

Two Birds with One F-16: How Economic Offsets from Foreign Defense Transactions Can Close Gaps in International Climate Finance

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INTRODUCTION

The 2015 Paris Climate Summit concluded with historic commitments from 192 nations to curb greenhouse gas emissions and transition to low-carbon economies. Many developing countries that had previously resisted commitments to reduce emissions have now promised significant cuts in fossil fuel usage. Often these commitments are at least partially contingent upon support—in the form of financing and technology transfers—from developed nations. However, a significant disparity remains between the potentially hundreds of billions of dollars that the United States, along with other developed countries, pledged to

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developing countries in non-binding commitments and the actual figures that the U.S. State Department has authorization to disburse. A promising source of capital and a potential vehicle for fulfilling these climate-financing commitments could come in the form of economic offsets from foreign military sales. The sale of defense products by U.S. firms to foreign governments accounts for an annual industry of tens of billions of dollars. However, market practice indicates that governments will often only buy from a foreign producer if the selling company also provides the purchasing government with investment, technology transfer, or other support either directly or indirectly related to items purchased. These bonuses, sent from the seller to the buyer, are referred to as “economic offsets.” Like the market for foreign defense sales generally, the market for economic offset provisions, which in a given transaction may reach 100 percent of the value of the sale itself, may equal tens of billions of dollars annually. Moreover, a number of the largest foreign country buyers of U.S. defense products are also seeking support for climate change adaptation and mitigation. By partnering with clean technology providers, defense firms can fulfill their offset obligations with indirect investments while the U.S. government can leverage an existing pool of capital and a bilateral mechanism to fulfill international climate finance commitments.

I. INTERNATIONAL CLIMATE FINANCE AFTER THE PARIS CLIMATE CONFERENCE

A. OVERVIEW OF THE PARIS AGREEMENT

In December 2015, over 192 countries committed to reducing domestic greenhouse gas emissions.¹ The groundbreaking Paris Agreement marked the first time both developed and developing nations agreed that mitigating global climate change required a universal commitment—not only a commitment from developed nations.² The nations also agreed to a collective goal of limiting the global average surface temperature to 1.5°C above pre-industrial levels.³ In order to accomplish this, the agreement requires countries to set emission reduction targets.⁴ Each country must set an emission reduction target for the year 2020, successive emission reduction strategies every five years thereafter, and a long-term strategy.⁵ The agreement entered into force on November 4, 2016, after 55 countries accounting for at least 55 percent of the world’s greenhouse gas

1. Paris Agreement to the United Nations Framework Convention on Climate Change art. 2, Dec. 12, 2015, T.I.A.S. No. 16-1104 [hereinafter Paris Agreement].

2. See Coral Davenport, *Nations Approve Landmark Climate Accord in Paris*, N.Y. TIMES (Dec. 12, 2015), http://www.nytimes.com/2015/12/13/world/europe/climate-change-accord-paris.html?_r=0.

3. See Paris Agreement, *supra* note 1, at art. 2.

4. *Id.*

5. See *id.* at art. 4, Preamble.

emissions had signed and ratified the agreement.⁶

B. DEVELOPING COUNTRIES HAVE REQUESTED FINANCING TO HELP THEM FIGHT
CLIMATE CHANGE

In many cases, developing nations consented to the Paris Agreement because they were promised monetary aid that could help them transition to low-carbon economies. Prior to the Paris Agreement, developing countries—led by China and India—generally refused to commit to domestic greenhouse gas reductions.⁷ Despite projections of immense growth in industrial capacity and consumption, developing nations at the Paris talks were willing to commit to domestic emissions reductions alongside developed nations. However, that willingness, in many cases, proved contingent upon receiving monetary commitments from industrialized countries to help the transition to low-carbon economies.⁸

Prior to the Paris Conference, the Conference of Parties (“COP”) invited countries to submit to the United Nations Climate Change Secretariat an Intended Nationally Determined Commitment (“INDC”) communicating quantifiable information on the scope, time frame, and methodology for climate-related commitments.⁹ As INDCs for developing countries like India, Egypt, Turkey, Indonesia, and Mexico demonstrate, developed world assistance is a fundamental assumption to achieving reductions.

In its INDC, India specifically cites its dependence on the developed world for establishing its capacity to generate renewable electricity.¹⁰ Among other pledges, India has committed to reducing the emissions intensity of its gross domestic

6. Michael Astor, *Paris Climate Agreement to Take Effect Nov. 4; Obama Hails It*, NBC WASH. (Oct. 5, 2016), <http://www.nbcwashington.com/news/national-international/Paris-Climate-Agreement-to-Take-Effect-Nov-4-396056071.html>.

7. See Michael A. Levi, *Copenhagen's Inconvenient Truth*, 88 FOREIGN AFF. 92, 92–94 (2009); Saibal Dasgupta, *Copenhagen Conference: India, China Plan Joint Exit*, TIMES INDIA (Nov. 28, 2009), <http://timesofindia.indiatimes.com/india/Copenhagen-conference-India-China-plan-joint-exit/articleshow/5279771.cms>; Tobias Rapp et al., *The Copenhagen Protocol: How China and India Sabotaged the UN Climate Summit*, DER SPIEGEL (May 5, 2010), <http://www.spiegel.de/international/world/the-copenhagen-protocol-how-china-and-india-sabotaged-the-un-climate-summit-a-692861-2.html>.

8. See, e.g., REPUBLIC OF INDIA, INTENDED NATIONALLY DETERMINED CONTRIBUTION 33 (2015), <http://www4.unfccc.int/submissions/INDC/Published%20Documents/India/1/INDIA%20INDC%20TO%20UNFCCC.pdf> (“Through this INDC, India has shown its commitment to combat climate change and these actions are indeed important contributions to the global effort. However, our efforts to avoid emissions during our development process are also tied to the availability and level of international financing and technology transfer since India still faces complex developmental challenges. The critical issue for developing nations is the gap between their equitable share of the global carbon space and the actual share of carbon space that will be accessible to them. The transfer of appropriate technologies and provision of adequate finance will have to be a determined contribution of the developed countries, which will further enable the developing countries to accomplish and even enhance their efforts.”).

9. See, e.g., Conference of the Parties Twentieth Session, U.N. Framework Convention on Climate Change, *Lima Call for Climate Action*, U.N. Doc. FCCC/CP/2014/10/Add.1, at 2 (2014), http://unfccc.int/files/meetings/lima_dec_2014/application/pdf/auv_cop20_lima_call_for_climate_action.pdf.

10. REPUBLIC OF INDIA, *supra* note 8, at 29.

product by 33 to 35 percent from 2005 levels by the year 2030 and to achieve 40 percent cumulative installed electric power capacity from non-fossil-fuel-based resources by 2030.¹¹ Indeed, India states that its climate goals will be achieved “with the help of transfer of technology and low cost international finance including from the Green Climate Fund,” a United Nations Framework Convention on Climate Change (“UNFCCC”) financing entity created to assist developing countries implement climate-related projects and programs.¹² The INDC provides a preliminary estimate that “at least USD 2.5 trillion (at 2014–15 prices) will be required for meeting India’s climate change actions between now and 2030.”¹³ India believes that a substantial portion of this sum will need to come from other nations.¹⁴

Like India, Egypt and Turkey’s climate goals also depend on help from the developed world. Egypt and Turkey have each made commitments to greater energy efficiency and higher generation of electricity from renewable energy sources. In its INDC, Egypt cites energy efficiency, mass transportation improvements, solar water heating, and renewable electricity generation each as a means to developing a low-carbon energy system.¹⁵ To achieve this, Egypt places an initial cost estimate of \$73 billion for the years 2020–30 to be realized through “sustainable international support from reliable resources through financial flows, capacity building, and technology transfer”¹⁶ Turkey, more specifically, targets up to a 21 percent reduction in greenhouse gas emissions from “business as usual levels” during the years 2021–30.¹⁷ Included in that goal is the installation of 10 gigawatts of solar power and 16 gigawatts of wind, as well as nuclear, co-generation, and transmission improvements.¹⁸ These commitments assume “international financial, technological . . . and capacity building support, including finance from the Green Climate Fund.”¹⁹ As such, both Egypt and Turkey demonstrate a dependence on foreign aid to accomplish their climate goals.

Other developing countries, including Indonesia and Mexico, have pledged tiered emission reduction goals: a less ambitious goal that is based only on unilateral efforts, and a goal that calls for deeper reductions that is contingent on international support. In its INDC, Indonesia pledges a 29 percent reduction in

11. *Id.*

12. *Id.*

13. *Id.* at 31.

14. *Id.*

15. ARAB REPUBLIC OF EGYPT, EGYPTIAN INTENDED NATIONALLY DETERMINED CONTRIBUTION 10–11 (2015), <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Egypt/1/Egyptian%20INDC.pdf>.

16. *Id.* at 13.

17. REPUBLIC OF TURKEY, INTENDED NATIONALLY DETERMINED CONTRIBUTION 2 (2015), http://www4.unfccc.int/submissions/INDC/Published%20Documents/Turkey/1/The_INDC_of_TURKEY_v.15.19.30.pdf. “Business as usual” refers to current, generally high, GHG emissions levels.

18. *Id.* at 3.

19. *Id.* at 3.

emissions from “business as usual” by 2030.²⁰ But the commitment will rise to a 41 percent reduction if countries reach a global agreement and if Indonesia receives “bilateral cooperations, covering technology development and transfer, capacity building, payment for performance mechanisms, technical cooperation, and access to financial resources.”²¹ Likewise, Mexico pledges a 25 percent reduction of greenhouse gases from business as usual by 2030.²² Mexico’s commitment increases to 40 percent if there is a global agreement that addresses certain topics like technical cooperation, access to low-cost financial resources, and technology transfer, among other international support mechanisms.²³ INDCs by developing countries demonstrate that there will be a limit to emission reduction efforts without developed world assistance.

C. THE OUTLOOK AND CONTROVERSY OF CLIMATE FINANCE

A massive gap remains between the amount of money contemplated in the Paris talks for developed nations to invest and the amount that developed nations have actually pledged to developing countries. Financial support from developed nations for climate adaptation and mitigation became a lightning rod for controversy at the Paris talks.²⁴ Although parties agreed that developed countries should assist developing countries’ climate adaptation and mitigation efforts, no legally-binding commitment to climate finance from developed to developing countries exists in the text of the agreement.²⁵ Nevertheless, countries have discussed figures as high as \$100 billion in annual climate-related aid from developed to developing countries.

Article 9 of the agreement requires developed countries to provide resources to developing countries for climate mitigation and adaptation.²⁶ It also calls for developed countries to “mobiliz[e] climate finance from a wide variety of sources” and to report on quantitative and qualitative information about the availability of resources for developing countries on a regular basis.²⁷ The final text of the agreement does not discuss a concrete figure for climate financing.²⁸

20. REPUBLIC OF INDONESIA, INTENDED NATIONALLY DETERMINED CONTRIBUTION 2 (2015), http://www4.unfccc.int/submissions/INDC/Published%20Documents/Indonesia/1/INDC_REPUBLIC%20OF%20INDONESIA.pdf.

21. *Id.* at 5–6.

22. GOBIERNO DE LA REPÚBLICA DE MÉXICO, INTENDED NATIONALLY DETERMINED CONTRIBUTION 2 (2015), <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Mexico/1/MEXICO%20INDC%2003.30.2015.pdf>.

23. *Id.*

24. *See, e.g.*, Justin Worland, *Why the Paris Climate Summit is All About the Money*, TIME (Dec. 7, 2015), <http://time.com/4138150/finance-paris-climate-conference/>.

25. *See generally* Paris Agreement, *supra* note 1.

26. *See id.* at art. 9.

27. *Id.*

28. *See generally* Paris Agreement, *supra* note 1.

Up until the final day of negotiating, a draft version of the agreement stated in the preamble the intention of developed nations to provide developing countries with \$100 billion per year in climate-related financing, harkening to the \$100 billion annual climate financing goal by 2020 established at COP 16.²⁹ But since no dollar figure appears in the final text of the agreement, the \$100 billion figure remains aspirational.

The United States delegation allegedly led the charge against a binding figure.³⁰ In the final week of the Paris talks, the U.S. State Department announced it would double its funding for international climate change adaption to a total of \$800 million by 2020.³¹ Yet all international climate commitments, including the \$3 billion contribution to the Green Climate Fund that the Obama Administration proposed in 2014, would have faced unequivocal challenge by the Republican majority in Congress, which would have prevented authorization and an appropriation of funds.³² Knowing a binding financial commitment would be a non-starter with Congress, Secretary of State John Kerry allegedly threatened to walk out of talks on December 11, 2015 in order to ensure the \$100 billion figure did not enter the articles of the Paris Agreement.³³ Still, a massive gap remains between the aspirational \$100 billion annual investment and the actual figures—such as the U.S.’s \$800 million five-year allocation toward adaption measures—that developed countries have pledged.

II. ECONOMIC OFFSETS TO FOREIGN DEFENSE SALES AS A SOLUTION FOR CLIMATE FINANCE

Economic offset packages from sales of defense goods to foreign governments stand as a multibillion-dollar pool of capital and a bilateral mechanism that could help close the climate financing gap for developing nations. This solution, which

29. Conference of the Parties to the U.N. Framework Convention on Climate Change, Adoption of the Paris Agreement, ¶ 54, U.N. Doc. FCCC/CP/2015/L.9 (Dec. 12, 2015), <https://unfccc.int/resource/docs/2015/cop21/eng/109.pdf>; Rep. of the Conference of the Parties on its Sixteenth Session, ¶ 98, U.N. Doc. FCCC/CP/2010/7/Add.1 (2011), <http://unfccc.int/resource/docs/2010/cop16/eng/07a01.pdf>.

30. Nitin Sethi, *US Threatens to Walk Out of Paris Pact Over Financial Obligations*, BUSINESS STANDARD (Dec. 11, 2015), http://www.business-standard.com/article/current-affairs/us-threatens-to-walk-out-of-paris-pact-over-financial-obligations-115121100913_1.html.

31. *United States Announces it Will Double Grant-Based, Public Climate Finance for Adaptation*, U.S. DEPT. OF STATE (Dec. 9, 2015), <https://geneva.usmission.gov/2015/12/09/fact-sheet-united-states-announces-it-will-double-grant-based-public-climate-finance-for-adaptation/>.

32. Coral Davenport & Mark Landler, *U.S. to Give \$3 Billion to Climate Fund to Help Poor Nations, and Spur Rich Ones*, N.Y. TIMES (Nov. 14, 2014), <http://www.nytimes.com/2014/11/15/us/politics/obama-climate-change-fund-3-billion-announcement.html>; see Devin Henry, *Republicans Vow to Deny Obama Climate Funds to Derail Paris Talks*, THE HILL (Nov. 20, 2015), <http://thehill.com/policy/energy-environment/260902-gop-vows-to-deny-obama-climate-funds-in-bid-to-derail-paris-talks>; see also Claire Foran, *The Republican Attempt to Derail the Paris Climate Talks*, THE ATLANTIC (Dec. 1, 2016), <http://www.theatlantic.com/politics/archive/2015/12/the-republican-attempt-to-derail-the-paris-climate-talks/418290/>.

33. See Sethi, *supra* note 30.

would involve U.S. government coordination but ultimately private sector leadership, would serve to enhance U.S. security interests and help meet climate financing commitments with no additional cost to the federal government. As such, the use of indirect offsets to foreign military sales could be an attractive alternative policy mechanism for traditional climate financing detractors in Washington.

A. UNITED STATES FOREIGN MILITARY SALES, DIRECT COMMERCIAL SALES, AND ASSOCIATED ECONOMIC OFFSETS

Foreign purchasers are a large market for U.S. defense contractors. With the passage of the Arms Export Control Act (“AECA”) in 1976, American defense contractors have been authorized to sell defense-related goods and services to foreign countries and international organizations.³⁴ The underlying purpose of the program is to “further the objective of applying agreed resources of each country to programs and projects of cooperative exchange of data, research, development, production, procurement, and logistics support to achieve specific national defense requirements and objectives of mutual concern.”³⁵ Before any trade can occur, the president must assess the eligibility of a foreign country to receive exports of defense articles.³⁶ In practice, the duty of assessment has been delegated to the Defense Security Cooperation Agency (“DSCA”) in the Department of Defense.³⁷ In turn, the State Department must approve these sales.³⁸ Since the adoption of the AECA, foreign military sales (“FMS”) (which feature government-to-government negotiations on behalf of the contractor) and direct commercial sales (“DCS”) (in which the contractor negotiates directly with the foreign purchaser) have become an increasingly significant market for military equipment.³⁹ This includes the sale of aircraft equipment, weapons systems, satellites, communications equipment, and electronics equipment, among other products accounting for tens of billions of dollars annually.⁴⁰ In an era of sequestration and reduced domestic defense spending, FMS and DCS have proven to be a critical method for U.S. firms to maintain sales, maintain market share, and to sustain capacity.⁴¹

34. See 22 U.S.C. § 2761–62 (2012).

35. 22 U.S.C. § 2751 (2012).

36. 22 U.S.C. § 2752–53 (2012).

37. *Security Cooperation Overview*, DEF. SEC. COOPERATION AGENCY, <http://www.dsca.mil/2014-foreign-customer-guide/security-cooperation-overview> (last visited Feb. 28, 2017).

38. 22 U.S.C. § 2752 (2012).

39. Derek Gilman et al., *Foreign Military Sales and Direct Commercial Sales 1* (Sept. 30, 2014), http://www.dsca.mil/sites/default/files/final-fms-dcs_30_sep.pdf.

40. *Id.* at 1, 14.

41. See Aaron Mehta, *US Doubles Down on Foreign Military Sales*, DEFENSE NEWS (July 19, 2014), <http://uslaboragainstar.org/Article/466/us-doubles-down-on-foreign-military-sales>.

As the defense export market has grown, it has become common practice for purchasing countries to require that sellers of defense goods offer an economic offset package.⁴² The underlying theory of an offset is that purchasing countries allege harm to their domestic economies when they buy materials from foreign producers.⁴³ Therefore, in exchange for an agreement to buy foreign defense products, purchasing countries require that foreign suppliers provide additional economic support to offset this alleged harm. These offsets may be either directly or indirectly related to the purchased product. Examples of direct economic offsets include co-production of the purchased products or licensed production of a product's components.⁴⁴ Indirect offset packages may include these same mechanisms to build capacity in areas unrelated to the purchased product.⁴⁵ Economic offset packages can also include features such as credit assistance, investment, technology transfer, and training.⁴⁶

Because the economic offset is, in effect, a sweetener, the U.S. government has taken the official stance that it is market distorting.⁴⁷ Accordingly, the U.S. government does not enter directly into, encourage, or commit contractors to offset contracts with purchasing countries.⁴⁸ Nevertheless, the federal government is aware of the demand that offset agreements be included in defense exports and has made efforts to study and mitigate those impacts to U.S. industry.⁴⁹

B. ECONOMIC OFFSETS COMPRISE A MULTIBILLION-DOLLAR POOL OF CAPITAL

Economic offsets in the defense export market comprise a multibillion-dollar pool of capital that the United States and other developed countries could use to help reach the \$100 billion climate finance pledge. From fiscal years 2008–2015, the United States averaged over \$34 billion in annual FMS sales, including a high

42. Robert S. Metzger, *Offsets Loom Large as Defense Firms Sell More Abroad*, LAW360 (Sept. 30, 2013), <http://www.law360.com/articles/476581/offsets-loom-large-as-defense-firms-sell-more-abroad>; see *Offsets in Defense Trade: Twenty-First Study*, U.S. DEP'T OF COMMERCE BUREAU OF INDUS. & SEC. ii (2016), <https://www.bis.doc.gov/index.php/forms-documents/pdfs/1620-twenty-first-report-to-congress-12-16/file>.

43. Robert L. Waller, *The Use of Offsets in Foreign Military Sales*, ACQUISITION REV. QUARTERLY 225–26 (2003).

44. U.S. DEP'T OF COMMERCE BUREAU OF INDUS. & SEC., *supra* note 42, at 6, 31.

45. *See id.*

46. *Id.* at 31.

47. *See, e.g.*, U.S. GENERAL ACCOUNTING OFFICE, TRADE OFFSETS IN FOREIGN MILITARY SALES 5 (Apr. 13, 1984), <http://www.gao.gov/products/NSIAD-84-102>; Defense Production Act Amendments of 1992, Pub. L. 102-558, Title I, Part C, §123 (1992).

48. Defense Production Act Amendments of 1992, *supra* note 47.

49. *See* U.S. DEP'T OF COMMERCE BUREAU OF INDUS. & SEC., *supra* note 42, at 8; Dept. of Defense, Defense Acquisition Regulation Supplement: Interim Rule on Offset Costs (DFARS Case 2015-D028), Fed. Reg. 80,105, (June 2, 2015) (“DoD recognizes the need to have offsets embedded in DoD FMS contracts. However, the decision whether to engage in indirect offsets and the responsibility for negotiating and implementing these offset arrangements ultimately reside with the FMS customer and contractor(s) involved.”).

of nearly \$67 billion in fiscal year 2012.⁵⁰ These FMS figures pale in comparison to DCS sales, which generally exceed FMS sales by a ratio of nearly 3:1.⁵¹ Accordingly, it is likely that the U.S. defense export market may regularly exceed \$100 billion in sales agreements annually.⁵² How much of that market is reflected in economic offsets? The cost of these offsets varies by purchasing jurisdiction, but can be anywhere from 30 to 100 percent of the contract price.⁵³ Between 2011 and 2015, the value of reported offset agreements by U.S.-based contractors relative to their contract values averaged 47.5 percent, according to the annual report on the impact of offsets in defense trade that the Department of Commerce's Bureau of Industry and Security prepares for Congress; for the \$66.3 billion in contracts reported, firms entered into \$31.5 billion in offset commitments.⁵⁴ A conservative estimate puts U.S. contractors alone on the hook for over \$5 billion annually in economic offset commitments.⁵⁵

Shareholder disclosures by contractors support this multibillion-dollar sum of annual offset costs.⁵⁶ For example, in its 2014 Annual Report, Lockheed Martin explained that it had \$13.1 billion in outstanding offset obligations, some of which extend through 2027.⁵⁷ Lockheed Martin is just one of dozens of prime contractors engaged in foreign defense sales. Indeed, it is estimated that \$214 billion in offset commitments were signed worldwide from 2005–11, with that number expected to reach \$500 billion in total by 2016.⁵⁸ Accordingly, tens of billions of dollars are annually obligated worldwide to support investments in

50. U.S. DEPT. OF DEFENSE SECURITY COOPERATION AGENCY, HISTORICAL FACTS BOOK 2 (2015) http://www.dsca.mil/sites/default/files/historical_facts_book_-_30_september_2015.pdf.

51. Gilman, *supra* note 39, at 1.

52. *See id.*

53. Metzger, *supra* note 42 (discussing that India typically requires a 30 percent offset, although has insisted on 50 percent in the past. Meanwhile, Canada imposes a 100 percent offset requirement. Turkey requires a minimum of 70 percent industrial participation or offset value).

54. U.S. DEP'T OF COMMERCE BUREAU OF INDUS. & SEC., *supra* note 42, at ii; U.S. DEP'T OF COMMERCE BUREAU OF INDUS. & SEC., OFFSETS IN DEFENSE TRADE: TWENTIETH STUDY ii (Dec. 28, 2015), <https://www.bis.doc.gov/index.php/forms-documents/pdfs/1449-final-20th-offsets-in-defense-trade-report-public-report/file>; U.S. DEP'T OF COMMERCE BUREAU OF INDUS. AND SEC., OFFSETS IN DEFENSE TRADE: NINETEENTH STUDY ii (Dec. 28, 2014), <https://www.bis.doc.gov/index.php/forms-documents/other-areas/strategic-industries-and-economic-security/offsets-in-defense-trade/1203-nineteenth-report-to-congress-3-15/file>; U.S. DEP'T OF COMMERCE BUREAU OF INDUS. & SEC., OFFSETS IN DEFENSE TRADE: EIGHTEENTH STUDY ii (Dec. 28, 2013), <https://www.bis.doc.gov/index.php/forms-documents/other-areas/strategic-industries-and-economic-security/offsets-in-defense-trade/877-eighteenth-report-to-congress-12-13/file>; U.S. DEP'T OF COMMERCE BUREAU OF INDUS. & SEC., OFFSETS IN DEFENSE TRADE: SEVENTEENTH STUDY ii (Dec. 28, 2012), <https://www.bis.doc.gov/index.php/forms-documents/sies/687-seventeenth-report-to-congress/file> (averaging years 2011–2015).

55. *See* U.S. DEP'T OF COMMERCE BUREAU OF INDUS. & SEC., *supra* note 42, at ii.

56. *See, e.g.*, LOCKHEED MARTIN CORP., 2014 ANNUAL REPORT (2014), 47 <http://www.lockheedmartin.co.uk/content/dam/lockheed/data/corporate/documents/2014-Annual-Report.pdf>.

57. *Id.*

58. Metzger, *supra* note 42.

purchasing countries, many of whom are developing nations seeking climate assistance. Even if contractors and countries agree to spend a fraction of that money on indirect offsets for climate mitigation or adaptation, the United States and other developed nations would be billions of dollars closer to reaching the aspirational \$100 billion climate finance pledge without needing to authorize additional public funds.

C. THE FMS MODEL IS A PROVEN, FLEXIBLE MECHANISM FOR BILATERAL TRADE AND INVESTMENT THAT CAN SERVE CLIMATE FINANCE

Not only do economic offsets present a significant pool of capital for nation-building investments, but the FMS and DCS negotiations process provides an existing bilateral channel through which climate offset agreements may be pursued. As noted above, the fundamental purpose of the AECA is the “cooperative exchange of data, research, development, production, procurement, and logistics support to achieve specific national defense requirements and objectives of mutual concern.”⁵⁹ This point is emphasized by the diversity of federal agencies involved: the State Department, the Department of Defense, and the Department of Commerce (for analyzing the impact of economic offsets). Significantly, the State Department, the same agency responsible for leading climate negotiations and fulfilling climate obligations, must also approve any FMS transaction. Although the U.S. government must remain at arms-length during offset negotiations, the familiarity of Department of State officials with climate finance needs could help U.S. contractors looking for indirect offset opportunities to target countries in need of climate-related finance.

At least twenty of the United States’ top fifty FMS buyers indicated in their Paris INDCs that they required international investment, financing, or technology transfer to achieve their climate commitments.⁶⁰ Included in the top twenty-five FMS destinations are India, Egypt, Turkey, Jordan, Mexico, and Indonesia.⁶¹ As noted above, these countries make their climate commitments in a large part contingent on anywhere from tens to hundreds of billions of dollars in support from developed countries.

59. 22 U.S.C. § 2751 (2012).

60. See DEFENSE SECURITY COOPERATION AGENCY, *supra* note 50.

61. See *id.*; INDCs for India, Egypt, Indonesia, Mexico, *supra* notes 8, 15, 19, 21; HASHEMITE KINGDOM OF JORDAN, INTENDED NATIONALLY DETERMINED CONTRIBUTION 1 (2009), <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Jordan/1/Jordan%20INDCs%20Final.pdf>.

TOP-25 FMS BUYERS THAT ARE SEEKING INTERNATIONAL CLIMATE FINANCING⁶²

Country	FMS Sales FY10-15 (USD in thousands)	Paris INDC Notes
India	6,881,950	Seeking financing and technology transfer toward estimated \$2.5 trillion in climate costs ('15-'30).
Egypt	5,067,394	Seeking financing and technology transfer toward estimated \$73 billion in climate costs ('20-'30).
Turkey	3,111,010	Seeking financial, technological, and capacity building support toward 21% emissions reduction and installation of 10GW solar, 16 GW wind.
Jordan	2,039,313	Pledges 1.5% emissions reduction, rising to 14% with international support for estimated \$4 billion in climate costs.
Mexico	1,561,674	Pledges 25% emissions reduction, rising to 40% with financing and technology transfer.
Indonesia	1,535,163	Pledges 29% emissions reduction, rising to 41% with bilateral technical and financing resources.

There are many ways that economic offsets could help a developing nation to meet its emission reduction goals. One example is India. The India INDC submission expresses an intention to build or increase capacity in a laundry list of technologies such as clean coal, biofuels, nuclear, wind, and solar power.⁶³ The country has made significant strides partnering with the developed world in planning to expand its solar energy capacity.⁶⁴ As a hypothetical, it is easy to imagine a defense contractor partnering with a company specializing in “advanced biomass gasification technologies” (to pick one INDC request) and apply its economic offset toward financing a hundred-million-dollar algal biomass or a Fischer-Tropsch⁶⁵ gas-to-liquids plant. It is also easy to imagine the contractor

62. See *supra* note 61. This table does not include DCS figures.

63. REPUBLIC OF INDIA, *supra* note 8, at 9–10.

64. See Arthur Neslen, *India Unveils Global Solar Alliance of 120 Countries at Paris Climate Summit*, THE GUARDIAN (Nov. 30, 2015), <http://www.theguardian.com/environment/2015/nov/30/india-set-to-unveil-global-solar-alliance-of-120-countries-at-paris-climate-summit>.

65. U.S. DEP'T OF ENERGY, *Fischer-Tropsch Synthesis*, <https://www.netl.doe.gov/research/coal/energy-systems/gasification/gasifiedia/ftsynthesis> (last visited Feb. 28, 2017) (“Liquid transportation hydrocarbon fuels and various other chemical products can be produced from syngas via the well-known and established catalytic chemical process called Fischer-Tropsch (FT) synthesis, named after the original German inventors, Franz Fischer and Hans Tropsch in the 1920s.”).

doing this in collaboration with an advanced biofuels company looking to expand its international presence while providing jobs and training for Indian workers. A similar hypothetical project could be arranged in Turkey, whereby a U.S. contractor could partner with a utility-scale wind energy developer to finance the construction and interconnection of some or all of the requested 16 GW wind capacity.

D. INDIRECT OFFSETS IN THE FORM OF CLIMATE MITIGATION AND ADAPTION
INVESTMENTS STRENGTHEN U.S. SECURITY WHILE FULFILLING INTERNATIONAL
OBLIGATIONS

Pursuing climate finance through indirect offsets to foreign military sales and direct commercial sales would strengthen U.S. security in a number of ways. This, combined with the fact that it does not require any additional financial outlays, should make climate finance through offsets a politically-palatable solution for even the most formidable of climate skeptics in Washington.

First, the Obama administration and the Department of Defense were outspoken about the national security implications of climate change, including changes in maritime patterns affecting naval operations and increased social unrest due to extreme weather and resulting floods.⁶⁶ Although some members of Congress and the Trump administration may discount these projections, others—particularly those focused on defense issues—will likely support a plan that not only equips our allies to defend themselves, but also helps them to mitigate and adapt to potential environmental and social instability.⁶⁷

Second, the use of indirect offsets, in the form of financing for climate adaptation, mitigation, or technology transfer helps to secure critical U.S. supply chains from vulnerabilities. Direct offsets in the form of co-production, licensed production, or technology transfer often require key elements of the defense product's manufacturing to be constructed abroad. For example, in the case of Sikorsky Aircraft Corporation's 2014 sale of Black Hawk helicopters to Turkey, Turkey required Sikorsky to build a co-production facility in Turkey.⁶⁸ Yet, even if these items, constructed abroad, are not sold back into the U.S. defense supply chain (as in the case of Sikorsky's helicopters) foreign production of key defense components risks the misappropriation of transferred technology into non-

66. See, e.g., U.S. DEPT. OF DEFENSE, NATIONAL SECURITY IMPLICATIONS OF CLIMATE-RELATED RISKS AND A CHANGING CLIMATE 3, 5 (July 23, 2015), <http://archive.defense.gov/pubs/150724-congressional-report-on-national-implications-of-climate-change.pdf?source=govdelivery>.

67. See, e.g., Byron Tau & Rebecca Ballhaus, *Lindsey Graham, in Early GOP Debate, Defends Some of His Positions*, WALL STREET J. (Oct. 28, 2015), <http://www.wsj.com/articles/lindsey-graham-in-early-gop-debate-defends-some-of-his-positions-1446075839>.

68. See, e.g., Burak Ege Bekdil, *Turkey Hopes Sikorsky Deal Boosts Local Industry, Exports*, DEFENSE NEWS (Mar. 17, 2014), <http://www.turkishnews.com/en/content/2014/03/18/turkey-hopes-sikorsky-deal-boosts-local-industry-exports/>.

intended weapons systems or to non-intended third-parties.⁶⁹ Any such risk is entirely negated when the offset obligation can be met by non-defense investment such as clean energy development or coastal adaptation projects.

Third, economic offsets already exist as a privately-funded pool worth billions of dollars. Sellers are already contractually obligated to invest billions of dollars in purchasing countries and the U.S. government already helps to monitor and facilitate those sales agreements. Although it takes an official position against entering directly into, encouraging, or committing contractors to offset agreements, the U.S. government can incentivize contractors already committed to providing offsets to negotiate climate adaptation or mitigation-related indirect offsets with purchasing countries. The State Department, which already has a role in helping to coordinate the underlying FMS transaction, could use its influence to leverage other federal resources for domestic companies doing business abroad, such as the Overseas Private Investment Corporation or the Export-Import Bank to help finance the offset.⁷⁰ Moreover, the State Department could help companies and their indirect offset providers to access international financing facilities, such as the World Bank's International Bank for Reconstruction and Development, the Global Environmental Facility, or the Green Climate Fund. By leveraging these financing resources, the State Department could incentivize firms to partner with energy- or environment-related offset providers while remaining at arms-length in actual offset negotiations. Meanwhile, policymakers can still take credit for the billions of dollars in climate financing going to developing countries at no increased cost to the federal government.

E. CLIMATE-RELATED OFFSETS MAKE GOOD BUSINESS SENSE AND MANY DEVELOPING COUNTRIES HAVE EXPRESSED OFFICIAL DEMAND FOR CLIMATE FUNDING

Without the actual cooperation of U.S. defense firms that are selling their products to governments abroad, this plan will not succeed. State Department-coordinated access to domestic and international climate financing resources should help incentivize contractors to pursue climate-related indirect offsets. Independent of these incentives, a strong business case exists for contractors to partner with clean energy or climate adaptation partners. FMS providers are already obliged to fulfill billion-dollar outlays abroad.⁷¹ Just as there is a national security incentive to pursue indirect offsets, there is an even stronger business incentive to have maximum control over supply chains and intellectual property. There is little doubt that companies would prefer to write a check to a third-party

69. Owen E. Herrstadt, *The Role of the United States Government in Setting Offset Policy*, in TRENDS AND CHALLENGES IN AEROSPACE OFFSETS 73, 205–06, (Charles W. Wessner, ed.), <https://www.nap.edu/read/6315/chapter/18>.

70. See, e.g., *OPIC in Action: Impact Investing*, OVERSEAS PRIV. INV. CORP., <https://www.opic.gov/opic-action/impact-investing> (last visited Feb. 2, 2017).

71. See LOCKHEED MARTIN CORP., *supra* note 56, at 47.

rather than being responsible for establishing co-production operations in an unfamiliar country. By pursuing climate-related indirect offsets, contractors can seize an opportunity to diversify their portfolios with strategic partnerships with clean technology companies (for example, an advanced drop-in biofuel company could get the opportunity to partner with an aviation contractor to advance jet fuel technology). Many companies have already been factoring climate change into their business plans. For example, United Technologies, a leading defense contractor, signed the White House's American Business Act on Climate Pledge during the Paris talks.⁷² The Paris Agreement sent a signal to the market that clean technology financing is a priority for governments across the world. The same market forces that have led defense contractors to invest in international sales could also lead them to invest in greater energy and environmental capabilities themselves.

Finally, purchasing countries will have to agree to an indirect offset package focused on climate mitigation and adaption measures, rather than direct coproduction or other alternatives. It is unwise to discount the difficulty of coming to terms on an offset package to FMS or DCS deal. Yet, those countries that lobbied strongly for a legally binding climate finance provision in Paris should nevertheless be obliged to pursue an opportunity to fulfill their own commitments and uphold requests for developed country assistance.

CONCLUSION

Countries across the globe reached an unprecedented consensus in Paris to combat climate change. However, there still exists a significant disconnect between the aspirational level of climate finance pledged by developed nations and the actual resources that industrialized countries—like the United States—have committed to such mitigation and adaptation measures. By leveraging the sale of defense products abroad and their corresponding economic offset obligations, the United States and other developed nations can utilize a familiar bilateral development mechanism while tapping into a multibillion-dollar pool of capital for funding climate adaptation and mitigation measures. Economic offsets from foreign military sales and direct commercial sales can enable the United States to fulfill its climate finance pledges all while enhancing its national security and the security of its allies.

72. *United Technologies Joins White House Pledge to Act on Climate Change*, UNITED TECHNOLOGIES (Dec. 2, 2015), <http://www.utc.com/News/News-Center/Pages/United-Technologies-Joins-White-House-Pledge-to-Act-on-Climate-Change.aspx>.