

tually, in 2005, just prior to merging with Chevron, Unocal agreed to release the relevant patents.³¹⁵

In cases of “abusive” standards capture – intentional or willful non-disclosure of IP by a standard-setting participant who later refuses to grant a license at reasonable and non-discriminatory terms³¹⁶ – remedies may be available under patent law and on other legal bases. For example, in addition to patent misuse, US courts have applied antitrust,³¹⁷ deception,³¹⁸ equitable estoppel, fraud,³¹⁹ and implied license principles.³²⁰ Courts also have highlighted the importance of clear IP directions by Standard-Setting Organizations (SSOs), whose policy role is further discussed below.

3. Green Technology Standards and IP Policies

A 2002 study on IP policies of SSOs³²¹ found that while most (36 out of 47) of the selected SSOs in the field of telecommunications and computer-networks operated policies governing IP ownership, their disclosure requirements varied significantly.³²² Many SSOs required the disclosure of issued patents, but not of pending applications.³²³ Furthermore, some SSOs allowed members to own IP rights in a standard, subject to conditions on use such as royalty-free licensing.³²⁴ Other SSOs prohibited or at least discouraged ownership.³²⁵ Only a limited number of SSOs required a member to search its files or broader literature to identify relevant IP rights.³²⁶ While “reasonable and nondiscriminatory licensing” was the majority rule for royalty-bearing licensing of essential patents, few SSOs explained what those terms meant or how licensing disputes would be resolved.³²⁷

315 Press Release, FTC, Dual Consent Orders Resolve Competitive Concerns about Chevron’s \$18 Billion Purchase of Unocal, FTC’s 2003 Complaint against Unocal (June 10, 2005).

316 Mueller, *supra* note 312.

317 *E.g.*, United States v. Dell Corp. 1998 FTC LEXIS 30 (1998); *and* Rambus Inc. v. FTC No. 07-1086 (D.C. Cir. 2008).

318 *E.g.*, 15 U.S.C. § 45(1) (Section 5(1) of the Federal Trade Commission Act).

319 *E.g.*, Rambus Inc. v. Infineon AG, 318 F3d 1081 (Fed. Cir. 2003).

320 Mueller, *supra* note 312.

321 See Mark A. Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 CAL. L. REV. 1889, 1904-1907 (2002).

322 *Id.*

323 *Id.*

324 *Id.*

325 *Id.*

326 *Id.*

327 *Id.*

The dispersed nature of clean technology complicates IP policy review of SSOs with regard to green standards as a whole. Figure 2 makes only a partial attempt by considering selected SSOs in relation to photovoltaic and wind energy standards.³²⁸

328 Selection of SSOs is based on the following sources: Liang Ji, Underwriters Laboratories Inc (UL), *Introduction to PV Standard Organizations* (2009); IHS Consulting, *Selected Wind Energy Standards & Documents* (2008), at <http://engineers.ihs.com/news/standards/wind-energy.htm>; Photovoltaic Standards (2011), at <http://www.pvresources.com/en/standards.php>.

Figure 2. IP Policies of Selected Green Technology Standard-Setting Organizations

(Note: Questions originate from Prof. Lemley in his article, *Intellectual Property Rights and Standard-Setting Organizations*, 90 *CAL. L. REV.* 1889, 1973–1975 (2002) and are here applied by Hee-Eun Kim to SSOs with green technology standards.)

SSOs	Committee on PV or wind energy	Patent Policy	Disclosure?	Search?	Patent declaration/letter of assurance publicly available on SSO website	Licensing Provisions
ANSI ³²⁹		ANSI Patent Policy 3.1 as revised in 2008 ³³⁰	Y (not only patent holder but also any participant; pending applications)	ANSI is not responsible for identifying patents for which a license may be required	N	Under reasonable terms and conditions that are demonstrably free of any unfair discrimination; ANSI's Board of Standard Review will evaluate whether the terms and conditions are "reasonable" and/or "free of any unfair discrimination"
ASTM ³³¹	E44 for solar, geothermal and other alternative energy sources	Section 15 of the Regulations Governing ASTM Technical Committees ³³²	Y (but the committee shall make an initial determination that a patented item is required for inclusion in a draft standard; make efforts to consider alternatives)	ASTM is not responsible for identifying patents for which a license may be required	N	Same as ANSI
AWEA ³³³	AWEA Small Wind Turbine Performance and Safety Standard ³³⁴	N/A	N/A	N/A	N/A	N/A
CEN/CENELEC ³³⁵	N/A	CEN/CENELEC Guide 8 "Guidelines for implementation of the common IPR policy" ³³⁶ (edited in January 2010)	Y, including pending applications either their own or of others	N/A	Y	Royalty-free or fair, reasonable and non-discriminatory terms and conditions

329 American National Standards Institute (ANSI).

330 ANSI Patent Policy, at <http://publicaa.ansi.org/sites/apdl/ANSI%20Patent%20Policy.doc>.

331 American Society for Testing and Materials (ASTM).

SSOs	Committee on PV or wind energy	Patent Policy	Disclosure?	Search?	Patent declaration/letter of assurance publicly available on SSO website	Licensing Provisions
IEC ³³⁷	TC82 for PV / TC88 for wind turbines	ITU-T/ITU-R/ISO/IEC Common Patent Policy ³³⁸ (adopted in 2007)	Y, including pending applications	N/A	Y	Royalty-free or fair, reasonable and non-discriminatory terms and conditions
IEEE ³³⁹	SCC21 on fuel cells, PVs, dispersed generation, energy storage	IEEE-SA Standards Boards Bylaws ³⁴⁰ (as approved in December 2010)	Y, any potential Patent Claims personally aware, anyone's	No duty to perform a patent search	N	No enforcement or under reasonable rates, with reasonable terms and conditions that are demonstrably free of any unfair discrimination
ISO	TC 180 on solar energy; TC 255 on biogas; TC 85 on nuclear energy	ITU-T/ITU-R/ISO/IEC Common Patent Policy ³⁴¹ (adopted in 2007)	Y, including pending applications	N/A	Y	Royalty-free or fair, reasonable and non-discriminatory terms and conditions
SAC ³⁴²	TC90 on PV (corresponding to IEC's TC82)	Draft Regulations on the Administration of Formulating and Revising National Standards including Patents ³⁴³ (as of November 2009)	Y (patent proprietors who are either involved in developing a standard or aware that a standard under development relates to a patent they hold are obliged to disclose their patents; failure to do so results in a royalty-free license; intentional concealment will cause unspecified liability)		N/A	Either a royalty-free license or a license that bears a royalty that is 'significantly lower than the normal licensing fee'; silence as to what are the factors determining 'normal licensing fee'

332 ASTM, Regulations Governing ASTM Technical Committees (issued Oct. 2010), at <http://www.astm.org/COMMIT/Reg.pdf>.

333 American Wind Energy Association (AWEA).

SSOs	Committee on PV or wind energy	Patent Policy	Disclosure?	Search?	Patent declaration/ letter of assurance publicly available on SSO website	Licensing Provisions
SEMI ³⁴⁴	SEMI PV1-0709, SEMI PV2-0708 focusing on materials, wafers, cells and equipment (rather than on modules and systems)	Section 15 of SEMI Standards Regulations ³⁴⁵ (as of March 2, 2010)	Y (any participants, any non-confidential patented technology or copyrighted information, including issued patents and published patent applications)	N	N/A	Reasonable and non-discriminatory terms and conditions
UL	UL1703, UL1741, UL8703 on PVs	Section 8 of UL's Standards Development and Maintenance Program ³⁴⁶ (issued in October 2007)	Same as ANSI	UL is not responsible for identifying patents for which a license may be required	N	Same as ANSI

334 AWEA, Small Wind Turbine Performance and Safety Standard (AWEA Standard 9.1 – 2009) (2009), *available at* <http://www.awea.org>.

335 European Committee for Electrotechnical Standardization (CENELEC).

Overall, the above data suggest some progress in governance on IP in standards on the part of these particular SSOs. Most have IP policies in place requiring the disclosure of issued patents, pending applications and other non-confidential information. For this purpose, standard-setting participants are provided with procedures for submitting a patent declaration or a letter of assurance. Some SSOs make these submissions available on their website, publicly showing which, if any, patents have been declared with respect to a particular standard.³⁴⁷

Under these SSOs' policies, licensing is usually available under reasonable and non-discriminatory terms. The precise meaning of these conditions will take account of the circumstances of each case and involves fine-tuning the balance between IP rights and access. Comparable in this respect to certain other areas, in green technology, standardization can facilitate the creation of physical networks and help more affordable technology to reach emerging economies. On the other hand, the infancy of the green technology market may cause reluctance on the part of companies to commit to certain licensing terms and conditions in early stages of commercialization.

Finally, affecting participants regardless of their provenance, the above-mentioned Chinese SSO's Regulations on mandatory licensing in case of non-disclosure and on the level of licensing fees appear to deviate to an extent from more regular international practice.

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- 336 CEN/CENELEC, CEN/CENELEC Guide 8: CEN-CENELEC Guidelines for Implementation of the Common IPR Policy (Patents and Other Statutory Intellectual Property Rights Based on Inventions), Jan. 2010, at http://ftp.cenorm.be/BOSS/Reference/Guides/CEN_CLC/CEN_CLC_8.pdf.
- 337 International Electrotechnical Council (IEC).
- 338 ITU-T, ITU-R, ISO, IEC, Guidelines for Implementation of the Common Patent Policy for ITU-T/ ITU-R/ ISO/ IEC, available at <http://www.iec.ch/tctools/patent-guidelines.htm>.
- 339 Institute of Electrical and Electronics Engineers (IEEE).
- 340 IEEE, IEEE-SA Standards Boards Bylaws, at http://standards.ieee.org/develop/policies/bylaws/sb_bylaws.pdf.
- 341 ITU-T *et al.*, *supra* note 338.
- 342 Standardization Administration of the People's Republic of China (SAC).
<http://www.sac.gov.cn/templet/default/ShowArticle.jsp?id=5298>.
- 344 Semiconductor Equipment and Materials International (SEMI).
- 345 Governing SEMI Standards Committees, Regulations (issued Mar. 2, 2010), at http://www.semi.org/cms/groups/public/documents/web_content/p041894.pdf.
- 346 UL, The Standard for Safety UL's Standards Development and Maintenance Program (issued Oct. 15, 2007).
- 347 *E.g.*, IEC, List of IEC Patent Declarations Received by IEC, at <http://www.patents.iec.ch> (last visited Jan. 17, 2011).

