Michigan Journal of Environmental & Administrative Law

Volume 9 | Issue 2

2020

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https://doi.org/10.36640/mjeal.9.2.federal

THE FEDERAL COAL LEASING PROGRAM AS AN ACTIONABLE SUBSIDY UNDER INTERNATIONAL TRADE LAW

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The World Trade Organization (WTO) is often criticized for standing in the way of responses to climate change. Restrictions on domestic renewable energy subsidies under the Agreement on Subsidies and Countervailing Measures (SCM Agreement) have drawn particular disfavor. But critics overlook the role that the SCM Agreement can play in similarly disciplining domestic fossil fuel subsidies. This Note demonstrates that potential role by focusing on one prominent fossil fuel subsidy in the United States: The Bureau of Land Management's (BLM) coal leasing program on federal lands. The program is an actionable subsidy under the SCM Agreement because it provides coal mining rights to private companies at artificially low prices. In response, WTO member countries should challenge the BLM's program, either by initiating a dispute at the WTO or by imposing countervailing duties on U.S. imports. WTO-authorized retaliation could shift the political calculus that keeps the current program in place, meaningfully reducing U.S. emissions.

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INTRODUCTION

Climate change is "the most systemic threat to humankind."[1] Environmental sustainability depends on a rapid transition away from fossil fuels, especially coal.[2] In the United States, roughly forty percent of fossil fuel production takes place on federal lands through private leasing agreements administered by the Bureau of Land Management (BLM).[3] The BLM's leasing program dramatically underprices extracted coal, resulting in over-production, lower market prices, and additional emissions.[4]

The BLM could simply raise leasing prices.[5] The current administration, however, has no appetite to do so.[6] This Note instead advocates that U.S. trading partners invoke the World Trade Organization's (WTO) Agreement on Subsidies and Countervailing Measures (SCM Agreement)[7] to compel reform of the program.

The WTO is often criticized for hampering solutions to climate change.[8] In particular, restrictions on subsidies under the SCM Agreement may narrow a gov-

1. Somini Sengupta, *Biggest Threat to Humanity? Climate Change, U.N. Chief Says*, N.Y. TIMES (Mar. 29, 2018), https://www.nytimes.com/2018/03/29/climate/united-nations-climate-change.html (quoting United Nations secretary general António Guterres); *see also* Oliver Cann, *More Walls, More Warming, Less Water: A World at Risk in 2016*, WORLD ECON. F. (Jan. 14, 2016), http://reports.weforum.org/global-risks-2016/press-releases/?doing_wp_cron=1543884203.7339379787445068359375 (describing climate change as the biggest threat to the global economy).

2. Coral Davenport, *Major Climate Report Describes a Strong Risk of Crisis as Early as 2040*, N.Y. TIMES (Oct. 7, 2018), https://www.nytimes.com/2018/10/07/climate/ipcc-climate-report-2040.html.

3. *See* Jayni Foley Hein, *Federal Lands and Fossil Fuels: Maximizing Social Welfare in Federal Energy Leasing*, 42 HARV. ENVTL. L. REV. 1, 7-10 (2018); Press Release, *The War on Coal is Over: Interior Announces Historic Coal Projects in Utah*, U.S. DEP'T INTERIOR (Feb. 14, 2019), https://www.blm.gov/press-release/war-coal-over-interior-announces-historic-coal-projects-utah#targetText=%E2%80%9CCoal%20production%20on%20federal%20lands,percent%20of%20our%20nation's%20coal.

4. *See infra* Part I.

5. *See, e.g.*, Hein, *supra* note 3, at 51-54; Michael Burger, *A Mitigation-Based Rationale for Incorporating a Climate Change Impacts Fee into the Federal Coal Leasing Program*, SABIN CTR. FOR CLIMATE CHANGE L. (Sept. 2016), https://climate.law.columbia.edu/sites/default/files/content/docs/Burger-09-2016-Climate-Change-Impacts-Fee_1.pdf.

6. *See, e.g.*, Devin Henry, *Trump Administration Ends Obama's Coal-Leasing Freeze*, HILL (Mar. 29, 2017), https://thehill.com/policy/energy-environment/326375-interior-department-ends-obamas-coal-leasing-freeze; Press Release, U.S. DEP'T INTERIOR, *supra* note 3.

7. Agreement on Subsidies and Countervailing Measures, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1869 U.N.T.S. 14 [hereinafter SCM Agreement].

8. *See, e.g.*, Aaditya Mattoo et al., *Reconciling Climate Change and Trade Policy* (WORLD BANK, Policy Research Working Paper No. 189, 2009), https://openknowledge.worldbank.org/handle/10986/4319; Bradly J. Condon, *Climate Change and Unresolved Issues in WTO Law*, 12 J. INT'L ECON. L. 895 (2009).

ernment's authority to incentivize renewable energy.[9] The SCM Agreement, however, is double-edged: it can and should be used to discipline subsidies to the fossil fuel industry.[10] Some scholars have speculated that the SCM Agreement applies to fossil fuel subsidies, but they have done so at a relatively high level of generality. They have largely concluded that the structure of fossil fuel subsidies avoids discipline under the SCM Agreement.[11] This Note focuses its analysis on one prominent fossil fuel subsidy, arguing that the federal coal leasing program amounts to an actionable subsidy under the SCM Agreement.

Part I outlines the BLM's coal leasing program and argues that it subsidizes activities of coal mining companies. Part II applies the SCM Agreement's rules to the BLM program. The artificially low price set for leasing coal mining rights on federal land comports with the SCM Agreement's definition of "subsidy": a financial contribution by the government, via the provision of a good, that confers a benefit to a specific industry. Finally, Part III speculates as to the remedies available to other WTO members to challenge the BLM's program. Major coal exporters could challenge the program through the WTO's Dispute Settlement Understanding (DSU), while major coal importers with their own domestic production could impose countervailing duties.

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9. *Compare* Magnus Lodefalk & Mark Storey, *Climate Measures and WTO Rules on Subsidies*, 39 J. WORLD TRADE 23, 31 (2005) (arguing that climate policies are permissible), *and* Jaemin Lee, *SCM Agreement Revisited: Climate Change, Renewable Energy, and the SCM Agreement*, 15 WORLD TRADE REV. 613 (2016) (placing renewable energy subsidies under the SCM Agreement's "general infrastructure" exception), *with* Steve Charnovitz, *Green Subsidies and the WTO* (EUR. UNIV. INST., Working Paper RSCAS 2014/93, 2014) (adopting a more pessimistic position).

10. No country has yet initiated a WTO dispute against another member's fossil fuel subsidy. Henok Birhanu Asmelash, *Energy Subsidies and WTO Dispute Settlement: Why Only Renewable Energy Subsidies Are Challenged*, 18 J. INT'L ECON. L. 261, 281 (2015) ("[N]o formal dispute involving fossil fuel subsidies has so far been brought to the WTO."). Fossil fuel subsidies are a major contributor to global emissions. *Id.* at 267. For an overview of global fossil fuel subsidies, see generally David Coady, *How Large Are Global Fossil Fuel Subsidies?*, 91 WORLD DEV. 11 (2017) (calculating the scale of global fossil fuel subsidies).

11. *See, e.g.*, Asmelash, *supra* note 10; Chris Wold et al., *Leveraging Climate Change Benefits Through the World Trade Organization: Are Fossil Fuel Subsidies Actionable?*, 43 GEO. J. INT'L L. 635 (2012); Robert Howse, *Securing Policy Space for Clean Energy under the SCM Agreement: Alternative Approaches*, INT'L CTR FOR TRADE & SUSTAINABLE DEV. (Dec. 2013), https://www.ictsd.org/sites/default/files/research/E15_CleanEnergy_Howse_FINAL.pdf. Often, scholars focus on the legality of green energy subsidies under the SCM Agreement after only a cursory observation that fossil fuel subsidies cannot be challenged. *See, e.g.*, Sherzod Shadikhodjaev, *Renewable Energy and Government Support: Time to 'Green' the SCM Agreement?*, 14 WORLD TRADE REV. 479, 483 (2015) ("It is arguably not easy to apply the SCM disciplines to successfully block fossil fuel subsidies.").

I. THE BLM'S COAL LEASING PROGRAM

A. *Structure of the Program*

The BLM manages roughly 570 million acres of federal land that can be leased to private companies for mining coal.[12] Just over forty percent of all coal in the United States is extracted from BLM leases.[13] Eighty-five percent of that federal coal is produced solely in the Powder River Basin (PRB) region of Wyoming and Montana.[14]

Under the Mineral Leasing Act, the BLM conducts lease sales at "fair market value," administers the leases, and monitors production to calculate the royalties owed by mining companies.[15] A mining company compensates the federal government for the right to extract coal in two primary steps.[16] First, a company purchases a lease, either through application or a competitive bidding process, based on the fair market value of the underlying coal deposits.[17] Calculation of fair market value is a flexible process guided by prior sales, expected production, and resulting income.[18] Second, the mining company must pay a fixed percentage of the value of the extracted coal in the form of royalties.[19]

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12. *Coal*, BUREAU LAND MGMT., https://www.blm.gov/programs/energy-and-minerals/coal (last visited Dec. 1, 2018).

13. Eric Lipton & Barry Meier, *Under Trump, Coal Mining Gets New Life on U.S. Lands*, N.Y. TIMES (Aug. 6, 2017), https://www.nytimes.com/2017/08/06/us/politics/under-trump-coal-mining-gets-new-life-on-us-lands.html. This percentage represents a dramatic increase since 1960, when only 1.3 percent of coal was produced on federal lands. *See* Hein, *supra* note 3, at 9.

14. *Background*, BUREAU LAND MGMT., https://www.blm.gov/programs/energy-and-minerals/coal/background (last visited Dec. 1, 2018).

15. *Id.*

16. Coal companies must also pay rent on leased land, *Lease Management*, BUREAU LAND MGMT., https://www.blm.gov/programs/energy-and-minerals/coal/lease-management (last visited Dec. 5, 2018), but rent amounts are negligible. Kenneth Gillingham et al., *Reforming the U.S. Coal Leasing Program: Royalty Rates and Auction Practices do not Reflect the Social Costs of Coal*, 354 SCIENCE 1096, 1097 (2016).

17. *See* 43 U.S.C. § 1701(a)(9) (2012); *Lease by Application (LBA) Process*, BUREAU LAND MGMT., https://www.blm.gov/programs/energy-and-minerals/coal/lease-by-application-process (last visited Dec. 1, 2018). In brief, under competitive bidding, the BLM selects a tract of land and the right to mine it goes to the company that bid the highest. In the application process, a mining company itself selects a tract of land that it would like to mine and submits a proposal to BLM to lease it. BUREAU LAND MGMT., *Frequently Asked Questions About the Federal Coal Leasing Program*, 6-8, https://eplanning.blm.gov/epl-front-office/projects/nepa/64842/78268/88489/CoalFAQ.pdf (last visited Jan. 19, 2020).

18. *See* U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-14-140, COAL LEASING: BLM COULD ENHANCE APPRAISAL PROCESS, MORE EXPLICITLY CONSIDER COAL EXPORTS, AND PROVIDE MORE PUBLIC INFORMATION 33 (2013) (criticizing the BLM's approach for being inconsistent and for regularly establishing low fair market values).

19. *See Lease by Application (LBA) Process*, *supra* note 17. These royalties are a significant source of revenue for the federal and state governments. *See* Hein, *supra* note 3, at 8, 11.

This program has been criticized for systematically underpricing federal coal resources at both the leasing and royalty stages.

B. *Deficiencies of the Program*

The BLM's coal leasing program amounts to a subsidy to coal mining companies because it underprices the value of federal mining leases. Four features of the program result in inadequate leasing and royalty rates: the fair market value fails to reflect the value of the underlying resources, the uncompetitive bidding process depresses lease prices, companies circumvent royalties through captive transfers, and finally, the entire program fails to account for negative externalities of coal production.

1. Pricing Below Fair Market Value

The simplest cause of underpricing is that the fair market value used to appraise mining leases fails to reflect the actual value of the resources. First, BLM's calculation of the value of its leases fails to incorporate the potential for coal exports.[20] Because coal exports command significantly higher prices than domestic sales, the fair market value "systematically underprice[s] coal owned by the American public, potentially leading to millions of dollars in foregone revenue each year."[21] Independent reports by the GAO and even the Department of the Interior's own Office of the Inspector General highlighted this deficiency.[22] Second, BLM's pricing for mining leases ignores the opportunity cost of leasing the land out for cattle grazing.[23] This similarly results in undervaluation, as low-priced leases push ranchers off grazing land.[24]

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20. *See* CLARK WILLIAMS-DERRY, SIGHTLINE INST., UNFAIR MARKET VALUE: BY IGNORING EXPORTS, BLM UNDERPRICES FEDERAL COAL 1-2, 13 (July 2014), https://www.sightline.org/research_item/unfair-market-value/.

21. *Id.* at 1; *see also* Hein, *supra* note 3, at 15.

22. *See* U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 18, at 36-39; OFFICE OF THE INSPECTOR GEN., U.S. DEP'T OF THE INTERIOR, CR-EV-BLM-0001-2012, COAL MANAGEMENT PROGRAM, U.S. DEPARTMENT OF THE INTERIOR 6-9 (2013), https://www.doioig.gov/sites/doioig.gov/files/CR-EV-BLM-0001-2012Public.pdf ("BLM does not fully account for export potential in developing the [fair market value]s."). The BLM's calculation of fair market value nominally acknowledges the role of exports, BUREAU OF LAND MGMT., H-3070-1, ECONOMIC EVALUATION OF COAL PROPERTIES 3-8 (2014), but independent studies by the GAO, DOI Office of Inspector General, and nongovernmental groups have concluded that insufficient attention is paid to exports in practice.

23. *See* Neela Banerjee & Robert McClure, *How Federal Giveaways to Big Coal Leave Ranchers and Taxpayers Out in the Cold*, INSIDE CLIMATE NEWS (Dec. 29, 2017), https://insideclimatenews.org/news/29122017/wyoming-powder-river-basin-coal-subsidies-climate-change-oil-gas-trump; *cf.* Terry Punt & Leland James Turner, *Guest Opinion: BLM Fails to Change With Coal Market*, BILLINGS GAZETTE (May 4, 2018), https://billingsgazette.com/opinion/columnists/guest-opinion-blm-fails-to-change-with-coal-market/article_9cf0c082-1c07-507f-b2d3-cc795357e70e.html.

24. *See* Banerjee & McClure, *supra* note 23.

2. Uncompetitive Bidding

The Mineral Leasing Act requires that coal leases be offered to private miners on the basis of competitive bidding.[25] Unfortunately, for several structural reasons, the BLM has fallen short of this ideal. These reasons—which benefit established companies—include the fact that leases tend to be small and directly adjacent to active mines as well as the significant capital investments required to develop a new mining site.[26] Lack of competition is particularly a concern in the PRB because, despite its enormous coal production, it was decertified as a coal-producing region in 1990 following pressure from the coal mining industry.[27] This means that leasing procedures in the PRB are more lenient than in other regions and land to be leased is identified by mining companies in applications, producing less competitive prices.[28] A GAO study reflects this reality, finding that only ten percent of federal coal leases had more than one bidder.[29] This lack of bidding competition results in an artificially low fair market value set by the BLM.[30] A low winning bid for one lease provides a benchmark that BLM uses to calculate lower values for future leases.[31]

3. Inadequate Royalties

After a company has secured a mining lease, it pays a royalty calculated as a fixed percentage of the value of the coal sold in its first transaction.[32] In practice, royalty rates fall below the rate that would be set by market competition. First, the royalties are simply too low: they have not increased since the Mineral Leasing Act was passed in 1920, and are lower than rates set by many state and foreign governments.[33] Second, assessing the royalty value at the first sale allows companies to

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25. 30 U.S.C. § 201(a)(1) (2012).

26. *See* U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 18, at 17-18; Hein, *supra* note 3, at 13; Gillingham et al., *supra* note 16, at 1097 ("[B]idding is often uneconomic for other firms, leaving the operator of the existing mine without meaningful competition.").

27. Josh Lappen, *A Policy History of Federal Coal Leasing: Past and Present Challenges*, 19 WYO. L. REV. 151, 165 (2019) (noting the shift from the BLM-led management of certified regions to industry-led selection of land in newly-decertified regions).

28. *Id.*; *see also* JEREMY NICHOLS, WILDEARTH GUARDIANS, THE POWDER RIVER BASIN OF THE WEST: KEY TO SOLVING GLOBAL WARMING 17-19 (Nov. 23, 2009), https://pdf.wildearthguardians.org/site/DocServer/report_powder_river_11-23-09.pdf.

29. U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 18, at 15-16.

30. *See* OFFICE OF THE INSPECTOR GEN., *supra* note 22, at 7. ("Comparable sales are a key component of determining the [fair market value]. In two recent sales . . . , however, BLM developed its comparable sales analyses using a lower bid amount . . . . [T]he risk of accepting a lower bid is increased with an inappropriately low [fair market value]."); Hein, *supra* note 3, at 14 (observing that "bids have failed to even keep up with inflation"); NICHOLS, *supra* note 28, at 19.

31. Lappen, *supra* note 27, at 172-73.

32. *See Lease by Application (LBA) Process*, *supra* note 17.

33. *See* Hein, *supra* note 3, at 14, 18.

circumvent paying based on the true market value of the coal.[34] Companies often sell coal to an affiliate at an artificially low price (termed "captive transactions") in order to pay a lower royalty. The affiliate then sells at the higher market rate.[35] Finally, the BLM allows companies to invoke deductions for cleaning and transportation of extracted coal, among other things, to set a lower price.[36]

As a result of these three shortcomings, there is a significant and growing gap between the price of federally owned coal and that of coal mined on private land.[37] The low price of federal coal "clearly exerts a strong downward pressure on the national average coal price."[38]

4. Failure to Capture Externalities

The BLM's pricing for coal also excludes significant negative externalities. Most directly, coal extraction produces significant pollution at the mining site.[39] In the long term, state and federal governments may bear these costs because many

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34. *See* Matt Lee-Ashley & Nidhi Thakar, *Cutting Subsidies and Closing Loopholes in the U.S. Department of the Interior's Coal Program*, CTR. FOR AM. PROGRESS (Jan. 6, 2015), https://www.americanprogress.org/issues/green/reports/2015/01/06/103880/cutting-subsidies-and-closing-loopholes-in-the-u-s-department-of-the-interiors-coal-program/.

35. *See id.*; *see also* EXEC. OFFICE OF THE PRESIDENT, THE ECONOMICS OF COAL LEASING ON FEDERAL LANDS: ENSURING A FAIR RETURN TO TAXPAYERS 17 (2016), https://obamawhitehouse.archives.gov/sites/default/files/page/files/20160622_cea_coal_leasing.pdf ("Federal PRB coal tends to be sold at low prices to subsidiaries . . . then sold for higher prices in a final transaction. This vertically-integrated arrangement . . . provides a perverse incentive . . . ."); Patrick Rucker, *Asia Coal Export Boom Brings no Bonus for U.S. Taxpayers*, REUTERS (Dec. 4, 2012), https://www.reuters.com/article/us-usa-coal-royalty/asia-coal-export-boom-brings-no-bonus-for-u-s-taxpayers-idUSBRE8B30IL20121204 (calculating that this loophole was used to avoid paying $40 million in royalties in 2011 alone).

36. *See* Hein, *supra* note 3, at 21-22; *see also* EXEC. OFFICE OF THE PRESIDENT, *supra* note 35, at 8, 18.

37. *See* EXEC. OFFICE OF THE PRESIDENT, *supra* note 35, at 16 ("[The] gap between Federal PRB coal and private coal prices has widened, with private coal from Appalachian and interior States ranging from $30 per ton to as high as $100 per ton . . . while Federal PRB coal still remains close to $10 per ton.").

38. *Id.* at 17 ("EIA forecasts suggest that this trend will continue, further increasing the influence of Federal coal in setting lower market prices for coal in the United States . . . ."); *see also* Alison Cassady, *Complex Market Forces Are Challenging Appalachian Coal Mining*, CTR. FOR AM. PROGRESS (Oct. 6, 2014), https://www.americanprogress.org/issues/green/reports/2014/10/06/98371/complex-market-forces-are-challenging-appalachian-coal-mining/ (linking low prices of PRB coal to downward price pressures that harm higher-priced coal production regions). Spot prices for PRB coal offer additional, though incomplete, evidence of this pricing pressure. The price of PRB coal is typically half the price of any other region and only a quarter of the price of Appalachian coal. *Coal Markets*, U.S. ENERGY INFO. ADMIN., https://www.eia.gov/coal/markets/ (last visited Jan. 27, 2020).

39. *See, e.g.*, Nichols, *supra* note 28, at 8-10 (describing environmental disruption caused by strip-mining techniques in the PRB); Gary Braasch, *Powder River Basin Coal on the Move*, SCI. AM. (Dec. 9, 2013), https://www.scientificamerican.com/article/powder-rive-basin-coal-on-the-move/ (cataloguing air, water, and noise pollution as well as irreparable destruction of habitat).

coal companies simply cannot afford remediation.[40] The harm resulting from the effects of climate change presents an even larger externality.[41] Burning federal coal accounts for ten percent of all U.S. greenhouse gas emissions.[42]

As a matter of public policy, the BLM should raise its pricing to better internalize these externalities.[43] Because private coal leases also exclude such externalities, however, they are not a basis for identifying an actionable government subsidy.[44] Part II outlines the SCM Agreement and argues that BLM's leasing program satisfies the criteria for an actionable subsidy.

II. APPLYING THE SCM AGREEMENT

The WTO disciplines domestic subsidies through the General Agreement on Trade and Tariffs (GATT) Article VI[45] and the SCM Agreement.[46] These agreements define an actionable subsidy as having the following three elements.

First, "a subsidy shall be deemed to exist if . . . there is a *financial contribution* by a government or any public body . . . and . . . a *benefit* is thereby conferred."[47] SCM Article 1.1 then lists four types of financial contributions: "a direct transfer

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40. *See* Mark Olalde, *US Coal Hasn't Set Aside Enough Money to Clean Up Its Mines*, DESMOGBLOG (Mar. 16, 2018), https://www.desmogblog.com/2018/03/16/us-coal-hasnt-set-aside-enough-money-clean-its-mines; Scott Fields, *The Earth's Open Wounds: Abandoned and Orphaned Mines*, ENVTL. HEALTH PERSP., Mar. 2003, at 154, 161 (observing that "the role of addressing cleanup invariably falls to governmental agencies, generally to the federal land management agencies").

41. *See* Gillingham et al., *supra* note 16, at 1097 ("[T]he monetized climate damages from PRB coal combustion are about six times the spot price of coal. This underscores that PRB coal is substantially underpriced relative to its social costs."); Hein, *supra* note 3, at 21 ("Failure to account for the externality costs of fossil fuel production . . . means that the public bears the burden of mitigating and adapting to such costs, including greenhouse gas emissions . . . .").

42. Hein, *supra* note 3, at 22.

43. *See id.* at 18, 51-54 (advocating that BLM's "royalty rate can be used as type of Pigouvian tax" to account for environmental externalities).

44. *See infra* Section II.B. "Some fossil fuel subsidy estimates . . . comprise failure to price negative externalities associated with the consumption of fossil fuels. But such regulatory support measures do not fall within the list of financial contributions, and hence fall outside the ambit of the SCM Agreement." Asmelash, *supra* note 10, at 271.

45. General Agreement on Tariffs and Trade art. VI, Oct. 30, 1947, 61 Stat. A-11, 55 U.N.T.S. 194 [hereinafter GATT].

46. The SCM Agreement added to GATT Art. VI's limitations on domestic subsidies. It outright forbids "prohibited" subsidies and makes otherwise "actionable" subsidies subject to challenge through the WTO's Dispute Settlement Understanding or by authorizing countervailing duties on imported, subsidized goods. *Subsidies and Countervailing Measures: Overview*, WORLD TRADE ORG., https://www.wto.org/english/tratop_e/scm_e/subs_e.htm (last visited Mar. 7, 2019).

47. SCM Agreement, *supra* note 7, at art. 1.1 (emphasis added).

of funds," foregoing revenue that is otherwise due, provision of "goods or services other than general infrastructure," and purchase of goods.[48]

Second, a subsidy must be specific.[49] A subsidy is de jure specific if it "explicitly limits access to certain enterprises," or if it is "limited to . . . a designated geographical region."[50] Alternatively, a subsidy is de facto specific based on its "use . . . by a limited number of certain enterprises," whether it is granted "disproportionately . . . to certain enterprises," and "the manner in which discretion has been exercised."[51]

Third, another WTO member may seek a remedy only if the subsidy causes an "adverse effect" to the interests of that country.[52] The country may then challenge the subsidy through the Dispute Settlement Understanding (DSU)[53] or impose countervailing duties on subsidized imports.[54]

This section argues that BLM's program is an actionable subsidy under the SCM Agreement.[55] Specifically, the program is a financial contribution by the U.S. government which, through provision of a good, confers a benefit to a specific industry. Part III develops support for the last requirement of an actionable subsidy: it has adverse effects on other WTO members.[56]

A. *Financial Contribution via Provision of a Good*

Under SCM Article 1.1(a)(1)(iii), "a financial contribution" includes when "a government provides goods or services other than general infrastructure."[57] The

48. *Id.* art. 1.1(a)(1)(i)-(iii). Additionally, Article 1.1(a)(1)(iv) prevents circumvention of these requirements by specifying that the government may not simply have a "private body . . . carry out one or more of the type of functions illustrated . . . above." *Id.* art. 1.1(a)(1)(iv).

49. *Id.* art. 2.

50. *Id.* art. 2.1(a), 2.2.

51. *Id.* art. 2.1(c).

52. *Id.* art. 5.

53. *Id.* art. 7; Understanding on Rules and Procedures Governing the Settlement of Disputes art. 1, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 2, 1869 U.N.T.S. 401 [hereinafter DSU].

54. GATT, *supra* note 45, at art. VI:3.

55. One could also argue that the leasing program is a *prohibited* subsidy under the theory that it is, "contingent . . . in fact," an export subsidy. SCM Agreement, *supra* note 7, at art. 3.1(a). One critic argues that BLM's program actually favors the export of coal over domestic sales. *See* Williams-Derry, *supra* note 20, at 1. If true, then BLM's subsidy may increase the ratio of export sales to domestic sales, fulfilling the AB's test for export subsidies. *See* Appellate Body Report, *European Communities and Certain Member States—Measures Affecting Trade in Large Civil Aircraft*, ¶¶ 1046-49, WTO Doc. WT/DS316/AB/R (adopted May 18, 2011) [hereinafter EC—Aircraft]. Prohibited subsidies are subject to stricter procedures for securing a remedy through the DSU. *See* SCM Agreement, *supra* note 7, at art. 4. However, fossil fuel subsidies are most likely to be challenged as actionable subsidies. *See* Asmelash, *supra* note 10, at 274.

56. *See infra* Part III.

57. SCM Agreement, *supra* note 7, at art. 1.1(a)(1)(iii).

Appellate Body (AB), which hears appeals from disputes between WTO members, has interpreted both terms at issue here: "provides" and "goods."[58] The coal leasing program provides a good, coal, within the AB's articulation of Article 1.1.

1. A Right to Extract a Resource is a Good

The AB has interpreted the term "good" in the context of natural resources in two prominent reports: *United States—Softwood Lumber IV*[59] and *United States—Carbon Steel (India)*.[60] In *Softwood Lumber IV*, the AB considered a challenge by Canada against U.S. countervailing duties imposed on softwood lumber imports.[61] The United States determined that Canada's stumpage program provided the lumber industry standing timber at less than adequate remuneration.[62] Under Canada's program, private companies entered into licensing agreements with provincial governments to harvest timber from public land if they met certain maintenance obligations and paid a "volumetric 'stumpage charge'" for the harvested timber.[63] Though the AB faulted the imposition of U.S. duties for other reasons,[64] it concluded that Canada's program constituted a provision of a "good," standing timber.[65]

In reaching this conclusion, the AB began by defining "goods" generally—as "tangible or movable personal property other than money," including "things to be severed from real property."[66] The AB then made several interpretive moves that

58. "The Appellate Body was established in 1995 under Article 17 of the Understanding on Rules and Procedures Governing the Settlement of Disputes (DSU). It is a standing body of seven persons that hears appeals from reports issued by panels in disputes brought by WTO Members. The Appellate Body can uphold, modify or reverse the legal findings and conclusions of a panel, and Appellate Body Reports, once adopted by the Dispute Settlement Body (DSB), must be accepted by the parties to the dispute." *Dispute Settlement: Appellate Body*, WORLD TRADE ORG., https://www.wto.org/english/tratop_e/dispu_e/appellate_body_e.htm (last visited Mar. 2, 2019).

59. Appellate Body Report, *United States—Final Countervailing Duty Determination with Respect to Certain Softwood Lumber from Canada*, WTO Doc. WT/DS257/AB/R (adopted Jan. 19, 2004) [hereinafter Lumber IV (AB)].

60. Appellate Body Report, *United States—Countervailing Measures on Certain Hot-Rolled Carbon Steel Flat Products from India*, WTO Doc. WT/DS436/AB/R (adopted Dec. 8, 2014) [hereinafter Carbon Steel (AB)].

61. Lumber IV (AB), *supra* note 59, ¶ 1.

62. *Id.* ¶ 2.

63. Panel Report, *United States—Preliminary Determinations with Respect to Certain Softwood Lumber from Canada*, ¶ 7.14, WTO Doc. WT/DS236/R (adopted Sept. 27, 2002) [hereinafter Lumber III (Panel)].

64. Lumber IV (AB), *supra* note 59, ¶¶ 108-22, 165-66, 168.

65. *Id.* ¶¶ 67, 76.

66. *Id.* ¶ 58.

established a broad meaning of "goods."[67] For one, the French and Spanish versions of the SCM Agreement support an inclusive meaning of the term, as distinct from merely "products."[68] Further, alluding to the logic of *expressio unius*, the AB observed that Article 1.1(a)(1)(iii) lists only one exception, "general infrastructure."[69] It inferred, then, that "all goods that might be used by an enterprise to its benefit"—aside from "infrastructure of a general nature"—are goods under the SCM.[70] The AB also supplemented its textual analysis with pragmatic considerations, finding that a broad definition of "goods" furthers the purpose of preventing circumvention of the WTO's subsidy rules "in cases of financial contributions granted in a form other than money."[71]

This definition of "goods" comfortably includes the coal underlying American public land as it does the standing timber on Canadian public land. Like standing timber, coal is tangible, capable of possession, and "severable from land."[72] Further, coal also satisfies Canada's proposed requirement that a good be tradable.[73]

The 2014 *Carbon Steel (India)* report confirms this conclusion. In that dispute, India challenged U.S. countervailing duties on Indian steel exports because of alleged government provision of iron and coal mining rights.[74] Again, the AB criticized several portions of the U.S. investigation,[75] but concluded that the mining rights constituted a provision of goods to the Indian steel industry.[76] This conclusion drew heavily from the above analysis in *Softwood Lumber IV*.[77] Without much

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67. The AB utilized Articles 33 and 31(1) of the Vienna Convention on the Law of Treaties, referring to other language versions, context, and purpose. Vienna Convention on the Law of Treaties arts. 31(1), 33(1), *opened for signature* May 23, 1969, 1155 U.N.T.S. 331.

68. Lumber IV (AB), *supra* note 59, ¶ 59; *see* Marrakesh Agreement Establishing the World Trade Organization art. XVI(6), 1869 U.N.T.S. 14 (establishing English, French, and Spanish as the three "authentic" languages of the WTO); *see also* Appellate Body Report, *United States—Anti-Dumping Measures on Certain Hot-Rolled Steel Products from Japan*, ¶ 60, WTO Doc. WT/DS184/AB/R (adopted July 24, 2001) (defining "a permissible interpretation [as] one which is found to be appropriate *after* application of the pertinent rules of the *Vienna Convention*" (emphasis in original)).

69. *Id.* ¶ 60.

70. *Id.*; *see also* Lumber III (Panel), *supra* note 63, ¶ 7.26 (observing that "the SCM Agreement does not in any way provide a [correlating] exception for the right to exploit natural resources"). The AB rejected Canada's proposed definitions of goods as necessarily "traded" goods capable of tariff classification, Lumber IV (AB), *supra* note 59, ¶ 62; "personal property," *id.* ¶ 65; or requiring specification of individual items, such as particular trees to be harvested, *id.*

71. Lumber IV (AB), *supra* note 59, ¶ 65.

72. *Id.* ¶ 59; *see also* Asmelash, *supra* note 10, at 270 ("There is no question over the fact that energy products such as oil, liquefied natural gas, and solid fuels are goods.").

73. *See, e.g.*, *U.S. Coal Exports Increased by 61% in 2017 as Exports to Asia More than Doubled*, U.S. ENERGY INFO. ADMIN. (Apr. 17, 2018), https://www.eia.gov/todayinenergy/detail.php?id=35852.

74. Carbon Steel (AB), *supra* note 60, ¶¶ 1.1-1.2.

75. *Id.* ¶¶ 4.55, 4.353, 5.1-5.2.

76. *Id.* ¶¶ 4.73-4.75.

77. *Id.* ¶¶ 4.67-4.69.

equivocation, the AB concluded that coal satisfied its previously-articulated definition of a good.[78]

2. A Right to Extract is a Provision of Coal

Softwood Lumber IV and *Carbon Steel (India)* also clarify that a governmental grant of a right to extract natural resources fits the meaning of providing a good in Article 1.1(a)(1)(iii).[79]

In *Softwood Lumber IV*, the AB defined "provide" as "to supply or furnish for use," or "to put at the disposal of."[80] It rejected a narrow definition of "provide" merely to "supply."[81] The AB recognized, however, that not every government action which makes goods available to an enterprise is necessarily a provision of such goods.[82] Instead, there must be a "reasonably proximate relationship" between the "action of the government" and the "use or enjoyment of the good . . . by the recipient."[83] This test is explicitly outcome-based, looking at "the consequence of the transaction."[84]

Canada's stumpage arrangement satisfied this proximate relationship. As the AB stated, the "stumpage arrangements g[a]ve tenure holders a right to enter . . . government lands, cut standing timber, and enjoy exclusive rights over the timber that is harvested."[85] Though the government does "not supply the felled trees" themselves, the "[r]ights over felled trees . . . crystallize as a natural and inevitable consequence of . . . harvesting rights."[86] The program's "*raison d'être*" was "making available timber" to harvesters.[87]

Carbon Steel (India) built upon the reasonably proximate relationship test by applying it to India's provision of mining rights to steel companies.[88] The AB dismissed India's argument that the relationship was too remote because of the complex intermediate steps required to extract and refine coal and iron ore.[89] Ultimately, like in *Softwood Lumber IV*, mining rights "put iron ore and coal deposits at the disposal of steel companies" and provided them "exclusive[ ] . . . use of those re-

78. *Id.* ¶ 4.70, 4.72 (referring to "the final goods consisting of extracted iron ore and coal" and "final extracted goods"). The definition of "good" is rarely the focus of an AB adjudicated dispute arising under the SCM. Of the few where it is, none, support a finding that coal is *not* a good.

79. SCM Agreement, *supra* note 7, at art. 1.1(a)(1)(iv).

80. Lumber IV (AB), *supra* note 59, ¶ 69.

81. *Id.* ¶¶ 71-73.

82. *Id.* ¶ 71.

83. *Id.*

84. *Id.* ¶ 75.

85. *Id.*

86. *Id.*

87. *Id.*

88. Carbon Steel (AB), *supra* note 60, ¶ 4.70.

89. *Id.* ¶¶ 4.70-4.75.

sources."[90] Steel companies acquired mining rights knowing that rights over the underlying resource "[were] a natural and inevitable consequence[,] . . . suggest[ing] that making available . . . coal is the *raison d'être*" of the arrangement.[91] Both the AB and Panel below contrasted rights to *extract*, which have a close relationship to the ultimate good, with mere rights to *explore*, where the relationship is "more tenuous."[92]

The analogy to the BLM's leasing program is straightforward.[93] A lease is a right to extract that puts the coal underlying a discrete portion of American public land at the disposal of a mining company.[94] Like *Carbon Steel (India)*, the relationship between the act of leasing and the final good, coal, is sufficiently proximate. The BLM leases grant rights "expressly to enable the beneficiary to extract for its use . . . what was previously a government controlled mineral, in this case, . . . coal."[95]

B. *Conferring a Benefit*

Article 1.1(b) of the SCM Agreement requires that, as a result of the government provision of the good, "a benefit is thereby conferred" to the recipient.[96] The AB provided an authoritative interpretation of "benefit" in *Canada—Aircraft*.[97] In that report, the AB observed that benefit's "ordinary meaning . . . clearly encompasses some form of advantage."[98] It further stated that "a 'benefit' does not exist in the abstract" but requires that a recipient has "received and enjoyed . . . something."[99] Analysis of the benefit, then, is focused on the "benefit to the recipient," not the "cost to the government."[100] This distinction is important for analyzing the

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90. *Id.* ¶ 4.74.

91. *Id.*

92. *Id.*

93. India's challenged leasing program granted "captive" mining rights that only permitted extracted minerals to be used by the owner company. *Steel Companies May Be Permitted to Divert Ore from Captive Mines to Other Units*, ECON. TIMES (Oct. 27, 2019), https://economictimes.indiatimes.com/industry/indl-goods/svs/steel/steel-companies-may-be-permitted-to-divert-ore-from-captive-mines-to-other-units/articleshow/71782750.cms. Since the WTO dispute, India has announced reforms to make the market more competitive. *Id.*

94. *See, e.g.*, 30 U.S.C. § 201(a)(1) (2012) ("[T]he coal so offered for lease shall be for use by such entity or entities in implementing a definite plan to produce energy for their own use or for sale to their members or customers . . . .").

95. Carbon Steel (AB), *supra* note 60, ¶ 4.75.

96. SCM Agreement, *supra* note 7, at art. 1.1(b).

97. Appellate Body Report, *Canada—Measures Affecting the Export of Civilian Aircraft*, WTO Doc. WT/DS70/AB/R (adopted Aug. 2, 1999) [hereinafter Canada—Aircraft].

98. *Id.* ¶ 153.

99. *Id.* ¶ 154.

100. *Id.* ¶¶ 155-56.

BLM's program because leasing federal land is not a *cost* to government but actually a significant source of federal *revenue*.[101]

1. Identification of Benefit

Crucially, the term "benefit" also requires a comparison.[102] An entity receives a benefit if it is made "'better off' than it would otherwise have been, absent that [financial] contribution."[103] The AB further stated that "the marketplace provides an appropriate basis for comparison in determining whether a 'benefit' has been 'conferred.'"[104] A financial contribution confers a benefit if the terms offered to the recipient are more favorable than those offered by the market.[105] The text of Article 14 refers to "the market" and "prevailing market conditions" to calculate various types of subsidies, confirming that the marketplace is a "basis for comparison."[106] Article 14(d) was central in the *Softwood Lumber IV* and *Carbon Steel (India)* reports. It states:

> [T]he provision of goods or services . . . by a government shall not be considered as conferring a benefit unless the provision is made for *less than adequate remuneration* . . . . The adequacy of remuneration shall be determined in relation to *prevailing market conditions for the good* or service in question in the country of provision or purchase (including price, quality, availability, marketability, transportation and other conditions . . . .).[107]

This language "link[s] the concepts of 'benefit' and 'remuneration' such that . . . a showing that 'remuneration' is 'less than adequate' is consonant with a finding of 'benefit.'"[108] Most simply, the benefit conferred is equal to the difference between the government price and the benchmark price, the benchmark being the prevailing market price in the country of provision.[109] In *Softwood Lumber IV*, however, the AB addressed the U.S. investigation of Canada's stumpage arrangement, which used a proxy price as a benchmark rather than private prices in Canada's market.[110] The United States argued that the government's predominance in

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101. *See* Hein, *supra* note 3, at 8, 11.

102. Canada—Aircraft, *supra* note 97, ¶ 157.

103. *Id.*

104. *Id.* (emphasis added).

105. *Id.* ¶ 157.

106. *Id.* ¶ 158; SCM Agreement, *supra* note 7, at arts. 14(b)-(d).

107. SCM Agreement, *supra* note 7, art. 14(d) (emphasis added).

108. Carbon Steel (AB), *supra* note 60, ¶¶ 4.125-4.126 ("Article 14(d) . . . establishes the adequacy of remuneration as the lens through which 'benefit' . . . must be assessed.").

109. *Id.* ¶¶ 4.148-4.149 ("Prevailing market conditions in the country of provision is thus the standard for assessing the adequacy of remuneration.").

110. Lumber IV (AB), *supra* note 59, ¶ 80.

the standing timber market distorted private prices, making the market an inaccurate benchmark.[111] Instead, the United States utilized a proxy price based on stumpage rates in U.S. border states adjusted for conditions in Canada.[112] The Panel concluded that this approach was inconsistent with Article 14(d)'s comparison to prevailing market conditions in Canada.[113]

While the AB rejected the U.S. proxy here, it nevertheless interpreted Article 14(d)'s "in relation to prevailing market conditions" language more broadly to permit use of other benchmark prices in exceptional circumstances.[114] Use of prevailing market prices is the default "starting-point" on the assumption that private prices "generally represent an appropriate measure of the 'adequacy of remuneration' for the provision of goods."[115] But when that assumption breaks down, investigating governments may use alternative benchmarks to account for government-caused distortions.[116] Otherwise, the resulting calculation of the benefit would be inaccurate, frustrating the purposes of both Article 14 and the SCM Agreement more broadly by rewarding WTO members for circumventing their commitments.[117]

Specifically, an investigating country "may use a benchmark other than private prices . . . in the country of provision[ ] when it has been established that these private prices are distorted[ ] because of the dominant role of the government in the market."[118] Government participation, when sufficiently predominant, causes private suppliers to "align their prices with those of the government" such that it is not "possible to calculate benefit."[119] The AB emphasized that this is a "very limited" exception.[120] Merely "alleg[ing] that a government is a significant supplier would not, on its own, prove distortion and allow" a different benchmark.[121]

A proper benchmark aside from the private market could include proxies for the cost of production and profits as well as "prices for similar goods quoted on

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111. *Id.*

112. *Id.*

113. Panel Report, *United States—Final Countervailing Duty Determination with Respect to Certain Softwood Lumber from Canada*, ¶ 7.64, WTO Doc. WT/DS257/R (adopted Aug. 29, 2003) [hereinafter Lumber IV (Panel)]; *see also* Lumber III (Panel), *supra* note 63, ¶ 7.53 ("[T]he text of Article 14 SCM Agreement leaves no choice to the investigating authority but to use as a benchmark the market . . . as it exists in the country of provision.").

114. Lumber IV (AB), *supra* note 59, ¶ 88; *see also id.* ¶ 91 (stating use of "any" method in the chapeau of Article 14 similarly suggests that calculation of benefit can be flexible).

115. *Id.* ¶ 90.

116. *Id.*

117. *Id.* ¶¶ 93-96.

118. *Id.* ¶ 103.

119. *Id.* ¶ 101.

120. *Id.* ¶ 102.

121. *Id.*

world markets."[122] Above all, a benchmark must always "connect[ ] with[ ] prevailing market conditions in the country of provision."[123] Otherwise, the AB is cautious of both utilizing prices from other countries[124] and evaluating any price methodology in the abstract.[125] Ultimately, the AB concluded there to be insufficient factual evidence either to measure the extent of government-induced price distortion in Canada or to identify an accurate alternative benchmark.[126]

Subsequent reports built on *Softwood Lumber IV*. First, there is no "*per se* rule" for using out-of-country prices whenever "the government is the predominant supplier."[127] Instead, panels should consider the presence of price distortions on a "case-by-case basis," keeping in mind that "the more predominant a government's role[,] . . . the more *likely* this role will result in . . . distortion."[128] Second, investigating governments may resort to benchmarks outside the private market for reasons other than government-induced distortion.[129] Though the bar remains high, "there may be other circumstances where an investigating authority would not be required to use in-country prices."[130]

2. Calculation of Benefit

Here, a WTO member challenging the BLM's leasing program could calculate the size of the benefit conferred by reference to one of two prices: either prevailing coal prices in the U.S. market or a proxy price calculated with reference to, for example, international coal prices, costs of production and transportation, and expected profits. Either approach is tenable here.

First, the price of federal coal extracted from BLM leases is far below that of coal extracted from private lands.[131] In 1990, private coal on average cost 3.3 times as much as federal coal, while the price in 2014 was a full 5 times higher.[132] Though a portion of this price difference is attributable to chemical differences of the coal

122. *Id.* ¶ 106.

123. *Id.*

124. *Id.* ¶ 108; *see also* Lumber III (Panel), *supra* note 63, ¶ 7.58 ("[D]omestic markets of the member countries of the WTO are not identical—nor are they expected to be . . . .").

125. *See* Lumber IV (AB), *supra* note 59, ¶ 106 ("We, therefore, make no findings on the WTO-consistency of any of these methods in the abstract.").

126. *Id.* ¶¶ 115-18.

127. Appellate Body Report, *United States—Definitive Anti-Dumping and Countervailing Duties on Certain Products from China*, ¶ 443, WTO Doc. WT/DS379/AB/R (adopted Mar. 11, 2011) [hereinafter US—Anti-Dumping and Countervailing Duties (China)].

128. *Id.* ¶¶ 444, 446 (emphasis in original); *see also* Carbon Steel (AB), *supra* note 60, ¶ 4.156.

129. Carbon Steel (AB), *supra* note 60, ¶¶ 4.186-4.188.

130. *Id.* ¶¶ 4.189-4.191.

131. *See* EXEC. OFFICE OF THE PRESIDENT, *supra* note 35, at 16.

132. *Id.*

that underlies federal and private lands, a large portion is a result of BLM's subsidization.[133]

Second, the BLM may be such a predominant supplier of coal that private suppliers are forced to lower their own prices, distorting the market.[134] A panel would determine whether the degree of distortion is sufficiently exceptional to justify departing from the strong presumption of using private market prices. For comparison, the BLM supplies roughly forty percent of U.S. coal,[135] while in *Softwood Lumber IV*, Canada's stumpage arrangement supplied seventy to ninety percent of the standing timber market.[136] In accounting for the subsidizing effect of "captive transactions,"[137] the AB in *Carbon Steel (India)* approved the U.S. methodology which calculated the benefit of paying lower royalties.[138] How, exactly, to calculate a proxy market price for coal is subject to debate, but several experts have done so.[139] A 2012 study, for example, found that without government subsidization, the market price of PRB coal is $33 per short ton.[140]

C. *Specificity of the Subsidy*

All actionable subsidies must be specific to certain enterprises under Article 2 of the SCM Agreement.[141] In prior resource extraction disputes, investigating governments successfully argued that extraction rights were de facto specific under Article 2.1(c).[142] Under 2.1(c), specificity is a fact-dependent inquiry which considers the "use of a subsidy by a limited number of enterprises, predominant use by certain enterprises," and the granting authority's use of discretion.[143]

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133. *Id.* at 16-17.

134. *Id.* at 17.

135. Lipton & Meier, *supra* note 13.

136. *See* Lumber III (Panel), *supra* note 63, ¶ 7.54.

137. *See supra* Section I.B.3.

138. *See* Carbon Steel (AB), *supra* note 60, ¶¶ 4.331-4.335.

139. *See, e.g.*, TOM SANZILLO, THE GREAT GIVEAWAY: AN ANALYSIS OF THE UNITED STATES' LONG-TERM TREND OF SELLING FEDERALLY-OWNED COAL FOR LESS THAN FAIR MARKET VALUE 29-33 (Inst. for Energy Econ. & Fin. Analysis 2012), http://ieefa.org/study-almost-30-billion-in-revenues-lost-to-taxpayers-by-giveaway-of-federally-owned-coal-in-powder-river-basin/. *But see* ROBERT H. NELSON, THE USE AND MANAGEMENT OF FEDERAL COAL 42-45 (Prop. & Env't Res. Ctr. 2017), https://www.perc.org/wp-content/uploads/2017/01/The-Use-Management-of-Federal-Coal.pdf (criticizing attempts to calculate the magnitude of the coal leasing program subsidy).

140. SANZILLO, *supra* note 139, at 30. But actual prices in 2012 were roughly a third that amount. *Coal Markets Archive*, U.S. ENERGY INFO. ADMIN., https://www.eia.gov/coal/markets/includes/archive2.php (last visited Oct. 29, 2019).

141. SCM Agreement, *supra* note 7, at arts. 2, 8.1.

142. *See* Carbon Steel (AB), *supra* note 60, at 194; Lumber IV (Panel), *supra* note 113.

143. SCM Agreement, *supra* note 7, at art. 2.1(c).

In *Softwood Lumber IV*, the Panel determined that Canada's stumpage arrangement was specific.[144] The Panel emphasized that "the inherent characteristics of the good" in question, standing timber, limited its utility to "certain enterprises only."[145] A provision of standing timber is inherently specific in a way that direct provision of a more fungible good—money, "oil, gas, water, etc."—would not be.[146] It was irrelevant that end-users of timber produced a variety of final products.[147] Instead, the finding of specificity followed from the fact that "the stumpage program[ ] can clearly only benefit certain enterprises . . . which can harvest . . . standing timber."[148] Canada did not press the issue on appeal.[149]

The AB similarly concluded that India's provision of mining rights was a benefit specific to the steel industry.[150] It upheld the U.S. determination that the program was actually used by "a limited number" of enterprises.[151] This accorded with the AB's view that Article 2.1(c) "suggests an inquiry into whether the enterprises or industries so particularized constitute a quantitatively limited group."[152] Echoing *Softwood Lumber IV*, the AB also determined that the inherent characteristics of iron and coal reserves limited the subsidy to a specific industry.[153] Though not "every provision of goods with limitations inherent in the characteristics of the goods will" be specific, such limitations do create a "greater likelihood of a finding of specificity."[154]

Commentators have identified specificity as one of the foremost obstacles to concluding that fossil fuel subsidies are actionable.[155] But these specificity concerns are most prominent in cases of consumer-side subsidies that lower the domestic price of fossil fuels without disturbing the price of a country's energy exports.[156] Such consumer-side subsidies tend to benefit large swaths of an economy—from shipping companies to large heavy manufacturers to individual homeowners—and so arguably fall short of singling out any individual industry in the way that Article 2 of the SCM Agreement forbids.[157]

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144. *See* Lumber IV (Panel), *supra* note 113, ¶ 7.125.

145. Lumber IV (Panel), *supra* note 113, ¶ 7.116.

146. *Id.*

147. *Id.* ¶¶ 7.120-7.121 ("[S]pecificity . . . is to be determined at the enterprise or industry level, not at the product level.").

148. *Id.* ¶ 7.121.

149. Lumber IV (AB), *supra* note 59, ¶¶ 5, 45.

150. *See* Carbon Steel (AB), *supra* note 60, ¶ 4.398.

151. *Id.* ¶¶ 4.377, 4.380.

152. *Id.* ¶ 4.377.

153. *Id.* ¶ 4.398.

154. *Id.* ¶ 4.393.

155. Asmelash, *supra* note 10, at 281 ("In the context of fossil fuel subsidies, perhaps the most difficult challenge comes in the form of meeting the specificity requirement.").

156. *See* Shadikhodjaev, *supra* note 11, at 483.

157. *Id.*

Unlike such economy-wide price distortions, the BLM's leasing subsidy is specific to the coal extraction industry.[158] Though consumers of coal may enjoy downstream pricing benefits, the actual use of the program is limited to a small number of extractive enterprises.[159] Few companies bid for leases and all that do are located within the coal extraction industry.[160] Further, as in *Carbon Steel (India)*, the inherent characteristics of coal limit its utility to only those enterprises able to harvest and process it.[161] Additionally, it could be argued that the leasing program is a specific subsidy under Article 2.2 because it is almost entirely "located within a designated geographical region," the PRB.[162] A focus on producers of fossil fuels may be more likely to produce a positive specificity finding than a more traditional focus on consumers of energy.[163]

The prior three sections demonstrate that the BLM's coal leasing program is an actionable subsidy under the SCM Agreement. In order to seek a remedy, however, a WTO member must further demonstrate that the subsidy has caused it some adverse effect.

III. Adverse Effects and Options for Other WTO Members

Article 5 of the SCM Agreement lists three categories of adverse effects: "(a) injury to the domestic industry of another Member; (b) nullification or impair-

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158. Government-granted rights to extract oil and natural gas could similarly be specific. For example, the GAO has found that the Department of Interior's leasing program for onshore and offshore oil and gas leases similarly fails to set adequate royalty rates or calculate an accurate fair market value for the underlying resources. U.S. Gov't Accountability Office, GAO-19-531, Offshore Oil and Gas: Opportunities Exist to Better Ensure a Fair Return on Federal Resources 1 (2019). Because of these undervaluations, oil and gas extracted from federal lands is produced at an artificially low price in comparison to both state and foreign governments. U.S. Gov't Accountability Office, GAO-07-676R, Oil and Gas Royalties: A Comparison of the Share of Revenue Received from Oil and Gas Production by the Federal Government and Other Resource Owners (2007).

159. *See* Wold et al., *supra* note 11, at 656 ("Other programs, even if not expressly limited to a particular industry, are in fact only available to the fossil fuel industry and thus would likely constitute *de facto* specificity.").

160. *See supra* Section I.B.2.

161. *See* U.S. Gov't Accountability Office, *supra* note 18, at 17 (observing that few companies have "the significant capital investment and time required to" make use of new federal leases).

162. SCM Agreement, *supra* note 7, at art. 2.2; *see also* Carbon Steel (AB), *supra* note 60, ¶ 4.375 n.1011 ("[U]nder Article 2.2, a positive determination of specificity also hinges on whether a subsidy is *limited* to certain enterprises. In that context, those enterprises must be located within a designated geographical region.").

163. As U.S. countervailing duty jurisprudence demonstrates, it can be difficult to determine at what point disproportionate consumption of energy by an energy-intensive industry crosses the line into supporting a finding that an energy policy is an actionable subsidy. *See* Bethlehem Steel Corp. v. United States, 25 Ct. Int'l Trade 307, 322-23 (2001) (concluding that a Korean electricity subsidy was not specific to the steel industry because large electricity consumption was an "inherent characteristic" of the steel industry).

ment of benefits accruing . . . to other Members . . . ; [and] (c) serious prejudice to the interests of another Member."[164] Part III focuses on the first and last of these, injury to a domestic industry and serious prejudice to interests. A Member sustaining adverse effects has a choice of remedies; it may either challenge the subsidy in the DSU under SCM Article 7[165] or it may impose countervailing duties on imports of the subsidized good under GATT Article VI.[166]

The adverse effect identification requirement is comparable to the "injury-in-fact" standing requirement in U.S. federal courts.[167] In both systems, injury functions as a "threshold question in every . . . case."[168] Challenging the federal coal leasing program not only requires identifying a specific financial contribution being conferred, but also a WTO member country adversely affected—that is, injured—by that contribution.

The difficulty of identifying adverse effects is another commonly-raised obstacle to concluding that fossil fuel subsidies are actionable.[169] But unlike other fossil fuel subsidies, the existence of coal exports makes it easier to identify WTO member countries whose domestic coal industries have been adversely affected by the program. Specifically, two classes of countries potentially suffer an adverse effect sufficient to respond to the BLM's program; coal exporters could bring a challenge through the DSU,[170] while importers of U.S. coal could impose countervailing duties.

A. *Challenge Through the DSU*

A WTO member that exports coal to the same market as the United States could challenge BLM's program under SCM Article 7 if it demonstrates that it has experienced serious prejudice as a result.[171] Australia is well-positioned to make such an argument.

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164. SCM Agreement, *supra* note 7, at art. 5.

165. *Id.* art. 7.

166. GATT, *supra* note 45, at art. VI:3.

167. *See, e.g.*, Lujan v. Defs. of Wildlife, 504 U.S. 555 (1992). Like standing doctrine in U.S. courts, the requirement of individualized injury has the benefit of sharpening legal questions and ensuring that consequential matters are litigated by enthusiastic parties. *Cf.* Baker v. Carr, 369 U.S. 186, 204 (1962).

168. Warth v. Seldin, 422 U.S. 490, 498 (1975).

169. *See* Asmelash, *supra* note 10, at 282 (concluding that it would be "extremely difficult for a complainant to demonstrate the existence of adverse effects on its like energy-intensive industry.").

170. "Dispute settlement is the central pillar of the multilateral trading system, and the WTO's unique contribution to the stability of the global economy." *Understanding the WTO: Settling Disputes*, WORLD TRADE ORG., https://www.wto.org/english/thewto_e/whatis_e/tif_e/disp1_e.htm (last visited Mar. 2, 2019).

171. *See* Wold et al., *supra* note 11, at 659.

The largest supplier of coal to East Asia is Australia.[172] Australia's coal mining industry has struggled in recent years and could experience significant injury if its exports decline.[173] At the same time, U.S. coal exports increasingly service consumer markets in East Asia.[174] A significant portion of these exports originate from BLM coal leases in the PRB.[175] Additionally, artificially low U.S. coal prices make exports from other U.S. coal deposits more attractive for export.[176] Increased U.S. coal exports to Asia could cause significant adverse effects to Australia's domestic coal industry if they result in reduced Australian market share.[177] Some observers speculate that such a trade-off in exports has already begun.[178]

Australia has at least a prima facie case for serious prejudice to its interests. Article 6.3 provides four different types of prejudice, two of which are most relevant to Australia: "(b) the effect of the subsidy is to *displace or impede* the exports of a like product of another Member from a third country market;" and "(c) the effect . . . is a *significant price undercutting* by the subsidized product . . . or price depression or lost sales."[179] To demonstrate displacement, Australia would point to changes in its own market share relative to that of the United States.[180] Proving price undercutting rests on a comparison of the subsidized and non-subsidized like

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172. *See* Rob Smith, *These Are the World's Biggest Coal Producers*, WORLD ECON. F. (Jan. 11, 2018), https://www.weforum.org/agenda/2018/01/these-are-the-worlds-biggest-coal-producers/.

173. *See* Frank Jotzo & Salim Mazouz, *Coal Does not Have an Economic Future in Australia*, CONVERSATION (Sept. 5, 2018), http://theconversation.com/coal-does-not-have-an-economic-future-in-australia-102718; Ben Deacon, *Coal Industry Grapples with Change and the Challenges of Transition*, ABC NEWS (Apr. 13, 2018), https://www.abc.net.au/news/2018-04-14/coal-industry-in-transition/9644812.

174. *See U.S. Coal Exports Increased by 61% in 2017 as Exports to Asia More than Doubled*, *supra* note 73; Jude Clemente, *The U.S. Coal Export Boom to Asia*, FORBES (Oct. 7, 2018), https://www.forbes.com/sites/judeclemente/2018/10/07/the-u-s-coal-export-boom-to-china/#439a507e3454.

175. *See* Heather Richards, *Hope for Coal Exports Grows in Unstable Market, but Challenges Remain Firm*, CASPER STAR TRIB. (Apr. 29, 2018), https://trib.com/business/energy/hope-for-coal-exports-grows-in-unstable-market-but-challenges/article_e3bc2e43-bee2-5896-935e-0722dd139920.html; *see also* Braasch, *supra* note 39.

176. *See* Williams-Derry, *supra* note 20, at 1-2.

177. *See U.S. Coal Exports Increased by 61% in 2017 as Exports to Asia More than Doubled*, *supra* note 73; *see also* Keith Johnson, *Trump Makes American Coal Great Again—Overseas*, FOREIGN POL'Y (Apr. 4, 2018), https://foreignpolicy.com/2018/04/04/trump-makes-american-coal-great-again-overseas/.

178. *See* Peter Ker, *US Coal Miners Target Australia's Asian Customers*, AUSTL. FIN. REV. (Aug. 8, 2018), https://www.afr.com/business/mining/us-coal-miners-target-australias-asian-customers-20180808-h13p4o ("American competitors are successfully growing their market share in the Asian markets that Australia has traditionally dominated.").

179. SCM Agreement, *supra* note 7, at art. 6.3 (emphasis added).

180. *Id.* art. 6.4.

product prices in the same destination market.[181] Satisfying any of these conditions is sufficient to demonstrate serious prejudice.[182]

Brazil's successful complaint in *Upland Cotton* is instructive. There, Brazil alleged that U.S. subsidies lowered U.S. cotton export prices and displaced Brazilian cotton exports in both the "world market" and dozens of specific third country markets in which U.S. and Brazilian cotton competed.[183] The AB affirmed the lower panel's decision, finding that whether the "market" of competition was defined as the entire world or instead as discrete third markets, the U.S. subsidy had caused serious prejudice to Brazilian interests in terms of export displacement.[184] Australia's challenge to federal coal exports could follow a similar, successful format.

B. *Countervailing Duties*

An importer of subsidized U.S. coal could challenge the BLM's program through the DSU citing injury to a domestic industry. But an importer has the additional option of imposing countervailing duties on subsidized imports under GATT Article VI.[185] Imposition of duties has several advantages over a challenge through the DSU. Duties avoid the costly, years-long disputes that play out in the DSU.[186] They also offer a more certain form of retaliation given the difficulties of enforcing WTO judgments.[187] Though a number of countries are potentially positioned to impose countervailing duties, China is the best situated.

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181. *Id.* art. 6.5.

182. *See* Panel Report, *United States—Subsidies on Upland Cotton*, ¶ 7.1390, WTO Doc. WT/DS267/R (adopted Sept. 8, 2004). Proving "serious prejudice" may entail a lower evidentiary burden than proving "injury." Wold et al., *supra* note 11, at 693.

183. Appellate Body Report, *United States—Subsidies on Upland Cotton*, ¶ 400, WTO Doc. WT/DS267/AB/R (adopted Mar. 3, 2005).

184. *Id.* ¶¶ 414, 456, 496. After the AB authorized Brazil to retaliate against the United States, the two countries instead agreed to monthly financial payments to compensate Brazilian cotton farmers for their losses. Vicki Needham, *US, Brazil Settle Cotton Dispute*, HILL (Oct. 1, 2014), https://thehill.com/policy/finance/219434-us-brazil-settle-cotton-dispute. After years of these payments, the two countries then agreed to a final lump-sum settlement that left the U.S. cotton subsidies in place. *Id.*

185. GATT, *supra* note 45, at art. VI.

186. *See* Asmelash, *supra* note 10, at 279 ("The average cost of initiating a WTO dispute is estimated to be around US$1 million per year for the duration of the dispute, depending on its complexity."); Gregory Shaffer et al., *The Extensive (but Fragile) Authority of the WTO Appellate Body*, 79 LAW & CONTEMP. PROBS. 237, 267-70 (2016) (observing that Appellate Body proceedings in particular are long, complex, and vulnerable to delay tactics).

187. *See* Won-Mog Choi, *To Comply or Not to Comply?—Non-implementation Problems in the WTO Dispute Settlement System*, 41 J. WORLD TRADE 1043, 1043 (2007) (cataloguing difficulties of enforcing DSU decisions); Chad P. Bown, *Trade Remedies and World Trade Organization Dispute Settlement: Why Are So Few Challenged?*, 34 J. LEGAL STUD. 515 (2005) (concluding that relatively few trade remedy actions are actually challenged in the DSU).

China is the world's largest coal producer as well as one of the largest importers of coal.[188] Though its consumption is expected to peak as the country transitions to greener forms of energy generation,[189] China remains a major consumer of American coal.[190] As China tries to reduce its demand for imported coal, Chinese producers risk being undercut by lower-priced imported coal.[191] The "squeeze of imported coal" could lower domestic Chinese coal production and reduce the industry's employment.[192]

Article 15 lists the factors that China would need to cite to prove an injury to its domestic coal industry.[193] It would need to identify: (1) the volume of subsidized coal; (2) the price effects of the imported coal;[194] and (3) the impact on China's coal industry, including "decline in output, sales, market share, profits, productivity, return on investments, or utilization of capacity" as well as factors like "inventory, employment, [and] wages."[195] A successful challenge would also define the relevant "like product" and "domestic industry," which are unlikely to hamper China's effort.[196] Article 15.7 also allows China to argue that it faces an imminent threat of material injury, dependent on an additional list of factors.[197]

In the past, China's need for coal likely overwhelmed any desire to tax coal imports.[198] And China's reliance on coal today may still prevent the country from

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188. *See These Are the World's Biggest Coal Producers*, *supra* note 172.

189. *See* Qi Ye & Jiaqi Lu, *China's Coal Consumption Has Peaked*, BROOKINGS (Jan. 22, 2018), https://www.brookings.edu/2018/01/22/chinas-coal-consumption-has-peaked/; *see also* Melanie Hart et al., *Everything You Think You Know About Coal in China Is Wrong*, CTR. FOR AM. PROGRESS (May 15, 2017), https://www.americanprogress.org/issues/green/reports/2017/05/15/432141/everything-think-know-coal-china-wrong/.

190. *See* Clyde Russell, *U.S. Coal Exports Surge, but Thank China, not Trump*, REUTERS (July 31, 2017), https://www.reuters.com/article/us-column-russell-coal-usa/u-s-coal-exports-surge-but-thank-china-not-trump-russell-idUSKBN1AG0CC.

191. *See* Yunna Wu et al., *Competitiveness Analysis of Coal Industry in China: A Diamond Model Study*, 52 RESOURCES POL'Y 39, 41 (2017).

192. *Id.* at 52.

193. SCM Agreement, *supra* note 7, at art. 15.

194. *Id.* arts. 15.1-15.2.

195. *Id.* art. 15.4.

196. *Id.* arts. 15.1, 16. Other scholars have concluded that "products used to generate renewable energy such as solar panels and wind turbines are not 'like' fossil fuels under the SCM Agreement." Wold et al., *supra* note 11, at 684. This issue is avoided, however, by identifying foreign-produced coal as the "like product" in question.

197. SCM Agreement art. 15.7, *supra* note 7 (considering the nature of the subsidy, the increasing rate of subsidized imports, the increasing capacity of exporters to increase production, whether subsidized imports depress domestic prices, and the volume of inventories of the subsidized good).

198. *See* Kevin Tu & Sabine Johnson-Reiser, *Understanding China's Rising Coal Imports*, CARNEGIE ENDOWMENT FOR INT'L PEACE (Feb. 16, 2012), https://carnegieendowment.org/2012/02/16/understanding-china-s-rising-coal-imports-pub-47215 ("Over the past decade, China's domestic coal output has more than doubled while its coal imports have increased by a factor of 60—the country's dependence on other nations' coal exports is growing.").

taking actions that would raise the price of imported coal.[199] But China's current national interests might also align to restrict coal imported from the United States.[200] The Chinese government now seeks to transition to renewable energy,[201] bolster domestic coal production,[202] and retaliate against U.S. tariffs imposed by the Trump Administration.[203] Imposing countervailing duties would further all three of these objectives. As a result, China has the necessary legal conditions and could have the motive necessary to actually impose countervailing duties on U.S. coal imports.

C. *The Virtues and Limits of Enforcement Under the SCM Agreement*

Despite attention on the issue, efforts to reform fossil fuel subsidies from within countries have achieved only minor, sporadic successes.[204] As others have argued, the lack of meaningful progress is largely attributable to the influence of well-resourced and politically-connected fossil fuel companies.[205] These same companies are likely to oppose reform pressures that arise out of challenges brought through the WTO. Like any other government action, companies that would be harmed by a particular WTO dispute invest lobbying resources to influence their

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199. *See* Mengjia Ren et al., *China Overinvested in Coal Power: Here's Why*, VOX (Mar. 16, 2019), https://voxeu.org/article/china-overinvested-coal-power-here-s-why.

200. Domestic interests play an essential role in WTO dispute initiation and litigation. Jappe Eckhardt & Dirk De Bièvre, *Boomerangs over Lac Léman: Transnational Lobbying and Foreign Venue Shopping in WTO Dispute Settlement*, 14 WORLD TRADE REV. 507, 508 (2015). The role of domestic interests is even greater in determining the imposition of domestic trade remedies because the relevant industries must petition for a government investigation and lobby for countervailing duties. *See* SCM Agreement, *supra* note 7, art. 11.1 ("[A]n investigation to determine the existence, degree and effect of any alleged subsidy shall be initiated upon a written application by or on behalf of the domestic industry."); *see also* Asmelash, *supra* note 10, at 282 ("The key question is . . . whether the domestic industries have an incentive to lobby their governments to take action against foreign subsidies.").

201. *See* Hart et al., *supra* note 189; *see also* Ye & Lu, *supra* note 189.

202. *See* Clyde Russell, *China Move to Restrict Coal Imports May Drive Price Divergence*, REUTERS (Apr. 17, 2018), https://www.reuters.com/article/us-column-russell/china-move-to-restrict-coal-imports-may-drive-price-divergence-russell-idUSKBN1HO1JV. Of course, China may be wary of challenging U.S. fossil fuel subsidies, knowing that the same arguments could be levied against China. *Cf.* Asmelash, *supra* note 10, at 284 ("Countries may therefore be unwilling to challenge each other out of fear that their own subsidy may come under scrutiny.").

203. *See* Joe Ryan & Zhe Huang, *China's Taxing America's Coal Just as It Was Looking to Buy More*, BLOOMBERG (June 15, 2018), https://www.bloomberg.com/news/articles/2018-06-15/china-s-taxing-america-s-coal-just-as-it-was-looking-to-buy-more.

204. Laura Merrill & Nina Quintas, *One Step Forward, Two Steps Back: Fossil Fuel Subsidies and Reform on the Rise*, INT'L INST. FOR SUSTAINABLE DEV. (May 29, 2019), https://www.iisd.org/gsi/subsidy-watch-blog/fossil-fuel-subsidies-and-reform-on-the-rise.

205. *See, e.g.*, Shadikhodjaev, *supra* note 11, at 483.

government's response to the dispute.[206] This suggests a certain degree of humility about the potential for broad reform of subsidies under the SCM Agreement.

At the same time, action under the SCM Agreement has the potential to shift the political calculus that has kept fossil fuel subsidies in place. First, WTO-sanctioned retaliation is designed to harm other powerful industries in the target country that will then lobby their government to repeal the trade-distorting policy at issue.[207] Second, imposing duties on U.S. coal exports would lower the volume and profitability of those sales abroad, reducing the financial surplus that beneficiaries of the subsidy may devote to lobbying efforts. Together, retaliation could sufficiently shift the balance of financial and political incentives that the United States faces and simply make the costs of retaining the current coal leasing program too great.[208]

If reform is successful, it could prevent significant additional global emissions. Although some reduction in U.S. production would admittedly be offset by Chinese and Australian coal, that offset would not defeat the purpose of the reform. First, countries like China and India import U.S. coal because it undercuts alternative supplies.[209] By some estimates, the increased consumption enabled by U.S. imports will raise Chinese emissions alone by the equivalent of 35 million passenger cars.[210] Second, U.S. coal exports undercut the ability of the United States to credibly signal to other countries its commitment to reducing global emissions.[211] Finally, the availability of cheap PRB coal has increased pressure to expand coal

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206. *See* Jeheung Ryu & Randall W. Stone, *Plaintiffs by Proxy: A Firm-Level Approach to WTO Dispute Resolution*, 13 REV. INT'L ORGS. 273, 304-05 (2018).

207. *See* Mark L. Movsesian, Essay, *Enforcement of WTO Rulings: An Interest Group Analysis*, 32 HOFSTRA L. REV. 1, 4 (2003) ("By imposing burdens on the products of countries that adopt such measures, the retaliation remedy creates incentives for another set of domestic interest groups—exporters—to lobby against them. Over time, if retaliation is correctly calibrated, the domestic groups that favor free trade can neutralize the effect of the domestic groups that oppose it." (citations omitted)).

208. *Id.* at 21 ("Retaliation accomplishes this task by promoting trade indirectly, creating incentives for domestic groups to lobby against protectionist measures while allowing national governments the ultimate say on regulatory policy."). But it is also possible that reduced respect for international institutions—the WTO chief among them—could short-circuit this traditional mechanism of political reform through WTO disputes. *See* Gregory Shaffer, *How Do We Get Along? International Economic Law and the Nation-State*, 117 MICH. L. REV. 1229, 1244 & n.78 (2019).

209. *See* Russell, *supra* note 190.

210. Nathan Joo et al., *Fact Sheet: 5 Things You Should Know About Powder River Basin Coal Exports*, CTR. FOR AM. PROGRESS (Aug. 19, 2014), https://www.americanprogress.org/issues/green/reports/2014/08/19/95820/fact-sheet-5-things-you-should-know-about-powder-river-basin-coal-exports/.

211. Joby Warrick, *U.S. Exports Its Greenhouse-Gas Emissions—As Coal. Profitable Coal.*, WASH. POST (Oct. 15, 2015), https://www.washingtonpost.com/world/us-exports-its-greenhouse-gas-emissions—as-coal-profitable-coal/2015/10/08/05711c92-65fc-11e5-bdb6-6861f4521205_story.html (referring, naturally, to the Obama Administration's efforts to organize an international response to climate change, an effort that has come to a halt under the Trump Administration).

infrastructure, both in the American west and abroad.[212] If industries continue to invest so much in fossil-fuel specific infrastructure that will become outdated over time, they will contribute to "carbon lock-in" that frustrates future clean energy transitions.[213] Though reform of the BLM's program is not sufficient to reverse global trends, it is nevertheless one piece of the larger effort necessary to mitigate the worst effects of climate change.

CONCLUSION

The BLM's coal leasing program satisfies the SCM Agreement's definition of an actionable subsidy. It should be noted, however, that the precise process of investigation prescribed by the SCM Agreement is highly technical. The conclusions reached here, particularly on questions of benefit and adverse effects, are necessarily dependent on a deeper quantitative analysis. Nevertheless, at least two conclusions emerge from the above analysis. First, the SCM Agreement, like much of the WTO, rests on a proper alignment of state interests. The United States will face consequences for its subsidizing behavior only if Australia or China determines that it is in its national interest to make a challenge. Second, the BLM's program demonstrates that the SCM Agreement can be an asset—rather than merely a liability—to climate policy. Responses to climate change should, whenever possible, cohere with traditional, even short-term national interests. Toward that end, the SCM Agreement offers an opportunity to significantly reduce U.S. coal-based emissions by enlisting economic self-interest to enforce established law.

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212. Lappen, *supra* note 27, at 184-85 ("In recent years, leading American coal companies have restructured to vertically integrate mines with export facilities, signed long-term export agreements, and sought supply contracts with Asian utilities.").

213. *Cf.* Emily Hammond & Jim Rossi, *Stranded Costs and Grid Decarbonization*, 82 BROOK. L. REV. 645, 646-47 (2017).