Analysing the Role of Patent Pooling in the Diffusion of Green Technology: Perspectives from India and USA

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ABSTRACT

The concept of patent pooling has emerged as a vital tool in the areas of nanotechnology, biotechnology, pharmaceuticals, clean energy technologies, etc. They are of great use to developing countries like India to attain access to advanced and expensive technologies. However, anti-competitive attributes have been witnessed in developed countries like US. In the international patent regime, patent pooling has become a commercially viable concept. In the global patent thicket where access to advanced technology is a need for developing nations, patent pools by renowned innovators have become an effective market strategy.

In the contemporary scenario where climate change is one of the major global concerns the role of environment friendly technologies has become extremely crucial. When we talk about innovative technologies, we have to keep in mind the patent implications that ensue. Large firms have various green patents tagged to their name. Further, patent pooling can be defined as an agreement between two or more patent owners to licence one or more of their patents to one another or to third parties. Often, patent pools are connected to complex technologies that require complimentary patents in order to offer effective technical solutions.

The objective of this paper is to critically analyze the current scenario pertaining to patent pooling (in India and US) and its prospective role in diffusion of green technologies.

1. Introduction

Patent pool is a consortium of two or more patent-holders to promote a particular technology and share the market monopoly. Patent pool is an association of two or more companies to cross license their patents in respect to a particular technology. In other words this is an agreement between companies to license or permit one another or any third party to use the patents owned by them.

"The aggregation of intellectual property rights which are the subject of cross-licensing, whether they are transferred directly by patentee to licensee or through some medium, such as a joint venture, set up specifically to administer the patent pool."1

Patent pools can also be defined as an agreement between two or more patent owners to licence one or more of their patents to one another or to third parties. Often, patent pools are connected to complex technologies that require complimentary patents in order to offer effective technical solutions.2 Generally, mature technologies come under the purview of patent pools. Frequently, patent pools also represent the basis for industry standards that supply firms with the necessary technologies to develop compatible product and services.


Patent pools are basically originated as most of the technologies involve various patents and owners and it is impossible to adopt such technology without infringing any ones technology or without an effective means to obtain necessary license to use the various patents. Other reason for origination of patent pools was to avoid the competitors suing each other in order to keep out each other from the technology.

The concept of patent pooling has emerged as a vital tool in the areas of nanotechnology, biotechnology, pharmaceuticals, clean energy technologies, etc. They are of great use to developing countries like India to attain access to advanced and expensive technologies. However, anti-competitive attributes have been witnessed in developed countries like US. In the international patent regime, patent pooling has is a commercially viable concept.

2. Patent Pools and Anti-Trust: an Analysis

Patent pools are "one-stop shop" licensing mechanisms that facilitate access to complex technologies with high levels of patenting activity. However, given that patent pools entail collaborations between patentees antitrust issues can arise if the pro-competitive features of the pool are not clearly defined. The impact of patent pools on innovation will be positive (e.g. will alleviate the effects of patent thickets) if the pools are not anti-competitive and fulfill certain conditions. Policy measures addressing such issues are important in ensuring that patent pools are compatible with the objectives of the patent system (e.g. promoting access to innovative knowledge). 3

In the global patent thicket where access to advanced technology is a need for developing nations, patent pools by renowned innovators have become an effective market strategy.

This gives rise to the possibility of anti-competitive activities as the firms coming together to pool their patented technologies in order to disseminate them might engage in certain cartel-like behaviour. There have been several cases in various jurisdictions.

When there are overlapping patent rights, patent pooling may impede the development of underlying technology by the inventors as it would amount to infringement of patent. This poses a serious problem in the antitrust law.

If the patentees adopt a cooperative solution and cross-license or pool their patents, they effectuate a horizontal merger of their assets and can perpetuate monopoly pricing. With the strengthening of intellectual property law, patent rights are increasingly blocking the development of new technologies, and support is growing to loosen legal constraints on patent pools. 4

2.1. Antitrust and Cross-Licensing Arrangements

Cross-licensing is different from patent pooling in operation where firms holding overlapping patent rights mutually execute licenses to gain access to one another’s patented technology.

Patentees in the industry often execute royalty-free cross-licenses that creates open competition. Sometimes, patentees execute such licenses to shield a bogus patent from litigation and mutual royalty scheme or other restrictions are incorporated. 5

The US 1995 Antitrust Guidelines for the licensing of intellectual property give similar treatment to cross-licensing and patent pools.

This conflicting situation among pooling of patents, cross-licensing and fair competition calls for serious regulatory measures. It is extremely important for the policy makers to address the cartelization which is perpetrated by patent-holders in the garb of patent pooling.

3. Dichotomy Of Patent Pooling And Green Technologies

Like other advanced technologies, clean technologies or green technologies or environment friendly technologies have also become the need of the hour. Many developing countries are striving to gain access on such technologies as they don’t have sufficient capital to invest in the R&D. This poses a challenge to the

3 Patents Pools and Antitrust; available at https://www.innovationpolicyplatform.org/content/patent-pools-and-antitrust , (last accessed on 24-07-18)
5 See, e.g., United States v. Singer Mfg. Co., 374 U.S. 174, 178 n.2 (1963); United States v. E.I. du Pont de Nemours & Co., 351 U.S. 377, 420 (1956) (Warren, J., dissenting); see also Klein DVD Letter, supra note 66. In the diaper industry, Kimberly Clark and Procter & Gamble entered into a cross-licensing arrangement after seven years of litigation once it became clear that Procter & Gamble’s patents were at risk because of the litigation. Through the cross-licensing scheme, the firms were able to extract double royalties from other diaper manufacturers. See Tara Parker-Pope, Cleaning Up: Stopping Diaper Leaks Can Be Nasty Business, P&G Shows Its Rivals, WALL ST. J., Apr. 5, 1999, at AI.
international patent regime where only a few firms are in a few developed countries are developing effective green technologies.

As per the mandate of UNFCCC, developing countries should also play a vital role in research, development and commercialization of green technologies. It has set up a funding mechanism to achieve this goal which ultimately helps spread green technology and creates economic spill-over effects in developing nations in the form of new jobs, industrialization, service industry development, etc.

History of patent system has witnessed some high-level patent pools in various domains of technological advancement. Some of the prominent ones are:

(i) Pools associated with monopolies such as the Sewing Machine Combination (1856), National Harrow Company (1890), Motion Picture Patents Company (1908), Davenport Folding Beds (1916), etc.
(ii) Pools created in response to US Government policies such as Manufacturers Aircraft Association (1917) and the Radio Corporation of America (1919).
(iii) Recent pools such as MPEG-2 Patent Portfolio, MPEG-4 (1998), DVD 3C (1998), DVD 6C (1999), etc.

3.1. Patent Pledges

From environmental point of view, pledging of patents is a mechanism whereby innovators provide their patent royalty-free in the interest of climate.

In the context of environmental innovation, patent pledges are designed as cooperative ventures that allow green technology holders to pledge their patented technologies for widespread free use. They simplify the access procedures and facilitate the non-exclusive use of materials for non-commercial purposes. Adhesion to such collaborative model requires an intellectual property right and the pledge is usually subject to certain condition. The current types of green patent pledges that have been adopted in the past few years usually took the form of a community pledges. However, they do not address yet issues of product standardization or standards-development organizations due to the diversity of green technology innovation.

3.2. The Eco-Patent Commons

Perhaps the most glaring development in the field of green technology by way patent pledging is the Eco-Patent Commons. It's a consortium of renowned conglomerates which have pledged their patents in environment friendly technologies.

The creation of the not-for-profit initiative EcoPC is quite recent, in January 2008. It was established by IBM, Nokia, Sony, and Pitney Bowes in cooperation with the World Business Council for Sustainable Development (WBCSD) and it allows companies to pledge patents that protect green technologies. Companies as well as individuals can join the commons by pledging at least one patent.

“Pledge” in this context means making patents available for use by third parties free of charge. The pledge is a legally binding commitment that prevents EcoPC member companies from enforcing any pledged patent. The ownership right remains with the pledging party which distinguishes the EcoPC from conventional

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7 Patent pledges are usually divided into two principal categories: community pledges and unilateral pledges. Community pledges are made by members of a specific group, according to some predetermined form or formula, with respect to a defined technology or set of patents. Unlike community patent pledges, unilateral pledges are made by firms independently and do not follow a pre-determined format. Jorge L. Contreras (2015), Patent Pledges, ARIZ. ST. L.J. (forthcoming), Available at SSRN: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2525947 at 15.

8 Green technology is marked by its diversity but unified by its purpose to benefit the environment and mitigate climate change. It includes various categories and sub-categories: renewable-energy generation technologies such as solar, wind, hydro, wave and tidal, geothermal and biofuels; energy storage technologies such as fuel cells and advanced batteries; transportation technologies such as hybrid and electric vehicles; energy infrastructure technologies including smart grid, energy-efficient power systems, building materials and lighting technologies, bio-based plastics and other materials, water filtration and desalination systems; technologies that reduce pollution and emissions, and even carbon trading schemes and other green policies and investment mechanisms. See Eric L. Lane, Clean Tech Intellectual Property: Eco-Marks, Green Patents, and Green Innovation (np: Oxford University Press, 2011) at 1.


10 According to the “Ground Rules” http://www.wbcsd.org/web/projects/ecopatent/EcoPatentGroundRules.pdf, also “any worldwide counterparts” to the pledged patent are considered to be subject to the non-assertion pledge i.e. any equivalents to the pledged patent.
greenhouse gases. The need to address climate change has become a global imperative. The role of financial factors and R&D in patent pools will play a crucial role in the diffusion of green technologies.

3.3 Role of Financial Factors and R&D in Patent Pools

It is important to note that private players (innovators) in the market are much concerned about their market cap and intellectual property rights. Also, it is their prerogative to infuse financial resources in their R&D. It is not possible to pledge a patent i.e. provide a patented technology (eco-friendly) royalty-free all the time. Cross-licensing of patents is an initiative taken by innovative firms in order to increase the magnitude of diffusion of technology. However, their motive to earn profits through patent pools cannot be overlooked.

Unlike the pharmaceutical sector where there are no substitute products, in the renewable energy sector, most clean technologies have been running off-patent. Only a few specific improvements in green technologies have been patented and a great number of competing patents exist which increases the competition in the market and brings the prices down. It plays a vital role in enhancing the access to clean technologies for those who require it the most viz. developing countries that are not financially strong to afford such technologies and are facing heavy impact of climate change.

It is important to note that firms which are engaged in green innovation run the risk of low-returns. The capital that they infuse in the process of innovation and R&D doesn’t bring that much of an efficient return when they finally release their patent in the market by way of patent pools or otherwise because too many ventures are engaged in the same activity as the sustainable development movement has gained global acceleration.

Economic integration appears necessary to catalyze the international market for renewable energy and clean technologies. This is mainly because there is a clear nexus between patenting and access to green technology. A constructive tie between firms of developed and developing countries will bring about a considerable change in the international technology diffusion scenario. Joint ventures will promote the national capacity to research and produce such technologies without the need of a foreign licensor. In turn, this will increase the number of patent pools in the interest of the environment.

3.4 Policy Interventions and Future of Green Technologies

Climate change has emerged as a serious global issue and needs to be addressed in an emphatic manner. Emission of Greenhouse Gases (GHG) is resulting into high levels of global warming and needs to be combated through various economic and technological policy interventions.

Implementation of carbon tax on industries contributing to carbon emission has been strongly recommended. Controlled economic activity to stabilize GHG emission is also suggested as a solution by some scholars. However, among these recommendations, advanced diffusion of environment friendly technologies and promotion of green innovation come as the most desirable.

In developing countries like India, replacement of existing technology by adopting green technologies is a quite a difficult process. However, efforts like free technology transfer and licenses have been utilized to diffuse green technologies.

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11 Ibid.
12 Gans (2010) uses an endogenous growth model to show that under some conditions even policies targeted towards energy efficiency or carbon reductions can reduce overall output enough to discourage environmentally friendly innovation.
In the current scenario, where the competition among innovators in the global market is intense, patent pools should be used an instrument to incentivize private players to engage in green innovation and support diffusion of green technologies for reasonable commercial benefits.

4. Patent Pooling And Green Technology: Trend In The United States

With rapidly growing economy and innovation, patent pools in the US are also increasing. With the advent of new technology, pooling of patents in various domains of technology has been witnessed across the IPR landscape of the US.

Patent pools are an efficient solution to prevent the creation of patent thickets resulting due to overlapping of patents in a particular field. After the proactive approach by the World Health Organization (WHO) pertaining to patent pools, they have been utilized as policy tools in the field of pharmaceuticals and medication. Since this initiative, patent pools have been formed around the area of diagnostics such as HIV-AIDS, breast cancer, etc.\footnote{Lampe, Ryan and Moser, Petra (2016), \textit{Patent Pools, Competition and Innovation—Evidence From 20 US Industries Under The New Deal}; The Journal of Law, Economics and Organization, Volume 32, Issue 1, pp. 22.}

A perusal of the history of patent pools in the US reveals that a lot of technology has been integrated by many firms via this tool.\footnote{Rosenthal, Elizabeth, U.S. IS FALLING BEHIND IN THE BUSINESS OF ‘GREEN’, available at https://www.nytimes.com/2011/06/09/business/09subsidies.html (last accessed on 03-09-2018)} However, evidence relating to patent pooling in the field of environment friendly technologies isn’t significant.

4.1. Green Innovation in the US

United States has always been a global innovator in emerging fields. However, the governments under Obama and Trump have not been able to produce any satisfactory results in the area of green innovation and green technology. Various researches have attempted to study the reason behind the same. President Obama, during his reign, switched to clean energy, and some States, like California, took aggressive measures. But the overall initiative by the various governments remained generally insufficient. Leading American companies hesitated to engage in fields like wind-power, energy-efficient appliances or even mass-market insulation, because upfront costs are large and profits uncertain.\footnote{Breitzman, Anthony and Thomas, Patrick (2011), \textit{Analysis of Small Business Innovation in Green Technologies}, available at https://www.sba.gov/content/analysis-small-business-innovation-green-technologies (last accessed on 03-09-2018)}

4.2. Green Patenting in the US Firms: Current Trends

An extensive research\footnote{http://www.medicinespatentpool.org.} on green patenting and development of green technologies by the US firms (small and large) has revealed the following notable results:

(i) Organizations based in the United States were responsible for 43 percent of U.S. patents in green technologies in 2005-2009.\footnote{Ibid.}

(ii) Green patents form much lower percentage of these large firms’ portfolios than the small firms’ portfolios (1.5 percent on average for large firms, versus 20 percent for small firms).\footnote{Ibid.} Several small firms have patent portfolios that are almost entirely green, which is not the case for any of the large firms. It appears that many small firms are building their business around green technologies, while large firms are largely enhancing product lines with green technologies.

(iii) Small firms have contributed a lot when comes to patenting in the areas of fuel cells, solar energy and batteries. Cumulatively, in green technologies, small firms of US account for 14 per cent of the patents.\footnote{Ibid.}

(iv) In green patenting, small firms have exhibited impressive citation metrics. It implies that small firms are engaged in inventing important green technologies and they tend to file patents only on significant inventions.

\footnote{Ibid.}
The study reveals that in the US small firms are engaged in innovating green technologies as a part of their core business as compared to large firms.

3.3. Prolific Inventors and Green Entrepreneurs in the US

Research has shown that individuals from small firms have had a fairly strong possibility of giving rise to new wave of entrepreneurialism that is focused on the development and marketing of green technologies and green products.

A study of patent trends from 2005-2009 revealed that there were 32 individuals who invented five or more green patents with a citation index of 1.0 or higher. Out of these inventors, 35 percent are now C-level (CEO, CTO, Chief Scientist) executives at small green firms and nearly 30 percent are cofounders of green firms.21

Approximately 80 percent of the prolific green inventors had previously worked at large companies or large government or university labs. More than 30 percent had five or more patents for previous employers in non-green technologies. This illustrates the difficulty in training a person at a university to be a green entrepreneur.

The factors that drive these individuals towards green technologies are still unclear. However, the findings suggest that it is important to promote a culture of green training and motivating young and dynamic minds to move towards green innovation.

4.3 Patent Pooling: Contemporary Scenario

There isn’t any strong evidence to show that patent pools have been entered into by firms in the field of green technology. According to the study, firms, both small and large, have been engaged in innovation of technologies which are green and non-green. However, patent pooling and cross-licensing has not been a much explored avenue in the area of green technologies as it has been for other technologies such as DVD, aircrafts, radio technology, etc.

It is crucial for the US policy makers to promote pooling of patents by leading innovation firms in the domain of eco-friendly technologies. Patent regime and green innovation should work in a synergized manner to produce optimum results. US, being the leader in innovation, should strive for joint efforts in order to enhance global diffusion of green technology through patent pools.

A research22 has found positive correlation between competition and innovation particularly among patent pools in the US. However, majority of the patent pools were found in the area of biotechnology, nanotechnology, telecom, pharmaceuticals, etc. There is still a long way to go for the US to become a leading player in the diffusion of green technology through pooling and cross-licensing of patents.

Another research finds an inverse relation between patent pools and market competition in the US market. It states that pooling of patents may mitigate the competition and consequently discourage innovation as it concentrates the creation and cross-licensing of technologies at one place.

A different research reveals that the very idea of creation of successful patent pools provides incentives to the innovators to apply for more patents.23 Patent pools, apart from promoting knowledge-sharing among the inventors, give a business edge to the licensing parties in the market. It also reveals that an effective licensing mechanism in a given jurisdiction provides a boost to the innovators to come up with more advanced innovation. This would certainly help those innovators who are sincerely engaged in eco-innovation and want their contribution to be noticed by the society and the government.

5. Patent Pooling And Green Technology In India

With the rapid technological advancement and industrialization, patenting in India has also taken a massive leap. Though the Indian patent regime is known to be rigid in its operation, the landscape of patenting in India has opened a new gateway for innovators at both national and global platforms.

Patent pooling is an emerging concept in the patenting domain of India. Big innovators have captured the Indian with great efforts owing to the stringent patent regime in India and they are often reluctant to pool their technology with another competitor in the Indian market. However, the only area where patent pooling is shown to have a noticeable impact in India is cheap and affordable health care facilities.

Recently, one Indian generic drug manufacture Aurobindo Pharma Limited and MedChem, joined the Medicines Patent Pool (MPP) for manufacturing of several anti-retroviral medicines. This enabled Aurobindo

21 Ibid.
22 Supra Note 15.
Pharma to have access the patented drugs of that Gilead which was recently introduced into the pool. Now, Aurobindo can manufacture and sell tenofovir in larger number of countries without paying any royalty.\(^{24}\)

5.1. Green Patenting and Innovation in India

According to UNEP and the OECD green indicators\(^ {25}\), India is one of the fastest growing green economies in the world.

Many technology creators in India are working towards green innovation and it is important that they receive the support of policy makers so as to get due return on their investment. Policy makers should also ensure that such technologies are easily accessed by the consumers in order to build a green ecosystem.

It is noteworthy that India being a country at a post-development stage has taken active measures to access green technology. In the past few years, Indian foreign policy has targeted to obtain licence to use clean technologies that are innovated in developed nations.

India has witnessed a tremendous growth in R&D activities in various fields such as renewable sources of energy, industry, agriculture, biotechnology, etc. The prime focus of these activities has been to enhance eco-friendly innovation.\(^ {26}\) There are a number of government and private organizations which are involved in greening of various prominent sectors of growth. The number of green patent applications in the last decade has increased exponentially. Thus, it has also been opined that like many countries (e.g. Brazil, Korea, US, etc.), India should also fast-track patent applications pertaining to green technology.

Also, in the light of the fact that the Indian Patents Act, 1970 is silent as to the operation and execution of patent pools, there is a need for Indian policy-makers to fine tune the patent system to make room for patent pooling (both national and cross-national) and diffusion of environment friendly technologies.


As far as the Patents Act is concerned, there is no provision that facilitates the creation of patent pools or cross-licensing of patents.

However, with the formulation of a policy to that effect, innovators in India would be able to pool their patents and share market monopoly. Hence, government interference in this regard is required.

Section 102 of the Patents Act provides for acquisition of patents by the Central Government in public interest. However, this provision cannot be interpreted to mean that patent pools can be created under this section by the interference of the government because that would mean the loss of monopoly of patent-holders.

From the point of view of antitrust, it is possible that some patent pools work in adverse manner in the market and thus, there is strict regulation of such agreements under the Competition Act, 2002. It can be perceived as a barrier in the way of creation of patent pools.

Section 3(3) of the Competition Act, 2002 deals with those horizontal agreements between associations or enterprises which: (a) directly or indirectly determine the sale prices; (b) limit or control production, supply,


\(^ {26}\) Anand, Manish, Dhawan, Ninika and Kedia, Shailly; \textit{SCIENCE, TECHNOLOGY AND INNOVATION FOR LOW CARBON DEVELOPMENT IN INDIA}, Discussion Paper, Shakti Sustainable Energy Foundation, TERI.

\(^ {27}\) \textit{102. Acquisition of inventions and patents by the Central Government}. -

(1) The Central Government may, if satisfied that it is necessary that an invention which is the subject of an application for a patent or a patent should be acquired from the applicant or the patentee for a public purpose, publish a notification to that effect in the Official Gazette, and thereupon the invention or patent and all rights in respect of the invention or patent shall, by force of this section, stand transferred to and be vested in the Central Government.

(2) Notice of the acquisition shall be given to the applicant, and, where a patent has been granted, to the patentee and other persons, if any, appearing in the register as having an interest in the patent.

(3) The Central Government shall pay to the applicant, or, as the case may be, the patentee and other persons appearing on the register as having an interest in the patent such compensation as may be agreed upon between the Central Government and the applicant, or the patentee and other persons; or, as may, in default of agreement, be determined by the High Court on a reference under section 103 to be just having regard to the expenditure incurred in connection with the invention and, in the case of a patent, the term thereof, the period during which and the manner in which it has already been worked (including the profits made during such period by the patentee or by his licensee whether exclusive or otherwise) and other relevant factors.
technical development, investment or provision of services; (c) share the market, source of production or provision of sources by way of allocation of geographical area of the market, type of goods or services, number of market customers or in any other similar way; (d) directly or indirectly result in bid rigging or collusive bidding. It provides that any such agreement shall be presumed to have appreciable adverse effect on the market.

The Section, however, in its proviso, excludes agreements enters into by way of joint ventures if such agreement increases efficiency in production, supply, distribution, storage, acquisition or control of goods or provision of services.

Section 3(4), 29 on the other hand, deals with vertical agreements, and provides that any agreement amongst enterprises or persons at different stages or levels of the production chain in various markets, in respect of production, supply, distribution, price or trade in goods or provision of services, including—(a) tie-in arrangements; (b) exclusive supply agreement; (c) exclusive distribution agreement; (d) refusal to deal; (e) resale price maintenance; shall be deemed to have an appreciable adverse effect on competition in India.

The confluence of combinations pertaining to IPR and fair competition has been dealt with in Section 3(5) 30 of the Competition Act, 2002. It provides that any licence granted with reasonable conditions to exploit the monopoly attached to an IPR would not constitute an anti-competitive agreement.

28. 3. Anti-competitive agreements.—

(3) Any agreement entered into between enterprises or associations of enterprises or persons or associations of persons or between any person and enterprise or practice carried on, or decision taken by, any association of enterprises or association of persons, including cartels, engaged in identical or similar trade of goods or provision of services, which—
(a) directly or indirectly determines purchase or sale prices;
(b) limits or controls production, supply, markets, technical development, investment or provision of services;
(c) shares the market or source of production or provision of services by way of allocation of geographical area of market, or type of goods or services, or number of customers in the market or any other similar way;
(d) directly or indirectly results in bid rigging or collusive bidding, shall be presumed to have an appreciable adverse effect on competition: Provided that nothing contained in this sub-section shall apply to any agreement entered into by way of joint ventures if such agreement increases efficiency in production, supply, distribution, storage, acquisition or control of goods or provision of services. Explanation.—For the purposes of this sub-section, "bid rigging" means any agreement, between enterprises or persons referred to in sub-section (3) engaged in identical or similar production or trading of goods or provision of services, which has the effect of eliminating or reducing competition for bids or adversely affecting or manipulating the process for bidding.

29. (4) Any agreement amongst enterprises or persons at different stages or levels of the production chain in different markets, in respect of production, supply, distribution, storage, sale or price of, or trade in goods or provision of services, including—
(a) tie-in arrangement;
(b) exclusive supply agreement;
(c) exclusive distribution agreement;
(d) refusal to deal;
(e) resale price maintenance, shall be an agreement in contravention of sub-section (1) if such agreement causes or is likely to cause an appreciable adverse effect on competition in India. Explanation.—For the purposes of this sub-section,—
(a) “tie-in arrangements” includes any agreement requiring a purchaser of goods, as a condition of such purchase, to purchase some other goods;
(b) “exclusive supply agreement” includes any agreement restricting in any manner the purchaser in the course of his trade from acquiring or otherwise dealing in any goods other than those of the seller or any other person;
(c) “exclusive distribution agreement” includes any agreement to limit, restrict or withhold the output or supply of any goods or allocate any area or market for the disposal or sale of the goods;
(d) “refusal to deal” includes any agreement which restricts, or is likely to restrict, by any method the persons or classes of persons to whom goods are sold or from whom goods are bought;
(e) “resale price maintenance” includes any agreement to sell goods on condition that the prices to be charged on the resale by the purchaser shall be the prices stipulated by the seller unless it is clearly stated that prices lower than those prices may be charged.

30. (5) Nothing contained in this section shall restrict—
(i) the right of any person to restrain any infringement of, or to impose reasonable conditions, as may be necessary for protecting any of his rights which have been or may be conferred upon him under:
(a) the Copyright Act, 1957 (14 of 1957);
(b) the Patents Act, 1970 (39 of 1970);
(c) the Trade and Merchandise Marks Act, 1958 (43 of 1958) or the Trade Marks Act, 1999 (47 of 1999);
(d) the Geographical Indications of Goods (Registration and Protection) Act, 1999 (48 of 1999);
(e) the Designs Act, 2000 (16 of 2000);
(f) the Semi-conductor Integrated Circuits Layout-Design Act, 2000 (37 of 2000);
The term ‘reasonable conditions’ may be interpreted to mean that if any licensing arrangement has the effect of adversely affecting the prices, quality or variety of goods and services then the arrangement would fall in the category of anti-competitive agreement.

The Competition Commission of India (CCI) has regarded patent pooling as a restrictive practice which is exclusive of the bundle of rights forming an IPR as recognized under Section 3(5). Further, CCI has also identified some situations where patent pools could be deemed as anti-competitive. For instance, when two firms pool their patents and agree not to grant licence to third parties while fixing prices as well, the arrangement shall be considered as anti-competitive.

In an innovation market, if certain technologies are locked in limited hands and new entrants are strategically isolated from the market, it becomes difficult for third parties to compete. Therefore, in the light of the guidelines provided by the CCI, especially in absence of judicial pronouncements on the matter, it is imperative for the innovators who are engaged in patent pooling practices to ensure that their agreements do not entail antitrust litigation.

The role of judiciary in interpreting the law pertaining to patenting and competition cannot be ignored. The judges have to take up the responsibility to clear ambiguities in the matter so that the practice of patent pools can be used in an ethical and economically and socially beneficial manner.

6. Conclusion

A study of the recent trends in the field of patent pooling, cross-licensing and diffusion of green technologies reveals that innovation firms around the globe have become aware of the fact that their investment R&D in developing their technologies must be aligned with the globally recognized environmental goals. In other words, innovators cannot afford to relentlessly apply for technologies which are harmful to the global climate.

It is also made quite clear that commercial as well as cross-national patent pools will be created only when the recipient market has a robust patent protection regime. Thus, India, in order to promote diffusion of green technology via patent pool mechanism, has to enhance support for green development through liberalized monetary policies. The patent holders will naturally be inclined towards the market which gives them an edge over the competitors while raising their goodwill as they contribute new climate-friendly innovations in countries where they are required.

Considering the interface between intellectual property and competition has covered the global commercial market. Thus, the policy-makers and innovators across the globe must work in synergy to make efficient use of the patent thicket that is created in the competitive market. Patent pools must be diligently regulated to yield pro-competitive impact.

The focus of policy-makers around the global has always been on creation of patent pools in the sector of pharmaceuticals as epidemics, terminal diseases, deadly outbreaks, etc. have been serious issues especially in under-developed countries. Pharmaceutical giants have exercised great commercial leverage by offering their invented products to the governments. However, it is also imperative for the major innovative companies around the globe to come together to use the fairly new patent pooling system for developing and disseminating climate-friendly technologies like they have been doing in the sectors of pharmaceuticals, biotechnology, nanotechnology, radiology, etc.

In order to attract creation of patent pools in the area of green technologies, both developing and developed economies have to take proactive steps. Private players engaged in development of environment friendly technologies need incentives to pool and further licence their technologies. Thus, efficient competition and IP regimes properly balanced with environmental safeguards should be the vision plan for the coming decades.

(ii) the right of any person to export goods from India to the extent to which the agreement relates exclusively to the production, supply, distribution or control of goods or provision of services for such export.