A Proposal for a Clean Technology Directive: European Patent Law and Climate Change

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This article charts the conflicted, dissonant policies of the European Union towards intellectual property and climate change. It contends that there is a mismatch between the empirical work of the European Patent Office and the quietist policy options contemplated by the European Union. This article contends that the European Union needs to develop a Clean Technology Directive to allow for a differentiated approach to patent law and clean technologies - especially given the past complicity of the European Union in global warming and climate change. It highlights essential elements in a comprehensive policy package for the reform of patent law – considering patentable subject matter; patent incentives; and patent exceptions.

I. Introduction

Historically, under the Statute of Monopolies 1623 (UK), patent law provided exclusive rights to inventors for “the sole working or making of any manner of new manufactures” in return for the dissemination of information about the inventions. The legal regime was very much bound up with the industrial revolution, providing incentives for the manufacture of new inventions by factories – William Blake’s “Dark Satanic Mills”. Estelle Derclaye reflects that, accordingly, patent law has a tarnished reputation for promoting dirty, polluting technologies:

“The question then arises: could intellectual property rights (IPRs) be the cause of global warming? After all, the industrial revolution has brought with it IPRs, among the most relevant of which is the right to protect inventions. And the primary aim of patent law is to give an incentive to inventors to invent new products, processes and machines. Copyright law’s rationale is similar. Some of the greatest inventions of the last two centuries include the car, the train, the plane, the refrigerator, and the computer, and with them comes the use of energy, generally oil and coal, to make them work. These are some of the causes that contribute the most to the increase in levels of CO₂ in the planet’s atmosphere. For instance, a third of CO₂ emissions in the European Union (EU) are generated by transport. The intellectual property academic community has so far paid very little attention, if any, to this increasingly important issue.”

There has been much debate, within the European Union, and internationally, as to whether patent law could be transformed into a legal regime, which encouraged research, development, and deployment of clean technologies. As F. Scott Kieff comments: “To the extent new technologies are helpful to environmental goals, such as cleaner burning engines, the patent system can be seen as generating environmental good by providing incentives for their commercialization ex ante.”

The patent administration in the European Union has had a mixed record on environmental matters. The European Patent Organisation was...
established by the Convention on the Grant of European Patents which was signed in Munich in 1973. The organisation consists of the European Patent Office (EPO) and the Administrative Council. The EPO has long been forced to grapple with questions about patent law and environmental protection, as the result of the active participation of civil society groups, most notably Greenpeace, in opposition proceedings.3 Under the leadership of Alain Pompidou, Alison Brimelow and Benoit Battistelli, the EPO has been the most engaged and focused intellectual property registration office on the question of intellectual property and climate change. The EPO has explored a number of future scenarios, and their impact upon patent administration, law, and policy. The EPO has developed powerful, new databases to allow for comprehensive searches of clean technologies. The EPO has funded and participated in empirical research with respect to intellectual property and climate change.

In an effort to be forward-thinking about the future challenges to intellectual property, the EPO commissioned and released a report in 2007 entitled Scenarios for the Future.4 The president of the EPO, Alain Pompidou, explained the impetus for the study:

"Today it is our role as the EPO, a major player in the global knowledge-based economy and as custodian of one of the principal patent offices in the world, to take a lead in ensuring that the system remains fit for purpose in support of innovation, competitiveness and economic growth for the benefit of the citizens of Europe. The patent system has its roots in Europe. In 1474, at the time of the Republic of Venice, the first patent law was enacted. The resulting system by and large has stood us in good stead over the intervening centuries. However, the big question is whether it can still accommodate and adapt to meet the needs of the twenty-first century’s information society."5

The report recognised in its executive summary: “Complex new technologies based on a highly cumulative innovation process are seen as the key to solving systemic problems such as climate change, and diffusion of technology in these fields is of paramount importance."6 The study envisaged: "The IP needs of these new technologies come increasingly into conflict with the needs of classic, discrete technologies."7 The report recognised that intellectual property had to face a number of challenges and threats to the environment and climate change: "There are critical risks around energy (fossil fuels look unsustainable, nuclear energy continues to pose safety risks and alternative energies require major development), water (wars over its supply have been predicted) and food (agricultural monocultures could lead to unprecedented problems with newly virulent pests, global fish stocks and many species are in danger)."8 In this scenario, it was recognised: "Climate change is now a given: every aspect of human activity needs to adjust to its potential consequences, from mass human migration to resource shortages."9 The report commented: "How we manage the knowledge that can enable these adjustments is a critical question."10 The scenario worried: "Ecological problems will most drastically affect parts of the world that are not themselves responsible for causing them; vulnerability to climate change is a factor of exposure, sensitivity and adaptive capacity."11 The report imagined four possible futures for intellectual property in 2025.

In September 2010, a Joint Study by the EPO, the United Nations Environment Programme (UNEP) and the International Centre for Trade and Sustainable Development (ICTSD) – Patents and Clean Energy: Bridging the Gap Between Evidence and Policy – was published to some fanfare.12 Achim Steiner, the Executive Director of the UNEP, Benoit Battistelli, the new President of the EPO, and Ricardo Melendez-Ortiz, the chief executive ICTSD, made a joint statement in the foreword to this work:

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5 Ibid., p. 2.

6 Ibid., p. 10.

7 Ibid., p. 10.

8 Ibid., p. 27.

9 Ibid., p. 27.

10 Ibid., p. 27.

11 Ibid., p. 29.
"Enhancing technology transfer has been a key pillar of the global climate change regime since the inception of the United Nations Framework Convention on Climate Change (UNFCCC) in 1992. The current climate change negotiations recognise the need to strengthen this pillar by, among other things, the establishment of a technology mechanism to accelerate technology development and transfer. In this context, the role of intellectual property rights in the development of climate change mitigation and adaptation technologies, and especially their transfer to developing countries, has emerged as a particularly contentious issue. Despite repeated calls for reliable and continuously updated information about climate change technologies and patents, this vigorous debate has been marked by a general lack of impartial data and evidence that would enable policy-makers to make informed choices."\(^1\)

The report had three main conclusions. First, the report observed that policy processes can have a positive impact on technology development: "The surge in patenting around clean energy technologies, occurring following the signing of the Kyoto Protocol, suggests that clear policy signals from climate negotiations can be effective in stimulating technology development."\(^2\) Second, the report emphasized that "Accurate and publicly available information on existing and emerging clean energy technology, including IPRs and licensing, is urgently needed."\(^3\) Third, the report maintained that "technology information platforms should be an essential component of the emerging new technology transfer architecture."\(^4\)

Yet, in spite of such progressive tendencies, the European Union has at the same time frustrated and stonewalled efforts to develop international rules on intellectual property and climate change. During its deliberations in Copenhagen, the Ad Hoc Working Group on Long-Term Co-Operative Action under the United Nations Framework Convention on Climate Change 1992 identified five key options to address issues pertaining to intellectual property and climate change – including technology transfer; specific measures such as a patent pool and public sector licensing; patent subject matter exclusions; compulsory licensing; and a technology mechanism.\(^5\) Such measures were supported by the so-called BASIC countries (comprising Brazil, India, China, and South Africa); members of the Group of 77; least developed countries; and small island states. The host, Denmark, and members of the European Union instead promoted the so-called "Danish text". This draft text supported strong protection of intellectual property rights: "Parties commit to enable the accelerated large-scale development, transfer and deployment of environmentally sound and climate friendly technologies across all stages of the technology cycle, respecting IPR regimes including protecting the legitimate interests of public and private innovators."\(^6\) As the result of an agreement between the United States and the BASIC countries, the Copenhagen Accord 2009 was reached on the 18 December 2009.\(^7\)

While the Copenhagen Accord 2009 contains some language on a technology mechanism, the agreement is silent on the question of intellectual property.

In preparation for 16\(^{th}\) Conference of the Parties (COP 16), members of the Ad Hoc Working Group on Long-term Cooperative Action under the United Nations Framework Convention on Climate Change 1992 continued their discussions over intellectual

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2. Ibid., p. 6.

3. Ibid., p. 68.

4. Ibid., p. 68.

5. Ibid., p. 68.

6. Ibid., p. 10.

7. Ibid., p. 6.


property and climate change. The 10 February 2010 annex on enhanced action on technology development and transfer canvassed two options in bracketed text – “Option 1” that there be “no reference to Intellectual Property Rights in the text” and “Option 2” that there should be reference to intellectual property and climate change in the text. A number of clauses were contemplated under “Option 2”, including: measures relating to technology transfer, patent pools, public sector licensing, patent subject matter exclusions, compulsory licensing, and climate innovation centres.

Again, the European Union was hostile to the measures raised under “Option 2”. The Cancún Agreements 2010 provide a further elaboration of the Technology Mechanism, as well as establishing a Green Climate Fund, providing incentives for reducing emissions and forest degradation. However, there is no specific, explicit mention of intellectual property in the Cancún Agreements 2010.

This paper seeks to resolve this paradox in the policies of the European Union towards intellectual property and climate change – the countervailing progressive and reactionary tendencies at play. It contends that the European Union needs to develop a Clean Technology Directive to allow for a differentiated approach to patent law and clean technologies. Such a Directive should address patentable subject matter; patent incentives; and patent exceptions.

II. A Clean Technology Directive

In the past, the European Union has developed special directives to deal with new technologies under patent law. After thirteen years of great controversy and public debate, the European Parliament voted to adopt the European Union Directive on the Legal Protection of Biotechnological Inventions 1998 (the so-called Biotechnology Directive). Article 1 of the Directive provides that “Member States shall protect biotechnological inventions under national patent law” and “shall, if necessary, adjust their national patent law to take account of the provisions of this Directive.” In 2001, the Dutch Government sought to annul the Directive in the European Court of Justice. It argued that the Directive interfered with the internal markets of European Union countries and breached the principle of subsidiarity, and the principle of legal certainty. The Netherlands insisted that the Directive was incompatible with international obligations – in particular, the TRIPS Agreement 1994, the Rio Convention on Biological Diversity 1992, and the Agreement on Technical Barriers to Trade 1994. Further, it argued that the Directive breached fundamental rights by providing for the patentability of body parts, and that the Directive undermined human dignity and integrity. The European Court of Justice rather tersely rejected such arguments, and refused the application to annul the Directive.

Tine Sommer is adamant it would be a mistake to create an instrument like the Biotechnology Directive to deal with clean technologies:

“It is also useless simply to amend patent law with highly specific and detailed rules on environmentally sound technologies. As the biotech experience must have taught us, this may only lead to confusion and disharmony. The biotech lesson in particular, with its mix of competences between the EU and the EPO, is not the way forward. Until we adopt an EU patent, with its own patent Court of Justice, this area must be settled at the level of the EPO or the WTO.”


22 Ibid., p. 24.


In her view, "Patent law can adapt to the changing nature and pace of technology if we keep patentability standards straight and thereby restore its global legitimacy." While a case can be made that the Biotechnology Directive was an imperfect instrument, Sommer’s optimism about the patent system’s capacity to adapt to new technologies could be queried.

As an alternative, this article will argue that there is a need for a differentiated approach to dealing with clean technologies under patent law. The key topics that should be addressed include: patentable subject matter; patent incentives; and patent exceptions.

### III. Patentable Subject Matter

Focusing upon European patent law, Estelle Derclaye comments that states could adopt “negative” measures under the patent system to address global warming – “by preventing the patenting of polluting inventions or, in other words, requiring that all inventions be eco-friendly.” She discusses the litigation in the European Union dealing with patent subject matter and the “ordre public” (public morality and order):

“European and national patent laws already have a negative system in place through the *ordre public* provision of the energy performance certificates (Art. 53.a) and the case law interpreting it. It is already an important tool to cool the earth as the case law could be applied to excessive release of greenhouse gases by an invention, as it can potentially seriously damage the environment. However, the current interpretation of Art. 53.a does not go far enough, as it does not properly integrate the prevention and precautionary principles. In addition, only where it is likely that the patented invention will seriously damage the environment will the invention be unpatentable or revoked.”

There has been much debate in the European Union over the meaning of *ordre public*. In the “Harvard Oncomouse” litigation in the European Union, there was significant debate as to what test was appropriate in these circumstances. In the “Oncomouse” decision, the Examining Division initially declined to consider the issue, taking the view that it was inappropriate for technocrats to adjudicate upon the morality of the invention.

The Board of Appeal suggested that there was a need to engage in a balancing exercise: "The decision as to whether or not EPC Article 53 (a) is a bar to patenting the present invention would seem to depend mainly on a careful weighing up of the suffering of animals and possible risks to the environment on the one hand, and the invention’s usefulness to mankind on the other." [author’s emphasis] Applying this standard, the Examining Division contemplated whether the claimed invention was contrary to “ordre public” or morality:

“The development of new technologies is normally afflicted with new risks; this is an experience mankind has made many times in the past. The experience has also shown that these risks should not generally lead to a negative attitude vis-à-vis new technologies but rather to a careful weighing up of the risks on the one hand and the positive aspects on the other and that the result of this consideration should be the determining factor in whether a new technology should be used or not. If higher life forms are involved in the new technology it is not only the risk which must be considered but also the possible harm which is done to such higher life forms. This leads one to the question of morality.”

The Examining Division held that the subject matter was patentable, given that finding a cure for cancer was a worthy end. In a further consideration of the Harvard Oncomouse in 2006, the Technical
Board of Appeal reiterated that the balancing test “clearly allows the scope or extent of, on the one hand, the animal suffering and/or environmental risk and, on the other hand, the usefulness to mankind to be considered.”

In the case of Plant Genetic Systems/Glutamine Synthetase Inhibitors, the Technical Board of Appeals provided further consideration of the requirement that a patent application is not contrary to either “ordre public” or morality. The Board noted that surveys and opinion polls do not necessarily reflect “ordre public” concerns or moral norms that are deeply rooted in European culture. The Technical Board of Appeals observed:

“The function of a patent office is to grant patents, that is, exclusive rights to make use of inventions claimed in said patents for a limited geographical area and for a specified time. The Board agrees with the appellants’ submission that patent offices are placed at the crossroads between science and public policy. However, at this crossroads patent offices are not alone, but find themselves side-by-side with an increasing number of other authorities and bodies, in particular regulatory authorities and bodies, whose function is, inter alia, to ensure that the exploitation of a given technology, regardless of whether it is protected by a patent or not, takes place within the regulatory framework provided by laws, international treaties, administrative provisions, and so on.”

The Board concluded: “It would be unjustified to deny a patent under EPC Article 53 (a) merely on the basis of possible, not yet conclusively-documented hazards.” The Board noted: “Should the competent authorities and bodies, after having definitively assessed the risks involved, prohibit the exploitation of the invention, the patented subject-matter could not be exploited anyhow.”

Also noteworthy is the Relaxin case, in which the Green Party unsuccessfully objected to the Howard Florey Institute’s patent application in respect of relaxin; and the opposition by Greenpeace to stem cell patents.

It should also be noted that the EPO has also struggled to deal with claims of “biopiracy” – especially in relation to patents filed in respect of the Neem Tree and Nap Hal Wheat.

Criticising such decisions, Riccardo Pavoni complains that “the EPO ... has never undertaken the slightest effort to consider and evaluate principles and legal instruments of international environmental law” – most particularly, the precautionary principle. Given this lack of environmental engagement, it would be doubtful that the European Patent Office would ever exclude dirty technologies, which polluted the atmosphere, from patentable subject matter. Similarly, controversial technologies, such as geo-engineering, may well pass its superficial cost-benefit analysis.

IV. Patent Incentives

Estelle Derclaye reflects that there are a number of positive measures which could be employed to promote green innovation: “Under a positive system, green inventions would be encouraged through a special, preferential treatment within the patent laws.” Such measures could include – giving green inventions priority over others by giving applicants administrative advantages – faster examination, reduced fees for the application, grant and maintenance of patents, removal of green inventions from deferred examination, earlier publication and/or priority at the opposition and infringement stages (so-called “fast track” system).
The Intellectual Property Office in the United Kingdom has created a “green channel” for patent applications relating to “green” or environmentally-friendly technology.\(^{48}\) David Lammy, the Minister for Intellectual Property under the Gordon Brown’s Labour Government, observed of the initiative:

“Today’s initiative builds on this by offering innovative UK businesses working in green technologies the chance to get high-quality patent rights faster than ever before. This in turn will speed up the time it takes to get products to market, benefiting both business and consumers.”\(^{49}\)

The United Kingdom Intellectual Property Office contended: “The green patents initiative will make it easier and faster for new products to reach the market.”\(^{50}\) In its estimations, “It could take only nine months to get a patent granted under this scheme, compared with the current average time of two-to-three years.”\(^{51}\)

In 2010, the United Kingdom Intellectual Property Office launched a “Green patent database” on World Environment Day.\(^{52}\) The new Intellectual Property Minister, Baroness Judith Wilcox, a Conservative Member of the House of Lords, declared of the new database:

“Innovation and invention will drive the green economy and help make Britain a world leader in this field. Green growth will feed the economic recovery while helping to create a more responsible and sustainable future. This new database will provide businesses with easy access to green ideas and inventions. I want to ensure the UK is at the cutting-edge of low-carbon technology and industries.”\(^{53}\)

The press release by the United Kingdom Intellectual Property Office emphasized: “This initiative highlights the Government’s commitment to ensuring this country is at the forefront of developing new technology and industries that benefit the environment.”\(^{54}\) It noted that “The database will feature inventions that have been processed under the “Green Channel” initiative, which was launched a year ago.”\(^{55}\)

However, such administrative reforms will only have a limited effect. Estelle Derclaye maintains that there is scope for the European Patent Convention 2000 to be reformed to take into account a range of environmental concerns: “Inventions which cut down greenhouse gas release should certainly receive the most advantageous regime.”\(^{56}\) She comments that “a commitment from the legislature would be needed to grant a favourable regime to greener inventions.”\(^{57}\) Failing such political commitments, Derclaye wonders whether environmental groups, such as Greenpeace, might agitate for change of the European Patent Convention 2000.

### V. Patent Exceptions

There has been significant international conflict over patents relating to clean technologies. To take one example, the Danish wind power company, Vestas, was locked in multi-jurisdictional conflict with Enercon for many years.\(^{58}\) A settlement was reached in 2008, with Vestas confiding in an announcement:

“In previous company announcements, Vestas Wind Systems A/S has informed of various patent disputes with Enercon GmbH/Mr Aloys Wobben. In these disputes Mr Aloys Wobben has claimed that Vestas Wind Systems A/S infringes various patents; primarily in the area of grid connection, but also in other technical areas. As also informed Vestas Wind Systems A/S has successfully challenged the validity of the patents in the decisions handed down so far. The Executive Management is now pleased to announce that Vestas Wind Systems A/S has

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\(^{49}\) Ibid.

\(^{50}\) Ibid.

\(^{51}\) Ibid.


\(^{53}\) Ibid.

\(^{54}\) Ibid.

\(^{55}\) Ibid.


\(^{57}\) Ibid., p. 234.

entered into a settlement agreement with Enercon GmbH, Mr Aloys Wobben. Among other things, the agreement settles all present legal disputes with Mr Aloys Wobben on a worldwide basis, including the cases in the UK, the Netherlands, Ireland and Canada which will be discontinued and the decisions already handed down will stand.\textsuperscript{59}

In this context, patent exceptions play an important role – particularly in facilitating access to clean technologies.

Under Article 30 of the TRIPS Agreement\textsuperscript{1994}, “Members may provide limited exceptions to the exclusive rights conferred by a patent, provided that such exceptions do not unreasonably conflict with a normal exploitation of the patent and do not unreasonably prejudice the legitimate interests of the patent owner, taking account of the legitimate interests of third parties.” Historically, in the European Union, member states have taken a broad and flexible approach to the defence of experimental use. Article 27(b) of the Community Patent Convention 1975 (CPC) has provided the basis for an experimental use exception which exempts “acts done for experimental purposes relating to the subject matter of the patented invention.”\textsuperscript{60} While there remain variations in the interpretation of the defence of experimental use in different jurisdictions in the European Union, there is scope for the defence of experimental use to apply to potentially both commercial and non-commercial uses.\textsuperscript{61} Arguably, though, the European Union needs to recognise the legitimacy of developing countries, least developed countries, and small island states enjoying similarly flexible exceptions to patent rights.

Under Article 31 of the TRIPS Agreement\textsuperscript{1994}, countries may engage in compulsory licensing of patented inventions under certain circumstances. The European Union has been ambivalent about compulsory licensing – perhaps, because of fears that its comparative strengths in clean technologies could be undermined. In a resolution adopted in November 2007, the European Parliament emphasised the “urgent need to develop production, consumption and trade patterns that mitigate climate change and its economic impact.”\textsuperscript{62} The Parliament expressed the concern that the Clean Development Mechanism, the Kyoto Protocol’s principal system for technology transfer, “is not yet sufficient to significantly shift investment patterns in those sectors that have the greatest impact on climate change, such as power generation, transport and industrial energy use.”\textsuperscript{63} The European Parliament recommended “launching a study on possible amendments to the [TRIPS Agreement\textsuperscript{1994}] in order to allow for the compulsory licensing of environmentally necessary technologies, within the framework of clear and stringent rules for the protection of intellectual property.”\textsuperscript{64}

However, during the discussions over the Copenhagen Accord\textsuperscript{2009} and the Cancún Agreements\textsuperscript{2010}, the European Union was hostile to the inclusion of compulsory licensing as a legitimate measure in the international negotiations. Peter Czaga from the Directorate-General for Trade for the European Commission made the following comments at a civil society dialogue meeting on trade and climate change in 2009:

“China and other developing countries claim that IPR hampers the transfer of “green technologies” to developing countries and, accordingly, at the UNFCCC talks, propose measures which would weaken IPR protection in that sector (such as compulsory licensing). The Commission has the firm view that IPR as such do not constitute a barrier to the transfer of “green technologies” to developing countries. Also, the weakening of IPR would be detrimental to the fight against climate change in the long run as it would discourage investment and innovation in the sector. Moreover, the introduction of specific provisions for “environmental inventions” would create discrepancies on the level of protection between different categories of


\textsuperscript{63} Ibid.

\textsuperscript{64} Ibid.
inventions. This would make the patent system more complex, create difficulties for "borderline" inventions and legal uncertainty.”

Czaga maintains that “instead of considering changes in IPR legislation, it is far more useful to focus on more operational initiatives, such as disseminating information on relevant off-patent technologies or (voluntary) patent pools.”

Such a statement is wrong-headed as it suggests that compulsory licensing is illegitimate or illegal – when it occupies a hallowed place under the TRIPS Agreement 1994. The distinctive language about the “weakening of intellectual property rights” suggests that the European Commission is pandering to industry groups and business interests who subscribe to an agenda of intellectual property maximalism.

The wind turbine manufacturer, Vestas, was particularly influential with its submissions to the European Commission. In a long disquisition on the inviolability of intellectual property rights, the Danish company emphasized:

"Respect for intellectual property rights is what gives private companies the incentive to innovate and to share technological know-how. It’s their guarantee for fair compensation for the investment and innovation they have created. Taking away these legal protections and financial incentives risks killing off innovation.”

The European Commission should pay heed to the European Parliament on the question of compulsory licensing – rather than being led astray by self-interested companies like Vestas, and industry groups. Arguably, the European Union should establish a compulsory licensing mechanism, allowing for the export of patented clean technologies to developing countries and least developed countries.

Article 66 (2) of the TRIPS Agreement 1994 holds: "Developed country Members shall provide incentives to enterprises and institutions in their territories for the purpose of promoting and encouraging technology transfer to least-developed country Members in order to enable them to create a sound and viable technological base." In 2010, the European Union reported upon its implementation of its obligations with respect to technology transfer. The report stresses that the European Union has funded certain climate change-related projects – such as the development of drought-resistant maize:

"Climate researchers worldwide warn that Africa is more vulnerable than any other continent to the impacts of climate change. It is vital that agricultural production be adapted now to the more frequent and longer periods of drought that are expected. The International Maize and Wheat Improvement Center is already playing an important role in this respect by breeding new varieties of maize which are tolerant to drought. Around 50 such varieties are already being cultivated on more than a million hectares of land. BMZ is supporting the programme to the amount of €2.2 million.”

By and large with respect to intellectual property, though, the report is inadequate. There is indication of a systematic approach to the transfer of clean technologies. The report discusses research funding and aid – but does not necessarily address the sharing of intellectual property. On the whole, the response of the European Union to the implementation of Article 66 (2) of the TRIPS Agreement 1994 has been woefully inadequate.

VI. Conclusion

Given its historical responsibility towards the problem of global warming, the European Union needs to play a larger role in the diffusion of clean technologies to least developed countries, small island states, and countries particularly vulnerable to the impacts of climate change. While the European
Union has done some empirical research on patents and clean technologies, it has failed to make any significant adjustments to its policy settings in relation to patent law.

The joint study by the EPO, UNEP, and ICTSD suggested that there was scope for further empirical research into intellectual property and climate change:

“A survey capturing the views of entities in the developing world seeking access to [Clean Energy Technologies] is considered essential for a broader understanding of the issues at stake. Future work and refinements should also be done on landscapes which identify patented inventions that have been commercialised in the marketplace. This would give a better idea of which technologies are working and inducing technological change. Further, a study of patenting by publicly funded institutions and universities would be important in helping to understand the source of new technologies and the role of government funding in their development.”

For all its strengths, the report recognises some of the limitations of patent landscaping: “Even if the necessary resources and expertise are available, the data retrieved in such analyses may be of limited value as it reflects only the current snapshot of dynamically changing, transient landscapes.” It warns of the dangers of extrapolating from present data to future trends: “The prevailing trends of today would not necessarily reflect tomorrow’s realities, in particular in the clean energy technology field.” Moreover, the report does not engage with the various options put forward to address intellectual property and climate change canvassed in Copenhagen and Cancún. As a result, the report does not transcend the status quo; it has only a weak normative agenda.

This article has contended that there should be both procedural and substantive reforms to patent law in order to encourage the development and diffusion of clean technologies. Estelle Derclaye maintains that the European Union has an obligation to improve its performance in this regard:

“Europe, as one of the richest and most polluting regions in the world, where industrial revolution and its unfortunate bad effects started, should lead the way to find solutions to global warming. As we did before when we invented all of these new machines in the 18th and 19th centuries, we should again be first not only in inventing, but in inventing green, and thereby set an example to the rest of the world. It is not (only if at all) a question a pride though. It is a question of survival. The issue is intrinsically international as we are all dependent on the well-being of our eco-systems, and first of all the world’s temperature and climates. Of course, the greening of patent law is not a panacea, but it gives incentives (if not pressures) to invent mechanisms to cool the earth.”

This article contends that the European Union should play a more productive and accommodating role in international negotiations over intellectual property and climate change. The collective should provide leadership in the establishment of Climate Innovation Centres – facilitating collaborations between the public and private sectors, and technology transfer to countries in need for technologies to adapt to, and mitigate the effects of climate change. In particular, the European Union should help develop international rules on technology transfer, public sector licensing, patent pools, patentable subject matter, and compulsory licensing.

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72 Ibid., p. 65.
73 Ibid., p. 65.