, who could then seek compensation through international investment arbitration.[84]

II. THE INVESTMENT LAW CHALLENGE TO COAL PHASE OUT

To accelerate the phasing out of coal power, states can opt to ban the use of coal for power generation by a certain date. Given China's conclusion of investment agreements with the Asian countries hosting its coal power investments, Chinese investors could, in theory, initiate international arbitration proceedings against phase-out decisions, such as by relying on the expropriation and fair and equitable treatment standards commonly included in investment treaties. To do so, Chinese investors would first have to obtain access to arbitration.

The following sections introduce the mechanism of coal phase out (or coal ban), before examining the question of access to arbitration in Chinese investment treaties and assessing the risk that the expropriation and fair equitable treatment standards pose to the legality of phase-out decisions.

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80. Jakob et al., *supra* note 1, at 704; IEA, COAL IN NET ZERO TRANSITIONS, *supra* note 1, at 66.

81. Oberschelp et al., *supra* note 79, at 113 (arguing that "[p]hasing-out the 10% most carbon-intensive coal power plants by capacity would already reduce coal power carbon emissions by 16% and human health impacts by 64%. More generally, the retirement of all China-invested coal plants in the world by 2050 would reduce CO_2 emissions by estimated 8.6 billion cumulative tons, with 341 million tons annual reduction"); *see also* Isabella Suarez & Tom Xiaojun Wang, *1-Year Later: China's Ban on Overseas Coal Power Projects and its Global Climate Impacts*, 3-22 (Ctr. for Rsch. on Energy and Clean Air & People of Asia for Climate Solutions, Sept. 22, 2022).

82. IEA, COAL IN NET ZERO TRANSITIONS, *supra* note 1, at 61–62; BRI INT'L GREEN DEV. COALITION, *Green and Low-carbon Transition of Power Sector in Southeast Asia: Baseline and Pathway* 3 (2023).

83. IEA, NET ZERO ROADMAP, *supra* note 3, at 16–17, 55, 79–81, 92.

84. BRI INT'L GREEN DEV. COALITION, *supra* note 82, at 6, 27; Matt Gray, *How to Waste over Half a Trillion Dollars: The Economic Implications of Deflationary Renewable Energy for Coal Power Investments*, CARBON TRACKER (Mar. 12, 2020), https://perma.cc/W43U-YWGN.

A. COAL BANS AND INVESTOR COMPENSATION

Coal phase-out decisions force investors to close their installations, unless they can switch to other fuels (e.g., biomass) or install carbon capture and storage equipment.[85] These decisions are a highly effective way of transitioning away from coal but generate potential tensions with investors' rights to property and international investment protection.

1. Environmental Effectiveness

Besides phase-out decisions in the European Union (e.g., Finland, the Netherlands, and Germany), Canada (Ontario and Alberta), or the American States of Oregon, California, Hawaii and Washington,[86] China is relying on the mandatory closure of inefficient coal power plants to reach its emission reduction targets.[87] Domestic facilities failing to meet China's binding energy efficiency and emission (SO_2 and NO_X) performance standards must close.[88] Coal phase-out measures may now also be applied to China's overseas investments as part of the host states' transitions to net-zero emissions (Section I).

According to environmental law theory, technology or resource bans are a form of direct regulation, generally considered effective in achieving environmental

85. *Wet verbod op kolen bij elektriciteitsproductie* [Act on the Prohibition on the Use of Coal in Electricity Production] (Netherlands) Dec. 11, 2019, https://perma.cc/9WAR-4S7V, arts. 2, 3, and 3.a; *see also* BEYOND FOSSIL FUELS, *Europe's Coal Exit: Overview of National Coal Phase Out Commitments* (Dec. 7, 2023), https://perma.cc/A59H-LWGG.

86. Ending Coal for Cleaner Air Act, 2015, S.O. 2015, c. 25, Bill 9, art. 59.3(1) (Dec. 3, 2015); Emissions Performance Standard, Senate Bill 1368 (Perata, Chapter 598, Statutes of 2006) (limiting "long-term investments in baseload generation by the state's utilities for power plants based on greenhouse gas emissions"); *see also* A Bill for an Act Relating to the Environment, 2020, S.B. NO. 2629 SD2 HD1, Act 023, Section 2 (Sept. 15, 2015); 2007–08 Mitigating the Impacts of Climate Change, Bill SB 6001 (July 22, 2007); *see also* JOEL JAEGER, THESE 10 COUNTRIES ARE PHASING OUT COAL THE FASTEST (World Res. Inst., Nov. 30, 2023), https://perma.cc/84NZ-BG97.

87. *See* Guowuyuan Guanyu Yinfa 2030 Nian Qian Tan Da Feng Xingdong Fang'an de Tongzhi (国务院关于印发2030年前碳达峰行动方案的通知) [Notice of the State Council on Issuing the Action Plan for Carbon Dioxide Peaking Before 2030] (promulgated by the State Council, Order No. 23, effective Oct. 24, 2021), art 3.1(a) ("We will orderly phase-out outdated coal power capacity, accelerate energy-saving upgrades and flexibility retrofits on units that remain in service") [hereinafter Action Plan for Carbon Dioxide]. China's Environmental Protection Law (art. 60) allows authorities to restrict production or order to close down companies discharging pollutants beyond "pollutant-discharge standards"; *see* Zhonghua Renmin Gongheguo Huanjing Baohu Fa (中华人民共和国环境保护法) [Environmental Protection Law of the People's Republic of China] (promulgated by Standing Committee of the National People's Congress, Order No. 9, first adopted Dec. 26, 1989, last revised 24. Apr. 2014, effective Jan. 1, 2015) art. 60; *see also* Anatole Boute & Hao Zhang, *The Role of the Market and Traditional Regulation in Decarbonising China's Energy Supply*, 30 J. ENV'T L. 261–84 (2018).

88. Guanyu 2016 Nian Mei Dian Hangye Taotai Luohou Channeng Mubiao Renwu de Tongzhi (关于2016年煤电行业淘汰落后产能目标任务的通知) [Notice on Eliminating Backward Capacity in Coal-fired Power Industry in 2016], (promulgated by National Energy Administration, Order No. 282, effective Oct. 16, 2016).

protection objectives.[89] Regarding the phasing out of coal power, strong evidence exists that direct regulation has been a powerful way of closing carbon-intensive power plants and reducing GHG emissions related to electricity production.[90] In China, for instance, 4.1 GW of inefficient coal power capacity has been shut down in 2022 alone.[91]

A coal power ban also has the advantage of creating planning certainty for stakeholders in the electricity sector and affected communities that can benefit from compensation as part of "just transition" mechanisms.[92] It is also meant to provide a more coordinated decommissioning of coal power plants compared to uncoordinated closures caused by market forces.[93] For example, Germany justified its regulatory coal phase-out approach with the benefits of a more targeted trajectory for the development of alternative electricity sources, and with the possibility "to determine a gradual closure path upfront, [which would have a smaller] impact on security of supply and employees in the sector."[94]

2. Legal Frictions

At the same time, mandating the closure of coal power stations by a certain date interferes with the property rights of the plant owners, and can thus result in legal challenges before national and international courts.[95] As coal power plants

89. This argument builds on Anatole Boute, *Phasing Out Coal Through Electricity Market Regulation*, 59 COMMON MKT. L. REV. 1007, 1007–44 (2022). On direct regulation, *see generally* MICHAEL G. FAURE & ROY A. PARTAIN, ENVIRONMENTAL LAW AND ECONOMICS: THEORY AND PRACTICE 122-123 (2019); *see also* SUZANNE KINGSTON ET AL., EUROPEAN ENVIRONMENTAL LAW 131 (2017).

90. *See, e.g.,* 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. 59–60 (2014) (finding that there is "strong evidence" that the use of direct regulation has been effective in inducing closures of older, highly polluting coal power plants in the past).

91. Although China decommissioned 70.45 GW of old coal power capacity in the last decade, new investments continue to be made in the sector. *See* LAURI MYLLYVIRTA ET AL., CHINA PERMITS TWO NEW COAL POWER PLANTS PER WEEK IN 2022 3 (Ctr. for Rsch. on Energy and Clean Air & Global Energy Monitor, Feb. 2023); DAVID SANDALOW ET AL., GUIDE TO CHINESE CLIMATE POLICY 45 (2022); Colleen Howe & Ella Cao, *In China's Coal Country, Full Steam Ahead with New Power Plants Despite Climate Pledge*, REUTERS (Nov. 30, 2023), https://perma.cc/6ANG-7LK2.

92. *See, e.g.,* FELIX HEILMANN & REBEKKA POPP, E3G, HOW (NOT) TO PHASE OUT COAL: LESSONS FROM GERMANY FOR JUST AND TIMELY COAL EXITS 10–11 (2020), https://perma.cc/33JY-FMEH; MARCIA ROCHA ET AL., CLIMATE ANALYTICS, A STRESS TEST FOR COAL IN EUROPE UNDER THE PARIS AGREEMENT: SCIENTIFIC GOALPOSTS FOR A COORDINATED PHASE-OUT AND DIVESTMENT VII, 2, 31 (Feb. 2017), https://perma.cc/SSW8-7S6Q. On the "just" and "fair" transition in the EU, *see also Proposal for a Council Recommendation on Ensuring a Fair Transition Towards Climate Neutrality*, COM (2021) 801 final (Dec. 14, 2021).

93. Rocha et al., *supra* note 92, at VII; *See* Heilmann & Popp, *supra* note 92, at 10.

94. *See* Commission Decision SA.58181, Tender Mechanism for the Phase-out of Hard Coal in Germany, 2020, 21.

95. KYLA TIENHAARA & LORENZO COTULA, RAISING THE COST OF CLIMATE ACTION? INVESTOR-STATE DISPUTE SETTLEMENT AND COMPENSATION FOR STRANDED FOSSIL FUEL ASSETS 23 (IIED 2020).

become "stranded assets" by regulation,[96] investors can seek compensation based on their constitutional right to property and international investment protection, such as under the expropriation and fair and equitable treatment standards.[97] As illustrated by the arbitration proceedings initiated by foreign investors against coal power bans in the Netherlands and Canada (Alberta), this risk is far from hypothetical.[98]

Compensating investors in coal power for early decommissioning raises important legitimacy questions, since it shifts the financial burden of decarbonization from the coal plant operators to society.[99] The just transition away from coal requires public support for workers and communities dependent on coal to limit the socio-economic impact of a coal power ban;[100] however, compensating investors for closing down their carbon-intensive facilities is highly problematic as it "divert[s] public funds away from climate change mitigation and adaptation efforts."[101]

The international initiatives to accelerate the closure of coal power plants in Asia (in particular the Energy Transition Mechanism and Just Energy Transition Partnerships) recognize the compensation aspect of phase-out strategies.[102] In Indonesia, for instance, "changes to existing PPAs which have a negative financial impact on the private partner are unlikely to be acceptable without compensation."[103] Implementing coal phase-out decisions, beyond the projects refinanced with international support, could thus trigger investor compensation claims, similar to the arbitration proceedings initiated against these measures in the European Union and Canada.

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96. Int'l Renewable Energy Agency (IRENA), *Stranded Assets and Renewables: How the Energy Transition Affects the Value of Energy Reserves, Buildings and Capital Stock* 21 (Working Paper, July 2017) https://perma.cc/7DMU-LUHN (defining stranded assets in the power generation sector "as fossil fuel power plants that call for closure before the end of their anticipated technical lifetimes").

97. *See* Boute, *supra* note 12.

98. *See RWE v. the Netherlands*; *Uniper v. the Netherlands*; *Westmoreland v. Canada*, *supra* note 16.

99. This argument builds on Boute, *supra* note 12, at 1087, 1088. *See generally* Paul Simshauser, *Monopoly Regulation, Discontinuity & Stranded Assets*, 66 ENERGY ECON. 384, 386 (2017) (arguing that "arguments grounded in equity and fairness can be deployed by both sides of the stranding debate" (both in the utility's and consumer's perspective), and can thus be used in favor of a partial recovery of stranded costs).

100. Boute, *supra* note 12, at 1087, 1088; *see also* Katowice Comm. of Experts on the Impacts of the Implementation of Response Measures, *Implementation of Just Transition and Economic Diversification Strategies: A Compilation of Best Practices from Different Countries* (2023), https://unfccc.int/sites/default/files/resource/A%20compilation%20of%20best%20practices%20on%20JT%20and%20EDT.pdf; Greg Muttitt & Sivan Kartha, *Equity, Climate Justice and Fossil Fuel Extraction: Principles for a Managed Phase Out*, 20 CLIMATE POL'Y 1024 (2020); Georgia Piggot et al., *Curbing Fossil Fuel Supply to Achieve Climate Goals*, 20 CLIMATE POL'Y 881 (2020).

101. Tienhaara et al., *Investor-State Dispute Settlement*, *supra* note 13, at 1197.

102. *Energy Transition Mechanism Trust Fund*, ASIAN DEV. BANK, https://perma.cc/RQ3J-4KA7 (last visited Jan. 28, 2024); JETPI-CIPP, *supra* note 39, at 87; JETPV-RMP, *supra* note 44, at 55.

103. JETPI-CIPP, *supra* note 39, at 203.

B. ACCESS TO ARBITRATION UNDER CHINESE INVESTMENT TREATIES

Chinese investment treaties are divided into four generations, a categorization based on the protection offered to investors and on the type of disputes that investors can bring to international arbitration.[104]

1. Four Generations of Investment Treaties

First-generation investment treaties (1982-1990) were chiefly concluded with developed capital-exporting countries and feature a "narrow" arbitration (or dispute resolution) clause, limiting access to arbitration to disputes on the amount and method of payment of compensation for expropriation, while other matters are left to local courts.[105] Second-generation investment treaties (1990-1997) are marked by China's accession to the International Centre for Settlement of Investment Disputes (ICSID Convention)[106] and were mainly adopted with capital-importing developing countries.[107] These treaties largely reproduce the limited arbitration regime of the first-generation investment treaties, only allowing arbitration for disputes regarding compensation amount for expropriation.[108] Third-generation investment treaties coincide with China's accession to the World Trade Organization (WTO).[109] They grant full consent to ICSID-arbitration, allowing investors to challenge government measures based on all investment protection rights recognized in the treaty.[110] China's fourth investment treaty generation, starting post-2008, also provides broad access to arbitration, but balances this

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104. *See, e.g.,* Axel Berger, *Hesitant Embrace: China's Recent Approach to International Investment Rule-Making*, 16 J. WORLD INV. & TRADE 843, 844–45 (2015); Matthew Levine, *Towards a Fourth Generation of Chinese Treaty Practice: Substantive Changes, Balancing Mechanisms, and Selective Adaptation, in* CHINA'S INTERNATIONAL INVESTMENT STRATEGY: BILATERAL, REGIONAL, AND GLOBAL LAW AND POLICY 205, 219 (Julien Chaisse ed., 2019).

105. For an analysis of narrow dispute resolution clauses, their implications, and their interpretation by arbitral tribunals, *see* Manjiao Chi & Xi Wang, *The Evolution of ISA Clauses in Chinese IIAs and Its Practical Implications: The Admissibility of Disputes for Investor-State Arbitration*, 16 J. WORLD INV. & TRADE 869, 869–83 (2015); Bajar Scharaw, *The (Provisional) End of Debates on Narrow Dispute Settlement Clauses in PRC First-Generation BITs?—China Heilongjiang et al v. Mongolia*, 34 ARB. INT'L 293 (2018); *see also* August Reinisch, *How Narrow are Narrow Dispute Settlement Clauses in Investment Treaties?*, 2 J. INT'L DISP. SETTLEMENT 115 (2011).

106. *Database of ICSID Member States, Signatory and Contracting States*, INT'L CTR. FOR SETTLEMENT INV. DISPS, https://perma.cc/FSU6-SGCH (last visited Apr. 11, 2021) (signature Feb. 9, 1990; deposit of ratification Jan. 7, 1993; entry into force Feb. 6, 1993); *see also* INT'L CTR. FOR SETTLEMENT OF INV. DISP., *China Signs the ICSID Convention*, 7 NEWS FROM ICSID 2 (1990).

107. Yuwen Li & Cheng Bian, *China's Stance on Investor-State Dispute Settlement: Evolution, Challenges, and Reform Options*, 67 NETH. INT'L L. REV. 503, 516 (2020); NORAH GALLAGHER & WENHUA SHAN, CHINESE INVESTMENT TREATIES: POLICIES AND PRACTICE 38-41 (2009); Du, *supra* note 23, at 281, 289.

108. Levine, *supra* note 104, at 208; Li & Bian, *supra* note 107, at 504 n.3; *see also* Chi & Wang, *supra* note 105, at 883.

109. Berger, *supra* note 104, at 844–46, 854.

110. Monika Heymann, *International Law and the Settlement of Investment Disputes Relating to China*, 11 J. INT'L ECON. L. 507, 517–18 (2008); Gallagher & Shan, *supra* note 107, at 41.

access with references to sustainability, as part of an attempt to reaffirm states' "right to regulate investment for legitimate public policy purposes."[111]

The bilateral investment treaties that China concluded with key destinations for its coal power investments (e.g., Pakistan, Indonesia, Vietnam, and the Philippines) are mainly first- and second-generation treaties, limiting the type of disputes that investors can bring to arbitration. The 1989 China-Pakistan investment treaty refers disputes concerning the legality of expropriatory measures to local courts.[112] International arbitration is only possible for disputes concerning the amount of compensation for expropriated assets, in case the investor brought a claim before local courts and the dispute remained unresolved one year after the complaint was filed.[113] The 1992 China-Vietnam and the 1994 China-Indonesia investment treaties limit access to arbitration to "dispute[s] involving the amount of compensation resulting from expropriation."[114] Indonesia unilaterally denounced the treaty in 2015, but Chinese investments made prior to the date of termination of the agreement continue to be protected for a further period of ten years.[115] The 1992 China-Philippines investment treaty allows investors to submit to international arbitration disputes related to compensation for expropriation or "any other dispute on the matter of this Agreement agreed by the two parties to the dispute."[116]

2. Access to Arbitration Based on Narrow Clauses

A strict interpretation of these "narrow" dispute resolution clauses would make it difficult for Chinese investors to successfully bring arbitration cases against the forced closure of their coal power plants. As the question of expropriation must be addressed by local courts, host countries could neutralize investors' access to

111. GLOBAL 20 (G20), *G20 Guiding Principles for Global Investment Policymaking,* art. VI (Sept. 14, 2016), https://perma.cc/M884-4UVK; *see also* BRICS, BRICS Perspective on International Investment Agreements arts. 1–2, 4 (July 14, 2014), https://perma.cc/V9FS-2PKJ.

112. Agreement between the Government of the People's Republic of China and the Government of the Islamic Republic of Pakistan on the Reciprocal Encouragement and Protection of Investments, art. 4.3, Feb. 12, 1989 [hereinafter China-Pakistan BIT].

113. *Id.* at art. 10.

114. Agreement Between the Government of the Republic of Indonesia and the Government of the People's Republic of China on the Promotion and Protection of Investments, art. IX.3, Nov. 18, 1994 [hereinafter China-Indonesia BIT] (unilaterally denounced by Indonesia Mar. 31, 2015); Agreement Between the Government of the People's Republic of China and the Government of the Socialist Republic of Vietnam concerning the Encouragement and Reciprocal Protection of Investments, art. 8.3, Dec. 2, 1992, [hereinafter China-Vietnam BIT].

115. China-Indonesia BIT, *supra* note 114, at art. XIII.2.

116. Agreement Between the Government of the People's Republic of China and the Government of the Republic of the Philippines Concerning Encouragement and Reciprocal Protection of Investments, arts. 10.2(a)–(b), July 20, 1992 [hereinafter China-Philippines BIT].

arbitration by simply denying that the phase-out measure amounts to an expropriation (*see* Section II.C).[117]

However, a number of arbitral tribunals have interpreted these clauses beyond their "ordinary meaning," refusing to limit jurisdiction to the question of compensation and thus accepting to consider whether an expropriation took place.[118] This interpretative approach would allow foreign investors in coal power to overcome the narrow formulation of the applicable dispute resolution clause and bring expropriation claims against phase-out decisions to international arbitration.

Chinese investments in coal power are also protected under the Agreement on Investment between China and the Association of Southeast Asian Nations (ASEAN)[119] and the China-Pakistan Free Trade Agreement,[120] as well as the Regional Comprehensive Economic Partnership.[121] The China-ASEAN Agreement on Investment and the China-Pakistan Free Trade Agreement provide access to arbitration for any legal dispute between investors and the host state, including expropriation and other substantive investment protection standards, such as fair and equitable treatment.[122] Investors could thus avail themselves of these treaties, bringing arbitration claims against host states for their coal phase-out measures.

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117. The tribunal in *Vladimir Berschader and Moïse Berschader v. Russia*, Case No. 080/2004, SCC, Award, ¶ 153 (Apr. 21, 2006) [hereinafter *Berschader v. Russia*], strictly interpreted a "narrow" dispute resolution clause – similar to the first- and second-generation Chinese investment treaties – as excluding the existence of expropriation.

118. A broad interpretation of "narrow" dispute resolution clauses was followed in *Señor Tza Yap Shum v. The Republic of Peru*, ICSID Case No. ARB/07/6, Decision on Jurisdiction and Competence, ¶ 188 (June 19, 2009) quoted in ¶ 103, Decision on Annulment (Feb. 12, 2015); *Sanum Investments Limited v. Lao People's Democratic Republic*, Case No. 2013-13, UNCITRAL, PCA, Award on Jurisdiction, ¶ 342 (Dec. 13, 2013) [hereinafter *Sanum v. Laos*]; *Beijing Urban Construction Group Co. Ltd. v. Republic of Yemen*, ICSID Case No. ARB/14/30, Decision on Jurisdiction, ¶ 90 (May 31, 2017) [hereinafter *Beijing Urban Construction v. Yemen*]. *See also* Anatole Boute, *Energy Dispute Resolution along the Belt and Road: Should China Accede to the Energy Charter Treaty?*, *in* CHINA AND INTERNATIONAL DISPUTE RESOLUTION IN THE CONTEXT OF THE 'BELT AND ROAD INITIATIVE' 185, 194 (Wenhua Shan et al. eds., 2021) (examining the implications of these decisions for Chinese overseas energy investments).

119. Agreement on Investment of the Framework Agreement on Comprehensive Economic Cooperation Between the People's Republic of China and the Association of Southeast Asian Nations, China-ASEAN, Aug. 15, 2009 [hereinafter China-ASEAN Investment Agreement].

120. Free Trade Agreement between the Government of the People's Republic of China and the Government of the Islamic Republic of Pakistan, Nov. 24, 2006 [hereinafter China-Pakistan FTA].

121. The Regional Comprehensive Economic Partnership Agreement, Nov. 15, 2020, covers the ten members of the Association of Southeast Asian Nations (ASEAN), including Indonesia, Vietnam, and the Philippines (but not Pakistan), as well as China, Australia, Japan, New Zealand, and the Republic of Korea. *See Regional Comprehensive Economic Partnership Agreement,* https://perma.cc/GNR6-C9AR (last visited Jan. 28, 2024).

122. China-Pakistan FTA, *supra* note 120, at art. 54; China-ASEAN Investment Agreement, *supra* note 119, at arts. 7.1–2(a); *see also* Chi, supra *note* 21, at 511, 517.

C. EXPROPRIATION

In line with common treaty practice, Chinese investment treaties with major hosts of coal power projects provide protection against direct expropriation and measures having an effect equivalent to expropriation.[123] Arbitral tribunals have interpreted this standard as covering state measures neutralizing the economic value of investments, e.g., the cancellation of production licenses or deprivation of contractual rights.[124] These expropriatory measures are allowed in principle, but they must be non-discriminatory, for a public purpose, imposed in accordance with due process, and require compensation.[125]

1. Investors' Claims

Investors facing a coal ban could argue that cancelling their right to produce electricity from coal amounts to an expropriation requiring compensation. This argument governed the claims initiated by foreign investors against phase-out decisions in the European Union.

In *RWE v. Netherlands*, RWE argued that the Dutch coal phase-out decision amounted to an indirect expropriation as it "prohibit[ed] the very essence of [RWE's] business activity (i.e., electricity generation by burning coal), depriving it of the use of its investments and destroying its value as the plant no longer had any use or value without the ability to burn coal."[126]

Similarly, in *Uniper v. Netherlands*, Uniper claimed that the Coal Ban Law substantially deprived the value and use of its investment by requiring its plant to close 26 years before it was expected to cease operations.[127] Uniper expected to recover and earn a return over four decades, as its investment involved "high-value and long-term financial commitments in projects that cannot adapt their cost and financing structures to short-term changes in investment conditions and that are, therefore, particularly sensitive to legal and political changes and other

123. *See, e.g.,* RCEP, *supra* note 121, Annex 10B, at arts. 1–2(b).

124. *Perenco Ecuador Ltd. v. Republic of Ecuador and Empresa Estatal Petróleos del Ecuador (Petroecuador)*, ICSID Case No. ARB/08/6 2014, Decision on Remaining Issues of Jurisdiction and on Liability, ¶ 672 (Sep. 12, 2014); *Occidental Petroleum Corporation and Occidental Exploration and Production Company v. The Republic of Ecuador*, ICSID Case No. ARB/06/11, Award, ¶ 453–55 (Oct. 5, 2012); *See generally* PETER CAMERON, INTERNATIONAL ENERGY INVESTMENT LAW 230-31 (2010); *see also*, *e.g.,* Jason Ruddall, *The Tribunal with a Toolbox: On* Perenco v Ecuador*, Black Gold, and Shades of Green*, 11 J. INT'L DISP. SETTLEMENT 485, 486–89 (2020); Borzu Sabahi & Kabir Duggal, *Occidental Petroleum v Ecuador (2012): Observations on Proportionality, Assessment of Damages and Contributory Fault*, 28 ICSID REV. 279, 281–86 (2013).

125. *See, e.g.,* China-Philippines BIT, *supra* note 116, at arts. 4.1(a)–(c); China-Vietnam BIT, *supra* note 114, at arts. 4.1(a)–(d); China-ASEAN Investment Agreement, *supra* note 119, at arts. 8.1(a)–(d); RCEP, *supra* note 121, at arts. 10.13.1(a)–(d).

126. *RWE v. the Netherlands*, *supra* note 16, Request for Arbitration, ¶ 50 (Jan. 20, 2021) [hereinafter *RWE*, Request for Arbitration]; *RWE*, Claimants' Memorial, *supra* note 16, at ¶ 462–65.

127. *Uniper v. the Netherlands*, Claimants' Memorial, *supra* note 16, ¶ 381–82, 388–92.

associated risks."[128] It further asserted that the law amounted to illegal indirect expropriation as it was "not tailored to its proffered public purpose," ignored more proportionate solutions, did not share "the burden across the energy sector," and did not adopt measures taken against other energy sources with comparable emissions like gas-fired power plants.[129]

Investors in oil and gas production, as well as mining, have made similar expropriation claims to challenge the cancellation of their production rights.[130]

2. Government Defense

States are likely to respond to these claims by invoking their sovereign right to regulate and implement environmental measures under the police powers doctrine. In *RWE v. Netherlands*, the Netherlands argued that "[u]nder the police powers doctrine, a state measure resulting in economic loss to an investor, but which falls within the state's regulatory ambit, will not qualify as an indirect expropriation and will not give rise to the obligation to pay compensation."[131] The Coal Ban Law was non-discriminatory and adopted in good faith, as it aimed to benefit the general welfare in "reducing CO_2 emissions in the fight against global warming (in fulfilment of national policies and international obligations)," and "serve[d] the public purpose of reducing CO_2 emissions to prevent harmful climate change."[132]

The Netherlands also argued that the Coal Ban Law was proportionate to the aim pursued as it represented "a rational measure adopted to reduce CO_2 emission, as is undisputed between the Parties."[133] Meeting the goals of the Paris Agreement requires coal power plants—the most carbon-intensive source of electricity—"to cease emissions from 2030."[134] Alternative policies were found "less effective, cost-effective, and/or legally untenable."[135] The Netherlands also emphasized the absence of commitment to refrain from banning coal use. For the government, "it was evident that significant CO_2 emission reduction was needed

128. *Id.* at ¶ 361.

129. *Id.* at ¶ 410–14, 431–34.

130. *See Ascent Resources Plc. and Ascent Slovn. Ltd. v. Republic of Slovenia.*, ICSID Case No. ARB/22/21 (Aug. 15, 2022) (concerning a recent hydraulic fracking ban).

131. *RWE v. the Netherlands*, *supra* note 16, Respondent's Counter-Memorial [hereinafter *RWE*, Counter-Memorial], ¶ 751 (Sept. 5, 2022).

132. *Id.* at Sec. 15.1.1, ¶ 774–75.

133. *Id.* at Sec. 15.1.1, ¶ 781–82, Sec. 16.4.2 ¶ 981; *see also* Amandine Van den Berghe & Maria Veder, *Legal Opinion on Uniper's Legally Misconceived ISDS Threat to Dutch Coal Phase-Out*, at 10 para. 37 (ClientEarth, Nov. 21, 2019), https://perma.cc/QDG8-CD4F.

134. *RWE*, Counter-Memorial, *supra* note 131, at Sec. 15.1.2, ¶ 781–82, Sec. 16.4.2, ¶ 981; *see also* Van den Berghe & Veder, *id.*

135. *RWE*, Counter-Memorial, *supra* note 131, at Sec. 15.1.2, ¶ 782, 985.

and the Netherlands expressly warned potential investors that changes in the framework would likely occur."[136]

3. Assessing the Threat of Expropriation

In practice, a number of tribunals have found that the termination of investors' right to produce energy can amount to an expropriation. In *Rockhopper v. Italy,* the tribunal agreed that the government's decision to deny a production concession application expropriated the investment.[137] In particular, "the Claimants went, in one fell swoop, from a position where they had rights to a valuable production concession which would actually lead . . . to such production concession, to essentially nothing at all. . . There was, factually speaking, an immediate and complete deprivation of the Claimants' investment."[138] With high compensation requirements not only for sunk investment costs, but also for "lost future profits," the *Rockhopper* case illustrates that states adopting fossil fuel phase-out measures face significant legal and financial risks of arbitration claims accompanied by hefty compensation awards.[139]

In *Bear Creek v. Peru*, the tribunal found that the revocation of a mining license in response to local opposition to the project constituted an indirect expropriation as it deprived the "Claimant of all the major legal rights it had obtained and needed for the realization of its mining Project,"[140] and interfered with its "reasonable expectations based on the express governmental authorization."[141] The fact that the measure had been taken to protect local communities in the face of social protests did not justify the taking.[142]

Investors have also successfully challenged the legality of environmental measures based on their impact on the investment's economic value.[143] As summarized by Wälde and Kolo, "in the extreme case of complete and indefinite destruction of the economic value of property by otherwise fully legitimate regulation, and if individuals are required by regulation to make a special sacrifice in

136. This was further confirmed by previous policies, such as the Clean Fossil Policy Memo, Parliamentary papers II 2003/04, 28 241, no. 6 (Sept. 22, 2003), Memorandum on the Long-Term Vision for Security of Supply, Parliamentary papers II 2002/03, 29 023, no. 1 (Sept. 3, 2003), Energy Reports (2005 and 2011), Letter from the Minister for Housing, Spatial Planning and the Environment, Parliamentary papers II 2006/07, 28 240, no. 77 (June 28, 2007), and Sector Agreement (Oct. 28, 2008); *RWE*, Counter-Memorial, *supra* note 131, at ¶ 791, 794–800.

137. *Rockhopper v. Italy*, *supra* note 16, at ¶ 197.

138. *Id.* at ¶ 194.

139. *See* Boute, *supra* note 12.

140. *Bear Creek Mining Corporation v. Republic of Peru*, ICSID Case No. ARB/14/21, Award, ¶ 375 (Nov. 30, 2017) [hereinafter *Bear Creek v. Peru*].

141. *Id.* at ¶ 376.

142. *Id.* at ¶ 415.

143. *See, e.g., Técnicas Medioambientales Tecmed, S.A. v. The United Mexican States*, ICSID Case No. ARB (AF)/00/2, Award, ¶ 116 (May 29, 2005); *see also* Viñuales, *supra* note 17, at 310, 314–5.

terms of their proprietary rights for the benefit of the society at large, compensation is also owed."[144]

According to Schill, a ban on certain production techniques does not necessarily deprive an investor of all economic use of its investment, if the investor can adjust its production facilities to the new environmental requirements.[145] In the case of coal power bans, coal power plant operators could equip their facilities with carbon capture and storage or retrofit their installations to use biomass, hydrogen or other low-carbon alternatives.[146] Given the high cost of these adjustments, however, there is a risk that these environmental regulations could appear as destroying the economic value of coal power investments.[147]

Similarly, investors in coal power could argue that a requirement to close their facilities, unless they install highly expensive decarbonization equipment, would amount to an indirect expropriation under China's investment treaties.

D. FAIR AND EQUITABLE TREATMENT

Besides expropriation, Chinese investment treaties require host states to accord investors fair and equitable treatment,[148] a standard that tribunals have commonly interpreted as including protection of "investors' legitimate expectations."[149] In addition to expropriation claims, investors could invoke the fair and equitable

144. Thomas Wälde & Abba Kolo, *Environmental Regulation, Investment Protection and 'Regulatory Taking' in International Law*, 50 INT'L COMPAR. L.Q. 811, 846 (2001).

145. *See* Stephan W. Schill, *Do Investment Treaties Chill Unilateral State Regulation to Mitigate Climate Change*, 24 J. INT'L ARB. 469, 474 (2007); *see also* Rechtbank Den Haag [Court of Justice The Hague], Nov. 30, 2022, No. C/09/608584, *RWE Eemshaven Holding II v. De Staat der Nederlanden (Het Ministerie van Economische Zaken en Klimaat)*.

146. *See, e.g.,* IEA, ENERGY TECHNOLOGY PERSPECTIVES 2020: SPECIAL REPORT ON CARBON CAPTURE UTILISATION AND STORAGE: CCUS IN CLEAN ENERGY TRANSITIONS (2020); *see also* Fulong Song et al., *Review of Transition Paths for Coal-Fired Power Plants*, 4 GLOB. ENERGY INTERCONN. 354, 362 (2021); Minghai Shen et al., *Carbon Capture and Storage (CSS) Development Path Based on Carbon Neutrality and Economic Policy*, 1 CARBON NEUTRALITY 1–21 (2022).

147. *See, e.g., RWE*, Request for Arbitration, *supra* note 126, at ¶ 50; *RWE*, Claimants' Memorial, *supra* note 16, at ¶ 462–65; *see also*, *e.g.,* Lea Di Salvatore, INVESTOR-STATE DISPUTES IN THE FOSSIL FUEL INDUSTRY (IISD Report, Dec. 2021).

148. *See* China-Pakistan FTA, *supra* note 120, at art. 48.1 (investors "shall all the time be accorded fair and equitable treatment"); China-Pakistan BIT, *supra* note 112, at art. 3.1 (referring to equitable treatment); China-Indonesia BIT, *supra* note 114, at art. 2.2. ("[i]nvestments of investors of either Contracting Party shall at all time be accorded fair and equitable treatment and shall enjoy adequate protection . . . in the territory of the other contracting Party"); China-Vietnam BIT, *supra* note 114, at art. 3.; China-Philippines BIT, *supra* note 116, at art. 3.1; China-ASEAN Investment Agreement, *supra* note 119, at arts. 7.1–2(a); *see also* RCEP, *supra* note 121, at art. 10.5.1 (limiting protection to "the customary international law minimum standard of treatment of aliens.").

149. Federico Ortino, *The Obligation of Regulatory Stability in the Fair and Equitable Treatment Standard: How Far Have We Come?*, 21 J. INT'L ECON. L. 845, 845 (2018); *see also* Christopher Campbell, *House of Cards: The Relevance of Legitimate Expectations under Fair and Equitable Treatment Provisions in Investment Treaty Law*, 30 J. INT'L ARB. 361–79 (2013).

treatment standard to challenge the interference of a coal power ban with their legitimate expectations.

1. Investors' Claims

In *RWE v. Netherlands*, RWE argued that the Dutch Coal Ban Law breached its legitimate expectations as it had invested following the Netherlands' "declared desire and policy to have new coal-fired power plants . . . in order to guarantee the security of supply and become more independent from gas-exporting states."[150] RWE had received all necessary licenses for the operation of its coal power plants, without limits in time.[151] RWE argued that, by forcing the investor to close down its power plants "decades prior to the end of its expected technical and economic lifetime," the Netherlands was breaching RWE's legitimate expectations.[152] According to RWE, the legal framework under which it had invested had fundamentally changed, going from encouraged economic activity to complete prohibition.[153] By adopting the Coal Ban Law, the Netherlands "failed to provide a stable and consistent legal framework,"[154] and "completely reversed a legal position it had adopted and maintained over a period of 15 years, and which led Claimants to invest in the Netherlands."[155]

In *Uniper v. Netherlands*, the investor similarly claimed that the host state breached the fair and equitable treatment standard on three grounds.[156] For the company, the Coal Ban Law frustrated its legitimate expectations as Uniper's coal plant would have to shut down by 2030 "as a result of the Respondent's fundamental changes to its legal framework."[157] The state fundamentally and radically altered the existing regulatory regime from "consistently, publicly and expressly encourag[ing] and support[ing] the Claimants' investment" to "formally announc[ing] . . . that as of 2030, the plant would no longer be able to generate electricity using coal."[158]

2. Government Defense

In its defense, the Netherlands responded that it "did not offer any undertaking of regulatory immutability of the energy and environmental framework to Claimants, much less an explicit undertaking guaranteeing that Claimants would be permitted to unabatedly emit CO_2 from the burning of coal of the lifetime of

150. *RWE*, Request for Arbitration, *supra* note 126, at ¶ 60.
151. *Id.* at ¶ 60.
152. *Id.* at ¶ 61.
153. *Id.* at ¶ 62.
154. *RWE*, Claimants' Memorial, *supra* note 16, at ¶ 513, 534.
155. *Id.* at ¶ 521.
156. *Uniper v. the Netherlands*, Claimants' Memorial, *supra* note 16, at Sec. 5.4, ¶ 456.
157. *Id.* at Sec. 5.4(b), ¶ 475.
158. *Id.* at Sec. 5.4(c), ¶ 480–81.

[the investors' plants]."[159] According to the Netherlands, it did not guarantee that it would freeze the regulatory framework governing coal power investment, "nor did it enact and subsequently repeal a regulatory regime aimed at inducing foreign investment."[160] Instead, the Netherlands had repeatedly warned that coal power, and fossil fuels more generally, would be subject to more stringent regulation to achieve the international, European, and national climate change mitigation targets.[161]

3. Assessing the Threat of Unfair and Inequitable Treatment

Uniper's and RWE's claims illustrate the risk of arbitration claims against phase-out decisions arising from investors' expectations of regulatory stability, and frustration of the regulatory regime upon which their investments were made. The fair and equitable treatment standard does not freeze a state's regulatory framework.[162] However, a "reversal of assurances" by the host state can violate the fair and equitable treatment principle, provided the investor can convince the arbitral tribunal that it invested in reliance of these assurances.[163] Arbitral tribunals are divided on which kind of specific assurances or commitments can create legitimate investors' expectations.[164] While some tribunals have refused to accept that general regulations can give rise to specific commitments, others supported the view that a host state's laws and regulations can create legitimate expectations.[165]

The defense that the government had repeatedly warned investors of more stringent climate regulation may be more difficult to articulate in relation to China's overseas coal power plants, considering the guarantees provided by the host state in the contracts governing these investments. As seen under Section I. B, in addition to China's investment treaties with the host country, Chinese overseas investments in coal power are governed by project-specific contracts (e.g.,

159. *RWE*, Counter-Memorial, *supra* note 131, at ¶ 893.

160. *Id*. at ¶ 942.

161. *Id*. at ¶ 895, 901.

162. *EDF (Services) Limited v. Romania*, ICSID Case No. ARB/05/13, Award, ¶ 217 (Oct. 8, 2009); *Saluka Investments B.V. v. The Czech Republic*, UNCITRAL, Partial Award, ¶ 304–05, 500 (Mar. 17, 2006) [hereinafter *Saluka v. Czech Republic*]; *see also* Diego Zannoni, *The Legitimate Expectation of Regulatory Stability Under the Energy Charter Treaty*, 33 LEIDEN J. INT'L L. 455 n.17 (2020).

163. RUDOLF DOLZER, URSULA KRIEBAUM & CHRISTOPH SCHREUER, PRINCIPLES OF INTERNATIONAL INVESTMENT LAW 209–11 (Oxford University Press, 3d ed., 2012).

164. *See, e.g., Masdar Solar & Wind Cooperatief U.A. v. Kingdom of Spain*, ICSID No. ARB/14/1, Award, ¶ 489–522 (May 16, 2018).

165. In *9REN Holding S.a.r.l v. Kingdom of Spain*, ICSID No. ARB/15/15, Award, ¶ 295 (May 31, 2019), for instance, the tribunal saw "no reason in principle why such a commitment of the requisite clarity and specificity cannot be made in the regulation itself where (as here) such a commitment is made for the purpose of inducing investment, which succeeded in attracting the Claimant's investment." Dolzer, Kriebaum & Schreuer, 208–09, support the view that "the regulatory framework on which the investor is entitled to rely consists of legislation and treaties as well as of assurances contained in decrees, licenses, and similar executive statements."

Build-Operate Transfer) that typically entitle investors to a certain degree of legal stability.[166]

E. THE THREAT OF INVESTMENT ARBITRATION TO COAL PHASE OUT

Both Uniper's and RWE's claims have been discontinued as part of conditions of a government rescue package agreed in the context of the 2022 energy crisis.[167] Despite their discontinuing for political reasons, these claims illustrate the risk that foreign investors in coal power could invoke the expropriation and fair and equitable treatment standards under international investment treaties to seek compensation for the forced closure of their installations. Similarly to *RWE v. Netherlands* and *Uniper v. Netherlands*, the Chinese investment treaties with major destinations of Chinese coal power investments contain substantive standards that could be used to oppose phase-out decisions.

Investors' claims against phase-out decisions have led to increasing criticism of the threat posed by investment arbitration to ambitious climate regulation, and more specifically to the transition away from coal.[168] The United Nations Intergovernmental Panel on Climate Change cautioned that investment treaties could "be used by fossil fuel companies to block national legislation aimed at phasing out the use of their assets."[169] In theory, the mere threat of arbitration and risk of high investor compensation could dissuade states from adopting phase-out decisions.[170]

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166. *See, e.g.,* Peter Cameron, *In Search of Investment Stability, in* RESEARCH HANDBOOK ON INTERNATIONAL ENERGY LAW 124, 124–48 (Kim Talus ed., 2014).

167. Jack Ballantyne, *RWE to withdraw ECT claim against Netherlands*, GLOB. ARB. REV. (Nov. 3, 2023), https://perma.cc/8HP8-GW88; Jack Ballantyne, *Uniper withdraws ECT claim*, GLOB. ARB. REV. (Mar. 21, 2023), https://perma.cc/YQ9A-ZN2H.

168. *See, e.g.,* Myriam Gicquello & Emily Webster, *The Investment Treaty Regime and the Clean Energy Transition,* EUROPEAN YEARBOOK OF INTERNATIONAL ECONOMIC LAW 2022 235, 235–66 (Jelena Bäumler et al. eds., 2023); TOMÁS RESTREPO RODRÍGUEZ, INVESTMENT TREATY LAW AND CLIMATE CHANGE (2022) 70–77; *see also, e.g.*, Kyla Tienhaara & Christian Downie, *Risky Business? The Energy Charter Treaty, Renewable Energy, and Investor-State Disputes*, 24 GLOBAL GOVERNANCE 451, 458–60 (2018).

169. IPCC, *Summary for Policymakers, in* CLIMATE CHANGE 2022: IMPACTS, ADAPTATION AND VULNERABILITY, CONTRIBUTION OF WORKING GROUP II TO THE SIXTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 14–81 (Hans-Otto Pörtner et al. eds., 2022); *see also* UNCTAD, *Treaty-based Investor-State Dispute Settlement Cases and Climate Action*, 1–22 (IIA Issues Note, Sept. 2022); Joint Submission from the Center for International Environmental Law (CIEL), the International Institute for Sustainable Development (IISD), and ClientEarth on the Call for Inputs from the Special Rapporteur on Human Rights and the Environment, *Investor-State Dispute Settlement (ISDS) Mechanisms and the Right to a Clean, Healthy, and Sustainable Environment* 5 (June 15, 2023) [hereinafter Joint CIEL-IISD-ClientEarth Submission] https://perma.cc/5VVM-FRRB.

170. Kyla Tienhaara, *Regulatory Chill and the Threat of Arbitration: A View from Political Science,* EVOLUTION IN INVESTMENT TREATY LAW AND ARBITRATION 606, 606–627 (Chester Brown & Kate Miles eds., 2011); Tienhaara, *supra* note 19, at 229–50; *see also* United Nations General Assembly, *Human Rights-Compatible International Investment Agreements*, Report of the Working Group on the issue of human rights and transnational corporations and other business enterprises (A/76/238) (July 27, 2021); Veblen Institute for Economic Reforms and CIEL, ClientEarth and IISD Submissions to the

To reconcile investment and environmental protection, China has started to integrate environmental exceptions in its investment treaties, consistent with international norms. Building on recent arbitral practice and the scholarship on environmental exceptions, the following section examines the environmental exceptions recently adopted by China and its treaty partners, and assesses their effectiveness in providing an answer to the arbitration constraints related to the phasing out of coal power.

III. ENVIRONMENTAL EXCEPTIONS IN CHINESE INVESTMENT TREATIES

In reaction to the criticism of investment law as an obstacle to environmental protection, states have incorporated environmental exceptions in investment treaties. With environmental exceptions, "states have sought to guide and constrain investment tribunals' decision-making, in response to concerns that these tribunals have paid insufficient attention to the need for host states to retain the legal capacity to enact and maintain non-discriminatory public welfare measures."[171] Although China's first- and second-generation investment treaties, including with its main Asian partners in the coal power sector, do not include environmental exceptions, its more recent treaties do integrate such clauses.[172] Recent arbitration decisions have revealed, however, that environmental exceptions of the type included in China's investment treaties may not adequately safeguard states' environmental powers.[173]

This section introduces the environmental exceptions in Chinese investment treaties and, based on recent arbitral practice, examines their effectiveness in shielding coal phase-out decisions from investors' challenges.

A. POLICE POWERS DOCTRINE

To protect states' right to adopt environmental measures, investment treaties can include specific clauses recognizing states' "right to regulate" and formalizing their "police powers."[174] Under the police powers doctrine, non-discriminatory

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OECD, INVESTMENT TREATIES AND CLIMATE CHANGE: OECD PUBLIC CONSULTATION, COMPILATION OF PUBLIC SUBMISSIONS 61–62, 236–37 (Apr. 13, 2022) [hereinafter OECD PUBLIC CONSULTATION].

171. Caroline Henckels, *Scope Limitation or Affirmative Defense? The Purpose and Role of Investment Treaty Exception Clauses,* EXCEPTIONS IN INTERNATIONAL LAW 363, 363 (Lorand Bartels & Federica Paddeu eds., 2020); *see also*, *e.g.*, Keene, *supra* note 20, at 62, 69; Chester Brown & Domenico Cucinotta, *Treatment Standards in Environment-Related Investor-State Disputes, in* RESEARCH HANDBOOK ON ENVIRONMENT AND INVESTMENT LAW 175, 180 (Kate Miles ed., 2019); Camille Martini, *Balancing Investors' Rights with Environmental Protection in International Investment Arbitration: An Assessment of Recent Trends in Investment Treaty Drafting*, 50 INT'L L. 529, 576–80 (2017).

172. Jesse Coleman et al., *International Investment Agreements, 2015-16: A Review of Trends and New Approaches*, *in* YEARBOOK ON INTERNATIONAL INVESTMENT LAW & POLICY 2015-2016 42, 72–74 (Lisa E. Sachs & Lise Johnson eds., 2018); Su & Shen, *supra* note 23, at 4–6, 18, 25–26, 28–29.

173. Baltag, Joshi & Duggal, *supra* note 20, at 398–402, 406, 412.

174. *See, e.g.*, Guangyi Qu & Wei Shen, *Public Health and Investment Protection in the Context of the Covid-19 Pandemic – From the Sustainable Perspective of Exception Clauses*, 14 SUSTAINABILITY 1,

environmental regulation should in principle not amount to an indirect expropriation, provided they are proportionate, adopted in good faith, implemented for public purposes, and do not "unreasonably change the regulatory framework."[175]

1. Police Powers in Chinese Investment Treaties

China has followed the international treaty reform trend by incorporating references to states' "police powers" under its fourth-generation investment treaties.[176] A significant number of Chinese investment treaties clarify that non-discriminatory and good faith measures to protect the environment do not constitute indirect expropriation.[177] Arbitral tribunals must consider the "character and objectives" of challenged state measures, and whether the measures are "proportionate" to

4 (2022); *see also, e.g.*, Catharine Titi, *Police Powers Doctrine and International Investment Law,* GENERAL PRINCIPLES OF LAW AND INTERNATIONAL INVESTMENT ARBITRATION 323, 324 (Andrea Gattini et al. eds., 2018); CATHERINE TITI, THE RIGHT TO REGULATE IN INTERNATIONAL INVESTMENT LAW 123–89 (2014).

175. Schill, *supra* note 145, at 469, 477. Examples of arbitral decisions defining the police powers doctrine include *Methanex v. USA*, UNCITRAL, Final Award of the Tribunal on Jurisdiction and Merits, Part IV, Ch. D, ¶ 7 (Aug. 3, 2005) [hereinafter: *Methanex v. USA*]; *Saluka v. Czech Republic*, ¶ 262; *Chemtura Corporation v. Government of Canada*, Ad Hoc NAFTA Arbitration under UNCITRAL Rules, Award, ¶ 266 (Aug. 2, 2010) [hereinafter: *Chemtura v. Canada*]; *Eco Oro Minerals Corp. v. Republic of Colombia*, ICSID Case No. ARB/16/41, Decision on Jurisdiction, Liability and Directions on Quantum, ¶ 635, 642, 698–99 (Sep. 9, 2021) [hereinafter *Eco Oro v. Colombia*]; *Philip Morris*, ¶ 300–7; United States Model Bilateral Investment Treaty (2012), Annex B on Expropriation, ¶ 4(b).

176. Ying Zhu, *Do Clarified Indirect Expropriation Clauses in International Investment Treaties Preserve Environmental Regulatory Space?*, HARV. INT'L L.J. 377, 377–78 (2019); On "[m]ore precise norms" in investment treaties, *see also* Caroline Henckels, *Protecting Regulatory Autonomy Through Greater Precision in Investment Treaties: The TPP, CETA, and TTIP*, 19 J. INT'L ECON. L. 27, 40–43 (2016).

177. *See, e.g.*, Bilateral Agreement for the Promotion and Protection of Investments Between the Government of the People's Republic of China and the Government of the Republic of Colombia, art. 4.2, Nov. 22, 2008; Agreement between the Government of the People's Republic of China and the Government of the Republic of Uzbekistan on the Promotion and Protection of Investments [hereinafter China-Uzbekistan BIT], art. 6.3, Apr. 19, 2011; Agreement Between the Government of the Peoples' Republic of China and the Government of Canada for the Promotion and Reciprocal Protection of Investments, Annex B10, Sept. 9, 2012; Agreement Between the Government of the People's Republic of China and the Government of the United Republic of Tanzania Concerning the Promotion and Reciprocal Protection of Investments, art. 6.3, Mar. 24, 2013; Agreement Between the Government of the Republic of Turkey and the Government of the People's Republic of China Concerning the Reciprocal Promotion and Protection of Investments, art. 5.3, July 29, 2015; Free Trade Agreement Between the Government of the People's Republic of China and the Government of the Republic of Korea [hereinafter China-Korea FTA], Annex 12-B, art. 3(b), June 1, 2015; Free Trade Agreement Between the Government of the People's Republic of China and the Government of the Republic of Mauritius, Ch. 8, Annex B, art. 5, Oct. 17, 2019; Mainland and Hong Kong Closer Economic Partnership Arrangement, Investment Agreement, Annex 3, June 28, 2017; s*ee also* Agreement Between the Government of the Republic of India and the Government of the People's Republic of China for the Promotion and Protection of Investments, art. 5, Nov. 21, 2006; Agreement Among the Government of Japan, the Government of the Republic of Korea and the Government of the People's Republic of China for the Promotion, Facilitation and Protection of Investment [hereinafter China-Japan-Korea Trilateral Investment Treaty], Protocol art. 2(c), May 13, 2012 (referring to "legitimate public welfare" or "interest" without specifying environmental protection).

the objectives pursued, including environmental protection.[178] More specifically, the Regional Comprehensive Economic Partnership, to which China and relevant Asian coal partners like Indonesia, Vietnam, and the Philippines are parties,[179] affirms the right of the contracting parties to regulate "in pursuit of legitimate public welfare objectives."[180] Its Annex confirms that "non-discriminatory regulatory actions by a Party that are designed and applied to achieve legitimate public welfare objectives, such as the protection of... the environment, do not constitute expropriation."[181]

The Comprehensive and Progressive Agreement for Transpacific Partnership, a treaty to which Vietnam is a party and China has formally applied to join,[182] adopts a similar definition of indirect expropriation and stipulates that, "except in rare circumstances," non-discriminatory regulatory measures to protect the environment do not constitute indirect expropriation.[183] The Agreement features a further standalone chapter fully dedicated to the environment, whereby Parties recognize each Party's sovereign right to "establish its own levels of domestic environmental protection and its own environmental priorities, and to establish, adopt or modify its environmental laws and policies accordingly."[184]

Although it does not provide for investor-state arbitration, the comprehensive agreement on investment between China and the European Union features a similar provision dedicated to the right to regulate, according to which "Parties recognise the right of each Party to determine its sustainable development policies and priorities, to establish its own levels of domestic ... environmental protection, and to adopt or modify its relevant laws and policies accordingly, consistently with its multilateral commitments in the fields of ... environment."[185]

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178. *See, e.g.*, China-Korea FTA, *supra* note 177, Annex 12-B, art. 3.a.(iii); China-Uzbekistan BIT, *supra* note 177, art. 6.2.(d); China-Japan-Korea Trilateral Investment Treaty, *supra* note 177, Protocol art. 2.b.(iii). *See also* Zhu, *supra* note 176, at 412.

179. For RCEP member states, *see supra* note 121.

180. RCEP, *supra* note 121, at Pmbl. Rec. 10.

181. *Id.* at Annex 10B art 4. *See also* China-ASEAN Investment Agreement, *supra* note 119, at arts. 8.1(a)–(d) (allowing "flexibility to the Parties to address their sensitive areas [...] in the realisation of the sustainable economic growth and development goals on the basis of equality and mutual benefits so as to achieve a win-win outcome," but subjecting non-discriminatory expropriation to the requirement of compensation).

182. Ministry of Commerce, People's Republic of China, *China Officially Applies to Join the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)*, Sept. 18, 2021, https://perma.cc/MC5F-C5QV; State Council, People's Republic of China, *China Officially Applies to Join CPTPP*, Sept. 17, 2021, https://perma.cc/8Q6R-FNEU; *see also* Zhong Nan, *China Willing, Capable of Joining CPTPP, Senior Official Says*, CHINA DAILY (Apr. 24, 2023), https://perma.cc/MB3F-YRCM.

183. Comprehensive and Progressive Agreement for Trans-Pacific Partnership, Mar. 8, 2018 [hereinafter CPTPP], Annex 9-B, art. 3(b).

184. *Id.* at art. 20.3.2.

185. EU-China Comprehensive Agreement on Investment [hereinafter CAI], Agreement in Principle (announced Dec. 30, 2020, published Jan. 22, 2021, ratification suspended) Sec. IV, Sub-sec. 2, art. 1.

2. Putting the Police Powers Doctrine to the Test

In several arbitration disputes, states have successfully invoked the "police powers" clause to defend the legality of environmental bans under the expropriation standard. Similarly, governments could rely on this defense to shield their coal phase-out decisions against expropriation claims. However, the police powers defense does not necessarily shelter governments from claims under other investment standards like fair and equitable treatment.

In *Eco Oro v. Colombia*, the tribunal agreed that a mining ban resulted in "the complete deprivation of a potential right to exploit" natural resources, rendering the investor's mining concession valueless, but rejected the expropriation claim based on the police powers clause of the treaty.[186] The environmental limitations imposed on the investor "were adopted in good faith, [were] non-discriminatory and designed and applied to protect the environment such that they [were] a legitimate exercise of Colombia's police powers and [did] not constitute indirect expropriation."[187]

In *Methanex v. USA*, the tribunal rejected the expropriation claim directed at a ban on the use of a certain fuel additive, by considering that:

> as a matter of general international law, a non-discriminatory regulation for a public purpose, which is enacted in accordance with due process and, which affects, inter alios, a foreign investor or investment is not deemed expropriatory and compensable unless specific commitments had been given by the regulating government to the then putative foreign investor contemplating investment that the government would refrain from such regulation.[188]

In *Chemtura v. Canada*, the tribunal ruled that the cancellation of the investors' product registration was non-discriminatory, motivated by the dangers posed by the investor's activity for human health and the environment, and that "under such circumstances," it was a "valid exercise of the State's police powers" and thus did not amount to an expropriation.[189]

However, other tribunals have been more restrictive in their recognition of states' right to adopt ambitious public policy measures.[190] In *Bear Creek v. Peru*,

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186. *Eco Oro v. Colombia*, *supra* note 175, at ¶ 634. Although the actual economic value of the investor's right to exploit was uncertain, the tribunal concluded that the substantial deprivation of this right could amount to indirect expropriation.

187. *Id.* at ¶ 699.

188. *Methanex v. USA*, *supra* note 175, at Part IV, Ch. D, ¶ 7.

189. *Chemtura v. Canada*, *supra* note 175, at ¶ 97, 251, 254, 266; *see also Copper Mesa Mining Corporation v. Republic of Ecuador*, PCA No. 2012-2, Award, ¶ 6.10 (Mar. 15, 2016) [hereinafter *Copper Mesa v. Ecuador*].

190. Joshua Paine, *Bear Creek Mining Corporation v. Republic of Peru: Judging the Social License of Foreign Investments and Applying New Style Investment Treaties*, 33 ICSID REV. 340, 346 (2018); Keene, *supra* note 20, at 85–86; *see also* Federico Ortino, *Defining Indirect Expropriation: The Transatlantic Trade and Investment Partnership Approach and the (Elusive) Search for "Greater Certainty"*, 43 LEGAL ISSUES ECON. INTEGRATION 351, 364 (2016); Wolfgang Alschner & Kun Hui,

Peru invoked the police powers doctrine, formally recognized under the applicable treaty, to justify the revocation of a mining license as a necessary measure "to protect its citizens in the face of months of violent protests that threatened their health and safety."[191] The tribunal majority rejected this defense, ruling that the detailed expropriation provisions of the treaty did not allow for other exceptions "from general international law or otherwise . . . considered applicable in this case."[192] The tribunal further reasoned that "[t]here is, thus, no need to enter into the discussion between the Parties regarding the jurisprudence concerning any police power exception for measures addressed to investments."[193]

Similarly, in *Copper Mesa v. Ecuador*, Ecuador unsuccessfully argued that the termination of a mining concession was a legitimate exercise of its police powers to protect the environment and public health.[194] Although the tribunal accepted that non-discriminatory measures adopted in good faith for public purposes are not subject to compensation, it found Ecuador's measures to be arbitrary and adopted without due process.[195]

3. Police Powers and Coal Phase Out

Based on existing arbitral practice, the police powers doctrine could in principle help host states justify a ban on the use of coal for power generation, provided the government did not commit to refrain from adopting such environmental regulation towards the investor.[196] However, as illustrated in, e.g., *Bear Creek v. Peru*, there is also a risk that tribunals could follow a restrictive interpretation of this defense. Furthermore, even if coal phase-out measures were found to be non-discriminatory, adopted in good faith, for public purpose, and justified by legitimate police powers,[197] the limitation of the police powers defense to expropriation would not help avoid compensation for breaches of other investment

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Missing in Action: General Public Policy Exceptions in Investment Treaties, in YEARBOOK ON INTERNATIONAL INVESTMENT LAW & POLICY 2018 364, 374, 378–84, 392 (Lisa E. Sachs et al., eds., 2019).

191. *Bear Creek v. Peru*, *supra* note 140, ¶ 337, 469.

192. *Id.* at ¶ 473.

193. *Id.* at ¶ 474.

194. *Copper Mesa v. Ecuador*, *supra* note 189, at ¶ 6.10–6.11, 6.13, 6.58, 6.60.

195. *Id.* at ¶ 6.66–6.67; Agreement Between the Government of Canada and the Government of the Republic of Ecuador for the Promotion and Reciprocal Protection of Investments, art. XVII.3, Apr. 24, 1996 (unilaterally denounced by Ecuador May 19, 2018).

196. *See, e.g.,* Oliver Hailes, *The Customary Duty to Prevent Unabated Fossil Fuel Production: A Tipping Point*, 20 TRANSNAT'L DISP. MGMT. 3, 21, 37 (2023) (on "ways in which a tribunal applying international law in an investment treaty dispute could reconcile the tension between a contractual assurance of regulatory stabilisation and the customary duty to prevent unabated fossil fuel production under the rubric of an FET standard").

197. *Eco Oro v. Colombia*, *supra* note 175, at ¶ 581–616, 642; *see also* Viñuales, *supra* note 17, at 56–58.

protection standards.[198] Only few Chinese investment treaties extend this defense to the fair and equitable treatment standard.[199]

B. WTO-STYLE EXCEPTIONS

The drafting of environmental exceptions in investment treaties has been heavily influenced by the general exceptions under WTO law, and in particular the General Agreement on Trade and Tariffs (GATT) (Article XX(b) and (g)), according to which:

> nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures . . . necessary to protect human, animal or plant life or health [and] . . . relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption.[200]

1. WTO-Style Exceptions in Chinese Investment Treaties

A number of investment treaties concluded by China, such as the China-ASEAN Investment Agreement, contain WTO-style environmental exceptions.[201] The Regional Comprehensive Economic Partnership and Comprehensive Agreement on Investment directly incorporate Article XX of the GATT for the purpose of its investment chapter.[202] Similarly, the Comprehensive and Progressive Agreement for Trans-Pacific Partnership, to which China has applied, establishes that:

> [n]othing in this [Investment] Chapter shall be construed to prevent a Party from adopting, maintaining or enforcing any measure otherwise consistent with this Chapter that it considers appropriate to ensure that investment

198. *See Eco Oro v. Colombia*, discussed in Sections III.B.2 and III.B.3.

199. *See* Agreement Between the Government of the People's Republic of China and the Government of the Republic of Madagascar for the Reciprocal Promotion and Protection of Investments, art. 3.2, Nov. 21, 2005 (stating that environmental measures "shall not be regarded as obstacles" to the fair and equitable standard); *see also* Chi, *supra* note 21, at 517; Fan, *supra* note 21, at 33.

200. General Agreement on Tariffs and Trade, opened for signature Oct. 30, 1947, Pmbl. 61 Stat. A-11, 55 U.N.T.S. 194 arts. XX(b), (g) [hereinafter GATT]. On the influence of the GATT on investment law exceptions, *see, e.g.*, Mark Wu, *The Scope and Limits of Trade's Influence in Shaping the Evolving International Investment Regime, in* THE FOUNDATIONS OF INTERNATIONAL INVESTMENT LAW 168–69, 197 (Zachary Douglas, Joost Pauwelyn & Jorge E. Viñuales eds., 2014); Barton Legum & Ioana Petculescu, *GATT Article XX and International Investment Law, in* PROSPECTS IN INTERNATIONAL INVESTMENT LAW AND POLICY: WORLD TRADE FORUM 340, 340 (Roberto Echandi & Pierre Sauvé eds., 2013).

201. China-ASEAN Investment Agreement, *supra* note 119, at arts. 16.1(b), (f).

202. RCEP, *supra* note 121, at art. 17.12.1 (clarifying that "measures referred to in subparagraph (b) of Article XX of GATT 1994 include environmental measures necessary to protect human, animal or plant life or health, and that subparagraph (g) of Article XX of GATT 1994 applies to measures relating to the conservation of living and non-living exhaustible natural resources"). Similarly, *see* CAI, *supra* note 185, Sec. VI, Sub-sec. 2, arts. 4.1(b), 4.2.

> activity in its territory is undertaken in a manner sensitive to environmental, health or other regulatory objectives.[203]

2. Putting WTO-Style Exceptions to the Test

The scholarship on investment law and the environment is divided on the effectiveness of these protections in investment treaties. For some, WTO-style exceptions balance investor protection and states' right to regulate effectively,[204] and arbitral tribunals can benefit from the existing WTO practice in interpreting these environmental exceptions.[205] Exceptions decrease arbitral discretion, therewith limiting the risk of unsettling arbitral decisions on environmental regulation.[206] However, others argue that the inclusion of WTO-style exceptions may be too "narrow" and "restrictive."[207] Recent arbitral practice illustrates the potential limitations of WTO-style environmental exceptions in protecting states' right to regulate under international investment law.

Most notably, in *Eco Oro v. Colombia,* the tribunal ruled that the environmental exception in the applicable investment treaty[208] did not exclude investor compensation, as compensation did not in itself prevent the state from adopting

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203. CPTPP, *supra* note 183, art. 9.16.

204. *See* JÜRGEN KURTZ, THE WTO AND INTERNATIONAL INVESTMENT LAW: CONVERGING SYSTEMS 228 (2016) (arguing that "[a] better and sustainable pathway for the future is a modelling strategy whereby states parties take the best features of WTO law and then tailor resulting flexibilities both in light of contemporary concerns and the distinct institutional context of investment law").

205. Christina Beharry & Melinda Kuritzky, *Going Green: Managing the Environment Through International Investment Arbitration*, 30 AM. UNIV. INT'L L. REV. 383, 392–93 (2015); Suzanne A. Spears, *The Quest for Policy Space in a New Generation of International Investment Agreements*, 13 J. INT'L ECON. L. 1037, 1065 (2010); Andrew Newcombe, *The Use of General Exceptions in IIAs: Increasing Legitimacy or Uncertainty?*, *in* IMPROVING INTERNATIONAL INVESTMENT AGREEMENTS 267, 275 (Armand De Mestral & Céline Lévesque eds., 2013).

206. Keene, *supra* note 20, at 89; *see also* Caroline Henckels, *Should Investment Treaties Contain Public Policy Exceptions?*, 59 B.C. L. REV. 2825, 2826–27 (2018) (arguing that exceptions serve as thoughtful "attempt to inject greater determinacy into the normative content of substantive obligations").

207. Jorge E. Viñuales, *Foreign Investment and the Environment in International Law: Current Trends, in* RESEARCH HANDBOOK ON ENVIRONMENT AND INVESTMENT LAW 12, 34 (Kate Miles ed., 2019); *see also*, *e.g.,* Stefan ZLEPTNIG, NON-ECONOMIC OBJECTIVES IN WTO LAW 55–84, 125–223 (2010); Aaron Cosbey, *The Road to Hell? Investor Protections in NAFTA's Chapter 11, in* INTERNATIONAL INVESTMENT FOR SUSTAINABLE DEVELOPMENT: BALANCING RIGHTS AND REWARDS 150–69 (Lyuba Zarsky ed., 2005); Jorge E. Viñuales, *Foreign Investment and the Environment in International Law: An Ambiguous Relationship,* 80 BRIT. Y.B. INT'L. L. 244, 309 (2010); Keene, *supra* note 20, at 89; Newcombe, *supra* note 205, at 293.

208. *See* Canada-Colombia Free Trade Agreement, art. 2201(3), Nov. 21, 2008 ("For the purposes of Chapter Eight (Investment), subject to the requirement that such measures are not applied in a manner that constitute arbitrary or unjustifiable discrimination between investment or between investors, or a disguised restriction on international trade or investment, nothing in this Agreement shall be construed to prevent a Party from adopting or enforcing measures necessary: (a) To protect human, animal or plant life or health, which the Parties understand to include environmental measures necessary to protect human, animal or plant life and health; (b) To ensure compliance with laws and regulations that are not inconsistent with this Agreement; or (c) For the conservation of living or non-living exhaustible natural resources.")

environmental measures.[209] The tribunal accepted that the exception served as "final safety net" to protect a state's right to regulate once there is a breach of the state's primary obligations.[210] However, the tribunal construed the exception as permission (and not defense), considering that "neither environmental protection nor investment protection is subservient to the other, they must co-exist in a mutually beneficial manner."[211]

As the exception aimed to ensure that "a Party is not prohibited from adopting or enforcing a measure to protect human, animal or plant life and health," it prohibited an investor from applying for restitution, i.e., from requesting the environmental measure to be cancelled and the investor's mining rights to be fully restored.[212] Equally, however, the exception did not "permit such action to be taken without the payment of compensation."[213] Given that the investment treaty was equally supportive of investment and environmental protection, the parties would have made explicit that the taking of environmental measures would not give rise to compensation, had they intended to permit the adoption of these measures without any liability for compensation.[214] By contrast to the treaty's Annex, which clarified the circumstances in which a measure is not to constitute a breach of the expropriation standard, the environmental exception did not refer to claims for breaches of the investment treaty.[215] Colombia "provided no justification as to why it is necessary for the protection of the environment not to offer compensation to an investor for any loss suffered as a result of measures taken by Colombia to protect the environment . . . ."[216]

Thus, while the *Eco Oro v. Colombia* tribunal accepted that states cannot be prohibited from regulating environmental measures, it held that an environmental exception, drafted following the WTO-model, does not prevent compensation.[217] Similarly, in *Bear Creek v. Peru*, the tribunal majority adopted a restrictive

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209. *Eco Oro v. Colombia*, *supra* note 175, at ¶ 829–33, 837; Güneş Ünüvar, *A Tale of Policy Carve-outs and General Exceptions: Eco Oro v. Colombia as Case Study*, 14 J. INT'L DISP. SETTLEMENT 517, 529–30 (2023).

210. *Eco Oro v. Colombia*, *supra* note 175, at ¶ 373–80; Robert Garden, *Eco Oro v. Colombia: The Brave New World of Environmental Exceptions*, 38 ICSID REV. 17, 21 (2023).

211. *Eco Oro v. Colombia*, *supra* note 175, at ¶ 828. On exceptions as permission or defence, *see, e. g.*, Caroline Henckels, *Permission to Act: The Legal Character of General and Security Exceptions in International Trade and Investment Law*, 69 INT'L & COMP. L.Q. 557, 563 (2020); Henckels, *Scope Limitation or Affirmative Defence?*, *supra* note 171, at 363, 374; Henckels, *Should Investment Treaties Contain Public Policy Exceptions?*, *supra* note 206, at 2825, 2826–34.

212. *Eco Oro v. Colombia*, *supra* note 175, at ¶ 829.

213. *Id.*

214. *Id.*

215. *Id.* at ¶ 829–30 ("given that the Contracting Parties drafted other provisions, such as Annex 811 (2)(b) [i.e., the police powers doctrine], to include an express stipulation as to the circumstances in which a measure is not to constitute a treaty breach, it is simply not credible that the Contracting Parties left such an important provision of non-liability to be implied when considering the operation of Article 2201(3) [i.e., the WTO-style environmental exception]").

216. *Id.* at ¶ 832; Ünüvar, *supra* note 209, at 529–30.

217. *Eco Oro v. Colombia*, *supra* note 175, at ¶ 836–37; Ünüvar, *supra* note 209, at 530.

application of a similar environmental exception, ruling that because the exception did "not offer any waiver from the obligation . . . to compensate for the expropriation, Respondent has also failed to explain why it was necessary for the protection of human life not to offer compensation to Claimant for the derogation."[218]

3. WTO-Style Exceptions and Coal Phase Out

In principle, the references to "human, animal or plant life or health" and to the "conservation of living and non-living exhaustible natural resources" in WTO-style exceptions could be interpreted as covering measures taken to mitigate climate change,[219] thus applying to coal phase-out decisions. However, as seen in *Eco Oro v. Colombia* and *Bear Creek v. Peru*, the application of WTO-style exceptions to an environmental ban does not necessarily exempt the host state from the compensation requirement.

By implying that the payment of compensation does not in itself prevent the adoption of environmental measures, arbitral tribunals ignored the "regulatory chill" theory, according to which the threat of compensation can dissuade states from adopting ambitious environmental measures.[220] As argued by Sheargold, damages are the main remedy in investment arbitration disputes, and exceptions thus serve little purpose in safeguarding states' regulatory sovereignty if they do not exempt states from the requirement of investor compensation.[221] This risk is particularly acute in relation to coal phase-out decisions, taking into account the potentially large damages that investors could seek to obtain for the early retirement of their power stations.[222]

The *Eco Oro v. Colombia* tribunal required the payment of compensation for environmental regulation by refusing to prioritize environmental protection over investment protection. A similar conclusion is possible under China's investment

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218. *Bear Creek v. Peru*, *supra* note 140, at ¶ 477. Similarly, *see Copper Mesa v. Ecuador*, *supra* note 189, at ¶ 6.58; On the restrictive application of environmental exceptions, *see also* Paine, *supra* note 190, at 341–42 (2018); Alschner & Hui, *supra* note 190, at 382–84.

219. *See* by analogy United States Standards for Reformulated and Conventional Gasoline, Report of the Appellate Body, WT/DS2/AB/R (adopted Apr. 29, 1996) (applying Article XX of the General Agreement on Trade and Tariffs to clean air). On climate change measures under the WTO-exceptions, *see, e.g.*, Joost Pauwelyn, *Carbon Leakage Measures and Border Tax Adjustments under WTO Law, in* RESEARCH HANDBOOK ON ENVIRONMENT, HEALTH AND THE WTO 448–506 (Geert Van Calster & Denise Prévost eds., 2013); Ilaria Espa, Joseph Francois & Haro van Hasselt, *The EU Proposal for a Carbon Border Adjustment Mechanism (CBAM): An Analysis under WTO and Climate Change Law* 11, 14 (World Trade Institute Working Paper No. 06/2022); Michael A. Mehling et al., *Designing Border Carbon Adjustment for Enhanced Climate Action*, 113 AM. J. INT'L L. 433, 464–67 (2019).

220. Ünüvar, *supra* note 209, at 532–33 (arguing that Eco Oro's assertion that "compensation (or the risk thereof) *per se* is not capable of precluding a state from adopting or enacting a measure to protect the environment is problematic."); *see also* Tarald Laudal Berge & Axel Berger, *Do Investor-State Dispute Settlement Cases Influence Domestic Environmental Regulation? The Role of Respondent State Bureaucratic Capacity*, 12 J. INT'L DISP. SETTLEMENT 1, 25 (2021).

221. Elizabeth Sheargold, OECD PUBLIC CONSULTATION, *supra* note 170, at 198.

222. *Id.* at 198; *see also* Boute, *supra* note 12.

agreements, including its most recent treaties that recognize the importance of environmental protection but also emphasize the interdependence of the economic, social, and environmental aspects of sustainable development.[223] Even the Comprehensive Agreement on Investment between China and the European Union, acclaimed as the "most remarkable example" of environmental sustainability integration in Chinese investment agreements,[224] "converges" investment and environmental protection.[225]

C. THE CHALLENGE OF DRAFTING EFFECTIVE CLIMATE EXCEPTIONS

The drafting of environmental exceptions effectively protecting phase-out decisions against the threat of arbitration is a challenging task. As illustrated by recent arbitral decisions, tribunals could refuse to prioritize environmental protection over investment protection. WTO-style exceptions could thus fail to shield host states implementing ambitious environmental measures from the obligation to compensate investors. Instead, environmental exceptions should explicitly clarify that environmental protection, and climate change mitigation in particular, is a permissible objective, and that no compensation shall be paid for the non-discriminatory implementation of climate regulation.[226] However, in the absence of arbitral practice on these climate-specific exceptions, it is difficult to test their effectiveness. There is a risk that climate-specific exceptions could also suffer from unpredictable interpretations by arbitral tribunals. It is therefore necessary, as the next section demonstrates, to explore new ways of preventing arbitration challenges against climate regulation.

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223. RCEP, *supra* note 121, at Pmbl. Rec. 11; *See also* Free Trade Agreement Between the Government of the People's Republic of China and the Government of New Zealand, Pmbl. Rec. 11, Apr. 2, 2008; Free Trade Agreement Between the Government of the People's Republic of China and the Government of Iceland, Pmbl. Rec. 9, Apr. 15, 2013. *See also* China-Korea FTA, *supra* note 177, at art. 16.1.2 (reaffirming Parties' commitment to "[p]romoting economic development in such a way as to contribute to the objective of sustainable development"); Fan, *supra* note 21, at 33–4.

224. Fan, *supra* note 21, at 37.

225. Dominic Npoanlari Dagbanja, *The CAI and Sustainable Development*, 23 J. WORLD INV. & TRADE 572, 573 (2022); *See* CAI, *supra* note 185, at Pmbl. Rec. 7 (referring to the parties' objective "to strengthen their [. . .] investment relations in accordance with the objective of sustainable development, and to promote investment in a manner supporting high levels of environmental [. . .] protection, including fighting against climate change [. . .], taking into account the relevant international standards and agreements"). For a criticism of the CAI from an environmental perspective, *see, e.g.*, Qian, *supra* note 21, at 640–41.

226. *See, e.g.*, Elizabeth Sheargold, OECD PUBLIC CONSULTATION, *supra* note 170, at 199 (arguing that "States should be cautious about adopting the language of WTO general exceptions in their investment treaties. Instead, general exceptions should be drafted in a way which clarifies that: (a) protection of the environment and/or energy transition are permissible objectives; (b) no compensation is payable in relation to measures covered by the exception; and (c) when considering whether a measure is 'necessary', examination of alternative measures should be limited to the same economic sector as the challenged measure, and that complementary aspects of a broad regulatory strategy are not alternatives."); *see also* Paine & Sheargold, *supra* note 20, at 295 (arguing that general exceptions should "be interpreted to provide a defence to liability and. . . remove any requirement to pay compensation" since, due to the application of the exception, there is no internationally wrongful act).

IV. PREVENTING THE ARBITRATION OF CLIMATE DISPUTES

Given the unpredictable interpretation of environmental exceptions by arbitral tribunals, alternative approaches are needed to neutralize the threat of investment arbitration against phase-out decisions. A first option is to exclude, or "carve out," coal power from international investment protection. This approach was central to the recent attempt to "modernize" the Energy Charter Treaty,[227] a plurilateral energy investment agreement heavily criticized for constraining climate regulation.[228] A second option is for the home state government, i.e., China, to require its companies to comply with the climate laws of host states, and address the carbon footprint of their investments.

The following analysis first examines the role of coal power carve-outs, building on the literature on environmental carve-outs and the Energy Charter Treaty modernization, before looking at the role of the home state government in neutralizing arbitration disputes by overseas investors.

A. COAL POWER CARVE-OUTS

Scholars have argued that carve-outs are the most effective way of neutralizing the threat of investment arbitration against climate measures.[229] The attempted modernization of the Energy Charter Treaty provides useful lessons on how China could incorporate this mechanism in its investment treaties.

1. Environmental Carve-Outs

By contrast to exceptions that aim at preserving states' regulatory space across all sectors, carve-outs exempt specific sectors or measures from the protection offered under investment treaties.[230] Investment treaties can carve out environmental measures, similarly to the carve-out of taxation measures, government procurement, and tobacco regulation.[231] Polluting industries may also be carved out, similarly to cultural industries.[232]

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227. Energy Charter Treaty, art. 1, ¶ 6, Dec. 17, 1994, 1994 O.J. (L 380) 24.

228. LUKAS SCHAUGG & SARAH BREWIN, UNCERTAIN CLIMATE IMPACT AND SEVERAL OPEN QUESTIONS: AN ANALYSIS OF THE PROPOSED REFORM OF THE ENERGY CHARTER TREATY 15-17 (IISD Report, Oct. 2022).

229. Gus Van Harten, Research Paper, *An ISDS Carve-Out to Support Action on Climate Change* 11 OSGOODE HALL LEGAL STUDIES RSCH. PAPER 1 (2015); European Parliament Resolution on Towards a New International Climate Agreement in Paris, EUR. PARL. DOC. 2015/2112(INI), Oct. 14, 2015; Paine & Sheargold, *supra* note 20, at 291, 304.

230. Henckels, *Should Investment Treaties Contain Public Policy Exceptions?, supra* note 206, at 2828; *see also* Jorge E. Viñuales, *Seven Ways of Escaping a Rule: Of Exceptions and Their Avatars in International Law, in* EXCEPTIONS IN INTERNATIONAL LAW 65, 67–8 (Lorand Bartels & Federica Paddeu eds., 2020) (equating carve-outs with exemptions, as opposed to exceptions).

231. *See, e.g.*, Abba Kolo, *Tax "Veto" as a Special Jurisdictional and Substantive Issue in Investor-State Arbitration: Need for Reassessment?*, 32 SUFFOLK TRANSNAT'L L. REV. 475 (2009); Paine & Sheargold, *supra* note 20, at 291.

232. *See, e.g.*, Gilbert Gagné, *The Evolution of Canada's Cultural Exemption in Preferential Trade Agreements*, 26 CAN. FOREIGN POL'Y J. 298, 298 (2020); Paine & Sheargold, *supra* note 20, at 291.

While exceptions are defined by a measure's purpose, such as environmental protection, carve-outs are industry-specific or policy-specific.[233] Unlike general exceptions, carve-outs do not require a "necessity test" to determine a legitimate public purpose.[234] Carve-outs have a narrower scope than general exceptions but provide greater certainty about what measures are excluded from investment protection.[235]

Several Chinese investment treaties exclude environmental measures and "non-discriminatory measures for legitimate public welfare objectives" from investment arbitration.[236] Such exclusions can be defined as investor-state dispute settlement carve-outs, "safeguard[ing] policy space by barring investors from challenging certain kinds of measures through ISDS."[237]

Industry-specific carve-outs, excluding fossil fuel investments from the scope of investment treaties, are considered more effective than policy-specific carve-outs as climate regulations continue to evolve, reflecting technology developments and changing priorities.[238] Sheargold, for instance, supports the exclusion of "coal-fired electricity generation . . . from the scope of application of an investment treaty, or from being the subject of ISDS claims."[239]

2. The Energy Charter Treaty "Flexibility Mechanism"

The most significant attempt to carve out carbon-intensive activities from international investment protection was made as part of the Energy Charter Treaty "modernization,"[240] to which China is an observing party.[241] To address increasing

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233. Sheargold, OECD PUBLIC CONSULTATION, *supra* note 170, at 196.

234. *Id*.

235. *Id*.

236. Free Trade Agreement Between the Government of the People's Republic of China and the Government of Australia, arts. 9.11(4), 9.12(2), June 17, 2015; Free Trade Agreement Between the People's Republic of China and the Swiss Confederation, art. 12.7.3, July 6, 2013; Protocol to Upgrade the Free Trade Agreement Between the Government of the People's Republic of China and the Government of the Republic of Singapore, Appendix 8, New Ch. 17, art. 7, Nov. 12, 2018; Protocol to Upgrade the Free Trade Agreement Between the Government of the People's Republic of China and the Government of New Zealand, Appendix 9, Ch. 22, art. 9.1, Jan. 26, 2021; *see also* Fan, *supra* note 21, at 31.

237. Sheargold, OECD PUBLIC CONSULTATION, *supra* note 170, at 195.

238. Paine & Sheargold, *supra* note 20, at 297.

239. Sheargold, OECD PUBLIC CONSULTATION, *supra* note 170, at 196.

240. The carve-out excludes coal, lignite, coal gas, tar distilled from coal, and electrical energy produced from such sources from the definition of Economic Activity in the Energy Sector, determining the scope of application of investment protection under the ECT. *See* Decision of the Energy Charter Conference, Public Communication Explaining the Main Changes Contained in the Agreement in Principle [hereinafter Modernized ECT, Public Communication], Finalisation of the Negotiations on the Modernisation of the Energy Charter Treaty, CCDEC 2022 10 GEN, Sec. 1 Pillar 2, June 24, 2022; Ad Hoc Meeting of the Energy Charter Conference, Agreement in Principle of the Modernisation of the Energy Charter Treaty, Annex to CC 750 Rev [hereinafter Modernized ECT, Agreement in Principle], Annex NI SB, June 24, 2022.

241. Status of Observer by Invitation granted by the Energy Charter Conference on Dec. 17, 2001 (CCDEC200117), https://perma.cc/Y4XV-3GLF (last updated on Aug. 7, 2015).

criticism on the threat that the Energy Charter Treaty poses to climate regulation, and the transition away from coal in particular,[242] the parties to the treaty agreed to include a "flexibility mechanism" in a modernized version of the treaty, allowing host states to exclude investment protection for fossil fuels in their territory.[243] However, the "flexibility mechanism" was limited in scope, time, and territorial application, which undermined its effectiveness to address the climate-investment tension. It only applied to fossil fuel investments, including coal power, made in contracting parties that explicitly required the exclusion of these investments from arbitration. Only the European Union and the United Kingdom announced their intention to apply the mechanism.[244] Furthermore, the application of the mechanism was subject to a ten-year delay, starting from August 2023 for new investments, and from the entry into force of the modernized treaty for existing investments.[245]

By excluding coal power from investment protection, the "modernization" would have allowed contracting parties to adopt phase-out decisions in ten years without risking arbitration claims; however, critics denounced this delay as contradicting the "current knowledge on the speed of fossil fuel phase-out needed to limit global warming to 1.5°C above pre-industrial levels," thereby jeopardizing the achievement of climate objectives.[246] Moreover, in host countries that did not opt for the "flexibility mechanism," fossil fuel investments would remain protected,[247] exposing their climate policies to a higher risk of arbitration.[248]

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242. Resolution of 24 November 2022 on the outcome of the modernization of the Energy Charter Treaty, Eur. Par. Doc. 2022/2934 RSP (2022) (recognizing "that the ECT has come under heavy criticism as an obstacle to the transition to renewable energy and to the protection of energy security in the EU and its Member States; considers the current ECT an outdated instrument which no longer serves the interest of the European Union, especially with regard to the objective to become climate neutral by 2050").

243. *See* Modernized ECT, Agreement in Principle and Public Communication, *supra* note 240, Sec. 1 Pillar 2.

244. Switzerland only adopted the "flexibility mechanism" for hydrogen and synthetic fuel investments made after August 15, 2023, not (existing) coal and petroleum investments; Modernized ECT, Agreement in Principle, *supra* note 240, at Annex NI Sec. B, arts. 1(a) 27.01-08, art. 1(b), ¶ 2–3, art. 3(i), Sec. C, arts. 1, 2(ii); *see also* Bart-Jaap Verbeek, *The Modernization of the Energy Charter Treaty: Fulfilled or Broken Promises?*, 8 BUS. & HUM. RTS J. 97, 100 (2023).

245. Modernized ECT, Public Communication, *supra* note 240, Sec. 1, Pillar 2.

246. European Parliament Resolution on the Outcome of the Modernisation of the Energy Charter Treaty [hereinafter Resolution on the ECT Modernization Outcome], EUR. PARL. DOC. 2022/2934(RSP) art. S, ¶ 7 Nov. 24, 2022; *see also* OLIVIER BOIS VON KURSK & GREG MUTRITT, LIGHTING THE PATH: WHAT IPCC ENERGY PATHWAYS TELL US ABOUT PARIS-ALIGNED POLICIES AND INVESTMENTS (IISD Report, June 2022).

247. The foreseen carve-outs will not "affect investment protection in the territory of other Contracting Parties, unless they opt to apply them vis-à-vis investors from the aforementioned Contracting Parties reciprocally" (Modernized ECT, Public Communication, Sec. 1 Pillar 2). The modernized ECT allows contracting parties to exclude investment protection for investors of contracting parties that triggered the "flexibility mechanism." *See* Modernized ECT, Agreement in Principle, *supra* note 240, at Part III, New Article: Non-Application of Part III to Certain Investments; Annex NI, Sec. B Chapeau, ¶ 2(i); Annex NPT.

248. Amandine Van den Berghe et al., *The New Energy Charter Treaty in Light of the Climate Emergency*, JUS MUNDI (July 6, 2022), https://perma.cc/9DTD-2PRZ; Martin D. Brauch, *The Agreement*

The Energy Charter Treaty "modernization" was thus perceived as insufficient and "completely at odds with needed climate action,"[249] as the "risk of policy action to avert climate change over the coming decades will continue to be shifted on to taxpayers."[250] Instead, according to the Parliament of the European Union, the treaty should "immediately prohibit fossil fuel investors from suing contracting parties for pursuing policies to phase-out fossil fuels" in line with their Paris Agreement commitments.[251] In the absence of such reform, a large number of European member states have started to announce their withdrawal from the Energy Charter Treaty.[252]

3. A Coal Power Carve-Out in Chinese Investment Treaties

Incorporating a "flexibility mechanism," akin to the modernized Energy Charter Treaty, into China's investment treaties would considerably reduce the threat of arbitration facing the transition away from coal in Asia. Although the Energy Charter Treaty "flexibility mechanism" has been heavily criticised by European states for its ten-year transition period, this delay would fit with the decarbonization trajectory of most developing countries in Asia. In accordance with the international climate law principle of Common But Differentiated Responsibilities and Respective Capabilities, developing countries are not subject to the same level of ambition in terms of GHG emission reductions, and can therefore not be expected to immediately phase out coal.[253] This different degree of ambition is for instance reflected in the Net Zero Roadmap of the International Energy Agency, which recommends the closure of coal power plants by 2040 in developing countries, one decade later than in Europe and other developed countries.[254]

Excluding coal power from international investment protection following a ten-year transition period would allow countries hosting Chinese investments to facilitate their closure without risking compensation under China's investment treaties. This would call for China and its partners to embark on investment treaty reforms in the region, potentially creating a fifth-generation of Chinese investment treaties to iron out the climate-investment tension.

In parallel, to neutralize the risk that investment arbitration poses to the transition away from coal, the Chinese government has an important role to play in

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in Principle on ECT "Modernization": A Botched Reform Attempt that Undermines Climate Action, KLUWER ARB. BLOG (Oct. 17, 2022), https://perma.cc/PZJ5-JZ5C.

249. Van den Berghe et al., *id*.

250. Jonathan Bonnitcha, OECD PUBLIC CONSULTATION, *supra* note 170, at 31.

251. Resolution on the ECT Modernization Outcome, *supra* note 246, art. S ¶ 7.

252. *Proposal for a Council Decision on the withdrawal of the Union from the Energy Charter Treaty*, COM (2023) 447 final.

253. United Nations Framework Convention on Climate Change, art. 3.1., May 9, 1992, 1771 U.N.T. S., 107 S. Treaty Doc No. 102-38; Paris Agreement, *supra* note 2, at art. 2.2.

254. IEA, *supra* note 3, at 79–80, 92.

requiring its overseas investors to comply with the climate laws of the states hosting their investments.

B. DOMESTIC CLIMATE REGULATION OF OVERSEAS INVESTMENTS: THE "HOST COUNTRY" PRINCIPLE

The Chinese government regulates Chinese overseas investment activities,[255] including environmental protection, and by extension climate change mitigation.[256] This regime concerns both new and existing investments, and is potentially relevant to neutralize the threat of investment arbitration to coal phase out.

1. New Investments

Regarding new investments, the government does not allow its companies to invest in projects that do not comply with the environmental laws and standards of the host country.[257] Given the relatively low environmental standards that apply in many Asian countries, this "host country" principle has been criticized for facilitating the export of inefficient technologies to China's neighbors, and thus locking host countries in carbon-intensive infrastructure.[258] In the coal power

255. Xiaohan Gong & Anatole Boute, *For Profit or Strategic Purpose? Chinese Outbound Energy Investments and the International Economic Regime*, 14 J. WORLD ENERGY L. & BUS. 345, 354–55 (2021); Lee Jones & Yizheng Zou, *Rethinking the Role of State-owned Enterprises in China's Rise*, 22 NEW POL. ECON. 743, 746 (2017); *see also*, *e.g.*, Qiye Jingwai Touzi Guanli Banfa (企业境外投资管理办法) [Measures for the Administration of Overseas Investment of Enterprises] (promulgated by the National Development and Reform Commission [hereinafter NDRC], Order No. 11, Dec. 26, 2017, effective Jan. 1, 2018), art. 1; Guanyu Jinyibu Yindao he Guifan Jingwai Touzi Fangxiang Zhidao Yijian de Tongzhi (关于进一步引导和规范境外投资方向指导意见的通知) [Notice on Guiding Opinions on Further Directing and Regulating the Direction of Overseas Investments] (2017) (promulgated by State Council, NDRC, Ministry of Commerce, People's Bank of China, and Ministry of Foreign Affairs, Order No. 74, effective Apr. 8, 2017).

256. *See, e.g.*, Matthew S. Erie & Jingjing Zhang, *A Comparison of Inbound and Outbound Investment Regulatory Regimes in China: Focus on Environmental Protection, in* CHINA AND THE WTO: A TWENTY-YEAR ASSESSMENT 429, 447 (Henry Gao et al. eds. 2023); Ben Boer, *Greening China's Belt and Road: Challenges for Environmental Law*, 19 UNIV. OF SYDNEY L. SCH. RSCH. PAPER SERIES, 1–19 (2019).

257. Duiwai Touzi Hezuo Jianshe Xiangmu Shengtai Huanjing Baohu Zhinan (对外投资合作建设项目生态环境保护指南) [Guidelines for Ecological and Environmental Protection of Foreign Investment Cooperation and Construction Projects] (promulgated by Ministry of Ecology and Environment and Ministry of Commerce, Order No. 2, Jan. 6, 2022, effective May 1, 2022), arts. 3, 7.

258. Tancrède Voituriez et al., *Revisiting the 'Host Country Standard' Principle: A Step for China to Align its Overseas Investments with the Paris Agreement*, 19 CLIMATE POL'Y 1205, 1207 (2019) (arguing that the "host country principle" may equate to a "relaxation" clause, as environmental regulations in BRI host states are often less comprehensive, rigorous, or enforceable than those in China); *see also* Christoph Nedopil Wang & Yingzhi Tang, *Interpretation of the "Green Development Guidelines for Foreign Investment and Cooperation"* (Green Fin. & Dev. Ctr., FISF Fudan Univ., July 26, 2021) https://perma.cc/8A8S-C2Q5; Christoph Nedopil et al., *Understanding China's Latest Guidelines for Greening the Belt and Road*, CHINA DIALOGUE (Feb. 15, 2022), https://perma.cc/UFY9-ZJ4E; Simon Zadek, *The Critical Frontier: Reducing Emissions from China's Belt and Road*, BROOKINGS (Apr. 25, 2019), https://perma.cc/LYH5-TLLC; Kelly S. Gallagher & Qi Qi, *Chinese Overseas Investment Policy: Implications for Climate Change*, 12 GLOB. POL'Y 260, 262–64, 269 (2021).

sector, many Asian countries have lower emission standards than those applicable in China, allowing Chinese companies to invest in power plants of lower efficiency than the national Chinese average.[259]

In 2021, the government strengthened its external environmental regulation by requiring Chinese investors abroad to adhere to Chinese or international regulatory standards where the host country's environmental laws are absent or "too lenient."[260] In the same year, China announced that it would stop investing in new coal power abroad and encouraged companies to "align their overseas investing activities with the [international climate] targets."[261] These reforms can contribute to limiting an increase of China's global carbon footprint,[262] but remain insufficient to phase down China's existing overseas coal power plants pursuant to the international transition to net-zero emissions in the energy sector.

2. Existing Investments

The "host country" principle also applies to existing investments. The Chinese government enjoins investors abroad "to strictly abide by the laws, regulations, rules, and standards of the host countries on environmental protection."[263] Chinese overseas investors are expected to "take rational and necessary measures

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259. *See, e.g.*, Nedopil et al., *supra* note 258; BRI INT'L GREEN DEV. COALITION, *Issue Report on Belt and Road Green Energy and Environment – Status Quo and Prospect of Southeast Asian Power Infrastructure Development* 43-45 (2020); *see also* Voituriez et al., *supra* note 258, at 1207; Simon Zadek, Commentary, *The critical frontier: Reducing Emissions from China's Belt and Road*, BROOKINGS (Apr. 25, 2019), https://perma.cc/32SC-Z4ED.

260. Duiwai Touzi Hezuo Lüse Fazhan Gongzuo Zhiyin (对外投资合作绿色发展工作指引) [Green Development Guidelines for Overseas Investment and Cooperation] [hereinafter Green Development Guidelines] (promulgated by the Ministry of Commerce and Ministry of Ecology and Environment, July 9, 2021, effective July 16, 2021), art. 3(7); Guidelines for Ecological and Environmental Protection of Foreign Investment Cooperation and Construction Projects, *supra* note 258 ("Enterprises implementing foreign investment and cooperative construction projects shall abide by the ecological environmental laws, regulations and policy standards of the host country (region) . . . . If the host country (region) does not have relevant standards or the standard requirements are relatively low, on the basis of ecological environmental protection permit, it is encouraged to adopt internationally recognized rules and standards or China's stricter standards.").

261. Green Development Guidelines, *supra* note 260, at arts. 1, 2, 3.1, 3(8) (China seeks to "showcase leadership in global endeavours towards green transition" through "effective control of carbon emissions"); Action Plan for Carbon Dioxide, *supra* note 87, at art. 4.1 (aiming to "make overseas projects more environmentally sustainable").

262. For a critical assessment of China's 2021 coal stop, *see, e.g.*, Christoph Nedopil, *Lessons from China's Overseas Coal Exit and Domestic Support*, 379 SCIENCE 1084–87; Han Chen & Wei Shen, *China's No New Coal Power Overseas Pledge, One Year On*, CHINA DIALOGUE (Sept. 22, 2022), https://perma.cc/PX3N-A3ZB; *see also* Suarez & Wang, *supra* note 81.

263. Tuijin Gong Jian "Yidai Yilu" Lüse Fazhan de Yijian (推进共建 "一带一路" 绿色发展的意见) [Opinions on Promoting the Green Development under the Belt and Road Initiative] [hereinafter Opinions on Promoting Green Development] (promulgated by the NDRC, Ministry of Foreign Affairs, Ministry of Ecology and Environment, and Ministry of Commerce, effective Mar. 16, 2022), art. 1(2) ¶ 4, art. 3(13); *see also* Green Development Guidelines, *supra* note 261, at arts. 3(2), 3(7); "Yidai Yilu" Shengtai Huanjing Baohu Hezuo Guihua ("一带一路"生态环境保护合作规划) ["Belt and Road" Ecological and Environmental Cooperation Plan] (promulgated by Ministry of Ecology and

to reduce or mitigate adverse ecological impacts from investment and cooperation activities in accordance with the laws and regulations of the host country."[264] China's governmental authorities are charged with ensuring that "enterprises consciously comply with local environmental protection laws, regulations, standards and codes."[265]

Although criticized for having incentivized inefficient coal power investments abroad, the "host country" principle could, in theory, help facilitate the phasing out of these assets, and neutralize the risk of international investment arbitration. As seen in Section II.A, the accelerated closure of existing carbon-intensive facilities depends on the environmental regulation of these assets by the host countries themselves. Accordingly, in host countries that ban the use of coal for electricity production to reach carbon neutrality, Chinese investors would have "to strictly abide" by this environmental rule and close down their installations.[266]

Scholars have questioned the effectiveness of corporate social responsibility clauses in investment treaties, e.g., provisions enjoining investors to comply with the domestic environmental laws of the host state, mainly by pointing to insufficiently binding obligations and the lack of proper enforcement mechanisms.[267] Similarly, the "host country" principle has been criticised for lacking "serious enforcement consequences" in cases of non-compliance, as most relevant Chinese policies governing overseas investments only "encourage voluntary compliance."[268] It remains to be seen

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Environment, formerly Ministry of Environmental Protection, Order No. 65, effective May 5, 2017) art. 4(1).

264. Green Development Guidelines, *supra* note 260, at arts. 3(2), 3(7).

265. Tuijin Lüse "Yidai Yilu" Jianshe de Zhidao Yijian (推进绿色 "一带一路" 建设的指导意见) [Guiding Opinions on Promoting the Green Belt and Road Construction] (promulgated by Ministry of Ecology and Environment, Ministry of Foreign Affairs, and NDRC, Apr. 24, 2017, effective Apr. 26, 2017) art. 3(iii).2.

266. Opinions on Promoting Green Development, *supra* note 263, at arts. 1(2) ¶ 4, 3(13). Chinese-led initiatives have already made recommendations to this effect. Most notably, the Belt and Road International Green Development Coalition initiated by the Chinese Ministry of Ecology and Environment has recommended to "phase down outdated capacity" of coal power generation in Vietnam and Indonesia, and retrofit others to provide flexibility services in an electricity system dominated by variable renewable energy. *See* BRI INT'L GREEN DEV. COALITION, *Green and Low-carbon Transition of Power Sector in Southeast Asia: Baseline and Pathway* 86 (2023 Policy Study Series).

267. *See, e.g.,* Nicolas Bueno, Anil Yilmaz Vastardis, & Isidore Ngueuleu Djeuga, *Investor Human Rights and Environmental Obligations: the Need to Redesign Corporate Social Responsibility Clauses*, 24 J. WORLD INVESTMENT & TRADE 179-216 (2023). For an example of more binding language, *see, e.g.*, Article 7(1) of the Dutch Model BIT (2019), https://investmentpolicy.unctad.org/international-investment-agreements/treaty-files/5832/download, according to which "[i]nvestors and their investments shall comply with domestic laws and regulations of the host State, including laws and regulations on human rights, environmental protection and labour."

268. Erie & Zhang, *supra* note 256, at 439, 445 (arguing that "there is no unified law regulating ODI [Overseas Direct Investment]" and that "policies related to the environmental protection of overseas investments" are "voluntary, not legally binding, and as such, lack enforceability"); *see also, e.g.*, Joanna

whether the Chinese government will enforce its environmental regulation of overseas investments and bindingly require Chinese investors to comply with foreign phase-out decisions and refrain from contesting these decisions before international arbitration. As a leader on the international climate scene,[269] China would have much to gain from enforcing the "host country" principle, and thereby facilitating the global transition away from coal power.

CONCLUSION

Given China's role in overseas coal power investments and the risk of investment arbitration facing phase-out decisions, China's position on the tension between investment protection and climate regulation is relevant for the global transition away from coal. Major hosts of Chinese coal power investments have announced their intention to phase down coal power on their territory, but the requirement to compensate investors for these stranded assets could jeopardize the implementation of these decisions.

In theory, Chinese investment treaties provide legal grounds to investors to seek, and potentially obtain, significant damages for the closure of their installations. Following the international trend, China included environmental exceptions in its recent investment treaties. However, arbitral practice on these exceptions has shown limits to their effectiveness in safeguarding states' regulatory powers. Although there are strong arguments for host states to justify ambitious climate regulation under international investment law, the unpredictable interpretation and application of investment treaties by arbitral tribunals exposes states to sizeable financial risks.

Given the difficulty in formulating effective exceptions protecting states' regulatory powers to adopt climate measures, alternative approaches to facilitate the transition away from coal are needed. First, building on the recent attempt to modernize the Energy Charter Treaty, China and its partners could incorporate a coal power, or fossil fuel, carve-out in their investment treaties, thereby allowing host states to exclude investment protection for coal power after a ten-year transition period. Second, China could help prevent arbitration claims against phase-out decisions by requiring Chinese investors to strictly comply with the climate laws of the states where they invest. This approach is already recognized under China's existing environmental regulation of overseas investments. To address the threat of arbitration to coal phase out, the "host country" principle could now be established as a binding requirement to be enforced by the government.

In sum, tackling foreign investors' global carbon footprint while preventing the threat of investment arbitration does not only depend on sound investment treaty reforms, but also on the home state's domestic regulation of its overseas

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Coenen et al., *Environmental Governance of China's Belt and Road Initiative* 31 ENV'T POL'Y & GOVERNANCE 3–17 (2020); Gallagher & Qi, *supra* note 258, at 260, 264, 269; Voituriez et al., *supra* note 258, at 1205, 1208.

269. Green Development Guidelines, *supra* note 260, at art. 2.

investments. Not only the host state, but also the home state government has a role to play in facilitating the energy transition of its investment partners, and thereby catalyzing further urgent fossil phase-out initiatives mired by the investment-climate tension.