Access to Sunlight: Resolving Legal Issues to Encourage the Use of Solar Energy

Tamara C. Sampson and R. Alta Charo

TABLE OF CONTENTS

I. INTRODUCTION

To encourage the use of solar energy, equipment must be installed and access to sunlight must be assured, regardless of the solar energy technology relied on. Access to sunlight is a prerequisite whether decentralized or large centralized systems of energy collection are provided. Equipment installation is particu-

larly cumbersome in decentralized settings where existing building stock must be adopted. It is clear that solar energy cannot compete with fossil fuel energy if it cannot overcome the obstacles to equipment installation and to access to sunlight. Legal means to minimize these obstacles are a primary condition of the development of solar power.

This article first addresses the threshold issue of how solar installation can be facilitated through building codes and equipment standards. It then considers the private contractual arrangements which may be used to assure access to sunlight. Private actions for nuisance are only highlighted here.

At least one jurisdiction has held that an owner of a solar heated residence states a claim upon which relief can be granted when he asserts that a neighbor's proposed construction of a residence, otherwise meeting legal requirements, interferes with access to an unobstructed path for sunlight across the aggrieved party's property.[1] Traditionally, however, courts have been reluctant to use nuisance law as a means of curtailing landowner rights to develop their property as they wish. Consequently, the development of nuisance law as a means by which to protect access to sunlight is likely to be a slow, piecemeal effort of plaintiffs establishing on the facts of individual cases that they have suffered *substantial* and *unreasonable* interference of their right to use or enjoy their property.[2] As a device to protect access to sunlight on a broad scale, nuisance law, therefore, warrants little more than this brief acknowledgement.

Public regulatory approaches to facilitating solar access include the acquisition of easements and restrictive covenants to prevent obstruction; the use of the public nuisance doctrine to prevent obstruction of sunlight; and the use of local zoning ordinances to assure access to sunlight. This article also reviews a number of recent state statutes that seek to advance the use of solar energy in the creation of new rights to the unimpaired enjoyment of sunlight. Appendix B provides data on tax incentives also aimed at encouraging solar energy use.

1. Prah v. Maretti, 108 Wis. 2d 223, 321 N.W.2d 182 (1982). Applying private nuisance doctrine to obstruction of access to sunlight across adjoining land, the court stated "The law of private nuisance is better suited to resolve landowner's disputes about property development in the 1980s than is a rigid rule which does not recognize a landowner's interest in access to sunlight." 108 Wis. 2d at 236, 321 N.W.2d at 190.

2. *Prah*, 108 Wis. 2d at 227.

II. Obtaining Access to Sunlight: Building Codes and Equipment Standards

A. *Building Codes*

Building codes can, but generally do not, require all new buildings to be constructed so that solar equipment can be easily installed.[3] If this is done, building owners may avoid the possibly prohibitive cost of renovating their properties to support a solar energy system. The primary purpose of building codes, however, is to ensure that contractors employ safe materials, equipment and methods.[4] Standards are generally enacted into law by local governments exercising the state's police power delegated to them for this purpose. In general, local governments have the authority to enact local building codes. Most local codes are based on one of the model building codes promulgated and annually revised by national or regional associations of professionals in the field of code enforcement.[5] Standards for solar heating and cooling equipment have not been included in most of these building codes.[6] Under the current building permit procedure, this exclusion means that solar energy systems are less likely to be employed than the conventional systems covered directly by the code requirements.

Without code-approved standards, solar energy systems will never be realized. Building codes authorize the granting of permits for the use of all materials, equipment and methods conforming to the local building code guidelines. In addition, code

3. For a general discussion of building codes and solar system standards, *see* R. Chew, Solar Law: A Practitioners Handbook of Legal Issues Related to the Use of Solar Collectors 46-56 (1979) (study discussing judicial remedies to building permit denial); J. Minan & W. Lawrence, Legal Aspects of Solar Energy 153-178 (1981) (discussing the pros and cons of solar standards and suggesting possible code guidelines).

4. Minan & Lawrence, *supra*, at 155.

5. Two out of three locally enacted codes are based on model codes developed by building code organizations. Chew, *supra* note 3, at 47 n.10 (citing National Comm'n on Urban Problems, Building the American City 259 (1969) (table 2, nn.3 & 4)). The leading model codes include: Basic Building Code, (promulgated by the Building Officials and Code Administrators International) used in 60% of the northeastern and northwestern cities; Uniform Building Code, (promulgated by the International Conference of Building Officials) used by the majority of cities and counties in the West and Midwest; Standard Building Code, (promulgated by the Southern Building Code Congress) used in the South. *Id.* at 47.

6. An exception is the model code drafted by the International Association of Mechanical Officials. The code provides for "readily accessible piping," with fittings adaptable to solar heating equipment.

officials have the discretion to approve alternatives to the code guidelines "if the alternative is shown to be at least the equivalent of that prescribed in the code in strength, fire-resistance, and safety, as well as quality, effectiveness, and durability."[7] In the absence of official solar energy system guidelines, solar users must obtain special building permits, subject to the discretion of building code officials. Approval of solar energy systems on a case-by-case basis accommodates sporadic solar use, but it is an inefficient approach for encouraging solar use as a viable alternative to conventional systems. As two commentators have stressed, the viability of solar use depends on its acceptance and use by builders and architects.[8] Without the assurance of well-researched, documented and code-approved standards for solar energy systems, builders and architects will continue to resist change.[9]

B. *Equipment Standards*

Solar standards incorporated into local building codes would provide essential guidelines to contractors unfamiliar with solar energy systems. However, solar energy systems operate within a "narrow tolerance limit."[10] Therefore, installation of solar energy systems must be more exact than with conventional systems. A building contractor must pay greater attention to detail, which requires additional time and cost.

Incorporating solar standards into building codes could counterbalance the disincentives to solar use within the construction industry. Federal standards would be most effective in spurring nationwide development of solar energy systems. Further, federal standards could avoid unnecessary variation, easing the task of design and construction for firms with interstate practice. Such federal standards would have to account for regional variations in climate, construction materials and land-use planning patterns, but such factors could be adequately addressed within the rulemaking process. Presently no such standards exist, however.

7. CHEW, *supra* note 3, at 48.
8. *See* MINAN & LAWRENCE, *supra* note 3, at 155-157.
9. *Id.*
10. *Id.* at 159.

Even at the state level, only Florida and California have enacted legislation designed to standardize solar energy systems.[11]

In 1977, the California legislature authorized the California Energy Resources Conservation and Development Commission to promulgate regulations "designed to encourage the development and use of solar energy and to provide maximum information to the public concerning solar devices."[12] The California Testing and Inspection Program resulted from the 1977 legislative directive. The program tests the durability, effectiveness and safety of solar equipment, and requires that labels to certify approval are attached to approved equipment. The program also publishes solar information tailored to the needs of builders, architects and insurers.

In 1976, the Florida legislature issued a mandate to develop solar energy system standards.[13] As a result, the Florida Solar Energy Center (FSEC) was instituted to "develop and promulgate standards for solar energy systems manufactured or sold in [the] state based on the best currently available information," and to "establish criteria for testing performance of solar energy systems and . . . maintain the necessary capability for testing or evaluating performance of solar energy systems."[14] Since 1976, the FSEC has promulgated standards and test methods.[15] In 1980, the FSEC standards became mandatory statewide standards. A 1978 amendment to the Solar Energy Standards Act provides that "all solar energy systems manufactured or sold in the state must meet the standards established by the center and shall display accepted results of approved performance tests in a manner prescribed by the center."[16]

The comprehensive programs implemented in California and Florida provide the kind of standardization necessary to promote solar use. State and regional standards providing safety and efficiency levels would give builders, architects, insurers, solar carriers and consumers greater confience in solar use.

11. CAL. PUB. RES. CODE § 25605 (West Supp. 1986); the Florida Solar Energy Standards Act of 1976, codified at FLA. STAT. ANN. § 377.705(2)(b) (West Supp. 1984).

12. CAL. PUB. RES. CODE § 25605 (West Supp. 1986).

13. FLA. STAT. ANN. § 377.705(2)(b) (West Supp. 1984).

14. FLA. STAT. ANN. § 377.705(4)(a)-(b) (West Supp. 1984).

15. MINAN & LAWRENCE, *supra* note 3, at 167-68.

16. FLA. STAT. ANN. § 377.705(4)(d) (West Supp. 1984). *See* MINAN & LAWRENCE, *supra* note 3, at 168.

III. PRIVATE CONTRACTUAL APPROACHES TO MAXIMIZING SUNLIGHT

Solar energy is not appropriate for all climates and locations. But in climates where solar energy is efficient, particularly in densely populated urban areas, problems may arise. The shadow cast by a neighboring building or tree can obstruct needed sunlight. The shadow need not be present at all times to be a problem—one that falls only two to three hours a day may significantly reduce energy savings, if it falls at peak collecting hours. The question then becomes how to ensure continuous access to sunlight.

A. *Use of Easements to Prevent Neighbors Blocking Sunlight*

One way to assure access to sunlight is by acquiring an easement over neighboring property. An easement confers a beneficial right in one landowner, the "dominant tenant," on or over the real property of a neighbor, the "servient tenant."[17] Easements are generally categorized as having either an affirmative or a negative effect upon the servient tenant. An affirmative easement allows the dominant tenant to enter into or to engage in specified activities on the servient tenant's property. A negative easement allows the dominant tenant to prevent the servient tenant from engaging in certain activities on his own premises, which in the absence of the easement the servient tenant would be free to do.[18]

An easement granting a solar user unobstructed sunlight over neighboring property is a negative easement. The dominant tenant (or solar energy user) would have no right to enter or otherwise use the property of the servient tenant, but he or she could prevent the servient tenant (*e.g.*, a neighbor) from erecting a fence, building or other obstruction which blocks sunlight from crossing to the solar user's property.

Easements are created by two methods: the servient tenant may make an express conveyance to the dominant tenant, called an "express easement"[19] or, if the dominant tenant has enjoyed long-continued use of the easement with the servient tenant's

17. R. POWELL, THE LAW REAL PROPERTY ¶ 404 (1985).

18. *See* Comment, *Access Rights for Solar Users: In Search of the Best Statutory Approach*, 16 LAND & WATER L. REV. 501, 503 (1981).

19. POWELL, *supra* note 17, at ¶ 407.

knowledge and acquiescence, the law can infer a "prescriptive easement."[20] Courts will uphold the creation of express negative easements to sunlight,[21] but have long ago abandoned the doctrine of "ancient lights," and refuse to uphold prescriptive negative easements for sunlight.[22] Therefore, absent a statutory plan superseding the common law, a solar user can protect access to light only by striking an explicit bargain with his neighbor.[23]

Several states have passed statutes which largely codify the common law doctrine of express negative easements.[24] The statutes vary in their specificity and in the remedies provided for obstruction of the solar access easement.[25] They typically require that a solar easement be made in writing and recorded in the

20. *Id.* at ¶ 413.

21. *See generally* Moskowitz, *Legal Access to Light: The Solar Energy Imperative*, 9 NAT. RESOURCES LAW. 177, 201 (1976).

22. The English doctrine of ancient lights which allows the acquiring of a negative easement to sunlight through long-continued use with the servient tenant's acquiescence is no longer applicable in the United States. *See* Fontainbleu Hotel Corp. v. Forty-Five Twenty-Five, Inc., 114 So. 2d 357 (Fla. Dist. Ct. App. 1959). Even if one were to try to revive the doctrine of ancient lights, there would be several problems. First, solar users need a substantial amount of light. The ancient lights doctrine guarantees only enough illumination to allow ordinary work during daylights hours. Further, United States courts have long been hostile to prescriptive easements—which require the dominant tenant to be an adverse user for a substantial period of time—because the servient tenant often has insufficient notice of the adverse use. Finally, the solar user would need to demonstrate a continuous, long-term use before the prescriptive easement could be implied. During this period of time the solar user would have made a substantial financial committment with no guarantee that the right to continue such use would accrue.

23. A comprehensive analysis of easements for solar use can be found in Gergacz, *Solar Energy Law: Easements of Access to Sunlight*, 10 N.M. L. REV. 121 (1980). *See also* Eisenstadt, *Access to Solar Energy: The Problems of Its Current Status*, 22 NAT. RES. J. 21 (1982).

24. The states which presently have statutory authority allowing for the express creation of solar easements are: CALIFORNIA: CAL. CIV. CODE § 801.5 (West 1982); COLORADO: COLO. REV. STAT. §§ 38-32.5-100.3 to 103 (1982); FLORIDA: FLA. STAT. ANN. § 704.07 (West 1979); GEORGIA: GA. CODE ANN. §§ 85-1411 to 1414 (Supp. 1980); IDAHO: IDAHO CODE § 55-615 (1979); ILLINOIS: ILL. ANN. STAT. ch. 96½, § 7303(f) (Smith-Hurd 1979); INDIANA: IND. CODE ANN. §§ 32-5-2.5-1 to 3 (Burns 1980); MINNESOTA: MINN. STAT. ANN. § 500.30 (West Supp. 1985); MISSOURI: MO. ANN. STAT. § 442.012 (Vernon Supp. 1985); MONTANA: MONT. CODE ANN. §§ 70-17-301 to 302 (1985); NEBRASKA: NEB. REV. STAT. §§ 66-909 to 912 (1981); NEVADA: NEV. REV. STAT. § 111.370 to 111.380 (1985); NEW JERSEY: N.J. STAT. ANN. §§ 46:3-24 to 3-26 (West Supp. 1985); NORTH DAKOTA: N.D. CENT. CODE §§ 47-05-01.1 to 01.2 (1978); OREGON: OR. REV. STAT. §§ 105.885 to 895 (1983); TENNESSEE: TENN. CODE ANN. §§ 64-9-201 to 206 (Supp. 1980); UTAH: UTAH CODE ANN. § 57-13-1 (Supp. 1980); VIRGINIA: VA. CODE §§ 55-352 to 354 (1980); WASHINGTON: WASH. REV. CODE ANN. §§ 64.04.140 to 170 (Supp. 1986).

25. For an analysis of various state sunlight easement codifications, *see generally* Gergacz, *supra* note 23.

same manner as other property easements. The amount of detail which must accompany an easement varies. Some statutes require only that a description of the dimensions specify the vertical and horizontal angles at which the solar easement extends over the property subject to the solar easement.[26] Others require details regarding place and time of day or seasons during which the obstruction is to be prohibited or limited, in addition to the restrictions to be placed on vegetation, structures and other objects which would impair the passage of sunlight.[27] Transferability is spelled out in some statutes but not in others.[28] Similarly, provisions regarding enforcement appear in some statutes but not in others. Thus in Nebraska, a solar easement may be enforced even against persons who were not involved in the original contract or whose property does not adjoin that of the beneficiary,[29] and it may be enforced by injunction or proceeding in equity or other civil action.[30] By contrast, Oregon and California statutes are silent regarding enforcement.[31]

These common law codifications have only limited value because they continue to require the servient tenant to agree expressly to grant an easement to the solar user (the dominant tenant). The codifications do not in and of themselves create easement rights. Rather, the statutes simply provide for legal recognition and enforcement of private easement agreements. In densely populated areas, the cost of acquiring an express solar easement may negate the financial advantage of solar energy use. The costs of the easement include both substantive costs for the restrictions on property use, and transaction costs, such as drafting agreements. To conform to statutory requirements may entail the professional services of builders, surveyors and attorneys.[32] Further, many landowners are reluctant to grant such easements. As one commentator notes, at the very least "neighboring land owners will be wary of agreements which may have

26. MONT. CODE ANN. § 70-17-301(1) (1985).

27. *Compare* NEB. REV. STAT. § 66-911(2) (1981) *with* CAL. CIV. CODE § 801.5(b) (West 1982).

28. *Compare* IDAHO CODE § 55-615 (1979) *with* CAL. CIV. CODE § 801.5 (West 1982).

29. NEB. REV. STAT. § 66-910 (1981) ("No duly recorded solar skyspace easement shall be unenforceable on account of lack of privity of estate or privity of contract.")

30. NEB. REV. STAT. § 66-912 (1981).

31. OR. REV. STAT. §§ 105.885 to 895 (1983); CAL. CIV. CODE § 801.5 (West 1982).

32. Comment, *supra* note 18, at 508-09.

the effect of limiting their rights to even permit a tree to grow on their property."[33]

B. *Use of Restrictive Covenants to Protect Access to Sunlight*

Restrictive covenants are privately arranged "mutually binding agreements between private parties which limit the development and utilization of land in order to bestow a benefit."[34] Typically, when a developer sells plots in a new subdivision, restrictions on land use are incorporated in the deed. Solar access can be assured if developers include a covenant that restricts the height and placement of structures and vegetation. Once a covenant for solar use is established, the protection of solar access passes to any subsequent owner of the property.

At present, restrictive covenants tend to be more a barrier than an incentive to solar use. Many covenants affecting land use in subdivisions are aesthetic covenants which prohibit alterations that are not harmonious with the architectural style of the community.[35] Aesthetic covenants may also make certain placements of vegetation mandatory. The issue for most solar users, therefore, is how to avoid covenants which in effect restrict access to sunlight.[36] Restrictive covenants can place severe limitations on the owner's free use of his land. This characteristic of the restrictive covenant runs counter to the basic concept of property law: a property holder should be able to pass title to another free of any encumbrances. The solar user may therefore seek to rely on the traditional judicial reluctance to apply overly restrictive cove-

33. *Id.* at 508. In addition, a solar user may often require solar easements from other landowners besides those with adjoining property. In one reported urban case, easements from five neighbors were required to protect solar access from 9 a.m. to 3 p.m. *See* Eisenstadt, *supra* note 23, at 25.

34. CHEW, *supra* note 3, at 36 (citations omitted).

35. "Some covenants prohibit additions or modifications offensive to 'a high class residence district.'" CHEW, *supra* note 3, at 38 n.76 discussing McBride v. Berman, 28 Ohio Misc. 47, 272 N.E.2d 181 (1971).

36. Johnson, *State Approaches to Solar Legislation: A Survey*, 1 SOLAR L. REP. 55 (1979) provides an analysis of cases in which restrictive covenants served as a barrier to solar access. Even when restrictive covenants are used to assure access to sunlight, their use is quite limited. For example, they cannot be used in existing communities except by unanimous consent of the residential owners. Second, they cannot be used for industrial or commercial land. Third, they must be *very* carefully drafted, because as an interest in land they are subject to the Statute of Frauds. *See* Comment, *Solar Rights and Restrictive Covenants: A Microeconomic Analysis*, 7 FORDHAM URB. L.J. 283 (1978-79). *See also* Sain v. Silvestre, 78 Cal. App. 3d 461, 144 Cal. Rptr. 478 (Cal. Ct. App. 1978); Sandstrom v. Laresen, 59 Hawaii 491, 583 P.2d 971 (1978).

nants. For example, courts generally interpret any ambiguities in a manner least restrictive to land use.[37] They have also developed several lines of analyses to challenge the restraints in restrictive covenants. For example, courts recognize a constructive waiver of a restrictive covenant in cases where other violations of the covenant have gone unchallenged for a particular length of time.[38]

Courts have also accepted the argument that changed circumstances can make a restrictive covenant obsolete. In *Kraye v. Old Orchard Association*,[39] the plaintiffs wanted to install rooftop collector plates for their solar hot-water heater. The collectors would have violated a restrictive covenant which forbade the installation of rooftop structures unless they were installed in such manner that they were not visible from neighboring property or adjacent streets. The court ruled this restriction no longer enforceable. The decision emphasized that it was the public policy in California "to promote and encourage the use of solar energy system. . . ."[40] This new policy directive represented a change in conditions which made the covenant at issue obsolete.[41]

Legislatures have also limited the effectiveness of restrictive covenants. Some states have limited the life-span of restrictive covenants.[42] California and Colorado have passed statutes which invalidate covenants restricting the installation or use of a solar energy system.[43] Legislative action to limit restrictive covenants generally is preferable to judicial recourse to lift a particular restrictive covenant that bars solar access because it is not only

37. *See* Cimino v. Dill, 108 Ill. App. 3d 782, 439 N.E.2d 980 (1982); *See also* POWELL, *supra* note 17, at ¶ 674.

38. The party seeking to break the restrictive covenant must draw a strong pattern of similar covenant violations. A few scattered incidents will probably not satisfy the burden of proof necessary. *See* POWELL, *supra* note 17, at ¶ 679.

39. Kraye v. Old Orchard Assoc., (Cal. Super. Ct. 1979) *reported in* 1 SOLAR L. REP. 503 (1979).

40. *Id.*

41. It should be noted that this case runs counter to the majority of decisions which hold that "changes *outside* the subdivision will not negate restrictive covenants affecting property *in* the subdivision as long as the covenants remain of some value to the beneficiaries." CHEW, *supra* note 3, at 44 (emphasis in the original). *See also* POWELL, *supra* note 17, at ¶ 679.

42. *See, e.g.*, GA. CODE ANN. § 45-5-60 (1982), which limits the life of restrictive covenants to twenty years.

43. *See* California Solar Right Act, CAL. CIV. CODE § 714 (West 1982); COLO. REV. STAT. § 38-30-168 (1982).

more broadly effective and certain, but also because it avoids litigation costs that can add to the cost of solar power.

IV. Public Regulatory Approaches to Maximizing Sunlight

A. *Use of State Police Power to Define a Public Nuisance*

One statutory approach to guaranteeing solar access is premised on the state police power to define a public nuisance. If the state reasonably finds that access to sunlight for the purpose of solar energy collection is desirable and an ordinary use of property, then an obstruction may be considered a public nuisance. A public nuisance is virtually any form of annoyance or inconvenience interfering with common public rights. States have great latitude in defining a public nuisance, subject to certain constitutional limitations. The use of the state's police power to regulate the use of property is constitutional if it furthers a legitimate public purpose, and if the regulation is reasonably related to that purpose.[44]

California has used the public nuisance approach to protect the solar user's access to sunlight. The California Solar Shade Control Act[45] prohibits a landowner from planting vegetation on his property which shades greater than ten percent of a solar collector surface at any time between 10 o'clock in the morning and 2 o'clock in the afternoon.[46] Violators who refuse to remove the shrubbery after thirty days notice from the district, city, or prosecuting attorney are subject to a fine of up to $1,000.[47] Shrubs planted before passage of the ordinance, timberland, and land devoted to the production of commercial agricultural crops are exempted from the Act.[48] Municipalities may opt out of the ordinance by a majority vote of the governing body.[49]

The California statute is a useful beginning, but it provides limited benefits to the solar user. The statute does not grant a pri-

44. Powell, *supra* note 17, at ¶ 859. *See also* Hayes, Solar Access Law: Protecting Access to Sunlight for Solar Energy Systems (1981); Note, *Securing Solar Access in Maine*, 32 Maine L. Rev. 439, 446-52 (1980). In 1982, the Wisconsin Supreme Court held, in *Prah v. Maretti*, 108 Wis. 2d 223, 321 N.W.2d 182 (1982), that obstruction of a solar collector can be deemed a public nuisance.

45. Cal. Pub. Res. Code §§ 25980-25886 (West Supp. 1985).

46. *Id.* at § 25982.

47. *Id.* at § 25983.

48. *Id.* at § 25984.

49. *Id.* at § 25985. A useful section-by-section analysis of the California statute can be found in Comment, *supra* note 18, at 511-14.

vate right of action but instead places enforcement responsibility with public prosecutors, who, because they are elected officials, may be hesitant to enforce unpopular ordinances. In addition, the statute has been criticized because it "vitiates the potential advantages of local flexibility by prescribing statewide standards."[50]

The California statute also raises a number of other issues.[51] First, the Act raises issues of constitutional due process. The use of the state's police power may be inappropriate[52] because protecting a private solar user's access to sunlight may be regarded as a private rather than a public purpose under some state constitutions. State constitutions that justify solar access protection as an exersice of state police power for a public purpose must also be drafted carefully to avoid violation of the just compensation provisions of the Federal constitution, since the solar user's property is increased in value by the addition of airspace while his neighbor's property is conversely decreased in value.[53]

Second, the Act fails to promote efficient use of solar energy in certain circumstances. The California statute has no efficiency requirements, and therefore even unnecessarily large or inefficient solar energy systems would be protected by the 10 percent rule. For example, the statute provides no guidelines for angling solar collectors. Poor angling or placement may not only be inefficient, but it may unnecessarily burden the adjoining landowner. Even with efficient placement, if only a small percentage of the output is actually needed by the solar user, or if the solar user fails to maintain the equipment, the statute nonetheless applies.[54] A more carefully drafted statute would encourage the efficient use of solar energy by preferring the more efficient use over an inefficient one, and by rewarding those users who carefully select, place and maintain their equipment to maximize energy production.

Third, the Act fails to provide mechanisms for adapting to changed circumstances or resolving disputes. Any legislation

50. Goble, *Siting-Protection: A Note on Solar Access*, 2 SOLAR L. REP. 25, 47 (1980).

51. *See generally* Gergacz, *supra* note 23.

52. The use of the state's policing power would be justified if there were a significant number of solar users affected and if the court were to view the encouragement of solar use to have been marked as a "public purpose." Tulare Irrig. Dist. v. Lindsay-Strathmore Irrig. Dist., 3 Cal. 2d 489, 45 P.2d 972 (1935).

53. U.S. CONST., amend. V.

54. Gergacz, *supra* note 23, at 28.

designed to facilitate long-term use of solar energy must be flexible enough to accommodate the changing needs of the solar user and his neighbors, as well as the changing environment. Litigation is an expensive and time-consuming method of dispute resolution, and these statutes should allow alternative means of conflict resolution.

B. *Use of Zoning Laws to Ensure Access to Sunlight*

Zoning regulations are sometimes used to facilitate access to sunlight. Zoning is an important device by which municipalities regulate land use to protect health and safety, advance sound residential, commercial and industrial development and serve other public purposes.[55] A number of states have enacted zoning statutes which allow municipalities to consider solar access a legitimate public purpose.[56] The statutes tend to employ conventional zoning techniques, such as building height limitations, lot size restrictions and set-back requirements. While traditional zoning techniques can be helpful, advocates of the zoning approach to solar use would like to see the utilization of zoning strategies specifically tailored to the problem of solar access,[57] particularly the "solar envelope."[58] A solar envelope may be defined as

> a spatial construct which defines where, within a lot, one may build without interfering with the solar access of adjacent lots. Solar envelopes set the height limitations for a lot in accord with land configuration and seasonal positions of the sun. The

55. POWELL, *supra* note 17, at ¶ 867.

56. *See, e.g.*, ARIZ. REV. STAT. §§ 9-461.05, 9-462.01 (Supp. 1980); CAL. GOVT. CODE § 65860.5 (West Supp. 1980); CONN. GEN. STAT. ANN. § 8-13(d) (West Supp. 1980); ME. REV. STAT. tit. 30, §§ 4956 (3-112), 4961 (Supp. 1980); N.Y. GEN. CITY LAW § 20(24) (McKinney Supp. 1980); OR. REV. STAT. §§ 215.110, 227.090, 227.290 (1979); WASH. REV. CODE ANN. §§ 35.63.080 to -090, 36.70.560 (Supp. 1981). *See generally* HAYES, *supra* note 44, at 73-89 and Comment, *supra* note 18, at 509-11 (both containing a comprehensive analysis of traditional zoning approaches to solar access); Pullian & Hedgecock, *Local Leadership for Solar Energy*, 2 SOLAR L. REP. 57 (1980) (describing San Diego's experience in mandating the use of solar energy); Note, *Solar Energy: An Analysis of the Implementation of Solar Zoning*, 17 WASHBURN L.J. 146 (1977) (analyzing the possible problems and advantages of solar zoning).

57. *But cf.* CHEW, *supra* note 3, at 58-59. The author cites several studies which seem to show by aerial surveys that residential neighborhoods employing traditional zoning techniques have "few significant shading problems resulting from buildings on neighboring property."

58. *See generally*, HAYES, *supra* note 44, at 91-124 (includes a model solar envelope statute). For an overview of solar envelopes, *see* Osofsky, *Solar Building Envelopes: A Zoning Approach for Protecting Residential Solar Access*, 15 URB. LAW. 637 (1983).

> task of deriving such a construct is made easier through the use of computer modeling.[59]

Traditional zoning yields a rectangular shaped area around the building which delineates the limitation of the buildable space. The solar envelope, on the other hand, results in a top surface which consists of "one or more planes sloping at various angeles."[60]

The primary advantage of the solar envelope is that it allows adjacent lots to retain greater building area than traditional zoning because a building can rise to greater heights on the side of the lot not required for solar access. A subsidiary advantage is that the shape of the solar envelope encourages architectural innovations, such as graduated buildings. These graduated buildings often feature terraces and courtyards, attractive by-products of energy efficiency for urban dwellers.[61]

One troublesome aspect of traditional zoning and the solar envelope is that the solar user acquires no vested property right.[62] Zoning ordinances are subject to change by the appropriate zoning board or by the legislature, both of which respond to political and economic trends. Because zoning is regarded as a tool to accommodate and balance competing property interests, solar users can be caught between unpredictably shifting priorities. While zoning's flexibility is an advantage in many land-use planning efforts, this same quality makes zoning, in the absence of other strategies, a precarious tool for long-term solar energy development. In order to circumscribe the ability of zoning law to deter rather than encourage solar energy use, some states have enacted statutes which prohibit zoning restrictions on the installation or use of solar energy systems, except under limited conditions.[63]

59. Osofsky, *supra*, at 642.

60. *Id.* at 642, 645, diagram 2.

61. *Id.* at 644.

62. An early zoning case stated that "zoning regulations are not contracts by government and may be modified." Reichelderfer v. Quinn, 287 U.S. 315, 323 (1932).

63. *See, e.g.*, WIS. STAT. ANN. § 66.031 (West Supp. 1985) which provides that:

> No county, town or village may place any restriction, either directly or in effect, on the installation or use of a solar energy system . . . unless the restriction satisfies one of the following conditions:
>
> 1) Serves to preserve or protect public health or safety..
> 2. Does not significantly increase the cost of the system or significantly decrease its efficiency.

Zoning remains, however, a tool by which some areas may exclude the use of solar energy.[64] Roof collectors can sometimes violate height restrictions. Some communities may find exterior solar systems aesthetically offensive, and some courts have accepted the protection of neighborhood aeshtetics as a legitimate exercise of a state's police power.[65] In one reported case the court upheld a town zoning board's denial of a variance to allow a detached solar collector to be placed in a front yard.[66] Zoning can be a powerful tool to encourage solar use, but it is ineffective without political support and strong community interest, and it can actually hinder solar power development in some cases.

C. *Creating a Property Right to Sunlight*

In Wisconsin, a solar permit system has been devised which allows every municipality to grant a permit to an owner who has installed or intends to install a solar collector. Such a permit may protect the permit holder from "impermissable interference," including blockage of solar energy from a collector.[67]

New Mexico has taken an even more aggressive approach to assure solar access. The New Mexico Solar Rights Act[68] is a novel approach because it creates a legal right to unobstructed sunlight which is based upon concepts, developed earlier in Western water law, of beneficial use and prior appropriation.[69] The Act provides that the first solar user gains priority over all other subsequent users. The extent of the solar right is determined by how much solar energy the solar user puts to beneficial use.

The New Mexico approach was summed up by one author as the following:

3. Allows for an alternative system of comparable cost and efficiency.

64. *See* HAGMAN, URBAN PLANNING AND LAND DEVELOPMENT CONTROL LAW (1971).

65. *See* Annot. 21 A.L.R.3d 1222 (1968) (analyzing how aesthetic objectives or considerations affect the viability of zoning ordinances). *See generally* Annot. 52 L.Ed. 863 (1978) (Supreme Court's view as to the constitutionality of residential zoning restrictions).

66. D'Aurio v. Board of Zoning Appeals of Town of Colonie, 92 Misc. 2d 898, 401 N.Y.S.2d 425 (N.Y. Sup. Ct. 1978).

67. WISC. STAT. ANN. § 66.032 (West Supp. 1985).

68. N.M. STAT. ANN. §§ 47-3-1 to 47-3-5 (1978). *See generally* Hillhouse & Hillhouse, *New Mexico's Solar Rights Act: A Cloud Over Solar Rights*, 1 SOLAR L. REP. 751 (1979); Kerr, *New Mexico's Solar Rights Act: The Meaning of the Statute*, 1 SOLAR L. REP. 737 (1979); Note, *Access to Sunlight: New Mexico's Solar Rights Act*, 19 NAT. RES. J. 957 (1979).

69. The statute was influenced by the 1977 article published in *Trial* magazine by then law student Mary Ray White. She proposed a model solar rights statute based on analogy to laws governing water rights. *See* Kerr, *supra* note 68, at 739.

> Just as the owner of a water right does not "own" water but rather has a right to divert it and put it to beneficial use, so the owner of a solar right does not own sunlight but has the right "to an unobstructed line-of-sight path from a solar collector to the sun, which permits radiation from the sun to impinge directly on the solar collector." In order for the solar right to vest, the sunlight must be put to a beneficial use. This beneficial use is the "basis, measure and limit of the solar right, except as otherwise provided by written contract."[70]

The statute extends the beneficial use doctrine to passive solar systems as well as active solar systems. Municipalities are granted authority to "legislate, or ordain that a solar collector user has a solar right even though a structure or building located on neighboring property blocks the sunshine from the proposed solar collector site."[71] By implication, this provision authorizes the use of the state's eminent domain power to ensure the right to sunlight. The solar right created by the Act is a new property right, which is freely transferable.[72] A solar user who sells her home would pass the solar right on to the new owner.

The New Mexico Solar Rights Act has received significant criticism.[73] Most commentators agree that the statute was passed too quickly, thereby leaving too many issues unresolved.[74] One major criticism is that the solar right prescribed is too broad, so that the only limitation upon the solar user is beneficial use.[75]

In response, the New Mexico legislature attempted to make clear the permissible burden that a solar right could place on a neighbor's use of land. A 1982 amendment stated that the local authority to enforce a solar right extends "only as to obstructions located on the burdened property which cast a shadow greater than the shadow cast by a hypothetical fence ten feet in height located on the property line of the property on which the solar collector is located."[76] In reality this amendment did little to clarify the Solar Rights Act.

70. Note, *supra* note 68, at 958 (quoting N.M. STAT. ANN. §§ 72-1-1- to -4, 47-3-3(B), 47-3-4(B)(1) (1978)).

71. N.M. STAT. ANN. § 47-3-4(B)(2) (1978).

72. *Id.* at § 47-3-5.

73. *See, e.g.*, Gergacz, *supra* note 23, at 13-20; Note, *Access to Sunlight: New Mexico's Solar Rights Act*, 10 N.M. L. REV. 169, 171-175.

74. Gergacz, *supra* note 23, at 13-20.

75. *See* Note, *supra* note 73, at 171.

76. N.M. STAT. ANN. § 47-3-11 (Supp. 1985).

A second important issue raised by the statute is the constitutionality of the state or local governments' power to condemn existing structures in order to provide solar access for solar collectors. One commentator suggests that "in focusing solely on the needs of the solar energy user, the New Mexico Act ignores the property rights of adjoining landowners in a manner which may violate the Fifth Amendment of the United States Constitution."[77] Another commentator asserts that the creation of a solar right is constitutional as long as a state can show "that its regulation is reasonable and designed to enhance the public welfare."[78]

Even if the New Mexico approach is constitutional, however, the question remains whether prior appropriation is the best way to balance competing interests. The statute conveys an immutable right to the solar user, which could conceivably favor a first user whose solar unit is inefficient, while posing an obstacle to a potential second user who plans to use more effective equipment or techniques. Further, this immutable right may inhibit development throughout the community, even if that development is desirable for other reasons. If western water law is to be instructive, the concepts must not be borrowed without an understanding of the problems to which they have given rise.

By late 1985, the constitutionality of the New Mexico statute had not as yet been tested. Because there have been no reported cases since the Act's passage, a solar user who relies on the statute for solar access must take some risk of invalidity. Nevertheless, this statute provides the most dramatic and extensive protection of solar access. It also teaches us that experience with the "beneficial use" and "prior appropriation" doctrines used in the context of water laws may provide some guidance to the future development of similar solar rights laws.

D. *Model Statutes—Lungren's Draft*

Eliminating solar access barriers requires balancing property rights and rights to sunshine. Suggested model statutes can help legislators design laws that suit local conditions and political demands. John Lungren has drafted one such model statute,[79] which is reprinted in Appendix A. His proposal is noteworthy as

77. Gergacz, *supra* note 23, at 15.

78. Comment, *supra* note 18, at 517-18.

79. Lungren, *Solar Entitlement: A Proposed Legislative Model*, 4 J. ENERGY L. & POL'Y 171 (1983).

a comprehensive effort to establish three statutory means by which an individual can obtain a property right to solar access. The first two entail clarifying the applicability of the private law mechanisms of easements and covenants to solar access. The third entails the creations of a new solar right which can be obtained through a newly created administrative procedure.

Two policy assumptions underpin these means of protecting solar access: 1) public benefits will flow from the increased construction and use of solar energy devices; and 2) those who have invested in solar devices should have the usefulness of their investment protected.[80]

1. Easements

To create an enforceable and transferable property interest in solar access by means of an easement, the statute provides that a written document must be completed containing at least: 1) a description of the property subject to and benefiting from the solar easement;[81] 2) a detailed description of the perimeters which must not be obstructed;[82] 3) additional terms and conditions under which the easement is granted;[83] and 4) a statement of the compensation, if any, received by the owner of the servient estate.[84] As with real property, such an easement would have to be filed, recorded and indexed in the office of the local registrar of deeds.[85]

The detailed description of properties involved served two purposes: 1) to forestall future conflicts among landlords, and 2) to advance the purposes of the notice requirement.[86]

2. Covenants

Where a landlord is not the possessor and the possessor is likely to remain in control of the land for a long period of time, the statute provides for the creation of a limited property right by

80. *Id.* at 185.
81. *Id.* at 189.
82. *Id.*
83. *Id.* at 191.
84. *Id.*
85. *See id.* at 172-76 for a general discussion of easements.
86. These provisions draw on existing sections of state statutes. *See, e.g.*, GA. CODE ANN. § 85-1414(a) (Supp. 1982); ILL. ANN. STAT. ch. 96½, §§ 7303(e), 7303(f) (Smith-Hurd 1979 & Supp. 1982-83).

way of a solar covenant.[87] As with an easement, a covenant, in order to create a solar right, would have to be evidenced in writing,[88] include a description of the property subject to the covenant,[89] provide a detailed description of the perimeters not to be obstructed,[90] and clarify the terms and conditions under which the covenant was granted.[91]

While a solar covenant would be enforceable against the possessor of the burdened property who signed the covenant (*e.g.*, a commercial tenant or lessee), or a successor in interest of that signer (*e.g.*, a sub-tenant), the benefitted possessor or owner would have to release from the covenant any possessor of the burdened property against whom the covenant was unenforceable.[92] This arrangement would be less secure than an easement but would enable enforceable agreements even where landowners were not amenable.

3. Solar Rights

In contrast to the solar easements and covenants, the "solar right" is a new creature of state law under the model statute. In concept it is similar to eminent domain proceedings—a solar right may be obtained from an administrative authority if its benefits to the public outweigh the burdens it places on individual landowners. To ensure that the benefits do outweigh the burdens, the statute sets forth requirements for notice and hearing on the issue, and provides that if a solar right remains unexploited for two years it will automatically expire.[93] A burdened landowner may seek to have the solar right voided through an administrative procedure that considers whether the proposed obstruction of the area affected by the solar right is of sufficient value to the people of the state to make the voiding of the solar right reasonable.[94]

As with the New Mexico statute, the primary question created by this proposed "solar right" is whether it so devalues surround-

87. *See* Lungren, *supra* note 79, at 176-77 for a discussion of covenants in the model statute.
88. *Id.* at 192.
89. *Id.*
90. *Id.*
91. *Id.*
92. *Id.* at 193-94.
93. *Id.*
94. *Id.*

ing properties—by limiting the uses to which they can be put—that the solar right constitutes a taking without just compensation, in violation of the Fifth Amendment.[95] The fact that the height and use restrictions will apply only to certain landowners near the property with the solar right poses an additional complication by creating the possibility of unfairness. In contrast, for example, zoning restrictions on height and use apply equally to all landowners within the zoned area. Courts, however, have allowed restrictions on development and use of air rights by specific properties, in the name of a public good such as historic preservation.[96] Furthermore, providing a means of voiding the solar right ensures that the taking will not continue beyond the time that it is a reasonable exercise of state power.[97]

V. CONCLUSION

Growth in markets and developments in technology often go in tandem. A future for solar technology therefore requires facilitating the market acceptability of solar energy production. Important obstacles to that acceptability—building preparedness, equipment dependability, and protected access to sunlight—can be facilitated by legislative action.

Building codes should require that new buildings be equipped with features that would ease solar equipment installation. They should also incorporate standards for solar heating and cooling equipment.

Access to sunlight will also have to be assured. Common law means of attaining this goal would benefit from being codified in statute and augmented by the creation of a statutory right to solar access.

95. *See supra* notes 77-78 and accompanying text.

96. *See, e.g.*, Penn Central Trans. Co. v. New York City, 438 U.S. 104 (1978) (upholding state law prohibiting construction in the air space above Grand Central Station in New York City. The court rejected the thesis that full use of air rights is so involved with investment expectations as to cause an inevitable taking).

97. *Cf.* the problem of granting an immutable right to solar access under the New Mexico statute, *supra* notes 68-78 and accompanying text.

VI. Appendix A: Lungren's Model Statute[98]

Section I. Declaration of Policy

The legislature hereby finds that the use of solar energy can (1) relieve the nation's reliance upon irreplaceable domestic and imported fossil fuels subject to depletion due to natural usage, economic or political circumstances; (2) reduce the environmental effect of air and water pollution through use of a non-polluting energy source; (3) create employment in the manufacturing, installation, maintenance and development of solar devices; and, (4) require establishment of solar property rights in order to encourage solar development by furnishing assurance of continued access to sunlight.

The legislature declares that construction and use of solar energy devices is of great value to the public health, safety, and welfare of the citizens of this state and that appropriate action must be taken to encourage solar energy use.

Further, as the use of solar energy collection devices increase, the necessity of protecting these devices from the probability of shading by structures or vegetation becomes imperative. Therefore, the legislature declares that a property interest in solar rights, easements and covenants shall be established to guarantee a private owner continued access to sunlight.

Section II. Aborgation of Common Law

The state of _____ recognizes a solar easement, a solar covenant, and a solar right as the only property rights to solar access. Each of these rights may only be acquired by compliance with the requirements set forth in this act.

Section III. Definitions

As used in this section the following terms have the following meanings:

A. "solar energy": radiant energy (direct, diffuse, and reflected) received from the sun at wave lengths suitable for conversion into thermal, chemical, or electrical energy.

B. "solar energy collector": a structure or portion of a structure which is used to convert solar energy into thermal, chemical, or electrical energy, including any space or struc-

98. Lungren, *supra* note 79, at 185-197.

tural components specifically designed to retain heat derived from solar energy and any mechanism specifically maintained to produce photosynthetic products.

C. "solar energy system": a complete unit consisting of a solar energy collector and an energy storage area with capability to distribute energy for the purpose of converting sunlight into a source for heating, cooling or the production of electricity.

D. "Solar device": any device or combination of devices or elements which rely upon sunshine as an energy source. The term includes, but is not limited to, any device or style of construction that uses either active or passive means of collecting solar energy, for use in:

1. heating or cooling a structure, building, or enclosed space;
2. heating or pumping of water;
3. industrial, commercial or agricultural processes;
4. generating electricity or steam or any other source of power.

A solar device may be used for purposes other than the collection of solar energy. These purposes include, but are not limited to, serving as a structural member of a roof, wall, or window.

E. "solar easement": a right to an unobstructed line-of-sight path from the solar device to the sun (which permits radiation from the sun to impinge directly on a solar device) expressed as a property interest that attaches to and runs with the land benefited and burdened.

F. "solar covenant": a right to an unobstructed line-of-sight path from a solar device to the sun (which permits radiation from the sun to impinge directly on a solar collector) that is enforceable only against a possessor of the property burdened by the solar covenant who signed the instrument that created the solar covenant, or a successor in interest of that signer.

G. "solar right": a right to the use of an unobstructed line-of-sight path from a solar device to the sun (which permits radiation from the sun to impinge directly on a solar device) established and controlled by the administrative procedure described in this act.

SECTION IV. CONTENT OF A SOLAR EASEMENT

A. Creation. A solar easement shall be created in writing. Nothing in this section shall be deemed to create or authorize the creation of an implied or prescriptive easement. The instrument creating a solar easement shall contain, but is not limited to:

1. Description of Property
   A description of the real property subject to and benefiting from the solar easement.
2. Description of Easement
   The perimeters of the solar easement must be described in language sufficiently clear to allow the owner of the property subject to the easement to understand the extent of the grant. A drafter shall describe (1) the vertical and horizontal angles, expressed in degrees, at which the solar easement extends over the servient estate and the points from which those angles are to be measured, (2) the height above the property over which the solar easement extends, (3) prohibited shadow patterns, (4) the hours of the day during which sunlight or a solar energy system may not be obstructed, and (5) any other reasonably certain description.
3. Terms and Conditions of Grant
   The terms and conditions under which the solar easement is granted shall be specified, including (without limitation) specific height restrictions placed on vegetation, structures or other objects.
4. Compensation
   Any compensation received by the owner of the servient estate as consideration for the granting and/or maintenance of the solar easement shall be stated.

B. Notice. Any property owner shall grant a solar easement in the same manner and with the same effect as a conveyance of an interest in real property. The easement shall be filed, duly recorded, and indexed in the office of the registrar of deeds in the county in which the property affected by the solar easement is located.

C. Enforcement. A solar easement is enforceable against any owner or possessor of the property burdened by the solar

easement who causes an obstruction to intrude into the area affected by the solar easement.

SECTION V. CONTENT OF A SOLAR COVENANT

A. Creation. A solar covenant shall be created in writing. The instrument creating a solar covenant shall contain, but is not limited to, the following:
   1. Description of Property
      A description of the real property subject to the solar covenant.
   2. Description of covenant
      A description of the vertical and horizontal angles, expressed in degrees and measured from the site of the solar energy system or any other description which defines the three dimensional space, or the place and time of day in which an obstruction of sunlight is prohibited or limited.
   3. Terms and Conditions of Grant
      Any terms or conditions of grant are those under which the solar covenant is granted or may be terminated.

B. Notice. The instrument creating a solar covenant shall be filed, duly recorded, and indexed in the office of the registrar of deeds in the county in which the property affected by the solar covenant is located.

C. Enforcement. A solar covenant is enforceable only against a possessor of the property burdened by the solar covenant who signed the instrument that created the solar covenant or a successor in interest of that signer.

D. Release. The person who signed the instrument that created the solar covenant, as the possessor or owner of the real property benefitted by the solar covenant, shall cause a release of the solar covenant to be filed, in the same place that the instrument that created the solar covenant was filed, within 30 days of receiving written notice that any person against whom the solar covenant is unenforceable has taken possession of the real property burdened by the solar covenant.

E. Substance controls over form. If an instrument is labeled a solar covenant but contains all that is necessary to create a solar easement and is signed by both the landowner and

the possessor of the burdened land, that instrument may create a solar easement.

SECTION VI. CREATION OF A SOLAR RIGHT

A. Creation. The legislature declares that the right to use solar energy is a property right, the exercise of which is to be encouraged and regulated by the laws of the state. This property right shall be known as a solar right.

B. Application Requirements. Any owner of real property may make application for a solar right. The application shall be made to and in the manner required by the Department of _____. The application shall contain, but is not limited to, the following:

1. A description of the real property upon which the solar device is to be installed or is installed; a description of all real property subject to the solar right; and
2. Evidence that all applicable code and permit requirements have been complied with; and
3. A description of the vertical and horizontal angles, expressed in degrees and measured from the site of the solar energy system, from which the solar right will extend over the real property subject to the solar right; and
4. A description of any growth or structure that does now, or appears likely in the future, to interfere with the solar right; and
5. A list of all landowners of record whose property will be affected by the proposed solar right; and
6. Proof that notice and copy of the application has been given to all landowners of record whose property will be affected by the proposed solar right; and
7. The Department shall determine if an application is satisfactorily completed and shall notify the applicant of its determination.

C. Procedure for Hearing. If one or more landowners object to the granting of the solar right, then the director of the Department of _____, or the director's representative, shall schedule a hearing, to be held within a reasonable period of time, and shall notify all objectors and the applicant of the date, time and place of the hearing. The hearing

shall be conducted in accordance with rules specified by the Department.

D. Departmental Approval. The Department shall grant a right if the Department determines the following:
   1. The granting of a permit will not unreasonably interfere with the orderly land use and development plans of the area; and
   2. No person has demonstrated that she or he has present plans to build a structure, has applied for a building permit prior to receipt of a notice, or has made substantial progress toward planning or constructing a structure that would create an imeprmissible interference; and
   3. The benefits to the public will exceed any imposed burdens.
   4. The Department may grant a right subject to any condition or exemption it deems necessary to minimize the possibility that the future development of nearby property will create an impermissible interference to solar access or to minimize the burden on any person affected by the granting of the right. Such conditions or exemptions may include, but are not limited to, restrictions on the location of the collector and requirements for the compensation of persons affected by the granting of the right.

E. Appeals. Any party represented at the hearing may appeal the decision of the director of the Department of _____ to the district court, within 30 days of the decision of the director.

F. Record of Permit
   1. The Department shall specify the property restricted by the right and shall prepare notice of the granting of the right. The notice shall identify the property upon which the solar collector is or will be located and the property restricted by the right. It shall further specify that the property may not be developed and that vegetation may not be planted on the property so as to create an impermissible interference with the solar collector which is the subject of the right.
   2. The instrument creating a solar right shall be filed, duly recorded, and indexed in the office of the registrar

of deeds in the county in which the property affected by the solar right is located.

G. Enforcement. A solar right is enforceable only against landowners who received notice and had an opportunity to present objections during the administrative process and subsequent owners of the real property affected by the solar right.

H. Expiration. A solar right expires at the end of any continuous 24-month period in which there is not a functioning solar device at the location for which the solar right was granted.

VII. Appendix B: Tax Incentives

Federal

Tax incentives to encourage the use of solar energy have been enacted both at the federal and state level and have been used successfully.[99]

The primary federal tax incentive for solar users is the Windfall Profits Act of 1980,[100] which amended the provisions pertaining to solar-tax incentives of the Energy Tax Act of 1978.[101] Under the Windfall Profits Act, a solar user is entitled to a tax credit of up to $14,000 for expenditures in installing residential solar energy systems, if incurred after December 31, 1979. However, the Act only provides tax credits towards solar installations in the taxpayer's principal residence. The Act does not cover business sites or second homes. Further, the Act does not cover the rented houses of absentee landlords, or installations in mobile homes or

99. For a general overview of these incentives, see Minan & Lawrence, *supra* note 3.

100. Pub. L. No. 96-223, 94 Stat. 229 (1980), *codified at* 26 U.S.C. §§ 4988-4996 (1980). The tax-incentives in this act will expire on December 31, 1985, unless reenacted. A coalition of alternative energy industries and public interest groups have introduced bills in the House, H.R. 2001, 99th Cong., 1st Sess. (1985) and Senate, S. 1220, 99th Cong., 1st Sess. (1985), to extend these credits for three to five years, during which time their scope and magnitude would be diminished until all tax incentives are phased-out. The bills were introduced in reaction to the Treasury II tax proposal, which fails to eliminate significant tax subsidies to the oil and gas industries. If Treasury I, which deletes all special tax incentives for the energy industries, were to be adopted, then alternative energy industries would withdraw their support for H.R. 2001 and S. 1220 in favor of a "level-playing field" for all energy industries.

101. Pub. L. No. 95-618, 92 Stat. 175 (1978), *codified at* 26 U.S.C. § 46 (1982).

prefabricated buildings.[102] These exceptions limit the effectiveness of the law.

State

State tax-incentives for solar use usually take one of the following forms: 1) real property tax exemptions; 2) sales-and-use tax exemptions; 3) income tax exemptions; or 4) income tax credits.

The exemption of the value of the solar installation from the value of the real property is the most common state tax incentive. With this approach, the value of the solar installation is not added to the value of the property, thereby decreasing the state property tax liability. However, the "primary effect of real-property incentives . . . . is subsidization of existing solar use rather than promotion of new solar investment. The economic problem for the average taxpayer in converting to solar energy is the initial high cost of a solar-energy system."[103] A real-property tax exemption will not alleviate the problem of the high cost of initial installation.

The sale-and-use tax exemption allows solar equipment to be exempted from state and local taxation on the sale and use of the equipment. Unlike the real-estate tax exemption, the sales tax exemption lowers the cost of buying the equipment. However, labor costs, which would include the cost of installation and of necessary remodelling, are not affected by the exemption. Selection, design, installation and repair of equipment comprise a significant percentage of overall costs of installation. Thus, the sales-and-use tax exemption provides an adequate incentive to invest in solar technology.

Special personal income tax exemptions are also used. They permit deducting the cost of solar home installations from personal income. However, they require taxpayers to itemize expenses before any savings can be realized. This means that the majority of taxpayers, who do not itemize, will not have any benefit. Income tax credits which allow the cost of solar energy installations to be credited against the tax, have been cited by two commentators as having "the greatest potential for promoting

102. MINAN & LAWRENCE, *supra* note 3, at 76.

103. *Id.* at 72. *See also* KAN. STAT. ANN. §§ 79- 32,166 to 32,174(6), 79-1118, 79-201h (Supp. 1981) for an example of a property tax credit of up to $1,500 for homes and $4,500 for businesses.

the use of solar energy in that they reduce tax liability."[104] However, such tax credits are only valuable in middle or upper income brackets. Further, some states allow the tax credit to be claimed only by residential installers,[105] although other states include businesses.[106]

Tax incentives for the installation of solar energy equipment have not been very effective because the incentives are not large enough to offset the high cost of such installation. Legislative approval of such tax incentives suggests that there is some interest in encouraging the use of solar energy. While this expression of legislative interest is encouraging, there is considerable doubt that tax exemptions of any kind can ever be sufficient to provide a realistic encouragement to the use of solar technology.

104. MINAN & LAWRENCE, *supra* note 3, at 74.

105. *See, e.g.*, ARIZ. REV. STAT. §§ 43-128.03 (West Supp. 1980); N.M. STAT. ANN. §§ 75-15A-11.3A (Supp. 1975); N.C. GEN. STAT. §§ 105-151.2 (1979 & Supp. 1983); OKLA. STAT. ANN. tit. 68, § 2357.2 (West Supp. 1985).

106. N.D. CENT. CODE § 57-38-01.8 (1983); N.M. Stat. Ann § 7-2-16 (1978).