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**Our Generation's Sputnik Moment:
Comparing the United States' Green Technology Pilot
Program to Green Patent Programs Abroad**

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By Kate Nuehring*

Half a century ago, when the Soviets beat us into space with the launch of a satellite called Sputnik, we had no idea how we'd beat them to the moon. The science wasn't even there yet. NASA didn't exist. But after investing in better research and education, we didn't just surpass the Soviets; we unleashed a wave of innovation that created new industries and millions of new jobs.

This is our generation's Sputnik moment.

– President Barack Obama¹

¶1 Innovation in green technology matters. In President Obama's 2011 State of the Union address, the President made it clear that one of his top priorities is to ensure United States global leadership in the emerging industries of clean energy and energy efficiency, going so far as to call this our Sputnik moment.² President Obama promised government support for scientists and engineers focusing on the hardest problems in clean energy, the "Apollo Projects of our time."³ In a White House statement released after the State of the Union address, United States Secretary of Commerce Gary Locke argued that not only is clean technology one of the greatest economic opportunities of the twenty-first century, but it is also critical to reduce our dependence on foreign oil and clean up our environment.⁴ In addition, Locke identified several ways that the Department of Commerce would focus on encouraging clean technology.⁵ One of the ways he mentioned was the Green Technology Pilot Program.⁶

¶2 The Green Technology Pilot Program is a program the United States Patent and Trademark Office (USPTO) adopted to expedite the patent examination process for "green" patents. Unfortunately, the program has not received as many applications as

* Love and gratitude to my parents, Alan and Isabel Nuehring, for their unwavering support throughout law school and always.

¹ Address Before a Joint Session of the Congress on the State of the Union, 2011 DAILY COMP. PRES. DOC. 47, at 3 (Jan. 25, 2011) (emphasis added) [hereinafter State of the Union Address], available at <http://www.gpo.gov/fdsys/pkg/DCPD-201100047/pdf/DCPD-201100047.pdf>.

² *Id.*

³ *Id.*

⁴ Gary Locke, *Empowering American Clean Energy and Efficiency Businesses*, WHITE HOUSE BLOG (Jan. 28, 2011, 3:30 PM), <http://www.whitehouse.gov/blog/2011/01/28/empowering-american-clean-energy-and-efficiency-businesses>.

⁵ *Id.*

⁶ *Id.*

originally expected. In a bid to garner more applicants, the USPTO first eliminated classification requirements restricting applications to inventions falling within specifically delineated fields of technology. More recently, the USPTO extended the length of the program and eliminated a requirement restricting applications to only those patent applications that had been filed before a certain date.

¶3 This Comment first gives a nuanced explanation of the Green Technology Pilot Program's background and considers the benefits the program offers inventors and society at large. Then it takes a detailed look at the permanent disadvantages that would arise if the pilot program were fully implemented and the temporary disadvantages caused by the program's "pilot program" status. It concludes that the vast majority of the disadvantages of the program are specific to the pilot program itself and would not carry over to a fully implemented program.

¶4 For purposes of considering how the pilot program might be fully implemented, this Comment reviews green technology patent programs in place around the world. It compares the patent offices of countries with green technology pilot programs with the USPTO to see which of the green technology pilot program methods used abroad might be feasible in the USPTO. Due to the voluminous number of applications that the USPTO receives and the significant patent backlog at the USPTO, large patent offices such as the Japan Patent Office (JPO) and the European Patent Office (EPO) are more likely to employ methods that could be realistically implemented in the USPTO. This Comment argues that if the Green Technology Pilot Program is permanently implemented, the United States should either adopt the JPO's method of submissions or the EPO's classification system. Adopting the JPO method would require that program applications include a comparative analysis and a prior art analysis. Adopting the EPO's green classification system would require that patents fall within one of those classifications.

I. BACKGROUND ON THE GREEN TECHNOLOGY PILOT PROGRAM

¶5 On December 9, 2009, the USPTO announced a new program called the Green Technology Pilot Program. It is designed to promote green technology by expediting patent applications for inventions "pertaining to environmental quality, energy conservation, development of renewable energy resources or greenhouse gas emission reduction."⁷ According to the announcement, the first 3,000 patent applications filed before December 8, 2010 with a petition to join the program (a petition to "make special") in accordance with the program requirements would be placed on an examiner's special docket prior to the first Office action and on the examiner's amended docket after the first Office action.⁸

¶6 In order to qualify for the expedited process, an application had to meet several requirements. First, the invention had to fall within one of the classifications listed by the

⁷ Pilot Program for Green Technologies Including Greenhouse Gas Reduction, 74 Fed. Reg. 64,666 (Dec. 8, 2009) [hereinafter Pilot Program].

⁸ *Id.* at 64,666, 64,667. See generally U.S. PATENT & TRADEMARK OFFICE, PETITION TO MAKE SPECIAL UNDER THE GREEN TECHNOLOGY PILOT PROGRAM, available at <http://www.uspto.gov/forms/sb0420.pdf> (last updated Nov. 2010) (requiring applicants acknowledge and abide by the rules of the Green Technology Pilot Program).

program.⁹ Broadly, the listed classifications include: alternative energy production; energy conservation; environmentally friendly farming; and environmental purification, protection, or remediation.¹⁰ Additionally, the application had to be a non-reissue, non-provisional utility application, or an international application that had entered the national stage in compliance with 35 U.S.C. § 371.¹¹ The application could contain only twenty total claims and three or fewer independent claims, and the invention had to be directed to an application that materially enhances the quality of the environment or that materially contributes to: the discovery or development of renewable energy resources, the more efficient utilization and conservation of energy resources, or greenhouse gas emission reduction.¹² The application had to include a statement allowing election without traverse, should the examiner find the patent directed to multiple inventions, and the invention had to be filed electronically.¹³

¶7 At the time the program was announced, the Green Technology Pilot Program was expected to be a very popular mechanism for applicants. Early on, the USPTO estimated that approximately 20,000 patent applications filed before December 9, 2009 would qualify for expedited examination.¹⁴ However the program was limited to the first 3,000 applicants to apply.¹⁵ After accepting 3,000 applications into the program, the USPTO said it would reevaluate the workload and resources needed to extend the pilot program.¹⁶ Both politicians and industry leaders lauded the program as an incentive for the development of green technologies and industries in the United States.¹⁷ One of the reasons the program was expected to be so successful was the amount of time by which it would reduce a patent's pendency. USPTO Director David Kappos, at a press conference announcing the new program, indicated that the Green Technology Pilot Program was estimated to cut pendency time by twelve months.¹⁸ Another patent practitioner estimated that the program would cut pendency from forty months to twenty-four months.¹⁹

¶8 Despite the initial rosy outlook, the number of applicants to the Green Technology Pilot Program was far below what was expected. By mid-June 2010, only 950 requests to

⁹ Pilot Program, *supra* note 7, at 64,667.

¹⁰ *Id.* at 64,668–69.

¹¹ *Id.* at 64,667 (entering the national stage in compliance with the U.S. Code means that an international application has begun to be reviewed within the USPTO to determine whether the international application should result in a United States patent).

¹² *Id.* at 65,667.

¹³ *Id.* Election without traverse means that, should an examiner decide that a single patent application covers two or more inventions that are different enough that they should be in different applications, the applicant will agree with the examiner rather than argue that the examiner was mistaken and that the inventions should not be separated.

¹⁴ Amanda Robert, *USPTO Pilot Program Encourages Patents for Green Technologies*, CHI. DAILY L. BULL., July 14, 2010, at 13.

¹⁵ David Kappos, Remarks at Press Conference Announcing Pilot to Accelerate Green Technology Applications (As Prepared) (Dec. 7, 2009), *available at* <http://www.uspto.gov/news/speeches/2009/2009nov07.jsp>.

¹⁶ Pilot Program, *supra* note 7, at 64,666.

¹⁷ Teneille R. Brown, *The Eminence of Imminence and the Myopia of Markets*, 9 J. MARSHALL REV. INTELL. PROP. L. 674, 689 (2010).

¹⁸ Kappos, *supra* note 15.

¹⁹ Robert, *supra* note 14.

be included in the program had been filed, and only approximately 350 of those requests had actually been admitted into the program.²⁰ On May 21, 2010, the USPTO announced that classification would no longer be material in determining whether a patent would be granted special status.²¹ Instead, to be included in the pilot program, a patent application would need to state that “special status is sought because the invention materially enhances the quality of the environment by contributing to the restoration or maintenance of the basic life-sustaining natural elements.”²²

¶9 The elimination of the classification requirements increased the number of requests to have applications included in the Green Technology Pilot Program . During the first six and a half months of the program, from December 2009 to mid-June 2010, 950 requests were made.²³ Therefore, during the first six and a half months, approximately 146 requests were made per month. During the next seven months, from mid-June 2010 to mid-January 2011, an additional 1,286 requests were made.²⁴ This means about 184 requests were made per month after the elimination of the classification system, a 26% increase.

¶10 Additionally, the percentage of applications actually granted accelerated examination under the Green Technology Pilot Program increased after the elimination of the classification system. Approximately 350 of the 950, or approximately 37%, of the requests filed between December 2009 and mid-June 2010 were granted accelerated examination.²⁵ In contrast, approximately 795 of the 1,286, or approximately 62%, of the requests filed between mid-June 2010 and mid-January 2011 were granted accelerated examination.²⁶ Therefore, the percentage of applications granted accelerated examination actually increased approximately 25% after the classification system was eliminated, presumably because a wider variety of inventions were considered eligible for the program.

¶11 On November 10, 2010, the USPTO announced additional changes to the Green Technology Pilot Program.²⁷ Initially, the pilot program was set to expire on December 8, 2010, but the USPTO extended the deadline until December 31, 2011, or until 3,000

²⁰ Jeffrey S. Whittle et al., *Qualifying Barriers Lower for “Green Technology” Patent Applications*, NAT’L L. REV. (June 16, 2010), <http://www.natlawreview.com/print/article/qualifying-barriers-lower-green-technology-patent-applications>.

²¹ Elimination of Classification Requirement in the Green Technology Pilot Program, 75 Fed. Reg. 28,554 (May 21, 2010).

²² *Id.* at 28,555.

²³ See Whittle et al., *supra* note 20.

²⁴ See U.S. PATENT & TRADEMARK OFFICE, GREEN PETITION REPORT SUMMARY, (Jan. 17, 2011) [hereinafter JANUARY USPTO REPORT SUMMARY], *available at*

http://www.uspto.gov/patents/init_events/green_report_summary20110117.pdf (indicating the total of petitions filed in January 2011 was 2236); Whittle et al., *supra* note 20 (indicating the total number of petitions filed May 2010 was 950).

²⁵ See Whittle et al., *supra* note 20.

²⁶ See JANUARY USPTO REPORT SUMMARY, *supra* note 24 (indicating the total number of granted applications in January 2011 was 1145); Whittle et al., *supra* note 20 (indicating the total number of granted applications as of May 2011 was 350).

²⁷ Madhumita Datta et al., Advisory, *USPTO Announces Extension and Expansion of Program for Fast Reviews of “Green” Patent Applications*, PILLSBURY INTELL. PROP. (Pillsbury Winthrop Shaw Pittman LLP) (Nov. 17, 2010),

https://www.pillsburylaw.com/siteFiles/Publications/IP_Advisory_Green_Patent_Applications_11_17_10_final_revised1.pdf.

applications had been accepted into the program.²⁸ In addition, the USPTO announced that the program had been extended to include patent applications filed on or after December 8, 2009.²⁹ As a result, the number of requests to have applications included in the program increased dramatically. Between mid-January and late May 2011, an additional 1,291 requests were made, approximately 287 requests per month.³⁰ Therefore, the number of requests per month increased by approximately 53% after the November 10, 2010 announcement. Of those, 773 were granted, approximately 60% of the requests.³¹ Therefore, the percentage of applications granted after the November 10, 2010 announcement remained relatively similar to the percentage granted after the classification system was initially eliminated.

¶12 In short, the history of the Green Technology Pilot Program leads to three questions. First, it is not clear why there are not more applications for the program given the apparent benefits of the program; why aren't more people applying for it? Second, what will happen if the pilot program is instituted as a full time program? Finally, if the program were implemented full time, how could it be improved? This Comment will address each of these three questions, beginning with analyzing the advantages and drawbacks of the program.

II. WHY IT SHOULD WORK: ADVANTAGES OF THE PROGRAM

¶13 The Green Technology Pilot Program offers a number of advantages both for society as a whole and for companies and inventors that have qualifying pending patent applications. Facially, the program offers inventors and companies the opportunity to have their application pendency reduced and offers society the benefit of having environmentally friendly technologies hurried along so that they may be available and utilized sooner.

¶14 Patent law provides major incentives for entrepreneurial activity. For chip design, software, pharmaceutical, biotech, and other tech companies, the value of the company's stock is based, at least in part, on the patents they own.³² New companies in particular are more interested in obtaining patents. In 1972, entrepreneurs filed only 5% of patent applications; by 1992, entrepreneurs filed more than 23% of patent applications.³³ The reason is likely that, especially in the United States, venture capitalists who fund startup companies often want the certainty of patent protection as a precondition for

²⁸ *Id.*

²⁹ *Id.*

³⁰ See JANUARY USPTO REPORT SUMMARY, *supra* note 24 (indicating the total number of petitions filed as of January 2011 was 2,236); U.S. PATENT & TRADEMARK OFFICE, GREEN PETITION REPORT SUMMARY, (May 31, 2011) [hereinafter MAY USPTO REPORT SUMMARY], *available at* http://www.uspto.gov/patents/init_events/Green_report_summary20110530.pdf (indicating the total number of petitions filed as of May 2011 was 3,527).

³¹ See JANUARY USPTO REPORT SUMMARY, *supra* note 24 (indicating the total number of petitions granted as of January 2011 was 1145); MAY USPTO REPORT SUMMARY, *supra* note 30 (indicating the total number of petitions granted as of May 2011 was 1,918).

³² Viktor Mayer-Schönberger, *The Law as Stimulus: The Role of Law in Fostering Innovative Entrepreneurship*, 6 I/S J.L. & POL'Y 153, 165 (2010).

³³ *Id.* at 166.

investment.³⁴ In many high technology areas, patents are the only assets small companies have and are crucial in attracting the venture capital necessary to commercialize their inventions.³⁵ Delays in getting a patent can be fatal for small companies because the lack of patent protection can seriously harm their ability to attract investors.³⁶

¶15 The Green Technology Pilot Program provides several major benefits to startup companies. First, startups that have their patent application accepted into the program are able to have the patent pendency reduced by, according to the estimations mentioned by the USPTO and a patent practitioner, anywhere from twelve to sixteen months. This reduction in pendency potentially makes it easier to obtain venture capital at an earlier time than would otherwise be anticipated.

¶16 In addition, the name recognition of the program may provide a startup with an opportunity to more easily market itself as a legitimate green technology company. One of the first companies to receive a patent through the Green Technology Pilot Program, Skyline Solar, routinely mentions the Green Technology Pilot Program in its press releases.³⁷ Another company, EnergyOne Technologies, mentioned the program in a press release about its first provisional patent, openly stating that “[t]he patent filing is the first step for EnergyOne to establish itself in the renewable energy market as a forward thinking, leading edge technology powerhouse.”³⁸

¶17 The Green Technology Pilot Program benefits American society as a whole by benefiting green entrepreneurs. The program encourages green technology entrepreneurs to produce clean energy products for the reasons described above, and Americans care about having clean energy technology for a number of reasons. Some Americans feel a moral obligation to be good stewards of the Earth and its resources and view global warming and environmental damage as a breach of this duty.³⁹ Other fiscally conscientious Americans worry about the impact of growing oil imports on the dollar.⁴⁰ Some Americans with a militaristic view consider the global conflict that could occur in the event of catastrophic global warming.⁴¹ Yet other Americans would prefer not to be

³⁴ Warren K. Mabey, Jr., *Deconstructing the Patent Application Backlog . . . A Story of Prolonged Pendency, PCT Pandemonium & Patent Pending Pirates*, 92 J. PAT. & TRADEMARK OFF. SOC'Y 208, 246 (2010).

³⁵ *Id.*

³⁶ *Id.*

³⁷ *E.g.*, Press Release, Skyline Solar, Skyline Solar Appoints Thomas Rohrs CEO (July 1, 2010), <http://www.skyline-solar.com/documents/Rohrs-July-1-2010.pdf>; Press Release, Skyline Solar, Department of Defense Selects Skyline Solar to Install High Gain Solar Arrays on U.S. Military Bases (Dec. 7, 2010), <http://www.skyline-solar.com/documents/press-12072010.pdf>.

³⁸ *EnergyOne Technologies Announces First Provisional Patent Filing*, BUSINESSWIRE, Dec. 2, 2010, available at <http://www.bloomberg.com/apps/news?pid=conewsstory&tkr=ATPT:US&sid=a7r9Q1Rfid.s>.

³⁹ *See, e.g.*, *Climate Change: An Evangelical Call to Action*, CHRISTIANS & CLIMATE, <http://christiansandclimate.org/learn/call-to-action/> (last visited July 20, 2011); *Welcome, Introduction, & Background*, WHAT WOULD JESUS DRIVE?, <http://www.whatwouldjesusdrive.info/intro.php> (last visited July 20, 2011).

⁴⁰ *See, e.g.*, David Paul, *Oil Price Swings as a Dollar Hedge Pose a New Threat to Our Fiscal Future*, HUFFINGTON POST (May 19, 2011, 8:40 AM), http://www.huffingtonpost.com/david-paul/oil-price-swings-as-a-dol_b_863967.html (discussing the correlation between the rise in oil prices and the decline in the U.S. dollar).

⁴¹ *See, e.g.*, Joseph Romm, *Memorial Day 2030*, ENERGY NOW (May 31, 2011, 1:42 PM), <http://www.energynow.com/energypanel/2011/05/31/memorial-day-2030> (predicting that “climate-induced

dependent upon oil imports from unstable, if not outright hostile, countries in Latin America and the Middle East for foreign policy reasons.⁴²

¶18 In addition to alleviating these concerns, the Green Technology Pilot Program would potentially provide a boost to the economy by creating jobs in the newly developed green technology areas. A variety of studies have confirmed that technological effort has a strongly positive effect on net job creation.⁴³ Additionally, innovative companies generally create more and destroy less employment than non-innovative companies.⁴⁴ All of this supports the idea that the Green Technology Pilot Program could have a net positive impact on the economy.

¶19 The advantages of the Green Technology Pilot Program to inventors, companies, and society are significant. Given the advantages, the relatively modest response to the implementation of the program is puzzling. The following section will provide a detailed look into the disadvantages of the Green Technology Pilot Program, ultimately attempting to parse out why the Green Technology Pilot Program is not working.

III. WHY IT IS NOT WORKING: PERMANENT DISADVANTAGES OF THE PROGRAM

¶20 The disadvantages of the Green Technology Pilot Program can be divided into two categories: permanent disadvantages that would ultimately exist if a fully implemented program were adopted and temporary disadvantages that exist currently in the pilot program but would disappear if the program were implemented fully. Because the permanent disadvantages are the more serious impediment to full adoption of the program, these disadvantages will be analyzed first.

¶21 The Green Technology Pilot Program does put some additional burdens on applicants. As described earlier, the number of claims is limited to three independent claims and twenty total claims.⁴⁵ Under normal circumstances, a patent applicant could file more than that number provided they were willing to pay the USPTO for the additional claims.⁴⁶ In addition, in the event that a patent examiner finds that a patent application is directed to two or more inventions, an applicant in the Green Technology Pilot Program must choose one of the inventions without traverse, meaning that the patent applicant could not dispute the patent examiner's finding of two or more inventions.⁴⁷ Under normal circumstances, an applicant facing such a finding by a patent examiner could traverse, meaning the applicant could argue that the two inventions found

crises could topple governments, feed terrorist movements or destabilize entire regions" to the point where the entire world will be at war, and "everyone will ultimately become a veteran").

⁴² See, e.g., Rebecca Lefton & Daniel J. Weiss, *Oil Dependence Is a Dangerous Habit*, CTR. FOR AM. PROGRESS (Jan. 2010), http://www.americanprogress.org/issues/2010/01/pdf/unstable_oil.pdf.

⁴³ César Alonso-Borrego & M. Dolores Collado, *Innovation and Job Creation and Destruction: Evidence from Spain*, 68 RECHERCHES ÉCONOMIQUES DE LOUVAIN 149, 149 (2002) (Fr.), available at http://www.cairn.info/load_pdf.php?ID_ARTICLE=REL_681_0148.

⁴⁴ *Id.* at 151.

⁴⁵ Pilot Program, *supra* note 7, at 64,667.

⁴⁶ U.S. PATENT & TRADEMARK OFFICE, FEE SCHEDULE,

<http://www.uspto.gov/web/offices/ac/qs/ope/fee2009september15.htm#patapp> (last updated Apr. 1, 2011).

⁴⁷ Pilot Program, *supra* note 7, at 64,667.

by the examiner are actually one invention that should be included in the same patent.⁴⁸ Also, an applicant to the Green Technology Pilot Program must file the application electronically and must provide a statement, described earlier, about why the invention qualifies as green.⁴⁹

¶22 These restrictions on participants in the Green Technology Pilot Program, however, are common to all individuals seeking accelerated examination of a patent through the fully implemented Accelerated Examination Program.⁵⁰ Furthermore, the United States has a significant patent backlog.⁵¹ Accelerated examination may cause other patent applicants to wait longer for responses because, when accelerated patents jump up the waitlist, other patents, by default, are moved down the waitlist. Given the benefit of reduced pendency, the restrictions in place for the Green Technology Pilot Program seem reasonable in that they allow an examiner to more quickly process the application and return to the non-accelerated applications. Moreover, the USPTO has made some effort to limit the restrictions or extra burdens in place for applicants in the Green Technology Pilot Program. Unlike the Accelerated Examination Program, the Green Technology Pilot Program provides the additional benefit of not requiring applicants to conduct a pre-examination search meeting certain requirements, as is required by the Accelerated Examination Program.⁵²

¶23 The permanent disadvantages to the Green Technology Pilot Program for applicants seem reasonable in light of the benefits that the program confers. However, there are also some disadvantages for society as a whole from implementing such a program. As discussed earlier, the United States patent system is already swamped with applications and backed up on examining them.⁵³ This program has the potential to inundate the patent office with even more patent applications and to further backup the patent system such that inventors in non-qualifying areas must wait even longer for USPTO office actions. Potentially, this could slow business in non-green technology areas. However, considering the benefits to society discussed earlier and the procedures in place to reduce the amount of time that accelerated applications will take, this disadvantage does not seem prohibitive.

¶24 Another potentially permanent harm to society is the fact that patents may actually prevent members of society from being able to take advantage of the green technologies that are developed. A patent grants its inventor or assignee a monopoly over the invention for twenty years. Unless there is competition, the price of an invention can remain relatively high.⁵⁴ This is problematic if the cost of the green invention is more than the price of its polluting equivalent, such as gas or coal, because people may then be

⁴⁸ See MPEP § 1893.03(d) (8th ed. Rev. 7, Sept. 2008).

⁴⁹ Pilot Program, *supra* note 7, at 64,667-68.

⁵⁰ U.S. PATENT & TRADEMARK OFFICE, USPTO PATENT EXAMINATION ACCELERATION PROGRAMS AND PROPOSALS, available at http://www.uspto.gov/patents/process/file/accelerated/comp_chart_dom_accel.pdf [hereinafter *USPTO Acceleration Programs*].

⁵¹ See generally Mabey, *supra* note 34.

⁵² *USPTO Acceleration Programs*, *supra* note 50.

⁵³ See generally Mabey, *supra* note 34.

⁵⁴ Estelle Derclaye, *Not Only Innovation but Also Collaboration, Funding, Goodwill and Commitment: Which Role for Patent Laws in Post-Copenhagen Climate Change Action*, 9 J. MARSHALL REV. INTELL. PROP. L. 657, 672 (2010).

compelled to use the cheaper (albeit polluting) option.⁵⁵ In addition, because the majority of environmentally friendly inventions are outdated before the end of their patent term,⁵⁶ the public domain does not necessarily benefit from such patent grants. This means the cheaper, non-monopolized price is not realized until the utility of the invention has largely passed.

¶25 However, patent owners may be compelled by both market forces and, at least for some patent owners, a true concern about the state of the environment to ensure that these potential disadvantages are minimized. Because the demand for an environmentally friendly invention will be much higher if that invention is cheaper than polluting equivalents, simple business sense dictates that a lower price for a larger number of sales is more desirable than a higher price for a more limited number of sales. The same reasoning encourages patent owners to engage in licensing for a reasonable price. Non-exclusive licensing in particular could benefit the public by causing the licensing companies to compete with one another to produce the product at the lowest price. In addition, because inventors of green technology likely care about the environment, they may be willing to dedicate their invention to the public domain earlier than would be required under patent laws. For example, companies such as IBM, DuPont, and Sony have contributed a pool of free green patents to what has been labeled the Eco-Patent Commons, believing that putting green patents in the public domain can help disseminate these technologies.⁵⁷

¶26 Although the Green Technology Pilot Program does pose some permanent disadvantages to both inventors and society as a whole, these permanent disadvantages are generally not severe and are outweighed by the benefit offered by the program. Therefore, temporary disadvantages must exist that would explain why the pilot program has been so poorly utilized.

IV. WHY IT IS NOT WORKING: TEMPORARY DISADVANTAGES OF THE PROGRAM

¶27 A number of temporary disadvantages to the Green Technology Pilot Program provide a logical explanation for the failure of the program to live up to expectations. One problem with the program may be that not enough people are aware of it. Poor publicity may have hurt the response to the program.⁵⁸ Comments about the program by government officials, such as those made after the State of the Union address by the Secretary of Commerce,⁵⁹ may slowly correct this problem. In addition, the marketing efforts discussed earlier of startup companies applying for and receiving patents through the program, such as EnergyOne and Skyline Solar, may bring awareness and eventually even brand name recognition to the Green Technology Pilot Program within the startup community.

⁵⁵ *See Id.*

⁵⁶ *Id.* at 671-72

⁵⁷ Lisa Larrimore Ouellette, Comment, *Addressing the Green Patent Global Deadlock Through Bayh-Dole Reform*, 119 YALE L.J. 1727, 1732 (2010).

⁵⁸ Martin LaMonica, *Green-tech Patent Program Off Target Pace*, GREEN TECH-CNET NEWS (Aug. 27, 2010, 6:34 AM), http://news.cnet.com/8301-11128_3-20014880-54.html.

⁵⁹ Locke, *supra* note 4.

¶28 Another temporary disadvantage was that, until recently, the program was only available to applications that had already been filed by December 8, 2009.⁶⁰ This means that in the past, the program provided no incentive for recalcitrant green technology inventors to file a patent application. Now that the program has been expanded to include newly filed patent applications, the Program will be an incentive to file a patent application.

¶29 Yet another temporary disadvantage of the program was that, prior to the recent changes, a patent applicant who wanted to be in the Green Technology Pilot Program had to return to their already-filed application and pursue additional paperwork if their application had been filed before the pilot program was announced. This means that the pilot program required additional patent practitioner work and expense beyond the anticipated amount that was already completed, arguably making Green Technology Pilot Program a less appealing route to pursue. Although the USPTO is now allowing applications filed after December 8, 2009 to be part of the pilot program, the same problem applies to all the applications filed between December 9, 2010 and November 10, 2010, when the change in rules was announced. Presumably, for patent applications filed after the change, the additional paperwork will not seem as burdensome because it can be completed at the time the application is filed.

¶30 Another temporary issue with the Green Technology Pilot Program is that it is an untested pilot program and, as such, has not become a tried and true program relied upon by patent practitioners. The mere designation as a pilot program has sometimes been considered a harm to participation.⁶¹ For example, the electronic filing system (EFS) initially was not popularly adopted by patent practitioners, even though EFS is commonly used now.⁶² The ratio of pilot programs that become fully implemented to pilot programs instituted is not high.⁶³ Therefore, the incentive for a patent practitioner to familiarize herself with what is likely a transient pilot program is much lower than the incentive to become familiar with a fully implemented program.

¶31 Patent practitioners may be particularly reluctant to capitalize upon the Green Technology Pilot Program given its ambiguity regarding classifications. Early on, the classifications excluded a number of technologies.⁶⁴ Even after the classifications were eliminated, confusion about exactly what type of invention would qualify may have dissuaded inventors from investing the time and money necessary to join the program. Because the qualification criteria would likely become more clear over time if the program were fully implemented, the number of patent applicants willing to devote the energy, time, and expense of applying to the program would likely increase.

¶32 Finally, as the number of applications to the pilot program near the 3,000 application maximum, patent practitioners may not be interested in filing paperwork for a special status if it is too late for them to actually receive it. This problem too would be eliminated if the program were implemented full time.

⁶⁰ Datta et al., *supra* note 27.

⁶¹ Daniel R. Bestor & Eric Hamp, *Peer to Patent: A Cure for Our Ailing Patent Examination System*, 9 NW. J. TECH. & INTELL. PROP. 16, 25 (2010).

⁶² *Id.* at 26.

⁶³ Justin Pats, *Preventing the Issuance of “Bad” Patents: How the PTO Can Supplement Its Practices and Procedures to Assure Quality*, 48 IDEA 409, 425 (2008).

⁶⁴ Pilot Program, *supra* note 7, at 64,667–69.

V. EXPECTATIONS FOR THE PROGRAM IF IT WERE FULLY IMPLEMENTED

¶33 If expedited examination for green technology patents is implemented full time, the temporary challenges that are reducing the number of applications to the pilot program will disappear. Already, the USPTO has instituted changes that reduce these problems. A rise in the number of applications to the Green Technology Pilot Program could reasonably be expected as the number of temporary problems decrease. The permanent implementation of the program would likely lead to greater use of it. Opening the program up to all applications and extending the program by one year have already doubled the number of applications per month.⁶⁵ If the program were fully implemented, therefore, what might happen?

¶34 The problem of patent backlog could become much more serious if the Green Technology Pilot Program were fully implemented. In light of the advantages and reduced disadvantages, the number of applications to the patent office would potentially be much larger in a fully implemented program. The elimination of the classification system might then be called into question. After all, the percentage of applications granted accelerated examination actually increased approximately 25% after the classification system was eliminated.⁶⁶ Therefore, although the elimination of the classification system might make sense for the pilot program, a closer look should be taken to determine what sort of “green” patents should be allowed if the program is fully implemented.

VI. WHAT THE USPTO CAN LEARN FROM GREEN PATENT PROGRAMS ABROAD

¶35 One way to determine how a fully implemented green technology patent program could be structured in the United States without overloading our patent system is to look at the standards used in other countries. In recent years, accelerated examination programs for green patents have been adopted at patent offices around the world. Overall, most international green technology programs require only some type of declaration that the patent is environmentally beneficial to accelerate examination. In general, “environmentally beneficial” is construed broadly without any set guidelines defining what that means, although the JPO focuses on reducing consumption and CO₂ and the Korean Intellectual Property Office (KIPO) focuses upon minimizing the discharge of pollutants. A review of the green technology patent programs available abroad, conducted below, underscores the priority that clean technology is being given worldwide and provides some interesting ideas for the USPTO to consider in their program.

¶36 The United Kingdom Intellectual Property Office (UKIPO) adopted its “Green Channel” patent acceleration program on May 12, 2009.⁶⁷ Under the program, a patent applicant must show: (1) how the patent is environmentally friendly, and (2) which

⁶⁵ See *supra* note 30 and accompanying text.

⁶⁶ JANUARY USPTO REPORT SUMMARY, *supra* note 24; Whittle et al., *supra* note 20

⁶⁷ UK ‘Green’ Inventions To Get Fast-tracked Through Patent System, INTELLECTUAL PROP. OFFICE (May 12, 2009), <http://www.ipo.gov.uk/about/press/press-release/press-release-2009/press-release-20090512.htm>.

actions (search, examination, combined search and examination, and/or publication) the applicant wishes to accelerate.⁶⁸ The Green Channel does not rely upon classifications.⁶⁹ The UKIPO explains:

This is because inventions which have an environmental benefit can arise in any area of technology. For example, we would accept an acceleration request for a manufacturing process which uses less energy, in the same way as we would accept an acceleration request for a wind turbine or a recycling process.⁷⁰

¶37 To show that an invention is environmentally friendly, a statement that the invention is environmentally friendly suffices.⁷¹ The Office elaborates that simple statements suffice for solar panels or wind turbines, whereas more detailed statements would be necessary for a manufacturing process that uses less energy.⁷² The UKIPO will not conduct any detailed investigation into the assertion but will refuse requests if they are clearly unfounded.⁷³ An example of an application that would not be founded is a perpetual motion machine.⁷⁴

¶38 The Green Channel provides a number of benefits. The UKIPO claims that it could take only nine months to get a patent granted.⁷⁵ The nine-month estimate assumes that the applicant requests accelerated combined search, examination, and publication and then responds promptly to any objections or outstanding matters.⁷⁶ No promise can be given for any particular patent.⁷⁷ The Green Channel also provides an online searchable database of the patents granted under the program.⁷⁸ As of June 22, 2011, 308 applications had been admitted into the program and published.⁷⁹

¶39 The KIPO introduced its Superspeed Examination System (SES) for green patents on October 1, 2009.⁸⁰ To qualify for the program, a technology must be drawn “to green technologies that minimize the discharge of pollutants, as well as those which received

⁶⁸ *Green Channel for Patent Applications*, INTELLECTUAL PROP. OFFICE (May 12, 2009), <http://www.ipo.gov.uk/pro-types/pro-patent/p-law/p-pn/p-pn-green.htm> [hereinafter *Green Channel Applications*].

⁶⁹ *Green Channel Frequently Asked Questions*, INTELLECTUAL PROP. OFFICE, <http://www.ipo.gov.uk/types/patent/p-applying/p-after/p-green/p-green-faq.htm> (last visited June 26, 2011) [hereinafter *Green Channel FAQ*].

⁷⁰ *Id.*

⁷¹ *Green Channel Applications*, *supra* note 68.

⁷² *Green Channel FAQ*, *supra* note 69.

⁷³ *Green Channel for Patent Applications*, INTELLECTUAL PROP. OFFICE, <http://www.ipo.gov.uk/p-green.htm> (last visited June 26, 2011).

⁷⁴ *Id.*

⁷⁵ *Green Channel FAQ*, *supra* note 69.

⁷⁶ *Id.*

⁷⁷ *Id.*

⁷⁸ *Online Patent Services – Green Channel Patent Applications*, INTELLECTUAL PROP. OFFICE, <http://www.ipo.gov.uk/types/patent/p-os/p-gcp.htm> (last updated Aug. 24, 2011).

⁷⁹ *Id.*

⁸⁰ *Press Release: Thanks to Superspeed Examination, Green Technology Acquires Patent In a Month*, KOREAN INTELLECTUAL PROP. OFFICE (Oct. 20, 2009), http://www.kipo.go.kr/kpo/user.tdf?seq=1305&c=1003&a=user.english.board.BoardApp&board_id=kiponews&catmenu=ek20200.

funding or authentication for green growth.”⁸¹ KIPO selects and operates agencies that conduct prior arts searches for patent applications.⁸² As of September 2009, three agencies conduct prior arts searches: Korea Institute of Patent Information, WIPS Company, and IP Solution Company.⁸³ To apply for the superspeed examination, an applicant must first request a prior art search by an authenticated agency and then must submit the results of the search to KIPO.⁸⁴ As in the United States, the application must be submitted electronically.⁸⁵

¶40 The KIPO’s SES offers numerous benefits. A typical patent application to the KIPO takes eighteen months, while a preferential patent application takes three months.⁸⁶ Under the SES, the time can be reduced to less than a month, which KIPO claims is “the fastest examination period in the world.”⁸⁷

¶41 The JPO introduced an accelerated patent examination program for green patents on November 1, 2009.⁸⁸ To receive an accelerated examination, an applicant must fulfill two requirements. First, the applicant must include a short statement explaining that “the claimed invention has an advantage in reducing consumption, reducing CO₂ and the like in a reasonable manner, based on the disclosure of the specification of the application.”⁸⁹ Second, the applicant must disclose prior art and provide a comparative analysis between the prior art and the current invention.⁹⁰

¶42 Australia’s intellectual property office, IP Australia, introduced an accelerated patent examination for green technologies on September 15, 2009.⁹¹ IP Australia already had an expedited examination process in place for applications meeting certain requirements, and this process required that the request for expedited examination be in writing and include reasons why the particular patent application should be examined ahead of its turn.⁹² Under the new addition to the patent law, a statement that a patent application related to a field of green technology would be considered a suitable reason for expedited examination.⁹³ This requirement likely will be construed broadly.⁹⁴ The benefit of the program is that applications are likely to have a reduced waiting time of four to eight weeks.⁹⁵

⁸¹ *Id.*

⁸² *Id.*

⁸³ *Id.*

⁸⁴ *Id.*

⁸⁵ *Id.*

⁸⁶ *Id.*

⁸⁷ *Id.*

⁸⁸ JAPAN PATENT ATTORNEYS ASS’N, ACCELERATED (APPEAL) EXAMINATION FOR GREEN TECHNOLOGY PATENT APPLICATIONS, *available at* http://www.jpaa.or.jp/english/whatsnew/pdf/green_technology_patent.pdf.

⁸⁹ *Id.*

⁹⁰ *Id.*

⁹¹ Kathryn Morris & Mark Roberts, *IP Australia Encourages Rapid Examination of “Green Patent Applications,”* DAVIES COLLISON CAVE (Sept. 16, 2009), <http://www.davies.com.au/pub/detail/79/ip-australia-encourages-rapid-examination-of-green-patent-applications>.

⁹² *Id.*

⁹³ *Id.*

⁹⁴ *Id.*

⁹⁵ Press Release, Richard Marles, Parliamentary Secretary for Innovation and Industry, Fast Tracking Patents for Green Technology Solutions, IP AUSTRALIA (Sept. 15, 2009), *available at* http://www.ipaustralia.gov.au/pdfs/news/MR_150909_fast_track_green_patents.pdf.

¶43 Israel's Patent Office (Israel PO) introduced accelerated examination for green patents on December 27, 2009.⁹⁶ Although the Israel PO already has an expedited examination process, inventions that have a beneficial environmental effect are not considered for the Israel PO's expedited patent process.⁹⁷ Therefore, this new system provides a new opportunity for inventions with a beneficial environmental effect.⁹⁸ The new system does not require any additional fees.⁹⁹ To qualify for expedited examination in the new system, a patent application must fall into one of the newly created green classifications.¹⁰⁰ In order to receive such classification, a patent application must provide a short explanation of the invention and how it benefits the environment.¹⁰¹ Patent applications that have already been filed may be reclassified into the green classification if a statement describing the invention and its beneficial environmental effect is furnished.¹⁰² The benefit of the program is that after a patent application has received the green classification, it will be examined within three months.¹⁰³

¶44 Canada is in the process of introducing a new program to expedite green patents. Proposed amendments to Canada's patent rules have been published, thereby starting a thirty-day consultation period beginning October 3, 2010.¹⁰⁴ To receive accelerated examination, patent applicants would need to submit a declaration that their invention "relates to technology the commercialization of which would help to resolve or mitigate environmental impacts or conserve the natural environment and resources."¹⁰⁵ The Canadian Intellectual Property Office (CIPO) will produce a substantive office action within two months following receipt of an applicant's request or response.¹⁰⁶ A response from the applicant to the examiner's report will be required within three months from the date of the examiner's report.¹⁰⁷ No additional fee will be required.¹⁰⁸

¶45 To date, the EPO does not have an accelerated program for green technologies. However, the EPO recently launched the Patents and Clean Energy project with the United Nations Development Programme and the International Centre for Trade and Sustainable Development.¹⁰⁹ The purpose of the project is to study the effect of

⁹⁶ *Israel Patent Office Encourages Green Patents*, JMB, FA©TOR & CO. (Dec. 2009), http://www.israel-patents.co.il/index.php?page_id=272.

⁹⁷ Susan E. Lifshitz, *IP-Israel Newsletter 2009 4th Quarter*, LIFSHITZ AND TREITEL/IP-ISRAEL GROUP, <http://www.ip-israel.com/index-6.html> (last updated Jan. 2010).

⁹⁸ *See id.*

⁹⁹ *Id.*

¹⁰⁰ *Id.*

¹⁰¹ *Id.*

¹⁰² *Id.*

¹⁰³ *Id.*

¹⁰⁴ *Expedited Examination of Patent Applications Related to Green Technology*, CANADIAN INTELLECTUAL PROP. OFFICE, <http://www.ic.gc.ca/eic/site/cipointernet-internetopic.nsf/eng/wr02462.html> (last updated Aug. 4, 2011).

¹⁰⁵ *Id.*

¹⁰⁶ *Id.*

¹⁰⁷ *Id.*

¹⁰⁸ *Id.*

¹⁰⁹ Emma Barraclough, *EPO Leads Debate on Patents and Climate Change*, MANAGING INTELL. PROP. (Feb. 1, 2010), <http://www.managingip.com/Article/2379565/Managing-Patents-Archive/EPO-leads-debate-on-patents-and-climate-change.html>.

intellectual property rights on climate change mitigation and adaption technologies.¹¹⁰ EPO examiners developed a new classification system for environmentally related technologies, spending well over a hundred days on the project.¹¹¹ The classification system focused on inventions that have the potential for reducing greenhouse gas emissions.¹¹² The study identified green technologies that are commercially available or have strong prospects of commercialization in the near-to-medium term, ultimately identifying six categories that include wind energy, hydro/marine energy, solar energy, geothermal energy, biofuels and clean coal. The study also identified a list of renewable technologies that are currently at the research and development stage but that will potentially be available within five to ten years.¹¹³

¶46 To recap, most international green technology programs require only that a patent applicant declare the patent is “environmentally beneficial,” which is generally a broad, unguided requirement. The JPO requires reduced consumption and CO₂, and the KIPO is concerned with minimizing the discharge of pollutants. A few of the more unique provisions provided for in international green patent programs include the database of green patents created by the UKIPO, the use of independent agencies employed by the KIPO, and the comparative analysis between the prior art and the current invention required by the JPO.

VII. HOW THE USPTO COMPARES TO INTERNATIONAL PATENT OFFICES

¶47 Before any suggestion can be made regarding what aspects of international green technology patent programs could be adopted by the United States, a comparison of the patent systems in the different countries in general is first appropriate. The USPTO is the largest patent office in the world, employing approximately 9,500 employees.¹¹⁴ Of these employees, over 6,000 are patent examiners and the rest are either trademark examiners or support staff.¹¹⁵ In 2009, the USPTO examined nearly 483,000 patent applications.¹¹⁶ Given the size and the sheer number of patents going through the USPTO, other large patent offices such as the EPO and JPO are more likely to have policies that could reasonably be implemented at the USPTO. In contrast, smaller patent offices do not bear the same burden as the USPTO, so their policies must be more closely examined.

¹¹⁰ EUROPEAN PATENT OFFICE, PATENTS AND CLEAN ENERGY: BRIDGING THE GAP BETWEEN EVIDENCE AND POLICY 6 (2010) [hereinafter EPO GUIDELINES], *available at* [http://documents.epo.org/projects/babylon/eponet.nsf/0/cc5da4b168363477c12577ad00547289/\\$FILE/patents_clean_energy_study_en.pdf](http://documents.epo.org/projects/babylon/eponet.nsf/0/cc5da4b168363477c12577ad00547289/$FILE/patents_clean_energy_study_en.pdf).

¹¹¹ Barraclough, *supra* note 109.

¹¹² *Id.* at 15.

¹¹³ *Id.* at 27 (These technologies include solar heating with seasonal storage (in shallow underground) and solar cooling, PV systems based on modules with nanotechnology-based PV cells, floating offshore wind, ocean thermal energy conversion, salinity-gradient-based power, small-scale geothermal power, hot dry rock geothermal power, biomass integrated gasification combined cycle, biomass pyrolysis, biomass torrefaction, cellulosic ethanol, second-generation biodiesel and algae, dimethyl ether from biomass, and biorefinery.).

¹¹⁴ *See* U.S. PATENT & TRADEMARK OFFICE, PERFORMANCE AND ACCOUNTABILITY REPORT: FISCAL YEAR 2010, at 9 (2010), *available at* <http://www.uspto.gov/about/stratplan/ar/2010/USPTOFY2010PAR.pdf>.

¹¹⁵ *Id.*

¹¹⁶ U.S. PATENT & TRADEMARK OFFICE, U.S. PATENT STATISTICS CHART, *available at* http://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.pdf.

¶48 Along with the USPTO, the EPO and the JPO comprise the “big three” and are collectively known as the “Trilateral Offices.”¹¹⁷ The EPO is a centralized patent application and granting system for the contracting countries,¹¹⁸ of which there are currently thirty-eight.¹¹⁹ The EPO employs about 7,000 staff members.¹²⁰ In 2010, the EPO received over 150,000 patent applications.¹²¹ In 2009, the JPO staffed 2,904 people and had 1,894 examiners.¹²² In 2009, the JPO received approximately 349,000 patent applications.¹²³

¶49 Other countries have much smaller patent offices that deal with far fewer applications. KIPO has a staff of around 1,500 with approximately 650 patent examiners and examines approximately 160,000 patents annually, though many are outsourced.¹²⁴ The CIPO has about 1,050 employees with about 400 examiners, and received approximately 52,500 patent applications in the 2005–06 year.¹²⁵ The UKIPO had 281 examiners as of 2008¹²⁶ and received over 25,000 patent applications in 2007.¹²⁷ IP Australia received approximately 22,000 applications in 2009,¹²⁸ and the Israel PO received approximately 8,000 in 2007.

¶50 The larger patent offices have a much more challenging time getting through the large number of patent applications in a timely manner. Average patent pendency in the JPO is currently between five and six years, and the average time required between a request for examination and a first office action is twenty-six months.¹²⁹ Based on 2009 statistics, 501,100 patent applications are pending at the EPO, an amount higher than in

¹¹⁷ See R. Balamurugan & R. Radhakrishnan, *Patenting: An Indian Scenario*, 8 INDIAN J. ECON. & BUS. 313, 315 (2009); *Office of the Administrator for Policy and External Affairs: Patent Trilateral Activities*, U.S. PATENT & TRADEMARK OFFICE, http://www.uspto.gov/ip/global/patents/ir_pat_trilateral.jsp (last updated Oct. 4, 2010); TRILATERAL CO-OPERATION, <http://www.trilateral.net/index.html> (last visited June 26, 2011).

¹¹⁸ *European Patent Office*, EUROPEAN PATENT OFFICE, <http://www.epo.org/news-issues/press/background/epo.html> (last updated Jan. 21, 2011).

¹¹⁹ See *Member States of the European Patent Organisation*, EUROPEAN PATENT OFFICE, <http://www.epo.org/about-us/organisation/member-states.html> (last updated Mar. 10, 2011).

¹²⁰ *Who We Are*, EUROPEAN PATENT OFFICE, <http://www.epo.org/about-us/jobs/why/who.html> (last updated Jan. 10, 2011).

¹²¹ *European Patent Applications Filed with the EPO*, EUROPEAN PATENT OFFICE, <http://www.epo.org/about-us/office/statistics/patent-applications.html> (last updated June 6, 2011).

¹²² JAPAN PATENT OFFICE, ANNUAL REPORT 2009, at 164 (2009), available at http://www.jpo.go.jp/shiryuu_e/toushin_e/kenkyukai_e/pdf/annual_report2009/part5.pdf

¹²³ *The Number of Applications and Registrations in 2009*, JAPAN PATENT OFFICE, http://www.jpo.go.jp/cgi/linke.cgi?url=/torikumi_e/hiroba_e/e_2009tourokukensuu.htm (last updated May 21, 2010).

¹²⁴ LONDON ECONOMICS, INTELLECTUAL PROP. OFFICE, PATENT BACKLOGS AND MUTUAL RECOGNITION 169 (Jan. 2010) [hereinafter PATENT BACKLOGS], available at <http://www.ipo.gov.uk/p-backlog-report.pdf>.

¹²⁵ Mary Carman, *CIPO: Facts and Stats to Enhance Understanding*, CANADIAN INTELLECTUAL PROP. OFFICE 7, 18 (NOV. 19, 2009), available at [http://www.ic.gc.ca/eic/site/cipointernet-internetopic.nsf/vwapj/2009-11-19aippi-eng.pdf/\\$file/2009-11-14aippi-eng.pdf](http://www.ic.gc.ca/eic/site/cipointernet-internetopic.nsf/vwapj/2009-11-19aippi-eng.pdf/$file/2009-11-14aippi-eng.pdf).

¹²⁶ PATENT BACKLOGS, *supra* note 124, at 158.

¹²⁷ *Id.* at 152.

¹²⁸ IP AUSTRALIA, PATENTS EXAMINATION & HEARING GROUP—DEMAND REPORT (2011), available at <http://www.ipaustralia.gov.au/pdfs/statistics/Patent%20Demand%20Statistics.pdf>.

¹²⁹ *FAQ—Japan*, EUROPEAN PATENT OFFICE, <http://www.epo.org/searching/asian/japan/faq.html>.

past years, showing an increasing patent backlog there, as well.¹³⁰ As the patent backlog has increased at the EPO, so has the average amount of time from filing to grant of a patent application.¹³¹

¶51 The backlog at the USPTO is particularly serious. The USPTO is simply unable to process the number of applications coming in to the office in a timely manner, causing the number of pending applications to grow. In 2008, 496,762 applications were filed but only 396,228 were eliminated from the system (by such processes as grant of a patent, abandonment of a patent, and so forth).¹³² Therefore, a net increase in pending patents of approximately 100,000 patent applications occurred in 2008 alone. Over the past decade, as the number of pending patents has increased, the amount of time any given patent will be pending has also increased.¹³³ Applicants wait an average of 34.6 months for grant or denial; in some high technology areas, applicants must be prepared to wait five to eight years for a patent to issue.¹³⁴

¶52 Therefore, any informed review of the Green Technology Pilot Program must take into consideration the tremendous patent backlog at the USPTO. Because smaller patent offices do not face the same challenges that the United States does, their policies must be scrutinized more carefully to determine how effectively that policy could be applied in the United States in light of the patent backlog. In contrast, policies in place at the EPO or JPO are more likely to have considered the effect upon patent backlog.

VIII. POTENTIAL IMPROVEMENTS TO THE UNITED STATES PROGRAM

¶53 Based on the differences delineated above, should the Green Technology Pilot Program be adopted full time and become customary, requiring a broad, general statement of environmental benefit in patent applications to qualify for accelerated examination, as many of the smaller patent offices do, may not be sufficient. The primary benefit to society of such a program exists only if the green technology disclosed in a patent that is being accelerated truly will mitigate environmental damage, and such benefit must be weighed against the damage to society of having a patent backlog causing increased patent pendency for all non-green technologies. Examiners at smaller patent offices may have the time available to adequately assess the legitimacy of any claim of environmental benefit and to ensure that such claims are being examined with consistency across all technology areas. However, the USPTO receives so many more patent applications and already is so pressed for time that it simply would not be able to ensure both legitimacy and consistency should the Green Technology Pilot Program become more popular.

¶54 One option would be for the United States to follow the JPO's requirement that applicants for accelerated examination provide a list of relevant prior art and a comparative analysis between the prior art and the current invention. The concept is not

¹³⁰ EUROPEAN PATENT OFFICE, ANNUAL REPORT 2009, at 18 (2010), *available at* [http://documents.epo.org/projects/babylon/eponet.nsf/0/afbc07d9e3b95f12c125770d0055a883/\\$FILE/epo_annual_report_2009.pdf](http://documents.epo.org/projects/babylon/eponet.nsf/0/afbc07d9e3b95f12c125770d0055a883/$FILE/epo_annual_report_2009.pdf).

¹³¹ *Id.*

¹³² Mabey, *supra* note 34, at 217.

¹³³ *Id.*

¹³⁴ *Id.* at 218.

entirely foreign to the USPTO. The Peer to Patent Program introduced at the USPTO in 2007 allows third parties to submit prior art and an explanation of why and how the prior art is relevant to patents applications in the program.¹³⁵ Examiners use this information when examining the patent applications.¹³⁶ The benefit of such a submission is that it can greatly reduce the amount of time an examiner spends looking for and comparing prior art to the invention in question.

¶155 The submissions made by patent applicants for green technology would differ than those made by third parties in the Peer to Patent Program in two significant ways. First, because the applicant rather than a third party would be making the submission, the submission would be subjective rather than objective and would not provide as comprehensive a basis upon which an examiner could make a decision. The duty of disclosure combined with potential charges of inequitable conduct and a threat of malpractice might offset some of this bias, but might also make some practitioners apprehensive about using the program. Second, the applicant may be unwilling to set forth a clear statement of what the applicant considers prior art and why for fear of potential patent litigation down the road should the patent issue. Thus, this requirement could deter otherwise qualified applicants from taking advantage of the program.

¶156 A second option would be for the USPTO to reinstitute a classification requirement once the program became more popular. If the USPTO were to take this route, the USPTO should likely make a close comparison of its permitted classifications with the classifications created by the EPO. In general, the classifications seem to align. However, a more in-depth review of these classifications with actual examples of what qualifies under the EPO categories and what qualifies under the USPTO categories should be conducted because the exact definitions are not entirely clear. For example, the EPO study lists ocean energy as one of its six main categories,¹³⁷ and the USPTO classifications originally promulgated with the Green Technology Pilot Program includes only classifications of “Hydroelectric” and “Water level” (e.g., wave or tide).¹³⁸ It is unclear if these two classifications would encompass all that the EPO meant by ocean energy. Likewise, the EPO lists “salinity-gradient-based power” as one of the technologies that might be developed in the coming five to ten years,¹³⁹ and it is unclear whether such power would fall under any of the classifications originally promulgated by the USPTO.

¶157 A third option would be for the United States to take a cue from the KIPO and outsource the examination of green technology patents to an outside company. If this approach were adopted, potentially a simple statement of environmental benefit could be sufficient. The outside agency could take the time to ensure the claim was legitimate and that all patents in the program were being examined using consistent criteria. The disadvantage to this is that it would likely involve an additional price tag—both to fund the examination by the company and to fund the government oversight needed to ensure the company was abiding by specified criteria. Most of the countries that have created accelerated green technology programs have made sure that no extra fees were required

¹³⁵ Bestor & Hamp, *supra* note 61, at 18.

¹³⁶ *Id.*

¹³⁷ EPO GUIDELINES, *supra* note 110, at 27.

¹³⁸ Pilot Program, *supra* note 7, at 64,668.

¹³⁹ EPO GUIDELINES, *supra* note 110, at 27.

for green patent applications. Not requiring additional fees makes sense because, as discussed above, early stage entrepreneurs often do not have capital until after they have received a patent. Thus, of the options discussed thus far, this is likely the least appealing.

¶58 One final takeaway from other programs would be the green patent database created by the UKIPO. The UKIPO's website allows a user to see a list of all the patents that have been issued through the Green Channel program and to search exclusively within this list. The USPTO's website that allows users to search for patent applications and patents, called PAIR, does not have a comparable function.¹⁴⁰ A user of the USPTO's PAIR website can search for patents and patent applications using an application number, a control number, a patent number, a PCT number or a publication number.¹⁴¹ A PAIR user can also search using a class, subclass, or art unit number.¹⁴² However, a user cannot search simply for a list of the patents issued through the Green Technology Pilot Program.¹⁴³

¶59 Given that patent applications are already uploaded onto PAIR,¹⁴⁴ creating a feature that enables users to search for patents and patent applications in the Green Technology Pilot Program would likely not be all that difficult. The benefit of doing this would be that it would allow society to have easier access to information about environmentally-friendly inventions without having to wade through all the applications and patents at the USPTO. Such a search function would also solidify the Green Technology Pilot Program as a mark of sorts for green products that could be capitalized upon by companies getting patents through the program.

IX. CONCLUSION: SHOOT FOR THE MOON (OR SUN-DRIVEN TECHNOLOGY)

[W]e've begun to reinvent our energy policy. We're not just handing out money. We're issuing a challenge. We're telling America's scientists and engineers that if they assemble teams of the best minds in their fields, and focus on the hardest problems in clean energy, we'll fund the Apollo Projects of our time.

– President Barack Obama¹⁴⁵

¶60 To summarize, the Green Technology Pilot Program conveys many benefits upon both patent applicants and society as a whole. Although the program has not been very popular thus far, temporary disadvantages currently decreasing the use of the pilot program would likely disappear once the program was permanently implemented. As the program becomes more popular, the USPTO should balance the benefits of the program against the already-existing burden on patent examiners and the increasing patent backlog.

¹⁴⁰ See *PAIR*, U.S. PATENT & TRADEMARK OFFICE, <http://portal.uspto.gov/external/portal/pair> (last visited July 20, 2011).

¹⁴¹ See *id.*

¹⁴² See *id.*

¹⁴³ See *id.*

¹⁴⁴ See *id.*

¹⁴⁵ State of the Union Address, *supra* note 1, at 3.

¶61 If the United States chooses to support the “Apollo projects of our time” by upgrading the Green Technology Pilot Program to permanent status, the United States should look around at its international counterparts for potential improvements to its program. One option would be for the USPTO to implement a requirement like the JPO has for their accelerated green technology program whereby an applicant would submit prior art and a comparative analysis of the prior art. Another would be for the USPTO to reinstate classification requirements, perhaps after having analyzed these classifications in light of the survey completed by the EPO.

¶62 The President issued some big challenges in his State of the Union address: first, that the United States become the first country by 2015 to have one million electric vehicles on the road,¹⁴⁶ and second, that the United States obtain 80% of its electricity from clean energy sources by 2035.¹⁴⁷ If those goals are going to become realities, the government must follow through on its promise to support clean technology entrepreneurship. One way that this can be encouraged is by transitioning the Green Technology Pilot Program from a temporary program to a well thought out, permanent, fully implemented program.

¹⁴⁶ *Id.*

¹⁴⁷ *Id.* at 4.