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COMPULSORY LICENSING IN TRIPS: CHINESE AND INDIAN COMPARATIVE ADVANTAGE IN THE MANUFACTURE AND EXPORTATION OF GREEN TECHNOLOGIES

by *Rishi R. Gupta**

Challengers to the United States' global influence, such as Brazil, China, and India, have criticized heavy polluters like the United States and the United Kingdom for significantly contributing to the world's total carbon emissions but failing to share its green technologies with the rest of the world.¹ Utilizing Rio+20 to redefine Article 31(b) of the World Trade Organization's Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement should create an international framework for transfer of green technology through a patent process called compulsory licensing.² Compulsory licensing allows a country to bypass a patent and create a generic copy of a technology by licensing it within its borders.³

Currently, the United States holds the largest number of patents for green technology in various sectors, including: wind, solar photovoltaic, concentrated solar power, biomass-to-electricity, and carbon capture and storage.⁴ Unfortunately, given the long statutory periods provided to patent holders and the high costs of entering the green technology market, these patents effectively provide the patent holder with a twenty year monopoly.⁵ Thus, this intellectual property barrier inhibits financially strapped developing countries from acquiring the newest and most effective technologies, preventing them from mitigating the environmental consequences of their rapid growth.⁶ At the same time, China and India have a comparative advantage in the manufacturing of green technologies over companies in the United States and are able to produce these technologies at much lower costs.⁷

While a compulsory license typically requires a country to prove that it attempted and failed to secure a voluntary license, the TRIPS agreement waives this requirement in cases of national emergency, circumstances of extreme urgency, or for public non-commercial use.⁸ Specifically, the WTO should use Rio+20 to recognize that greenhouse gas emissions are a circumstance of "extreme urgency."⁹ In 2003 at Doha, the WTO extended compulsory licenses to the exportation of pharmaceuticals, allowing a country with the requisite manufacturing capacity to obtain a compulsory license to manufacture pharmaceutical products that alleviate public health problems.¹⁰ Brazil and Thailand have used the WTO's 2003 decision to spread cheaper AIDS medication and put pressure on patent holders to decrease their prices.¹¹ This manufacturing and exportation model of compulsory licensing could be similarly

employed in countries like China and India for transfer and dissemination of green technology.¹²

However, this type of compulsory licensing is often criticized because of its potential harm to economic growth in patent holding countries and the expansion of future green technologies.¹³ Critics argue that strong patents reward patent holders for their innovations, thereby incentivizing future innovations in green technology.¹⁴ These enforceable patents are generally regarded as necessary to guarantee profits for the patent holder.¹⁵ Some of this impact would be mitigated, however, because compulsory licensing requires that the licensor pay the patent holder adequate remuneration, which typically takes the form of royalties.¹⁶ Moreover, the need for compulsory licenses usually arises in countries where the patent holder has chosen not to make its green technology available, so there is not a significant loss in either profits or incentives to innovate because these countries were already shut out of the market.¹⁷

Beyond economics, the environmental impact of compulsory green technology licenses in China and India would be extremely positive for the entire globe. Primarily, technology transfer through compulsory licensing would speed up global green technology development by allowing companies in China and India to begin innovating and improving on currently held patents without having to wait the full twenty years.¹⁸ Indeed, by impeding research and development in China and India, the current intellectual property regime severely limits the possibility of follow-on innovations that could lead to further breakthroughs in the field.¹⁹

The proliferation of advanced green technologies in the economically developing countries of China, the world's largest emitter of greenhouse gas emissions, and India, the fourth largest emitter, would be felt immediately.²⁰ Other developing countries could attain greater means to reduce their emissions because compulsory licensing would significantly reduce high start-up costs by allowing China and India to manufacture significantly cheaper green technologies.²¹ Smaller, developing countries would also see a significant decrease in the cost of green technology due to China and India's cheaper manufacturing capabilities in wind and solar energy.²²

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¹⁰⁸ See *The Equator Principles*, *supra* note 67, at 5 (stating principle 7: “Independent Review: For all Category A projects and, as appropriate, for Category B projects, an independent social or environmental expert not directly associated with the borrower will review the Assessment, AP and consultation process documentation in order to assist EPFI’s due diligence, and assess Equator Principles compliance”).

¹⁰⁹ See Abbott, *supra* note 100, at 3, 4.

¹¹⁰ See *Investor Group Representing over US\$15 Trillion Calls for Action on Climate Change*, United Nations Environment Programme, <http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=651&ArticleID=6830&l=en> (last visited Apr. 17, 2012) (more than one-quarter of global market capitalization).

¹¹¹ *Id.*

¹¹² See *About Us*, PRINCIPLES FOR RESPONSIBLE INVESTMENT, <http://www.unpri.org/about/> (last visited Apr. 17, 2012).

¹¹³ See *Signatories*, PRINCIPLES FOR RESPONSIBLE INVESTMENT, <http://www.unpri.org/signatories/> (last visited Apr. 17, 2012).

¹¹⁴ See Jon Entine, *UN Global Compact: Ten Years of Greenwashing?*, Ethical Corporation (Nov. 1, 2010), <http://www.ethicalcorp.com/governance-regulation/un-global-compact-ten-years-greenwashing>; Elaine Cohen, *UN Global Compact: Celebrating Ten Years of What?*, CSRWire (Nov. 23, 2010), http://www.csrwire.com/csrlive/commentary_detail/3325-The-UN-Global-Compact-celebrates-10-years-of-what-; Dec. Ten Years of Setting the Record Straight, UNITED NATIONS GLOBAL COMPACT, <http://unglobalcompact.wordpress.com/2010/11/04/10-years-of-setting-the-record-straight/> (last visited Apr. 17, 2012); Press Release: UN Global Compact punishes companies for failing to play its greenwash game, but not for violating its Principles (Mar. 29, 2012), <http://info.babymilkaction.org/pressrelease/pressrelease29mar12> (arguing that while companies are expelled for failing to submit COPs, other companies, such as Nestlé, a Patron Sponsor of the Rio+20 Corporate Sustainability Forum, “get away with submitting misleading reports and systematically violating the Global Compact Principles”).

¹¹⁵ See Jo Confino, *Cleaning up the Global Compact: dealing with corporate free riders*, THE GUARDIAN (Mar. 26, 2012), <http://www.guardian.co.uk/>

[sustainable-business/cleaning-up-un-global-compact-green-washApr.](http://www.unglobalcompact.org/AboutTheGC/index.html); see also *About Us*, UNITED NATIONS GLOBAL COMPACT, <http://www.unglobalcompact.org/AboutTheGC/index.html> (last visited Apr. 17, 2012).

¹¹⁶ See *Corporate Responsibility: Investors Give New Twist to Good Cop/Bad Cop routine*, PRINCIPLES FOR RESPONSIBLE INVESTMENT, http://www.unpri.org/files/PRI_GCpHII_final.pdf (last visited Apr. 17, 2012).

¹¹⁷ *Id.*

¹¹⁸ *Id.*

¹¹⁹ See *Update of IFC’s Pol’y and Performance Standards on Environmental and Social Sustainability, and Access to Information Pol’y*, INTERNATIONAL FINANCE CORPORATION (Apr. 14, 2011), http://www1.ifc.org/wps/wcm/connect/fca42a0049800aaaaba2fb336b93d75f/Board-Paper-IFC_SustainabilityFramework-2012.pdf?MOD=AJPERES (revising standards to “introduce[] a resource efficiency concept for energy, water, and core material inputs”; “strengthen[] focus on energy efficiency and greenhouse gas measurement”; “reduce[] greenhouse gas emissions thresholds for reporting to IFC from 100,000 tons of CO₂ to 25,000 tons of CO₂ per year”; “require[] determination of accountability with regards to historical pollution”; and introduces the concept of “duty of care” for hazardous waste disposal). Jan. Apr. Apr.

¹²⁰ See THE CARBON PRINCIPLES, <http://www.carbonprinciples.com/> (last visited Apr. Apr. 17, Apr. 2012).

¹²¹ See *Biodiversity for Banks Program (B4B)*, EQUATOR PRINCIPLES, <http://www.equator-principles.com/index.php/best-practice-resources/b4b> (last visited Apr. Apr. 17, Apr. 2012).

¹²² See RIO+20 CORP. SUSTAINABILITY FORUM, <http://unglobalcompact.event.com/events/rio-20-corporate-sustainability-forum/custom-18-251b87a2deaa4e-56a3e00ca1d66e5bfd.aspx> (last visited Apr. 15, 2012); see generally *Financiers Search for Sustainable Future*, EARTH SUMMIT 2012, <http://www.earthsummit2012.org/earth-summit-in-the-press/financiers-search-for-sustainable-future> (last visited Apr. 17, 2012).

¹²³ See generally <http://www.un.org/geninfo/bp/enviro.html> (last visited Apr. 15, 2012) (noting that “[s]ome 2,400 representatives of non-governmental organizations (NGOs)” attended).

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Information and technology transfer to China and India through compulsory licensing offers a unique opportunity to exploit the benefits of international trade to promote an environmentally sustainable future. However, international cooperation at the Rio+20 conference will be crucial in promoting this opportunity by finally dealing with the issue of how to maintain intellectual property rights while disseminating

the benefits of these technologies. While methods to mitigate short-term economic costs should be considered, Rio+20 must recognize the promise that compulsory licensing holds for reducing emissions in the long run and acknowledge the urgent need to make green technology available to the developing world at an affordable price.



Endnotes: COMPULSORY LICENSING IN TRIPS: CHINESE AND INDIAN COMPARATIVE ADVANTAGE IN THE MANUFACTURE AND EXPORTATION OF GREEN TECHNOLOGIES

¹ See Robert Fair, *Does Climate Change Justify Compulsory Licensing of Green Technology?*, 6 INTERNATIONAL LAW & MANAGEMENT REVIEW 21, 23 (2009) (referencing a joint resolution issued by Brazil, China, and India).

² See Eco-Accord, United Nations Conference on Sustainable Development, Proposals for Rio+20: Sustainable Development Needs a New Impetus ¶ 15 (Nov. 1, 2011), <http://www.unctad.org/rio20/index.php?page=view&type=510&nr=525&menu=20>; TRIPS: Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299, 313 (1994), available at http://www.wto.org/english/docs_e/legal_e/27-trips_04c_e.htm [hereinafter TRIPS Agreement] (defining that it is appropriate to use compulsory licensing for “extreme urgency”).

³ See Sarah M. Wong, *Environmental Initiative and the Role of the USPTO’s Green Technology Pilot Program*, 16 MARQ. INTELL. PROP. L. REV. 233, 243

(2012); TRIPS AND HEALTH: FREQUENTLY ASKED QUESTIONS, http://www.wto.org/english/tratop_e/trips_e/public_health_faq_e.htm (last visited Apr. 24, 2012).

⁴ BERNICE LEE ET AL., CHATHAM HOUSE REPORT, WHO OWNS OUR LOW CARBON FUTURE? INTELLECTUAL PROPERTY AND ENERGY TECHNOLOGIES 23, 27, 30, 34, 40 (2009) (providing data that of the entire world’s green energy patents the U.S. based companies hold 27.2% of wind patents, 40.4% of solar photovoltaic patents, 40.4% of biomass-to-electricity patents, 37.8% of concentrated solar power patents, and 68.4% of carbon capture patents).

⁵ See Kate Nuehring, *Our Generation’s Sputnik Moment: Comparing the United States’ Green Technology Pilot Program to Green Patent Programs Abroad*, 9 NORTHWESTERN JOURNAL OF TECHNOLOGY AND INTELLECTUAL PROPERTY 609, 616 (2011).

⁶ See generally Michael Hasper, Note, *Green Technology in Developing Countries: Creating Accessibility through a Global Exchange Forum*, 1 DUKE

L. & TECH. REV. (2009) (explaining the unique hurdle that intellectual property rights create).

⁷ See Rasmus Lema and Adrian Lema, *Whither Technology Transfer? The Rise of China and India in Green Technology Sectors*, paper prepared for the 8th GLOBELICS International Conference, Kuala Lumpur, Malaysia 17 (2010).

⁸ TRIPS Agreement, 1869 U.N.T.S. 313.

⁹ See Eco-Accord, United Nations Conference on Sustainable Development, Proposals for Rio+20: Sustainable Development Needs a New Impetus ¶ 15 (Nov. 1, 2011).

¹⁰ See Robert Fair, *Does Climate Change Justify Compulsory Licensing of Green Technology?*, 6 INTERNATIONAL LAW & MANAGEMENT REVIEW 21, 26 (2009); for how to cite this decision- http://www.wto.org/english/tratop_E/TRIPS_e/implem_para6_e.htm.

¹¹ See Fair, *supra* note 9, at 28.

¹² See Wong, *supra* note 8.

¹³ See generally TIM WILSON, INSTITUTE OF PUBLIC AFFAIRS, UNDERMINING MITIGATION TECHNOLOGY: COMPULSORY LICENSING, PATENTS AND TARIFFS (2008) (claiming that compulsory licensing would have a negative effect on economic growth and green technology innovation).

¹⁴ See Bronwyn H. Hall and Christian Helmers, *The Role of Patent Protection in (Clean) Technology Transfer*, 26 SANTA CLARA COMPUTER & HIGH TECH. L.J. 487, 492 (2010).

¹⁵ See *id.* at 493.

¹⁶ See TRIPS Agreement, 1869 U.N.T.S. 313; Veronique Greenwood, *Who Owns Green Tech?*, SEED MAGAZINE (Jul. 30, 2009), http://seedmagazine.com/content/article/intellectual_property_who_owns_green_tech/.

¹⁷ See JEROME REICHMAN ET AL., CHATHAM HOUSE, INTELLECTUAL PROPERTY AND ALTERNATIVES: STRATEGIES FOR GREEN INNOVATION 30 (2008) (noting that compulsory licensing is especially useful when companies refuse to make the technology affordable in a particular country).

¹⁸ Rasmus Lema and Adrian Lema, *Whither Technology Transfer? The Rise of China and India in Green Technology Sectors*, paper prepared for the 8th GLOBELICS International Conference, Kuala Lumpur, Malaysia 19 (2010) (noting the importance of licensing to spur more competition and innovation in China and India).

¹⁹ See Cameron Hutchison, *Does TRIPS Facilitate or Impede Climate Change Technology Transfer into Developing Countries?*, 3 U. OTTAWA L. & TECH. J. 517, 527-28 (2006) (recognizing that inflexible intellectual property rights regimes can stifle follow-on innovations).

²⁰ Katy Daigle, Associated press, Rising powers say new bank can help development <http://www.google.com/hostednews/ap/article/ALeqM5jcvOCTIx57W9v4p85bhFNfSckqA?docId=951a797b59ab4a289d0ac09128eef0c6>.

²¹ See Robert Fair, *Does Climate Change Justify Compulsory Licensing of Green Technology?*, 6 INTERNATIONAL LAW & MANAGEMENT REVIEW 21, 22 (2009).

²² See Joanna I. Lewis, *Building a National Wind Turbine Industry: Experiences from China, India, and South Korea*, 5 INT'L J. TECH. & GLOBALISATION 281, 283-90 (2011); Lema and Lema, *supra* note 18, at 8-13; Uciilia Wang, *Chinese Manufacturers Cement Their Hold on Global Solar Market*, FORBES (Feb. 27, 2012, 1:10 PM), <http://www.forbes.com/sites/uciliawang/2012/02/27/chinese-manufacturers-cement-their-hold-on-global-solar-market/>.

Endnotes: INTERNATIONAL INVESTMENT LAW AND ARBITRATION, SUSTAINABLE DEVELOPMENT, AND RIO+20: IMPROVING CORPORATE INSTITUTIONAL AND STATE GOVERNANCE

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³⁵ Roland Kläger, 'Fair and Equitable Treatment' and Sustainable Development, in SUSTAINABLE DEVELOPMENT IN WORLD INVESTMENT LAW 241-42 (Marie-Claire Cordonier Segger, Markus W. Gehring, & Andrew Newcombe eds., 2011).

³⁶ See generally Tecnicas Medioambientales Tecmed S.A. v. United Mexican States, ICSID Case No. ARB(AF)/00/2, Award (May 29, 2003).

³⁷ *Id.* at ¶154 (cited in MTD v. Chile, ICSID Case No. ARB(AF)/01/7, Award, ¶112; Occidental Exploration and Production Co. v. Ecuador, LCIA Case No. UN3467, Award, ¶185 (July 1, 2004)).

³⁸ Saluka Investments BV v. Czech Republic, UNCITRAL, Partial Award, ¶304-05 (Mar. 17, 2006) See, IISD, at 17-18.

³⁹ Kläger, *supra* note 37, at 242.

⁴⁰ *Id.*

⁴¹ See IISD, *supra* note 35, at 18-19.

⁴² See Comprehensive Economic Cooperation Agreement Between the Republic of India and the Republic of Singapore, India-Sing., June 29, 2005.

⁴³ *Id.*

⁴⁴ Restatement (Third) of Foreign Relations Law § 206 (1987).

⁴⁵ See generally United Nations Conference on Trade and Development, *Taking of Property*, U.N. Doc. UNCTAD/ITE/IIT/15 (2000), <http://www.unctad.org/en/docs/psiteitd15.en.pdf>.

⁴⁶ *Id.*

⁴⁷ OECD, "Indirect Expropriation" and the "Right to Regulate" in International Investment Law, International Investment Law: A Changing Landscape (2005).

⁴⁸ *Id.* at 46-47.

⁴⁹ *Id.* at 44.

⁵⁰ *Id.*

⁵¹ Caroline Henckels, *Indirect Expropriation and the Right to Regulate*, 15 J. INT'L ECON. L. 223, 225 (2012) (Fn. 4).

⁵² Waste Management v. United Mexican States (Waste Management II), ICSID Case No. ARB(AF)/00/3, Award (April 30, 2004), <http://www.state.gov/documents/organization/34643.pdf>.

⁵³ *Id.* at ¶¶ 159,160.

⁵⁴ Henckels, *supra* note 53, at 225.

⁵⁵ Tecnicas Medioambientales S.A. v. Mexico (TECMED), ICSID Case No. ARB (AF)/00/2, Award (May 29, 2003), http://icsid.worldbank.org/ICSID/FrontServlet?requestType=CasesRH&actionVal=showDoc&docId=DC602_En&caseId=C186.

⁵⁶ Metalclad Corp. v. United Mexican States, ICSID Case No. ARB(AF)/97/1, Award (Aug. 30, 2000), http://icsid.worldbank.org/ICSID/FrontServlet?requestType=CasesRH&actionVal=showDoc&docId=DC542_En&caseId=C155.

⁵⁷ *Id.* at ¶ 111.

⁵⁸ Methanex Corporation v. United States at Part II, Chap. D, ¶ 16.

⁵⁹ *Id.* at Part I, ¶ 1.

⁶⁰ *Id.*

⁶¹ Methanex, Part IV, Chap. D, ¶ 7.

⁶² IISD, *supra* note 35, at 22, 23.

⁶³ See IISD, *supra* note 35, at 23-24.

⁶⁴ UNITED STATES MODEL BILATERAL INVESTMENT TREATY, Article 3(1), (2004), <http://www.state.gov/documents/organization/117601.pdf>. Article 3(2) sets forth the same language, with the exception that the word "investments" is substituted for the word "investors" as it appears in Article 3(1).

⁶⁵ Kate Miles, *Sustainable Development, National Treatment and Like Circumstances in Investment Law* in SUSTAINABLE DEVELOPMENT IN WORLD INVESTMENT LAW 265, 268-269 (Marie-Claire Cordonier Segger, Markus W. Gehring, Andrew Newcombe eds., 2011).

⁶⁶ See *id.* at 269 (describing a broad interpretation of the term, which in turn captures a range of regulation and governmental decision-making that is virtually limitless).

⁶⁷ *Id.*

⁶⁸ Miles, *supra* note 67, at 269.

⁶⁹ S.D. Myers, Inc. v. Government of Canada, First Partial Arbitral Award, ¶ 243 (Nov. 13, 2000), 8 ICSID Rep. 3 at 52-53.

⁷⁰ *Id.* at 55, ¶ 256.

⁷¹ *Id.* at 26, ¶¶ 89-93.

⁷² *Id.* at 29, ¶¶ 109-112.

⁷³ *Id.* at 54, ¶¶ 250.

⁷⁴ *Id.* at 76, ¶¶ 241-56.

⁷⁵ *Id.* at 54, ¶¶ 251, 255.

⁷⁶ Pope & Talbot v. Canada, Award on the Merits of Phase 2, ¶ 78, Arbitral Tribunal (April 10, 2001) available at http://www.international.gc.ca/trade-agreements-accords-commerciaux/assets/pdfs/Award_Merits-e.pdf.

⁷⁷ IISD, *supra* note 35, at 29.

⁷⁸ See IISD, *supra* note 35, at 50.