

Articles

A Parisian Consensus

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Climate change is a leading challenge for world society today. Global climate action so far has proved unable to meet the moment. The reason for the current policy impasse is that we treat climate change as an environmental problem instead of an energy problem. Once we switch perspectives, we can see that we are trapped in an energy trilemma—caught between energy equity, energy security, and environmental sustainability. We can only resolve the trilemma when we balance the three limbs against each other. I propose that a commons governance approach can achieve this goal.

For any such approach to work, we must rely heavily on one of today's great bugbears: economic globalization. I submit that the existing legal framework supporting globalization, known as Washington Consensus instruments, can in fact be fused with the global climate framework under the Paris Agreement to give rise to a "Parisian Consensus" on global energy governance. This Parisian Consensus builds on an existing global legal infrastructure to slingshot us past the current climate impasse. It differs from existing approaches to climate governance by insisting upon a developmental imperative: we must expand, rather than restrict, energy access to create an energy infrastructure capable of supporting equitable development. I submit that this development perspective can succeed

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where existing approaches have stalled: generating realistic buy-in for a global, sustainable energy future.

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INTRODUCTION

At the heart of many global challenges today lies an energy trilemma.¹ We need cheap energy to fuel our daily lives and grow our economies.² However, cheap energy does not just support economic growth.³ First, cheap energy is a matter of *energy equity*: Cheaper energy means that people with less money need to spend a smaller share of their income on energy to commute to work, grow food, or produce

1. David B. Spence, *Regulation and the New Politics of (Energy) Market Entry*, 95 NOTRE DAME L. REV. 327, 334 (2019); Shelley Welton & Joel Eisen, *Clean Energy Justice: Charting an Emerging Agenda*, 43 HARV. ENV'T L. REV. 307, 312 (2019); Rafael Leal-Arcas, *Sustainability, Common Concern, and Public Goods*, 49 GEO. WASH. INT'L L. REV. 801, 824 (2017).

2. See Namit Sharma et al., *The Decoupling of GDP and Energy Growth: A CEO Guide*, MCKINSEY Q. (Apr. 24, 2019), <https://www.mckinsey.com/industries/electric-power-and-natural-gas/our-insights/the-decoupling-of-gdp-and-energy-growth-a-ceo-guide#> [<https://perma.cc/G5GF-JDL4>] (tracing the link between increased electrification and decreased total energy use).

3. See *Today in Energy: Link Between Growth in Economic Activity and Electricity Use is Changing Around the World*, U.S. ENERGY INFO. ADMIN. (Nov. 20, 2017), <https://www.eia.gov/todayinenergy/detail.php?id=33812> [<https://perma.cc/VZE2-WGCR>] (noting the different correlations between energy and economic growth depending upon the stage of an economy’s industrial development). At this point, the cheapest form of baseload energy is gas-fired power. See William B. McClain, *Trends in Electricity Prices During the Transition Away from Coal*, 10 U.S. BUREAU LAB. STAT.: BEYOND THE NUMBERS 10 (May 2021), <https://www.bls.gov/opub/btn/volume-10/trends-in-electricity-prices-during-the-transition-away-from-coal.htm> [<https://perma.cc/A3TG-NSQF>].

goods and services.⁴ But cheaper energy encourages us to consume more of it.⁵ Second, the more energy we consume, the less *environmentally sustainable* our way of living becomes.⁶ Climate change risks wiping out countries, not to mention the annihilation of entire ecosystems.⁷ Finally, we need *energy security* to be able to plan our lives.⁸ The less secure that our energy economy becomes, the less autonomous we become and the less we are and feel like the masters of our own economic destinies. But as the use of coal in China demonstrates, more secure energy is frequently more expensive and less environmentally sustainable.⁹

Because energy plays such a central role in the world economy, the energy trilemma lays at the heart of some of the most important global problems. Most clearly, climate change is almost entirely a question of energy production and consumption.¹⁰ It is simply impossible to tackle climate change without addressing energy.¹¹ Just as importantly, global economic prosperity depends on energy.¹² Areas

4. See Frédéric G. Sourgens & Lori A. McMillan, *The Carbon Taxation Conundrum*, in *DECARBONISATION AND THE ENERGY INDUSTRY: LAW, POLICY AND REGULATION IN LOW-CARBON ENERGY MARKETS* 221, 221–44 (Tade Oyewumni et al. eds., 2020).

5. John Kemp, *Natural Gas and Energy Transition: History and Outlook*, REUTERS (Oct. 16, 2019), <https://fingfx.thomsonreuters.com/gfx/ce/7/6939/6921/NATURAL%20GAS%20AND%20ENERGY%20TRANSITION.pdf> [<https://perma.cc/6T37-G4TK>].

6. Matthew Taylor et al., *IPCC Climate Change Report Calls for Urgent Action to Phase Out Fossil Fuels—As It Happened*, GUARDIAN (Aug. 25, 2021, 7:16 AM), <https://www.theguardian.com/environment/live/2018/oct/08/ipcc-climate-change-report-urgent-action-fossil-fuels-live> [<https://perma.cc/6T37-G4TK>].

7. See Michael Oppenheimer et al., *Sea Level Rise and Implications for Low-Lying Islands, Coasts and Communities*, in *SPECIAL REPORT ON THE OCEAN AND CRYOSPHERE IN A CHANGING CLIMATE* (2019), <https://www.ipcc.ch/srocc/chapter/chapter-4-sea-level-rise-and-implications-for-low-lying-islands-coasts-and-communities/> [<https://perma.cc/VET9-JW22>] [hereinafter *IPCC Sea Level Rise*]; see also *How Does Climate Change Affect Coral Reefs?*, NAT'L OCEANIC & ATMOSPHERIC ADMIN. (May 11, 2020), <https://oceanservice.noaa.gov/facts/coralreef-climate.html> [<https://perma.cc/4UPD-VEYA>].

8. Monika U. Ehrman, *A Call for Energy Realism: When Immanuel Kant Met the Keep It in the Ground Movement*, 2019 UTAH L. REV. 435, 469 (2019).

9. Haley Zaremba, *Why China Can't Quit Its Coal Addiction*, OILPRICE.COM (Oct. 3, 2020, 10:00 AM), <https://oilprice.com/Energy/Coal/Why-China-Cant-Quit-Its-Coal-Addiction.html> [<https://perma.cc/9ESG-YDKM>].

10. David Biello, *How to Solve Global Warming: It's the Energy Supply*, SCI. AM. (Apr. 13, 2014), <https://www.scientificamerican.com/article/how-to-solve-global-warming-its-the-energy-supply/> [<https://perma.cc/4FG7-JAQF>].

11. See *id.*

12. See Sharma et al., *supra* note 2.

without access to affordable energy will not develop economically.¹³ Such areas will be cleaved from economic development and deprived of the benefits of growth achieved elsewhere.¹⁴ Finally, it is a persistent cliché that the United States fought wars over access to oil.¹⁵ The fact that it is a cliché makes it no less true: Energy security is at the heart of geopolitical confrontation.¹⁶ In fact, some of the most worrying uses (and near uses) of force have occurred in oil and gas rich areas, including the South China Sea (China/Philippines/Vietnam) and the Black Sea (Russia/Ukraine).¹⁷

Any legal framework to address our current global climate, economic, and security challenges therefore must be able to address and resolve the energy trilemma, rather than exacerbate it. It is obvious that even the staunchest denial of climate change does little to protect Miami from drowning or California from burning.¹⁸ Addressing

13. See, e.g., Suparna Dutt D’Cunha, *Modi Announces ‘100% Village Electrification’, but 31 Million Indian Homes Are Still in the Dark*, FORBES (May 7, 2018, 3:30 AM), <https://www.forbes.com/sites/suparnadutt/2018/05/07/modi-announces-100-village-electrification-but-31-million-homes-are-still-in-the-dark/?sh=3017730f63ba> [https://perma.cc/8WYE-YN6R] (noting government inefficiency in providing energy in rural India); FRANCIS FUKUYAMA, *POLITICAL ORDER AND POLITICAL DECAY: FROM THE INDUSTRIAL REVOLUTION TO THE GLOBALISATION OF DEMOCRACY* 53–54 (2014) (discussing government inefficiency in the context of education policy in India and linking it to severe poverty). For a similar link between economic development and energy access along Russian to E.U. energy value chains, see MARGARITA M. BALMACEDA, *RUSSIAN ENERGY CHAINS: THE REMAKING OF TECHNOCRACY FROM SIBERIA TO UKRAINE TO THE EUROPEAN UNION* 207–27 (2021). For an admission that energy access is not a sufficient condition for economic development, see ABHIJIT V. BANERJEE & ESTHER DUFLO, *GOOD ECONOMICS FOR HARD TIMES* 188 (2019).

14. FUKUYAMA, *supra* note 13, at 53–54.

15. Antonia Juhasz, *Why the War in Iraq Was Fought for Big Oil*, CNN (Apr. 15, 2013, 7:42 AM), <https://www.cnn.com/2013/03/19/opinion/iraq-war-oil-juhasz/index.html> [https://perma.cc/L3V5-2F8G].

16. See DANIEL YERGIN, *THE NEW MAP: ENERGY, CLIMATE, AND THE CLASH OF NATIONS*, at xiii–xx (2020).

17. See, e.g., JC Gotinga, *Chinese Warship Targeted Philippine Navy Vessel in West PH Sea – AFP*, RAPPLER (Apr. 23, 2020, 12:52 PM), <https://www.rappler.com/nation/afp-says-chinese-warship-targeted-navy-vessel-west-philippine-sea-april-2020> [https://perma.cc/4WTJ-9GRA]; Ariel Cohen, *As Russia Closes In On Crimea’s Energy Resources, What Is Next For Ukraine?*, FORBES (Feb. 28, 2019, 8:59 AM), <https://www.forbes.com/sites/ariel-cohen/2019/02/28/as-russia-closes-in-on-crimeas-energy-resources-what-is-next-for-ukraine/?sh=3aa1bd7829cd> [https://perma.cc/V54Y-G9B2]; Jose Elias Rodríguez, *Repsol Says Drilling Suspended on Vietnam Oil Block Disputed by China*, REUTERS (Aug. 2, 2017, 12:21 PM), <https://www.reuters.com/article/us-southchinasea-vietnam/repsol-says-drilling-suspended-on-vietnam-oil-block-disputed-by-china-idUSKBN1AI27D> [https://perma.cc/KS9E-GCHM].

18. Amy Graff, *Trump on Climate Change: “It Will Get Cooler,” He Says Without Evidence During California Visit*, SFGATE (Sept. 14, 2020, 3:37 PM), <https://www.sfgate.com/>

climate change has thus become one of the leading priorities for the Biden Administration.¹⁹ In fact, as I will discuss in Part I, international diplomatic efforts prioritize climate change ahead of almost any other concern and certainly have done so following the conclusion of the Paris Agreement in 2015.²⁰ Since then, climate action and the Paris Agreement framework have come to represent the dominant paradigm of international order. This new priority has relegated the prior article of faith in the United States and Europe—the international economic order (think “globalization,” “Washington Consensus,” and “global free trade”)²¹—to the background, and has even caused that framework to retreat where it is thought to impede the State’s ability to enact swift domestic environmental regulation to protect the climate.²²

The problem is that these policies do not in fact resolve the energy trilemma but are themselves trapped in it. The clearest symptom of this predicament is that *climate achievement* hobbles far behind *climate ambition*.²³ Not only that, but climate policies can themselves lead to serious social unrest and riots, to the point of having to be modified or withdrawn, as shown by the French yellow vests protests paralyzing France in response to climate measures.²⁴ The energy trilemma suggests a reason for this problem: the reduction of carbon

news/editorspicks/article/Trump-wildfires-California-visit-president-15566276.php [https://perma.cc/2QUY-5BSA].

19. See Lisa Friedman, *A ‘Nerve Center’ for Climate in the Biden White House*, N.Y. TIMES (Jan. 21, 2021), <https://www.nytimes.com/2021/01/19/climate/biden-climate-change.html> [https://perma.cc/5ZCA-KK8E]; Monika Pronczuk, *EU Agrees to Slash Emissions by 2030*, N.Y. TIMES (July 14, 2021), <https://www.nytimes.com/2020/12/11/world/europe/eu-climate-emissions.html> [https://perma.cc/NBJ7-254L].

20. Paris Agreement to the United Nations Framework Convention on Climate Change, Dec. 12, 2015, T.I.A.S. No. 16-1104 [hereinafter Paris Agreement].

21. See James Thuo Gathii, *The Neoliberal Turn in Regional Trade Agreements*, 86 WASH. L. REV. 421, 460 (2011) (“The Washington Consensus has ten elements: fiscal discipline, redirection of public expenditures to fields offering high economic returns, tax reform, interest rate liberalization, a competitive exchange rate, trade liberalization, liberalization towards foreign direct investment, privatization, deregulation, and secured property rights.”).

22. Terrence Mullan, *Making Trade Work to Mitigate Climate Change*, COUNCIL FOR REL. (July 16, 2019, 10:03 AM), <https://www.cfr.org/blog/making-trade-work-mitigate-climate-change> [https://perma.cc/SEJ2-NDX2].

23. Chloé Farand, *Countries Signal Greater Climate Ambition But ‘Step Change’ Needed on Road to Glasgow*, CLIMATE HOME NEWS (Dec. 12, 2020, 9:09 PM), <https://www.climatechangenews.com/2020/12/12/leaders-get-road-hope-paris-anniversary-climate-summit/> [https://perma.cc/3JG9-K4BG].

24. Vanessa Williamson, *What France’s Yellow Vest Protests Reveal About the Future of Climate Action*, BROOKINGS (Dec. 20, 2018), <https://www.brookings.edu/blog/fixgov/2018/12/20/what-frances-yellow-vest-protests-reveal-about-the-future-of-climate-action/> [https://perma.cc/V7DK-UJU3].

dioxide (CO₂) emissions by itself does not guarantee access to cheap energy.²⁵ Climate policies reducing CO₂ emissions may stop large coastal communities from flooding.²⁶ But these policies can put people out of a job in the process—be it in coal mining, or coal-fired power plants, or in industries that rely on electricity generated from greenhouse-gas-intensive fossil fuels.²⁷ The current climate focus risks falling into precisely this trap.²⁸ As I will argue, to avoid this trap requires more than *climate* action. It also requires an *international energy order* that supports fair and safe development.²⁹

25. See Ehrman, *supra* note 8, at 469.

26. See IPCC *Sea Level Rise*, *supra* note 7.

27. See, e.g., Daniel Strauss, *Clinton Haunted by Coal Country Comment*, POLITICO (May 10, 2016, 5:14 AM), <https://www.politico.com/story/2016/05/sanders-looking-to-rack-up-west-virginia-win-over-clinton-222952> [<https://perma.cc/9T7V-D7UA>] (discussing fallout from Secretary Clinton’s 2016 campaign comment that “We’re going to put a lot of coal miners and coal companies out of business”); David Roberts, *Hillary Clinton’s ‘Coal Gaffe’ Is a Microcosm of Her Twisted Treatment by the Media*, VOX (Sept. 20, 2017, 9:19 AM), <https://www.vox.com/energy-and-environment/2017/9/15/16306158/hillary-clinton-hall-of-mirrors> [<https://perma.cc/5Z6Y-AFN9>] (providing additional context for Secretary Clinton’s remarks); Ben Aylor et al., *How an EU Carbon Border Tax Could Jolt World Trade*, BCG (June 30, 2020), <https://www.bcg.com/publications/2020/how-an-eu-carbon-border-tax-could-jolt-world-trade> [<https://perma.cc/2DCZ-U83S>] (discussing the effects of carbon border adjustments on trade).

28. See Williamson, *supra* note 24.

29. See Glasgow Climate Pact, ¶ 32, U.N. Doc. FCCC/PA/CMA/2021/L.16 (Nov. 13, 2021) [hereinafter Glasgow Climate Pact] (“Urges Parties that have not yet done so to communicate . . . long-term low greenhouse gas emission development strategies referred to in Article 4, paragraph 19, of the Paris Agreement towards just transitions to net zero emissions by or around mid-century, taking into account different national circumstances.”). This “just transition” is directly related to the right of development. Draft Convention on the Right to Development, art. 4, U.N. Doc. A/HRC/WG.2/21/2 (Jan. 17, 2020) [hereinafter Development Convention]. As a general rule, it is uncontroversial that development requires more than a focus exclusively on environmental or economic sustainability. The idea of sustainable development has sought to balance these concerns, since at least the original publication of the Brundtland Report in 1987. See GRO HARLEM BRUNDTLAND, WORLD COMM’N ON ENV’T & DEV., OUR COMMON FUTURE, ¶ 51 (1987), <https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf> [<https://perma.cc/LB5W-ZEUZ>] (“At the heart of the issue lies the fact that there is often a conflict between the short-term economic interest of the individual nations and the long-term interest of sustainable development and potential economic gains of the world community at large.”). In fact, a significant philosophical literature has evolved around the idea of sustainable human development based on value pluralism, including ecological and economic values. See, e.g., MARTHA C. NUSSBAUM, CREATING CAPABILITIES: THE HUMAN DEVELOPMENT APPROACH ch. 2 (2011) (our concerns fit in Central Capabilities 2, 8, and 10). This idea of sustainable development is at the heart of the U.N. 2030 Sustainable Development Goals discussed in detail below. See G.A. Res. 70/1 (Oct. 21, 2015) [hereinafter Agenda 2030]. While this goal of sustainable development is indeed a

To solve this problem, I submit that we must move our focus from environmental action to energy action. If we focus on this energy problem, we can see that the energy trilemma can only be resolved when we balance the limbs of the trilemma (i.e., equity, security, sustainability) against each other. This balance requires us to take a different governance approach to global energy processes.

I submit that a ready candidate for such a different approach is commons governance.³⁰ Commons governance has been successful in addressing water governance problems.³¹ These water governance problems on their face responded to exactly the same trilemma of equity, security, and sustainability. What worked to solve the trilemma in the water context, therefore, could provide a roadmap for how we can solve it in the energy context, as well.

reasonable commonplace mantra in policy circles, it has fared less well in international and transnational law. The reason for this difficulty is the international and transnational legal fragmentation into separate, distinct subject-matter areas of expertise or, to some, into regimes. See *Fragmentation of International Law: Difficulties Arising from the Diversification and Expansion of International Law*, Rep. of the Study Grp. of the Int'l Law Comm'n, U.N. Doc. A/CN.4/L.682 (Apr. 13, 2006) (providing the dominant definition of fragmentation). For discussions of legal pluralism, see generally PAUL SCHIFF BERMAN, *GLOBAL LEGAL PLURALISM: A JURISPRUDENCE OF LAW BEYOND BORDERS* (2012); NICO KRISCH, *BEYOND CONSTITUTIONALISM: THE PLURALIST STRUCTURE OF POSTNATIONAL LAW* (2010). Development concerns precisely cross-cut these regimes. The brilliant work of Diane Desierto has highlighted how it is possible to re-join two of these regimes—international economic, social and cultural rights, as well as international economic law. See DIANE A. DESIERTO, *PUBLIC POLICY IN INTERNATIONAL ECONOMIC LAW: THE ICESCR IN TRADE, FINANCE, AND INVESTMENT* 17 (2015). The problem highlighted by this Article is that “climate law” (or perhaps international environmental law, of which it forms an uneasy part) and “energy law” continue to have a dangerously fraught relationship with each other. See generally Frédéric G. Sourgens, *The Precaution Presumption*, 31 EUR. J. INT'L L. 1277 (2020) (highlighting how such clashes might occur in the context of an invocation of the precautionary principle in international climate law). See also ANNA-ALEXANDRA MARHOLD, *ENERGY IN INTERNATIONAL TRADE LAW: CONCEPTS, REGULATION AND CHANGING MARKETS* 31–32, 238–39, 252–63 (2021) (seeking to explain how trade rules can support decarbonization, but also noting the particular roadblocks created by trade law to any such endeavor). My argument picks up here: this uneasy relationship means that each legal fragment precisely misunderstands the nature of the problem that they each respectively seek to solve—and thus potentially apply the wrong tools to solving this problem. As we see with the Glasgow Climate Pact, legal developments in climate law (and, for that matter, in energy law) favor an integrated approach. This Article is about how to pull off such an integrated approach.

30. In this Article, I rely principally on the work of Elinor Ostrom. See generally ELINOR OSTROM, *GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION* (2015) [hereinafter *OSTROM COMMONS*]; ELINOR OSTROM, *UNDERSTANDING INSTITUTIONAL DIVERSITY* (2005) [hereinafter *OSTROM DIVERSITY*].

31. See *OSTROM COMMONS*, *supra* note 30, at 104–10.

This change to a commons governance approach offers five surprising new insights. The first of these insights is that, to balance the trilemma and successfully combat climate change, we need to accelerate economic globalization. Moreover, we need to secure the right kind of economic globalization that integrates societies into global value chains on a footing of equality.³² Economic globalization is instrumental to delivering the capital needed to upgrade global energy infrastructures.³³ Economic globalization is also a condition to deliver what an equitable energy transition is fundamentally about: development.³⁴ Finally, globalization itself has weaved a sturdy web of overlapping legal security mechanisms that will, in turn, be able to significantly contribute to energy security during the turbulence of energy transition. When combined with a development lens, economic globalization is arguably the only driver that can secure climate success.

Second, any climate action—and indeed any rebalancing of the international economic paradigm towards greater developmental ambition necessary to support climate action—must begin with energy equity and the promise of development. Without the promise of equity and development, the “yellow vest” problem will play out globally, both in domestic politics and in international affairs.³⁵ Energy transition requires buy-in. And buy-in requires equity. This equity requires us to increase cheaper energy access, not decrease total energy consumption, since energy demand is obviously increasing as we adapt to

32. One of the fundamental problems of the current international (economic) order is the unequal integration of the Global South. ADOM GETACHEW, *WORLDMAKING AFTER EMPIRE: THE RISE AND FALL OF SELF-DETERMINATION* 58 (2019). My proposition is that existing environmentally-driven approaches to energy transition in the United States and the European Union unwittingly (or maybe not) exacerbate this original unequal integration. This means that energy transition can only work to the extent that it rectifies this original historical inequality. I depart from Getachew in her criticism that the entire project of globalization is tainted from the start as an “imperial global economy.” *Id.* at 32. My point is instead that foundational instruments of economic globalization can provide a path towards equal integration—and that energy transition will only succeed to the extent that international economic law in fact follows such a path (a path that I outline is currently available within its logic and paradigm). For this understanding of the globalization paradigm, see generally HAL BRANDS & CHARLES EDEL, *THE LESSONS OF TRAGEDY: STATECRAFT AND WORLD ORDER* (2019).

33. See discussion *infra* Section IV.C.

34. My understanding of development follows in the tradition of the one popularized by Martha Nussbaum. See NUSSBAUM, *supra* note 29. For a classical derivation, see Gisela Striker, *The Role of Oikeiōsis in Stoic Ethics*, in *ESSAYS ON HELLENISTIC EPISTEMOLOGY AND ETHICS* 281, 293–94 (1996). For a legal understanding of development that captures these insights, see Development Convention, *supra* note 29.

35. Tade Oyewunmi et al., *Introduction: Energy in a Carbon-Constrained World*, in *DECARBONISATION AND THE ENERGY INDUSTRY: LAW, POLICY AND REGULATION IN LOW-CARBON ENERGY MARKETS*, *supra* note 4, at 3; see also *supra* note 24 and accompanying text.

climate change.³⁶ We can only provide such increased access if we rely on the economic processes of globalization, as well as build infrastructure and provide access to markets to the newly-created industry supplied by that infrastructure.

Third, we can only deliver on the promise of development and energy equity if we focus next on energy security, rather than environmental sustainability. Without such security, buy-in from the broad spectrum of civil society, market, state, and international actors is unrealistic. Equity therefore must be guaranteed by, and integrated with, energy security.

Fourth, it is only once equitable and secure energy access is achieved that environmental sustainability can be attempted or realized. But even though environmental sustainability is not the cornerstone of the emerging energy infrastructure, it is of critical importance. In fact, environmental sustainability is the keystone of the new energy order. Without it, development and energy security are certain to unravel and fail. And if it were not for the existential threat of climate change, it is unlikely that trillions of dollars would be marshalled in less than a decade towards energy equity.³⁷

Fifth and finally, a commons governance solution to the global energy trilemma is achievable within existing international law paradigms. We do not need another treaty or another regime (a regime that current geopolitics would not favor in any event, given that existing multilateral treaties are falling into disrepair).³⁸ We just need to apply the tools at our disposal even-handedly. The existing global climate consensus mechanism, the Paris Agreement, already relies upon market mechanisms and climate finance mechanisms to solve climate ambition shortfalls. These market mechanisms deploy the tools of

36. MATTHEW E. KAHN, *ADAPTING TO CLIMATE CHANGE: MARKETS AND THE MANAGEMENT OF AN UNCERTAIN FUTURE 2* (2021). Energy efficiency will reduce some of this need. *Id.* at 68–69. Yet, it is on the whole unlikely that it will reduce absolute demands for energy worldwide. For a discussion, see generally Leonardo Sempertegui & Frédéric Sourgens, *The Importance of States and the Private Oil Sector for Successfully Implementing the Energy Transition*, 67 *ROCKY MTN. MIN. L. INST.* (forthcoming 2022).

37. INT'L ENG. AGENCY, *NET ZERO BY 2050: A ROADMAP FOR THE GLOBAL ENERGY SECTOR 22* (2021), https://iea.blob.core.windows.net/assets/deebef5d-0c34-4539-9d0c-10b13d840027/NetZeroBy2050-ARoadmapfortheGlobalEnergySector_CORR.pdf [<https://perma.cc/3RQ3-UPMR>].

38. See, e.g., Eleanor Wragg, *Slim Chances for the WTO Appellate Body Despite US Return to Multilateralism*, *GLOB. TRADE REV.* (Mar. 3, 2021), <https://www.gtreview.com/news/americas/slim-chances-for-the-wto-appellate-body-despite-the-us-return-to-multilateralism/> [<https://perma.cc/N988-9QVG>] (describing the state of abeyance of the World Trade Organization's Appellate Body, or second-instance adjudicator, and suggesting a bleak future for this mechanism).

economic and legal globalization towards realizing deep development and decarbonization goals.³⁹ They can each only do so when they are integrated together—when the Paris Agreement and Washington Consensus become a “Parisian Consensus”: an international energy order at the heart of an equitable, secure and sustainable global economic order created for the benefit of human flourishing and dignity.⁴⁰

Proceeding in six Parts, this Article formulates the background and rationale for a Parisian Consensus. Part I outlines the climate and international economic law regimes and observes that increased international legal climate efforts have been accompanied by a reduction in free trade and investment efforts, thus setting up a problematic confrontation between international governance tools that could be leveraged to drive energy transition. Part II discusses the energy trilemma and explains why current policy preferences are trapped in it. Part III suggests that the trilemma can be balanced by means of a commons governance approach. Part IV then submits that such an approach must begin with energy equity. Part V next discusses the energy security implications of commons governance. And Part VI finally argues how environmental sustainability counterbalances both energy equity and energy security.

I. A TALE OF TWO RESPONSES

An observer of U.S. and E.U. foreign policy today could easily notice that there are facially-contradictory approaches to the role of law when responding to climate emergencies in international governance. On the one hand, it is hard to pick up a newspaper without seeing that combating climate change is the leading priority on both sides of the Atlantic.⁴¹ What is more, commitment to this goal is driven by a commitment to international law: the Paris Agreement.⁴² The Biden Administration rejoined the Paris Agreement on the first day of the

39. See Paris Agreement, *supra* note 20, art. 6.

40. Pope Francis, *Fratelli Tutti: On Fraternity and Social Friendship*, ¶¶ 91–92, 106, VATICAN (Oct. 3, 2020), http://www.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20201003_enciclica-fratelli-tutti.html [https://perma.cc/FZX9-KDBN] (noting the importance of human dignity and human flourishing).

41. See Juliet Eilperin et al., *Biden to Place Environmental Justice at Center of Sweeping Climate Plan*, WASH. POST (Jan. 27, 2021), <https://www.washingtonpost.com/climate-environment/2021/01/26/biden-environmental-justice-climate/> [https://perma.cc/4D9E-MJSM]; Pronczuk, *supra* note 19.

42. See Paris Agreement, *supra* note 20.

Biden Presidency.⁴³ And on the E.U. side, participation in the Paris Agreement mechanism remains the gold standard for international climate policy.⁴⁴ As successive European decisions from the highest courts in the Netherlands and Germany have confirmed, this Paris mechanism imposes legal obligations on states to achieve ambitious climate mitigation results.⁴⁵ Here, we see law as a positive driver of foreign policy, lauded even by multinational energy companies like Chevron and ExxonMobil, and laying at the heart of a new global governance regime.⁴⁶

On the other hand, there is a noticeable retreat from and rejection of law as a governance tool with regard to climate emergencies in the erstwhile-universal article of faith in global affairs: free trade on open markets with strong protections for foreign investments across the globe, known as the Washington Consensus.⁴⁷ The Washington

43. *Paris Climate Agreement*, WHITE HOUSE (Jan. 20, 2021), <https://www.whitehouse.gov/briefing-room/statements-releases/2021/01/20/paris-climate-agreement/> [https://perma.cc/E3L7-RZKF].

44. Frank Jordans & Jeff Schaeffer, *As Leaders Set Fresh Climate Goals, Biden Pledges US Support*, ASSOC. PRESS (Dec. 12, 2020), <https://apnews.com/article/europe-climate-climate-change-paris-france-6e21f86b5c4affaee8ee04e870a1ea6c> [https://perma.cc/5SYY-XKZV].

45. See Matthias Goldmann, *Judges for Future: The Climate Action Judgment as a Post-colonial Turn in Constitutional Law?*, VERFASSUNGSBLOG (Apr. 30, 2021), <https://verfassungsblog.de/judges-for-future/> [https://perma.cc/JD4J-JG28]; BVerfG, 1 BvR 2656/18 (Mar. 24, 2021), https://www.bundesverfassungsgericht.de/SharedDocs/Entscheidungen/EN/2021/03/rs20210324_1bvr265618en.html [https://perma.cc/DX4C-GN5W]; HR 20 december 2019, __ 2020, 19/00135 m.nt. __ ¶¶ 5.2.1–5.5.3 (Stichting Urgenda/The State of the Netherlands) (Neth.) (unofficial English translation), <https://www.urgenda.nl/wp-content/uploads/ENG-Dutch-Supreme-Court-Urgenda-v-Netherlands-20-12-2019.pdf> [https://perma.cc/C69Z-YF6R] [hereinafter *Hoge Raad*].

46. See, e.g., *The Energy Transition*, CHEVRON (2019), <https://www.chevron.com/sustainability/environment/the-energy-transition> [https://perma.cc/BCX8-BSUY]; *Statement on Paris Climate Agreement*, EXXONMOBIL (Nov. 4, 2016), <https://corporate.exxonmobil.com/Energy-and-environment/Environmental-protection/Climate-change/Statements-on-Paris-climate-agreement> [https://perma.cc/48SJ-KKYW]. On the importance of these statements, see Sempertegui & Sourgens, *supra* note 36.

47. See Robert Howse, *Making the WTO (Not So) Great Again: The Case Against Responding to the Trump Trade Agenda Through Reform of WTO Rules on Subsidies and State Enterprises*, 23 J. INT'L ECON. L. 371 (2020); MATTHIAS HERDEGEN, *PRINCIPLES OF INTERNATIONAL ECONOMIC LAW* 166 (2d ed. 2016). My understanding of the Washington Consensus in this context is broader than the original formulation in the Bretton Woods context by John Williamson. See John Williamson, *Overview: An Agenda for Restarting Growth and Reform, in AFTER THE WASHINGTON CONSENSUS: RESTARTING GROWTH AND REFORM IN LATIN AMERICA* 1–20 (Pedro Pablo Kuczynsky & John Williamson eds., 2003). Here, I refer more broadly to the Bretton Woods instruments, as well as the trade and investment

Consensus also relies upon international law as the chief means to implement policy into practice, specifically via free trade agreements (FTAs), like the North American Free Trade Agreement (NAFTA), with strong investment chapters and dispute resolution mechanisms.⁴⁸ Energy transition is one driver of a strong push on both sides of the Atlantic to gut existing Washington Consensus treaties: the European Union terminated nearly all of its internal bilateral investment treaties.⁴⁹ And the European Union did so in response to investment tribunals ruling against E.U. Member States with regard to the rollback of subsidies for solar projects—and in favor of the commercial stability of energy transition policies.⁵⁰ The United States renegotiated

instruments comprising international economic law (e.g., GATT-94, TRIPS, the SCM Agreement, etc. on the trade side, and bilateral and multilateral investment treaties on the investment side). For an account of this regime in the energy sector, see MARHOLD, *supra* note 29, at 142. Centrally, this consensus is engaging with human rights concerns and issues of public policy beyond economic law as such (be it very much incompletely). See DESIERTO, *supra* note 29, at 158. What I refer to as the Washington Consensus is a legal space that is very much open to such human rights contestation from within international economic law. *Id.* at *passim*. It is open to such contestation because it does not look to market liberalization as an end in itself but as a tool towards broader development, as I argue more fully elsewhere. See generally FRÉDÉRIC G. SOURGENS, GOOD FAITH IN TRANSNATIONAL LAW: A PLURALIST ACCOUNT (2021) (unpublished manuscript) (on file with author).

48. HERDEGEN, *supra* note 47, at 166.

49. Fin. Stability, Fin. Servs., & Cap. Mkts. Union, *EU Member States Sign an Agreement for the Termination of Intra-EU Bilateral Investment Treaties*, EUR. COMM'N (May 5, 2020), https://ec.europa.eu/info/publications/200505-bilateral-investment-treaties-agreement_en [<https://perma.cc/BNJ2-EXBB>]. For a discussion, see Frédéric G. Sourgens, *Living on a Prayer: Termination of Intra-EU BITs and the Law of Treaties*, in THE VIENNA CONVENTION ON THE LAW OF TREATIES IN INTERNATIONAL ARBITRATION: HISTORY, EVOLUTION, AND FUTURE (Esmé Shirlow & Kiran Gore eds., forthcoming 2022) (draft on file with author). The European Union submits, of course, that it proposes a “better” regulatory mechanism, and that E.U. law is obviously inconsistent with bilateral investment treaties (BITs). *Id.* This argument is questionable in historical context—that is, E.U. Member States entered into BITs at a time they ought not to have, had they contemporaneously believed in the positions now advanced by the European Union. The Union appears far more likely to be engaged in a kind of regulatory turf war familiar to followers of European law more broadly (be it in a more extreme form). See KRISCH, *supra* note 29, at 203–04.

50. See Diane Desierto & Frédéric G. Sourgens, *Investment Law and Decarbonisation*, in DECARBONISATION AND THE ENERGY INDUSTRY: LAW, POLICY AND REGULATION IN LOW CARBON ENERGY MARKETS, *supra* note 4, at 157. The European Court of Justice rendered its judgment in March 2018. See Case C-284/16, *Slovak Republic v. Achmea*, ECLI:EU:C:2018:158 (Mar. 6, 2018). At this point, Spain had suffered two defeats in renewables cases. See *Novenergia II – Energy & Environment v. Spain*, SCC Case No. 2015/063, award (Feb. 15, 2018), <https://www.italaw.com/sites/default/files/case-documents/italaw9715.pdf> [<https://perma.cc/7AB2-ZJB4>]; *Eiser Infrastructure Limited and Energia Solar Luxembourg S.à r.l. v. Kingdom of Spain*, ICSID Case No. ARB/13/36, award (May 4, 2017),

<https://www.italaw.com/sites/default/files/case-documents/italaw9050.pdf> [<https://perma.cc/7WTY-DWYW>]. At the time, a significant number of disputes were pending against E.U. Member States arising out of similar projects. See U.N. Conference on Trade and Development, *Fact-Sheet on Intra-European Union Investor-State Arbitration Cases*, at 5, U.N. Doc. UNCTAD/DIAE/PCB/2018/7, https://unctad.org/system/files/official-document/diaepcb2018d7_en.pdf [<https://perma.cc/LFX8-S5HS>]. Given the number of such claims, it is reasonable to conclude that one influenced the other. At the same time, the European Union was also seeking to renegotiate the Energy Charter Treaty. For a recent discussion of E.U. renegotiation efforts on that front, see Martin Dietrich Brauch, *Should the European Union Fix, Leave or Kill the Energy Charter Treaty?*, COLUM. CTR. SUSTAINABLE DEV. (Feb. 9, 2021), <https://ccsi.columbia.edu/news/should-european-union-fix-leave-or-kill-energy-charter-treaty> [<https://perma.cc/GW88-2TDC>]. The fact that both efforts proceed in tandem would support the same conclusion. The European Union's hostility goes as far as seeking to force E.U. Member States to violate international legal obligations in complying with arbitral awards arising out of the renewables sector. See Garreth Wong et al., *European Commission Continues To Undermine Investment Protection In Europe: Challenge to Antin v. Spain Arbitral Award*, SHEARMAN & STERLING (Aug. 5, 2021), <https://www.shearman.com/Perspectives/2021/08/European-Commission-Continues-to-Undermine-Investment-Protection-in-Europe> [<https://perma.cc/35JH-CHHZ>]. At this point, there is further corroboration for this conclusion. The Court of Justice of the European Union ruled in *Komstroy v. Moldova* to narrow investor-state consent in the Energy Charter Treaty so as to exclude intra-E.U. disputes. See Case C-741/19, Republic of Moldova v. Komstroy, ECLI:EU:C:2021:655 (Sept. 2, 2021). The response to this judgment from the European anti-ISDS community revealed much of what is going on behind the scenes: "The ECT poses a massive threat to Europe's clean energy transition. While ISDS may be a little-known mechanism, it has for decades given cover for fossil fuel companies to sue any time their climate-wrecking investments are challenged by democratic decisions." *Companies Cannot Use ECT to Sue Governments for Climate Progress, Top Court Says*, CLIMATE ACTION NETWORK EUR. (Sept. 2, 2021), <https://caneurope.org/companies-cannot-use-ect-to-sue-governments-for-climate-progress-top-court-says/> [<https://perma.cc/9NTH-YDCV>] (quoting ClientEarth lawyer Amandine Van Den Bergh). For an analysis of the Komstroy decision, see Clement Fouchard & Vanessa Thieffry, *CJEU Ruling in Moldova v. Komstroy: The End of Intra-EU Investment Arbitration Under the Energy Charter Treaty (and a Restrictive Interpretation of the Notion of Protected Investment)*, KLUWER ARB. BLOG (Sept. 7, 2021), <http://arbitrationblog.kluwerarbitration.com/2021/09/07/cjeu-ruling-in-moldova-v-komstroy-the-end-of-intra-eu-investment-arbitration-under-the-energy-charter-treaty-and-a-restrictive-interpretation-of-the-notion-of-protected-investment/> [<https://perma.cc/FMA5-D4GR>].

NAFTA on a significantly less globalized basis.⁵¹ This renegotiation also weakened energy supply protections.⁵² And wherever one looks, there is rhetoric to exempt environmental and security policies in particular from the scope of such treaties altogether.⁵³

This change in global attitudes towards the Washington Consensus may well influence how existing FTAs are enforced. Free trade and investment agreements include exceptions clauses.⁵⁴ These clauses could perhaps be interpreted to exclude a broad array of environmental policies from the scope of extant protections.⁵⁵

Thus, the World Trade Organization (WTO)'s constitutive 1994 General Agreement on Tariffs and Trade (GATT) includes a general exceptions clause.⁵⁶ Among other things, the clause provides that nothing in the GATT "shall be construed to prevent the adoption or enforcement by any Member of measures . . . necessary to protect human, animal, or plant life or health."⁵⁷ A further exception exempts measures "relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption."⁵⁸ Recent FTAs have incorporated such general exceptions by reference and, for example, highlighted again that the exceptions in those agreements indeed do apply

51. See David Gantz & Sergio Puig, *The Scorecard of the USMCA Protocol of Amendment*, EJIL:TALK! (Dec. 23, 2019), <https://www.ejiltalk.org/the-scorecard-of-the-usmca-protocol-of-amendment/> [<https://perma.cc/NYM6-VR8P>] (outlining the result of the USMCA negotiations). For a critique of the agreement from a free trade perspective, see Daniel J. Ikenson, *Protectionist Love Child of the Labor Left and the Nationalist Right*, CATO INST. (Dec. 13, 2019), <https://www.cato.org/blog/protectionist-love-child-labor-left-nationalist-right> [<https://perma.cc/E4KX-GGGN>]. For a longer analysis of Trump Administration trade policies (including the USMCA), see generally Justin Hughes, *Globalization, Revising the Terms of Trade, and the Return of 'History'*, 14 OHIO ST. BUS. L.J. 15 (2019).

52. See MARHOLD, *supra* note 29, at 145–46.

53. Iana Dreyer, *Security and Climate 'Exceptions' Make Their Way into EU FTAs*, BORDERLEX (July 30, 2019), <https://borderlex.net/2019/07/30/mercosur-moment-security-and-climate-exceptions-make-their-way-into-eu-ftas/> [<https://perma.cc/5QED-CK6M>].

54. See, e.g., General Agreement on Tariffs & Trade 1994 art. XX, Apr. 15, 1994 [hereinafter GATT 1994]; Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1867 U.N.T.S. 187.

55. See Juscelino F. Colares, *The Emerging Supply-Side Case for Global Carbon Restrictions*, 19 U.C. DAVIS J. INT'L L. & POL'Y 139, 171–72 (2013) (discussing an interpretive change in exceptions mechanisms in GATT in the climate context).

56. GATT 1994, *supra* note 54, art. XX.

57. *Id.* art. XX(b).

58. *Id.* art. XX(g).

to measures necessary to protect human, animal, or plant life.⁵⁹ Such emphasis, together with the generally prevailing attitude towards greater state autonomy in trade and investment matters, could thus easily be used to expand the scope of measures falling within the general exceptions, even without further strengthening of existing treaty language.⁶⁰

Just as importantly, existing exceptions for measures involving questions of national security could certainly be used to sidestep free trade commitments. For example, Article 22.2 of the U.S.-Peru Free Trade Agreement exempts from the scope of the agreement any “measures that [the acting State] considers necessary for the fulfillment of its obligations with respect to the maintenance or restoration of international peace or security, or the protection of its own essential security interests.”⁶¹ The provision clarifies in a footnote that “[f]or greater certainty, if a Party invokes Article 22.2 in an arbitral proceeding initiated under Chapter Ten (Investment) or Chapter Twenty-One (Dispute Settlement), the tribunal or panel hearing the matter shall find that the exception applies.”⁶² Taken literally, this provision means that the State would reserve the ability to remove any measure from the scope of the FTA simply by characterizing it as a measure necessary for the protection of its own security interest.⁶³ As climate emergencies can be cast as natural security concerns, it is possible in principle to invoke such provisions in this context.⁶⁴ It would thus exempt

59. See Diane A. Desierto, *ASEAN Investment Treaties, RCEP, and CPTPP: Regional Strengths, Norms, Institutions, and Politics*, 27 WASH. INT’L L.J. 349, 373–82 (2018). The principal focus in BIT jurisprudence has turned on the question of necessity and GATT, art. XX(b)-type standards. For a full discussion, see generally Michael D. Nolan & Frédéric G. Sourgens, *The Limits of Discretion? Self-Judging Emergency Clauses in International Investment Agreements*, in YEARBOOK ON INTERNATIONAL LAW AND POLICY 362 (Karl Sauvant ed., 2011).

60. For a discussion of such a strategy, see generally Frédéric G. Sourgens, *The Precaution Presumption*, 31 EUR. J. INT’L L. 1277 (2020).

61. U.S.-Peru Trade Promotion Agreement, U.S.-Peru, art. 22.2, Apr. 12, 2006, T.I.A.S. No. 06-105.1, as amended, https://ustr.gov/sites/default/files/uploads/agreements/fta/peru/as-set_upload_file841_9542.pdf [<https://perma.cc/R5QY-WLTN>].

62. *Id.* n.2.

63. For a discussion of problems of interpretation of the provision, see generally Nolan & Sourgens, *supra* note 59.

64. See Christopher Flavelle et al., *Climate Change Poses a Widening Threat to National Security*, N.Y. TIMES (Oct. 21, 2021), <https://www.nytimes.com/2021/10/21/climate/climate-change-national-security.html> [<https://perma.cc/8ULL-XXDV>].

measures from international governance regimes simply by declaring a domestic emergency.⁶⁵

In a way, it is oddly self-contradictory that both attitudes towards the role of international law in addressing climate emergencies and energy transition policies prevail at the same time. To borrow a phrase from Daron Acemoglu and James Robinson's path-breaking book *The Narrow Corridor*, we seem to be of two minds in terms of whether we want to "shackle Leviathan"—the regulatory power and capacity of the State—by means of international law.⁶⁶ Acemoglu and Robinson maintain that liberal democracies like the United States and many E.U. Member States enjoy liberty precisely because they are able to shackle the power and capacity of the State by directing it through the rule of law to act for the benefit of the governed.⁶⁷ When a State provides basic services without oppressing its constituents, it unleashes enterprise and economic prosperity because it provides needed legal stability and room for competition and experimentation.⁶⁸ Washington Consensus treaties seek to achieve just that.⁶⁹

If we reject the Washington Consensus to strengthen the State, we unshackle Leviathan by removing international legal restraints on its scope of action to respond to climate change. At the same time, when we embrace international climate law, we wish to shackle the State again by means of international legal restraints; in this context, we hope to force States to curb carbon emissions in their respective economies and societies. On the one hand, we submit that international law is not an appropriate way to constrain regulatory and economic activity when we invoke exceptions clauses or narrow treaties to place such activity beyond the scope of international instruments that were previously applicable to them. But on the other hand, we charge exactly the opposite view when we rely on international law as a means to address climate change. To hold both views at the same

65. This possibility raises the issue of whether the invocation of exceptions included in international treaties is a withdrawal from the order that they enshrine. This certainly depends on the view one takes of international law. I follow here the view of Judge Lauterpacht—that the inclusion of self-judging clauses as broadly defeating the jurisdiction of an international court or tribunal is deeply problematic. See *Norwegian Loans (Fr. v. Nor.)*, Judgment, 1957 I.C.J. 9, 46–59 (July 6) (separate opinion by Lauterpacht, J.). For further discussion, see generally Nolan & Sourgens, *supra* note 59.

66. DARON ACEMOGLU & JAMES A. ROBINSON, *THE NARROW CORRIDOR: STATES, SOCIETIES, AND THE FATE OF LIBERTY* 26–27 (2019).

67. *Id.* at 152–200.

68. *Id.* at 144–45.

69. See HERDEGEN, *supra* note 47, at 166.

time thus appears strange, to say the least, if not inherently contradictory.

There is of course a way to resolve this apparent conflict. One might still concede that Leviathan should be shackled. We still believe that international law is a good tool to do so. But we just think that shackling Leviathan in favor of industry (“multinationals,” “the one percent,” “the billionaires,” etc.) is wrong because it benefits the few and hurts the many.⁷⁰ So we reject core parts of the Washington Consensus. We can still find it imperative to shackle Leviathan for a truly global common good. Just as climate catastrophes like hurricanes and wildfires will kill without regard for the account balance of its victims (be it that such disasters will of course *reach* more poor people who could not escape from their path), we can still believe in shackling Leviathan for such a truly common purpose by means of international constraints.⁷¹

But as this Article will argue, the current approach—while certainly understandable—is ultimately bound to fail. The current impulses to reduce the force of international economic law and increase the constraints of international environmental and climate law run headlong into an energy trilemma. This energy trilemma can only be solved when international economic law and international climate law work together to shackle Leviathans while growing economic capabilities and empowering societies. Global climate cooperation will certainly fail without strong and safe global energy markets. To hollow out trade and investment protections, therefore, is to deprive world society of the tools needed to keep States on track to save our climate.

But we must also heed the current criticisms of the Washington Consensus. As we shall see, free trade in open markets is not an end in itself. It is a means to an end: development. To better achieve this end, Washington Consensus processes—the law governing trade and investment, as well as finance—will have to change. At its core, it will have to embrace concepts of equity and human capabilities, instead of economic growth for its own sake.⁷² It is in this context that

70. See Elizabeth Warren, *The Trans-Pacific Partnership Clause Everyone Should Oppose*, WASH. POST (Feb. 25, 2015), https://www.washingtonpost.com/opinions/kill-the-dispute-settlement-language-in-the-trans-pacific-partnership/2015/02/25/ec7705a2-bd1e-11e4-b274-e5209a3bc9a9_story.html [<https://perma.cc/28JM-NQL5>].

71. Annie Lowrey, *What the Camp Fire Revealed*, ATLANTIC (Jan. 21, 2019), <https://www.theatlantic.com/ideas/archive/2019/01/why-natural-disasters-are-worse-poor/580846/> [<https://perma.cc/H2TX-2L6H>].

72. One may perceive a tension between the Washington Consensus and a human development approach (after all, I just conceded we need capital—so the capital gets to control the rules of the game). That is too fast of a conclusion. In technical terms, my point is that an

strengthened economic capabilities empower societies and thus reap the benefits of the shackled Leviathan, as outlined by Acemoglu and Robinson.⁷³ Importantly, this change is already underway, and it will be strengthened further when international economic and climate regimes are further integrated with each other. As this Article will submit, such a Parisian Consensus is the likeliest candidate to re-ground global development approaches and provide them with ready means of implementation in international law.

II. THE ENERGY TRILEMMA

Current approaches to climate action are trapped in an energy trilemma. Energy is the backbone for global economies and societies.⁷⁴ Focusing on climate action sees global energy policy through the lens of environmental sustainability of energy systems.⁷⁵ The problem is that this lens does not show the full picture: Global energy policy is also caught up in concerns that frequently contradict the values of environmental policy—namely, energy equity and energy security.⁷⁶ As we will see, these lenses have legitimate purchase on policymakers. And both of these lenses strongly favor the use of fuels and technology which are at odds with environmental sustainability. Environmental sustainability, energy equity, and energy security thus confront policymakers with an apparent trilemma: It seems that any choice in favor of one limb of the trilemma has negative consequences for one of the other limbs of the trilemma. This Part concludes that

approach relying on a Kaldor-Hicks approach to distributive justice is inadequate; such approaches tend to justify distributive outcomes that are problematic (even as a matter of common sense) by saying that greater efficiencies allow those negatively affected by a new distribution to, in principle, be compensated with room to spare. *See, e.g.*, BINYAMIN APPELBAUM, *THE ECONOMISTS' HOUR: FALSE PROPHETS, FREE MARKETS, AND THE FRACTURE OF SOCIETY* 189 (2019). My argument is that this room to spare will have to be enough of a distributive incentive to attract capital, and that distributive losses will in fact have to be compensated in a human development-driven approach. This of course means that minimizing risk will be a key tool to secure capital at such a lower rate of return. This is where international economic law (and particularly investment law) is crucial to lower investment risk.

73. *See* ACEMOGLU & ROBINSON, *supra* note 66, at 66.

74. *See* YERGIN, *supra* note 16, at 55–56 (showing the link between growth in BRICs and oil prices); *id.* at 59 (discussing the relationship between the shale boom and U.S. energy security and energy equity); *id.* at 160 (outlining Chinese energy security concerns).

75. U.N. Framework Convention on Climate Change art. 2, May 9, 1992, S. Treaty Doc. No. 102-38, 1771 U.N.T.S. 107, at 165, 166, 170 [hereinafter UNFCCC].

76. *See* YERGIN, *supra* note 16, at 61, 84–89 (discussing Russian/E.U. energy security concerns).

escaping this trilemma requires the very Washington Consensus tools from which we are retreating.

A. Environmental Sustainability

Organizations from the United Nations to the Davos World Economic Forum assert that climate change is the single biggest challenge for world society today.⁷⁷ When they do so, these organizations inherently address the environmental sustainability prong of the energy trilemma.⁷⁸ This prong of the trilemma most immediately sounds in international environmental law.⁷⁹ But as this Section will discuss, the gap between the ambition of the international climate regime and its actual results has brought on increasingly aggressive and successful invocations of international human rights law.

1. International Climate Law

Given the centrality of climate change, the United Nations Framework Convention on Climate Change (UNFCCC) is the most important international framework to address the environmental sustainability limb of the energy trilemma.⁸⁰ The UNFCCC was the result of a global effort on the heels of successful treaties to fight the depletion of the ozone layer.⁸¹ The UNFCCC, as the name suggests, is a framework convention only.⁸² It reflects agreement on a goal:

77. See, e.g., *Climate Change*, U.N., <https://www.un.org/en/global-issues/climate-change#:~:text=Climate%20Change%20is%20the%20defining,scope%20and%20unprecedented%20in%20scale> [<https://perma.cc/D9T9-7KZ4>] (stating that “[c]limate [c]hange is the defining issue of our time”); Natasha Frost, *Yet Again, Climate Change Is the Greatest Threat Facing Our World*, QUARTZ (Feb. 3, 2019), <https://qz.com/1527290/yet-again-climate-change-is-the-greatest-threat-facing-our-world/> [<https://perma.cc/Y4NH-RJ63>].

78. See *Human Security: Building Resilience to Climate Threats*, U.N. TRUST FUND FOR HUM. SEC. (Oct. 2017), <https://www.un.org/humansecurity/wp-content/uploads/2017/10/Human-Security-and-Climate-Change-Policy-Brief-1.pdf> [<https://perma.cc/AJ3M-KSRG>] (“One of the most pressing issues of our time, climate change threatens the lives and livelihoods of billions of people. Natural disasters, environmental degradation and extreme weather patterns disrupt harvests, deplete fisheries, erode livelihoods and spur infectious diseases.”).

79. See PHILIPPE SANDS & JACQUELINE PEEL, *PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW* 295–323 (4th ed. 2018).

80. See *id.* at 299–307; see also Daniel Bodansky, *The United Nations Framework Convention on Climate Change: A Commentary*, 18 YALE J. INT’L L. 451, 554–55 (1993).

81. DANIEL BODANSKY ET AL., *INTERNATIONAL CLIMATE CHANGE LAW* 102–05 (2017).

82. See UNFCCC, *supra* note 75.

addressing climate change.⁸³ It casts this goal in terms of a reduction in greenhouse gas emissions.⁸⁴ It establishes general principles governing emission reductions by Member States.⁸⁵ And it creates a legal infrastructure within which to agree upon specific emission cuts.⁸⁶ But it does not itself provide for specific obligations and timelines to reduce greenhouse gas emissions.⁸⁷ One of the key reasons for the UNFCCC's early failure to set specific obligations and timelines is the energy trilemma.

a. Differentiation or Why Kyoto Failed

From the very beginning, the energy trilemma posed a near-insurmountable problem for the UNFCCC architecture. To gain support among non-OECD countries in particular, the UNFCCC included a principle of common but differentiated responsibilities.⁸⁸ According to this principle, the substantive obligations to combat climate change would fall on developed nations, listed in Annex I to the UNFCCC, whereas presumptively developing nations—that is, “non-Annex I Parties”—would continue to have access to cheap, fossil-fuel driven sources of energy.⁸⁹

This principle of common but differentiated responsibilities introduced the energy equity limb into the very framework to guarantee environmental sustainability.⁹⁰ Problematically, it did so on a facially-selective basis.⁹¹ More problematically still, this selection garnered reasonable criticism, as “in the ensuing years, the annexes proved remarkably resistant to change, notwithstanding massive shifts in the world economy, which made many non-Annex I countries richer on a per capita basis than some of the poorest Annex I countries.”⁹² At the same time, the shadow of energy transition also raised serious energy

83. *Id.* art. 2.

84. *Id.*

85. *Id.* art. 3.

86. *Id.* art. 7.

87. BODANSKY ET AL., *supra* note 81, at 557.

88. UNFCCC, *supra* note 75, art. 3(1).

89. BODANSKY ET AL., *supra* note 81, at 505–06; *id.* at 122–23 (“Non-Annex I Parties” importantly included China).

90. UNFCCC, *supra* note 75, art. 3(1).

91. *Id.*; *see also* BODANSKY ET AL., *supra* note 81, at 505–06.

92. BODANSKY ET AL., *supra* note 81, at 122–23.

security (and real world security) concerns, as countries sought to tie up needed energy reserves while they could.⁹³

It is this facially-selective introduction of the energy trilemma which threatened to upend the first attempt to set specific climate obligations and timelines: the 1997 Kyoto Protocol concluded under the auspices of the UNFCCC.⁹⁴ The purpose of the Kyoto Protocol per its preamble was to “pursu[e] the ultimate objective of the Convention as stated in its Article 2”—that is, “to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.”⁹⁵ The Kyoto Protocol used a “more top-down prescriptive approach,” in which emission targets “were internationally negotiated rather than nationally determined” and became binding upon States as a matter of the Protocol itself.⁹⁶ Importantly, only Annex I countries would assume such international emission reduction obligations.⁹⁷

The literature on the merits of the Kyoto approach is vast.⁹⁸ Yet, it is fair to conclude that Kyoto did not stop climate change, despite the facial compliance of Kyoto States with their emissions targets.⁹⁹ The compliance picture further is overly rosy, as Canada withdrew in 2011 to avoid being found out of compliance.¹⁰⁰ Practically, therefore, the Kyoto experiment proved to be a failure.

A key reason for this failure is that the Kyoto Protocol was already stillborn when it became clear that the United States would not participate, due to the top-down emissions architecture of the

93. For a discussion, see generally JOHN DEUTCH, MIT JOINT PROGRAM ON SCI. & POL'Y GLOB. CHANGE, FUTURE UNITED STATES ENERGY SECURITY CONCERNS, REPORT NO. 115, (2004), https://web.mit.edu/globalchange/www/MITJPSPGC_Rpt115.pdf [<https://perma.cc/U9BE-QCAP>].

94. Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 10, 1997, 37 I.L.M. 22 [hereinafter Kyoto Protocol].

95. *Id.* pmb1. para. 2; UNFCCC, *supra* note 75, art. 2.

96. BODANSKY ET AL, *supra* note 81, at 23.

97. *Id.*

98. For a summary of this literature, see BODANSKY ET AL, *supra* note 81, at 160–208; SANDS & PEEL, *supra* note 79, at 307–16; BENOIT MAYER, THE INTERNATIONAL LAW ON CLIMATE CHANGE 39–42 (2018).

99. *Final Kyoto Analysis Shows 100% Compliance*, SCI. DAILY (June 10, 2016), <https://www.sciencedaily.com/releases/2016/06/160610095034.htm> [<https://perma.cc/CU2U-JXXZ>].

100. *See Canada Pulls Out of Kyoto Protocol*, GUARDIAN (Dec. 12, 2011, 9:04 PM), <https://www.theguardian.com/environment/2011/dec/13/canada-pulls-out-kyoto-protocol> [<https://perma.cc/8SF2-LF43>].

Protocol.¹⁰¹ The Clinton Administration signed the Protocol, but the Senate unanimously indicated during its negotiation that the Protocol stood no chance whatsoever of ratification.¹⁰² The Senate's objection was rooted precisely in the principle of differentiated responsibility at the heart of the top-down emissions architecture and thus the energy trilemma.¹⁰³ Consistent with the principle, the Kyoto Protocol exempted developing states from participating in greenhouse gas reduction efforts, thus giving these States a competitive advantage over the U.S. economy.¹⁰⁴

b. Overcoming Differentiation: Copenhagen to Paris

It was only with the 2009 climate negotiations in Copenhagen that the principle of common but differentiated responsibility began to tip towards a principle of truly common climate responsibility.¹⁰⁵ The Copenhagen negotiations for the first time brought to bear a truly global approach to climate mitigation.¹⁰⁶ Yet, the Copenhagen Accords at the end of the negotiations were a near disaster; it was impossible for the world community to agree to any legally binding text.¹⁰⁷ The Copenhagen Accords thus reflected a mere political commitment and, as such, were received by many as pure window-dressing of a catastrophic failure to reach consensus and take climate action.¹⁰⁸

It consequently fell to the Paris Agreement to bridge the gap, making it the arguably most important effort under the UNFCCC to

101. Harold Hongju Koh, *Triptych's End: A Better Framework to Evaluate 21st Century International Lawmaking*, 126 YALE L.J. F. 337, 350 (2017).

102. See Tyler McNish, *Carbon Offsets Are a Bridge Too Far in the Tradable Property Rights Revolution*, 36 HARV. ENV'T L. REV. 387, 398–401 (2012) (discussing how the Kyoto Protocol functions); Cass R. Sunstein, *Of Montreal and Kyoto: A Tale of Two Protocols*, 31 HARV. ENV'T L. REV. 1, 4 (2007) (discussing U.S. Senate objections).

103. Sunstein, *supra* note 102, at 5.

104. *Id.*

105. ALEXANDER ZAHAR, CLIMATE CHANGE FINANCE AND INTERNATIONAL LAW 72 (2017).

106. *Id.*

107. Koh, *supra* note 101, at 351–52.

108. See, e.g., *Why Did Copenhagen Fail to Deliver a Climate Deal?* BBC (Dec. 22, 2009, 4:33 PM), <http://news.bbc.co.uk/2/hi/8426835.stm> [<https://perma.cc/3VGW-NLE8>]; John Vidal, Allegra Stratton & Suzanne Goldenberg, *Low Targets, Goals Dropped: Copenhagen Ends in Failure*, GUARDIAN (Dec. 18, 2009, 7:47 PM), <https://www.theguardian.com/environment/2009/dec/18/copenhagen-deal> [<https://perma.cc/C2ZF-93AA>]; *Clocks Tick Down to Climate Summit*, EURONEWS (Nov. 23, 2009), <https://www.euronews.com/2009/11/23/clock-ticks-down-to-climate-summit> [<https://perma.cc/UX8U-LZ74>].

date.¹⁰⁹ The Paris Agreement succeeded in garnering full global participation, including the United States.¹¹⁰ It did so while also overcoming the principal roadblocks to U.S. participation in the Kyoto Protocol by including all States in greenhouse gas reduction efforts, not just developed states.¹¹¹ And it established an ambitious, specific climate change goal: limiting the increase in global average temperatures to well below 2° Celsius above pre-industrial levels.¹¹²

The Paris Agreement significantly relies upon a voluntary, bottom-up approach to meet its ambitious goals. Rather than mandating emission-reduction quotas like the Kyoto Protocol, the Paris Agreement leaves it to States to submit their own Nationally Determined Contributions (NDCs) towards the reduction of CO₂ emissions.¹¹³ The Paris Agreement does not make these NDCs binding as a matter of the Paris Agreement itself.¹¹⁴ Specific NDCs may, however, acquire such a binding character under international law depending upon how they are adopted.¹¹⁵ And increased performance of NDC commitments by a critical mass of States would in turn create practical and legal pressure on other States to follow suit.¹¹⁶

c. The Ambition-Performance Gap Remains

Despite this new architecture, the Paris Agreement did not solve the underlying collective action problem of how to sufficiently reduce greenhouse gas emissions to meet its climate change goals. The NDCs submitted during the first round of reporting significantly under-performed the climate goal of the Paris Agreement.¹¹⁷ While some States are beginning to update their NDCs, this update is nowhere near adequate to meet Paris Agreement goals.¹¹⁸ The reason again is the

109. Frédéric G. Sourgens, *Climate Commons Law: The Transformative Force of the Paris Agreement*, 50 N.Y.U. J. INT'L L. & POL. 885, 981 (2018).

110. Koh, *supra* note 101, at 363–64.

111. See Paris Agreement, *supra* note 20, art. 3.

112. *Id.* art. 2(1)(a).

113. *Id.* art 4.

114. Daniel Bodansky & Peter J. Spiro, *Executive Agreements Plus*, 49 VAND. J. TRANSNAT'L L. 885, 916–19 (2016); Koh, *supra* note 101, at 352–54.

115. Sourgens, *supra* note 109, at 915–44.

116. As I have argued elsewhere, these NDCs can become unilateral acts of state and binding as such on States under international law. *Id.*

117. *CAT Climate Target Update Tracker*, CLIMATE ACTION TRACKER (Nov. 18, 2020), <https://climateactiontracker.org/climate-target-update-tracker/> [https://perma.cc/E89Q-6485].

118. *Id.*

energy trilemma: States currently are not in a position to contemplate trading energy equity (or energy security) for environmental sustainability to the degree necessary to meet Paris goals.¹¹⁹

Even as States have under-promised in their NDCs, it appeared as though States would under-perform even comparatively less-ambitious NDCs.¹²⁰ COVID-19 slowed this under-performance due to the severe economic impact of the pandemic.¹²¹ Yet, these impacts are deceiving, as COVID-19 has not transformed global energy infrastructures.¹²² And in fact, the economic impact of the pandemic may make it more likely that States will need to lean more heavily on cheaper energy stores to fuel their economic recoveries.¹²³

2. Attacking the Performance Gap Through Rights-Based Litigation

As States so far have struggled to make sufficient commitments under the UNFCCC regime, civil society has looked for increasingly-novel ways to compel States to increase their climate change efforts. These efforts have come in the guise of a shift from a climate obligations perspective to a climate rights lens buttressed by human rights regimes.¹²⁴ This shift reveals that energy policy has an obvious human rights impact.¹²⁵ And civil society actors increasingly focus on environmental rights in articulating their energy policy submissions.¹²⁶

119. Zaremba, *supra* note 9; *see also* YERGIN, *supra* note 16, at 426–27.

120. *See, e.g.*, Stephen Leahy, *Most Countries Aren't Hitting 2030 Climate Goals, and Everyone Will Pay the Price*, NAT. GEO. (Nov. 5, 2019), <https://www.nationalgeographic.com/science/2019/11/nations-miss-paris-targets-climate-driven-weather-events-cost-billions/#close> [<https://perma.cc/WJ66-33QC>].

121. *See generally* Zhu Liu et al., *Near-Real-Time Monitoring of Global CO₂ Emissions Reveals the Effects of the COVID-19 Pandemic*, 11 NAT'L COMM. 5172 (2020).

122. Jonathan Lambert, *Emissions Dropped During the COVID-19 Pandemic, The Climate Impact Won't Last*, SCIENCE NEWS.ORG (Aug. 7, 2020, 5:00 AM), <https://www.sciencenews.org/article/covid-19-coronavirus-greenhouse-gas-emissions-climate-change> [<https://perma.cc/DLP9-RJ4G>].

123. *See* Zaremba, *supra* note 9 (discussing renewed Chinese reliance on coal).

124. *See generally* Maiko Meguro, *Litigating Climate Change Through International Law: Obligations Strategy and Rights Strategy*, 33 LEIDEN J. INT'L L. 933 (2020).

125. Diane Desierto, *COP25 Negotiations Fail: Can Climate Change Litigation, Adjudication, and/or Arbitration Compel States to Act Faster to Implement Climate Obligations?*, EJIL:TALK! (Dec. 19, 2019), <https://www.ejiltalk.org/cop25-negotiations-fail-can-climate-change-litigation-adjudication-and-or-arbitration-compel-states-to-act-faster-to-implement-climate-obligations/> [<https://perma.cc/FY6Y-94Q5>].

126. Meguro, *supra* note 124, at 938–41.

This trend has led to an increased use of high impact climate litigation.¹²⁷ The most well-known climate human rights case is the *Urgenda* litigation in the Netherlands.¹²⁸ There, the Urgenda Foundation launched a citizens' suit alleging that the Dutch government's climate policy failed to adequately protect the rights of Dutch citizens under civil law and under the European Convention on Human Rights (ECHR).¹²⁹ In a landmark decision, the Dutch Supreme Court ruled in December 2019 that the Dutch government's actions indeed violated the right to life in Article 2 and the right to private and family life in Article 8 of the ECHR.¹³⁰ The Court reasoned that Article 13 of the Convention guaranteed an effective remedy against human rights violations.¹³¹ In light of the grave threat of climate change, the Supreme Court confirmed the judgment of the District Court, ordering the Dutch government to reduce greenhouse gas emissions by at least 25% compared to 1990 levels.¹³²

Other proceedings have further tested the scope of climate change protections in the ECHR.¹³³ In November 2020, the Norwegian Supreme Court heard an appeal regarding the issuance of new petroleum exploration licenses by the Norwegian State.¹³⁴ The plaintiff, Greenpeace, asserted that this grant did not follow due diligence requirements to account for negative environmental impacts stemming from the issuance of the licenses.¹³⁵ The Norwegian Supreme Court ruled in favor of the government in December 2020.¹³⁶ Undeterred,

127. Jacqueline Peel & Jolene Lin, *Transnational Climate Litigation: The Contribution of the Global South*, 113 AM. J. INT'L L. 679, 687 (2019).

128. For a full list of pleadings and judgments in English, see *The Urgenda Climate Case Against the Dutch Government*, URGENDA.NL (Dec. 20, 2019), <https://www.urgenda.nl/en/the-mas/climate-case/> [<https://perma.cc/GNP5-6ZM3>].

129. *Id.*

130. *Hoge Raad*, *supra* note 45.

131. *Id.*

132. *Id.* ¶ 8. For a discussion of other climate litigation employing similar reasoning, see generally Frédéric G. Sourgens, *Diligent Zero*, 75 SMU L. REV. (forthcoming 2022).

133. Helen Duffy & Lucy Maxwell, *People v. Arctic Oil Before Supreme Court of Norway, What's at Stake for Human Rights Protection in the Climate Crisis?*, EJIL:TALK! (Nov. 13, 2020), <https://www.ejiltalk.org/people-v-arctic-oil-before-supreme-court-of-norway-whats-at-stake-for-human-rights-protection-in-the-climate-crisis/> [<https://perma.cc/7VKV-9P4R>].

134. *Id.*

135. *Id.*

136. *People v. Arctic Oil*, HR-2020-2472-P, (case no. 20-051052SIV-HRET), Dec. 22, 2020 (Nor.), https://www.klimasøksmål.no/wp-content/uploads/2021/01/judgement_translated.pdf [<https://perma.cc/P82P-PMUZ>].

the plaintiffs have now brought the question before the European Court of Human Rights.¹³⁷ Through a human rights lens, this litigation thus takes aim at the right of the State to issue or renew licenses or other similar instruments.¹³⁸

These proceedings are not limited to Europe. The Inter-American Human Rights system has squarely addressed the issue in an advisory opinion.¹³⁹ The Philippines Human Rights Commission further found that oil and gas companies were potentially liable for climate change impacts.¹⁴⁰ And a significant body of constitutional and human rights litigation is accruing not just in industrialized countries, but also and especially in the “Global South.”¹⁴¹

Such litigation seeks to force the energy trilemma deadlock in favor of more robust action for environmental sustainability through the courts. In certain instances, there is some sense of potential increased compliance: the Netherlands, for example, has adopted a raft of new measures to comply with the Supreme Court order.¹⁴² And yet, even such aggressive measures cannot fully comply with human rights aspirations. Thus, again in the Netherlands, policies leave the

137. Nerijus Adomaitis, *The People Vs Arctic Oil’: Climate Activists Target Norway At Human Rights Court*, REUTERS (June 15, 2021), <https://www.reuters.com/business/environment/the-people-vs-arctic-oil-climate-activists-target-norway-human-rights-court-2021-06-15/> [<https://perma.cc/P4J4-KSTM>].

138. *Id.*

139. The Environment and Human Rights (State Obligations in Relation to the Environment in the Context of the Protection and Guarantee of the Rights to Life and to Personal Integrity—Interpretation and Scope of Articles 4(1) and 5(1) of the American Convention on Human Rights), Advisory Opinion OC-23/18, Inter-Am. Ct. H.R., (ser. A) No. 23 (Nov. 15, 2017), http://www.corteidh.or.cr/docs/opiniones/seria_23_esp.pdf [<https://perma.cc/JP7S-9EZY>]. For a discussion, see generally Maria L. Banda, *Inter-American Court of Human Rights’ Advisory Opinion on the Environment and Human Rights*, 22 ASIL INSIGHTS 6 (May 10, 2018), <https://www.asil.org/insights/volume/22/issue/6/inter-american-court-human-rights-advisory-opinion-environment-and-human> [<https://perma.cc/T8JE-4K5P>].

140. *Groundbreaking Inquiry in Philippines Links Carbon Majors to Human Rights Impacts of Climate Change, Calls for Greater Accountability*, CTR. FOR INT’L ENV’T L. (Dec. 9, 2019), <https://www.ciel.org/news/groundbreaking-inquiry-in-philippines-links-carbon-majors-to-human-rights-impacts-of-climate-change-calls-for-greater-accountability/> [<https://perma.cc/UUY3-7KPB>]. For a collection of case documents, see *In re Greenpeace Southeast Asia and Others*, Case No. CHR-NI-2016-0001, <http://climatecasechart.com/climate-change-litigation/non-us-case/in-re-greenpeace-southeast-asia-et-al/> [<https://perma.cc/QX92-CDBZ>].

141. See generally Peel & Lin, *supra* note 127.

142. Jonathan Watts, *Dutch Officials Reveal Measures to Cut Emissions After Court Ruling*, GUARDIAN (Apr. 24, 2020, 12:10 PM), <https://www.theguardian.com/world/2020/apr/24/dutch-officials-reveal-measures-to-cut-emissions-after-court-ruling> [<https://perma.cc/632X-P63J>].

Netherlands four megatons of CO₂ short of meeting the reduction target.¹⁴³ What is more, the reduction is achieved by a 75% capacity reduction in the Netherlands' three coal-fired power plants.¹⁴⁴ But there has been comparatively little movement towards overhauling the Dutch energy infrastructure to replace generating capacity.¹⁴⁵ Human rights decisions and domestic litigation can therefore express a principle or goal, but they may fall short of providing a roadmap to achieve that end.

B. Energy Equity

A key problem in achieving environmentally sustainable energy supplies is the need for affordable energy, or energy equity. In post-industrial economies such as the United States, energy needs have begun to stabilize, as more efficient service economies have replaced more energy-intensive heavy industry.¹⁴⁶ But as economies industrialize, they have growing energy needs to bolster economic development.¹⁴⁷ Environmental sustainability thus can have significant consequences for energy equity.

143. *Id.*

144. *Id.*

145. See, e.g., Hans von der Brelie, *The Netherlands Must Reduce Carbon Emissions by the End of the Year, But Can This Be Done?*, EURONEWS (Sept. 18, 2020), <https://www.euronews.com/2020/09/18/the-netherlands-must-reduce-carbon-emissions-by-the-end-of-the-year-but-can-this-be-done> [<https://perma.cc/8DY5-7JL5>]. At this point, the Dutch government is considering a nuclear power push. See, e.g., Karl Mathiesen, *The Netherlands to Build New Nuclear Plants under Coalition Deal*, POLITICO (Dec. 15, 2021, 5:59 PM), <https://www.politico.eu/article/netherlands-to-build-new-nuclear-plants-under-coalition-deal/> [<https://perma.cc/R52V-G6YN>]. Nuclear power plants have a long history of construction and cost overruns. See David Chandler, *Study Identifies Reasons for Soaring Nuclear Plant Cost Overruns in the U.S.*, MIT NEWS (Nov. 18, 2020), <https://news.mit.edu/2020/reasons-nuclear-overruns-1118> [<https://perma.cc/2JJT-8BZW>].

146. See *Overview of Energy Markets*, ENG. INFO. ADMIN. (Jan 29, 2020), <https://www.eia.gov/outlooks/aeo/pdf/AEO2020%20Overview%20of%20Energy%20Markets.pdf> [<https://perma.cc/43MP-GK7L>].

147. *Compare China Key Energy Statistics*, INT'L ENG. AGENCY (2020), <https://www.iea.org/countries/china> [<https://perma.cc/MVL9-FWNT>] (showing Chinese historical energy demand growth since 1990), *with India Key Energy Statistics*, INT'L ENG. AGENCY (2020), <https://www.iea.org/countries/india> [<https://perma.cc/A4QK-9LN7>] (projecting rapid increase in energy demand in India).

1. Five Energy Affordability Factors

To understand how energy affordability affects decisions in the energy trilemma, it is helpful to examine five variables. The first of these variables outright favors renewable energy. This variable is the *cost of energy generation*. The operating cost of renewable energy plants (e.g., wind and solar) already approximates the cost of operating fossil fuel plants.¹⁴⁸ Operating costs for renewable energy are projected to fall significantly as new technology makes further advances.¹⁴⁹ In the long-term, renewable energy is thus both more environmentally sustainable and affordable than fossil fuels.

Operating costs alone do not show the complete picture. Second, one also needs to consider the *initial capital cost to build power plants*. Costs are going to differ depending upon where in the world a plant is to be constructed. But to understand the relative costs involved, it is instructive to look at recent U.S. data. These construction costs are typically reported by reference to a common energy output unit, kilowatt-hours (kWhs). Simple natural gas power plants cost approximately \$400–800/kWh, coal \$500–1,000/kWh, nuclear \$1,200–5,000/kWh, and photovoltaic solar plants \$4,500/kWh.¹⁵⁰ One estimate for onshore wind is \$1,100/kWh and significantly more for offshore wind.¹⁵¹ This greater capital cost is an affordability factor in favor of fossil fuel plants, as they cost less to build.

But the perhaps most important variable is the third: *replacement cost*. As the *Urgenda* decision in the Netherlands has shown, environmental sustainability requires a *swap* of energy sources from fossil fuel to carbon-neutral sources, as opposed to a ramp-up of production capacity in its own right.¹⁵² The fact that there is already energy infrastructure in place changes the equation: existing energy infrastructure is already partly or fully paid off but it nevertheless must

148. John Timmer, *Wind Power Prices Now Lower than the Cost of Natural Gas*, ARS TECH. (Aug. 17, 2019, 8:45 AM), <https://arstechnica.com/science/2019/08/wind-power-prices-now-lower-than-the-cost-of-natural-gas/> [<https://perma.cc/3VEZ-8VNL>].

149. *Id.*

150. *Basic Economics of Power Generation, Transmission and Distribution*, PENN ST. (2018), <https://www.e-education.psu.edu/eme801/node/530> [<https://perma.cc/V9WZ-2EXF>] [hereinafter *Basic Economics*].

151. David Milborrow, *Energy Costs Analysis: Why Wind Broke Into the Mainstream in 2018*, WINDPOWERMONTHLY.COM (Feb. 1, 2019), <https://www.windpowermonthly.com/article/1523677/energy-costs-analysis-why-wind-broke-mainstream-2018> [<https://perma.cc/PFV4-8D7F>]; *Offshore Wind*, NREL (2019), https://atb.nrel.gov/electricity/2021/offshore_wind [<https://perma.cc/58ZT-FHCU>].

152. See von der Brellie, *supra* note 145.

be replaced. This cost of replacement, as opposed to new development, creates significant equity issues.

Consider the analogy to buying a car. A 2020 Chevrolet Bolt EV costs approximately \$36,620 and an Impala \$31,620.¹⁵³ When choosing between a Bolt and the Impala, it may be prudent to choose the Bolt in light of its fuel savings. But if I *already own* a car, buying a Chevrolet Bolt simply because it is an electric car makes less economic sense. This is particularly the case if the car that I own is paid off and in good working order. In that scenario, I incur a \$37,000 expense that I would not otherwise need to spend. Unless I drive a 1987 Dodge W250 at nine miles per gallon, the savings in fuel and operating costs may not justify the investment from an affordability perspective alone.¹⁵⁴

Relatedly, existing energy infrastructure also brings with it a fourth factor: *economic path dependence*. There is an economic infrastructure of service contractors that has developed around existing dominant forms of energy generation that could be displaced.¹⁵⁵ Consider again the car analogy. There is a whole economy built around traditional cars—think gas stations, car mechanics, but also trucking companies delivering fuel to gas stations, and so on. As of yet, there is not a similarly-sized infrastructure to support electric cars. Replacing one with the other on a large scale thus will inflict significant economic pain on industries, which developed around the traditional car, and require further outlays to provide a similar infrastructure to serve its replacement. Path dependence therefore creates a significant economic impact beyond the immediate question of which energy source is most affordable in its own right.

Finally, non-fossil-fuel-based energy solutions require *significant additional resources* and, in the case of nuclear power, involve independent environmental risks (with additional associated social costs). As one U.S. government report explains, “[w]ind and solar generation require at least 10 times as much land per unit of power

153. 2020 Chevrolet Bolt, U.S. NEWS (2019), <https://cars.usnews.com/cars-trucks/chevrolet/bolt> [<https://perma.cc/L89L-36D3>]; 2020 Chevrolet Impala, U.S. NEWS (2019), <https://cars.usnews.com/cars-trucks/chevrolet/impala> [<https://perma.cc/7CVG-7XSK>].

154. Jacob Black, *Worst Gas Guzzlers of All Time*, DRIVING (Apr. 23, 2019), <https://driving.ca/ford/features/feature-story/worst-gas-guzzlers-of-all-time> [<https://perma.cc/6UNF-DC97>].

155. For a report on the energy services sector, see ELIZABETH STUART ET AL., U.S. ENERGY SERVICE COMPANY (ESCO) INDUSTRY: RECENT MARKET TRENDS (2016), https://www.naesco.org/data/industryreports/esco_recent_market_trends_30sep2016.pdf [<https://perma.cc/25AB-KVQL>]. See also BALMACEDA, *supra* note 13, at 46 (discussing the role of legacy infrastructure for economic and energy development).

produced than coal- or natural gas-fired power plants.”¹⁵⁶ This land will then not be available for other agricultural use. Renewables are resource-intensive from this perspective, as well. Intuitively, we can only spend our resources once. A loss of a resource for one use (e.g., water is not available for agricultural use because it is used to clean solar panels in desert terrain after a sandstorm) will increase the cost of that resource (e.g., water)—and consequently for products and services that rely on that resource in their supply chain (e.g., crops).

When one considers all of these variables together, it is easy to see why it is so difficult to move away from traditional fossil fuel-based energy. There are significant cost factors involved to make the switch. Making the switch thus creates an affordability issue.

2. Why Energy Affordability Is an Equity Issue

How then does this affordability perspective create an equity problem? To insist on non-fossil energy generation would increase the price of energy as new, replacement facilities are brought online to substitute existing traditional ones.¹⁵⁷ Alternatively, existing generation capacity could simply be shut down and not replaced.¹⁵⁸ This would reduce available energy and increase its price. In theory, this reduction and resultant price increase would affect economies differently depending upon their current state of development and development policies.

a. Development and Energy

Indeed, increasing the price of energy and/or reducing the energy available to an economy would have a significant (if different) economic impact in post-industrial, industrial, and industrializing economies.¹⁵⁹ In industrializing economies, there is significant

156. Samantha Gross, *Renewables, Land Use, and Local Opposition in the United States*, BROOKINGS (Jan. 2020), https://www.brookings.edu/wp-content/uploads/2020/01/FP_20200113_renewables_land_use_local_opposition_gross.pdf [<https://perma.cc/9DQA-UM2G>].

157. BALMACEDA, *supra* note 13, at 116–18.

158. *Id.*

159. This is not to say that energy access in its own right leads to economic growth. *See* BANERJEE & DUFLO, *supra* note 13, at 186–88. What does matter is “*how* resources are used.” *Id.* at 200. This “*how*” means that energy is not a magic bullet in its own right. But if used correctly to support broader social and economic policies aimed at economic and social development, energy becomes a critical component without which development outcomes simply could not be achieved. *See* APPELBAUM, *supra* note 72, at 282–84 (2019); *see also*

evidence that industrialization increases energy consumption.¹⁶⁰ Logically, constraining energy supply (or significantly increasing its cost) would negatively impact the ability of economies *to* industrialize. It thus would directly impact the infrastructure footprint of those economies at the outset and may prevent industrialization (e.g., determine what physical plants, roads, transmission lines, etc. are built). This concern in particular motivated the differentiated treatment of industrializing non-Annex I countries in the original UNFCCC and Kyoto regimes, as discussed in the previous Section.¹⁶¹

Industrializing economies may have one unexpected competitive advantage: They may have less existing infrastructure to displace. These economies therefore may be at a point of building out their electric grid, premised upon a greater original share of renewables.¹⁶² Yet the greater capital costs of these renewable projects will still create headaches in their own right.¹⁶³

In industrial economies, increases in energy prices would meaningfully increase the operating costs exclusively for energy-intensive industries.¹⁶⁴ This facially looks like good news. A more searching look, however, reveals a deeper problem. Energy-intensive industries consist of food, pulp and paper, basic chemicals, refining,

DAVID SINGH GREWAL, NETWORK POWER, THE SOCIAL DYNAMICS OF GLOBALIZATION 147 (2008) (discussing the distributional advantages to insiders and early defectors of an earlier standard to a new standard that is about to become dominant). For purposes of this Section, I refer to economies that are still building up significant new industrial capacity as *industrializing* economies. I refer to economies such as China that have already achieved a significant industrial production footprint as *industrialized*. I use *post-industrial* economies to refer to economies that have lost such industrial capacity in the context of globalization and have replaced it with a service economy.

160. See, e.g., Perry Sadorsky, *The Effect of Urbanization and Industrialization on Energy Use in Emerging Economies: Implications for Sustainable Development*, 73 AM. J. ECON. & SOC'Y 392, 400 (2014).

161. Christopher D. Stone, *Common But Differentiated Responsibilities in International Law*, 98 AM. J. INT'L L. 276, 290–91 (2004); see also discussion *supra* Section II.A.1.a.

162. John A Matthews, *Developing Countries and the Renewable Energy Revolution*, OECD (May 17, 2016), <https://www.oecd.org/dev/developing-countries-and-the-renewable-energy-revolution.htm> [<https://perma.cc/5J2P-QQJR>]; see also BANERJEE & DUFLO, *supra* note 13, at 160 (“Finally, and this might be the hardest piece to wrap one’s head around, countries on the way to the balanced growth path could actually be upgrading their technologies faster than those already there.”).

163. *Basic Economics*, *supra* note 150.

164. Einar Hope & Balbir Singh, *Energy Price Increases in Developing Countries, Case Studies of Colombia, Ghana, Indonesia, Malaysia, Turkey, and Zimbabwe*, WORLD BANK POL'Y RSCH. P. NO. 1442, 1–2 (1995), http://documents1.worldbank.org/curated/en/511371468743974805/107507322_20041117141015/additional/multi-page.pdf [<https://perma.cc/TM88-Q6XU>].

iron and steel, nonferrous metals (aluminum, copper, and zinc), and nonmetallic minerals (cement and glass).¹⁶⁵ These energy-intensive industries—and particularly, the steel industry—are the symbolic drivers of globalization: Leading steel producers have changed completely in the last thirty-five years, to the benefit of China, and have changed further due to Indian competition, among other reasons.¹⁶⁶ In fact, these energy-intensive industries are in many ways the backbone of further, more sophisticated industrialization in transportation, heavy engineering, defense, and other sectors.¹⁶⁷ Energy-intensive industry thus has a special place, even in currently industrial (as opposed to industrializing) economies.

b. The Development Impact of Energy Price Increases

How then will increases in energy prices affect industrial economies? As already discussed, energy infrastructures in industrial economies are not created equal, with a potential benefit for second movers to later build a significant part of their energy infrastructure; such second movers may not need to *replace* recently-built fossil-fuel-based energy infrastructure, despite still facing debt burden on that infrastructure, but may expand with energy access immediately with renewables.¹⁶⁸ Global increases in energy prices due to environmental sustainability concerns therefore will not necessarily be evenly-distributed across economies. In the worst-case scenario, relative increases in energy prices in one market over another due to such infrastructure deficits may mean that such production would shift to even cheaper markets.¹⁶⁹ Alternatively, it could lead to consolidation and

165. U.S. ENERGY INFO. ADMIN., INTERNATIONAL ENERGY OUTLOOK 113 (2016), <https://www.eia.gov/outlooks/ieo/pdf/industrial.pdf> [<https://perma.cc/ZJP9-CRKA>].

166. *Iron and Steel Industry Report*, DELOITTE (2017), <https://www2.deloitte.com/am/en/pages/manufacturing/articles/iron-and-steel-industry-report.html> [<https://perma.cc/WX6T-PGU8>].

167. *Id.*

168. See *Whose Power Plans Are Greener: China or India?*, THEWIRE (May 14, 2017), <https://thewire.in/economy/whose-power-plans-greener-china-india> [<https://perma.cc/ZE5H-S349>] (discussing the advantage of Indian power plans over Chinese analogues). This second mover advantage does not apply to all second movers, as some states will face significant difficulty in adapting to new energy infrastructures due to a lack of existing economic development. Rather, this advantage applies to countries that caught economic wind in their sails at just the right time and therefore still have both market access to justify large scale industrial expansion and the choice as to which energy systems to rely upon while scaling up.

169. See Theodor Levitt, *The Globalization of Markets*, HARV. BUS. REV., May-June 1983, at 92, 94 (“With transportation costs proportionately low, distant competitors will enter

increased efficiencies in production processes to remain cost-competitive with cheaper markets, despite the structural energy price disadvantage.¹⁷⁰ This typically translates to reductions in the labor force in the name of increased efficiency.¹⁷¹ Such a move would further centralize proceeds from globalized production processes to an increasingly-narrower elite band, and undo much of the benefit of globalization and its creation of a middle class in industrializing economies.¹⁷²

In post-industrial societies, increases in energy costs are unlikely to affect industrial footprints or corporate profits.¹⁷³ Yet, in such societies, *households* can fare significantly worse.¹⁷⁴ Further, much of the brick-and-mortar small business sector operates on reasonably narrow profitability margins, with many restaurants operating at a five-percent margin.¹⁷⁵ Gig workers similarly would be at particular risk of such increases, due to the financial fragility associated with gig work.¹⁷⁶ Any long-term increase in energy costs is particularly concerning, as it would have the effect of driving many smaller brick-and-mortar businesses out of the marketplace, further endangering gig workers, and widening existing inequality gaps within post-industrial societies.

In all three broad categories of societies, energy affordability therefore is very much a question of social equity. Stable, cheap energy means that more of a certain kind of economic activity is possible. In industrializing economies, more industrialization is possible. In industrial economies, energy affordability supports greater wealth transfers to budding middle classes. In post-industrial societies, it means

the now-sheltered markets of those companies with goods produced more cheaply under scale-efficient conditions. Global competition spells the end of domestic territoriality, no matter how diminutive the territory may be.”).

170. *Id.*

171. *Halting the Exodus After a Layoff*, HARV. BUS. REV., May 2008, at 30.

172. DAVID PILLING, *THE GROWTH DELUSION: WEALTH, POVERTY, AND THE WELL-BEING OF NATIONS* 96 (2018); *see also* BANERJEE & DUFLO, *supra* note 13, at 64–65, 80 (discussing the distributional problems of economic transformation).

173. CONG. BUDGET OFF., *THE ECONOMIC EFFECTS OF RECENT INCREASES IN ENERGY PRICES* 5 (July 2006), <https://www.cbo.gov/system/files?file=2018-10/07-21-energy-dist.pdf> [<https://perma.cc/GU9C-2REP>].

174. *Id.*

175. Rob Starr, *What Is a Good Margin for a Small Business?*, SMALL BUS. TRENDS (Jan. 21, 2019), <https://smallbiztrends.com/2019/01/what-is-a-good-profit-margin.html> [<https://perma.cc/W7Q4-FVKF>].

176. Regina Borsellino, *Why the Gig Economy Doesn't Work*, INVESTORPLACE (Oct. 11, 2019, 10:10 AM), <https://investorplace.com/2019/10/why-the-gig-economy-i-work/> [<https://perma.cc/GT95-QMUX>].

that more people can participate in economic activity as independent business owners or individual entrepreneurs, since higher energy costs in slim-margin economic activities would otherwise significantly raise barriers to entry. To believe that social equity is a question of increasing means of access to the middle class is to believe that energy affordability is very much a question of energy equity.

There is nothing inherently controversial about energy equity. The international climate framework recognizes that environmental sustainability cannot come at the price of energy equity. A key achievement of the Copenhagen Accords and Paris Agreement was to impose obligations to combat climate change on all States, not just Annex 1 States.¹⁷⁷ But this agreement came at a (reasonable) price: financially able States must provide financing to assist the least developed States to meet their climate responsibilities.¹⁷⁸ Energy equity thus requires that the world community as a whole shoulder the burden of combating climate change, rather than leaving States to fend for themselves.

c. The Human Rights Dimension of Energy Equity

This logic of energy equity reaches beyond the international State-to-State interaction to the human rights level. Energy equity must protect the basic economic opportunity of world society. Communities have a collective right to their “own means of subsistence,” as the International Covenant of Economic, Social and Cultural Rights (ICESCR) spells out.¹⁷⁹ Under this agreement, each State is obligated to take steps towards “achieving progressively the full realization” of economic, social, and cultural rights “to the maximum of its available resources.”¹⁸⁰ This much is also reflected in the U.N. Sustainable Development Goals, beginning with the work of Prime Minister Brundtland in 1987 and continuing into today’s updated version of sustainable development goals in Agenda 2030.¹⁸¹

177. See ZAHAR, *supra* note 105, at 85–86 (discussing climate finance in the Copenhagen Accord); Rafael Leal-Arcas & Antonio Morelli, *The Resilience of the Paris Agreement: Negotiating and Implementing the Climate Regime*, 31 GEO. ENV’T L. REV. 1, 5 n.11 (2018) (discussing climate finance in the Paris Agreement).

178. ZAHAR, *supra* note 105, at 85–86.

179. International Covenant on Economic, Social and Cultural Rights art. 1(2), Dec. 16, 1966, 1966 U.S.T. 521, 993 U.N.T.S. 3 [hereinafter ICESCR].

180. *Id.* art. 2(1).

181. See BRUNDTLAND, *supra* note 29, ¶¶ 7.1–7.3; *Goal 7*, U.N. DEP’T OF ECON. & SOC. AFFS., <https://sdgs.un.org/goals/goal7> [<https://perma.cc/ZJV7-WVWS>].

While flexible, this obligation is importantly an obligation of result rather than conduct: It requires the *full* realization of the rights in question after taking progressive steps towards that end.¹⁸² These rights include the right to health, food, and education.¹⁸³ Centrally, these rights all depend upon the creation of a sufficient energy infrastructure to deliver healthcare, sustenance, and schooling, given how hospitals, food refrigeration, and STEM education all require electricity.¹⁸⁴ It is thus a State's obligation to provide an energy infrastructure capable of delivering these outcomes.¹⁸⁵

Just as importantly, these rights in question are inherently linked to rights to economic opportunity. These are individual, and not just collective, rights. They include the right of individual members of world society to work.¹⁸⁶ This right to work imposes on States the "principal obligation . . . to ensure the progressive realization of the exercise of the right to work."¹⁸⁷ This requirement means that States must "adopt, as quickly as possible, measures aiming at achieving full employment."¹⁸⁸ Given the centrality of energy policy to employment, affordable energy access is essential for the realization of the right to work, as well.¹⁸⁹ Furthermore, states must not destroy the conditions for persons to work in third States.¹⁹⁰

Practically, this means that energy systems (including energy systems designed to promote environmental sustainability) cannot become a boon to rent-seekers domestically or transnationally. Rent-seeking is the "use of the public sector to reallocate property rights to the benefit of a particular interest—that is directed towards a single

182. DESIERTO, *supra* note 29, at 75.

183. ICESCR, *supra* note 179, arts. 11–13.

184. See BANERJEE & DUFLO, *supra* note 13, at 221 ("[F]or most Indians, additional consumption and additional energy consumption in particular is not a luxury. The very energy low consumption in rural India today is due to a mode of existence that is often unpleasant and dangerous.").

185. ICESCR, *supra* note 179, art. 2(1).

186. *Id.* art. 6.

187. CESCR, *General Comment No. 18, The Right to Work: Article 6 of the International Covenant on Economic, Social and Cultural Rights*, ¶ 19, U.N. Doc. E/C.12/GC/18 (Feb. 6, 2006).

188. *Id.* This is a matter of more than securing subsistence and is tied inherently to human dignity. See BANERJEE & DUFLO, *supra* note 13, at 122.

189. For a similar discussion in a slightly different context, see Stephen Tully, *The Contribution of Human Rights to Universal Energy Access*, 4 NW. J. INT'L HUM. RTS. 518, 524–31 (2006).

190. DESIERTO, *supra* note 29, at 266 (discussing ICESCR, art. 6 and CESCR, General Comment No. 18).

family, tribe, region, or ethnic group.”¹⁹¹ This rent-seeking behavior is well-documented, for example, in the traditional energy value chains between Russian source markets and European end markets, and is particularly pronounced in Ukraine.¹⁹² The energy sector is notorious for rent-seeking opportunities because certain companies (e.g., utilities) frequently have a monopoly position in energy generation as well as energy distribution, and there is often a close connection between the government and energy generation and distribution.¹⁹³ But renewables pose much of the same problem (and perhaps greater problems) when compared to traditional energy value chains.¹⁹⁴ Such rent-seeking is deeply problematic as a matter of human rights compliance, as rent-seekers use State resources for the enrichment of relatively few, thereby diminishing the resources available to the general public.¹⁹⁵

Similarly, environmentally sustainable energy systems also cannot become a cudgel for technologically advanced States to disadvantage technologically less capable States without violating the human rights in question.¹⁹⁶ This problem is currently on full display in

191. FRANCIS FUKUYAMA, *STATE BUILDING: GOVERNANCE AND WORLD ORDER IN THE TWENTY-FIRST CENTURY* 37 (2004).

192. See BALMACEDA, *supra* note 13, at 38, 209–11.

193. See *id.*

194. See generally Tae-hyeong Kwon, *Rent and Rent-Seeking in Renewable Energy Support Policies: Feed-in Tariff vs. Renewable Portfolio Standards*, 44 RENEWABLE & SUSTAINABLE ENERGY REVS. 676 (2015). For a study on rent-seeking in the Spanish renewables sector, see generally Victor Espinosa et al., *The Political Economy of Rent-Seeking: Evidence from Spain's Support Policies for Renewable Energy*, 14 ENERGIES 4197 (2021). For the reader adamantly following the footnotes, this is the same sector at issue in the withdrawal by E.U. Member States from bilateral investment treaties. See *supra* note 50 and accompanying text. Notably, rent-seeking behavior by investors in the renewables market would likely have been a defense to claims brought by renewables investors on the merits (i.e., it is unlikely that I can make out a reasonable investment-backed expectation to rent-see, given the lack of productivity of my activity), on quantum (i.e., it is unlikely that I would be awarded an unreasonable return on investment), and on jurisdiction (i.e., rent-seeking behavior is frequently associated with corruption). To say that E.U. Member States should not withdraw from BITs therefore emphatically does not support the conclusion that such Member States would automatically lose every case. Rather, the fight will focus on specifics in each dispute, such as the specific representations made by the State and the reasonableness of investor reliance on those representations.

195. See DESIERTO, *supra* note 29, at 131. On the importance of avoiding rent-seeking through a development lens, see John Mukum Mbaku, *Providing A Foundation for Wealth Creation and Development in Africa: The Role of the Rule of Law*, 38 BROOK. J. INT'L L. 959, 981 (2013). Interestingly, such rent-seeking is also inapposite to the (goals of the) free trade architecture of Washington Consensus institutions. See Ernst-Ulrich Petersmann, *Constitutionalism and International Organizations*, 17 NW. J. INT'L L. & BUS. 398, 436 (1997).

196. See ZAHAR, *supra* note 105, at 6–7.

a different context: the European Union's refusal to grant a TRIPS waiver for COVID-19 vaccines.¹⁹⁷ This roadblock to the free use of technological resources is fundamentally inconsistent with basic human rights, such as the right to life.¹⁹⁸ But the same problem is already recurring in the energy sector, as well. Here, it is the race to exclude States such as India from developing a competing domestic renewables industry (to thus compete with Western companies), while also imposing carbon border adjustments under the guise of climate change mitigation in a way that is deeply worrisome.¹⁹⁹ This, too, is problematic from a human rights perspective for the same reason as rent-seeking: here, the rent-seekers are technologically advanced States who act with callous disregard for the life, health, and welfare of people in developing States.²⁰⁰

At the same time, we must take seriously the climate change threat, as that threat, too, can destroy the foundations of economic life. Energy equity does not overrule environmental sustainability for the simple reason that environmental sustainability will begin to erode energy equity over time.²⁰¹ Fitting of the trilemma relationship between energy equity, environmental sustainability, and energy security, these concerns stand side-by-side, even if they practically have to be addressed sequentially, as we will discuss below.

To respect human rights, in other words, is to respect energy equity *and* environmental sustainability. Where they conflict, States are obligated to create new economic opportunities by protecting individuals against preventable environmental harm. They cannot choose one or the other. This tightrope is already part and parcel of the international climate regime. But to fully realize its potential, it must be incorporated not just in the climate regime, but also in a broader international energy regime.

197. See, e.g., Diane Desierto, *Equitable COVID Vaccine Distribution and Access: Enforcing International Legal Obligations under Economic, Social, and Cultural Rights and the Right to Development*, EJIL:TALK! (Feb. 2, 2021), <https://www.ejiltalk.org/equitable-covid-vaccine-distribution-and-access-enforcing-international-legal-obligations-under-economic-social-and-cultural-rights-and-the-right-to-development> [<https://perma.cc/4EJV-8CXS>].

198. *Id.*

199. See MARHOLD, *supra* note 29, at 252–57.

200. See DESIERTO, *supra* note 29, at 131.

201. Lars Löfquist, *Is There a Universal Human Right to Electricity?*, 24 INT'L J. HUM. RTS. 711, 717–19 (2020); Tully, *supra* note 189, at 530–31.

C. Energy Security

The last part of the energy trilemma is energy security. Energy security covers a broad range of sins, as this Section will discuss.²⁰² At heart, however, energy security concerns the question as to whether energy can reliably be delivered to those who need it, when they need it.²⁰³ There are many reasons that such a delivery of energy could be threatened, from the mundane (e.g., weather) to the nefarious (e.g., war and embargo).²⁰⁴ Each of these concerns may look different on their face—after all, what do technical questions of energy generation in poor weather have in common with geopolitical confrontations? Yet, from an energy perspective, these concerns all have the same effect: they threaten the secure, or predictable, coverage of social energy needs.

1. The Intermittence Problem

Beginning with the mundane, renewable energy has a technical problem that the combustion of fossil fuels does not. Wind power depends upon the wind to blow. Solar power depends on the sun to shine. These are natural phenomena, over which we have only a limited degree of control. If society shifts entirely to renewables for its energy needs, it therefore has to solve the problem that the “fuel” to generate electricity can become unavailable. This problem is known as “the intermitten[ce] problem.”²⁰⁵

One way in which the intermittence problem pits energy security as an ally of energy equity against environmental sustainability is in the context of a focus on energy mixes. Many environmental sustainability advocates demand a complete and quick abandonment of all fossil fuel consumption.²⁰⁶ This demand runs into the intermittence

202. Daniel Yergin, *Ensuring Energy Security*, 85 FOREIGN AFFS. 69, 69–78 (2006).

203. *See id.* at 78 (“Today, the concept of energy security needs to be expanded to include the protection of the entire energy supply chain and infrastructure—an awesome task.”).

204. *Id.* at 69–74.

205. M.R. Anisur et al., *Latent Heat Thermal Storage (LHTS) for Energy Sustainability*, in ENERGY SUSTAINABILITY THROUGH GREEN ENERGY 245, 246 (Atul Sharma & Sanjay Kar eds., 2015). This problem applies differently depending upon the resource. It obviously does not apply to nuclear power. And it is less of an issue with hydropower (though droughts will create significant issues) and geo-thermal.

206. *See, e.g.*, Tim Donaghy, *8 Reasons Why We Need to Phase Out Fossil Fuels*, GREENPEACE (Nov. 22, 2021), <https://www.greenpeace.org/usa/research/8-reasons-why-we-need-to-phase-out-the-fossil-fuel-industry/> [<https://perma.cc/98A7-KX7Z>].

problem.²⁰⁷ One might solve this problem through better energy storage, such as better battery power or the use of electrolysis to transform electricity into hydrogen to be burned in hydrogen power plants—a process producing water, rather than CO₂.²⁰⁸ The problem is that both of these means of solving the intermittence problem are costly; they require batteries or hydrogen plants to work.²⁰⁹

Thus, the far and away cheaper means to solve the intermittence problem is by continuing to rely on existing gas-fired power plants as part of the energy mix.²¹⁰ As burning gas is not dependent upon any external conditions, one can reliably use gas as a fuel.²¹¹

2. Supply Chain Issues

A second energy security consideration concerns short and reliable supply lines of materials needed to generate energy. The COVID-19 pandemic brought the general public's attention to such supply chain issues—the longer the chain, the more fragile that supply could become.²¹² Further, secure supply chains require reliable and efficient infrastructure to deliver needed materials, even in times of economic or environmental stress.²¹³ For example, there was a risk of a meat shortage around the world during the pandemic, even in meat-

207. Anisur, *supra* note 205, at 246.

208. *Intermittent Energy Resources and Battery Storage*, BONNEVILLE POWER ADMIN., <https://www.bpa.gov/EE/Technology/demand-response/Pages/intermittent-renewable-energy.aspx> [<https://perma.cc/K82Y-QTGE>]; Sean O'Neil, *Unlocking the Potential of Hydrogen Energy Storage*, FUEL CELL & HYDROGEN ENERGY ASS'N (July 22, 2019), <http://www.fchea.org/in-transition/2019/7/22/unlocking-the-potential-of-hydrogen-energy-storage> [<https://perma.cc/9KZZ-WC38>].

209. See *supra* note 208 and accompanying text.

210. See Chris Mooney, *Turns Out Wind and Solar Have a Secret Friend: Natural Gas*, WASH. POST (Aug. 11, 2016), <https://www.washingtonpost.com/news/energy-environment/wp/2016/08/11/turns-out-wind-and-solar-have-a-secret-friend-natural-gas> [<https://perma.cc/98W5-GVJ7>].

211. *Id.*

212. See, e.g., Amish Thakker & Sri Rajan, *Covid-19 Exposed the Fragility of Global Supply Chains*, BAIN & CO. (Oct. 14, 2020), <https://www.bain.com/insights/covid-19-exposed-the-fragility-of-global-supply-chains-snap-chart> [<https://perma.cc/G3D9-45LL>].

213. See Charles Fallon, *Infrastructure: Supply Chain's Missing Link*, SUPPLY CHAIN Q. (Mar. 6, 2015), <https://www.supplychainquarterly.com/articles/947-infrastructure-supply-chain-s-missing-link> [<https://perma.cc/52GF-7XBJ>].

producing countries.²¹⁴ The reason for this potential shortage was that working conditions at meat processing plants made these plants particularly susceptible to spread the virus.²¹⁵ This kind of a supply chain issue was thus detrimental to “meat security,” even in the context of local production.²¹⁶

Two key factors for this energy security concern are the availability of fuel supply and the ability to run energy facilities without interruption. In the United States, there is a ready supply of natural gas.²¹⁷ This ready supply means that reliance upon natural gas increases U.S. energy security.²¹⁸ As a result, it is currently unlikely that the United States will run into energy insecurity due to the unavailability of natural gas.²¹⁹ In China, on the other hand, coal is a feedstock that is more readily at hand.²²⁰ Thus, in China, energy security concerns are more likely to favor coal over gas.²²¹

In addition, the fact that there is a secure supply of fuel (e.g., gas, coal, sun, or wind) does not mean that the *energy* supply is secure.

214. Melissa Repko & Amelia Lucas, *The Meat Supply Chain Is Broken*, CNBC (May 7, 2020, 3:39 PM), <https://www.cnn.com/2020/05/07/heres-why-meat-shortages-are-likely-to-last-during-the-pandemic.html> [<https://perma.cc/HKM7-5ZYL>].

215. *Id.*

216. *Id.*

217. Jude Clemente, *U.S. Natural Gas Reserves Continue To Soar*, FORBES (Oct. 6, 2019, 7:22 PM), <https://www.forbes.com/sites/judeclemente/2019/10/06/u-s-natural-gas-reserves-continue-to-soar/?sh=5c56f3991b13> [<https://perma.cc/2SRJ-YNLR>].

218. U.S. DEP’T ENERGY, U.S. OIL AND NATURAL GAS: PROVIDING ENERGY SECURITY AND SUPPORTING OUR QUALITY OF LIFE 4 (2020), <https://www.energy.gov/sites/prod/files/2020/10/f79/Natural%20Gas%20Benefits%20Report.pdf> [<https://perma.cc/SZ26-U6P5>].

219. *Id.*

220. See Vanand Meliksetian, *China Believes Natural Gas Demand Will Soar*, OILPRICE.COM (Oct. 29, 2020), <https://oilprice.com/Energy/Energy-General/China-Believes-Natural-Gas-Demand-Will-Soar.html> [<https://perma.cc/92UW-D4NE>] (“China’s fossil fuel companies have not been able to match the country’s economic growth, meaning dependency on foreign producers has become a reality.”); *How Is China’s Energy Footprint Changing?*, CTR. STRATEGIC & INT’L STUD.: CHINA POWER (Mar. 17, 2022), <https://chinapower.csis.org/energy-footprint> [<https://perma.cc/9N84-ZZ5Q>] [hereinafter *CSIS Study*] (discussing China’s ability to cover coal demand from domestic production and neighboring states).

221. *CSIS Study*, *supra* note 220. For China’s position on coal in its energy mix at COP26, see *China Resists COP26 Push to End Coal as Energy Security Prevails*, BLOOMBERG (Nov. 12, 2021, 5:13 AM), <https://www.bloomberg.com/news/articles/2021-11-11/china-won-t-support-cop26-push-to-end-coal-upgrade-goals-early> [<https://perma.cc/UZ5E-KRUF>]. The reliance on coal is energy security driven. See, e.g., Keith Bradsher, *China Hurries to Burn More Coal, Putting Climate Goals at Risk*, N.Y. TIMES (Oct. 28, 2021), <https://www.nytimes.com/2021/10/28/business/energy-environment/china-coal-climate.html> [<https://perma.cc/RV2J-UAVV>].

The *generation* of energy must be secure in its own right.²²² This kind of energy security could be threatened when energy generation requires a type of technical expertise that is less common in a particular economy.²²³ This situation can militate in favor of using older technologies, as there will frequently be more individuals who are able to operate and maintain such plants.²²⁴ Further, this scenario implies that energy security could be endangered when components for the physical plant are difficult to replace. For example, there is no lack of sunshine in the Sahara Desert. Getting solar panels to the desert, and maintaining them there, is another matter entirely.²²⁵ Both of these factors again encourage using fossil fuel as a feedstock for energy generation. There is not only a ready supply of fossil fuels, but there is also a reasonably large, experienced workforce to operate energy generation in this manner.²²⁶ And due to the maturity of the marketplace, components of such energy generation are also comparatively easy to handle.²²⁷

3. Geopolitics

The third factor in energy security is geopolitics. For example, in 1973, Arab Gulf States sought to use their access to oil and gas as a means to put pressure on the West by denying them needed supplies.²²⁸ Such a risk remains today, be it in a different guise. In today's scenario, China has acquired control over nearly all of global rare earth

222. Consider again the problem of meat processing plants in the pandemic—the problem was not the availability of animals, but how to process and distribute them. See Repko & Lucas, *supra* note 214.

223. See BRUCE G. MILLER, CLEAN COAL ENGINEERING TECHNOLOGY 757–74 (2d ed. 2017) (discussing the link between energy technology/infrastructure and energy security).

224. See EUR. UNION SIXTH FRAMEWORK PROGRAMME, PROMOTING SUSTAINABLE ENERGY TECHNOLOGY TRANSFERS THROUGH THE CDM: CONVERTING FROM A THEORETICAL CONCEPT TO PRACTICAL ACTION 113 (2007), https://jin.ngo/images/jin/publications/ENTTRANS_final_report.pdf [<https://perma.cc/TCX3-8QJB>] (recognizing this problem in the context of technology transfer obligations under the UNFCCC regime).

225. Dave Levitan, *Is Anything Stopping a Truly Massive Build-Out of Desert Solar Power?*, SCI. AM. (July 1, 2013), <https://www.scientificamerican.com/article/challenges-for-desert-solar-power> [<https://perma.cc/6PFH-B87W>].

226. See MILLER, *supra* note 223, at 757–74.

227. See *id.*

228. Yergin, *supra* note 202, at 71.

stocks.²²⁹ These minerals are needed for computer chips.²³⁰ Furthermore, they are needed to build solar panels and wind turbines.²³¹ Denying access to rare earths therefore could create an energy problem for economies that are overly-reliant upon energy infrastructure and possess a significant need for this raw material.²³² Moreover, Pacific shipping lanes traverse the South China Sea.²³³ These shipping lanes are responsible for a great deal of global supplies of all kinds of raw materials.²³⁴ Today, China militarily threatens the South China Sea, frequently in violation of international law.²³⁵ This is a geopolitical threat to energy security because it imperils many key supply lines.²³⁶ It thus heightens the imperative to shorten supply lines away from Pacific shipping lanes. Other examples abound (consider Russia's geopolitical use of gas-resources).²³⁷ Energy transition has the potential

229. June Teufel Dreyer, *China's Monopoly on Rare Earth Elements—And Why We Should Care*, FOREIGN POL'Y RSCH. INST. (Oct. 7, 2020), <https://www.fpri.org/article/2020/10/chinas-monopoly-on-rare-earth-elements-and-why-we-should-care> [<https://perma.cc/AJ4H-JC56>].

230. *Explainer: China's Rare Earth Supplies Could Be Vital Bargaining Chip in U.S. Trade War*, REUTERS (May 30, 2019, 1:25 AM), <https://www.reuters.com/article/us-usa-china-rareearth-explainer/explainer-chinas-rare-earth-supplies-could-be-vital-bargaining-chip-in-u-s-trade-war-idUSKCN1T00EK> [<https://perma.cc/WD5S-TMX4>] [hereinafter *Explainer*].

231. UGRANATH CHAKARVARTY, INT'L ASS'N FOR ENERGY ECON., RENEWABLE ENERGY MATERIALS SUPPLY IMPLICATIONS 37, 38 (2018), <https://www.iaee.org/en/publications/full-newsletter.aspx?id=48> [<https://perma.cc/94AN-J6DH>] (“A key feature of renewables is the usage of rare earth metals. These metals are critical to the renewable energy technology manufacturing value chain.”).

232. See Dreyer, *supra* note 229; *Explainer*, *supra* note 230.

233. See *How Much Trade Transits the South China Sea?*, CTR. STRATEGIC & INT'L STUD.: CHINA POWER (Jan. 25, 2021), <https://chinapower.csis.org/much-trade-transits-south-china-sea> [<https://perma.cc/X3NW-NT7A>] (“[T]he South China Sea [is] carrying an estimated one-third of global shipping.”).

234. *Id.*

235. See generally Diane A. Desierto, *China's Maritime Law Enforcement Activities in the South China Sea*, 96 INT'L L. STUD. 257 (2020).

236. See *id.* at 259–60.

237. BALMACEDA, *supra* note 13, at 220. Indeed, Russia's 2022 invasion of Ukraine underscores this point. See, e.g., Frédéric G. Sourgens, *Energy Lessons from the Ukraine Crisis*, EJILTALK! (Feb. 24, 2022), <https://www.ejiltalk.org/energy-lessons-from-the-ukraine-crisis> [<https://perma.cc/3UTZ-9TCT>]; Mark Thompson & Chris Liakos, *Russia Raises Stakes in Energy Standoff by Insisting on Rubles for Gas*, CNN BUS. (Mar. 31, 2022, 1:21 PM), <https://www.cnn.com/2022/03/31/energy/russia-gas-ruble-standoff/index.html> [<https://perma.cc/Q65R-QPWN>].

to heighten these geopolitical pressures in the short-to-medium term.²³⁸

4. Commercial Stability

The fourth factor of energy security, and one of its main support beams, is global commercial stability.²³⁹ The buzzword used to capture the policy program to further such global commercial stability is “liberalization.”²⁴⁰ The idea behind liberalization of energy markets is that, the greater the global commercial stability, the more efficient and secure global supply chains become, as commercially-stable transactions help to reduce supply risk.²⁴¹ Under this logic, local availability of particular goods and services becomes less important.²⁴² Of course, harnessing market power through liberalization is not the only concern, and in fact must be combined with other energy security factors. But global commercial stability alone could already significantly reduce energy security pressures in favor of the use of coal in China: They, theoretically at least, make available reliable feedstocks of natural gas at a low and predictable price at a minimum.²⁴³

Currently, there is a comparatively high degree of global commercial stability.²⁴⁴ This is the direct result of the legal infrastructure

238. Jason Bordoff & Meghan L. O’Sullivan, *Green Upheaval: The New Geopolitics of Energy*, FOREIGN AFFS. (Jan./Feb. 2022), <https://www.foreignaffairs.com/articles/world/2021-11-30/geopolitics-energy-green-upheaval> [<https://perma.cc/52NC-T8DE>].

239. See ENERGY CHARTER SECRETARIAT, INTERNATIONAL ENERGY SECURITY: COMMON CONCEPT FOR ENERGY PRODUCING, CONSUMING AND TRANSIT COUNTRIES 10 (2015), https://www.energycharter.org/fileadmin/DocumentsMedia/Thematic/International_Energy_Security_2015_en.pdf [<https://perma.cc/FL6H-B9QQ>] [hereinafter ENERGY CHARTER CONCEPT].

240. See Kenneth J. Vandavelde, *Investment Liberalization and Economic Development: The Role of Bilateral Investment Treaties*, 36 COLUM. J. TRANSNAT’L L. 501, 504–05 (1998).

241. See ENERGY CHARTER CONCEPT, *supra* note 239, at 11–12; ANATOLE BOUTE, ENERGY SECURITY ALONG THE NEW SILK ROAD: ENERGY LAW AND GEOPOLITICS IN CENTRAL ASIA 8 (2019).

242. ENERGY CHARTER CONCEPT, *supra* note 239; see also Ole Gunnar Austvik, *EU Natural Gas Market Liberalization and Long-term Security-of-Supply and Demand*, in POLITICAL ECONOMY OF ENERGY IN EUROPE: FORCES OF INTEGRATION AND FRAGMENTATION 85–118 (Gunnar Fermann ed., 2009).

243. Giulia Romano et al., *Gas in China’s Energy Security Strategy: Threat of a New Form of Dependency?*, in CHINA’S ENERGY SECURITY: A MULTIDIMENSIONAL PERSPECTIVE 46, 64 (Giulia Romano & Jean-Francois Di Meglio eds., 2016).

244. See KLAUS PETER BERGER, THE CREEPING CODIFICATION OF THE LEX MERCATORIA 41–42 (2d ed. 2010); see also JESWALD W. SALACUSE, THE THREE LAWS OF INTERNATIONAL

supporting globalization.²⁴⁵ As critics of globalization begin to dismantle this legal infrastructure, however, they will compromise global commercial stability.²⁴⁶ This, in turn, will have a negative impact on energy security.

But even with maximum global commercial stability, it is simply not prudent to rely upon one source of energy to the exclusion of others. It is for this reason that energy security always encourages an energy *mix*.²⁴⁷ Such an energy mix may well be inefficient and increase capital cost.²⁴⁸ In fact, redundancy is the very point of having an energy mix—redundancy in the mix secures against unanticipated shortfalls in another part of the energy mix.²⁴⁹ This inefficiency increases the cost point of the energy infrastructure but makes it more resilient.²⁵⁰

Insistence upon an energy mix thus also counsels against the complete elimination of fossil fuels at this point. It is one thing to replace coal with gas and renewables; in fact, this is very much taking place in Europe and the United States already.²⁵¹ But it is another to seek to totally displace oil and gas, as well as coal. As it currently

INVESTMENT: NATIONAL, CONTRACTUAL, AND INTERNATIONAL FRAMEWORKS FOR FOREIGN CAPITAL 137–39 (2013).

245. See *supra* note 244 and accompanying text.

246. See discussion *supra* Part I.

247. ENERGY CHARTER CONCEPT, *supra* note 239, at 21.

248. See Richard Morningstar et al., *European Energy Diversification: How Alternative Sources, Routes, and Clean Technologies Can Bolster Energy Security and Decarbonization*, ATL. COUNCIL (Jan. 9, 2020), <https://www.atlanticcouncil.org/in-depth-research-reports/issue-brief/european-energy-diversification-how-alternative-sources-and-routes-can-bolster-energy-security-and-decarbonization> [<https://perma.cc/JM5C-DBFK>] (discussing the capital costs of energy diversification in Europe).

249. Ali Kharrazi et al., *Redundancy, Diversity, and Modularity in Network Resilience: Applications for International Trade and Implications for Public Policy*, 2 CURRENT RSCH. ENV'T SUSTAINABILITY (2020), <https://www.sciencedirect.com/science/article/pii/S2666049020300049/pdf?md5=5130ffbb45bed1a96dc95b5ec1b5567d&pid=1-s2.0-S2666049020300049-main.pdf> [<https://perma.cc/3GEQ-ADXC>].

250. *Id.* Depending on the scale of the cost increase, this reliance increase may well be consistent with equity concerns, where, for instance, the cost of resilience is less than the anticipated loss from energy shortfalls. It is only when the cost of resilience significantly exceeds the anticipated loss from energy shortfalls that energy security concerns would start to become inconsistent with energy equity concerns.

251. See Morningstar, *supra* note 248 (discussing Europe); Justine Calma, *Wind and Solar Energy Is Steadily Replacing Coal, But Not Fast Enough*, THE VERGE (Aug. 13, 2020, 11:27 AM), <https://www.theverge.com/2020/8/13/21366373/wind-solar-power-electricity-doubled-paris-climate-change-agreement> [<https://perma.cc/WK4G-PYTN>] (discussing the United States).

stands, such a move would prove reckless from an energy security perspective: It would require a massive investment in energy storage solutions.²⁵² We do not yet know whether any such storage approaches can be brought to the scale needed to replace gas.²⁵³ Such storage would be required for wind and solar energy.²⁵⁴ Consequently, wind and solar are not themselves diversified, as they rely critically upon the same energy infrastructure component: storage. Until the energy storage problem can itself be diversified, it is therefore anathema to energy security to displace fossil fuel in energy generation entirely. And at this point, such diversification is still futuristic.²⁵⁵

This need for continued reliance on gas is borne out by energy projections. The World Energy Outlook published by the International Energy Agency in October 2020 predicts that, following its stated-policies-scenario, the place of natural gas in electricity generation will decrease significantly in the next twenty years by forty-one percent.²⁵⁶ But this still leaves fifty-nine percent of today's natural gas generation capacity in place in the energy mix.²⁵⁷ Notably, this projection assumes that today's policy settings will in fact be fully implemented.²⁵⁸ It thus represents an optimal scenario where States actually attain their environmental sustainability goals.

It is in this sense that energy security is a second powerful counterweight to environmental sustainability in the energy trilemma. Even in the face of globally-secure markets and in the absence of geopolitical strife, energy security inhibits over-reliance on a single source of energy. Conditions today are far from ideal on both fronts. Thus, energy security advocates more forcefully for continued reliance on fossil fuels, unless energy security concerns can be meaningfully addressed by the legal infrastructure driving environmental sustainability.

252. See, e.g., Ivan Penn, *The Next Energy Battle: Renewables vs. Natural Gas*, N.Y. TIMES (July 6, 2020), <https://www.nytimes.com/2020/07/06/business/energy-environment/renewable-energy-natural-gas.html> [<https://perma.cc/ZKV9-LUEE>].

253. Kate Gibson, *Mix of Mechanical and Thermal Energy Storage Seen as Best Bet to Enable More Wind and Solar Power*, STAN. UNIV. PRECOURT INST. FOR ENERGY (June 30, 2020), <https://energy.stanford.edu/news/mix-mechanical-thermal-energy-storage-may-be-best-bet-enable-more-wind-and-solar> [<https://perma.cc/XP5R-DWUS>].

254. Penn, *supra* note 252.

255. See Gibson, *supra* note 253 (discussing theoretical research).

256. *World Energy Outlook: Outlook for Electricity*, INT'L ENERGY AGENCY (Oct. 2020), <https://www.iea.org/reports/world-energy-outlook-2020/outlook-for-electricity#abstract> [<https://perma.cc/5STZ-AQJH>].

257. *Id.*

258. *Id.*

III. THE ENERGY TRILEMMA AS A GLOBAL COMMONS PROBLEM

How then can we resolve the energy trilemma? A natural starting place is that we somehow must balance the three limbs of the trilemma against each other to satisfy the legitimate concerns of each. But balancing is easier said than done. *How* do we balance these limbs?

As we will see in this Part, we can find inspiration for this “how” in commons governance approaches. This starting point is not particularly novel.²⁵⁹ It has become somewhat fashionable to describe climate action—or more precisely, the lack thereof—as a *climate commons problem*.²⁶⁰ One popular reason to analyze international environmental problems, including climate change, by reference to commons is to invoke the so-called “tragedy of the commons,” or the destruction of shared resources by self-centered over-exploitation.²⁶¹ The point of this discussion is to highlight the collective action problem for climate action.²⁶² Other discussions go further and analyze climate as a true commons (that is, a common pool resource).²⁶³ But again, the focus here is on *climate* or, more broadly, the environment as a resource.²⁶⁴

Given the discussion of the energy trilemma so far, one is tempted to ask: Is this not the wrong commons? What if instead of a climate commons, we were dealing with a *global energy commons*?²⁶⁵ Climate action and environmental sustainability would of course be an important part of this energy commons problem.²⁶⁶ But it is not the

259. See, e.g., Scott Shackelford, *The Future of Frontiers*, 23 LEWIS & CLARK L. REV. 1331, 1370–74 (2019); Friedrich Soltau, *Common Concern of Humankind*, in OXFORD HANDBOOK OF INT’L CLIMATE CHANGE L. 202, 203 (Cinnamon Carlarne et al. eds., 2016); BODANSKY ET AL., *supra* note 81, at 40.

260. See *supra* note 259 and accompanying text.

261. Jutta Brunnée, *Common Areas, Common Heritage, and Common Concern*, in OXFORD HANDBOOK OF INT’L ENV’T L. 550, 557 (Daniel Bodansky et al. eds., 2008).

262. HARI OSOFSKI & LESLEY MCALLISTER, CLIMATE CHANGE LAW AND POLICY 262–63 (2012).

263. See, e.g., Angela Kallhoff, *Addressing the Commons: Normative Approaches to Common Pool Resources*, in CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT: ETHICAL PERSPECTIVES ON LAND USE AND FOOD PRODUCTION 63, 63–67 (Thomas Potthast & Simon Meisch eds., 2012).

264. *Id.*

265. See generally Cristina Acosta et al., *Facilitating Energy Transition through Energy Commons: An Application of Socio-Ecological Systems Framework for Integrated Community Energy Systems*, 10 SUSTAINABILITY 366 (2018).

266. *Id.* at 379.

only part of this commons, and the commons governance problem cannot be overcome, at all, if all one wishes to address is climate change, as opposed to the trilemma as a whole.

If this suggestion is right, the consequences would be rather significant. It would move the international response to climate change out of its current predominant home in international *environmental law*.²⁶⁷ To solve climate change instead requires something somewhat more complex: It requires one to support a new global *energy* order. But as energy is not produced or consumed for its own sake, what is needed is a new global *economic development* order.²⁶⁸ It is here that international climate law simply cannot be divorced from international economic law. The Paris Agreement and the Washington Consensus must find a way to support each other or otherwise perish together.

To test this hypothesis, this Part first defines what a “commons” is. It then compares whether this commons lens can be applied to our energy trilemma. It concludes that it, in fact, can, going further to offer a way to understand the balance between the three limbs of the trilemma. Part IV then uses the commons governance literature to suggest how such a balance can be struck and how existing Washington Consensus institutions can support this balance.

A. *What’s in a Commons?*

Commons pool resources. Pastures are one well-known commons example,²⁶⁹ insofar as they do not belong to any one farmer.²⁷⁰ Rather, the pasture is used by the entire community, without there being clear title held by any one of its members.²⁷¹ If community

267. See PHILIPPE SANDS ET AL., *PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW* 295–318 (4th ed. 2018) (discussing the climate change regime as part of international environmental law).

268. See Development Convention, *supra* note 29. This need for reform has recently been highlighted by the Special Rapporteur for the Development Convention. See Diane Desierto, *International Economic Law in a Time of Global Perils: Omicron and Other COVID Variants, Climate Change, Human Rights, and Development*, EJIL:TALK! (Nov. 29, 2021), <https://www.ejiltalk.org/international-economic-law-in-a-time-of-global-perils-omicron-and-other-covid-variants-climate-change-human-rights-and-development> [<https://perma.cc/D63L-Y8M8>]. For further discussion on how this argument overlaps with the sustainable development movement and Agenda 2030, see also *supra* note 29 and accompanying text.

269. See generally Garrett Hardin, *The Tragedy of the Commons*, 162 SCI. 1243 (1968).

270. *Id.*

271. FRANCIS FUKUYAMA, *THE ORIGINS OF POLITICAL ORDER: FROM PREHUMAN TIMES TO THE FRENCH REVOLUTION* 66–69 (2011).

members overuse the pooled resource out of competitive self-interest, such use becomes unsustainable, destroying the commons in the process. Put differently, overgrazing destroys the pasture.²⁷²

This classic economics example is somewhat ahistorical. It assumes that farmers act as economically self-interested individuals.²⁷³ But this is not how traditional commons formed.²⁷⁴ Rather, the shared use of pooled resources was originally embedded in the social web of kinship and religious tradition.²⁷⁵ It was, in fact, the very introduction of economic self-interest and questions of modern alienability of title that created the tragedy of the commons by undermining pre-existing authority structures that governed collective use.²⁷⁶ Here, the question is not so much what do I own, but how may I use the commons?

It is equally wrongfooted to shrug off commons as tribal or primitive and easily remediable by means of modern property law. One central example here is water.²⁷⁷ Water is pooled because members of the same community rely upon the same source of groundwater.²⁷⁸ Communities can overuse groundwater by removing so much water that groundwater reservoirs physically collapse.²⁷⁹ Once this happens, all current users lose their source of water. Groundwater access thus replicates the tragedy of the commons.²⁸⁰

What differentiates groundwater rights from supposedly primitive forms of property holdings is that individuals and municipalities today have legally enforceable property rights in the water that they use.²⁸¹ Tragedy looms because the legal rights in question are *inconsistent* with one another.²⁸² Trying to enforce the right would force a

272. Hardin, *supra* note 269.

273. FUKUYAMA, *supra* note 271, at 66–69.

274. *Id.*

275. *Id.*

276. *Id.*

277. Anne Hellum, *Engendering the Right to Water and Sanitation: Integrating the Experiences of Women and Girls*, in *THE HUMAN RIGHT TO WATER: THEORY, PRACTICE AND PROSPECTS* 300, 314 (Malcolm Langford & Anna F. S. Russell eds., 2017).

278. *Id.*

279. Dennis Dimick, *If You Think the Water Crisis Can't Get Worse, Wait Until the Aquifers Are Drained*, NAT'L GEOGRAPHIC (Aug. 21, 2014), <https://www.nationalgeographic.com/news/2014/8/140819-groundwater-california-drought-aquifers-hidden-crisis/> [<https://perma.cc/55U4-J2UP>].

280. Burke W. Griggs, *Beyond Drought: Water Rights in the Age of Permanent Depletion*, 62 KAN. L. REV. 1263, 1300 (2014).

281. *Id.*

282. *Id.*

court to eject a large number of current rightsholders.²⁸³ What holds people back from enforcing this right is that the remedy is so unfathomably extreme because of its destructive effect on entire communities, that it is quasi-taboo to invoke it.²⁸⁴ At the same time, the very existence of inconsistent rights can also act as an accelerant to insisting on one's right: to protect one's rights forces one to increase use so as not to bargain against oneself in a later compromise—but this only increases the stress on the common reservoir.²⁸⁵

This story is not the ancient history of a long-forgotten Germanic tribe. Instead, it is the very recent history of water rights in Southern California. And it is this struggle between Southern Californian communities that inspired much of Elinor Ostrom's classical work, *Governing the Commons*.²⁸⁶ Say what one will about California law in the middle of the twentieth-century, it was certainly not primitive. Quite to the contrary, it had water law doctrines of reasonable use and correlative rights that were legally able to resolve all water disputes.²⁸⁷ But litigation would have led to the collapse of reservoirs because such disputes would have taken too long to resolve and, in the meantime, would have required a showing of increased need premised on historical usage.²⁸⁸ Catastrophe was only avoided by treating the reservoir as a commons and focusing on sustainable, shared use by way of negotiations between affected communities.²⁸⁹

Nor is this kind of water commons unique to the conditions of booming California. Similar commons arise in completely different circumstances: the *zanjeras* in the Philippines.²⁹⁰ *Zanjeras* refer to joint farmland irrigation works.²⁹¹ Contributing to the construction of these irrigation works allowed tenant farmers for centuries to exchange their labor for rights to newly-irrigated parcels.²⁹² Centrally,

283. *Id.*

284. *Id.* at 1302.

285. See OSTROM COMMONS, *supra* note 30, at 104–10.

286. *Id.*

287. Burke W. Griggs & James J. Butler, Jr., *Groundwater in the American West: How to Harness Hydrogeological Analysis to Improve Groundwater Management*, in THE WATER PROBLEM: CLIMATE CHANGE AND WATER POLICY IN THE UNITED STATES 113, 120 (Pat Mulroy ed., 2017).

288. See OSTROM COMMONS, *supra* note 30, at 109.

289. *Id.* at 114.

290. *Id.* at 82.

291. *Id.* at 82–83.

292. *Id.* at 82–86. For a history of *zanjeras*, see generally JOSÉ A. RIVERA, THE ZANJERAS OF ILOCOS: COOPERATIVE IRRIGATION SOCIETIES OF THE PHILIPPINES (2020).

maintenance of the irrigation works and water allocation through the irrigation works is communal.²⁹³ The survival of farms in *zanjeras* depends upon water as a common pool resource.²⁹⁴ Particularly in droughts, water rights are commons rights allocated by rotation and are communally guarded and enforced.²⁹⁵

B. Trilemmas as Commons

If a commons approach is to help solve the energy trilemma, we must be able to analogize our energy trilemma to traditional commons problems, like water. To do so, we can first try to reformulate the water problem to which water commons governance responds as a kind of trilemma.²⁹⁶ The strength of the commons approach would then depend on how close the link between the water trilemma and the energy trilemma would be. On its face, this correlation appears to be particularly strong, as the water trilemma, like the energy trilemma, is built “around [1] security (reliability), [2] affordability, and [3] sustainability.”²⁹⁷

The first limb of the water trilemma is *security (reliability)*.²⁹⁸ Water security seeks to “guarantee security of supply.”²⁹⁹ Commons governance approaches work when cooperation between correlative water rightsholders can solve security of supply problems.³⁰⁰ Broadly, there are three supply-security problems. First, supply security assumes that cooperation in fact can *meaningfully improve water access*, even in times of drought or significant water stress.³⁰¹ Should this condition fail, there would be thus no basis for cooperation. The threshold question as to what is “sufficient” links supply security and affordability/equity concerns, as “enough” of a resource must mean “enough” at an affordable price. “Let them eat cake,” after all, was not

293. See OSTROM COMMONS, *supra* note 30, at 82–86.

294. *Id.* at 86–87.

295. *Id.*

296. Matthew C. Ives, Mike Simpson & Jim W. Hall, *Navigating the Water Trilemma: A Strategic Assessment of Long-Term National Water Resource Management Options for Great Britain*, 32 WATER & ENV'T J. 546 (2018).

297. *Id.* at 6.

298. *Id.*

299. *Id.* at 10.

300. See Carol M. Rose, *Energy and Efficiency in the Realignment of Common Law Water Rights*, 19 J. LEGAL STUDS. 261, 266 (1990) (discussing correlative rights); OSTROM COMMONS, *supra* note 30, at 82–87, 114 (discussing water commons governance solutions).

301. WAYNE MARTINDALE, GLOBAL FOOD SECURITY AND SUPPLY 99 (2015).

a good response to bread shortages in 1789 France, as Queen Marie-Antoinette found out to her disadvantage.³⁰²

Second, water supply security is threatened by *free riders*. In the *zanjeras*, supply security is threatened when participants do not do their share towards irrigation works maintenance.³⁰³ Similarly, anyone taking more than their fair share threatens supply security. Water commons address this problem successfully through community monitoring and effective enforcement of appropriate penalties for defection.³⁰⁴ Importantly, these enforcement mechanisms are sensitive to the position of the defecting party and involve as much effective peer pressure as they do coercive mechanisms.³⁰⁵

Third, supply security is threatened when water is used as a *means to pressure* downstream participants. Conflicts between upstream and downstream communities are common geopolitical occurrences, perhaps best encapsulated by the Nile conflict between upstream Ethiopia and downstream Egypt.³⁰⁶ Commons governance can overcome such challenges when there is a clear equity-based exit strategy for common resource governance—and probably only then.³⁰⁷

These three water-supply-security concerns *mirror* what we have seen in the *energy security context*. Security here too must guarantee a sufficient energy supply.³⁰⁸ This energy supply also requires cooperation to secure global energy supply chains.³⁰⁹ And geopolitical pressure using energy resources as pressure points currently poses threats to supply security to a greater extent in the energy sector than it does in the water sector.³¹⁰

302. Of course, it is doubtful that the Queen uttered those words. But the rumor was enough to build a narrative that very much became lethal. ANTONIA FRASER, MARIE ANTOINETTE: THE JOURNEY 135 (2001).

303. See OSTROM COMMONS, *supra* note 30, at 82–87.

304. *Id.*

305. *Id.*

306. Bryan Lufkin, *Why 'Hydro-Politics' Will Shape the 21st Century*, BBC (June 15, 2017), <https://www.bbc.com/future/article/20170615-why-hydro-politics-will-shape-the-21st-century> [<https://perma.cc/U4K8-QLGF>]. Ethiopia sits at the source of the Nile. Egypt and Ethiopia have had disagreements as to water rights from the Nile for centuries. At this point, Egypt and Ethiopia have reached a working relationship with the construction of the Grand Ethiopian Renaissance Dam. But if past is prologue, future conflicts regarding water rights are likely to resurface.

307. *See id.*

308. *See discussion supra* Section II.C.

309. *Id.*

310. *Id.*

The second limb of the water trilemma is *affordability*.³¹¹ This limb focuses on cost.³¹² Cost relates to security, as a secure source must in fact be affordable to be realistically available.³¹³ In the context of the commons governance discussion, both the groundwater situation in California and the Philippines *zanjeras* demand a lot of participants in the common water resource.³¹⁴ They require collaboration in joint production of the shared resource. And they demand that participants abstain from taking the water they need now to make sure other participants will also have access to water.³¹⁵ These demands can only work if there is a sense of fairness. That is, users must be able to have as much access to water as is feasible to support their legitimate ends.

Water affordability/equity again *mirrors energy equity*. Water equity ultimately is premised in a right to water.³¹⁶ We need water to live. But we need it for more than bare survival. It is a bedrock for health (think sanitation)³¹⁷ and economic activity (think farming).³¹⁸ Energy equity is similarly premised on a right to energy.³¹⁹ We also need energy to survive; we need a hearth for warmth and food almost as much as we need water.³²⁰ And just like water, energy is more than just a question of subsistence.³²¹ It lies at the very heart of our ability to deliver healthcare, education, and the infrastructure necessary for economic activity.³²² What holds true for water should therefore also hold for energy: Any governance arrangement must secure sufficient and fair access to this needed resource to make working together at all worthwhile.

311. Ives et al., *supra* note 296, at 6.

312. *Id.* at 6–7.

313. *Id.*

314. OSTROM COMMONS, *supra* note 30, at 82–87, 114.

315. *Id.*

316. DESIERTO, *supra* note 29, at 79–80.

317. *Id.*

318. *See id.* at 201.

319. Löfquist, *supra* note 201.

320. *See Goal 6: Ensure Availability and Sustainable Management of Water and Sanitation for All*, U.N. DEP'T OF ECON. AND SOC. AFFS., <https://sdgs.un.org/goals/goal6> [<https://perma.cc/N69Y-VYQH>]; *Goal 7: Ensure Access to Affordable, Reliable, Sustainable and Modern Energy for All*, U.N. DEP'T OF ECON. AND SOC. AFFS., <https://sdgs.un.org/goals/goal7> [<https://perma.cc/ZJV7-WVWS>] [hereinafter *SDG 7: Energy*].

321. *SDG 7: Energy*, *supra* note 320.

322. *See discussion supra* Section II.A.

Finally, the water trilemma also has an *environmental sustainability* problem akin to the energy context.³²³ In the classical commons governance context, California groundwater reservoirs would collapse, short of cooperation between a critical mass of water rightsholders.³²⁴ Currently, water also faces a climate concern as part of its environmental sustainability limb of the trilemma, bringing it in close alignment with the energy trilemma.³²⁵ The California example shows that cooperation can, in fact, overcome these environmental sustainability problems by providing sufficient water security through cooperation, and it highlights that this cooperation in fact yields sufficient water to meet water equity and security concerns.³²⁶

In short, commons governance in the water context is precisely the answer to the kind of trilemma that we encountered in the energy context.³²⁷ Commons governance is a good idea in the energy context because commons governance suggests that a balance between security, equity, and sustainability can, in fact, be reached. This balance, in turn, requires significant investment by participants to provide sufficient security of supply through cooperation. This investment is only successful to the extent that it is consistent with long-term environmental sustainability of supply. But this investment yields returns—namely, the distribution of an equitable share of the common pool resource to all participants.

One might reasonably wonder how global energy value chains constitute a commons. After all, energy value chains are not a geographical feature like a grazing pasture or a groundwater reservoir, both traditionally associated with commons.³²⁸ But it would be myopic to view an understanding of commons as limited to rights of use related to geographic features.

In comparison, it is on the whole accepted to look to cyberspace as a commons.³²⁹ While it relies on physical infrastructure, cyberspace obviously is more than a geographic feature.³³⁰ Nor is cyberspace located only in a confined area.³³¹ Cyberspace is a global value

323. Ives et al., *supra* note 296, at 6.

324. OSTROM COMMONS, *supra* note 30, at 106.

325. Ives et al., *supra* note 296, at 12–13.

326. OSTROM COMMONS, *supra* note 30, at 114.

327. See discussion *supra* Part II.

328. OSTROM COMMONS, *supra* note 30, at 104–10; Hardin, *supra* note 269.

329. OSTROM DIVERSITY, *supra* note 30, at 80. For a full discussion, see Frédéric G. Sourgens, *Cyber-Nuisance*, 42 U. PA. J. INT'L L. 1005, 1038–46 (2021).

330. Sourgens, *supra* note 329, at 1095.

331. *Id.*

chain defined by the connectivity that it provides to its participants.³³² It is therefore not earthshattering to suggest that commons as a concept are not tied to distinct geographic features.

What makes a commons, instead, is precisely that relationship between participants in social activities subject to the kind of trilemmas that we have discussed in the water and energy contexts. In this framework, no one person has absolute control over all aspects of a particular resource.³³³ Instead, everyone's rights depend upon the conduct of others.³³⁴

At heart, when we speak of commons from a legal point of view, we discuss situations in which different people hold correlative rights.³³⁵ In the context of a physical resource, this is straightforward: if I hold a mineral right in fee simple determinable (as I would in the context of an oil and gas lease), I have enforceable property rights in fee.³³⁶ But this enforceable property right in fee exists in a particular context; I may have a right in fee that only covers part of a common reservoir.³³⁷ Now, I am a correlative rightsholder with, for example, other lessees who hold mineral rights to different portions of the reservoir because our respective abilities to exploit our own rights under the lease depend upon each of us not destroying the common reservoir by over-exploitation.³³⁸

To determine whether I am a correlative rightsholder with third parties is a question of understanding relationships.³³⁹ I am a correlative rightsholder to the extent that I am in a relationship of mutual dependence for the exploitation of a resource.³⁴⁰ This mutual dependence, in turn, can manifest by way of our familiar trilemma.³⁴¹ Because I do not have full ownership of an entire value chain—but nevertheless wish to participate in the value chain—affordability, equity, and sustainability of resource use create facially-contradictory incentives. After all, I do not own the value chain outright and thus am

332. *Id.* at 1042.

333. OSTROM COMMONS, *supra* note 30, at 2.

334. OSTROM DIVERSITY, *supra* note 30, at 80.

335. *See* Rose, *supra* note 300, at 166, 177, 183–85, 190.

336. *See* David E. Pierce, *Carol Rose Comes to the Oil Patch: Modern Property Analysis Applied to Modern Reservoir Problems*, 19 PENN ST. ENV'T L. REV. 241, 245–46 (2011).

337. *Id.*

338. *Id.*

339. *See* discussion *supra* Section III.A; OSTROM DIVERSITY, *supra* note 30, at 80.

340. OSTROM DIVERSITY, *supra* note 30, at 80.

341. *See id.*

both in competition with, and dependent upon, the cooperation of other value chain participants.

To say that energy value chains, broadly conceived, should look to commons-based governance paradigms is not a question simply of analogy. Energy value chains only function with international cooperation. But they also create significant incentives for competitive advantage-seeking within that cooperative order.³⁴² The fact that we can identify a common relationship between participants in water and energy value chains says something more than that.³⁴³ It tells us that just as water value chains are commons, energy value chains, too, *are* a global commons.³⁴⁴

C. Consequences for Energy Governance

The upshot is that a commons governance approach can balance concerns of equity, security, and sustainability. Such a balance must begin with the question of equity. Commons governance requires cooperation towards the secure and sustainable use of a common pool resource.³⁴⁵ Such governance is only ever possible if participants believe that they fairly gain from participating. Failure of such trust in the fairness of cooperation introduces incentives for defection, decline, and destruction of the commons.³⁴⁶

Once the parties can recognize that their respective efforts will, in fact, secure an equitable share of the common resource, it is then possible to balance all three limbs to achieve as close to an optimally-secure and sustainable use of the commons. That is, commons governance may sacrifice affordability for sustainability or for security, or vice versa.³⁴⁷ But these possible balances must always be bounded by a minimal sense of equity of the overall arrangement to secure buy-in from all participants (i.e., “equity” in the sense of providing all access on a footing which they can afford).³⁴⁸ And these balances are also always bounded by the overall sustainability of resource use, as assessed in the current resource environment.³⁴⁹ Unsustainable resource

342. BALMACEDA, *supra* note 13.

343. *Id.*

344. *See id.*

345. *See* OSTROM DIVERSITY, *supra* note 30, at 263.

346. *See id.*

347. Ives et al., *supra* note 296, at 6–8.

348. OSTROM DIVERSITY, *supra* note 30, at 263.

349. *Id.* at 279.

use would directly threaten the equity of the cooperative effort by depriving participants of future shares of the common pool resource.³⁵⁰ Parties have increasing incentives to defect the closer they get to the end of the life of the resource. To avoid such a threat, the overall sustainability of use is therefore vital.

Such cooperative efforts can only operate when there is a high degree of *trust* between participants.³⁵¹ Cooperation is costly. And costs accrue *now*: That is, I must build and maintain communal irrigation works, rather than work on my farm.³⁵² But the benefits of cooperation typically take time and are, on the whole, less visible (i.e., I get water as a result of sustained communal efforts to maintain irrigation works, and I do not see the effort of previous generations that went into maintenance of the irrigation works after a devastating storm, etc.; I just see the irrigation works as they exist today).³⁵³ In the terms of economists and political scientists, commons are social capital intensive.³⁵⁴

Such trust cannot be government-mandated—rather, it needs a transformative, all-of-society effort.³⁵⁵ To build such trust requires a governance approach that brings as broad of a number of overlapping stakeholders into both deliberation and implementation of joint decisions.³⁵⁶ Commons scholars call this type of governance “polycentric.”³⁵⁷ As used by these scholars, polycentric governance involves multiple layers of public-private cooperation, such as between California municipalities, semi-private water boards set up by water rightsholders, and the State.³⁵⁸ Polycentric governance further relies upon the availability of courts to provide a means to resolve disputes and, more importantly, to make settlements reached between conflicting rightsholders binding as consent decrees.³⁵⁹

When polycentric governance works well, it helps to build social capital by involving as large of a number of stakeholders in

350. *See id.* at 263.

351. *Id.* at 97–98.

352. OSTROM COMMONS, *supra* note 30, at 82–87.

353. *Id.*

354. *See, e.g.,* FUKUYAMA, *supra* note 271, at 207; Luigi Guiso et al., *The Role of Social Capital in Financial Development*, 94 AM. ECON. REV. 526, 527 (2004).

355. FUKUYAMA, *supra* note 271, at 530.

356. *See id.*

357. OSTROM DIVERSITY, *supra* note 30, at 281–86.

358. OSTROM COMMONS, *supra* note 30, at 133–136.

359. *Id.*

commons decision-making.³⁶⁰ That is, decisions whether to sacrifice affordability for security, or whether sustainability is threatened, are not taken in only one place, even as those decisions require painful but bearable sacrifices.³⁶¹ They are instead diffused through multiple institutions, in which a large number of affected persons have a say and can participate in deliberation.³⁶² This polycentric approach therefore fosters trust-building throughout society, rather than leaving it on the ethereal plane of greater or lesser sovereigns.³⁶³

Commons governance therefore does appear to provide a means to solving the energy trilemma. To solve the trilemma means to build trust around mutually beneficial solutions. These solutions must make energy available on an affordable, equitable footing to all. This is not an end in itself, but rather a tool to support human development. As this affordable and equitable access creates buy-in for a new energy order, we also must secure it. This requires collaborative work to maintain supply lines and lower risk. Once these supply lines are secured, they must be made sustainable, so as not threaten the energy order by way of environmental collapse. And to do so, any governance approach must in fact embrace the cooperative, polycentric approach to governance. And it must be able to secure an overall equitable approach to global development, as any other result would simply not solve the collective action problem threatening climate policy. As the remainder of this Article will argue, such an equitable development approach to solving the climate dilemma is indeed possible. But it must rely upon the core principles inherent in the Washington Consensus—free trade in open markets—to create the kind of polycentric institutions needed to implement it. And it must rely on these principles to create the kind of growth and prosperity that can, in fact, equitably fuel a massive and disruptive shift in global energy systems.

IV. THE ENERGY EQUITY STARTING POINT

A commons governance solution begins and ends with equity. This insight applies to the energy trilemma. We thus see that actually solving the climate collective action problem means that we must start with energy equity and not with emission reduction.

360. OSTROM DIVERSITY, *supra* note 30, at 281–86.

361. See Ives et al., *supra* note 296, at 6–8.

362. OSTROM DIVERSITY, *supra* note 30, at 283.

363. *Id.* at 281, 285–86.

This proposition may seem strange. It certainly turns on its head much of the current way of thinking about climate action. Yet, it is the logical conclusion of what we have seen so far. That is, current environmental approaches cannot solve the climate problem because the climate problem is part of an energy trilemma (i.e., (1) equity, (2) security, and (3) sustainability). To solve the energy trilemma requires balancing the different limbs of the trilemma against each other. And one successful way to balance similar limbs of a trilemma—commons governance—is bounded first and foremost by concerns of equity. Thus, to solve the energy trilemma also requires us to begin with energy equity, rather than with another limb of the trilemma to arrive at a sustainable balance point.

If one is to start with energy equity, it should now be clear why the core principles of the Washington Consensus would turn out to be far more important to climate action than what one might at first suppose. As we will see, *energy equity* is of a piece with overall *development* policy. Development policy, in turn, is not just a question of emission reduction; it is also a question of balancing *economic, social, and cultural rights*, both within domestic and world societies.³⁶⁴ Such a balance makes the concerns of an international economic order acutely relevant. And as we shall see, much of the Washington Consensus's focus on free trade in open markets becomes a condition without which such a balance cannot be reached—even as energy equity in particular requires a more realistic appraisal of the relationship between the state, economy, and society, than a flatly-libertarian conception of the Washington Consensus (“state = bad”) currently countenances.³⁶⁵

This Part outlines the goals of cooperation towards energy equity in terms of the current development paradigm. It then outlines how this goal links up with the current climate paradigm. It next explores the relationship between such cooperation with the Washington Consensus. Finally, it addresses how polycentric governance requires a reimagining of the respective roles of the state, economy, and society in securing energy equity.

364. See discussion *supra* Section IV.A.

365. See generally Alfredo Saab-Filho, *Growth, Poverty and Inequality: From Washington Consensus to Inclusive Growth*, DESA Working Paper 100, ST/ESA/2010/DWP/100 (Nov. 2010), https://www.un.org/esa/desa/papers/2010/wp100_2010.pdf [<https://perma.cc/3EKW-NPSU>]. See also DESIERTO, *supra* note 29, at 381–82 (cautioning against extreme positions in the Keynes/Hayek debate as applied to international governance).

A. Development and Energy Equity

Cooperation is central to energy equity. Cooperation is important for energy equity for reasons that make sense from a commons perspective. Commons only work to the extent that participants take and use a reasonable share and give a reasonable amount of support in return. Cooperation in energy equity is precisely the component that makes it possible for participants in global energy systems to get fair and equitable access to energy, because of the mutual support of all participants in global energy systems.

We have seen in the context of the energy trilemma that energy equity seeks to improve the ability of increasing groups of people to more fully realize rights and capabilities through energy access.³⁶⁶ This concern of energy equity is central to a core tenet of international law and policy discourse: development.³⁶⁷ We must start with the development discourse to understand what energy equity ultimately requires of us.

A key starting point to understand the current place of energy equity in the international development discourse is the United Nation's Agenda 2030, adopted by the U.N. General Assembly in 2015.³⁶⁸ Agenda 2030 is part of a broader mission for the United Nations to improve global social conditions under the U.N. Charter.³⁶⁹ It grows out of earlier efforts within the U.N. system to establish policies, norms, rules, and standards through U.N. General Assembly resolutions to foster sustainable development, as well as to build institutions to help implement them.³⁷⁰ Agenda 2030 follows up on the earlier Millennium Development Goals (MDGs) adopted in 2000 and originally intended to be achieved by 2015.³⁷¹ While noting that this process was not without its critics, one group of leading international law scholars observed that "many of the goals set by the MDGs were indeed met within the agreed time frame, with the MDG process being credited with providing a catalytic effect and accountability."³⁷² Now

366. See discussion *supra* Section II.B.

367. See NUSSBAUM, *supra* note 29, at 33–34, 113.

368. See generally Agenda 2030, *supra* note 29.

369. ROSALYN HIGGINS ET AL., OPPENHEIM'S INTERNATIONAL LAW: UNITED NATIONS 623 (2017).

370. *Id.* at 624–25.

371. *Id.* at 627, 627 n.22.

372. *Id.* at 627.

in its next evolution, Agenda 2030 sets out the United Nations' sustainable development goals to be attained by 2030.³⁷³

Energy equity is central to Agenda 2030 in its own right. The Agenda ends the first paragraph of its vision statement by remarking: “we envisage a world . . . where there is *universal access to affordable, reliable, and sustainable energy*.”³⁷⁴ It is central because many of the other goals in Agenda 2030, in fact, require access to energy to be achievable.³⁷⁵ Energy equity in a word is “equitable” precisely because it allows societies to reach other developmental milestones.³⁷⁶ Affordable energy access therefore is not, and cannot be, an end in itself. Energy equity does not treat it as such.

Energy equity also supports several other goals in Agenda 2030. For example, access to energy as energy equity *supports* “a *healthy and well-educated workforce* with the knowledge and skills needed for *productive and fulfilling work* and *full participation in society*.”³⁷⁷ Such training, even in a remote context, requires energy.³⁷⁸ Similarly, industrial and service infrastructures require energy, as we have seen. The developmental point of energy equity therefore supports “the *productive capacities of least-developed countries* in all sectors, including through structural transformation.”³⁷⁹ Energy equity is instrumental to “adopt[ing] policies which increase productive capacities, productivity and productive employment,” as well as “financial inclusion,” “sustainable agriculture, pastoralist and fisheries development” and “sustainable industrial development.”³⁸⁰ These policies crucially depend upon energy access. Therefore, Agenda 2030's energy equity-focused Goal 7—“ensur[ing] access to affordable,

373. *Id.* at 627 n.22.

374. Agenda 2030, *supra* note 29, ¶ 7 (emphasis added).

375. *See, e.g., id.* Goals 1.4 (“equal rights to economic resources”), 2.4 (“sustainable food production systems”), 3.8 (“access to quality essential health-care services”), 4.3 (“equal access for all women and men to affordable and quality technical, vocational and tertiary education”), 6.2 (“access to adequate and equitable sanitation and hygiene for all”), 8 (“sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all”), 9.2 (“[p]romote inclusive and sustainable industrialization”).

376. *Id.* ¶ 8.

377. *Id.* ¶ 27 (emphasis added).

378. Lindsey McGinnis, *Zoom Isn't Carbon-Free. The Climate Costs of Staying Home*, CHRISTIAN SCI. MONITOR (Mar. 5, 2021), <https://www.csmonitor.com/Environment/2021/0305/Zoom-isn-t-carbon-free.-The-climate-costs-of-staying-home> [<https://perma.cc/QS6S-YR3E>].

379. Agenda 2030, *supra* note 29, ¶ 27 (emphasis added).

380. *Id.*

reliable, sustainable, and modern energy for all” —must be read in the context of its knock-on effects on other goals.³⁸¹

Fittingly, Goal 7 specifies this energy-equity sustainable development goal as part of a broader project. By 2030, the world community will seek to “ensure *universal* access to affordable, reliable and modern energy services.”³⁸² Goal 7 also spells out its hopes to make good on its aspirations: “enhance *international cooperation*.”³⁸³ This cooperation aims “to facilitate *access to clean energy research and technology*, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and *promote investment in energy infrastructure and clean energy technology*.”³⁸⁴ It further seeks to “*expand infrastructure and upgrade technology* for supplying modern and sustainable energy services for all in developing countries.”³⁸⁵

How then does one *achieve* energy equity? Agenda 2030 expressly links the achievement of energy equity (“universal access to affordable, reliable and modern energy services”) to “international cooperation.”³⁸⁶ This cooperation in turn requires “investment in energy infrastructure.”³⁸⁷ Just as importantly, it requires transfer of technology (“access to . . . research and technology”) to enhance social energy autonomy in developing states, rather than making them energy-dependent upon developed states, in tension with their own energy security demands.³⁸⁸

To work towards energy equity therefore means to allow a larger proportion of world society to have access to basic energy resources. This means that there must be a plan to increase, rather than decrease, energy generation, as well as decrease, rather than increase, energy prices to balance and solve the energy trilemma. The first order of business, therefore, is not the environmental question of how to reduce emissions, but the developmental question of how to secure greater and more equitable access to energy.³⁸⁹

381. *Id.* Goal 7.

382. *Id.* Goal 7.1 (emphasis added).

383. *Id.* Goal 7.a (emphasis added).

384. *Id.*

385. *Id.* Goal 7.b (emphasis added).

386. *Id.* Goals 7.1, 7.a.

387. *Id.* Goal 7.a.

388. *Id.*

389. This is not to suggest that environmental concerns are not important to the U.N. Sustainable Development Goals. They decidedly are. Goal 7 on its face includes the word “sustainable.” *Id.* Goal 7. The use of sustainability here recalls the Brundtland Report and its

B. Development and the Climate Regime

At first glance, this focus on energy equity would appear to run counter to the basic impulses of the international climate regime. We associate reducing emissions with reducing energy consumption.³⁹⁰ Energy equity would move the world in the opposite direction.³⁹¹ But this understanding of the climate regime is arguably too simplistic. Rather, the current climate regime already contains the building blocks to make energy equity a critical part of the energy commons balance.

Such an energy-equity focused policy program is a nascent part of climate law obligations under the Copenhagen Accords and the Paris Agreement.³⁹² As discussed above, one of the key changes in climate law was the switch from differentiated responsibility for climate mitigation on the part of developing and least developed States, to an obligation to provide climate finance to these States to upgrade their energy infrastructure.³⁹³ Climate finance therefore seeks to

insistence that energy be developed and deployed in an environmentally sustainable manner. See BRUNDTLAND, *supra* note 29, ch. 7 ¶ 4. My point here is consistent with the ordering in the Brundtland Report itself. It notes:

Patterns and changes of energy use today are already dictating patterns well into the next century. We approach this question from the standpoint of sustainability. The key elements of sustainability that have to be reconciled are: *sufficient growth of energy supplies to meet human needs* (which means accommodating a minimum of 3 per cent per capita income growth in developing countries); energy efficiency and conservation measures, such that waste of primary resources is minimized; public health, recognizing the problems of risks to safety inherent in energy sources; and protection of the biosphere and prevention of more localized forms of pollution.

Id. (emphasis added). The growth of energy needs in achieving Agenda 2030's Goal 7 is therefore entirely consistent with the priority for energy supply growth stemming from the Brundtland Report onwards. The fact that this growth in supply was listed first supports my argument that it is distinctly first among equals. *Id.*

390. Livia Albeck-Ripka, *How to Reduce Your Carbon Footprint*, N.Y. TIMES (Jan. 31, 2019), <https://www.nytimes.com/guides/year-of-living-better/how-to-reduce-your-carbon-footprint> [<https://perma.cc/A2GN-9E2J>].

391. See discussion *supra* Section II.B.

392. See ZAHAR, *supra* note 105, at 6–19. For climate finance under the Paris Agreement itself, see JORGE GASTELUMENDI & INKA GNITTKER, *Climate Finance (Article 9)*, in THE PARIS AGREEMENT ON CLIMATE CHANGE: ANALYSIS AND COMMENTARY 239, 242–52 (Daniel Klein et al. eds., 2017). On the current unfortunately mixed state of implementation of Article 9 after COP24 climate negotiations in 2018, see Chrysa Alexandraki, *COP 24 and Climate Finance: A Stepping Stone or a Blurred Line?*, EJIL:TALK! (Jan. 23, 2019), <https://www.ejiltalk.org/cop-24-and-climate-finance-a-stepping-stone-or-a-blurred-line> [<https://perma.cc/HA2P-SAR8>]. On the failure of COP25 in 2019 to meaningfully advance the climate regime, see Desierto, *supra* note 125.

393. ZAHAR, *supra* note 105, at 71–72.

replace existing generation capacity with Paris Agreement-compliant energy systems.³⁹⁴

The climate finance mechanism had hoped to raise at least “US\$100 billion per year by 2020 from a wide variety of sources: public and private, bilateral and multilateral, including alternative sources to address the needs of developing countries.”³⁹⁵ Part of this climate finance facility comes in the part of outright grants, but another part comes by way of guarantees and other insurance products for private loan financing.³⁹⁶

Climate finance efforts therefore go part of the way to meeting Goal 7. They represent an “investment in energy infrastructure.”³⁹⁷ These investments will make existing infrastructure more resilient—meaning that it will be easier to maintain and thus more reliable.³⁹⁸ Similarly, some of these projects also expand power generation capacity. For example, in November 2018, a World Bank institution facilitated more than \$1 billion in financing for the construction of a hydro-power plant that “will increase [Cameroon’s] power-generation capacity by nearly a third”: the Nachtigal Hydropower Plant.³⁹⁹ The Nachtigal Plant is a “420-megawatt (MW) power plant” that will increase access to power by 28% and which counts as climate mitigation.⁴⁰⁰ The project will be co-owned by Electricité de France and the Government of Cameroon, with additional equity investment from the

394. Paris Agreement, *supra* note 20, art. 9(1). Climate finance is intended to cover both mitigation (i.e., the reduction of CO₂ emissions) and adaptation (i.e., the preparation for climate change, such as the building of seawalls). The relative mix of finance remains to be resolved in detail. See Alexandraki, *supra* note 392.

395. GASTELUMENDI & GNITKE, *supra* note 392, at 241. This figure is expressly a floor after COP24. See Alexandraki, *supra* note 392.

396. See RICHARD K. LATTANZIO, CONG. RSCH SERV., IF10763, PARIS AGREEMENT: U.S. CLIMATE FINANCE COMMITMENTS (Oct. 2, 2019), <https://sgp.fas.org/crs/misc/IF10763.pdf> [<https://perma.cc/N8SX-ZTS9>] (detailing the manners in which the United States provides climate finance).

397. Agenda 2030, *supra* note 29, Goal 7.a.

398. *3 Things You Need to Know About Climate Finance*, WORLD BANK (June 1, 2020), <https://www.worldbank.org/en/topic/climatechange/brief/3-things-you-need-to-know-about-climate-finance> [<https://perma.cc/P8WQ-8HYL>].

399. *Cameroon’s Nachtigal Taps New Possibilities for Clean Power*, INT’L FIN. CORP. (May 2019), https://www.ifc.org/wps/wcm/connect/news_ext_content/ifc_external_corporate_site/news+and+events/news/cm-stories/nachtigal-cameroon-hydropower-plant-clean-power [<https://perma.cc/2BTX-MX9J>].

400. *Id.*

World Bank.⁴⁰¹ The debt financing for the project involves €110 million in World Bank funds and a €916 million loan package from eleven development finance institutions and four commercial banks.⁴⁰² As of August 2021, site preparation at the construction site had begun.⁴⁰³

Still, climate finance falls far short of meeting development goals, both alone or together with other sources of funding. Thus, as a joint report by the International Energy Agency, the International Renewable Energy Agency, the United Nations Statistics Division, the World Bank, and the World Health Organization has pointed out, “[a]t the current rate of progress, the world is not on track to achieve Sustainable Development Goal 7.”⁴⁰⁴ Further, “current and *planned policies will not be enough to meet the goals.*”⁴⁰⁵

Meeting these goals therefore will require more of the kind of private finance and investment already included in Paris Agreement financing plans.⁴⁰⁶ More drastically, it will also require a shift in thinking about climate finance. So far, “[c]limate finance is needed for mitigation, because large-scale investments are required to significantly reduce emissions.”⁴⁰⁷ It thus does not focus sufficiently—and, indeed, does not at all aim directly—at expanding energy access.⁴⁰⁸ The climate regime and climate finance thus fall short precisely because they do not see the bigger picture: from a commons governance perspective,

401. *Nachtigal Hydro Power Plant*, NS ENERGY BUS. (2020), <https://www.nsenergybusiness.com/projects/nachtigal-hydro-power-plant> [<https://perma.cc/5UCA-YJBS>] [hereinafter *Nachtigal*].

402. *Id.*; *Cameroon’s Nachtigal Taps New Possibilities for Clean Power*, *supra* note 399. For background on the Nachtigal Project, see *Nachtigal*, *supra* note 401. For further background on Cameroon’s hydropower plan, see Pius Lukong & Yinka Ibukun, *Cameroon Seeking to Build \$3 Billion Dam to Export Electricity*, BLOOMBERG (Sept. 18, 2020, 12:00 AM), <https://www.bloomberg.com/news/articles/2020-09-18/cameroon-seeking-to-build-3-billion-dam-to-export-electricity> [<https://perma.cc/4LZA-YUTJ>].

403. *Construction of Nachtigal Hydroelectric Dam in Cameroon on Course*, CONSTRUCTIONREVIEWONLINE.COM (Aug. 15, 2021), <https://constructionreviewonline.com/news/construction-of-nachtigal-hydroelectric-dam-in-cameroon-on-course/> [<https://perma.cc/DER7-S8ZD>].

404. INT’L BANK FOR RECONSTRUCTION & DEV., WORLD BANK, TRACKING SDG 7: THE ENERGY PROGRESS REPORT 119 (2020), https://trackingsdg7.esmap.org/data/files/download-documents/tracking_sdg_7_2020-full_report_-_web_0.pdf [<https://perma.cc/R556-BC35>] [hereinafter EPR 2020].

405. *Id.* (emphasis added).

406. GASTELUMENDI & GNITTKE, *supra* note 392, at 239–44.

407. *Introduction to Climate Finance*, U.N. FRAMEWORK CONVENTION ON CLIMATE CHANGE (2021), <https://unfccc.int/topics/climate-finance/the-big-picture/introduction-to-climate-finance> [<https://perma.cc/E5U7-PJYG>].

408. *Id.*

it is not enough to look to environmental sustainability.⁴⁰⁹ What is needed is a solution that is equitable *and* environmentally sustainable.⁴¹⁰ Climate finance needs to aim higher and include a broader list of projects to shoulder these energy equity demands, without which the energy trilemma simply cannot be solved.

C. Development, Climate, and the Washington Consensus

Energy investment and climate finance can only be the beginning. Even if financing and investment grew to the levels needed to meet the U.N. Sustainable Development Goals, energy equity would not be guaranteed or achieved. This investment is part of a broader economic picture.

The need to focus on this broader picture is inherent in the very idea of investment finance itself. Investment and finance inherently and legitimately seek *regular returns*.⁴¹¹ And such regular returns for energy investments are only sustainable if the economies that they supply with energy continue to stably increase demand through growth.⁴¹²

This growth cannot, in the first instance, depend upon a domestic market—the domestic market in developing and least developed countries does not of itself support the kind of capital-intensive energy infrastructure that Goal 7 sets out to build.⁴¹³ Put differently, if existing markets would support the need for such electricity on their own, there would be no need for Goal 7 as a global development goal, as market forces would already have met it without any need for intervention by world society.⁴¹⁴ As 2019 Nobel Prize-winning economists Abhuit Banerjee and Esther Duflo put it (albeit in a different context), in “a recent randomized controlled trial in Kenya, researchers partnered with Kenya Rural Electrification Authority to offer electricity connection at different prices in different communities.”⁴¹⁵ Critically, “demand fell very sharply as price rose, and villagers were not willing

409. See discussion *supra* Part III.

410. Agenda 2030, *supra* note 29, ¶ 7.

411. CHRISTOPH SCHREUER ET AL., THE ICSID CONVENTION: A COMMENTARY 128 (2d ed. 2009).

412. See *World Energy Investment 2018*, INT’L ENERGY AGENCY (July 2018), <https://www.iea.org/reports/world-energy-investment-2018> [<https://perma.cc/5NSB-Q3E2>] (noting that, despite “demand growth,” the “expected output from low-carbon power investments fell 10% in 2017 and did not keep pace.”).

413. See *EPR 2020*, *supra* note 404, at 119.

414. See *id.*

415. BANERJEE & DUFLO, *supra* note 159, at 188.

to pay anywhere near what would have been sufficient to cover the cost of connecting to the grid (not to mention building the grid).⁴¹⁶ That is, delivering needed energy is only possible when economic activity increases to the point that the villagers in question can afford connection. Existing economic activity simply will not do.

Consequently, developing economies must be given *better access to a global marketplace* to support the growth and development set out in Agenda 2030 and to strengthen investment incentives. Without such access, there is simply no market for finance or investment. Moreover, even with global access, needed capital will not necessarily be forthcoming for developing economies. For capital to be forthcoming, the global marketplace must accept on equal and fair terms the goods produced and services rendered in these economies.⁴¹⁷ Such improved market access and acceptance leads to economic growth.⁴¹⁸ Such growth in turn could support the kind of investments needed in energy infrastructure.

In a word, energy equity depends upon, but meaningfully advances, the core principles of the Washington Consensus. Energy equity is dependent upon the Washington Consensus principle that free trade in globally-open markets—and only free trade in globally-open markets—is not a zero-sum game.⁴¹⁹ Only such freedom can create the conditions for the mobilization of capital needed to meet the global climate change challenge and the development imperative expressed in Agenda 2030.

But this is not the end of the story. Agenda 2030 (and climate finance) adds to this axiom that global growth cannot be an end itself. It must serve human development—the right to be part of “*a healthy and well-educated workforce with the knowledge and skills needed for productive and fulfilling work and full participation in society.*”⁴²⁰ It thus provides a normative tool to support social mobilization, without undercutting the economic engine which makes social mobilization possible in the first place.⁴²¹

416. *Id.*

417. ANDREAS LOWENFELD, INTERNATIONAL ECONOMIC LAW 125 (2d ed. 2008) (discussing most-favored-nation treatment in the GATT and the General Agreement on Trade in Services (GATS)).

418. PILLING, *supra* note 172, at 97.

419. RAJ BHALA, MODERN GATT LAW: A TREATISE ON THE GENERAL AGREEMENT ON TARIFFS AND TRADE 204–05 (2005).

420. Agenda 2030, *supra* note 29, ¶ 27 (emphasis added).

421. See PILLING, *supra* note 172, at 97–98; FUKUYAMA, *supra* note 271 at 406–11; NUSSBAUM, *supra* note 29, at 47–49.

Certainly, such fair access to a global marketplace and investment in infrastructure development “abroad” will have short-term negative effects in already-industrialized and post-industrialized economies.⁴²² These economies will see losses of employment—in the unforgettable words of Ross Perot, they will hear the “sucking sound” of free trade.⁴²³ Consequently, there is a strong incentive for protectionist policies in industrialized and post-industrialized societies to protect their own, on an “America First” or “Britain First” or “India First” footing—global and human rights consequences be damned.⁴²⁴

What the commons nature of global energy systems begins to demonstrate is that such policies are stubbornly shortsighted, never mind the selfish injustice that they perpetuate. Such policies create the kinds of incentives for States to defect from energy commons.⁴²⁵ Such defections can have massive repercussions for energy security.⁴²⁶ Given the global nature of energy supply chains, world society depends upon the goodwill and cooperation of a far greater number of its constituents than just the industrial and post-industrialized States that would close the door.⁴²⁷ If there is no incentive for other constituents to support these supply chains, they will come under immense strain.⁴²⁸ This strain is deeply destructive in economic and social

422. See Matthew C. Klein, *How Many US Manufacturing Jobs Were Lost to Globalisation?*, FIN. TIMES (Dec. 6, 2016), <https://www.ft.com/content/66165693-ddf8-3988-b7e2-5ea887303c3e> [<https://perma.cc/D57R-B5C6>] (analyzing U.S. manufacturing job losses due to globalization).

423. Eduardo Porter, *Ross Perot's Warning of a 'Giant Sucking Sound' on Nafta Echoes Today*, N.Y. TIMES (July 9, 2019), <https://www.nytimes.com/2019/07/09/business/economy/ross-perot-nafta-trade.html> [<https://perma.cc/DJ6L-UWJX>].

424. See, e.g., Adam Ramsay, *Why Does England Vote Tory?*, OPEN DEMOCRACY (June 21, 2020, 9:22 AM), <https://www.opendemocracy.net/en/opendemocracyuk/why-does-england-vote-tory> [<https://perma.cc/Y5H4-4DX3>]; *Trump Declares 'America First' Vision*, N.Y. TIMES (Jan. 20, 2017), <https://www.nytimes.com/video/us/politics/10000004885343/trump-declares-america-first-vision.html?searchResultPosition=2> [<https://perma.cc/ELU9-SDAQ>]; Darshan Desai, *'India First' Is Modi's New Mantra*, HINDU (June 13, 2016, 2:39 PM), <https://www.thehindu.com/news/india-first-is-modis-new-mantra/article4494238.ece> [<https://perma.cc/37P7-A4KP>].

425. See BANERJEE & DUFLO, *supra* note 13, at 92 (discussing why trade wars are a bad idea).

426. See discussion *supra* Section II.C.

427. See Richard Nephew, *The Impact of Covid-19 on Global Supply Chains and Sanctions*, COLUM. CTR. ON GLOB. ENERGY POL'Y (May 8, 2020), <https://www.energypolicy.columbia.edu/research/commentary/impact-covid-19-global-supply-chains-and-sanctions> [<https://perma.cc/4JPG-HRBE>].

428. See discussion *supra* Section II.C.

terms.⁴²⁹ And as discussed in the next Section, it has the potential for complete ecological devastation.

The long-term—even the *mid-term*—interest of world society therefore is to stay the course of energy and trade governance inspired by the Washington Consensus. We can only solve our global energy problems through collaboration. This collaboration requires free trade in globally-open markets. But as energy equity already shows, it modifies the Washington Consensus in one important respect. It is no longer true that global growth is an end in itself. Global growth is a means to an end. That end is to support dignified standards of living throughout the world, to improve the attainment of human capabilities, and to turn the promise of human rights—the right to work, health, and education—into a reality in more places abroad and at home.

D. Polycentric Energy Equity

The processes aimed at creating stronger energy equity are decidedly young. But even at this early stage of development, these processes already reflect a “polycentric” approach to governance.⁴³⁰ In fact, they rely on different actors to exercise overlapping competencies over global energy equity. As we have seen in the Nachtigal Project, these actors include institutions like the World Bank, regional development finance institutions, States, and project sponsor companies.⁴³¹ And as this project is implemented, its success will depend on the cooperation between project sponsors, local regulators, and civil society actors.⁴³² Each of these actors will have overlapping competences over this and other similar projects providing the backbone of energy equity.⁴³³

One consequence of polycentric governance is that it takes a different view of the role of the State than the classically-libertarian approach associated with the Washington Consensus.⁴³⁴ In a polycentric framework, one cannot leave everything to the market. Rather, the State and markets each have important roles to play in facilitating energy equity, because each has different powers that supplement and support each other. As Kim Talus observed, “it seems that privately-

429. See discussion *supra* Section II.C.

430. OSTROM DIVERSITY, *supra* note 30, at 281–86.

431. *Nachtigal*, *supra* note 401.

432. GRALF-PETER CALLIESS & PEER ZUMBANSEN, *ROUGH CONSENSUS AND RUNNING CODE: A THEORY OF TRANSNATIONAL PRIVATE LAW* 276–77 (2010).

433. OSTROM DIVERSITY, *supra* note 30, at 281–86.

434. Desierto, *supra* note 268.

run industry acting in a liberalized environment is very good at creating efficiency, since its ability to create value for each monetary unit spent is far greater than that of state-run monopoli[es].⁴³⁵ “Furthermore, its ability to create efficiency from the existing infrastructure is clearly superior to state-run systems.”⁴³⁶ However, he critically cautions that privately-run industry’s “ability to invest in and create new infrastructure is less clear.”⁴³⁷

This observation appears downright Keynesian and State interventionist. After all, State intervention to secure access to energy is one of the core reasons for Keynesian intervention in the economy.⁴³⁸ And energy equity largely depends upon the State and international institutions for the creation of sufficient energy infrastructure to meet development goals.⁴³⁹

But on closer inspection, energy-equity governance is more nuanced than the interventionist/libertarian divide.⁴⁴⁰ Talus’ point is that the State’s role is to conceive of and launch energy infrastructure.⁴⁴¹ The State uses its powers to launch the preconditions for a marketplace to evolve by committing to energy infrastructure.⁴⁴² Without the State, this infrastructure would not develop in the first place (in fact, if it did, there would hardly be a need for Agenda 2030).⁴⁴³

But the State relies on private capital to build the infrastructure.⁴⁴⁴ Without global capital markets and commercial lenders, the infrastructure simply could not be built.⁴⁴⁵ And the State relies upon

435. KIM TALUS, *EU ENERGY LAW AND POLICY: A CRITICAL ACCOUNT* 276 (2013).

436. *Id.*

437. *Id.*

438. DESIERTO, *supra* note 29, at 56.

439. *Nachtigal*, *supra* note 401.

440. DESIERTO, *supra* note 29, at 384.

441. TALUS, *supra* note 435, at 276.

442. *Id.* at 276–77; *see also* APPELBAUM, *supra* note 72, at 284 (“The economist Mariana Mazzucato has pointed out that governments have unmatched resources to fund high-risk research; businesses by contrast, tend to invest once the path is clear.”).

443. Private capital is attracted to reasonably mature markets due to the risk profile of new and unproven marketplaces. Once other investors have shied away from a particular opportunity, there is a path dependence away from private capital investing, unless there is significant government support. *See* APPELBAUM, *supra* note 72, at 284.

444. *See Nachtigal*, *supra* note 401; APPELBAUM, *supra* note 72, at 282 (“The government could plant the seed and nurse the sprouts, but companies needed to be planted in the market.”). On how energy infrastructure is financed in the United States generally, *see*, for example, *Illinois Com. Comm’n v. FERC*, 576 F.3d 470, 476–78 (7th Cir. 2009).

445. *Nachtigal*, *supra* note 402; *see also* APPELBAUM, *supra* note 72, at 282.

private enterprise to operate the projects that the State co-sponsors.⁴⁴⁶ In fact, private enterprise delivers better and more affordable results than State intervention in energy generation could.⁴⁴⁷ To achieve these benefits, the State must create a marketplace in which reasonable returns are possible.⁴⁴⁸ This, then, is where the State incorporates much of the Washington Consensus to attract investment.⁴⁴⁹ But the State still is very much part and parcel of the equation to get the development engine started and to maintain the conditions in which it can continue to run. In terms of catchphrases, this model is thus far more *Hamiltonian* than it is Keynesian or libertarian.⁴⁵⁰

Importantly, this governance structure also has implications for the costs of phasing-out existing energy infrastructures. As we have discussed above, one of the greatest challenges for energy equity is the increased cost not just of building *new* infrastructure, *but the added cost of displacing existing* infrastructure as well.⁴⁵¹ The implication from the role of the State in creating the marketplace for new infrastructure is that it must also assume a significant responsibility in shouldering the cost of the phase-out of the old infrastructure.

To be successful in setting up new energy marketplaces, the State must be able to build trust.⁴⁵² The credibility of the State's future-looking commitments for the new marketplace will naturally be gauged against the most closely analogous State conduct: its conduct towards existing marketplaces.⁴⁵³ If the State is to build trust in future energy marketplaces, it cannot disrupt existing energy marketplaces.⁴⁵⁴ Such a policy will increase costs in the short-run, but it also has the benefit of building social capital for, rather than mobilizing

446. See *infra* note 445.

447. TALUS, *supra* note 435, at 276.

448. See discussion *supra* Part IV.

449. *Id.*

450. PAUL STUDENSKI & HERMAN KROOSS, FINANCIAL HISTORY OF THE UNITED STATES 45 (1952). Hamilton viewed the federal government as an important financial driver of the nascent U.S. economy and viewed the federal government as a creator of marketplaces within which private enterprise will come to thrive and strive. Even this moniker is not entirely apt, as energy equity is decidedly not mercantilist. For a contemporary take on Hamiltonian policies, see PHILIPPE AGHION, CÉLINE ANTONIN & SIMON BUNEL, THE POWER OF CREATIVE DESTRUCTION: ECONOMIC UPHEAVAL AND THE WEALTH OF NATIONS 68–70 (2021). For a different take on such an approach, see APPELBAUM, *supra* note 72, at 278.

451. See discussion *supra* Section II.A.

452. See OSTROM DIVERSITY, *supra* note 30, at 281–86.

453. See Desierto & Sourgens, *supra* note 50, at 157.

454. See *id.*

social foment against, new infrastructures.⁴⁵⁵ The 2018–19 yellow vest protests against climate policies in France concretely show the importance of such social capital concerns when they are linked to energy phase-out.⁴⁵⁶

If fully implemented, this governance structure has several key advantages. It expands the circle of stakeholders with an ability to guide decision-making; in other words, it relies on international institutions, states, lenders, markets, and civil society groups to implement decisions. It also creates a means to jumpstart an economy without allocating phase-out costs on social groups with an acute incentive to disrupt the newly-developing energy and economic order. Yet this structure achieves far more than merely laying the foundation for new economic activity that will use the energy generated by energy equity projects. The very act of building the new infrastructure also generates significant economic activity, creates employment opportunities, and educates the workforce in its own right. It is this economic activity that can help bridge the relative losses within society that are a natural consequence of the costly task of gradually switching existing infrastructures to a new and more equitable long-term paradigm.

This Part has outlined what a focus on energy equity would look like. In order to solve the climate change challenge, we must balance the energy trilemma of energy equity, energy security, and environmental sustainability. A commons governance approach requires us to begin with equity. This energy equity requires first that all societies have access to energy resources. But access to energy resources is not enough. Energy is a means to an end: development. As we have seen, such development is in a two-way relationship with energy. On the one hand, development cannot occur without energy. But energy access does not suffice for development. Rather, energy access is only meaningful when it is combined with economic opportunities that, in fact, utilize the energy in question. Thus, to provide energy equity is a question of re-thinking the international economic order in light of development goals. It turns out that this re-thinking, in fact, does not have to move far from the Washington Consensus. Rather, economic globalization can become an engine for development and energy access by providing needed finance and receptive markets. But it can only become such an engine when we think of economic globalization as fundamentally about something other than market liberalization. Globalization, instead, is a tool for development in the fullest sense. It is when we offer world society the means for such development as part

455. I develop this point more fully in Sourgens, *supra* note 132.

456. For a discussion, see generally Frédéric G. Sourgens, *Geo-Markets*, 38 VA. ENV'T L.J. 63 (2020). See also *supra* note 25 and accompanying text.

of a broader solution to the energy trilemma that we can see why anyone would be interested in becoming part of the solution. Development in the fullest sense of the world is indeed desirable in its own right. An order that would provide the means to achieve this outcome, therefore, is an order worthy of global participation.

V. STABILIZING ENERGY EQUITY WITH ENERGY SECURITY

We have already seen in the water commons context that the equity and security limbs of a resource trilemma have significant points of contact.⁴⁵⁷ Equitable marketplaces must be secure to be worth pursuing.⁴⁵⁸ The moment that an otherwise equitable arrangement becomes insecure, the equitable baseline supporting collaboration in commons governance begins to buckle.⁴⁵⁹ Once we know what equitable outcomes will support cooperation in commons governance, it is imperative to establish how such equitable outcomes could be stabilized and secured. Consequently, the next step in balancing the energy trilemma is energy security.

This proposition again seems strange. It is one thing to put energy equity ahead of environmental sustainability to secure buy-in. It is quite another to move energy security ahead of environmental sustainability, as well.

As we shall see in this Part, there are structural reasons for moving energy security ahead of environmental sustainability. Energy security provides the legal infrastructure to build trust. It does so through a combination of formal commitments, backed by dispute resolution mechanisms,⁴⁶⁰ and, where such formal commitments are frequently honored in the breach, through informal arrangements.⁴⁶¹ Together, energy security thus provides the necessary amount of legal security and geopolitical stability for States and markets alike to be able to rely on global energy supply chains. Once these global energy supply chains are secure, they undergird not just the current carbon-heavy energy economy, but they also safeguard and order the process of energy transition.

Here again, it should now be clear why the core principles of the Washington Consensus would turn out to be far more important to

457. See discussion *supra* Part II.

458. *Id.*

459. *Id.*

460. See discussion *infra* Section V.A.

461. See discussion *infra* Section V.B.

energy policy, and thus climate action, than what one might at first suppose. Washington Consensus instruments *depoliticize* disputes by providing a strong legal framework, inclusive of *binding dispute resolution* mechanisms to lend force to State commitments in the energy sector.⁴⁶² What is more, they also provide the framework to make commitments by energy market actors *globally-enforceable*.⁴⁶³

This Part outlines the goals of cooperation towards energy security in terms of a trust-building paradigm. It then explores the relationship between this trust-building paradigm and the Washington Consensus. It finally outlines how this goal works together with the current climate paradigm.

A. The Value of Pre-Commitment

In our discussion of commons governance, we have seen that trust and trust-building are instrumental to commons governance.⁴⁶⁴ Commons governance follows a famous two-step process for trust-building: (1) trust, but (2) verify.⁴⁶⁵ The more that verification confirms trust, the stronger that trust becomes.⁴⁶⁶ And the more easily disputes about verification can be resolved by means of rules determined ahead of time, the greater the trust in verification procedures.⁴⁶⁷ Much of the value of Washington Consensus legal instruments is that they create the international legal infrastructure to build trust and provide for means to verify compliance. This infrastructure allows greater global legal security in the energy sector.

The principal multilateral treaty squarely addressing energy security is the Energy Charter Treaty (ECT).⁴⁶⁸ The ECT is a unique multilateral treaty concerned exclusively with inter-governmental energy cooperation.⁴⁶⁹ The principal parts of the ECT imported core Washington Consensus trade law principles to make them binding

462. See discussion *infra* Section V.A.

463. See *id.*

464. OSTROM DIVERSITY, *supra* note 30, at 97–98.

465. *Id.*; see also Nina Porzucki, *Suzanne Massie Taught President Ronald Reagan This Important Russian Phrase: ‘Trust, But Verify’*, PUB. RADIO (Mar. 7, 2014), <https://www.pri.org/stories/2014-03-07/suzanne-massie-taught-president-ronald-reagan-important-russian-phrase-trust> [<https://perma.cc/K32M-UVAF>].

466. OSTROM DIVERSITY, *supra* note 30, at 97–98.

467. *Id.*

468. See Energy Charter Treaty, Dec. 17, 1991, 2080 U.N.T.S. 95 [hereinafter ECT]; KAJ HOBER, THE ENERGY CHARTER TREATY 52 (2020).

469. ECT, *supra* note 468, at 7.

upon States who had not yet become parties to the GATT.⁴⁷⁰ The ECT further extends strong investment protections against political risks, (e.g., expropriation to foreign investors in the energy sector),⁴⁷¹ sets out “rules for facilitating transit through participating States,”⁴⁷² and provides for best efforts obligations regarding environmental protection and energy efficiency.⁴⁷³ Viewed in its totality, the ECT seeks to provide a framework for energy supply security for energy consuming States, as well as energy demand security for States producing fuels such as natural gas, by providing a stable and predictable marketplace in which to sell.⁴⁷⁴

One of the key benefits of the ECT is that it has robust dispute resolution mechanisms.⁴⁷⁵ These dispute resolution mechanisms cover State-to-State disputes.⁴⁷⁶ They also provide a means for foreign investors to bring direct claims against the host State of their investment.⁴⁷⁷ These mechanisms seek to submit otherwise politically-contentious conflicts to a set of trusted stakeholders for adjudication according to pre-agreed treaty norms.⁴⁷⁸ This mechanism depoliticizes disputes by taking each situation out of its immediate political context and the temptations for *ex post* rationalizations.⁴⁷⁹ Instead, the mechanism places the dispute in the context of a set of norms agreed *ex ante* by the relevant stakeholders.⁴⁸⁰ It thus protects legally-cognizable reliance interests instead of politically-motivated expectations.⁴⁸¹

The ECT is nestled in a larger web of bilateral and multilateral treaties that further protect the legal security of energy investments. These treaties include bilateral or regional FTAs, such as the United States-Mexico-Canada Agreement.⁴⁸² They also include agreements

470. *Id.* at 10.

471. *Id.* at 10–11.

472. *Id.* at 12.

473. *Id.* at 13.

474. *Id.* at 11; *see also* ENERGY CHARTER CONCEPT, *supra* note 239, at 20.

475. HOBER, *supra* note 468, at 395–483.

476. *Id.* at 475–83.

477. *Id.* at 396–475.

478. Frédéric G. Sourgens, *Supernational Law*, 50 VAND. J. TRANSNAT’L L. 155, 210–14 (2017).

479. *Id.*

480. *Id.*

481. *Id.*

482. United States-Mexico-Canada Agreement, July 1, 2020, OFF. OF THE U.S. TRADE REP., <https://ustr.gov/trade-agreements/free-trade-agreements/united-states-mexico-canada-agreement/agreement-between> [<https://perma.cc/KEM3-WV3S>]

such as TRIPS, protecting intellectual property rights in global trade.⁴⁸³ They finally include the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards.⁴⁸⁴ The New York Convention serves as a backstop for the enforcement of international contracts through arbitration.⁴⁸⁵ The availability of such international arbitration has been instrumental in giving legal security to participants up and down energy supply chains, as there is great confidence that arbitral tribunals will enforce the contracts agreed upon by contracting parties in international business.⁴⁸⁶

This web of international treaties also seeks to provide a backstop against geopolitical insecurity in the energy sector. One of the most important treaties to provide such a backstop is the United Nations Convention on the Law of the Sea (UNCLOS).⁴⁸⁷ The UNCLOS guarantees freedom of navigation.⁴⁸⁸ This freedom is of particular importance for energy supply chains because it has significant geopolitical implications: it determines whether energy supplies can reach their destination unhindered. It is this freedom of navigation that has come under increased strain by Chinese interventions in the South China Sea.⁴⁸⁹ The sustainable use of shipping in global supply chains—including the regulation of environmental liability—is a key point of potential contention and one that is regulated under, and in collaboration

483. For a discussion of TRIPS, see generally Patricia L. Judd, *Retooling Trips*, 55 VA. J. INT'L L. 117 (2014).

484. ALBERT JAN VAN DEN BERG, *THE NEW YORK ARBITRATION CONVENTION OF 1958: TOWARDS A UNIFORM JUDICIAL INTERPRETATION* 12 (1981).

485. *Id.*

486. See Crina Baltag, *Enforcement of Arbitral Awards Against States*, 19 AM. REV. INT'L ARB. 391, 403 (2008) (“The main reason for the absence of enforcement procedures against states is the high degree of compliance by states with the awards rendered in favor of private entities.”).

487. United Nations Convention on the Law of the Sea, Dec. 10, 1982, 1833 U.N.T.S. 397 [hereinafter UNCLOS].

488. *Id.* arts. 8, 17, 87(1)(a); YOSHIFUMI TANAKA, *NAVIGATIONAL RIGHTS AND FREEDOMS*, in *THE OXFORD HANDBOOK ON THE LAW OF THE SEA* 536, 536–58 (Donald Rothwell et al. eds., 2015).

489. Jaques Delisle, *Remarks by Jacques Delisle*, 111 AM. SOC'Y INT'L L. PROC. 75, 76 (2017); Ankit Panda, *US Conducts Freedom of Navigation Operation Near China-Held Features in Spratlys*, DIPLOMAT (July 15, 2020), <https://thediplomat.com/2020/07/us-conducts-freedom-of-navigation-operation-near-china-held-features-in-spratlys> [https://perma.cc/HR6C-DWMC]; Shashank Bengali & Vo Kieu Bao Uyen, *Sunken Boats. Stolen Gear. Fishermen Are Prey as China Conquers a Strategic Sea*, LA TIMES (Nov. 12, 2020), <https://www.yahoo.com/video/sunken-boats-stolen-gear-fishermen-145223956.html> [https://perma.cc/XM66-4WWX]; see also *supra* notes 233–235 and accompanying text.

with, the UNCLOS.⁴⁹⁰ While tensions flare, particularly with China, this provides legal means to address them and to enhance energy security.

Just as importantly, the UNCLOS also governs claims to rights to explore offshore mineral reserves.⁴⁹¹ It thus provides a legal mechanism to resolve conflicting claims to title to natural resources.⁴⁹² This regime, too, is beginning to fold under Chinese pressure, even as it provides a means to avoid an all-out politico-military escalation.⁴⁹³ One of the most important steps to protect energy security, therefore, is to continue to strengthen existing treaties, such as the UNCLOS.

Similarly, FTAs can play a geopolitical role. For example, the efforts by the Obama Administration to negotiate the Transpacific Partnership (TPP) were intended to have significant energy security implications.⁴⁹⁴ One of the main policy goals behind the TPP was to build a united front against Chinese unilateralism.⁴⁹⁵ It thus was *not* a classic *containment* mechanism to isolate China.⁴⁹⁶ Rather, it was an attempt to propose mutually-beneficial rules of engagement that would create market security for the region—including energy security.⁴⁹⁷ FTAs like the TPP therefore are a key component to provide energy

490. See Paul Tae-Woo Lee et al., *Sustainability Challenges in Maritime Transport and Logistics Industry and its Way Ahead*, 11 SUSTAINABILITY 1331 (2019); T.C.E. Cheng et al., *Sustainability in Maritime Supply Chains: Challenges and Opportunities for Theory and Practice*, 78 LOGISTICS & TRANSP. REV. 1 (2015).

491. See Dominic Roughton & Colin Trehearne, *The Continental Shelf*, in 1 THE IMLI MANUAL ON INTERNATIONAL MARITIME LAW: THE LAW OF THE SEA 137–76 (David Attard et al. eds., 2014); Umberto Leanza & Maria Cristina Caracciolo, *The Exclusive Economic Zone*, in THE IMLI MANUAL ON INTERNATIONAL MARITIME LAW: THE LAW OF THE SEA 177–216 (David Attard et al. eds., 2014).

492. OWEN ANDERSON ET AL., INTERNATIONAL PETROLEUM LAW AND TRANSACTIONS ¶¶ 2.2.3–2.3.3 (2020).

493. Desierto, *supra* note 235 at 261–73.

494. Michael Levi, *What the TPP Means for LNG*, COUNCIL ON FOR. REL. (Nov. 17, 2015), <https://www.cfr.org/blog/what-tpp-means-lng> [<https://perma.cc/64BH-6DS5>].

495. Michal Meidan, *The TPP and China: The Elephant that Wasn't in the Room*, DIPLOMAT (Oct. 15, 2015), <https://thediplomat.com/2015/10/the-tpp-and-china-the-elephant-that-wasnt-in-the-room> [<https://perma.cc/VQP7-Y54J>].

496. Mireya Solis, *The Containment Fallacy: China and the TPP*, BROOKINGS (May 24, 2013), <https://www.brookings.edu/blog/up-front/2013/05/24/the-containment-fallacy-china-and-the-tpp> [<https://perma.cc/KWD2-YSJE>]. But see David Pilling, *It Won't Be Easy to Build an "Anyone But China" Club*, FIN. TIMES (May 22, 2013), <https://www.ft.com/content/08cf74f6-c216-11e2-8992-00144feab7de> [<https://perma.cc/H2C7-W6LT>] (arguing that TPP was a containment strategy).

497. See Meidan, *supra* note 495.

security through market security and should rightfully be viewed in this light.⁴⁹⁸

Strengthening these energy security instruments is critical to balance the energy trilemma. To meet the demands of both energy equity and environmental sustainability, supply chains must be lengthened to satisfy energy demand. Without such lengthened supply chains, States like China will rely upon coal as fuel due to its local abundance.⁴⁹⁹ In such a scenario, States may further be weary of relying upon renewable energy infrastructure that is itself dependent upon rare earth minerals, over which China, in turn, has a near monopoly.⁵⁰⁰

Just as importantly, these instruments assure lenders and sponsors for new energy projects—and the actors in the supply chains supporting these projects—that long-term bargains will be honored.⁵⁰¹ Such assurance significantly reduces risk.⁵⁰² Given the significant capital expenditure needed to meet the moment, both for energy equity and environmental sustainability, such legal security is a condition without which the energy trilemma simply cannot be solved.

B. Trust Building in the Shadow of the Law

Energy security is threatened in ways that the UNCLOS, the ECT, and other international legal instruments alone cannot defuse. States frequently treat global energy supply chains as “a continuation of politics by other means.”⁵⁰³ In fact, energy security is one of the main playthings of geopolitical *realpolitik*.⁵⁰⁴

498. Levi, *supra* note 494; HOBBER, *supra* note 468, at 5–6.

499. Keith Bradsher & Lisa Friedman, *China's Power Crunch Exposes Tensions Ahead of Key U.N. Climate Summit*, N.Y. TIMES (Oct. 7, 2021), <https://www.nytimes.com/2021/10/07/climate/china-cop26-blackouts-coal.html> [<https://perma.cc/UP7F-CHDC>]; YERGIN, *supra* note 16, at 155–56.

500. See Dreyer, *supra* note 229; YERGIN, *supra* note 16, at 132.

501. See *supra* note 500.

502. Michael Nolan, Julian Stait & Erin Culbertson, *Dispute Resolution in Project Finance Transactions*, in INTERNATIONAL PROJECT FINANCE: LAW AND PRACTICE 419, 422–39 (John Dewar ed., 2011).

503. CARL VON CLAUSEWITZ, ON WAR 12 (Col. J.J. Graham trans., 1873); Gary Emmons, *The Energy Politics of Russia vs. Ukraine*, HARV. BUS. REV. (Mar. 11, 2009), <https://hbswk.hbs.edu/item/the-energy-politics-of-russia-vs-ukraine> [<https://perma.cc/3HR5-BA29>].

504. Amy Jaffe at the Council of Foreign Relations has an entire blog devoted to energy *realpolitik*. See Amy Jaffe, *Energy Realpolitik*, COUNCIL ON FOR. REL. <https://www.cfr.org/blog/energy-realpolitik> [<https://perma.cc/498N-M4H6>]. For one

Notably, even here a commons approach focused on cooperation has proved instrumental in increasing energy security, be it on a more modest scale. State actors continue to threaten energy security by threatening energy distribution.⁵⁰⁵ This kind of a threat can escalate into military threats or uses of violence. One such recent example is the threat by Iran in 2019 to close the Straits of Hormuz, having previously conducted a drone strike on Saudi refining capacity at Abqaiq and Khurais.⁵⁰⁶ Such threats affect energy security not just in the Persian Gulf, but globally.⁵⁰⁷

What then is the *international legal response* to such energy security risks? In theory at least, the most serious of such risks are governed by collective security mechanisms—centrally, the U.N. Security Council’s role in responding to threats to international peace and security, as well as the prohibition against unilateral uses of force enshrined in the U.N. Charter.⁵⁰⁸ In practice, this mechanism has been weakened as a constitutive norm governing the use of force.⁵⁰⁹ It continues to erode due to continuing facially-illegal uses of force by permanent members of the U.N. Security Council, such as the United

instructive post, see Amy Jaffe, *Iranian Interests, Iraqi Oil, And The U.S. Response*, COUNCIL ON FOR. RELS. (Jan. 8, 2020, 12:20 PM), <https://www.cfr.org/blog/iranian-interests-iraqi-oil-and-us-response> [<https://perma.cc/BP26-TFF5>].

505. For discussion of the strategic threat posed by Iran to the Strait of Hormuz, see Rockford Weitz, *Explainer: Could Iran Close the Strait of Hormuz*, NAVY TIMES (Jan. 7, 2020), <https://www.navytimes.com/news/your-navy/2020/01/08/explainer-could-iran-close-the-strait-of-hormuz/> [<https://perma.cc/QTF7-Y6B9>]. See also Ellen R. Wald, *3 Reasons Iran Can't Put a Toll on the Straits of Hormuz*, FORBES (July 8, 2019, 3:39 PM), <https://www.forbes.com/sites/ellenwald/2019/07/08/3-reasons-iran-cant-put-a-toll-on-the-strait-of-hormuz/?sh=45267cb75ff2> [<https://perma.cc/D9R4-G7GE>] (discussing Summer 2019 threats to navigation through the Straits); *Iran Seizes British Tanker in Strait of Hormuz*, BBC (July 20, 2019), <https://www.bbc.com/news/uk-49053383> [<https://perma.cc/55RG-C2SS>]. On the drone strike on Abqaiq and Khurais, see Ben Hubbard et al., *Two Major Saudi Oil Installations Hit by Drone Strike, and U.S. Blames Iran*, N.Y. TIMES (Sept. 15, 2019), <https://www.nytimes.com/2019/09/14/world/middleeast/saudi-arabia-refineries-drone-attack.html> [<https://perma.cc/4JRL-9V6Z>]. Iranian involvement in the attack remains disputed. See, e.g., *Saudi Arabia Oil Attacks: UN 'Unable to Confirm Iranian Involvement'*, BBC (Dec. 11, 2019), <https://www.bbc.com/news/world-middle-east-50742224> [<https://perma.cc/3W8Q-2EXZ>].

506. See *supra* note 505 and accompanying text.

507. See Ilan Goldenberg et al., *In Dire Straits? Implications of US-Iran Tensions for Global Oil Markets*, COLUM. CTR. GLOBAL ENERGY POL’Y (Nov. 21, 2019), <https://www.energypolicy.columbia.edu/research/report/dire-straits-implications-us-iran-tensions-global-oil-market> [<https://perma.cc/Y4QX-B377>].

508. HIGGINS, *supra* note 369, at 980–1023.

509. W. Michael Reisman, *Thomas Franck and the Use of Force*, 104 AM. SOC’Y INT’L L. PROC. 403, 406 (2011).

States (e.g., most recently, the assassination of General Soleimani on Iraqi soil) and the Russian Federation (e.g., the current invasion of Ukraine and the 2014 annexation of Crimea), as well as China's illegal threat of use of force, to name but a few.⁵¹⁰

Yet, functionally at least, the U.S.-Iran conflict suggests that a continued framework for truly *collective (energy) security measures* remains possible.⁵¹¹ Here, Iran and the five permanent members of the Security Council (the "P-5"), as well as the European Union ("+1"), agreed to the so-called Iran Nuclear Deal on July 14, 2015.⁵¹² Under the Iran Nuclear Deal, "Iran agreed to specified limits on its nuclear development program in exchange for the P5+1's undertaking to lift domestic and international sanctions that had been imposed through the United Nations."⁵¹³ The U.N. Security Council lifted sanctions through Resolution 2231, which, in turn, contained a so-called snapback, "which allows any P-5 member to initiate re-imposition of the comprehensive U.N. sanctions by claiming a violation, without a vote by the U.N. Security Council."⁵¹⁴ The deal further had a strong inspection and verification mechanism.⁵¹⁵ The Trump Administration's eventual re-imposition of sanctions against Iran invoked this snapback provision, but was, in turn, rebuffed by the Security Council.⁵¹⁶

510. *Id.*; see also *Use of Armed Drones for Targeted Killing*, U.N. HUM. RTS. COUNCIL (July 3, 2020), U.N. Doc. A/HRC/44/38, <https://undocs.org/en/A/HRC/44/38> (discussing U.S. aggression in Iraq) [<https://perma.cc/544F-LFDV>]; Oriana Skylar Mastro, *Military Confrontation in the South China Sea*, COUNCIL FOR RELS. (May 21, 2020), <https://www.cfr.org/report/military-confrontation-south-china-sea> [<https://perma.cc/N4S8-YRSF>]; Thomas D. Grant, *Annexation of Crimea*, 109 AM. J. INT'L L. 68, 77–87 (2015) (discussing Russia's use of force against Ukraine). *But see* MARY E. O'CONNELL, *THE ART OF LAW IN INTERNATIONAL COMMUNITY* 142 (2019) (arguing for the bases pursuant to which the Security Council continues to have legitimacy).

511. See W. MICHAEL REISMAN, *THE QUEST FOR WORLD ORDER AND HUMAN DIGNITY IN THE TWENTY-FIRST CENTURY: CONSTITUTIVE PROCESS AND INDIVIDUAL COMMITMENT* 381 (2012).

512. S.C. Res. 2231 (July 20, 2015); Letter from the Permanent Representative of the United States of America to the United Nations addressed to the President of the Security Council, (July 16, 2015), <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N15/225/49/PDF/N1522549.pdf?OpenElement> [<https://perma.cc/PS42-88ZW>]; Harold H. Koh, *The Trump Administration and International Law*, 56 WASHBURN L.J. 413, 442 (2017).

513. See Koh, *supra* note 512, at 442–43.

514. See *id.* at 445; S.C. Res. 2231, (July 20, 2015).

515. *Verification and Monitoring in Iran*, IAEA, <https://www.iaea.org/newscenter/focus/iran> [<https://perma.cc/BDX9-84LZ>].

516. *Iran Nuclear Deal: UN Rejects US Bid to 'Snapback' Iran Sanctions*, BBC (Aug. 26, 2020), <https://www.bbc.com/news/world-middle-east-53912771> [<https://perma.cc/RL7K-GD5E>].

The Iran Nuclear Deal is imperfect. It is unclear whether it is binding as a matter of international law.⁵¹⁷ But an exclusive focus on the legally-binding nature of the Iran Nuclear Deal would tend to miss that “the [Deal] is a confidence-building device designed to shift from a pattern of confrontation toward a pattern of cooperation with Iran.”⁵¹⁸ Thus, whatever the *legal status* of the snapback provisions might be, the architecture of the Iran Nuclear Deal has a strong pull on policy options. In fact, the U.N. Security Council itself recently made as much clear when it rejected the attempt by the United States to trigger the snapback provision.⁵¹⁹

What, then, are the results on-the-ground at the current point of growing tensions? As of January 2021, Iran has increased pressure on the rest of the world by resuming uranium enrichment, in contravention of the Iran Nuclear Deal.⁵²⁰ But even as Iran appears to be defecting from the Iran Nuclear Deal, the country’s actions still appear to be constrained by a hope to return to a status quo of mutual performance. That is, Iran insists that “[o]ur measures are fully reversible upon FULL compliance by ALL.”⁵²¹ The fact of the deal, therefore, continues to provide a roadmap for energy security, even in the face of U.S. and Iranian defection. Trust in the agreement therefore appears capable of outlasting even such strain, suggesting that trust-building is indeed a viable means to safeguarding energy security, so long as key actors continue to express their support for the overall principles for the deal, as the European Union, Russia, and China all continue to do.⁵²²

517. Koh, *supra* note 512, at 443 (not legally binding).

518. Koh, *supra* note 101, at 353.

519. Marc Weller, *The Controversy About Iranian Nuclear Sanctions Snapback*, AM. SOC’Y OF INT’L L. (Oct. 19, 2020), <https://www.asil.org/insights/volume/24/issue/27/controversy-about-iranian-nuclear-sanctions-snapback> [<https://perma.cc/7DDG-6NBS>].

520. Jon Gambrell & Isabel Debre, *Iran Starts 20% Uranium Enrichment, Seizes South Korean Ship*, ASSOC. PRESS (Jan. 4, 2021), <https://apnews.com/article/iran-uranium-enrichment-20-percent-ab0930064c446114506b8d085941cf84> [<https://perma.cc/S9BT-2NX3>].

521. *Id.* (quoting Iranian foreign minister’s tweet).

522. As of January 2022, negotiations between the United States, Iran, and other world powers remain fraught but show signs of promise. *See, e.g.*, Arsalan Shahla, *Tehran Rejects Talk of Interim Nuclear Deal: Iran Snapshot*, BLOOMBERG (Jan. 10, 2022, 3:05 AM), <https://www.bloomberg.com/news/articles/2022-01-10/tehran-rejects-talk-of-interim-nuclear-deal-iran-snapshot> [<https://perma.cc/CH2X-K5L3>]. For an analysis of negotiations, see Zvi Bar’el, *Iran Caved in to the West in Nuclear Talks, or the Other Way Around?*, HAARETZ (Jan. 10, 2022), <https://www.haaretz.com/middle-east-news/iran/.premium-iran-caved-in-to-the-west-in-nuclear-talks-or-the-other-way-around-1.10527718> [<https://perma.cc/Z3W2-3MTT>]. For an analysis of the concepts in this article in light of Russia’s invasion, see

Even under strain of arbitrary defection by a party as important as the United States, there is a model for collective security action in the shadow of a formal U.N. Charter process. As the Iran Nuclear Deal has illustrated, this model works best when it involves all stakeholders in devising a plan to build an exit ramp from using energy security as geopolitical cudgel.⁵²³ Its usefulness is more questionable when no such realistic exit ramp can be conceived.⁵²⁴ But even here, energy security mechanisms that engage in trust-building through verification and continued engagement can, in fact, hold serious threats to keep energy security in check.⁵²⁵ The global energy trilemma, therefore, can be balanced, even in the absence of authoritative legal means to outlaw bellicose peradventures, through cooperative efforts mirroring the Iran Nuclear Deal.⁵²⁶

C. What's the Washington Consensus Got to Do with It?

One might ask what the international economic order represented by the current Washington Consensus has to do with this energy security paradigm. Energy security seems to inhabit a different department of world order than the Washington Consensus. After all, the Washington Consensus is cast first and foremost as an economic paradigm.

As Hal Brands and Charles Edel recently argued in *The Lessons of Tragedy*, one of the key reasons for the United States to champion free global trade on the open seas was to build an alliance for global security under the banner of the rule of law, human rights, and shared prosperity.⁵²⁷ Through this broad lens, it is therefore important to appreciate that the Washington Consensus was never chiefly about economics. It was instead about security.⁵²⁸ And this security is

Frédéric G. Sourgens, Energy Lessons from Ukraine, EJIL:Talk! (Feb. 24, 2022), <https://www.ejiltalk.org/energy-lessons-from-the-ukraine-crisis/> [https://perma.cc/74HB-RZC8].

523. Koh, *supra* note 512, at 442.

524. Alexander Baunov et al., *A Year After Maidan: Why Did Viktor Yanukovich Flee After Signing the Agreement With the Opposition?*, CARNEGIE MOSCOW CTR. (Feb. 25, 2015), <https://carnegie.ru/commentary/59172> [https://perma.cc/R8SB-P3L4].

525. See Koh, *supra* note 512, at 442–47.

526. OONA HATHAWAY & SCOTT SHAPIRO, *THE INTERNATIONALISTS: HOW A RADICAL PLAN TO OUTLAW WAR REMADE THE WORLD* 415–24 (2017).

527. See HAL BRANDS & CHARLES EDEL, *THE LESSONS OF TRAGEDY: STATECRAFT AND WORLD ORDER* 106–09 (2019).

528. *Id.*

nowhere more intimately wrapped up in both geopolitics and economic prosperity than when it concerns energy supply.⁵²⁹

What Brands and Edel highlight is something that we have already guessed from our discussion of energy equity. The point of international economic cooperation is to entice participation in a global security framework by promising equity.⁵³⁰ As President Kennedy eloquently stated, the point was never to design a “Pax Americana enforced on the world by American weapons of war.”⁵³¹ It always was to secure buy-in for security through development and reconstruction.⁵³² In fact, the original Bretton Woods institution at the heart of the Washington Consensus had this mission in its name: the International Bank for Reconstruction and Development.⁵³³

As Brands and Edel lead us to see, the legal infrastructure discussed in the context of energy security was intended as a *security tool*.⁵³⁴ And any such tool must first and foremost be concerned with providing energy security. But more importantly, this security is only guaranteed when it is *equitable*—when it has authority to speak to shared values of human development.⁵³⁵

Energy security and energy equity under the aegis of the Washington Consensus are therefore joined at the hip. They were designed to provide security by supporting equity. They were *meant* to provide for broad *global development premised in human rights*. And they were meant to secure this commitment to development in a legal infrastructure that would create safeguards for cooperation. And as cooperation grew, it was intended to premise security not in the safeguards themselves, but in the trust that they generated.

529. *Id.* at 83, 101.

530. *Id.* at 100–11, 133–35.

531. John F. Kennedy, *Commencement Address at American University* (June 10, 1963), <https://www.jfklibrary.org/archives/other-resources/john-f-kennedy-speeches/american-university-19630610> [<https://perma.cc/4GPP-72AD>].

532. *See id.*:

I am talking about genuine peace, the kind of peace that makes life on earth worth living, the kind that enables men and nations to grow and to hope and to build a better life for their children—not merely peace for Americans but peace for all men and women—not merely peace in our time but peace for all time.

533. HERDEGEN, *supra* note 47, at 531–35.

534. BRANDS & EDEL, *supra* note 527, at 106–09.

535. *Id.* at 70, 78, 156.

D. The Limits of Faith

This still leaves one important point from our earlier discussion of energy security: the problem of energy mixes.⁵³⁶ The discussion so far has done nothing to diminish the importance of energy mixes for energy security. It rather created conditions in which arriving at such an energy mix would be as free from geopolitical or political risk as possible.

The very lessons of energy security support the finding that a diverse energy mix is, in fact, helpful to diffusing energy security tensions. Ironically, the Iran Nuclear Deal is possible because oil and gas have a part in the energy mix. This means that Iran has something to gain by a removal of sanctions targeting its nuclear program under the deal.⁵³⁷ At the same time, the fact that (Persian Gulf) oil and gas do not tower over the energy landscape, like they did in the 1973 Oil Embargo, means that tensions over oil supplies created by Iran are less severe than they might have been.⁵³⁸ Both elements are instrumental in getting Iran and the rest of the world to agree to, and ultimately comply with, the Iran Nuclear Deal.

Where does this leave us? A balance of the energy trilemma cannot rely upon decarbonization through complete reliance on renewable sources of energy. Short of fantastic technological advances, gas and nuclear energy will have to play a role in balancing the energy trilemma for the foreseeable future. Undercutting this basic reality therefore is not a way to achieve environmental sustainability, as it would threaten the very global social buy-in needed to support it. As we increase renewables to the maximum extent possible while balancing the energy trilemma, we will need to find another way to achieve environmental sustainability. As we will see in the next Part, this way again relies heavily on the Washington Consensus.

VI. THE KEYSTONE OF SUSTAINABLE ENERGY SYSTEMS

This leaves the question of what to do about environmental sustainability. The discussion so far has made it appear as if this element is tertiary to equity and security—as if its discussion comes in third place. But this would be a serious misunderstanding. Environmental sustainability is not a cornerstone of commons governance. It is not

536. See discussion *supra* Section II.C.4.

537. See discussion *supra* Section II.C.

538. See Yergin, *supra* note 202 (discussing energy security after the 1973 Embargo).

the first piece to be laid in constructing a stable energy governance framework. That is, to care about environmental sustainability before creating conditions of energy equity and energy security leads precisely to the climate achievement gap discussed in Part I.

But it is the last piece not because it is unimportant. Rather, it is the last piece in a different sense: it is a keystone. Everything else must be in place before it can bear weight. But it is the piece that secures the architectural balance between countervailing forces. Without it, the entire edifice collapses. Environmental sustainability can only be achieved if the basic framework for energy equity and energy security has already been set. But without environmental sustainability, the framework of energy equity and energy security will simply collapse in on itself.

There is no more vivid illustration of this interdependency than recent summers in New Delhi.⁵³⁹ Temperatures in 2018 rose to unendurable levels.⁵⁴⁰ Climate change threatened the lives of millions in one city alone.⁵⁴¹ This suffering will be repeated in city after city, country after country, continent after continent. Needless to say, any order with such results is the very opposite of equitable. And it is bound to undo any sense of security as more and more people, pushed beyond even the conditions to support bare life, will seek a way—any way—out of their misery.

What we have seen so far is that environmental sustainability concerns fall far short of their mark. That is, the way it stands, the energy trilemma will, in fact, lead to a collapse of global energy systems because they cannot meet the demands of environmental sustainability. Climate change continues apace. And with it, existing energy equity and energy security arrangements are beginning to show strain.

The key question then is—how does an energy commons approach help to resolve the problem? What is it that we ought to be doing to balance the energy trilemma? And how can environmental sustainability use the processes discussed in the context of energy equity and energy security to slingshot world society out of the current climate crisis?

This Part will provide two answers. First, it will highlight what to avoid in the name of environmental sustainability. And it will show that some of the policy mistakes currently unfolding would, in fact, be

539. See, e.g., Somini Sengupta, *In India, Summer Heat May Soon Be Literally Unbearable*, N.Y. TIMES (July 17, 2018), <https://www.nytimes.com/2018/07/17/climate/india-heat-wave-summer.html> [<https://perma.cc/KJZ2-683W>].

540. *Id.*

541. *Id.*

checked by a robust enforcement of existing Washington Consensus treaties. Second, this Part leverages energy markets to slingshot technological developments in energy systems worldwide to secure environmental sustainability by leaning on the logic and force of energy equity and energy security.

A. Avoiding the Environmental Trap

The first key lesson from a commons governance perspective is that environmental sustainability must work with, and stabilize, the energy trilemma. Consequently, environmental concerns cannot actively work against the aspirations of energy equity and the guaranties of energy security. Rather, a commons governance perspective must use the processes at work in both limbs to direct them towards sustainable ends.

This first lesson should be intuitive. If environmental policies undermine energy equity, it is not likely that those disadvantaged will take their losses lying down. Rather, as the French yellow vest protests have shown, a serious departure from the pillars of energy equity will lead to strident counter-reactions.⁵⁴² These reactions are ultimately likely to doom environmental policies. And they are also likely to topple other important social equilibria and thus seriously affect (energy) security concerns.

In November 2021, the COP26 Glasgow Conference took an important step towards enshrining this intuitive lesson into international climate law. One of the significant sticking points going into the Conference was whether developing countries would be willing to make net-zero emission pledges.⁵⁴³ These pledges were seen as entirely too onerous for developing countries to bear, precisely because of the development impacts that such pledges could have.⁵⁴⁴ COP26 concluded with the Glasgow Climate Pact.⁵⁴⁵ This Pact included a solution that accordingly embraced a view of climate governance as

542. Oyewunmi, *supra* note 35, at 3; *see also* Williamson, *supra* note 24.

543. For a discussion of the developmental implications of such pledges, see Leonardo Sempertegui, Frédéric G. Sourgens, Teddy Baldwin, Gabrielle Frawley & Heather Kellum, *Second Generation Development-Based Net-Zero Pledges as the Vehicle to Achieve Paris-Goals*, THE VIENNA BRIEFS ON DECARBONIZATION, ENERGY & DEVELOPMENT (Nov. 2, 2021).

544. *See* Somini Sengupta, Lisa Friedman & Brad Plumer, *Glasgow Climate Talks Are Down to the Wire on Money, Ambition and Fossil Fuels*, N.Y. TIMES (Nov. 12, 2021), <https://www.nytimes.com/2021/11/12/climate/glasgow-climate-cop26.html> [<https://perma.cc/CR7P-PHM6>].

545. Glasgow Climate Pact, U.N. Doc. Decision -/CMA.3, https://unfccc.int/sites/default/files/resource/cma3_auv_2_cover%20decision.pdf [<https://perma.cc/6TA3-HR6E>].

development-driven: Paragraph 32 of the top line Glasgow decision “urges Parties that have not yet done so to communicate . . . long-term low greenhouse gas emission development strategies . . . towards just transitions to net zero emissions by or around mid-century, taking into account different national circumstances.”⁵⁴⁶ Just transition, development, and maximum climate ambition are now formally fused together.⁵⁴⁷

Similarly, if environmental policies undermine energy security concerns, it will be difficult to generate the trust needed to support collective action towards environmental policies. We have seen that environmental policies rely heavily on the market. The market, in turn, will look at political risk as one factor in economic decision-making.⁵⁴⁸ If States undermine the very pre-commitments that they have made to limit political risk for market actors, it would be naïve to think that market actors will play Charlie Brown to policymakers’ Lucy, of pulling away the expected return of collaboration.⁵⁴⁹ As energy security is impaired, the cost for environmental policies thus increases. Given the already-staggering costs of energy infrastructure overhauls, it is an understatement that any such move would be counterproductive.⁵⁵⁰

While these principles may appear intuitive, they are not always easy to implement in practice. For example, trading blocs like the European Union seek to unilaterally set their own “border carbon adjustments.”⁵⁵¹ Such adjustments are “basically a tax on imported goods based on their carbon content.”⁵⁵² These adjustments are helpful from an environmental perspective. They disincentivize the purchase of goods and services on the basis of their carbon footprint and thus steer consumers towards shopping for less carbon-intensive alternatives.

But such actions also run the risk of undermining energy equity and energy security. A border carbon adjustment jeopardizes imposing stealth tariffs on foreign produced goods by reference to

546. *Id.* ¶ 32.

547. See Sengupta et al., *supra* note 544.

548. Nolan et al., *supra* note 502, at 422–39.

549. PETER D. CAMERON, INTERNATIONAL ENERGY INVESTMENT LAW: THE PURSUIT OF STABILITY 183 (2010).

550. *Net Zero by 2050*, *supra* note 37.

551. Nikos Tsafos, *How Can Europe Get Climate Border Adjustments Right?*, CTR. FOR STRAT. & INT’L STUD. (Aug. 7, 2020), <https://www.csis.org/analysis/how-can-europe-get-carbon-border-adjustment-right> [<https://perma.cc/MD5U-WFRW>].

552. *Id.*

environmental concerns.⁵⁵³ Trading blocs like the European Union are in financially stronger positions to transform their own domestic energy systems, meaning that such policies support domestic production in comparatively richer economies.⁵⁵⁴ Such adjustments thus directly run counter to energy equity, and they risk appearing like a defection from energy equity compromises. Such defection can have dangerous repercussions throughout energy systems, as the energy equity concerns negatively affect energy security and environmental sustainability calculations in turn.

Such actions also imperil energy security. Facially, carbon border adjustments may well violate trade and investment principles in FTAs.⁵⁵⁵ But carbon border adjustments may well be argued to fall into broad exceptions discussed in the beginning of this Article—that is, they are arguably measures necessary to protect human, animal, and plant life under the GATT.⁵⁵⁶ But now there is a direct clash between environmental and energy security principles.⁵⁵⁷ If this clash is resolved in favor of environmental principles, the exception in energy security instruments may well swallow the rule.⁵⁵⁸ This possibility is again uniquely unhelpful in mobilizing capital and industry in favor of new energy policies, as the very security mechanisms upon which they rely have come under stress at the point that new investment decisions must be made.

B. Leveraging the Commons

Existing climate agreements already go more than part of the way towards leveraging a commons solution to climate change. The Paris Agreement tries to establish a framework to leverage the forces of energy equity and energy security in an emissions reduction marketplace.⁵⁵⁹ Article 6 recognizes that Parties can “choose to pursue voluntary cooperation in the implementation of their nationally determined contributions.”⁵⁶⁰ This provision contemplates that the Paris

553. See Shuting Pomerlau, *For Carbon, Is EU Proposing a Border Adjustment or a Tariff?*, NISKANEN CTR. (June 18, 2020), <https://www.niskanencenter.org/for-carbon-is-the-eu-proposing-a-border-adjustment-or-a-tariff> [https://perma.cc/4JR7-DXKE].

554. See Tsafos, *supra* note 551.

555. *Id.*

556. See GATT 1994, *supra* note 54, art. XX(b).

557. For a discussion of such clashes, see Sourgens, *supra* note 60.

558. *Id.*

559. Paris Agreement, *supra* note 20, art. 6(1).

560. *Id.*

Agreement Parties will set up a market pursuant to which States can use “internationally transferred mitigation outcomes towards nationally determined contributions.”⁵⁶¹ Such a market requires “robust accounting to ensure, inter alia, the avoidance of double counting.”⁵⁶² Further, Article 6 also contemplated “a mechanism to contribute to the mitigation of greenhouse gas emissions and support sustainable development.”⁵⁶³ After earlier failures, the Paris Parties finally adopted rules to implement these mechanisms at COP26 in Glasgow in 2021.⁵⁶⁴

The Article 6 market mechanism leverages energy equity and energy security towards environmental sustainability. Article 6 “will be able to generate offsets for emissions reductions in developed as well as developing countries.”⁵⁶⁵ One of the key benefits from an energy equity perspective is that it “could become another route to channel climate finance from richer nations to developing countries, supplementing existing measures.”⁵⁶⁶ It supports the construction of a resilient, efficient energy infrastructure abroad in such a manner as to avoid the environmental trap discussed in the previous Section.⁵⁶⁷ Rather than make energy infrastructure a question of competitive advantages to be priced by means of carbon border adjustments, Article 6 encourages the opposite: a strengthening of, and investment in, energy transition up and down global supply chains.⁵⁶⁸

The Article 6 market mechanism also deploys the key drivers of energy security: stable markets.⁵⁶⁹ Stable global markets increase efficiencies.⁵⁷⁰ Thus, “the cost of meeting current NDCs could be cut by as much as fifty percent in principle . . . with a fully global, friction-

561. *Id.* art. 6(2).

562. *Id.*

563. *Id.* art. 6(4).

564. Desierto, *supra* note 125; Guidance on Cooperative Approaches Referred to in Article 6, Paragraph 2, of the Paris Agreement, U.N. Doc. Decision -/CMA.3, https://unfccc.int/sites/default/files/resource/cma3_auv_12a_PA_6.2.pdf [hereinafter Art. 6(4) Rulebook].

565. BODANSKY ET AL., *supra* note 81, at 237.

566. Simon Evans et al., *In Depth Q&A: How Article 6 Carbon Markets Could Make or Break the Paris Agreement*, CARBONBRIEF (Nov. 29, 2019, 8:00 AM), <https://www.carbonbrief.org/in-depth-q-and-a-how-article-6-carbon-markets-could-make-or-break-the-paris-agreement> [<https://perma.cc/4T6W-DGTB>].

567. *See* discussion *supra* Section VI.A.

568. Paris Agreement, *supra* note 20, art. 6.

569. *Id.*

570. *State and Trends of Carbon Pricing 2019* at 55, WORLD BANK (June 2019), <https://openknowledge.worldbank.org/handle/10986/31755> [<https://perma.cc/L2GB-46NY>].

free carbon market.”⁵⁷¹ Specifically, “trading could save \$250bn every year by 2030.”⁵⁷² These savings could then be reinvested in energy equity goals set out in Agenda 2030 and in climate finance instruments. That is, efficient, stable, and legally-secure markets can precisely undergird climate ambition because they can superimpose themselves on, and borrow from, the global energy infrastructure created by energy security concerns.

Consequently, the Glasgow Climate Pact should be seen as a success. COP26 reached a compromise that is generally consistent with a commons governance approach. A full analysis of the Article 6 market mechanism is beyond the scope of this Section.⁵⁷³ However, a few highlights showcase how environmental sustainability can, and did, leverage commitments that drive development. First, Article 6(4)’s carbon markets require participants to pay a five percent fee into an Adaptation Fund for developing countries.⁵⁷⁴ While more robust action would have been desirable—Article 6(2)’s internationally transferred mitigation outcomes do not carry such a requirement⁵⁷⁵—the principle that carbon markets must support development finance is an

571. *Id.*

572. IETA, THE ECONOMIC POTENTIAL OF ARTICLE 6 OF THE PARIS AGREEMENT AND IMPLEMENTATION CHALLENGES (Sept. 2019), https://www.ieta.org/resources/International_WG/Article6/CLPC_A6%20report_no%20crops.pdf [<https://perma.cc/PPP6-J3PW>].

573. For initial reports of the Article 6 market mechanism after COP26, see Cristina Brooks & Kevin Adler, *COP26: Article 6 Rulebook Updated, But Remains Work in Progress*, IHS MARKIT (Nov. 15, 2021), <https://ihsmarket.com/research-analysis/cop26-article-6-rulebook-update-but-remains-work-in-progress.html> [<https://perma.cc/8VFP-RUUU>]; Frank Watson, *COP26: Nations Strike Deal on International Carbon Markets at Glasgow Summit*, S&P GLOBAL (Nov. 14, 2021, 2:17 PM), <https://www.spglobal.com/platts/en/market-insights/latest-news/energy-transition/111421-cop26-nations-strike-deal-on-international-carbon-markets-at-glasgow-summit> [<https://perma.cc/9KUC-L8XN>]; Kelley Kizzier, *COP26 Ends with a Strong Result on Carbon Markets and an International Call to Action for the Most Urgent Climate Priorities*, ENV’T DEF. FUND (Nov. 13, 2021), <https://www.edf.org/media/cop26-ends-strong-result-carbon-markets-and-international-call-action-most-urgent-climate> [<https://perma.cc/9Q94-G6GQ>]. For critical commentary, see Khaled Diab, *COP26: Half-Baked Carbon Market Rules Fail to Take Heat Off the Climate*, CARBON MKT. WATCH (Nov. 13, 2021), <https://carbonmarketwatch.org/2021/11/13/cop26-half-baked-carbon-market-rules-fail-to-take-heat-off-the-climate> [<https://perma.cc/RP38-LRWS>].

574. See Art. 6(4) Rulebook, *supra* note 564, Annex ¶ 58.

575. *Id.* Annex ¶ 37:

Participating Parties and stakeholders using cooperative approaches are strongly encouraged to commit to contribute resources for adaptation, in particular through contributions to the Adaptation Fund, and to take into account the delivery of resources under Article 6, paragraph 4, to assist developing country Parties that are particularly vulnerable to the adverse effects of climate change to meet the costs of adaptation.

important market for future governance progress.⁵⁷⁶ Second, the Article 6(2) mechanism is sufficiently robust to encourage meaningful infrastructure investment in developing countries.⁵⁷⁷ It thus promises to move a significantly greater portion of energy value chains to developing countries by locating such projects in these regions, rather than elsewhere.⁵⁷⁸ Far from being a greenwashing concern, this is a potential developmental benefit for developing countries to be among the first movers (and thus receive a first-mover advantage) with regard to new technologies.⁵⁷⁹ Third, the market rules as adopted create potential additional revenue flows for developing countries to support additional development progress to pathways already outlined in their NDCs.⁵⁸⁰ These NDCs hope to achieve broad economic diversification, together with emission reductions.⁵⁸¹ The mechanisms appear to support this goal by providing means to extend such diversification beyond existing NDC levels.⁵⁸²

What then is the vision of Article 6 emissions markets? At its most ambitious, such markets can help transition the world as a whole to new energy supply chains.⁵⁸³ One futuristic vision is that a truly global energy infrastructure could blanket deserts with solar panels and

576. *Id.*

577. One leading global law firm advises its clients that in light of the Article 6 rulebook, “[c]ountries and companies will be able to invest in sustainable development projects that lead to certified emission reductions in another country that can be used to offset their own carbon emissions.” Samuel Boxerman et al., *Key Developments and Takeaways for Business and Industry From Climate Conference of the Parties 26*, SIDLEY (Nov. 16, 2021), <https://www.sidley.com/en/insights/newsupdates/2021/11/key-developments-and-takeaways-for-business-and-industry-from> [<https://perma.cc/HP9K-JFPF>].

578. *Id.*

579. See Diab, *supra* note 573 (raising the greenwashing concern). Notably, this benefit will only be present to the extent that participant States insist on strong technology transfer commitments in return for Article 6(2) transfers. See Sandra Greiner et al., *Moving Towards Next Generation Carbon Markets, Observations from Article 6 Pilots*, at 19–20, CLIMATE FIN. INNOVATORS (June 2019), https://www.climatefocus.com/sites/default/files/Moving-toward-next-generation-carbon-markets_update-june-2019-1.pdf [<https://perma.cc/9XK9-6W6F>] (outlining pilot projects and providing information on the developmental and technological advantages that Article 6 projects could bring to host economies).

580. See generally Leonardo Sempértegui & Frédéric G. Sourgens, *The Importance of States and the Private Oil Sector for Successfully Implementing the Energy Transition*, 67 Rocky Mtn. Min. L. Inst. ____ (forthcoming 2022) (discussing NDCs of OPEC Member States).

581. *Id.*

582. See Greiner, *supra* note 579, at 19–22.

583. See BODANSKY ET AL., *supra* note 81 at 237 (noting that Article 6 “will not be limited to project-based reductions, and might involve emission reduction policies or programs”).

coastlines with offshore wind platforms. The energy generated by these installations could be turned into hydrogen or another fuel, that could then be shipped globally and, in turn, materially move the global energy mix towards a greater proportion of renewables.⁵⁸⁴ This vision is no longer entirely outlandish. But it would require massive investments on a global scale to integrate renewable energy supply chains to the same depth as petroleum supply chains—just as crude oil from Venezuela is refined in Houston, Texas to fuel cars on American streets, renewable energy from Tunisia could likewise be turned into hydrogen and shipped to Savannah, Georgia to be distributed across the United States as electricity.⁵⁸⁵ And as more projects come online, the more robust the energy supply chains would become. Hydrogen would be available not just from Tunisia, but from deserts and shorelines around the world.

In addition to such markets, States would create mechanisms to cooperate with regard to carbon capture deployment to push the world to carbon-negative emissions, even while fossil fuels remain in the energy mix to safeguard energy security.⁵⁸⁶ Such mechanisms can supplement and bridge the energy transition in the same way as traditional Article 6 markets.⁵⁸⁷ That is, they can accelerate technological development, speed its global implementation, and share technology,

584. See Tade Oyewunmi, *Power-to-Gas, Hydrogen, and a Spotlight on New York's Emerging Climate and Energy Policy*, 38 PACE ENV'T L. REV. 250–53 (2021); Mark Anderson, *Solar Closing in on "Practical" Hydrogen Production*, IEEE SPECTRUM (Sept. 1, 2020), <https://spectrum.ieee.org/energywise/energy/renewables/solar-closing-in-on-practical-hydrogen-production> [<https://perma.cc/U47H-XWY3>]; Amin Al-Habaibeh, *What if We Turned The Sahara Desert Into a Giant Solar Farm?*, SCI. ALERT (May 7, 2019), <https://www.sciencealert.com/is-turning-the-sahara-desert-into-a-giant-solar-farm-a-good-idea> [<https://perma.cc/7N6T-WZZK>].

585. *US Refiners Move on from Venezuelan Heavy Crude*, ARGUS (Jan. 24, 2020), <https://www.argusmedia.com/en/news/2057415-us-refiners-move-on-from-venezuelan-heavy-crude> [<https://perma.cc/H5WS-E5CW>]; Oyewunmi, *supra* note 584, at 21–24 (discussing the hydrogen chain).

586. Sourgens, *supra* note 456. COP26 made clear that such technology is within the scope of its energy transition vision due to its reference to unabated coal in the Glasgow Climate Pact, indicating the coal with carbon capture would remain an acceptable component of the energy mix even after COP26. See *COP26 Didn't Solve Everything—But Researchers Must Stay Engaged*, NATURE (Nov. 16, 2021), <https://www.nature.com/articles/d41586-021-03433-2> [<https://perma.cc/A6FW-34KF>].

587. See *U.S.-China Joint Glasgow Declaration on Enhancing Climate Action in the 2020s*, art. 7(E) (Nov. 10, 2021), https://www.state.gov/u-s-china-joint-glasgow-declaration-on-enhancing-climate-action-in-the-2020s/#.YYz_SH94EUI.twitter [<https://perma.cc/VC9M-CAPL>].

all the while supporting a truly diversified energy mix and environmental sustainability at the same time.⁵⁸⁸

These markets could truly be a keystone of equitable, secure, and environmentally-sustainable energy commons. They would stand on the backs of both the Paris Agreement and the Washington Consensus. Tantalizingly, they are within our very grasp. But to reach them requires us to understand that global energy problems can only be solved together and not apart—that they can only be tackled when we provide a reason for all members of world society as to why new energy processes are not built on their backs, but rather to their benefit. And that the only mechanism powerful enough to catapult us out of disaster is the power of focused enterprise operating on a global scale in free markets.

CONCLUSION

This Article has argued that global climate policies fail to achieve their ambitious goal of halting and reversing climate change because they fundamentally misunderstand the nature of global energy processes. It has been shown that global energy processes are trapped in an energy trilemma between energy equity, energy security, and environmental sustainability.⁵⁸⁹ This trilemma pulls energy policy in fundamentally-inconsistent directions. The Article has argued that this trilemma can be resolved when the different limbs of the trilemma are balanced against each other, and that such a balance is possible when global energy processes are seen as a commons.

The Article has shown that current global climate policies fail because they do not sufficiently embed climate action in a broader equitable global energy and economic order. The Article provides that such an order is an essential condition, both to deliver energy equity and to cabin threats to energy security as much as possible. The Article makes clear that only a baseline of global free trade in open markets can serve as a platform for such a broader equitable global economic order. It therefore has argued for the vitality of the Washington Consensus for climate action.

But it has also argued that something more is needed. The Washington Consensus focuses on growth for its own sake. Such policies will not by themselves bring about equitable global development

588. *Id.*

589. *See* discussion *supra* Part II.

or create the conditions for a new transition to equitable, secure, and sustainable energy markets.

The Article has therefore argued that the equitable commitments motivating the Paris Agreement—and the human rights actions that continue to be used to enforce it—must be brought into the core of the global economic order. Energy equity can only be achieved when global economic activity supports economic and social development, growing income and social capital alike. This can only be achieved when the State takes an active role in establishing infrastructure to support global energy markets and directing these markets towards equity and sustainability.

The Article, in a phrase, has argued that the Herculean energy challenge that we face must combine the *Paris Agreement* and the *Washington Consensus* into a *Parisian Consensus*. It must focus on an international energy order that supports global equitable development, as well as provides tools to maintaining international peace and security and climate justice. This Article has demonstrated that a commons governance approach can help us to begin to see the outlines of such a new consensus. And it has shown that on our best of days and in the hands of good global lawyers as stewards of world society, existing global legal decision processes indeed already bend towards this new consensus.