



## **Statement of the U.S. Chamber of Commerce**

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ON: "Climate for Innovation: Technology and Intellectual Property in Global Climate Solutions"

TO: The Select Committee on Energy Independence & Global Warming

DATE: Wednesday, July 29, 2009

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The Chamber's mission is to advance human progress through an economic, political and social system based on individual freedom, incentive, initiative, opportunity and responsibility.

The U.S. Chamber of Commerce is the world's largest business federation, representing more than three million businesses and organizations of every size, sector, and region.

More than 96 percent of the Chamber's members are small businesses with 100 or fewer employees, 70 percent of which have 10 or fewer employees. Yet, virtually all of the nation's largest companies are also active members. We are particularly cognizant of the problems of smaller businesses, as well as issues facing the business community at large.

Besides representing a cross-section of the American business community in terms of number of employees, the Chamber represents a wide management spectrum by type of business and location. Each major classification of American business -- manufacturing, retailing, services, construction, wholesaling, and finance -- is represented. Also, the Chamber has substantial membership in all 50 states.

The Chamber's international reach is substantial as well. It believes that global interdependence provides an opportunity, not a threat. In addition to the U.S. Chamber of Commerce's 112 American Chambers of Commerce abroad, an increasing number of members are engaged in the export and import of both goods and services and have ongoing investment activities. The Chamber favors strengthened international competitiveness and opposes artificial U.S. and foreign barriers to international business.

Positions on national issues are developed by a cross-section of Chamber members serving on committees, subcommittees, and task forces. More than 1,000 business people participate in this process.

**Testimony of Dr. Mark T. Esper  
Executive Vice President,  
Global Intellectual Property Center  
U.S. Chamber of Commerce**

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Chairman Markey, Ranking Member Sensenbrenner, Members of the Select Committee:

I appreciate the opportunity to testify today on behalf of the U.S. Chamber of Commerce's Global Intellectual Property Center (GIPC). The Global IP Center and its members believe that strong intellectual property rights (IPRs) are integral to driving the innovation and creativity necessary to create jobs, save lives, advance economic growth and development around the world, and generate breakthrough solutions to global challenges such as climate change.

**I. Introduction and Background**

Our Nation's founders recognized the link between strong intellectual property (IP) rights and innovation more than 200 years ago, and explicitly gave Congress the power to protect the IP rights of "Authors and Inventors" in Article I of the U.S. Constitution. As a result, America has led the world in innovation for generations, bringing inventions to market that have improved peoples' lives and the livelihood all around the globe. Today, America leads the world in patent applications. Indeed, the United States' intellectual property is worth between \$5.0 and \$5.5 trillion—more than the nominal GDP of any other country. IP accounts for more than one-half of all U.S. exports, helping drive 40% of the United States' economic growth. And as of 2008, IP-intensive industries employed more than 18 million Americans in jobs that often paid 40% more than those of the average non-IP industry worker.

But beyond driving job creation and economic growth, strong IP rights have created a secure framework for investment in research that led to solving some of the world's most difficult problems: from disease and famine, to water scarcity and energy security, just to name a few. Intellectual property rights provide the incentive to transform ideas—from a back-of-the-envelope concept to the most complex mechanical design or chemical formula—into products and services that advance human development, while simultaneously contributing a wealth of new knowledge that permit inventors and entrepreneurs to solve new problems.

New medicines to treat chronic diseases; advanced technologies to help clean our environment and reduce CO2 emissions; cutting-edge information technologies that keep families connected and businesses functioning; and state-of-the-art computer hardware and software that facilitate the search for answers. These are just a few examples of IP-protected technologies that are improving the lives of people around the world.

In addition to protecting and incentivizing inventors, scientists, researchers, and companies big and small, strong IP rights are also integral to promoting technology deployment and diffusion. Without the assurance that IP rights will be respected—and effort, creativity, and investment rewarded as a result—commerce between companies and countries will suffer, investment will

diminish, and the technologies needed to achieve our various goals will fail to achieve their full potential.

Strong IP rights also help advance human progress given the fact that, in exchange for sole, temporary rights to benefit from one's invention, the inventor must share information about the technology—rather than keep it secret—so that others may reach the same level of knowledge and build upon that achievement. As a recent expert study concluded, “The granting of IP rights is therefore one of society’s important drivers for innovation and economic growth.”<sup>1</sup>

## **II. Global Threats to IP and Innovation**

Despite these facts, threats to innovation and IP rights exist around the globe. In an effort to promote domestic industries or appeal to narrow political interests, some governments are actively engaged in attempts to weaken the current IP system. Meanwhile, some well-meaning activists and NGOs argue that strong IP rights are barriers to technology dissemination—completely ignoring IP’s role in innovation and technology transfer. They are actively promoting their misinformed views in governments and multilateral organizations around the world, ignoring the real obstacles to progress, such as high tariffs, poor infrastructure, political corruption, limited human capital, and other roadblocks to technology deployment.

The United Nations Framework Convention on Climate Change (UNFCCC) is the latest front where some are attempting to portray IP rights as a barrier to solving climate change. The GIPC believes these critics have once again turned reality on its head. Robust IP rights are not an obstacle, as some allege, but instead play a fundamental role in encouraging innovative solutions to climate change mitigation and adaptation; they are instrumental in facilitating the transfer of environmentally sound technologies and know-how to developing countries. Accordingly, any climate change agreement that weakens IP protections will surely hamper our efforts to address global warming by dampening R&D investment and slowing technology development and deployment at a time when both are needed most.

As you know, the global demand for energy is projected to rise by as much as 50% over the next 25 years. Simultaneously meeting the demand for affordable energy and reducing global greenhouse gas emissions can only be accomplished through significant innovations in the clean energy technology sectors. This will be a costly undertaking, which is why we must preserve strong IP rights to help attract the massive investment and research needed to develop and commercialize new clean energy and green technologies.

And contrary to the assertions of some who have portrayed IP protection as an impediment to technology transfer, IP protection actually helps facilitate tech transfer by providing companies a commercial incentive to engage in foreign direct investment, joint ventures, co-production, cooperative research endeavors, and licensing arrangements with local partners. Conversely, weak IP regimes discourage these joint ventures and other collaborative efforts. Private companies, who will generate nearly all of the new technologies needed to address global

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<sup>1</sup> Copenhagen Economics and the IPR Company. *Are IPR A Barrier To The Transfer Of Climate Change Technology* (Copenhagen Economics, January 2009), p. 9.

warming, obviously have an inherent interest in encouraging the diffusion of their technologies in the marketplace. But to do so they must also have confidence that their investments—their intellectual property—will be properly protected.

A report prepared for and commissioned by former U.K. Prime Minister Tony Blair and The Climate Group entitled “Intellectual Property Rights: The Catalyst to Deliver Low Carbon Technologies,” drew a number of conclusions, including that IPRs, particularly patents, “will be a catalyst, not a barrier, to creating and deploying low-carbon technologies,” and that “Threats to strong IPRs, such as easily-obtained compulsory licensing, are likely to be a strong disincentive to invest.”<sup>2</sup>

### **III. Attempts to Undermine IP in UN Climate Change Negotiations**

There now is a clear commitment by the developed world, led by the United States and Europe, to address global warming through some form of binding international agreement. Many in the developing world, however, led by China and India, are focused on their own development and economic growth. Beijing and New Delhi affix blame on the developed world for causing global warming, and hence responsibility for remedying the problem, officially eschewing any responsibility themselves. This despite the fact that China is the world’s top CO<sub>2</sub> emitter, and India itself ranks in the top five.

Indeed, about 80% or more of the expected growth in global carbon dioxide emissions to 2050 is expected to occur in developing countries, with China, India, and Southeast Asia leading the way. To be environmentally effective, therefore, any new accord must involve the active participation of developing countries.

Citing the principle of “common but differentiated responsibilities and respective capabilities,” developing countries expect to be compensated for activities they undertake to reduce emissions. China, India, South Africa, and others are pressing the U.S. and other developed countries to transfer anywhere from 0.5% to 1.0% of their gross domestic product each year to bankroll climate change programs in developing countries.

Developing countries also are trying to use the negotiations to weaken intellectual property protections through compulsory licensing of advanced energy technologies, ostensibly to remove barriers to “technology transfer.” Without IP rights, there’s very little incentive for companies to invest in costly research and development.

As either a negotiating tactic to block any international agreement, or a condition that will be used to advance their own economic development and technological prowess, China, India, and other developing countries are using the issue of technology transfer as a major lever in current UN negotiations. These countries have made various statements that would not only undermine innovation and the global IP system, but also prevent us from addressing global warming effectively.

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<sup>2</sup> Harvey, Ian. “Intellectual Property Rights: The Catalyst to Deliver Low Carbon Technologies.” A Breaking the Climate Deadlock Briefing Paper. (The Climate Group, 2008), p. 3.

For example, Shyam Saran, India's Special Envoy on Climate Change for the Prime Minister said in July 2008 that "India wants climate change technologies to be treated as public & common goods." And Zhou Dadi, of the Energy Research Institute of the People's Republic of China, stated in November 2007 that "If you really want to help China to speed up the technology transfer process, we have to really think about how to help China cover the high costs. Most of them are not based on material, they're based on intellectual property rights." Indeed, at a Beijing international conference in November 2008, both China and India proposed that compulsory licensing should be permitted for carbon abatement technologies.

As a result, among the options included within the current United Nations Framework Convention on Climate Change (UNFCCC) draft text related to IPRs are compulsory licensing, patent exclusions, and other exceptions for green technologies.<sup>3</sup> A report in the June 11, 2009 edition of the TWN Bonn News Update entitled "Developing countries call for no patents on climate-friendly technologies" stated that "In their text submitted on 10 June, G77 and China proposed that 'All necessary steps shall be immediately taken in all relevant fora to mandatorily exclude from patenting climate friendly technologies held by Annex II countries which can be used to adapt to or mitigate climate change'.<sup>4</sup> If any of these provisions are included in a final climate change agreement, China, India and other countries could claim the legal right to expropriate—to simply take—the "green" technologies developed by American and other companies. In other words, after years of research and development and millions (if not billions) of dollars invested by U.S. companies to develop the latest wind turbine, solar panel, lithium-ion battery, or other "green technology," these inventions could be taken outright by Chinese or Indian companies, manufactured abroad, and sold around the world at a cost that need not recoup any R&D expenses. The impact on development of clean energy technologies is obvious: few companies in the developing world would continue to invest in these climate change technologies if their profit incentive is removed through the legalized theft of their IP.

The impact on America's economy would be severe: workers in green tech industries—not to mention those in supporting sectors—would lose their jobs. Indeed, it is hard to see how America would ever create the five million green jobs President Obama has talked so much about. What is even more troubling is the fact that green technologies are not currently defined in the UNFCCC negotiating text, which creates a tremendous amount of uncertainty and leaves open the possibility that any technology—from cell phones and computers, new heating and lighting systems, to bicycles—that consumes less energy than its predecessor, or emits less CO<sub>2</sub> or other harmful byproducts, could also be expropriated. This would not only make American workers and industries in green technologies vulnerable to foreign expropriation of their products, but exposes a broader array of U.S. firms and industries as well.

#### **IV. Sacrificing IP Rights for Domestic Gain at America's Expense**

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<sup>3</sup> See paragraphs 188 and 189 on pages 48-49 of the UNFCCC Negotiating Text, dated 19 May 2009, and available online at <http://unfccc.int/resource/docs/2009/awglca6/eng/08.pdf>

<sup>4</sup> "Developing countries call for no patents on climate-friendly technologies." TWN Bonn News Update, 11 June 2009, p. 1. See also [www.twinside.org.sg](http://www.twinside.org.sg).

The Global IP Center believes that incorporating any of the aforementioned proposals into the final UN agreement would not only have a negative impact on the development and diffusion of climate change mitigation and adaptation technologies in both developed and developing countries, but would also put American workers and the U.S. economy at a competitive disadvantage.

For example, China, India, and Brazil are seeking to benefit from exceptions to IP laws despite their considerable competitive prowess in certain green technologies. According to a recent study by Copenhagen Economics that was commissioned by the European Commission and published in January 2009, China holds the largest market share of solar energy patents at 38%.<sup>5</sup> And according to a recent report in the *New York Times*, China considers renewable energy a “strategic industry” that it is “protecting” to “make sure its companies dominate globally.”<sup>6</sup> Chinese companies such as Suntech, Sinovel, China Wind Systems, and Gold Wind are leading the way in renewable energies with Beijing’s assistance and protectionist measures, such as high tariff and non-tariff barrier, and staggering local content requirements.

Indian companies such as Suzlon and Tata-BP are also among the world leaders in clean technology, ranking India fifth in total installed wind power. And Brazil is a world leader in biofuels, with Petrobras funding energy and carbon storage research and developing innovative biofuel technologies.

These countries are expending large amounts of public and private funds on green technologies, increasingly exporting these technologies abroad, and competing well with firms from the U.S., Japan, and Europe. But let me be clear, all of this innovation is a good thing. The more innovation and the more competition we have in the global marketplace, the greater likelihood we will create the breakthrough technologies needed to address climate change in a timely manner, and at the greatest choice and lowest prices possible to the consumer. What is underpinning this vibrant global marketplace, however—and often forgotten in this equation—are strong IP rights that protect the investments and ideas of these firms, and incentivizes them to research, develop, manufacture and deploy their goods and services.

One would think that, given the investments and innovation occurring in China, India, Brazil, and other parts of the developing world, these governments would be pressing to protect IP rights in UNFCCC negotiations, not undermine them. But just the opposite is happening. When one considers that their proposals for patent exclusion should only apply to developed countries, one can only surmise that they are using the lever of IP and “developing country” status to acquire technologies they currently do not have, and/or to gain a commercial advantage over their competitors in the developed world. Either way, American firms and workers will be put at a further competitive disadvantage if the developed world is compelled to surrender its technologies through a weakening of IP laws coming out of the UNFCCC negotiations.

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<sup>5</sup> Copenhagen Economics and the IPR Company. *Are IPR A Barrier To The Transfer Of Climate Change Technology* (Copenhagen Economics, January 2009), p. 5.

<sup>6</sup> Bradsher, Keith. “In China, a shield goes up for energy firms.” *The Global Edition of The New York Times*, 15 July 2009, p. 13.

## V. The Real Barriers to Technology Transfer

Some countries claim that IP rights are a major barrier to the diffusion of technology, and in the case of climate change, an obstacle to their CO<sub>2</sub> abatement efforts. Such claims are quite misleading. To begin, IP rights cannot be a barrier to technology transfer if the patents are not protected in the first place, which is often the case in many least developed countries. According to the Copenhagen Economics study, companies often do not seek patent production in countries where there is “no economic rationale for competition or counterfeiters to set up production.”<sup>7</sup>

That said, the report’s authors also concluded that many of the climate change adaptation and mitigation technologies and measures available to developing countries are either off patent, or not patented at all, with reforestation being a prime example. So again, it is hardly the case that IP rights are an obstacle to technology transfer.

Ironically, one of the real barriers to technology diffusion is not strong IP rights, but the lack of them. Indeed, the Copenhagen Economics report states that “US multinational companies are more active in engaging in transferring intangible assets (that might or might not be protected by IP rights) to own affiliates in a country, if the country has strengthened its IP legislations.”<sup>8</sup> The report also cites another study that suggests “trade is stimulated by strengthened IP legislation.” All of the evidence suggests, the Copenhagen Economics study concludes, “that a sound and enforced IPR system may be a prerequisite for technology transfer.”<sup>9</sup>

Another major obstacle to technology transfer is a country’s absorptive capacity, meaning a country’s ability to not only receive the technology, but then have the various means—from physical to human capital—to deploy and employ it effectively. Strong educational backgrounds may be needed to apply the know-how often needed to install, operate, and maintain a new technology. And in some cases, special infrastructure may be necessary to accommodate a renewable technology. The Copenhagen Economics report cites the example of windmills, which require specialized technologies to handle the power fluctuations generated by changes in the wind, as a case in point.

The Copenhagen Economics report also lists “Lack of access to capital in domestic and international markets” as a barrier to technology transfer.<sup>10</sup> While they cite past problems with servicing debt as a reason for lack of capital, other explanations can include official corruption, instability of governments, and a lack of strong IP protections and an effective legal and judicial framework that raise the risk levels for investment. Indeed, a 2008 study by Park and Lippoldt found that while technology transfer was enhanced by stronger levels of patent protection, other complementary factors such as “infrastructure, effective government policies and regulations, knowledge institutions, access to credit and venture capital, skilled human capital, and networks for research collaboration” were also necessary.

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<sup>7</sup> Copenhagen Economics, p. 15.

<sup>8</sup> Copenhagen Economics, p. 27.

<sup>9</sup> Copenhagen Economics, p. 28.

<sup>10</sup> Copenhagen Economics, p. 30.



Other obstacles to technology transfer are often self imposed through tariff and non-tariff barriers. A 2008 report by the OECD cited in the Copenhagen Economics report stated that Brazil, Russia, India and China have “significant barriers to trade in carbon abatement technology,” often imposing tariffs “above ten percent” on these technologies.<sup>11</sup> The report adds that these countries apply “burdensome pre-shipment inspection and informal ‘additional payment.’” Other barriers included “customs inspections, quantitative import restrictions and import surcharges or border taxes,” along with limited consumer information and regulatory instability.<sup>12</sup>

A recent report by the U.S. Chamber of Commerce stated that “many countries impose tariffs of up to 70% on climate-friendly goods and services, impeding access to cutting edge technologies.”<sup>13</sup> The report adds that countries such as the Philippines, Nigeria and Egypt have non-tariff barriers on clean coal technology, for example, “equivalent to triple-digit tariffs.” And India’s non-tariff barriers on fluorescent lamps are equal to a 100% tariff.<sup>14</sup> In fact, a 2007 report by the World Bank entitled International Trade and Climate Change concluded that by removing these types of barriers, trade in green technologies and services could rise 7-14% annually, and could facilitate investment.

Further underscoring this point is a report by the World Business Council for Sustainable Development that cited a study of Technology National Assessments that “identified economic and market barriers (80%) as the most significant obstacles to technology transfer. *IPR was noted to be the least important concern*” [emphasis added].” For these developing countries, capacity building and economic development will be the most important factor in allowing them to acquire and employ clean technology.

Finally, trade policy can contribute in a meaningful way to efforts on climate change through trade liberalization and not trade restrictions. For example, the United States and the European Union submitted a forward leaning proposal as part of the ongoing Doha Round of World Trade Organization (WTO) negotiations to increase global trade in and use of environmental goods and services. It would place priority action on technologies directly linked to addressing climate change and energy security. This important initiative complements and supports the objectives of and the process under the UNFCCC.

## **VI. Real Solutions to Technology Transfer**

Given the real and very serious obstacles to technology transfer, a number of remedies are readily apparent. The United States could take the following actions, which would have the combined, salutary effect of protecting a time-proven system of IP rights that drives innovation, creates jobs for American workers, primes our own economic growth and transition to a greener and cleaner economy, and helps address global warming:

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<sup>11</sup> Copenhagen Economics, p. 31.

<sup>12</sup> Ibid.

<sup>13</sup> Wenk, Christopher, and Westerman, Stephanie. *The Nexus of Climate Change and Trade: Don’t Break the Rules.* (U.S. Chamber of Commerce, April 2009), p. 5.

<sup>14</sup> Ibid.

- Urging developing countries to strengthen their IP laws and enforcement, and providing technical and other assistance as necessary to help in that endeavor;
- Working with countries in the developing world to also improve their absorptive capacity for new technologies by enhancing their physical infrastructure and human capital, and reducing their corruption, inefficiency, and political instability;
- Making the improvement and enforcement of strong IP rights an important component of all U.S. bilateral and multilateral Free Trade Agreements, with the US-Korea FTA serving as a good model;
- Working with our trading partners and others in the developing world to remove all tariff and non-tariff barriers to trade in climate change and mitigation technologies;
- Considering providing grants, low-interest loans, or other forms of financial assistance to the least developed countries that cannot afford advanced green technologies, but need them nonetheless; and,
- Providing financial, tax and other incentives to U.S. companies to trade or partner with firms in developing countries that need access to IP-protected green technologies, or that want to conduct joint research.

These are just a few ideas that can facilitate tech transfer as we strive to address global warming. The fact is, however, that technology development, deployment and diffusion cannot be mandated. It is a long term process that occurs largely (and most effectively) within the private sector along voluntary, commercially viable and IP-compliant terms.

And technology transfer can take many forms. According to the World Business Council on Sustainable Development, “Technology is transferred to developing countries through foreign direct investment (80% of capital inflow to developing countries), commercial cooperation agreements, joint ventures, licensing and local training and technology cooperation. Companies will optimize their operations using some form of technology diffusion.”<sup>15</sup>

Tech transfer involves the interactions between companies and individuals, not governments. In most cases, technology diffusion involves the simple marketing and distribution of patented products in the global marketplace. However, it could also involve a co-production agreement between the patent holder and a (foreign) partner, or even a licensing agreement between the patent holder and a second (or third) party to manufacture or distribute the good under certain terms and conditions. There are many other variations that may be utilized, but the core principles underlying any such tech transfer arrangement is that IP rights are respected, the agreement is commercially reasonable and viable, and that all parties undertake such an agreement voluntarily.

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<sup>15</sup> “IPR and technology transfer: myths and realities.” World Business Council for Sustainable Development fact sheet, p. 4.

In many of the arrangements worked out between partners, and especially between sellers and buyers, ongoing cooperation is often required beyond the “sale” itself. This cooperation includes any number of activities over a period of time to deliver, install, implement, adapt, maintain, and upgrade the technology. It may require transfer of technical know-how, trade secrets, and manufacturing specifications that are not disclosed in patent documents. It may also require a certain level of technological ability in the receiving company, and compliance with regulatory requirements in the target country.<sup>16</sup> It could also include the temporary employment of specialists, technicians, and managers from the firm that holds the patent, or the training of the buyer’s workforce.

Indeed, independent research has found transfer of technology to be a multi-stage process that needs to include, *inter alia*, incentives to innovate; incentives to transfer; and, incentives to implement and use the technology.<sup>17</sup> However, the bottom line is that effective tech transfer requires an extended relationship that touches upon all aspects of technology deployment, at all levels, so as to maximize the effectiveness of the invention and its value to the consumer, as well as safeguard the reputation of the company, the performance of its product, and improvement of the brand. Technology transfer cannot be compelled if it is to be effective; it must be a mutually agreeable relationship among all parties.

## **VII. The Role of Congress**

The Global IP Center applauds the U.S. House of Representatives and its Members who have taken a number of steps to ensure IP protection is a priority within the UNFCCC negotiations, particularly Ranking Member Sensenbrenner, and Representatives Blackburn, Larsen, and Kirk. As a result of these efforts, there are currently three House-passed bills containing provisions aimed at protecting IP for green technologies<sup>18</sup>.

While the Chamber views these provisions as positive, enacting them does not guarantee that IP rights will be protected in Copenhagen, nor does it foreclose the likelihood that other nations may, down the road, seek to use the narrowly tailored exceptions in the current WTO Agreement on the Trade Related Aspects of Intellectual Property Rights (TRIPS) to expropriate IP-protected American innovations related to clean technology.

As such, we believe it is critical that Congress continue to send the administration and our negotiating partners clear and forceful signals that IP rights is not an area where the United States is willing to make concessions at Copenhagen. Through both unambiguous statements and binding legislation, it is critical that our negotiators know not to succumb to appeals for greater exceptions, limitations, or flexibilities in longstanding IP rights—that there is no room

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<sup>16</sup> See, e.g., International Technology Transfer & Intellectual Property Rights, Peter Magic, University of Texas, [http://www.cs.utexas.edu/users/fussell/courses/econtech/public-final-papers/Peter\\_Magic\\_International\\_IP\\_Rights.pdf](http://www.cs.utexas.edu/users/fussell/courses/econtech/public-final-papers/Peter_Magic_International_IP_Rights.pdf), and footnotes.

<sup>17</sup> See, e.g., Technology Transfer and Domestication in the Arab World, Abu-Ghazaleh Intellectual Property and Hams Madanat, July 2006, [http://www.tagorg-theinstitution.com/Files/2006/Reports-Studies/Technology\\_Transfer\\_and\\_Domestication\\_in\\_the\\_Arab\\_World\\_July\\_6\\_2006.pdf](http://www.tagorg-theinstitution.com/Files/2006/Reports-Studies/Technology_Transfer_and_Domestication_in_the_Arab_World_July_6_2006.pdf)

<sup>18</sup> H.R. 2410, H.R. 2454, and H.R. 3081

for such ambiguities. Further, we must make clear that the United States will not allow the WTO TRIPS agreement to be misinterpreted or misapplied, either in letter or spirit, by other nations.

Given the stakes involved to America's workers, our economy, and the environment, it is critical that strong IP rights not be sacrificed at the altar of UNFCCC negotiations. If anything, they should be strengthened and improved—a pre-requisite for technology transfer no less. Strong IP rights are absolutely critical to achieve the goals we all share, and so they must be protected and promoted.

## **V. Conclusion**

If implemented, current proposals by some developing countries to include compulsory licensing and other forms of forced technology transfer in any future climate change agreement will surely harm innovation when it is needed most. Such proposals will certainly stifle research and development, and dissuade investment in new, advanced technologies. Without these technologies, addressing global warming will be exceedingly difficult, if not impossible.

Further, the proposals being put forth now by some governments also undermine the entire fabric of the international IP system, putting at risk a time-proven framework of laws, rules and norms that has served mankind well for decades, and setting a dangerous precedent that could affect our collective ability to address other problems in the future. Instead of targeting IP, we must focus on the real barriers to technology transfer, and pursue multiple options with our trading partners to promote effective technology diffusion over the long run.

Reducing global carbon emissions is a major challenge that will require many new technologies and unprecedented cooperation among the world's nations to achieve. At a time when job creation, economic growth, and problem solving are paramount, it is more important than ever to protect an IP-based incentive system that has worked extremely well for centuries in driving innovation, developing solutions, and deploying those technologies as broadly as possible. The Congress has taken a number of positive and constructive steps in this direction, but more can and should be done if we are to be successful at the end of the day.

Thank you.

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