ABSTRACT
The Patent System and Climate Change
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Substantial investment in the development of new technologies will be needed for efforts to mitigate and to adapt to the effects of climate change. Climate change is expected to impose significant adverse impacts not only on health and ecosystems, but also to affect food production, to displace populations and disrupt ownership, and to interfere with patterns of satisfying basic human needs. The amount of greenhouse gas emissions, and thus the extent of climate change and the problems it will cause, also will depend upon the widespread dissemination and affordability of new technologies.

These developments will place significant stress on the patent system, to which firms, individuals, and countries will naturally turn. They will also place stress on alternatives to the patent system for technology development and dissemination. Governments and private institutions and actors must decide how to fund climate change technological developments, what rights to grant for patentable inventions, how broadly to license and what conditions to place on licenses for those technologies, and whether and how to regulate prices and competition in markets for those technologies. All of the different aspects of patent law doctrines, such as subject matter, disclosure and patentability requirements, infringement standards and exceptions and limitations thereto, and misuse and antitrust doctrines will be subject to substantial scrutiny in regard both to climate change technologies and to more traditional technologies that may nevertheless affect greenhouse gas emissions and uptake or that may otherwise exacerbate or mitigate climate change problems.

Concerns over the patent system’s relationship to climate change technology development and dissemination are particularly acute given that most patented mitigation and adaptation technologies are still being developed principally in a very small group of developed countries (Japan, Germany, and the United States), although some emerging economies (such as China, South Korea, and Russia) are developing patented technologies in particular sectors (such as cement production and renewable energy). Such imbalances are likely to exacerbate trade tensions. Further, climate change technologies are less likely than traditional technologies to be exported, and so far even in competitive markets such technologies overwhelmingly are not licensed to developing countries (whether the result of intellectual property or of other factors such as scientific capability, market conditions, and investment climate). Given past failures to successfully transfer technologies to developing countries, international institutions will face continuing pressures to encourage developed country governments to mandate technology transfer and low-cost access to technologies patented by the developed countries’ nationals and corporations. These pressures may, like the earlier Doha negotiations over access to medicines, lead to changes to existing international treaty obligations, as well as to so-called regime shifting as the issues arise at different times in different environmental, trade, and intellectual-property treaty fora. In each context, the basic premises of the patent system as a means for incentivizing investment, invention, disclosure, development and dissemination of technology will likely be subject to serious theoretical, practical, and political challenges.