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## Australian and American Perspectives on the Protection of Solar and Wind Access

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# Australian and American Perspectives on the Protection of Solar and Wind Access

## INTRODUCTION

There is considerable potential in both Australia and the United States for the development of solar and wind energy. Except for Alaska, both countries lie within the latitude range of 50°N to 50°S. Research has shown that every country within this latitude range receives sufficient quantities of direct solar insolation for commercial exploitation,<sup>1</sup> and the prospects are particularly favorable in the sunbelt area of the United States and large tracts of northern and central Australia.<sup>2</sup>

The wind resource potential in both countries is also impressive. In the United States, the Solar Energy Research Institute stated in a 1980 report that there are 3.8 million homes, mostly in rural areas, and 370,000 farms in good locations for wind machines. The report further stated that there is a potential \$25 billion market<sup>3</sup> for wind generators and that the United States could eventually have five million small wind generators with a total generating capacity of 25 gigawatts.<sup>4</sup> In Australia, the National Energy Advisory Council has reported that favorable sites for wind energy generation exist in coastal areas, particularly along the south coast of the continent and the west coast of Tasmania. The Council further reported that in Western Australia, South Australia and Tasmania large-scale grid connected wind power could become economically viable by 1990 and a significant industry could develop to construct wind generators.<sup>5</sup>

The development of solar and wind energy has become of considerable

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1. AUSTRALIAN ACADEMY OF SCIENCE, 17 REPORT OF THE COMMITTEE ON SOLAR ENERGY RESEARCH IN AUSTRALIA 25 (1973).

2. Most of Australia receives over 1,600 kWh per square meter per year of solar radiation, while in an area near the Western Australia-Northern Territory border over 2,500 kWh per square meter per year of solar radiation is received: NATIONAL ENERGY ADVISORY COMMITTEE, RENEWABLE ENERGY RESOURCES IN AUSTRALIA 7 (AUSTRALIAN GOVERNMENT PUBLISHING SERVICE 1981).

3. 1980 values.

4. This is the equivalent of 500,000 barrels of oil a day. See generally Gray, *Windpower: An Industry Headed for Growth*, NAT'L ENERGY J. (1982). See also Solar Energy Research Institute, *New and Renewable Energy in the United States of America*, The United States National Paper for the 1981 U.N. Conference on New and Renewable Sources of Energy (June 1981).

5. National Energy Advisory Committee, *supra* note 2, para. 6.1. See also DEPARTMENT OF RESOURCES AND ENERGY, 6 ENERGY 2000: A NATIONAL ENERGY POLICY REVIEW, RENEWABLE ENERGY, 6-7 (1986).

national importance in both the United States and Australia during the latter part of the twentieth century. Neither country is self-sufficient in its energy resources. In the United States the vulnerability of the country's energy supplies was first exposed by the Arab oil embargo in 1973. It is no coincidence that many of the legislative initiatives designed to maximize the exploitation of renewable energy resources date from that time. The initial federal legislation was the *Solar Heating and Cooling Demonstration Act* 1974,<sup>6</sup> the *Solar Energy Research, Development, and Demonstration Act* 1974<sup>7</sup> and the *Federal Non-nuclear Energy Research and Development Act* 1974.<sup>8</sup> A few years later the U.S. Congress also enacted the *Solar Photovoltaic Energy Research, Development, and Demonstration Act*,<sup>9</sup> designed to increase the use of photovoltaic cells for the generation of electricity by direct sunlight, the *Public Utility Regulatory Policies Act* 1978,<sup>10</sup> designed, *inter alia*, to promote cogeneration facilities and wind generators by the use of economic incentives, and the *Ocean Thermal Energy Act* 1980,<sup>11</sup> designed to facilitate the exploitation of the temperature gradients in off-shore waters for the generation of electricity. In addition, during this era the U.S. Congress and many state legislatures enacted a wide variety of legislation establishing income, property and sales tax incentives for the use of solar and wind appliances,<sup>12</sup> establishing

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6. 42 U.S.C. §§ 2473(b), 5501-5517 (1982).

7. 42 U.S.C. §§ 5551-5566 (1982).

8. 42 U.S.C. §§ 5901-5917 (1982).

9. 42 U.S.C. §§ 5581-5594 (1982).

10. 16 U.S.C. §§ 2601-2645 (1982). This legislation is discussed, *inter alia*, in Martin, *Problems with PURPA: The Need for State Legislation to Encourage Cogeneration and Small Power Production*, 11 B.C. ENVTL. AFF. L. REV. 149 (1983); Wooster, *Cogeneration: Revival Through Legislation*, 87 DICK. L. REV. 705 (1983); Lornell, *A PURPA Primer* 3 SOLAR L. REP. 31 (1981); Lock & Van Kuiken, *Cogeneration and Small Power Production: State Implementation of Section 210 of PURPA*, 3 SOLAR L. REP. 659 (1981); Charo, Stearns & Mallory, *Alternative Energy Power Production: The Impact of the Public Utility Regulatory Policy Act*, 2 COLUM. J. ENVTL. L. 447 (1986); Eisenstadt, *PURPA and PV Systems*, 2 SOLAR L. REP. 1061 (1981).

11. 42 U.S.C. §§ 9101-9167 (1982). This legislation is discussed, *inter alia*, in Keith, *State and Federal Regulation of OTEC Plants in Hawaii*, 2 SOLAR L. REP. 491 (1980); Keith, *Laws Affecting the Development of Ocean Thermal Energy Conversion in the United States*, 43 U. PITT. L. REV. 1 (1981); Nanda, *The Legal Framework for the Development of Ocean Thermal Energy Conversion*, 19 SAN DIEGO L. REV. 385 (1982); Krueger & Yarema, *New Institutions for New Energy Technology: The Case of Ocean Thermal Energy Conversion*, 54 S. CAL. L. REV. 767 (1981); Reisman, *Key International Legal Issues with Regard to Ocean Thermal Energy Conversion Systems*, 11 CAL. W. INT'L L.J. 425 (1981).

12. The U.S. Congress and the majority of the States have enacted various forms of tax incentives to persons using solar and wind appliances. The taxation laws are discussed, *inter alia*, in Adams, *An Analysis of Solar Legislation—Taxes and Easements*, 14 LAND AND WATER L. REV. 393, 395-414 (1979); Johnson, *State Approaches to Solar Legislation: A Survey*, 1 SOLAR L. REP. 55, 57-92 (1979); Knopf, *Tax Benefits Through the Use of Solar Energy*, 2 NORTHROP U.L.J. OF AEROSPACE, ENERGY AND THE ENVT. 85 (1980); Minan & Lawrence, *Encouraging Solar Energy Development Through Federal and California Tax Incentives*, 32 HASTINGS L.J. 1 (1980); Minan & Lawrence, *State and Federal Tax Incentives to Promote Solar Use*, LEGAL ASPECTS OF SOLAR ENERGY 69-92 (Minan & Lawrence, eds., 1981); Roessner, *MAKING SOLAR LAWS WORK: A STUDY OF STATE SOLAR ENERGY INCENTIVES* (1980); Schifflett & Zuckerman, *Solar Heating and Cooling: State and Municipal Legal Impediments and Incentives*, 18 NAT. RES. J. 313, 320-325 (1978).

standards for solar and wind appliances,<sup>13</sup> and creating various governmental agencies responsible for promoting the use of renewable energy resources.<sup>14</sup>

Unlike the United States, Australia was not significantly affected by the Arab oil embargo. The shortfall in oil imports during that period was compensated for by increasing the rate of extraction from the Bass Strait oil fields, the main source of indigenous oil in Australia. Unfortunately, the proven reserves of oil in the Bass Strait are limited, and the 70 percent rate of oil self-sufficiency, which was achieved by Australia in the 1970s, is presently declining. Australia will be obliged to rely increasingly on imported oil unless or until further local oil fields are discovered.<sup>15</sup> For this reason, the development of solar and wind energy has been accorded high priority in Australia. This has been reflected in generous funding for solar and wind research by the federal government. For example, the annual expenditure by the Commonwealth Scientific and Industrial Research Organization on solar energy research increased from \$10,000 in 1952 to \$3.4 million in 1982,<sup>16</sup> while the federal government's other energy funding body, the National Energy Research, Development and Demonstration Council, has in recent years committed almost 15 percent of its total budget to solar and wind energy.<sup>17</sup> Some of the states have also taken an active lead in promoting solar and wind energy research. The most progressive state in this regard has been Victoria, which in 1980 established the Victorian Solar Energy Council under the *Victorian Solar Energy Council Act 1980* (Vic.). This institute was established as a statutory body to encourage and coordinate the general development of solar and solar-related energy resources within the state.<sup>18</sup>

Access to solar and wind energy resources requires legal safeguarding. In relation to solar energy, except at midday at certain times of the year in tropical latitudes, the sun is never directly overhead at any location.<sup>19</sup>

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13. FLA. STAT. ANN. § 377.705 (West 1986); CAL. PUB. RES. CODE § 25605 (West 1986); 1981 N.M. Laws 379.

14. For example, the Florida Solar Energy Center; Solar Energy Research Institute; Arizona Solar Energy Commission.

15. See, e.g., I. PAUSACKER & J. ANDREWS, *LIVING BETTER WITH LESS* 32-33 (1981).

16. Carrick, *The Politics of Energy Alternatives: A Liberal Viewpoint*, 4(1) SOLAR PROGRESS 5 (1983).

17. Carrick, *Guest Editorial*, 3(2) SOLAR PROGRESS 3 (1982).

18. The remaining States and Territories have not established a statutory body responsible for solar and wind energy matters, but instead carry out and fund solar and wind energy research through their Energy Advisory Committees or government departments dealing with energy matters. The bodies responsible for solar and wind energy are the Energy Authority of New South Wales, the Energy Division of the South Australian Department of Mines and Energy, the Department of National Development and Energy (Australian Capital Territory) and the Department of Mines and Energy of the Northern Territory and Western Australia. The only exception is in Queensland where the State Government supports the Queensland Solar Energy Research Centre located at the University of Queensland.

19. Hawaii is the only tropical area of the United States. In Australia, the Northern Territory and the northern parts of Queensland and Western Australia are within the tropics.

The effect of this is that sunlight reaching a solar device on the solar user's land will have to pass through the skyspace of one or more neighboring properties. Vegetation or a building on a neighbor's property may block the sunlight, and the solar collector panels may cease to function effectively or efficiently. The lower the position of the sun in the sky, the greater is the likelihood of shading. For this reason, the problem of interference with solar access is greatest in higher latitudes and during the winter months.<sup>20</sup>

In relation to wind energy, even if a wind generator is ideally situated at a windy location it may be rendered ineffective or inefficient if a building development, the growth of trees or the erection of another wind generator upwind<sup>21</sup> on neighboring land restricts the natural flow of wind to the generator. The adverse effect on the operation of wind generators of physical objects located on neighboring properties upwind is extremely significant, as relatively minor obstructions to the wind are capable of causing a large reduction in the production capacity of a wind generator. The power obtained from the wind varies as the cube of its velocity. For example, a wind generator designed to produce 2kW at 35 kilometres per hour will generate only 500 watts at 22 kilometres per hour.<sup>22</sup>

The path of law reform designed to protect solar and wind access has differed markedly in various common law countries. In contrast with the United States, where much legislation has been enacted,<sup>23</sup> progress in Australia has been very slow. Despite reports from various law reform agencies<sup>24</sup> pointing to the need for legislative action, such action has been limited to action at the local government level and has addressed only solar access.

There are lessons for both Australia and the United States to be gleaned

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20. For a detailed discussion of the problem of solar access, see S. Kraemer, *SOLAR LAW* 197-226 (1978) [hereinafter KRAEMER]; A. BRADBROOK, *SOLAR ENERGY AND THE LAW* 41-46 (1984) [hereinafter BRADBROOK]; Riordan & Hiller, *Describing the Solar Space in a Solar Easement*, 2 *SOLAR L. REP.* 299, 300-302 (1980).

21. Wind generators significantly reduce the wind energy potential in the immediately surrounding area for a distance of approximately ten times the diameter of the generator's blades depthwise and three times the diameter of the blades perpendicular to the wind. For this reason a large wind generator could adversely affect the performance of another large wind generator located on neighboring property downwind. See Baker & Walker, *Wake Studies at the Goodnoe Hills Mod-2 Site* (Report prepared for the Bonneville Power Administration, Portland, Or.) (Oct. 1982).

22. See R. LORNEILL & D. SCHALLER, *SMALL POWER PRODUCTION AND WIND ENERGY: REGULATORY ACTIONS UNDER PURPA* 3-4 (U.S. Dept. of Commerce 1982); EXECUTIVE OFFICE OF ENERGY RESOURCES, COMMONWEALTH OF MASSACHUSETTS, *HANDBOOK ON WIND ZONING FOR MUNICIPAL OFFICIALS* 4 (1982); R. Noun, *Protecting Wind Access: A Preliminary Assessment*, 3-4 (Feb. 1983) (Paper presented at Energy Sources Technology Conference, Houston, Tex.); LEGAL-INSTITUTIONAL IMPLICATIONS OF WIND ENERGY CONVERSION SYSTEMS, REPORT TO THE NATIONAL SCIENCE FOUNDATION UNDER NSF GRANT APR75-19137, 35 (1977).

23. See *infra* notes 40-61 and accompanying text.

24. See *infra* notes 62-89 and accompanying text.

from each other's law reform and legislative experience in this area. In Australia, there appears to be widespread ignorance as to alternative approaches which may be adopted to safeguard solar and wind access. The greater the use of renewable energy resources in Australia, the greater the imperative to take legislative action. In the United States, the fact that there have been so many different forms of statutes on this subject suggests undue haste and a lack of detailed planning as to the most appropriate legislative measures. The existence of obvious deficiencies in some of the U.S. legislation adds weight to this suggestion. The Australian experience may be useful in providing ideas for modifying renewable resource law in the United States.

This article focuses on the lessons which may be learned by both countries from the present experience. It examines the extent to which law reform is necessary to remedy the inadequacies of the common law safeguards for solar and wind access from an Australian perspective and explains the pressures for law reform which have developed in Australia. The various reforms adopted in Australia and the United States are then examined and compared. This material provides an essential background which hopefully will guide both countries to enact rational and effective laws in this area.

### THE NEED FOR SOLAR AND WIND ACCESS LEGISLATION

The starting point for any discussion of the development of legislation designed to protect solar and wind access must be a consideration of why law reform is required. This in turn requires the identification of existing methods available at common law to protect solar and wind access and an explanation of their inadequacies.

In both Australia and the United States, solar and wind access may be protected by express easements, implied easements, prescription or restrictive covenants. In addition, in the United States, solar access may also be protected in certain circumstances by the law of private nuisance. The authority for the latter proposition is the landmark decision of the Supreme Court of Wisconsin in *Prah v. Maretti*.<sup>25</sup> The plaintiff in that case had recently constructed an active solar space and water heating system in his home. He brought an action to restrain his neighbor from constructing a house in such a position as to shade the solar collector panels on the plaintiff's land. The majority of the court agreed that as

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25. 108 Wis. 2d 223, 321 N.W. 2d 182 (1982). This case is discussed in 21 DUQ. L. REV. 1159 (1983); 78 NW. U. L. REV. 861 (1983); 14 ENVTL. L. 223 (1983); 52 U. CIN. L. REV. 208 (1983); 16 J. MARSHALL L. REV. 435 (1983); 7 SUFFOLK TRANSNAT'L L.J. 235 (1983); WIS. L. REV. 1262 (1983).

the defendant's proposed residence blocked solar access it constituted a private nuisance. The court refused to follow earlier decisions that held that in the absence of an express agreement granting access to sunlight, a landowner's obstruction of another's access to sunlight is not actionable in nuisance. The court reasoned that the earlier cases are in conflict with modern social priorities. It is a moot point whether this decision will survive later judicial scrutiny by other United States courts, and whether the decision will be extended to include wind access protection. It also remains to be seen whether the Australian courts will follow the Wisconsin lead and disregard the established principles of the law of private nuisance,<sup>26</sup> which seem to preclude a successful action in nuisance by a solar or wind user, in order to provide a remedy based on policy considerations.

The application and relevance of the law of easements,<sup>27</sup> restrictive covenants<sup>28</sup> and nuisance<sup>29</sup> to the issue of solar and wind access has been examined in great detail in many articles and books published in the United States and Australia over the past decade. The essential elements of each of these legal doctrines will not be repeated in this article. A knowledge of these essential elements will be presumed. Reference may be made to earlier publications on this issue.

This part of the article will consider the important question why, in light of the availability of easements, restrictive covenants and (possibly) nuisance, statutory law reform is necessary to protect solar and wind

26. For a discussion of the Australian law of private nuisance, see F. TRINDADE & P. CANE, *THE LAW OF TORTS IN AUSTRALIA* 521-42 (1985). For a discussion of the U.S. law of private nuisance, see PROSSER AND KEETON *ON THE LAW OF TORTS* (1984).

27. For U.S. materials on easements of solar and wind access, see e.g., KRAEMER, *supra* note 20, at 33-56; Riordan & Hiller, *Describing the Solar Space in a Solar Easement*, 2 SOLAR L. REP. 299 (1980); Noun, *Protecting Wind Access: A Preliminary Assessment* 6-7 (1983) (Paper presented at Energy Sources Technology Conference, Houston, Tex.) 6-7 (1983); Zillman, *Common Law Doctrines and Solar Energy*, LEGAL ASPECTS OF SOLAR ENERGY, 25, 31-34 (Minan & Lawrence eds. 1981). For Australian materials on easements of solar and wind access, see BRADBROOK, *supra* note 20, at 47-75; Bradbrook, *The Development of an Easement of Solar Access*, 5 U. NEW SOUTH WALES L.J. 229 (1982); Bradbrook, *The Access of Wind to Wind Generators*, AUSTRALIAN MINING AND PETROLEUM LAW ASSOCIATION YEARBOOK 433, 442-453 (1984); Preece, *Solar Energy and the Law*, 6 QUEENSLAND LAWYER 83, 89-93 (1981).

28. For U.S. materials on solar and wind access covenants, see e.g. KRAEMER, *supra* note 20, at 57-72; Comment, *Solar Rights and Restrictive Covenants: A Microeconomic Analysis*, 7 FORDHAM URB. L.J. 283 (1979); Zillman, *supra* note 27, at 34-40; G.B. HAYES, *SOLAR ACCESS LAW*, 195-200 (1979) [hereinafter HAYES]. For Australian materials on solar and wind access covenants, see BRADBROOK, *supra* note 20, at 76-88 (1984); Bradbrook, *The Role of Restrictive Covenants in Furthering the Application of Solar Energy Technology*, 8 ADELAIDE L. REV. 286 (1983); Preece, *supra* note 27, at 88-89.

29. For U.S. materials on the relevance of private nuisance at common law to solar and wind access, see e.g. KRAEMER, *supra* note 20, at 129-42; Zillman, *supra* note 27, at 40-41; HAYES, *supra* note 28, at 169-79. For Australian materials, see BRADBROOK, *supra* note 20, at 89-110; Bradbrook, *Nuisance and the Right of Solar Access*, 15 U. W. AUSTL. L. REV. 148 (1983); Bradbrook, *The Access of Wind to Wind Generators*, AUSTRALIAN MINING AND PETROLEUM LAW ASSOCIATION YEARBOOK 433, 453-62 (1984).

access. The short answer is that these common law remedies are not as effective in the present context as may be apparent at first glance. This point is worthy of more detailed examination.

The doctrine of prescription illustrates why law reform is necessary. This doctrine is only of theoretical relevance. As a practical matter the law of prescription is likely to be of little, if any, relevance to a solar or wind user. Under the present law, the solar or wind user must install and use his solar collector panels or wind generator for twenty years before his prescriptive right to solar or wind access becomes an easement. At any time during this twenty-year period the neighboring landowner can block the solar access with impunity. Potential solar and wind users may be reluctant to invest in solar or wind devices if their right of solar or wind access is not legally safeguarded. They are unlikely to be reassured by the prospect that after twenty years' continuous use they would have a protected prescriptive right of access. Even a reduced prescriptive period would not be satisfactory. To encourage private individuals and industries to invest in solar and wind appliances, a guaranteed right of solar or wind access is needed at the time of the installation of the appliances, not several years later. For this reason the law of prescription can never satisfy the needs of the solar or wind user.<sup>30</sup>

The law of implied easements is also of only marginal assistance to a solar or wind user. Such easements only come into being upon a subdivision of land. Thus, unless the issue of solar or wind access arises at a time when the land requiring the access is being subdivided, the body of laws on implied grants and reservations of easements will be irrelevant. In the vast majority of cases, a renewable energy resource user will not have the opportunity to use an implied easement to protect his or her access to wind or solar resources.

Express easements granting solar and wind access are fraught with practical difficulties. The major problem is that such an easement will inevitably be difficult to obtain. As pointed out by Zillman and Deeny in the context of solar access, the newness of solar technology may well work against the solar user.<sup>31</sup> Although a neighbor may be willing to grant a right of way over his land, he may be unsure of the consequences of relinquishing rights to a portion of the airspace over his land. Further,

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30. In the United States, the Environmental Law Institute has reported that it is not worthwhile introducing new legislation designed to make the laws on prescription effective in the solar context. See Matuson, *A Legislative Approach to Solar Access: Transferable Development Rights*, 13 NEW ENG. L. REV. 835, 841-842 (1978).

31. Zillman & Deeny, *Legal Aspects of Solar Energy Development*, 25 ARIZ. ST. L.J. 25, 35 (1976). For further discussion of the problems involved in obtaining an express easement of solar access, see Law Reform Committee of South Australia, *Solar Energy and the Law* 103 (1978) (Discussion Paper, Adelaide); Matuson, *supra* note 30, at 844; Goble, *Solar Access and Property Rights: Reply to a "Maverick" Analysis*, 12 CONN. L. REV. 270, 279 (1980).

in most instances it will be necessary for the solar user in a city or suburban neighborhood to obtain easements from two or more neighboring landowners to the east and west in order to guarantee sufficient solar access to ensure the efficient use of the solar device. Adjacent landowners, realizing that their consent is essential to the solar user, may ask for an unreasonable sum of money for granting a solar access easement.<sup>32</sup> These practical difficulties apply equally well to wind access.

Other financial problems exist with protecting solar or wind access by express easements. The legal costs of drafting a solar or wind access easement may be considerable. The actual cost will depend on whether the easement is described in general or technical terms. The cost of drawing up an agreement containing detailed mathematical calculations which vary according to the topography of the servient and dominant land is likely to be very high. Surveying costs may also be considerable. The final problem is that the entire cost will fall on the solar or wind user and may be so high as to make the solar or wind device an uneconomic proposition.

The difficulties referred to in the preceding paragraphs relating to the obtaining of an express easement of solar or wind access apply with equal weight to the obtaining of a restrictive covenant designed to protect such access in established neighborhoods. As a practical matter, suspicion on the part of neighbors, high costs and inconvenience would probably inhibit the use of covenants in this situation.<sup>33</sup>

On a more optimistic note, these difficulties would not necessarily arise in new subdivisions and estates, and in this context solar and wind covenants are likely to play a significant role in the future. Land developers anticipating the future use of solar and wind appliances in their subdivisions could include in the restrictions applicable to the land restrictive covenants designed to protect solar or wind access.<sup>34</sup> Covenants of the type commonly used to preserve property values (for example, covenants limiting the height of buildings and preventing the removal of vegetation) could, if suitably drafted, be similarly used to protect access to the wind or direct sunlight. For the developer, the use of solar or wind covenants may enhance the value of the blocks in the subdivision.<sup>35</sup> For the solar

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32. For a discussion of the valuation of express easements of solar access, see Gaumnitz & Gergacz, *How to Draft and Determine the Value of Express Solar Access Easements*, 9 REAL EST. L.J. 128 (1980).

33. See Bradbrook, *The Role of Restrictive Covenants in Furthering the Application of Solar Energy Technology*, 8 ADELAIDE L. REV. 286, 288 (1983).

34. See Jaffe, *A Commentary on Solar Access: Less Theory, More Practice*, 2 SOLAR L. REP. 769, 779 (1980). As stated by Jaffe, in some communities in the United States the practice of filing restrictive covenants against the shading of collectors in the master deed declaration of development is encouraged.

35. The experience in the United States is that land developers have found that a general neighborhood plan appeals to potential purchasers. As stated by KRAEMER, *supra* note 20, at 57:

Land planners believe that lots on which direct sunlight is guaranteed will bring

or wind user, the use of solar or wind access covenants presents the opportunity for the intelligent planning of neighborhoods so as to assure the protection of solar or wind access for both the initial building and landscaping stages and for the future development of the land.

The fact that in new development covenants safeguarding solar or wind access can be imposed by the developer removes all the problems associated with private negotiations between individual landowners for such covenants in established neighborhoods. However, various problems associated with these covenants in new subdivisions do exist. First, there is little opportunity for co-ordinated uniform planning in development schemes. This lack of comprehensive planning means that restrictive covenants operating in a new development area may conflict or interfere with later comprehensive zoning proposals. Secondly, while landowners within the development are afforded protection by their mutual covenants, those on the fringe of the development may find this is not the case. Landowners immediately outside the development and not subject to restrictions may build structures or allow vegetation to grow and thus nullify the effect of the covenants.<sup>36</sup> The only way to overcome the latter problem is to negotiate for a covenant with the offending landowners, which raises the same problems as discussed in the context of established areas.

Private nuisance actions to enforce solar or wind access have three major drawbacks. First, a private nuisance action would involve such considerable legal costs and such delays that it cannot be regarded as an effective remedy in this context. Secondly, unlike an easement or restrictive covenant, nuisance does not grant the solar or wind user a proprietary interest in the airspace above neighboring land. Thirdly, the court has a discretion to award either damages<sup>37</sup> or an injunction, or both, if it concludes that the blocking of solar or wind access is actionable in nuisance. Because of the discretionary nature of the remedy, it is impossible to predict with certainty when the court will award damages rather than an

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substantially higher prices in the market place. With a potential profit incentive working, developers look to covenants as the most effective method of selling solar homes at competitive prices.

36. For example, in Australia it is common in larger development areas for developers to include a restrictive covenant preventing "any business or industry which by reason of the process involved in the method of manufacture or the nature of the materials or goods used, produced or stored is likely to cause or causes fumes or vapor or causes or discharges dust or other impurities or matter liable to become foul so as to be injurious to persons within neighboring lands." While such a covenant is effective within the development, neighbors not subject to such a development may well create conditions which directly interfere with solar or wind access.

37. The plaintiff has the option of claiming common law or equitable damages. At common law, damage is the ground of the action for nuisance. In the case of a continuing nuisance (as the blocking of solar or wind access would be regarded) a fresh action accrues each time fresh damage occurs, and legal damages can be assessed only up to the date of the proceedings. In contrast, equitable damages can cover future as well as past damage. See A. BRADBROOK & M. NEAVE, *EASEMENTS AND RESTRICTIVE COVENANTS* 349 (1981).

injunction. From the standpoint of many solar or wind users, an injunction is essential and damages are clearly unsatisfactory.<sup>38</sup> Many solar and wind users install their appliances for reasons other than to achieve savings in the cost of fuel, and these interests cannot be taken account of in the award of damages. While an award of damages would allow the user to recover the cost of the solar or wind appliance and the increased cost of substitute fuel,<sup>39</sup> this may be of minor consequence. Without an injunction, the solar or wind energy user will be left with a solar energy system or wind generator incapable of functioning effectively. Prime factors motivating many users to convert to solar and wind energy include the control it gives individual persons over their energy source, and the desire to reduce pollution problems and preserve the community's supplies of fossil fuels. The award of damages would not advance either the solar or wind user's purpose or the society's interest in the development of solar and wind energy.

Thus, as a practical matter, with the sole exception of restrictive covenants in new land subdivisions, the common law does not provide any effective safeguards for solar and wind access. In light of this situation, it is not surprising that pressure for law reform has developed in countries such as the United States and Australia, where significant potential for the exploitation of solar and wind energy exists. It is instructive to examine the divergent paths that law reform has taken in these countries.

### LAW REFORM IN THE UNITED STATES

Among common law countries, the United States has been in the vanguard of introducing legislative measures to safeguard solar and wind access. To date, the majority of the states have introduced some legislation in this area. The methods of legal protection differ from state to state, and a variety of different forms of legislation have been adopted.

With respect to solar access, the most widespread form of legislation adopted in the United States is legislation recognizing the validity of an easement for solar access.<sup>40</sup> Such legislation specifies both the manner

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38. The issue of the nature of the remedy in the solar context is discussed in Becker, *Common Law Sun Rights: An Obstacle to Solar Heating and Cooling?*, 3 J. CONTEMP. L. 19, 30-31 (1976); Note, *Obtaining Access to Solar Energy: Nuisance, Water Rights and Zoning Administration*, 45 BROOKLYN L. REV. 357, 366 (1979); HAYES, *supra* note 28, at 174-175.

39. The measure of damages in tort is "that sum of money which will put the party who has been injured . . . in the same position as he would have been in if he had not sustained the wrong for which he is now getting his compensation or reparation." *Livingstone v. Rawyards Coal Co.* 5 App. Cas. 25, 39 (1880) (*per* Lord Blackburn).

40. On this subject, see KRAEMER, *supra* note 20, at 33-56; BRADBROOK, *supra* note 20, at 47-75; Bradbrook, *The Development of an Easement of Solar Access*, 5 U. NEW SOUTH WALES L.J. 229 (1982); Comment, *Securing Solar Energy Rights: Easements, Nuisance, or Zoning?*, 3 COLUM. J. ENVTL. L. 112 (1976); Gergacz, *Legal Aspects of Solar Energy: Easements for Sunlight and*

of the creation of solar access easements and their contents. On the manner of the creation of such easements, the legislation is similar in all states and stipulates that any solar easement shall be created in writing and shall be subject to the same conveyancing and recording requirements as other easements.<sup>41</sup> On the contents of solar access easements, however, the legislation differs. Some states permit such easements to be created by means of a descriptive statement of the airspace affected by the easement,<sup>42</sup> while other states require that the easement be stated in mathematical terms with reference to the horizontal and vertical angles at which the easement extends over the burdened land.<sup>43</sup>

As an alternative to or in addition to solar easements, some states have declared that deeds, contracts or other instruments affecting the transfer or sale of, or an interest in, real property are in certain circumstances void and unenforceable if they contain covenants or conditions prohibiting or restricting the installation or use of solar devices.<sup>44</sup> The introduction of legislation designed to ensure that restrictive covenants protecting solar access (solar covenants) are recognized as legally valid has also been

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*Individual Solar Energy Use*, 18 AM. BUS. L.J. 414 (1980); Gergacz, *Solar Energy Law: Easement of Access to Sunlight*, 10 N.M. L. REV. 121 (1979). The States with legislation authorising express solar easements are: Alaska: ALASKA STATS. § 34.15.145 (1985); 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. §§ 44-9-20 to 44-9-23 (1987); Idaho: IDAHO CODE § 55-615 (1979); Illinois: ILL. ANN. STAT. ch. 96½ § 7303(f) (Smith-Hurd Supp. 1987); Indiana: IND. CODE ANN. § 32-5-2.5-1 to 3 (Burns 1980); Iowa: IOWA CODE ANN. §§ 93.22-93.25 (West Supp. 1987); Kentucky: KY. REV. STAT. § 381.200 (Baldwin Supp. 1987); Minnesota: MINN. STAT. ANN. § 500.30 (West Supp. 1988); Missouri: MO. ANN. STAT. § 442.012 (Vernon 1986); Montana: MONT. CODE ANN. §§ 70-17-301 to 302 (1987); Nebraska: NEB. REV. STAT. §§ 66-901 to 914 (1986); Nevada: NEV. REV. STAT. § 111.370 (1986); New Jersey: N.J. STAT. ANN. §§ 46:3-24 to 3-26 (West Supp. 1987); North Dakota: N.D. CENT. CODE §§ 47-05-01.1 to 01.2 (1978); Ohio: OHIO REV. CODE ANN. § 5301.63 (Page 1981); Oregon: OR. REV. STAT. §§ 105.885 to 895 (1984); Rhode Island: R.I. GEN. LAWS § 34-40-1 to 2 (1984); Tennessee: TENN. CODE ANN. §§ 66-9-201 to 206 (Supp. 1987); Utah: UTAH CODE ANN. § 57-13-1 to 2 (1986); Virginia: VA. CODE ANN. §§ 55-352 to 354 (1986); Washington: WASH. REV. CODE ANN. §§ 64.04.140 to 170 (Supp. 1987).

41. See, e.g., NEB. REV. STAT. § 66-910 (1986).

42. See, e.g., GA. CODE ANN. § 44-9-23 (1982); KY. REV. STAT. ANN. § 381.200(2) (Baldwin Supp. 1987); IOWA CODE ANN. §§ 93.22, 93.25 (West Supp. 1987).

43. See CAL. CIV. CODE § 801.5 (West 1982); COLO. REV. STAT. § 38-32.5-102 (1982); FLA. STAT. ANN. § 704.07 (Harrison 1979); ID. CODE § 55-615 (1979); ILL. ANN. STAT., ch. 96½, § 7303 (Smith-Hurd Supp. 1987); IND. CODE ANN. § 32-5-2.5-3 (Burns 1980); KAN. STAT. ANN. § 58-3802 (1983); MINN. STAT. ANN. § 500.30 (West Supp. 1988); MO. ANN. STAT. § 442.012 (Vernon 1986); MONT. CODE ANN. § 70-17-302 (1976); N.J. STAT. ANN. § 46:3-26 (West Supp. 1987); N.D. CENT. CODE § 47-05-01.2 (1978); TENN. CODE ANN. § 66-9-204 (Supp. 1987); UTAH CODE ANN. § 57-13-2 (1986); VA. CODE ANN. § 55-354 (1986).

44. See, e.g., CAL. CIV. CODE § 714 (West. Supp. 1988); FLA. STAT. ANN. § 163.04 (Harrison Supp. 1986); COLO. REV. STAT. § 38-30-168 (1982). On the subject of solar covenants, see KRAEMER, *supra* note 20, at 57-72; BRADBROOK, *supra* note 20, at 76-88; Bradbrook, *The Role of Restrictive Covenants in Furthering the Application of Solar Energy Technology*, 8 ADELAIDE L. REV. 286 (1983); Bowden, *Protecting Solar Access in Canada: The Common Law Approach*, 9 DALHOUSIE L.J. 261, 281-285 (1985); Comment, *Solar Rights and Restrictive Covenants: A Microeconomic Analysis*, 7 FORDHAM UR. L.J. 283 (1979).

mooted from time to time. For example, legislation was proposed in Iowa in 1979 that would have permitted city councils, city and county zoning commissions and boards of adjustment to include in ordinances relating to subdivisions a provision requiring deeds for property located in new subdivisions to contain restrictive covenants that guarantee reasonable solar access across neighboring properties.<sup>45</sup> To date, however, no state has enacted legislation recognizing the validity of solar covenants.

Some states in the United States also have enacted public nuisance statutes protecting solar access. An interesting illustration of this approach is California's *Solar Shade Control Act* 1978.<sup>46</sup> This legislation provides, *inter alia*, that after January 1, 1979 no person owning or controlling property shall allow a tree or shrub to be placed or to grow on such property so as to cast a shadow covering more than 10 percent of the collector absorption area of a solar collector on the property of another during designated hours.<sup>47</sup> Violation of this provision is deemed to be a public nuisance punishable by a maximum fine of \$500.<sup>48</sup>

An alternative form of solar access protection adopted in New Mexico and Wyoming is a legislative declaration that the right of solar access is a separate, novel interest in property.<sup>49</sup> In New Mexico, it is further provided that the principles of beneficial use and prior appropriation, which were developed in the western United States governing water law,<sup>50</sup> shall be applied to define the solar right.<sup>51</sup>

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45. S.F. 344 of 1979.

46. CAL. PUB. RES. CODE §§ 25980-25986 (West 1986). This legislation is discussed in Johnson, *State Approaches to Solar Legislation: A Survey*, 1 SOLAR L. REP. 55, 119-120 (1979); Miller, *Legal Obstacles to Decentralised Solar Energy Technologies (Part I)*, 1 SOLAR L. REP. 595 (1979); Comment, *Access Rights for the Solar User: In Search of the Best Statutory Approach*, 16 LAND AND WATER L. REV. 501, 512 (1981); Eisenstadt, *Access to Solar Energy: The Problem and its Current Status*, 22 NAT. RES. J. 21, 34-35 (1982).

47. CAL. PUB. RES. CODE § 25982 (West 1986).

48. Any city or county may adopt, by majority vote of the governing body, an ordinance exempting their jurisdiction from this law. *Id.* at § 25985.

49. N.M. STAT. ANN. § 47-3-4 (1978); WYO. STAT. §§ 34-22-101 to 106 (Cum. Supp. 1987). In New Mexico, the Solar Recordation Act of 1983 belatedly added that a solar right shall be considered an easement appurtenant, N.M. STAT. ANN. § 47-3-8 (1978). No such provision has been enacted in Wyoming. The legislation is discussed in: 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); Warren, *Common Problems in Drafting State Solar Legislation*, 1 SOLAR L. REP. 157 (1979); Gergacz, *Legal Aspects of Solar Energy: Statutory Approaches for Access to Sunlight*, 10 B. C. ENVTL. AFF. L. REV. 1, 13-20 (1982); Note, *New Mexico Solar Rights Scheme: The Light at the End of the Tunnel*, 5 J. ENERGY L. AND POLICY 301 (1984); P. SPIVAK, LAND-USE BARRIERS AND INCENTIVES TO THE USE OF SOLAR ENERGY, 23ff (1979) (Solar Energy Research Institute, U.S. Department of Energy); Williams, *Solar Access and Property Rights: A "Maverick" Analysis*, 11 CONN. L. REV. 430, 447-451 (1979).

50. For a discussion of these water law concepts, see W.A. HUTCHINS, 1 WATER RIGHTS LAWS IN THE NINETEEN WESTERN STATES 286-436 (1971) (Publication No. 1206, U.S. Dept. of Agriculture, Washington, D.C.).

51. N.M. STAT. ANN. § 47-3-4 (1978).

The final approach adopted in the United States is to protect solar access by means of building or planning laws.<sup>52</sup> In some instances, building codes are structured in such a way so as to achieve solar access protection by means of maximum height and minimum set-back requirements. Planning laws may be used so as to allow local ordinances to be established applying a separate regime for solar access protection.<sup>53</sup> Precedents exist in various United States municipalities which have a solar ordinance based either on permits and registration, so-called "solar envelopes" or a system of hypothetical solar fences. A system of permits and registration protects solar access on an allotment by allotment basis. Under such a system, a solar user seeking to safeguard his right of solar access applies to the local council for a permit. The user is required to notify all neighbors whose property may be affected by the grant of a permit. The neighbors are given the right to lodge an objection if they feel that granting the permit would deprive them of the right to develop their properties to a significant degree. If an objection is lodged, a hearing of the issue takes place before the local council. The council has the power to grant the permit with or without conditions or to refuse the permit. A permit, once granted, is registered in a separate register of solar access permits, in which case no future building permits may be granted where the effect of the proposed construction is to obstruct the permit holder's right of solar access.<sup>54</sup>

The system of solar envelopes was advanced by Ralph Knowles in the

52. For a discussion of building codes in the solar context, see KRAEMER, *supra* note 20, at 175-196; Dean, Hayes, Meeker, Miller & Thompson, *Solar Energy and the Law*, in SOLAR ENERGY HANDBOOK 26-9 to 26-12 (J.F. Kreider and F. Kreith, eds.); Robbins, *Building Codes, Land Use Controls and Other Regulations to Encourage Solar Energy Use*, in PROCEEDINGS OF THE CONSUMER CONFERENCE ON SOLAR ENERGY DEVELOPMENT 283ff (1976).

53. For a discussion of the relevance of planning laws in the solar context, see, e.g., KRAEMER, *supra* note 20, at 73-116; BRADBROOK, *supra* note 20, at 111-133; Eisenstadt, Long & Utton, *A Proposed Solar Zoning Ordinance*, 15 URB. LAW ANNUAL 211 (1978); Goble, *Siting ≠ Protection: A Note on Solar Access*, 2 SOLAR L. REP. 28 (1980); Spivak, *supra* note 49, at 3-6, 19-21. The following States have developed zoning statutes permitting municipalities to consider solar access: Arizona: ARIZ. REV. STAT. §§ 9-461.05, 9-462.01 (1987 Supp.); California: CAL. GOV'T CODE § 65860.5; Maine: ME. REV. STAT. ANN. tit. 30, § 4956 (3-12), 4961 (1987 Supp.); New York: N.Y. GEN. CITY LAW § 20(24) (McKinney 1988 Supp.); Oregon: OR. REV. STAT. §§ 215.110, 227.190, 227.290 (1985); Washington: WASH. REV. CODE ANN. §§ 35.63.080 to 090, 36.70.560 (1987 Supp.).

54. A system of this type is in force, *inter alia*, in city of Claremont, Cal., and Deschutes County, Or. The Claremont collector recordation ordinance, enacted in Dec. 1980, applies to cases where solar devices are added to existing residential buildings within the city. A land owner applying for a building permit to install a solar device must submit a plot plan showing the location of the proposed device in relation to surrounding structures and vegetation, both on the property owner's lot and on adjacent lots. The location of the system is reviewed and is either approved or the system is required to be relocated to a position that does not restrict neighboring property owners as much as the first location. Once the building permit is granted and the collector location is recorded on the City Solar Access Map, future building permits will not be granted to neighbors if the proposed construction will obstruct the installed collector's solar access. See L.K. PRICE, SOLAR SUBDIVISIONS: THE PROVISION AND PROTECTION OF SOLAR ACCESS 31 (1982) (Institute for Environmental Studies, Univ. of Wisconsin-Madison).

1970s<sup>55</sup> and may be defined as a volume space devised to allow development or trees within it which will not shade surrounding areas during specified periods of the day. The actual size and shape of the envelope depends on the period during which solar access is required and the configuration of the land parcel. The envelope guarantees solar access to surrounding property by the limitations it places on building heights and vegetation within the envelope.<sup>56</sup> A system of solar envelopes has been enacted in Wisconsin by the *Solar Access Act* 1981.<sup>57</sup> This legislation permits a solar user to rely for shade protection on the zoning restrictions imposed on neighboring land applicable at the time that the solar device was installed. The Act creates a "building envelope", which is created by specified height, and frontyard and backyard building restrictions defining a three-dimensional area of space which can be developed. Damages may be awarded to a solar user whose solar device is shaded by any structure offending the pertinent zoning restrictions built on neighboring land outside the designated building envelope.<sup>58</sup>

Under hypothetical solar fence ordinances, no building or tree may be erected or planted on a block of land when the effect will be to cast a shadow on neighboring land longer than the shadow cast by an imaginary fence of a designated height on the property boundary line between specified hours on the shortest day of the year.<sup>59</sup> This system enables any landowner who wishes to develop his land to calculate without difficulty the extent to which he can legitimately shade his neighbor's property without possible complaint. The system also provides a form of legal protection of solar access for each block of land and enables a solar user

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55. See Knowles, *The Solar Envelope*, 2 SOLAR L. REP. 263 (1980); Knowles, *Solar Access and Urban Form*, A.I.A. JOURNAL 42 (1980); R.L. KNOWLES AND R.D. BERRY, *SOLAR ENVELOPE CONCEPTS—MODERATE DENSITY BUILDING APPLICATIONS* (1980) (Solar Energy Research Institute, SERI/SP-98155-1). On the subject of solar envelopes, see also Osofsky, *Solar Building Envelopes: A Zoning Approach for Protecting Residential Solar Access*, 15 URB. LAWYER 637 (1983); HAYES, *supra* note 28, at ch. 5.

56. This definition is found in SOUTH AUSTRALIAN DEPARTMENT OF MINES AND ENERGY, *SOLAR ACCESS LEGISLATION FOR SOUTH AUSTRALIA: A DISCUSSION PAPER* 15-16 (1982).

57. Ch. 354, Laws of 1981. See Comment, *Wisconsin Recognises the Power of the Sun: Prah v. Maretti and the Solar Access Act*, WIS. L. REV. 1263 (1983).

58. *C.f.* the system in effect in the City of San Diego, California. The ordinance in effect in that city states that all blocks of land must have:

unobstructed access to sunlight to an area of not less than 100 square feet, falling on a horizontal plane 10 feet above the grade of the buildable area of the lot. The condition of unobstructed solar access shall be considered to be achieved when a specific area of not less than 100 square feet has an unobstructed skyview of the sun between azimuths of the sun at 45 degrees to the east and 45 degrees to the west of true south on Dec. 21.

The effect of this is to create indirectly a solar envelope in that the area of a block of land which may be developed is limited to that area where the building, once constructed, will not obstruct the unobstructed skyview requirements of neighboring blocks of land.

59. See KRAEMER, *supra* note 20, at 209-25; Eisenstadt & Utton, *Access to Sunlight: A Legislative Approach*, in LEGAL ASPECTS OF SOLAR ENERGY 45-68 (J.H. Minan & W.H. Lawrence, eds., 1981).

to calculate which areas of his property will be shade-protected and will thus be suitable for locating solar collector panels. The amount of shade protection will depend in each case on the height specified in the ordinance for the hypothetical solar fence. If the height of the fence is low, a land developer may shade only a very limited area of his neighbor's property and the bulk of neighboring land will be shade-protected. If the hypothetical fence is higher, a land developer may shade a much larger area of his neighbor's property and the extent to which the neighboring land is shade-protected will be reduced.<sup>60</sup>

Legislation in the United States designed to safeguard wind access is comparatively rare at present. The two forms of protection which have been adopted closely mirror those discussed above in the solar context. Oregon, Montana and Wisconsin have recently enacted legislation recognizing wind access easements.<sup>61</sup> The Wisconsin statute merely states that the easement must be in writing and is subject to the same conveying and recording requirements as other easements, while the Oregon and Montana statutes contain more specific requirements as to the contents of the instrument creating the property interest.

In some jurisdictions wind access is safeguarded by the use of height and set-back requirements contained in building regulations. Although, like the other regulations, the height and set-back requirements are designed to protect the interests of the community in good planning rather than to give any effective legal rights to the applicant for a planning permit. Nevertheless wind access can be safeguarded by tailoring the set-back requirements so as to allow a sufficient amount of uninterrupted airspace to ensure the efficient operation of a wind generator. This approach has been adopted by the California Energy Commission, which in 1982 drafted a "Model Ordinance for Small Wind Energy Conversion Systems" designed for adoption by the various local government authorities within that state. One provision of this model ordinance requires a wind generator to be set back 5 or 7 1/2 rotor diameters from the downwind property boundary in the direction of the prevailing wind across the land.

In the absence of other legislative models, Australia might have been expected to follow the lead of the United States and adopt similar legislation designed to guarantee solar and wind access. In general, however, the Australian state legislatures have been reluctant to do so.

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60. The system of hypothetical solar fences was pioneered in 1982 by the city of Boulder, Colo., and has also been adopted, *inter alia*, by Los Alamos and Taos, N. Mex. The system introduced in Boulder is enacted in Title 9, Ch. 8, Land Use Regulations, B.R.C. 1981, Solar Access. The system is discussed in Danielson, *Drafting a Solar Access Ordinance: One City's Experience*, 3 SOLAR L. REP. 911 (1982).

61. MONTANA CODE ANN. § 70-17-303 (1987); 1981 Or. Laws, ch. 590; WIS. STAT. ANN. § 700.35 (1987 Supp.).

## LAW REFORM IN AUSTRALIA

### Law Reform Proposals

To date, reports investigating the need for law reform to safeguard the right of solar access have been prepared in South Australia, New South Wales, Victoria and in a national study commissioned jointly by the Federal and Victorian Governments. The national study is the only one which has considered law reform to safeguard the right of wind access.

### Solar Access Protection

**South Australia.** The first study of this area of law in Australia was undertaken by a sub-committee of the Law Reform Committee of South Australia under the chairmanship of Mr. Justice Zelling. This sub-committee was established in September 1976 and issued a Discussion Paper in June 1978.<sup>62</sup> The terms of reference for this sub-committee were broader than merely solar access and included legal problems facing the increased use of solar energy, building and planning implications, consumer protection for energy appliances and the control of solar radiation. The sub-committee did not make any specific recommendations for reform of the law relating to solar access, but made the following general observations:

Although solar access is currently not a serious problem, acceptable legislative solutions could promote the use of solar energy systems. Existing law does not grant any right of access to the sun, although easements can be used to exchange ownership of air space. It is relatively simple to define the scope of unimpeded access necessary to use solar collectors effectively, but not so simple to suggest how an individual right to such access can be implemented.

It may be appropriate to consider such protection as part of planning law. It would be possible to declare some residential zones as solar zones, and consider limitations in those areas on building and vegetation so as to ensure access. The limitations presently existing in R1 or R2 zones may be sufficient, but the matter needs further examination.<sup>63</sup>

Unfortunately, although the sub-committee foreshadowed the need for further research in this area, it was disbanded after the Discussion Paper was published. Further work in this area was undertaken by the South Australian Department of Mines and Energy, which in May 1982 produced its own Discussion Paper.<sup>64</sup> The Paper's summary of recommendations states:

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62. LAW REFORM COMMITTEE OF SOUTH AUSTRALIA, *SOLAR ENERGY AND THE LAW IN SOUTH AUSTRALIA* (1978) (Discussion Paper) [hereinafter LAW REFORM COMMITTEE].

63. *Id.* at 7.

64. DEPARTMENT OF MINES AND ENERGY, *SOLAR ACCESS LEGISLATION FOR SOUTH AUSTRALIA* (1982) (Discussion Paper, Adelaide).

Possible mechanisms proposed for protecting access to solar energy are solar envelopes and private agreements, solar easements and encumbrances; if these options are not applicable then compensation may be payable where precedence of the shaded collector can be established by its owner.

The legislation would apply to the whole State with the specific components of access provisions being determined separately for each Local Council area. However a nominated trial period might best involve Councils in the Adelaide Plains region only.

Implementation of the access proposals would need to be accompanied with active solar access education aimed at schools, building and related industries, and land/property owners through their respective Local Councils. The solar access education effort could usefully form part of an overall solar energy education programme.<sup>65</sup>

Again, however, specific recommendations for law reform were not made.

Further consideration of the need for law reform in this area is being undertaken by a Working Group of the Energy in Buildings Consultative Committee of the Department of Mines and Energy. This Group produced its interim report in July 1984,<sup>66</sup> which tentatively recommended the establishment of solar access controls at the local government level by means of the *Planning Act* 1982 (S.A.). Section 40 of this Act establishes a Development Plan, which expresses development control policies for all parts of the state. Section 41 provides that the Development Plan may be amended from time to time by a Supplementary Development Plan. Pursuant to Section 41(3), a supplementary development plan may contain objectives (statements that explain the purpose of planning controls and support specific principles), proposals (statements of the intentions of public authorities in relation to specific studies and action projects), and principles of development control (statements that guide and control the type of development which may occur, and the conditions under which it may occur). All development within the State requires the consent of the relevant planning authority,<sup>67</sup> which must have regard to the provisions of the Development Plan.<sup>68</sup>

The tentative proposal of the Working Group was that a supplementary development plan should be prepared containing a principle of control over development which would impede solar access to neighboring properties. Such a principle would apply only to new development and would be an inappropriate mechanism to restore solar access where it is lost

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65. *Id.* at 3.

66. ENERGY IN BUILDINGS CONSULTATIVE COMMITTEE, *SOLAR ACCESS LEGISLATION FOR SOUTH AUSTRALIA* (1984).

67. *Planning Act*, S.A. Acts § 47(1) (1982). The relevant planning authority is usually the local council.

68. *Id.* § 47(9).

because of existing buildings. Further consideration is presently being given by the Working Group to the degree of protection of solar access which is reasonable for different types of subdivisions, and to whether the principles of solar access control should be mandatory or merely advisory.

**New South Wales.** Unlike in South Australia, specific proposals for reform have been made in New South Wales by the Total Environment Centre in a report published in 1982.<sup>69</sup> This report stated that solar access could best be safeguarded by the enactment of two quite separate reforms. The first is that the relevant state planning legislation<sup>70</sup> should be amended to enable the relevant local council on a subdivision of land to take into account the overshadowing of adjacent properties between the hours of 9 a.m. and 3 p.m. (Eastern Standard Time). Secondly, the Centre recommended the enactment of complex state legislation to be entitled the *Solar Easements Registration Act*.

Under this proposed legislation an application for registration of a solar easement could be lodged by any person who has an interest in the land which would constitute the dominant tenement in respect to either an existing or prospective solar collector installed or to be installed on the dominant tenement. The matter would be determined by the state Land and Environment Court, which would be bound to take into account the objections of any affected party before granting the application. If granted, the easement would be recorded by the Registrar-General of Land Titles in the Land Titles register. The consequence of registration would be to create a solar easement which would guarantee that all parts of the collecting surface would be free from shading by any vegetation or structure standing on the servient tenement between the hours of 9 a.m. and 3 p.m. Eastern Standard Time on any day of the year. Except in exceptional circumstances, or with the permission of the servient owner, no solar easement would be registrable where the position and dimension of an existing structure or vegetation would cause a breach of the easement if it were registered. In these circumstances, the court would have the power to register the easement subject to a variation in the guaranteed hours of shade protection. Both the dominant and the servient owners could apply for a variation of any registered solar easement at any time. The dominant owner could apply for a variation in the event that the solar collector is or is proposed to be relocated, enlarged, or modified. The servient owner could apply for cancellation or variation where the solar collector has not been used for a period of one year or more.

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69. TOTAL ENVIRONMENT CENTRE, *SOLAR ACCESS IN NEW SOUTH WALES—LEGAL REPORT* (1982).

70. Environmental Planning and Assessment Act, N.S.W. Acts § 90 (1974), and Local Government Act, N.S.W. State Acts, Parts XI and XII (1919).

Following the report of the Total Environment Centre, an Inter Departmental Working Group was established by the New South Wales Government to investigate the viability of the law reform recommendations. The Working Group thought that the present community interest in solar access did not warrant legislation such as the proposed *Solar Easements Registration Act* and stated that it considered the proposals to be unduly onerous.<sup>71</sup> The Working Group considered that the best method of giving effect to solar access protection would be to accept the Centre's first recommendation relating to Section 90 of the *Environmental Planning and Assessment Act*.<sup>72</sup> The Working Group noted, however, that there are many competing issues to be considered with the possible introduction of solar access controls.<sup>73</sup> For example, the existing rights of property owners to build or extend homes, the policy of urban consolidation and measures to protect the environment, such as tree preservation orders, all potentially conflict with solar access. In addition, local variations in topography and residential density may pose significant problems where one type of solar access control is applied across the metropolitan area or the state. The Group considered that such problems and conflicts may lead to additional costs, increased litigation, the requirement for specialized expertise and restrictions in new building works.

In light of these circumstances, the Working Group proposed a Pilot Study to assess the effects of giving local councils some control over solar access before a decision is made for the State. This Pilot Study is discussed later in this article.

**Victoria.** In Victoria, the first consideration given to possible law reform to safeguard solar access was made by the Law Institute. In a letter dated September 29, 1981 to the State Minister for Planning, the President of the Law Institute set out a number of options for investigation and comment by planning authorities. For newly developing areas, the Institute suggested, first, that an amendment could be made to existing planning scheme ordinances to include a provision suitably drafted to accommodate solar energy requirements. Secondly, it was suggested that there could also be additional control at the sub-divisional stage in the *Local Government Act*. Finally, it was suggested that planning authorities could include a condition in planning permits that development should not proceed in such a way that neighbors' access to sunlight is impeded. In relation to developed areas, the Law Institute stated that overriding legislation requiring neighbors to consider each other's solar energy needs

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71. Correspondence with Mr. R. Bardsley-Smith, Research Branch, Department of Environment and Planning. See also R. BARDSLEY-SMITH, AN OUTLINE OF THE SOLAR ACCESS PILOT STUDY (1984) (Department of Environment and Planning, Sydney).

72. *Id.* at 1-2.

73. *Id.* at 2.

and providing a mechanism for resolution of disputes might be appropriate. Such legislation would need to set out where priorities should lie between the rights of the solar user and the neighbor. It was further recommended that the state consider legislation facilitating the making of covenants between neighbors or within neighborhoods. Unfortunately, however, no specific reforms were proposed by the Institute.

Besides the co-commissioning of the national study by the Victorian Solar Energy Council in 1982, the only other move in Victoria towards the legal safeguarding of solar access has been the establishment in September 1984 of a Solar Access Study Group as a sub-committee of the Building and Planning Regulations Committee, established by the Office of Minerals and Energy. As of December 1986, this Study Group had not yet reported.

**National Study.** The national study, undertaken by the present writer, was funded jointly by the National Energy Research, Development and Demonstration Council and the Victorian Solar Energy Council. Its final report, relating to both solar and wind access, was produced in January 1985.<sup>74</sup>

### Solar Access Protection

In relation to solar access, the report investigated in detail various reforms introduced in the United States and, *inter alia*, made the following recommendations:

- (i) Solar users should be encouraged to safeguard their right to sunlight by entering into a solar easement or covenant where this is practicable. Suitable draft forms of a solar easement or covenant were suggested.<sup>75</sup>
- (ii) The abolition of all prescriptive easements, including easements of solar access.<sup>76</sup>
- (iii) Legislation in Queensland and Tasmania,<sup>77</sup> which empowers the courts to impose any type of easement over servient land wherever

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74. A. BRADBROOK, *LEGAL ASPECTS OF THE PRACTICAL APPLICATION OF SOLAR ENERGY TECHNOLOGY IN AUSTRALIA* (1985) (National Energy Research, Development and Demonstration Program Report No. 452, Canberra). This volume contains four separate reports, of which the following two are relevant here: *Main Report—The Law Relating to Solar Access* [hereinafter *National Study—Solar Access Report*], and *Report No. 3, The Access of Wind to Wind Generators* [hereinafter *National Study—Wind Access Report*].

75. *National Study—Solar Access Report*, *supra* note 74, at 142-45.

76. *Id.* at 145-47.

77. Property Law Act, Queensl. Acts § 180 (1974); Conveyancing and Law of Property Act, Tas. Acts § 84J (1884). For a detailed discussion of this legislation, see Tarlo, *Forcing the Creation of Easements—A Novel Law*, 53 AUSTL. L. J. 254 (1979); A. BRADBROOK & M. NEAVE, *EASEMENTS AND RESTRICTIVE COVENANTS IN AUSTRALIA* paras. 308ff (1981).

this is necessary for the effective use of the dominant land, is an effective method of protecting solar access and should be extended to other Australian jurisdictions.<sup>78</sup>

- (iv) The law of nuisance should be regarded as unsuitable as a basis for a satisfactory system of solar access protection.<sup>79</sup> The California *Solar Shade Control Act* 1978<sup>80</sup> was regarded as unsatisfactory for the following reasons. First, based on the discretionary nature of the remedy of injunction, the solar user could be faced with the problem that the court would award damages rather than an injunction where the right of solar access is infringed. Secondly, the remedy would be costly as in Australia injunctions are only granted by the Supreme Court of each state.<sup>81</sup> Thirdly, there is no precedent in Anglo-Australian law for the legislature to declare any activity or event to be a public or private nuisance and to be actionable accordingly. If such legislation is to be introduced, it would seem more appropriate for the legislature to attempt to codify the law of nuisance rather than to make a specific rule for the benefit of the solar user. Finally, it is unnecessary to import the complexities of the law of nuisance into the resolution of any dispute as other simpler alternative remedies are possible.
- (v) The suggestion that the right of solar access should be established as a separate, novel interest in property<sup>82</sup> was rejected for three reasons.<sup>83</sup> First, a person's right of unobstructed solar access interferes with the development of neighboring land to a much greater extent than a person's right to appropriate water. Secondly, the concepts of prior appropriation and beneficial use are peculiarly U.S. concepts and have no counterparts in Anglo-Australian law. Finally, the principle of beneficial use would cause practical difficulties in the solar context: for example, it is unclear how the court would assess the issue of beneficial use if the solar device were shown to be inefficient or uneconomic.
- (vi) A comprehensive system of protection for solar access can and should be established in respect to new property developments and subdivisions.<sup>84</sup> This aim could be partially achieved by the introduction of amendments to the relevant state subdivision and

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78. *National Study—Solar Access Report*, *supra* note 74, at 147-49.

79. *Id.* at 153-64.

80. *See supra* notes 46-48 and accompanying text.

81. In Victoria, the County Court also has jurisdiction to grant injunctions (County Court Act, Vict. Acts § 37 (1958)).

82. *See supra* notes 49-50 and accompanying text.

83. *National Study—Solar Access Report*, *supra* note 74, at 164-66.

84. *Id.* at 171-76.

town planning legislation<sup>85</sup> designed to ensure that the relevant state planning authority takes solar access considerations into account when determining whether to approve a plan of subdivision or planning application. Specific changes were recommended with respect to the relevant sections in the subdivision control legislation<sup>86</sup> adding solar access to the statutory list of matters which every plan of subdivision submitted to a local council must show, and also to the list of discretionary grounds upon which a council may refuse to seal a plan of subdivision. Specific changes were also recommended to the town planning legislation<sup>87</sup> to ensure that the blocking of solar access would be a statutory ground for granting a person the right to object to the granting of a permit for development of neighboring land, and to ensure that solar access is listed as one of the relevant considerations in the preparation of planning schemes.

- (vii) A comprehensive system of solar access protection at the local government level should be introduced by way of amendment to local planning scheme ordinances.<sup>88</sup> In most instances this reform could be achieved without the need for amendment to state legislation. The system of protection could be based on either a system of solar access permits, solar envelopes or hypothetical solar fences.<sup>89</sup> The hypothetical solar fence system was regarded as the preferred approach.<sup>90</sup> The major disadvantage of the system of permits was stated to be the need for a new bureaucracy to administer the system, which would be costly and time-consuming. A further problem was that it would vest substantial discretion in the relevant department of the local council, and in many cases it would be difficult to predict in advance of the hearing the likely outcome of the dispute; this in turn would tend to discourage

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85. New South Wales: Local Government Act 1919, Environmental Planning and Assessment Act 1979; Victoria: Planning and Environment Act 1987; South Australia: Planning Act 1982; Queensland: Local Government Act 1936; Western Australia: Town Planning and Development Act 1928; Tasmania: Local Government Act 1962.

86. See, e.g., Local Government Act, N.S.W. Stat. §§ 331-333 (1919); Local Government Act, Vict. Acts §§ 569-569B (1958); Local Government Act, Queensl. Acts § 34 (1936); Town Planning and Development Act, W. Austl. Acts §§ 20-24 (1928); Local Government Act, Tas. Acts §§ 464-469 (1962).

87. See, e.g., Environmental Planning and Assessment Act, N.S.W. Acts § 90 (1979); Local Government Act, Queensl. Acts § 33 (1936); Planning Act, S. Austl. Acts §§ 41, 47 (1982); Town Planning and Development Act, W. Austl. Stat. § 6 (1928); Local Government Act, Tas. Acts § 724 (1962).

88. *National Study—Solar Access Report*, *supra* note 74, at 176-87.

89. For a discussion of these three systems of protection, see *supra* notes 54-60 and accompanying text.

90. *National Study—Solar Access Report*, *supra* note 74, at 183-87.

neighbors from reaching a compromise settlement and would lead to protracted hearings. The basic problem of the system of solar envelopes is the complexity of the architectural concepts involved.<sup>91</sup> The relevant envelope for each block of land can be unique and may require the services of an architect for its calculation. Solar envelopes may be understood by architects, but they are not easy to reduce to legislation and are not readily intelligible to non-architects.

### Wind Access Protection

The National Study noted the close similarities from a legal standpoint between the protection of solar and wind access and advanced the following possible solutions designed to safeguard the position of a wind user:

- (i) Wind users should be encouraged to safeguard their right to wind access by acquiring an express easement or restrictive covenant designed to achieve this effect. No law reform would be necessary to achieve this objective.<sup>92</sup>
- (ii) State legislation could be introduced clarifying the right of a person to purchase certain airspace above land separate from the land itself.<sup>93</sup> At present, there is uncertainty in Anglo-Australian common law as to whether horizontal airspace can be conveyed other than pursuant to strata titles legislation.<sup>94</sup> If this uncertainty is removed by legislation, a wind user would be permitted to purchase sufficient airspace above his neighbor's land to safeguard wind access to the wind generator. The purchase of a fee simple estate in the airspace would be an alternative to the acquisition of an easement or covenant restricting any development on the neighboring land which impedes the access of wind to a wind generator.
- (iii) A wind access right could be established by state legislation as a separate, novel interest in property.<sup>95</sup> This would involve adopt-

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91. *National Study—Solar Access Report*, *supra* note 74, at 181-83.

92. *National Study—Wind Access Report*, *supra* note 74, at 34-39.

93. *Id.* at 39-41.

94. The strata titles legislation is contained in the Strata Titles Act, N.S.W. Stat. (1973); Strata Titles Act, Vict. Acts (1967); Building Units and Group Titles Act, Queensl. Stat. (1980); Strata Titles Act, W. Austl. Stat. (1966); and Conveyancing and Law of Property Act, Tas. Acts (1884). Legislation authorising the horizontal subdivision of airspace has been enacted in parts of Canada and the United States (*see, e.g.*, British Columbia: Land Titles Act, B.C. REV. STAT. c. 25 §§ 135-143 (1978); Colorado: COLO. REV. STAT. § 118-12-1 (1978)), but no such legislation exists in Australia.

95. *National Study—Wind Access Report*, *supra* note 74, at 41-43.

ing and modifying New Mexico and Wyoming legislation discussed earlier in the context of solar access.<sup>96</sup>

- (iv) An obstruction to wind access could be declared by State legislation to be a public nuisance.<sup>97</sup> This would involve adapting the wording of the California *Shade Control Act* 1978 to apply to wind access.<sup>98</sup>
- (v) State legislation could give the courts discretion to protect the access of wind to a wind generator by order where the courts consider it to be in the public interest.<sup>99</sup> Legislation of this nature could either permit the court to impose an easement over the neighboring land or simply authorize the court to order the removal of an obstruction to wind access within a reasonable time on application by a wind user.
- (vi) Wind access could be safeguarded by means of suitable amendments to the building regulations in operation in each state<sup>100</sup> designed to ensure that the set-back requirements allow a sufficient amount of uninterrupted airspace to ensure the efficient operation of a wind generator.<sup>101</sup>
- (vii) A system of wind access permits obtainable from local government authorities could be established.<sup>102</sup>

The National Study rejected solutions (iii), (iv), (vi) and (vii), above, for the same reasons as apply to their possible use to protect solar access.<sup>103</sup> Solutions (i) and (ii) were regarded as of only limited potential use inasmuch as easements, covenants and fee simple conveyances are consensual transactions, and a neighbor always has the right to refuse to agree to sell airspace above his land or to permit encumbrances to be created over his land. Even if a neighbor were willing to enter into a consensual transaction, he could require an exorbitant price.

The National Study concluded that solution (v), above, is the preferred option.<sup>104</sup> It stated that if legislatures wish to encourage the development of wind-electricity generation by providing a system for protecting wind access, they could best do so by enacting into law a system of wind access protection by court order available to all private wind users. A

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96. See *supra* notes 49-50 and accompanying text.

97. *National Study—Wind Access Report*, *supra* note 74, at 43-44.

98. See *supra* notes 46-48 and accompanying text.

99. *National Study—Wind Access Report*, *supra* note 74, at 44-52.

100. Victoria Building Regulations 1983, made pursuant to the Building Control Act, Vict. Acts (1981); Ordinance No. 70, Building, made pursuant to the Local Government Act, N.S.W. Stat. (1919); Standard Building By-laws 1975, made pursuant to the Building Act, Queensl. Stat. (1975); Building Regulations 1973, made pursuant to the Building Act, S. Austl. Acts (1970); Uniform Building By-laws 1974, made pursuant to the Local Government Act, W. Austl. Stat. (1960); Building Regulations 1978, made pursuant to the Local Government Act, Tas. Sess. Stat. (1962).

101. *National Study—Wind Access Report*, *supra* note 74, at 52-53.

102. *Id.* at 53.

103. The National Study undertook a critique of the alternative solutions. *Id.* at 53-60.

104. *Id.* at 59.

proposed form of model legislation was drafted.<sup>105</sup> Under this legislation

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105. *National Study—Wind Access Report*, *supra* note 74, at 45-46.

- (1) 'Court' means a Magistrates' Court. 'Structure' means any building, wall, fence, or other improvement erected on the land by any person otherwise than pursuant to a building permit issued by the local authority concerned. 'Wind generator' means any machine which converts kinetic energy in the wind into a usable form of electrical or mechanical energy.
- (2) The occupier of any land who owns or operates a wind generator on that land may at any time apply to a court for an order requiring the occupier of any other land to remove or trim any trees growing or standing on that other land, or to remove or alter any structure erected on that land.
- (3) On any such application the Court may make such order as it thinks fit, if, having regard to all the circumstances of the case, and, where required, to the matters specified in sub-section (4) of this section, the Court considers the order to be fair and reasonable, and to be necessary to remove or prevent, or to prevent the recurrence of any actual or potential obstruction to the access of wind reaching a wind generator installed or to be installed within a reasonable time on the land of the occupier.
- (4) In any case where the applicant alleges that a tree is obstructing the access of wind reaching a wind generator installed on his land, the Court in considering whether to make an order under this section, shall have regard to the following matters:
  - (a) The interests of the public in the maintenance of an aesthetically pleasing environment;
  - (b) The desirability of protecting public reserves containing trees; and
  - (c) The likely effect (if any) of the removal or trimming of the tree on ground stability, the water table, or run-off.
- (5) The Court shall not make an order under this section unless it is satisfied that the hardship that would be caused to the applicant or to any other person residing with the applicant by the refusal to make the order is greater than the hardship that would be caused to the defendant or to any other person by the making of the order.
- (6) Where the application relates to any land on which a wind generator has not been erected, the Court shall not make an order under this section unless it is satisfied that such wind generator will be erected on the land within a reasonable time. Unless the Court, having regard to all the circumstances of the case, otherwise determines an order made in such a case shall not become operative unless and until the wind generator is erected, and, if no such system is erected within a reasonable time, the order may be discharged on the application of any interested person.
- (7) Every order made under this section shall provide that the reasonable cost of carrying out any work necessary to give effect to the order shall be borne by the applicant for the order, unless the Court is satisfied, having regard to the conduct of the defendant, that it is just and equitable to require the defendant to pay the whole or any specified share of the cost of such work.
- (8) If an order made under this section in respect of the removal or trimming of any tree, or of the removal or alteration of any structure, is not duly complied with within one month after the date of the order, or within such longer period as may be specified in the order or allowed by the Court, the applicant for the order may at any time thereafter cause the land in respect of which the order was made to be entered upon and the work necessary to give effect to the order to be carried out; and, unless the Court otherwise orders, any order of the Court made under sub-section (7) of this section (not being an order requiring the defendant to meet the whole of the cost referred to in that sub-section) shall be discharged, and the applicant shall be entitled to recover from the defendant the whole of the reasonable cost of the work necessary to give effect to the Court's order.

the wind user would make an application to a court for the necessary wind access protection and the court would be vested with discretion whether to grant the order sought. In exercising its discretion the court would take into account whether the interests of the general community would be affected in any way, and, if not, would grant the order. The only exclusion from the operation of this legislation would be the various state electricity authorities. The reason for this exclusion is that if these authorities later decide to invest in large-scale wind generators to supplement their present sources of electricity generation, they could adequately ensure wind access by using their present legislative powers to purchase land compulsorily (subject to compensation).<sup>106</sup> This legislation is sufficiently broad to enable the various electricity authorities to buy sufficient neighboring land upwind to guarantee wind access or to acquire an easement or restrictive covenant over neighboring land sufficient to achieve the same result.

### Reforms

This section of the article will be limited to a discussion of reforms designed to protect solar access. As of this date, no measures designed to protect wind access have yet been enacted anywhere in Australia.

Solar access reforms have occurred only in New South Wales, Western Australia and South Australia. In Victoria, the issue is currently under consideration by the Department of Industry, Technology and Resources. In the Northern Territory, the position of the Government is that due to the low latitude of the whole land area (12°S to 24°S) the shadowing problem is not sufficiently serious to warrant legislation. In Queensland and Tasmania, the issue of solar access protection appears not to have been considered at all.

**New South Wales.** The proposal for a Pilot Study (Study) recommended by the Inter-Departmental Working Group, was accepted by the state government and put into effect in late 1984.<sup>107</sup> The purpose of the Study is to evaluate the implications of the Total Environment Centre's recommendation that solar access be made one of the considerations to be taken into account by local councils when development or building approval is sought by a developer pursuant to the terms of the relevant state legislation.<sup>108</sup> On a wider level, the Study is also designed to deter-

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106. See State Electricity Commission Act, Vict. Acts § 103 (1958); Electricity Trust of South Australia Act, S. Austl. Acts § 40(2) (1946); Electricity Act, Queensl. Stat. § 200 (1976); State Energy Commission Act, W. Austl. Stat. § 28(3) (1979); Energy Authority Act, N.S.W. Stat. § 14 (1976); Electricity Commission Act, N.S.W. Stat. §§ 14, 15 (1950); Hydro-Electric Commission Act, Tas. Acts § 36 (1944).

107. See R. BARDSLEY-SMITH, AN OUTLINE OF THE SOLAR ACCESS PILOT STUDY (1984) (Department of Environment and Planning, Sydney) (1984).

108. Environmental Planning and Assessment Act, N.S.W. Stat. § 90 (1979), and Local Government Act, N.S.W. Stat. Parts XI and XII (1919).

mine the implications of solar access rights by implementing, monitoring and evaluating a form of control at the local government level. The Study is intended to provide the following specific information concerning the development and building approval processes:

- (i) The increase, if any, in time taken to determine applications;
- (ii) The number of applications involving solar access considerations;
- (iii) The increase, if any, in the number of applications refused;
- (iv) The increase, if any, in the number of appeals lodged;
- (v) Whether or not local councils have the required expertise; and
- (vi) The extent of any need for special controls.

Five councils representing Sydney metropolitan, fringe metropolitan and rural areas were selected by the State Department of Environment and Planning. The relevant councils were requested by the Department to bring solar access within the scope of their development control, pursuant to the terms of the *Environmental Planning and Assessment Act* of 1979 (N.S.W.), either by means of a Local Environment Plan or a Development Control Plan.<sup>109</sup> Under the terms of the Pilot Study, the councils were to designate the areas to be included within the Study and the level of solar access protection to be applied in those areas. The Pilot Study was to last for approximately eighteen months.

The first council to introduce solar access was Blacktown, on the outer fringes of the Sydney metropolitan area. The Blacktown Council gazetted Local Environmental Plan No. 16 on February 10, 1984, which applies to new land developments in the Quakers Hill area. Clause 11 of this Plan is titled "Solar access as a matter for consideration" and reads as follows:

The council shall not grant consent to an application for the carrying out of development on land to which this plan applies unless it has made an assessment of the effect of the carrying out of that development on the access of solar radiation between the hours of 9 a.m. and 3 p.m., Eastern Standard Time, to existing or likely development on other land in the vicinity of the site of the development.

This clause was a council initiative, drafted with the assistance of the Department, quite separately from the Pilot Study. Following the introduction of the Study, the Blacktown City Council introduced Local Environmental Plan No. 72, gazetted on June 8, 1984, relating to other areas of the city. Clause 19, relating to solar access, is couched differently from the earlier Plan:

A person shall not erect a building on land if, in the opinion of the council, the building when erected would significantly affect the

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<sup>109</sup> For the contents and format of local environmental plans and development control plans, see *Environmental Planning and Assessment Act*, N.S.W. Acts §§ 70 and 72 (1979).

access of solar radiation between the hours of 9 a.m. and 3 p.m., Eastern Standard Time, on the day of the winter solstice, to existing or likely development on other land in the vicinity of that site.<sup>110</sup>

A similarly worded clause was adopted in May 1985 by Orange City Council, in rural New South Wales, in its Development Control Plan No. 5—Medium Density Housing. Significantly, however, clause 5.1 of this Plan adds the following additional sentence:

It is considered that "significantly affect" for the purposes of this plan shall refer to a shadow cast by a structure onto adjoining land which is greater than a shadow which could be cast by a 4 metre high "fence" located on the common boundary.

The solar access controls introduced in the municipalities of Randwick (inner metropolitan) and Lane Cove (fringe metropolitan) are contained in a Development Control Plan. The Municipality of Lane Cove Development Control Plan No. 3 For Regulation of Flats states in clause 1:

Flats will not be approved in any case unless the proposed building is so sited and designed that a total of five hours sunshine is available daily over 80 percent of the southern contiguous allotment during the month of June.

The Randwick Development Control Plan No. 4, "Dwelling House Controls," contains its solar access control in clause 4, which specifies general design guidelines for dwelling-houses erected in certain foreshore areas. Clause 4.3 states:

The period between 9 a.m. and 3 p.m. is generally accepted as a measure of reasonable solar access. If a particular site or house receives direct sunlight between these times in mid-winter (21st June—the shortest day) it will be assured of sunlight during this period for the rest of the year. In view of the benefits of direct sunshine for comfortable all year round indoor and outdoor living conditions, . . . a proposed dwelling house or addition should respect the reasonable desire of adjoining residents to direct sunshine.<sup>111</sup>

This represents the extent to which law reform has occurred in New South Wales. It is interesting to note that except for Orange, which has adopted the hypothetical solar fence model, none of the U.S. forms of local solar ordinances have been adopted. Problems may arise with the other municipalities in relation to enforcement of the solar access pro-

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110. Blacktown has since introduced solar access protection into many other Local Environment Plans: *see, e.g.*, Local Environment Plan No. 78, cl. 20 (1984).

111. The other council participating in the Pilot Study, the City of Goulburn in rural New South Wales, has not yet implemented any solar access controls. Letter to A.J. Bradbrook from K.E. Brown, Town Clerk, City of Goulburn (June 6, 1986).

vision as the drafting appears extremely vague. For example, the provision in Blacktown that a building must not "significantly affect" solar access is likely to lead to considerable disputation. The results of the pilot scheme, however, have not yet been obtained.

Although most of New South Wales is not yet subject to solar access controls, there is considerable significance in the developments which have occurred. The solar access controls discussed above are designed to continue in effect indefinitely and are not limited to the duration of the Pilot Study. Since the Study commenced, many other councils in the state have expressed an interest in adopting similar forms of solar access protection.<sup>112</sup> This form of control is being urged on councils by the state government through the Department of Environment and Planning as a solar access clause is now included by the Department in its *Manual for Preparing Local Environmental Plans and Studies*, which is prepared for the use of local councils.<sup>113</sup>

In conclusion, it appears that in New South Wales solar access is likely to be protected at the local government level by means of development and planning laws, rather than by any of the alternative means of protection identified earlier in this article. The only law reform issue of relevance for the state government will be to ensure that the enabling legislation is adequate and to consider whether the local councils should be required to take action in all cases to protect solar access.

**Western Australia.** Although, apart from the national study, solar access protection has not been considered by any law reform agency, the local councils in Western Australia already possess sufficiently broad discretionary power under the state planning and development legislation to enable them to include solar access controls by means of a by-law or ordinance.<sup>114</sup>

An exciting development occurred in the City of Wanneroo, on the northern outskirts of the Perth metropolitan area, in February 1985. By Amendment No. 293 to its Town Planning Scheme No. 1, the council added a new clause designed to safeguard solar access in areas declared by the council to be solar housing precincts. For each house in a precinct, a solar envelope is specified within which solar access is guaranteed during designated hours. The relevant parts of the clauses relating to solar housing precincts read as follows:

(b) Notwithstanding the requirements of Table No. 2 of this Scheme

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112. For example, Canterbury, Taree, Grafton and Coffs Harbour.

113. DEPARTMENT OF ENVIRONMENT AND PLANNING, *MANUAL FOR PREPARING LOCAL ENVIRONMENTAL PLANS AND STUDIES* (1985) (Sydney).

114. Town Planning and Development Act, W. Austl. Stat. (1928).

all buildings shall be set back from boundaries in accordance with the requirements of the R-15 density code of the Residential Planning Codes, as set out in Appendix 2 of the statement of Planning policy No. 1 gazetted on 30 January 1985, save that:

- (i) all dwellings within a precinct shall be constructed within the limits of the building envelope depicted for each lot on the Development Plan; . . .
- (c) With the exception of a fence up to 1.8 metres in height constructed on a lot boundary, no person shall build, erect, alter, maintain, plant or cultivate any building, structure, tree or vegetation of any type or any part of this precinct in such a manner as to:
  - (i) encroach upon the solar access and cause the inefficient operation (as outlined in Australian Standard A.S. 2002-1981) of a fixed roof installed solar collector between the hours of 9.00 a.m. and 3.00 p.m.;
  - (ii) encroach upon the solar access to northerly facing solar collectors fixed in or to the walls of any dwelling on adjoining lots between the hours of 9.00 a.m. and 3.00 p.m. from March 31 to October 31; or
  - (iii) encroach upon the solar access to the solar envelope of an adjacent undeveloped or partially developed lot.<sup>115</sup>

At present, this amendment is limited in its operation to one new land subdivision area within the city.<sup>116</sup> The state government is monitoring the effect of the amendment. The most important aspect of the monitoring process will be to determine whether the solar envelope approach to solar access protection is a viable option. As mentioned earlier, this approach has generally been dismissed as being too complex and difficult to reduce to workable legislation.<sup>117</sup> If the Wanneroo development proves successful, this opinion may need to be revised.

**South Australia.** As in Western Australia, the state planning legislation<sup>118</sup> is sufficiently broad to permit local councils to include solar access controls by means of a by-law or ordinance. At the present time, no local councils have sought to introduce such controls, but based on the recommendation of the national study, efforts have been taken by the State Department of Mines and Energy to provide planning guidelines for local councils relating to solar access provisions.<sup>119</sup>

The Minister for Environment and Planning is presently preparing a

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115. Town Planning Scheme No. 1, Amendment No. 293, Schedule 8 (1985).

116. Kingsley Solar Housing Estate.

117. See, *supra* note 89 and accompanying text.

118. Planning Act, S. Austl. Acts (1982).

119. Letter to A.J. Bradbrook from P. Walsh, Senior Energy Project Officer, South Australian Department of Mines and Energy (July 18, 1986).

supplementary development plan covering residential development in metropolitan Adelaide. Such a document provides objectives and principles to guide planning authorities (generally local councils) in making decisions relating to proposed development. With Ministerial support, the Department has drafted an objective and principle relating to solar access for inclusion in this supplementary development plan. This reads as follows:

*Objective 6G:* Provide conditions under which reasonable access to solar radiation will be available to existing and potential future solar energy systems associated with dwellings and domestic activities.

*Principle 12 (Solar Access):* Residential development should make allowance for solar access. In particular—

- (a) In new residential subdivisions, the orientation and placement of allotments should, as far as practicable, allow for the appropriate orientation of a dwelling on an allotment in accordance with local climatic conditions.
- (b) Any new residential development must be such as to provide reasonable access to incident solar radiation on adjacent allotments for the whole of the period between 3 hours before noon and 3 hours after noon during the month of June. This applies both to existing solar collectors as well as to potential future systems.
- (c) Any landscaping associated with residential development should account for the impact of future shading on solar access.<sup>120</sup>

This proposed mechanism for introducing solar access provisions into the planning process obviously has its limitations. It would apply only to residential development and only to metropolitan Adelaide, excluding the city of Adelaide. It would apply only to developments requiring planning approval, thus excluding proposed construction of most detached dwellings, and would not be binding on planning authorities. Nevertheless, it can be regarded as an important first step. The proposal will apply to several important types of residential development, including new subdivisions and most two-story houses. It will ensure that the issue of solar access protection is grounds for appeal against a decision of a planning authority under some circumstances.

## LESSONS FROM THIS EXPERIENCE

### Lessons for Australia

Little has been done in Australia to safeguard solar and wind access.

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120. METROPOLITAN ADELAIDE RESIDENTIAL DEVELOPMENT POLICY, SUPPLEMENTARY DEVELOPMENT PLAN BY THE MINISTER (1986).

Consequently, the scope for reform is very broad. It is always difficult to devise new laws to meet the needs of new technologies, and in this context the U.S. experience should assist the law reform effort in Australia immeasurably. It is, of course, easy to learn from someone else's experience.

There appear to be five lessons to be learned by Australia from the U.S. experience:

(a) The major reason why the state legislatures and local municipalities in Australia have been reluctant to legislate to protect solar and wind access has been pressure caused by land developers and the building industry.<sup>121</sup> The general attitude adopted by these groups is that there are already too many legislative requirements that they must satisfy before land can be subdivided or new buildings can be erected. To add further requirements relating to solar and wind access protection would cause delays and either increase the price of land and housing or reduce profitability and incentive for the land developers or builders. To date, these arguments have prevailed over contrary pressure mounted by environmentalists and other lobby groups for law reform.

The experience in the United States suggests that in time the political pressure by land developers and builders can be surmounted at both the local and state government levels. The large volume of state legislation attests to the truth of this statement, while at the local government level titanic political battles have been fought and won to protect solar access. The legal periodicals have documented some of these political battles.<sup>122</sup>

(b) It is unrealistic to expect the courts to provide a judicial safeguard for solar and wind access in the absence of legislation. Despite the favorable decision for the solar user in *Prah v. Maretti*, discussed earlier,<sup>123</sup> the prevailing view appears to be that any remedy for solar and wind access must be provided by the legislature.<sup>124</sup> Although there are no reported decisions in Australia on this subject, in light of the traditional conservative approach adopted by the Anglo-Australian judiciary,<sup>125</sup> it is submitted that the courts in Australia are less likely than their American

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121. Information supplied by Mr. W. Charters, Chairman, and Mr. J. Peoples, Executive Director, Victorian Solar Energy Council.

122. See, e.g., Danielson, *Drafting a Solar Access Ordinance: One City's Experience*, 3 SOLAR L. REP. 911 (1982).

123. 108 Wis. 2d 223, 321 N.W. 2d 182 (1982); see *supra* note 25 and accompanying text.

124. See, e.g., Devlin, *Obtaining Solar Access in California: The Solar Rights Act*, 17 CAL. W.L. REV. 123, 143-144 (1980); Eisenstadt, *Access to Solar Energy: The Problem and its Current Status*, 22 NAT. RES. J. 21, 29-31 (1982); Eisenstadt, Long & Utton, *A Proposed Solar Zoning Ordinance*, 15 URB. L. ANN. 211, 212 (1978).

125. See generally, Bradbrook, *Nuisance and the Right of Solar Access*, 15 U. W. AUSTL. L. REV. 148 (1983); Bradbrook, *The Access of Wind to Wind Generators*, AUSTRALIAN MINING AND PETROLEUM LAW ASSOCIATION YEARBOOK 433 (1984).

counterparts to provide a remedy for solar and wind access. Even if the courts were to prove more responsive, the costs and delays associated with litigation would make any judicial remedy ineffective for the typical solar and wind user.

(c) Legislation permitting and encouraging the use of solar or wind easements or covenants are not by themselves an adequate form of solar or wind access protection. The various difficulties associated with solar easements and covenants have been discussed in detail earlier.<sup>126</sup> The adoption of legislation relating to solar and wind easements or covenants, rather than relying on common law principles, does not remove these difficulties. Legislation in the United States does not, for example, simplify the drafting of such easements or covenants. As stated by Kraemer:

Solar easements will remain difficult to describe because of the relationship of the sun to the earth. Shadow variables include land slope, terrain, solar orientation, latitude, time of day, and height of potential obstructions. Lawyers, engineers, land planners, title companies and others have expressed concern over the complexity required to write a solar easement. . . . New solutions are required for a new problem.<sup>127</sup>

(d) As this last quotation suggests, on a broader scale it appears to be impossible to adapt existing legal principles to make effective solar and wind access protection laws. Attempts to do so in the United States appear to have met with failure. One illustration of this failure is the use of the principle of public nuisance in the California *Solar Shade Control Act*. Numerous weaknesses in the wording of this legislation have been identified,<sup>128</sup> although these could be remedied by suitable legislative amendment. More significant, however, is a number of fundamental objections which cannot be so easily remedied.

First, there are problems inherent in the discretionary nature of the remedy. The solar or wind user would still be faced with the possibility that the court would award damages rather than an injunction where the right of solar access is infringed. Second, there is the problem of legal costs to the solar or wind user. Neither of the proposed changes would alter the existing situation that injunctions are granted in Australia only by the Supreme Court. The legal costs inherent in making such an application may well deter many solar and wind users from enforcing their right of solar or wind access using the legal process.

A further objection is that there is no precedent in Australian law for

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126. See, *supra* notes 31-33 and accompanying text.

127. KRAEMER, *supra* note 20, at 42.

128. See, *supra* notes 79-81.

the legislature to declare any activity or event to be a public nuisance and to be actionable accordingly. Unlike most areas of contract and property law, in relation to the law of nuisance, the common law has been allowed to reign supreme. If pioneering legislation overriding the common law of nuisance is to be introduced, it would seem more appropriate for the legislature to attempt to codify the circumstances in which a nuisance is created or to make a broad-ranging declaration as to what constitutes a nuisance rather than to make a specific rule for the benefit of the solar or wind user.

Perhaps the major objection to the use of public nuisance in the present context is that it is unnecessarily complex. One may validly ask why it is necessary to declare the shading of solar collector panels to be a nuisance and so import all the complexities of that body of law into the resolution of any dispute when it would be possible to create legislation providing a simple remedy without resorting to the law of nuisance at all. There are useful precedents for legislation of this nature in Australia in the area of environmental protection.<sup>129</sup> In some instances where a legislature has considered it necessary to provide a remedy to an affected landowner for protection against excessive noise and unpleasant or dangerous emissions, it has not declared such activity to be a public or a private nuisance actionable under common law rules but has provided for a separate statutory remedy. Legislatures have done this even though the activities against which the remedy is sought fall within the scope of nuisance at common law. Most statutes of this nature provide for the prosecution of offenders by a statutory authority and the imposition of a criminal penalty instead of civil liability. This will usually satisfy the needs of the solar or wind energy user as he or she probably would be seeking an injunction rather than damages.

A further illustration of the failure of solar and wind access protection laws adapted from existing legal principles is the legislation in New Mexico and Wyoming which declares that the right to use solar energy is a property right and provides that principles developed in the western United States governing water law shall be applied to define the solar right.<sup>130</sup> There are numerous difficulties associated with this approach. The major problem is the fact that a person's right of unobstructed solar access interferes with the development of neighboring land to a much greater extent than a person's right to appropriate water. Under New Mexico law, the installation of a small solar hot water system could by itself prevent a large commercial or industrial development from occurring

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129. *See, e.g.*, Environment Protection Act, Vict. Acts §§ 38-53 (1970); Health Act, S. Austl. Acts §§ 82-126 (1935).

130. *See supra* notes 49-50.

on neighboring land.<sup>131</sup> In this way, the proper development of towns and cities can be impeded. Historically, it was for this very reason that courts and legislatures in most common law countries refused to admit the existence of prescriptive easements of light.<sup>132</sup>

A further difficulty is that the concepts of prior appropriation and beneficial use are peculiarly United States concepts and have no counterparts in Anglo-Australian water law. Thus the advantage of applying established legal concepts in water law to solar access rights in the United States would not be applicable in Australia. For this reason the analogy with water law is far less appealing for legislatures outside the United States.

A final problem is that the adoption of a principle of beneficial use would cause great practical difficulties in the solar energy context. For example, what percentage of a solar user's energy consumption must be supplied by a solar device before there could be said to be a "beneficial use"? How would a court assess the issue of beneficial use if the solar device were shown to be inefficient or uneconomic? Even if a legislative definition of "beneficial use" were attempted, it would be impossible to devise a system which would afford much certainty to the law. Inevitably the issue would have to be left to judicial discretion subject to certain legislative guidelines. Thus, litigation would be needed before a solar user could be confident that his right of solar access would be protected. The costs associated with such litigation and the lack of legal protection for solar access prior to the erection of a solar device would be sufficient to deter many potential solar users from investing in such devices.

(e) Solar and wind access legislation adopted at the local government level seems to have been more politically acceptable and effective than state legislation. This conclusion seems to be borne out by personal discussions by the writer with officials of the city of Boulder, Colorado,

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131. See, e.g., Gergacz, *Legal Aspects of Solar Energy: Statutory Approaches for Access to Sunlight*, 10 B.C. ENVTL. AFF. L. REV. 1, at 18 (1982); Note, *Access to Sunlight: New Mexico's Solar Rights Act*, 10 N.M. L. REV. 169, 171-179 (1980).

132. All Australian States have enacted legislation preventing the future creation of easements of light by prescription (Property Law Act, Vict. Acts § 195 (1958); Conveyancing Act, N.S.W. Stat. § 179 (1919); Law of Property Act, S. Austl. Acts § 22 (1936); Property Law Act, Queensl. Stat. § 178 (1974); Prescription Act, Tas. Acts § 9 (1934); Property Law Act, W. Austl. Stat. § 121 (1969)).

In the United States, prescriptive easements of light have been outlawed in numerous reported cases: see, e.g., *Fontainebleau Hotel Corp. v. Forty-Five Twenty-Five Inc.*, 114 So. 2d 357 (1959); *S.A. Lynch Corp. v. Stone*, 211 Ga. 516, 87 S.E. 2d 57 (1955); *Cain v. American National Bank and Trust Co. of Chicago*, 26 Ill. App. 3d 574, 325 N.E. 2d 799 (1975); *Haehlen v. Wilson*, 11 Cal. App. 2d 437, 54 P. 2d 62 (1936); *Homewood Realty Corp. v. Safe Deposit and Trust Co. of Baltimore*, 160 Md. 457, 154 A. 58 (1931); *Davis v. Robinson*, 189 N.C. 589, 127 S.E. 697 (1925); *Austin v. Bloch*, 105 P. 2d 868 (1940).

In contrast to the United States and Australia, in the United Kingdom prescriptive easements of light are recognized after 27 years of use by the Rights of Light Act, 7 & 8 ELIZ. 2, ch. 56 (1959).

concerning the city's solar access ordinance based on the hypothetical solar fence system, and with legal officers of the Solar Energy Research Institute. This conclusion is also supported by various legal commentators in the United States.<sup>133</sup>

This is the most valuable lesson to be learned from the United States' experience. Legislation at the local government level is preferable because of the decentralized nature of solar and wind technologies, and because political and physical conditions are likely to vary from one municipality to another. To illustrate this point, we can compare the likely response to any binding solar access controls at the state level in an environmentally conscious area, an outer suburban area and a small rural settlement. To residents in the rural settlement, solar access would in most instances be regarded as totally irrelevant as a legal issue, as on large blocks of land a solar user can protect his solar access by careful positioning of the solar device and the removal of any shade-creating vegetation on his own land. In rural settlements, the imposition of solar access controls in relation to land subdivision and town planning applications would be seen to be unnecessarily bureaucratic. To residents in environmentally conscious areas, state-wide solar access controls would be seen by many residents as a threat to their chosen lifestyle, as the destruction of many trees would be necessary if solar access is to be adequately safeguarded in forest areas. Common sense indicates that solar users should not move into forested areas. If they do move into such areas, the destruction of trees to accommodate their requirements would seem to be inappropriate. In contrast to both these areas, it is in respect of outer suburban areas that solar access controls are most likely to be welcomed by the local community and to operate most effectively.

Logic would suggest that solar access laws should only operate in areas where they are acceptable to the local community and are likely to prove effective in practice. State legislation binding all residents in the state, therefore, should not be introduced. This approach has recently been endorsed by the Californian Energy Commission, which stated:

Solar access is a local issue. Climate and topography (both physical and political) vary substantially from one city or county to another. Moreover, each local government has a different history, each city a different age. Some have many large shade trees, some are located on hills and valleys, others are located on flat terrain, some have

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133. See, e.g., Eisenstadt & Utton, *Access to Sunlight: A Legislative Approach*, in *LEGAL ASPECTS OF SOLAR ENERGY* 45 (J.H. Minan & W.H. Lawrence eds. 1981); Eisenstadt & Utton, *Solar Rights and Their Effect on Solar Heating and Cooling*, 16 NAT. RES. J. 363 (1976); Goble, *Siting/Protection: A Note on Solar Access*, 2 SOLAR L. REP. 25, at 31 (1980); Hirsén, *Solar Access Protection, Energy Policy and the Zoning Process*, 2 NORTHROP U.L.J. OF AEROSPACE, ENERGY AND THE ENV'T 35 (1980).

high-rise centers in concentrated downtown areas—all conditions which directly influence the type of solar access ordinance which is most appropriate for that city or county. Solar access ordinances should, as closely as possible, match local conditions and need. It should be pointed out that the need for a solar access ordinance depends upon these local conditions. Some areas may not need solar access protection. Assessment of the potential for solar access conflicts should be a first step in the local planning process.<sup>134</sup>

### Lessons for the United States

In view of the largely negative response in Australia to the introduction of solar and wind access protection laws, it may seem presumptuous to suggest that the United States can learn anything from the Australian experience in this area. Nevertheless, readers may be interested in understanding the reasons for the generally critical attitude adopted by the Australian law reform studies to the reforms enacted in the United States. To the extent that these criticisms are valid, the Australian experience may be of relevance to future reforms in the United States.

There are four possible lessons to be learned by the United States from the Australian experience and understanding of the problem:

(a) The sudden emergence of the oil crisis in America in 1973 resulting from the Arab oil embargo and the belated recognition of the need to maximize the country's level of energy self-sufficiency as a matter of urgency may well have caused the state governments to act too hastily in introducing solar and wind access laws. This criticism was first made by the Law Reform Committee of South Australia.<sup>135</sup> The validity of the criticism is evident from the haste in which such legislation was passed, the lack in many cases of any assessment of the need for and effect of such legislation by the appropriate law reform agency and the lack of coordination between the states as to the type of measures adopted. Much of the legislation introduced in this area during the 1970s has been severely criticized and has been found to be largely ineffective.<sup>136</sup> Some of the legislation has effectively been by-passed. For example, the majority of California municipalities have taken advantage of Section 25985 of the

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134. California Energy Commission, *Solar Access Ordinance—A Guide for Local Communities*, 22 (1981) (SolarCal-CEC Contract No. 400-80-021).

135. Law Reform Committee, *supra* note 62, at 9.

136. See, e.g., Comment, *Access Rights for the Solar User: In Search of the Best Statutory Approach*, 16 LAND AND WATER L. REV. 501, 518-19 (1981); Miller, *Legal Obstacles to Decentralized Solar Energy Technologies (Part I)*, 1 SOLAR L. REP. 595 (1979); Johnson, *State Approaches to Solar Legislation: A Survey*, 1 SOLAR L. REP. 55 (1979); Hillhouse & Hillhouse, *New Mexico's Solar Rights Act: A Cloud Over Solar Rights*, 1 SOLAR L. REP. 751 (1979); Gergacz, *Legal Aspects of Solar Energy: Statutory Approaches for Access to Sunlight*, 10 B. C. ENVTL. AFF. L. REV. 1 (1982).

California Public Resources Code, which permits any city or county to adopt an ordinance exempting their jurisdiction from the *Solar Shade Control Act*.

(b) Too much emphasis has been placed on the protection of solar and wind access by consensual measures based on principles of property law (that is, easements and restrictive covenants) and too little emphasis has been given to the use of building, planning and zoning laws as a suitable mechanism for achieving the desired goal. The importance of planning laws in this area has been emphasized by all the various Australian law reform agencies and the weaknesses in the consensual approach have been exhaustively documented.<sup>137</sup>

(c) Too much emphasis has been placed in the United States on state legislation, rather than local government legislation, to safeguard solar and wind access. Protection at the local government level is more appropriate,<sup>138</sup> but the reasons for this preference seem not to have been fully appreciated in many parts of the United States.

(d) While uniform legislation between the states is not essential, in light of the fact that the same problems of solar and wind access are shared by all the states, some measure of uniformity should be regarded as a desirable goal. The present laws on this subject in the United States are regarded in Australia as a hodge-podge of miscellaneous uncoordinated measures based on many disparate principles. Bearing in mind the decentralized nature of solar and wind technologies, it is important that the legal forms of protection are readily understood by the public. Unfortunately, the lack of uniformity detracts from this goal.

## CONCLUSION

The present legal position in both the United States and Australia with respect to solar and wind access protection is far from satisfactory. The United States, on the one hand, may have introduced too much ill-considered legislation too quickly. Australia, on the other hand, has dragged its heels and failed to introduce sufficient measures. Thus, both countries have failed to adequately protect access to solar and wind resources for diametrically opposite reasons.

The need for and the types of solar and wind access protection laws should be reconsidered in both countries. In each case the objective should be to introduce a system of legal protection which is effective for the

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137. See, e.g., National Study—Solar Access Report, *supra* note 74, at 24; Law Reform Committee, *supra* note 62, at 103.

138. The reasons why protection at the local government level is more appropriate are well documented in the Australian law reform reports: see, e.g., National Study—Solar Access Report, *supra* note 74, at 176-78; Law Reform Committee, *supra* note 62, at 112.

typical solar or wind user. This will require a system which is inexpensive to establish and to administer, which gives a speedy remedy, which involves the minimum of cost for the complainant and is simple to understand by a layperson. A reconsideration of the need for legislation and the adoption of these goals should lead to the enactment of new solar and wind access protection measures in both countries.

The objective of effective solar and wind access protection laws is more important than may be realized at first. The stakes are high because, without sensible and effective legal protection measures, people will not invest in solar devices or wind generators. This is a matter of common sense. Consumers will not invest in renewable resource technologies if their next-door neighbors can block their access to sunlight or wind with impunity. If the legal protection is perceived to be unsatisfactory, the use of renewable energy resources will be retarded. As aptly stated by Miller:

The legal system will not determine the ultimate fate of solar energy technologies, but it will have a lot to do with the rate at which they are adopted. In a period of transition in our energy supply, time is a critical factor.<sup>139</sup>

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139. Miller, *Legal Obstacles to Decentralised Solar Energy Technology: Part II*, 1 SOLAR L. REP. 761, 783 (1979).