VI. Balancing IP and Competition

Competition law can facilitate innovation and technology transfer by promoting 'static' efficiency through *e.g.*, competition in price and, more importantly, by encouraging 'dynamic' efficiency for the future.[282] Like patent policy, competition law can contribute to green technology development and diffusion, but they need to be balanced with each other.[283]

Given the infancy of the technical field, competition law has not yet played a dominant role in green technology.[284] So far, the idea of limiting the exclusivity conferred by IP rights is driven mainly by the special nature of green technology as public goods, rather than by any abusive behaviour of market participants. However, this is likely to change as the market develops to maturity. In fact, balancing issues will probably soon play out in industrialized countries, where the green IP and competition stakes are rising rapidly.

The first part of Chapter VI mentions the case of a US wind turbine patent at the heart of a prolonged legal battle for access to the US market by some foreign wind energy companies. Based in part on observed parallels with the semiconductor industry, likely applicable developments are identified, such as patent thicket, holdup and business method patents. In relation to the broader issue of international trade, the rise of China in this area, too, is flagged.

The second part of Chapter VI discusses the potential of standards or patent pools as balancing means. IP policies in this area seem to have improved from the past experience of abuse cases; yet, certain issues remain.

A. Patent Litigation and Developments in Law and Practices

1. GE's '039 Patent

U.S. Patent No. 5,083,039 was issued in 1992 (the '039 patent). Its 138 patent claims basically concern a wind turbine mechanism operating at variable speed under different wind conditions to convert wind energy into AC electrical pow-

282 *E.g.*, Josef Drexl, Seminar at the Munich Intellectual Property Law Center: Intellectual Property and Competition Law (Summer 2010) (on file with author).
283 *Supra* note 265.
284 Craig Waldman and Margaret Ward, *Antitrust Issues in Clean Technology*, The Antitrust Source (Apr. 2010), *available at* http://www.antitrustsource.com.

er.[285] At that time, electricity companies in the United States had to deliver power to their customers at a standard fixed frequency (60Hz), requiring the frequency of the power generated by a wind turbine to be constantly adjusted to this standard.[286]

The then-owner of the patent was U.S. Windpower, a California-based company specialized in this area,[287] which in 1993 changed its name to Kenentech.[288] Kenentech initiated a Section 337 proceeding before the US International Trade Commission (ITC) against Enercon, a German wind energy company, for patent infringement to prevent Enercon from entering the US market. Soon after Kenentech filed for bankruptcy in May 1996, the ITC in August 1996 found infringement by Enercon and issued an order excluding the latter's variable wind turbines from the US market until expiry of the '039 patent in 2011.[289] While Enercon appealed before the Federal Circuit, the '039 patent and Kenentech's other IP rights were acquired by Zond Energy Systems, which in 1997 became a subsidiary of Enron Wind.[290] In 1998, the Federal Circuit affirmed the ITC's decision. It appears that the '039 patent was reexamined between 1998 and 1999 and that the patentability of claims was confirmed without amendment. As part of bankruptcy proceedings, the '039 patent and other Enron Wind assets in 2002 ended up in the hands of GE, the largest in wind power in the United States.

A second set of proceedings commenced in 2008 when GE claimed before the ITC against Mitsubishi, a Japanese wind turbine maker, alleging infringement of patents that included the '039 patent.[291] The next year, GE sued Mitsubishi before the Southern District of Texas for infringement of the same patents.[292] Although the ITC's initial finding was favorable to GE, eventually, in January 2010, the ITC found no infringement.[293] In February 2010, GE also pursued Mitsubishi in the Northern District of Texas, requesting an injunction preventing it from using its allegedly infringing technology.[294]

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285 U.S. Patent No. 5,083,039 (issued Jan. 21, 1992).
286 Enercon GmbH v. ITC, 151 F3d 1365 (Fed. Cir. 1998).
287 *E.g.*, Paul Gipe, Wind Energy Comes of Age 3 (John Wiley & Sons, May 1995).
288 *Id.*
289 Pursuant to 35 U.S.C. § 154(a), for patent applications that were pending on June 8, 1995 and for patents that were still in force on June 8, 1995, the applicable patent term is the longer of (i) 17 years from the patent grant, or (ii) 20 years from the filing date of the earliest US or international (PCT) application to which priority is claimed.
290 *Enron Acquires Zond, A Major Wind-Power Company*, N.Y. Times, Jan. 7, 1997, *at* http://www.nytimes.com/1997/01/07/business/enron-acquires-zond-a-major-wind-power-company.html.
291 In the Matter of Certain Variable Speed Wind Turbines and Components Thereof, USITC Inv. No. 337-TA-641 (Mar. 2008), at 2009 ITC LEXIS 510.
292 General Electric Company v. Mitsubishi Heavy Industries, Ltd. et al., No. 2:2009 CV 00229 (S.D. Tex. filed Sept. 3, 2009).
293 *Id*.
294 General Electric Company v. Mitsubishi Heavy Industries, Ltd. et al., No. 3: 2010 CV 00276-F (N.D. Tex. filed Feb. 11, 2010).

Mitsubishi in turn in May 2010 filed a complaint with the Western District of Arkansas accusing GE of "violation of the antitrust laws" in the market of variable speed wind turbines. Mitsubishi argued that the '039 patent and other patents were obtained through fraud because the patentee had failed to disclose material prior art to the USPTO. Meanwhile, Mitsubishi filed a further patent infringement suit against GE with the Middle District of Florida.[295]

2. Patent Law and Practices

The GE cases exemplify what some consider to be "the beginning of an arms race" for IP in the clean energy industry.[296] The wind and other clean energy sectors have been compared to the semiconductor industry in that their products assemble numerous components from different manufacturers.[297] The GE litigation, which demonstrated "the substantial power of a quality patent,"[298] is considered to have given rise to a significant increase in wind energy patent filing. It is worth noting that certain types of practices developed for example with regard to semiconductor patents are often viewed as eroding the patent system: patent thickets, holdup, non-practicing entities, and damages considered excessive.

It is not yet clear whether and how such recent developments in patents will affect this emerging industry. As a general example, will an injunction still be a viable option after *eBay v. MercExchange*? More specific to the industry, will non-practicing entities build green patent portfolios? Little has emerged about intentions of non-practicing entities in this area of technology, although it is known, for example, that Intellectual Ventures operates a subsidiary concerned with the development of nuclear energy.[299] Policies of national patent offices favoring the patenting of green technology might also render this sector susceptible to the aforementioned more controversial patent practices.

In another development, business method patents are becoming more important in this sector, for instance, in relation to emissions trading. As noted, the Chicago Climate Change has the largest number of patents in carbon trading in the United States.[300] By way of illustration, one of these covers a computer-implemented method of "facilitating trade of emission allowances and offsets among participants, which includes establishing an emission reduction schedule for certain par-

295 Mitsubishi Heavy Industries, Ltd. v. General Electric Co. No. 6:10 CV 00812-JA-KRS (M.D. Florida. filed May 20, 2010).
296 *Id.*
297 *Id.*
298 *E.g.*, James R. Klaiber and Michael T. Nguyen, Panel Discussion at the 2010 AIPLA Annual Meeting (Oct. 21-23, 2010), Predicting the Future of Patent Enforcement in the Renewable Energy Field (unpublished manuscript), *available at* http://www.aipla.org.
299 TerraPower, http://www.terrapower.com.
300 *E.g.*, Eggertson, *supra* note 144; *also generally* Daignault, *supra* note 135.