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**Negotiated Solar Rights Conflict Resolution: A Comparative
Institutional Analysis of Public and Private Processes**

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NEGOTIATED SOLAR RIGHTS CONFLICT RESOLUTION

I. INTRODUCTION

Most legal analyses of residential solar power conflicts either support or assume the need for the statutory protection of solar investments. This perspective arises from the theory of property rights efficiency — i.e., residents will only make expensive investments in solar panels if they have a legally recognized protection to install a solar system receiving most of the solar radiation passing over a neighbor's land. Yet, underlying these disputes is a tradeoff between two productive uses: (1) Vertical land development and (2) the generation of electricity from solar panels.

Recent decades have seen the rise of state-level solar rights statutes,¹ implying that the development-solar legal balancing act has tipped in favor of solar owners. However, looking at individual disputes, both vertical development and solar often could make compelling normative claims to the efficiency of property protections via a servitude upon the other. The Coase Theorem² clarifies that to whom rights are initially assigned is likely immaterial with respect to efficient outcomes in neighbor-versus-neighbor conflicts; with low transaction costs, the highest-valued user will end up with the property right after bargaining. Without property rights, however, this market cannot function.³ So, there is a legal-theoretical basis, grounded in promoting efficient use, for the statutory assignment of solar rights. This article builds upon an argument that the preceding efficiency-based rationale is too simplified to inform a legal analysis of solar statutes.

Although statutes are a simple and direct way to assign solar property rights, it does not necessarily follow that statutes are simple and direct to enforce. This article argues that the enforcement of solar statutes through courts is far more costly than many solar-statute advocates may recognize. Recent amendments to solar statutes in California, as this article will explain, are revealing that California's heretofore-nation-leading government is

¹ Evan J. Rosenthal, *Letting the Sunshine In: Protecting Residential Access to Solar Energy in Common Interest Developments*, 40 Fla. St. U. L. Rev. 995, 1004 (2013).

² R.H. Coase, *The Problem of Social Cost*, 3 J.L. & Econ. 1 (1960).

³ Schmid, A. Allan, *Government, Property, Markets . . . In That Order . . . Not Government Versus Markets*, in *THE FUNDAMENTAL INTERRELATIONSHIPS BETWEEN GOVERNMENT AND PROPERTY*, 237-41 (Nicholas Mercuro and Warren Samuel eds., JAI Press 1999).

largely abdicating its enforcement role. As will be discussed, California is shifting the burden of enforcement to private disputants at the local level.

Enforcement issues have important implications for the implied efficiency of assigning solar property rights, but recent trends also pose an opportunity for normative institutional design that could potentially promote more effective dispute processing. The Coase Theorem⁴ makes clear that when enforcement costs are high or prohibitive, then the property rights efficiency argument cannot fully be realized as promised.⁵ This article will show that the most effective solution to the solar-rights enforcement problem is that governments should redirect energy to promoting local negotiation mechanisms.

This thesis builds on the lessons from recent legal cases and scholarship on solar conflicts within common interest developments (“CID”). A key conflict in this arena, which settled in 2008, garnered national media attention and spurred state-level legislative action.⁶ More recently, a set of conflicts made the news in Coachella Valley, as fees imposed by homeowners associations on solar projects created local-level disputes.⁷ Unfortunately for the researcher, these conflicts are by nature difficult to detect empirically and to assess quantitatively. One anticipates that most of these conflicts have occurred without record because it is likely they are being resolved through private negotiation and/or via a community dispute resolution process.

The legal outcomes of these cases are driven by an institutional conflict between community-level covenants, conditions, and restrictions

⁴ Coase, *supra* note 2.

⁵ Joshua M. Duke, *Property Rights and the Environment*, 3 ENCYCLOPEDIA OF ENERGY, NATURAL RESOURCES, AND ENVIRONMENT, 75-79 (Jason Shogren, ed. 2013).

⁶ Felicity Barringer, *Trees Block Solar Panels, and a Feud Ends in Court*, New York Times (April 7, 2008), http://www.nytimes.com/2008/04/07/science/earth/07redwood.html?pagewanted=all&_r=0.

⁷ Sammy Roth, *Some Homeowners Associations Make It Difficult to Go Solar*, THE DESERT SUN (May 18, 2015), <http://www.desertsun.com/story/tech/science/energy/2015/05/18/homeowners-associations-solar/27416213/>.

NEGOTIATED SOLAR RIGHTS CONFLICT RESOLUTION

(“CC&Rs”), and rights assigned by solar statutes. To preview the result, courts are turning to a “reasonableness”⁸ standard to determine when CC&Rs go too far; this implies that solar rights are limited, leaving it to judges and juries to determine the appropriate outcome in the development-solar balancing act. This article will argue that private litigation in courts is, relatively, poorly positioned to make this balance effectively. Instead, a market or mediated solution is likely better, albeit imperfect.

This paper uses a comparative institutional analysis⁹ of an actual solar conflict in California. The case is *Tesoro del Valle Master Homebuilders Association v. Griffin*,¹⁰ and involves the placement of a residential solar system in a residential development. The analysis supports the normative argument that the best of the imperfect conflict resolution processes may be for the states to: assign rights via statutes, but also support a more flexible enforcement approach based on local dispute-resolution norms and formal mechanisms. The local processes may be based on markets (Coasean¹¹ bargaining) or on informal norms (Ellickson¹²). Further, if these local, private negotiations are promoted and facilitated by governments, it ultimately may help lower the costs of reaching agreement between neighbors, ensuring efficient outcomes and allowing for more substantive participation by the disputing private parties than litigation-based enforcement.

II. BACKGROUND

The legal protection of solar rights dates to the Roman era, in which civil laws required a builder to have “servitude over neighboring land if he were not to leave his neighbors a minimum or reasonable amount of daylight.”¹³ As early as 1865, Robert Kerr, the nineteenth-century London architect who

⁸ *Tesoro Del Valle Master Homeowners Association v. Martin Griffin*, 200 Cal. App. 4th 619 (2011).

⁹ NEIL K. KOMESAR, *IMPERFECT ALTERNATIVES: CHOOSING INSTITUTIONS IN LAW, ECONOMICS, AND PUBLIC POLICY* (1994).

¹⁰ *Tesoro del Valle Master Homeowners Assn. v. Griffin*, 200 Cal. App. 4th 619, 630 (2011).

¹¹ Coase, *supra* note 2.

¹² ROBERT C. ELLICKSON, *ORDER WITHOUT LAW* (Harv. U. Press eds., 1st ed. 1991).

¹³ See Stephen Christopher Unger, Note, *Ancient Lights in Wrigleyville: An Argument for the Unobstructed View of a National Pastime*, 38 *IND. L.J.* 533, 542–43 (2005). See also Borimir Jordan & John Perlin, *Solar Energy Use and Litigation in Ancient Times*, 1 *SOLAR L. REP.* 583, 592–93 (1979).

authored *On Ancient Lights and the Evidence of Surveyors Thereon*, summarized the common law of “ancient lights”.¹⁴ His analysis points to the conflict between property rights and highest-and-best-use land development in London during this time.¹⁵ Statutory protection of right to “ancient lights” originates from the general statutes in the Prescription Act of 1832, which codified absolute rights to light after twenty years of access.¹⁶

Most early American courts, however, “unanimously repudiated the doctrine of ancient lights, with opinions reflecting the feeling that the protection of access to sunlight was not suited to a new and growing country because it would hinder the development of land.”¹⁷ Generally, U.S. courts favored intensive development over a protection from obstruction of light,¹⁸ but a few states previously “guaranteed landowners access to sunlight through recognition of prescriptive easements under this English doctrine.”¹⁹ A leading example of favored development occurred in 1959 when the Florida District Court of Appeals ruled in *Fontainebleau Hotel Corporation v. Forty-five Twenty-five, Inc.* that there is no legal right to air and sunlight:

¹⁴ ROBERT KERR, *ON ANCIENT LIGHTS AND THE EVIDENCE OF SURVEYORS THEREON* (Nabu Press eds., 1st 3d. 2010) (1865).

¹⁵ *Id.* at 1. (“As the value of house property has increased, disputes of this class have become more common than ever, more difficult of settlement, and more expensive. Serious complaints are made in all quarters--on the one hand, that vexatious litigants are permitted by frivolous technicalities to hamper improvement where improvement ought most to be encouraged; on the other, that bold speculators are able to override the rights of less wealthy and more timid neighbours, the very class who most require protection. Demands are made for legislative interference; and even Chancery judges confess themselves bewildered in the subtleties of pleading, and the conflict of interests equally entitled, not merely to legal respect, but to personal sympathy.”).

¹⁶ Prescription Act, 2 & 3 Will. 4 ch. 71 (1832).

¹⁷ Franklin Gevurtz, *Obstruction of Sunlight as a Private Nuisance*, 65 CAL. L. REV. 94, 105 (1977) (According to Gevurtz, “the doctrine of ancient lights is essentially the recognition of a prescriptive easement to light and air.”).

¹⁸ *Venuto v. Owens-Corning Fiberglas Corp.*, 22 Cal. App. 3d 116, 127 (1971), 99 Cal. Rptr. 350, 357-58 (Cal. Ct. App. 1971).

¹⁹ Tawny L. Alvarez, *Don't Take My Sunshine Away: Right-to-Light and Solar Energy in the Twenty-First Century*, 28 PACE L. REV. 535, 538 (2008).

NEGOTIATED SOLAR RIGHTS CONFLICT RESOLUTION

“No American decision has been cited, and independent research has revealed none, in which it has been held that — in the absence of some contractual or statutory obligation — a landowner has a legal right to the free flow of light and air across the adjoining land of his neighbor. Even at common law, the landowner had no legal right, in the absence of an easement or uninterrupted use and enjoyment for a period of 20 years, to unobstructed light and air from the adjoining land. *Blumberg v. Weiss*, 1941, 129 N.J. Eq. 34, 17 A.2d 823; 1 Am.Jur., Adjoining Landowners, § 51. And the English doctrine of "ancient lights" has been unanimously repudiated in this country. 1 Am.Jur., Adjoining Landowners, § 49, p. 533; *Lynch v. Hill*, 1939, 24 Del. Ch. 86, 6 A.2d 614, overruling *Clawson v. Primrose*, 4 Del. Ch. 643. There being, then, no legal right to the free flow of light and air from the adjoining land, it is universally held that where a structure serves a useful and beneficial purpose, it does not give rise to a cause of action, either for damages or for an injunction under the maxim *sic utere tuo ut alienum non laedas*, even though it causes injury to another by cutting off the light and air and interfering with the view that would otherwise be available over adjoining land in its natural state, regardless of the fact that the structure may have been erected partly for spite.”²⁰

The *Fontainebleau* court also noted that when a structure serves an efficient purpose, it cannot give rise to nuisance action for injunction or damages, even in the event of “irreparable injury.”²¹ The historical U.S. common law rule therefore largely supports vertical land development but inadvertently creates disincentives for landowners to adopt solar photovoltaics (PV) power systems.²²

²⁰ *Fontainebleau Hotel Corporation v Forty-Five Twenty-Five, Inc.*, 114 So. 2d 357, 359 (Fla. Ct. App. 1959).

²¹ *Id.* at 358-59.

²² This article does not focus on a purely common law approach to determining solar rights, using principles of nuisance as a defense against vertical development, but instead it explores the implications of the new wave of statutes that have already assigned clear solar rights. The focus is on the roles of transaction, and especially enforcement, costs and the relative ability of dispute resolution procedures to resolve U.S. solar rights conflicts efficiently and cost effectively. Common law solutions were sufficient until

Solar disputes are by nature spatially localized problems. These disputes might be better resolved through local or bilateral solutions than by one-size-fits-all standards. It is possible that state-level uniform standards awarding rights to solar parties could prevent some socially efficient vertical development, if neighbors are unable to reach an agreement. Solar statutes also implicitly grant veto or holdout power to solar owners in preventing vertical development. State-level legislative action further can be ineffective if high monitoring and enforcement costs prevent authorities from readily protecting the PV owner's solar right, and these authorities are unlikely to do so when they are far removed from the conflict. Further, it is the disputants themselves that have the best information about the conflict, their values, and neighborhood welfare. Finally, statutory enforcement ignores the power of a community to resolve its own disputes. These points align Coasean resolution with Robert Ellickson's view that people often find that the cost of submitting to formal dispute resolution is too high, such that they would rather resolve these issues on a local, informal basis.²³

technological advances triggered an incompatibility between high-rise buildings (and other sun-blockers such as trees) and the rise of rooftop-mounted and other solar photovoltaics ("PVs"). The boom in residential solar PV installations raises the stakes in the right to light debate because these systems represent valuable property — a revenue stream in the form of on-site electricity generation, resulting grid energy savings, and potential net-energy metering benefits (depending on state statutes in the particular location). A purely common law dispute processing, having evolved in the United States, is clearly a highly inadequate solution and has been progressively replaced by statutory protection for sunlight in the form of solar access laws that protect solar PV installations. In contrast to instances where statutes simply codify common law rules, solar has witnessed the opposite pattern. In short, the trend has been to use statutes to create relatively uniform standards that work against the common law rule. This uniformity could potentially prevent conflict by aligning expectations for all disputants.

²³ See Coase, *supra* note 2; ELICKSON, *supra* note 12; Bryan Caplan, *Robert Ellickson's Order without Law: A Review*, GEORGE MASON UNIV. (October 1992), <http://econfaculty.gmu.edu/bcaplan/ellick.htm> (stating that "[n]ot only is legislation unnecessary for law, but law is unnecessary for order. After studying dispute resolution among ranchers and farmers in Shasta County, California, Ellickson came to realize that most people find the costs of learning about the law (judge-made or statutory) and submitting to formal resolution procedures to be so high that it is easier to fall back on common-sense norms. He finds that all three of the functions of law - dispute resolution, rule formation, and enforcement - get supplied by means of these informal norms.").

NEGOTIATED SOLAR RIGHTS CONFLICT RESOLUTION

The foregoing argument raises the possibility that statutory rights assignment and centralized government enforcement may be less effective than statutory rights with a more localized dispute resolution process. The tension arises in balancing the enforcement costs of the former approach with the transaction and negotiation costs of the latter. If these costs are highly asymmetric, then this creates a comparative institutional analysis problem²⁴ with differential impacts in terms of efficiency and access to participation. Therefore, a single institutional analysis of statutory enforcement will not be sufficient to result in a meaningful conclusion — i.e., statutory enforcement is costly and thus local negotiations are automatically superior. Instead, this article presents a comparative institutional analysis between the public solution of statutory enforcement and the private, markets-based solution of community-level dispute resolution, analyzing the strengths and weaknesses of both processes and drawing a conclusion about the best of two imperfect²⁵ dispute processing mechanisms. The results of the analysis highlight the potential efficiency gains that result when these disputes are resolved using localized negotiation inspired by Coase and Ellickson.²⁶

This article offers a new perspective on solar rights and environmental dispute resolution, focusing on the community level. The comparative institutional analysis^{27,28} examines a case study, *Tesoro del Valle Master Homebuilders Association v. Griffin*,²⁹ and draws comparisons between the enforcement issues associated with statutes and the community dispute resolution process. This community dispute resolution process developed herein is a local one, in that neighbors would participate and could use CC&Rs as preemptory instruments. In addition, local boards or community planning organizations could assist with enforcement of solar rights disputes. The motivation for the community dispute resolution approach is similar to that of alternative dispute resolution processes; those with the best

²⁴ See KOMESAR, *supra* note 9.

²⁵ See KOMESAR, *supra* note 9.

²⁶ See Coase, *supra* note 2. ELLICKSON, *supra* note 12.

²⁷ See KOMESAR, *supra* note 9.

²⁸ Joshua. M. Duke and L. A. Csoboth, *Increased Scientific Capacity and Endangered Species Management: Lessons from the Red Wolf Conflict*, 8 DRAKE J. AGRIC. L. 539, 552 (2003) (this article extends the Komesar version of comparative institutional analysis).

²⁹ *Tesoro del Valle Master Homeowners Assn. v. Griffin*, 200 Cal. App. 4th 619, 630 (2011).

information (i.e., solar owners and their neighbors) should also be incentivized and empowered to lead conflict resolution. The analysis also suggests an important hypothesis: that the “insurance policy” provided by statutes to solar owners — protecting the value of solar investments — is potentially of less value to the property right holder than the certainty of market behavior when one considers the failures of the real world’s costly enforcement.

Evan J. Rosenthal³⁰ and others have described the composition of solar access laws and their roles in community-level governance. Our argument builds upon several scholars, who have argued against the use of the courts in enforcing solar rights statutes, citing deficiencies and high inefficiency.^{31,32} At the same time, others have argued that common law^{33,34} and property

³⁰ Rosenthal, *supra* note 1, at 1006.

³¹ See John William Gergacz, *Legal Aspects of Solar Energy: Statutory Approaches for Access to Sunlight*, 10 B.C. ENVTL. AFF. L. REV. 1, 29 (1982) (“Fifth, the Act’s reliance on the judiciary to resolve disputes may not be the most equitable method. These problems are serious deficiencies and point out that California’s answer to the issues of solar access is far from satisfactory.”).

³² See Sara C. Bronin, *Solar Rights*, 89 B.U. L. REV. 1217, 1265 (2009) (“After a review of the judicial developments with respect to nuisance, prescriptive easements, and implied easements, it is difficult to imagine that courts could ever become fully engaged with the development of a solar rights regime. Even if courts suddenly became receptive to solar rights, litigation would be a poor strategy for solar rights seekers for many reasons, including the uncertainty of the outcome and the related transaction costs. Rather than repeating “ancient” debates about ancient lights and other topics, modern scholars should shift their focus away from the courts.”).

³³ See Shawn M. Lyden, *An Integrated Approach to Solar Access*, 34 Case W. L. Rev. 367, 368 (1984) (“Unfortunately, the common law affords little or no protection to a landowner’s interest in access to sunlight. Courts have historically shown great reluctance to interfere with land use on the basis of something ‘so impalpable and fleeting as air and light.’”).

³⁴ See Scott F. Stromberg, *Has the Sun Set on Solar Rights? Examining the Practicality of the Solar Rights Act*, 50 NAT. RESOURCES J. 211, 212-13 (2010) (“Unfortunately, the common law and express easements adopted in other states have been shown to offer little protection to solar users who require access to solar energy. Some courts have been unwilling to protect access to solar energy through common law legal theories, due in part to the limitation that solar access will place on the development of adjacent properties... The failure of common law and express easements to protect solar access leaves the solar user without a right to access solar energy and, thereby, discourages its implementation.”).

law³⁵ poorly process right to light conflicts. Some have also advocated for various degrees of involvement of local and municipal governments^{36,37} in inspiring private negotiation of easements, and yet others have discussed the role of norms in solar rights disputes.³⁸ This paper builds upon these legal analyses, adding a comparative analysis of the underappreciated but critical differences in enforcement costs of statutes and transaction costs of negotiation. This “cost asymmetry” has important implications for the potential role for community governance to play in dispute resolution regarding solar installations in master planned communities. As demonstrated in the comparative institutional analysis of the *Tesoro v. Griffin* case presented here, the high enforcement costs of statutes raise the possibility that the relatively low transaction costs of local negotiation will be the most efficient and equitable solution to residential solar rights conflicts. This argument therefore brings together three threads of legal analysis: (1) the existing literature’s concerns about solar-enforcement, (2) the Coasean³⁹ notion that private bargains will be superior to mandated, uniform outcomes,

³⁵ Troy A. Rule, *Property Rights and Modern Energy*, 20 GEO. MASON L. REV. 803, 836 (2013) (“In these settings, courts and policymakers must be cautious not to unfairly or inefficiently redistribute existing property interests in their effort to promote new forms of energy development . . . as policymakers seek to adapt property law to the realities of the modern energy sector.”).

³⁶ See Ellis Raskin, *The Definitive Guide to Tree Disputes in California*, 21 HASTINGS W.-N.W. J. ENV. L. & POL’Y 113, 124 (2015). (“Absent any municipal ordinances that guarantee otherwise, property owners do not have the right to light and air unobstructed by trees. The only exceptions are when the blockage of sunlight is malicious or if the trees obstruct a solar easement granted under the Solar Shade Control Act.”).

³⁷ Alexandra B. Klass, *Property Rights on the New Frontier: Climate Change, Natural Resource Development, and Renewable Energy*, 38 ECOLOGY L.Q. 63, 66-67 (2011) (“In recent years, state and local governments have in many cases adopted historical natural resource development approaches to solar and wind by defining leasehold estates, easements, and other property interests in solar and wind rights. . . . In these efforts, states are hoping to spur development and create more certainty in investment. . .”).

³⁸ See R. Lisle Baker, *My Tree versus Your Solar Collector or Your Well versus My Septic System? – Exploring Responses to Beneficial but Conflicting Neighboring Uses of Land*, 37 B.C. ENVTL. AFF. L. REV. 1, 1 (2010) (“[R]esolving conflicts between neighboring beneficial uses of land would be aided by guidelines which might be grounded . . . with a sense that rough justice is being served. Two such norms appear helpful: priority in time and examining which of the two beneficial uses appears to be the more intrusive . . .”).

³⁹ See Coase, *supra* note 2.

and (3) the Elicksonian⁴⁰ notion that local, informal negotiation may be superior to one-size-fits-all standards.

III. SOLAR RIGHTS STATUTES

Solar rights statutes establish and delimit the rights of solar owners. There are a variety of types of these laws, from acts that prevent solar owners from being forced to endure shade, to mechanisms for creating easements to enabling statutes for the creation of local ordinances. In some states, these statutes provide the framework for solar easements to be contracted between two parties.⁴¹ Though the solar-owner property rights enumerated are substantive, the rights are more limited than some might realize — for instance, via CC&Rs. Further, the burden of enforcing these rights largely falls upon the owner, despite some instances in the past where the government took an active role in enforcement.

Rosenthal⁴² recently advanced the literature on understanding solar rights statutes. Rosenthal found that, “as of 2012, forty states ha[d] some form of solar access law,” twenty-one of which “specifically addressed CC&Rs that ‘effectively prohibit’ or ‘unreasonably interfere’ with a homeowner’s ability to install” a solar system.⁴³ Despite the statutes, little judicial interpretation exists; Rosenthal wrote that despite the “323,600 association-governed

⁴⁰ See ELLICKSON, *supra* note 12.

⁴¹ Rosenthal, *supra* note 1, at 998. (“These laws are diverse in makeup but can provide a number of rights and protections, including: the right to install a solar device on a property subject to countervailing building codes or local ordinances; the creation of a solar easement; and provisions mandating the removal of vegetation that blocks sunlight. Twenty-one states have also specifically addressed CC&Rs that ‘effectively prohibit’ or ‘unreasonably interfere’ with a homeowner’s ability to install a solar energy generation system.”).

⁴² *See id.*

⁴³ *Id.* at 998 (“As of 2012, forty states have some form of solar access law on their books, with some local governments taking action as well. These laws are diverse in makeup but can provide a number of rights and protections, including: the right to install a solar device on a property subject to countervailing building codes or local ordinances; the creation of a solar easement; and provisions mandating the removal of vegetation that blocks sunlight. Twenty-one states have also specifically addressed CC&Rs that ‘effectively prohibit’ or ‘unreasonably interfere’ with a homeowner’s ability to install a solar energy generation system.”).

NEGOTIATED SOLAR RIGHTS CONFLICT RESOLUTION

communities in the United States containing some 25.9 million housing units” in 2012,⁴⁴ there is a relatively thin basis of case law featuring homeowner versus prohibitive CC&Rs.⁴⁵ Rosenthal summarized the power of CC&Rs:

Community associations are, to a large extent, right to feel so empowered. When a homeowner within a CID wishes to undertake a home improvement project — such as a solar installation — CC&Rs will often require the homeowner to seek prior approval from the association's governing board. Courts are highly deferential to the decisions made by these boards; many courts apply a form of the business judgment rule when assessing an association board's decision. Common law principles also strongly favor the enforceability of private contractual agreements, including CC&Rs. In the end, as one commentator noted, "more than likely, community associations will win in court if the family agreed to rules when joining a community."⁴⁶

Rosenthal studied these sources of law and made recommendations regarding how solar access laws might be strengthened to protect solar rights more effectively.⁴⁷

This leads to a key point in our article. CC&Rs significantly limit solar rights by allowing these rights to be suspended by the community and requiring the solar owner to either seek enforcement or defend him or herself in court if a CID association seeks to challenge these rights. Further, courts have adopted a standard of reasonableness in determining what limitations

⁴⁴ *Id.* at 1000 (“As of 2012, there were 323,600 association-governed communities in the United States containing some 25.9 million housing units.”).

⁴⁵ *Id.* at 1003 (“Despite the board member's warning, there is a scant body of case law featuring homeowners seeking judicial approval of a solar project in the face of prohibitive CC&Rs and/or an adverse decision by an association board. Homeowners may simply abandon plans for a solar device in the face of potential legal hurdles, figuring that the up-front costs of installation are substantial enough as is before factoring in legal fees, as well (think Henry Homeowner). Others likely realize that any legal challenge they could mount faces an uphill battle considering the deference courts give to the decisions of community association boards.”).

⁴⁶ Rosenthal, *supra* note 1, at 999 (footnotes omitted).

⁴⁷ *Id.*

are permissible. This standard is one that better matches a presumptive rights regime and nuisance law rather than one where the solar rights have ostensibly been allocated via statute.

Rosenthal argues that the precise and quantifiable definition of reasonableness standards and the scope of the law, as well as the elimination of provisions for restriction of solar installations on purely aesthetic grounds, are necessary to implement effective solar rights legislation on a state level,⁴⁸ thereby “divest[ing] the courts, to the greatest extent possible, of their discretionary power in analyzing the ‘reasonableness’ of a community association’s covenants, conditions, and restrictions pertaining to solar energy use.”⁴⁹ Rosenthal suggests that courts are regaining power from community associations, which had previously “assumed a function traditionally performed by state and local governments.”⁵⁰

A. SCOPE OF SOLAR RIGHTS

The scope of Rosenthal’s article does not include the solar rights granted through a parallel class of legislation regarding solar shading, pioneered by the California Solar Shade Control Act.⁵¹ While shading was perhaps outside the scope of his comprehensive review, it is important to note that the term “solar rights” can refer to two different sources of conflict: the right to install the panels in the first place, and the right to the light necessary for their continued performance once installed.⁵² Installation rights are protected under solar rights statutes as well as solar easements, which can be negotiated

⁴⁸ *Id.* at 1007-09.

⁴⁹ *Id.* at 1017.

⁵⁰ *Id.* at 1008 (“Kristina Caffrey has suggested that in regulating the placement of solar devices, community associations have essentially assumed a function traditionally performed by state and local governments: ‘All the way back to *Village of Euclid v. Ambler Realty*, state and local governments have told property owners what they can and cannot do and where they can or cannot do it.’ Thus, courts could view solar access laws as ‘taking back’ the responsibility of zoning and land use planning from community associations.”).

⁵¹ Cal. Pub. Res. Code § 25980-86 (2015).

⁵² Rosenthal, *supra* note 1, at 998.

NEGOTIATED SOLAR RIGHTS CONFLICT RESOLUTION

between two private parties.⁵³ Performance rights are protected under solar shading legislation and local zoning ordinances.

From the perspective of a solar owner, the necessity for multiple layers of protection stems from the multitude of dimensions on which installations can vary, in the technical design qualities of the system, incentive policy benefits, and other dimensions. In a formal negotiation of these dimensions, a document summarizing the negotiated terms along each dimension would serve a valuable purpose in creating a legally binding settlement. In the case of future judicial dispute, the document could also be introduced as evidence in subsequent litigation. Some of these dimensions are laid out in Table 1, a sample worksheet table, developed for the purpose of delineating some of the potential dimensions for the private negotiation of solar rights disputes between neighbors.

⁵³ *Id.* at 999.

Table 1: Negotiable dimensions on which residential solar installations can vary

<u>Solar Owner's Right</u>	<u>Negotiable Dimension</u>	<u>Neighbor's Right</u>
	Nameplate Capacity of System	
	Number and surface area of panels	
	Location of panels	
	Azimuth (to prevent shading)	
	Degree of Shading (%)	
	SREC benefits	
	Tax Credit benefits	
	Solar rights at the end of system useful life	
	Solar Easement	

This table reflects the diversity of potential rights associated with solar, but it also presents a preliminary framework for normative recommendations on negotiation. Both formal and informal negotiations between neighbors could benefit from pre-identified parameters of rights negotiation. For

example, neighbors could use this framework to negotiate side payments from the solar owner to homes in viewshed of the system. Concurrently, other neighbors may negotiate the terms of a solar easement in concert with a side payment that comes in the form of a fixed proportion of annual energy savings, thereby incentivizing the neighbor to maximize sunlight and output to the solar owner's system.

The initial assignment of these installation rights and performance rights to both the solar owner and neighbor come in the form of solar rights legislation, local zoning ordinances, solar easements, and CC&Rs. After negotiation, the rights enumerated in the negotiation process become matters of enforcement in the case of a violation.

B. Enforcement

One of the most important trends in solar rights is the evolution of how property rights are enforced. The change in enforcement seems to be traceable to a specific, high profile conflict that occurred in Northern California in 2008.⁵⁴ Although the conflict is relatively minor in substance, it triggered significant controversial media coverage — most of which raised concerns about the criminal prosecution of “developed” uses, which in this case were redwood trees. In California prior to 2008, the Solar Shade Control Act⁵⁵ was enforced as a public nuisance carrying criminal misdemeanor charges. In 2008, in *California v. Bissett*,⁵⁶ a tree owner refused to trim or remove trees that were shading a neighbor's solar panels. The public and media reaction seems to have led to an amendment to the Solar Shade Act, as summarized by Day Anders and Adi Kuduk, that considered violations a private nuisance requiring civil (rather than criminal) enforcement:

“Before the Act's amendment became effective on January 1, 2009, solar collector owners seeking to enforce the Act had to have their claims prosecuted by a district attorney or other prosecutor. This entailed demonstrating to the prosecutor that a violation occurred, having the prosecutor deliver a thirty-

⁵⁴ See Barringer, *supra* note 6.

⁵⁵ Cal. Pub. Res. Code § 25980-86 (2015).

⁵⁶ *California v. Bissett*, No. BB727255 (Cal. Sup. Ct. Santa Clara County Mar. 28, 2008).

day abatement notice to the offending tree or shrub owner to cure the violation, and finally prosecuting this person if the violation was not abated within thirty days.

Now that violations of the Act are no longer criminally prosecuted, the solar collector owner is solely responsible for enforcing the protections afforded by the Act. This is essentially a two-step process. First, the affected solar collector owner must provide the tree or shrub owner written notice requesting compliance with the requirements of Section 25982. Second, if the tree or shrub owner fails to comply with the written notice requesting compliance with the Act, the affected solar collector owner may bring a private nuisance suit under the Act against the negligent person to remedy the solar shading.⁵⁷

In sum, this excerpt shows that, with respect to the right to be free from shading, the burden of enforcement shifted from the public to the private solar owner.

While California has led the way in adopting solar rights legislation, the frontier for the enforcement of solar rights is evolving and relatively unexplored. To the skeptic, it might seem as though legislatures assigned these solar rights with good intentions, but were not prepared to pay for the costs of enforcing the law. Some statutes were not written with an explicit enforcement role for the state, though others were. Currently, states are pursuing one of the following strategies: (1) not enforcing solar rights; (2) under-enforcing solar rights; (3) shifting enforcement burden to local governments; or (4) shifting the enforcement burden to private parties. Although these strategies lower the state government's fiscal costs, the cost of enforcement must be paid nonetheless. The owners of solar property rights will either see costs of asserting and defending their rights, or they will choose to not defend their rights at all — which is also costly. If they choose to use the courts for enforcement, then that also imposes a social cost.

⁵⁷ Scott Anders et. al., *'Hey, Your Tree is Shading My Solar Panels: California's Solar Shade Control Act*, 2 J. SUSTAINABLE REAL EST. 361, 368 (2010).

No empirical literature could be identified indicating recent trends in enforcement of solar rights. Thus, the authors conducted a brief and non-representative set of phone contacts to state and local governments in California.⁵⁸ The contacts showed that many local governments do not have experience with the enforcement of solar rights conflicts and, therefore, are not taking an active role in pursuing enforcement. The phone conversations suggest that it is likely that most of these disputes are being settled privately between neighbors, outside the realm of government intervention — though perhaps through judicial resolution. In many states with strong solar rights legislation, including California, property rights are clearly defined. Moreover, in private negotiation transactions costs are relatively low, and therefore Coasean⁵⁹ outcomes through bargaining are possible.

Another critical piece in the analysis of statutes is the high enforcement costs for the judicial dispute resolution of statutorily assigned rights — i.e., litigation costs. These costs are likely very high, relative to the solar and development values at stake, so it is not surprising that one finds little appellate case law in this area.⁶⁰ Governments could, but do not seem to, actively police some of these conflicts. One could imagine the analog of a building code inspector, enforcing violations. While the violation of solar rights statutes has rarely been a criminal act, their enforcement, generally through judicial dispute resolution processes, remains very costly. Without government representation of their interests, these costs fall on the disadvantaged party, i.e., the party that is losing in the status quo. There is a significant asymmetry in the costs of formal legal action and self-enforcement, and there is an inherent bias towards the status quo, be it one in which solar panel owners threaten the developed use, or vice versa. These

⁵⁸ Addendum available upon request (on file with Benjamin Attia, Univ. of Del.).

⁵⁹ See Coase, *supra* note 2.

⁶⁰ Rosenthal, *supra* note 1, at 999 (“Considering the deferential treatment community associations receive in the courts, the importance of solar access laws becomes clear—without them, homeowners face nearly impossible odds when challenging the adverse decision of an association board. But can solar access laws turn the tide in favor of homeowners? Despite the spread of statutes addressing solar rights, little case law involving homeowners pitted against their associations has developed, perhaps due to homeowners deciding to abandon their efforts rather than potentially face litigation. Solar access laws are also a relatively recent phenomenon. However, several cases indicate that courts will carefully scrutinize the language of solar access laws in determining how they impact a traditional review of an association board’s decision. Statutory construction of these laws is thus of critical importance.”).

cost asymmetries will likely lead to substantive inefficiency, and our normative recommendations seeks to lower these costs with a community dispute resolution process.

IV. DECENTRALIZED CONFLICT RESOLUTION: ELLICKSONIAN NORMS AND COASEAN BARGAINING

Because solar rights disputes are spatially localized — involving a small number of solar owners and neighbors — the most applicable decentralized resolution processes are Ellicksonian norms⁶¹ and Coasean bargaining.⁶² This section briefly outlines how these processes function, focusing on the costs of conflict resolution. These resolution costs may then be compared to the enforcement costs of statutes.

The theory behind efficient Coasean bargaining relies on a precondition — the assignment of property rights to either the solar party or the developed-use party.⁶³ Solar rights statutes existed in forty states in 2012, largely in the form of a lesser right in land that mirrors a negative easement.⁶⁴ The assignment of rights is often quite precise and varied. For example, a statute might specify that no more than 10 percent of a solar panel may be shaded between the hours of 10:00 a.m. and 2:00 p.m. on the winter solstice as long as the solar panel was installed before the shade-producing developed use.⁶⁵ This statute would therefore assign a negative easement whereby the developed-use property is encumbered, such that the shading use of land would not be pursued.

These conflicting land uses fall along a spectrum of rights, with extremes favoring vertical development or solar rights (see Figure 1). When rights are completely assigned to vertical development, such as in the *Fontainebleau*⁶⁶ case, there is no statutory protection for solar rights or to prevent solar

⁶¹ See ELLICKSON, *supra* note 12.

⁶² See Coase, *supra* note 2.

⁶³ *Id.*

⁶⁴ Rosenthal, *supra* note 1, at 998.

⁶⁵ Cal. Pub. Res. Code § 25982 (2015).

⁶⁶ See *Fontainebleau Hotel Corp. v. Forty-Five Twenty-Five, Inc.*, 114 So. 2d 357 (Fla. Dist. Ct. App. 1959).

NEGOTIATED SOLAR RIGHTS CONFLICT RESOLUTION

shading. Conversely, the opposite spectral extreme holds for absolute solar rights over vertical development, fully protecting the stream of benefits from solar panels. Although many might anticipate that solar statutes award absolute rights, this is not the case. In most states with solar rights, these statutes have created a solar rights-leaning regime with reasonableness standards and other disputatious protections. The solar rights regime's location along the spectrum can be influenced by the types of dispute resolution processes taking place and by the costliness of enforcing one's solar rights.



Figure 1: Solar Rights Spectrum

Conflict arises when vertical development is perceived to be unreasonable to the solar owner; in Figure 1, conflict would be a land-use decision resulting in a point to the left of where the solar owner believes his or her rights reside. A solar owner could seek government help to enforce his or her rights by limiting the developed land use, which in Figure 1 would mean seeking to shift the presumptive activity to the right. However, this centralized enforcement may be expensive, relative to the value of the shift right in Figure 1. Our hypothesis is that the shift could be accomplished through decentralized private negotiation at a lower cost. Alternately, the developed use owner could compensate the solar owner sufficiently to remain at or near the left-most status quo point.

With property rights assigned, the next step in a Coasean analysis is to assess transaction costs.⁶⁷ Transaction costs involve the resources expended to reach a formal agreement, whereby (1) the developed-use owner pays the solar owner to endure more shading or (2) the solar owner pays the

⁶⁷ *Id.* at 850-53; Duke, *supra* note 5; see also, Joshua M. Duke, *Institutions and Land-Use Conflicts: Harm, Dispute Processing, and Transactions*, 38 J. Econ. Issues. 227, 234 (2004).

developed-use owner to provide more sun than currently provided.⁶⁸ For instance, the contract might specify that the shade will be less than 10 percent during the given hours or the shade will apply to fewer hours than the statute specifies. Examples of transaction costs would be the costs of paying a lawyer to draft a contract, filing documents, negotiating the price, and enforcing the contract.⁶⁹

The next step in a Coasean⁷⁰ analysis is to compare the magnitude of the total transaction costs to the potential gain from trade,⁷¹ which in this case would be the value of the adjustments specified above. For several reasons, it is reasonable to anticipate that in most conflicts, the transaction costs will exceed the value of the adjustments. First, although the solar panels and developed uses are valuable (i.e., of a magnitude greater than \$10,000), the value of the potential gains from trade will often be less because they involved only *adjustments* to the rights specified in the statutes. Second, the transaction costs are likely to be substantial (i.e., at least \$1,000-\$2,000) because of the professional services that are likely to be involved. Collectively, this Coasean analysis suggests that bargaining can deliver the efficient level in the developed-use-versus-solar balance,⁷² but it is likely in most conflicts that the status quo statutorily assigned property rights would prevail.

Because the principal obstacle to bargaining is transaction costs, one might hypothesize that informal, norms-driven outcomes may be at play. Simply, the costs of reaching an informal agreement are likely to be less than the formal-agreement transaction costs. The informal agreement costs would involve private (and likely, bilateral) negotiation, but no contracting cost. The main cost of informal agreements would be the costs to the victim of seeking redress, if the other party violates the informal agreement. The costs are analogous to contractual enforcement costs, and occur only in expectation. If the negotiation is upheld, then these are highly efficient, privately negotiated transactions that likely involve low or near-zero transactions costs, and likely

⁶⁸ Coase, *supra* note 2, at 15-19; *See* Duke, *supra* note 5.

⁶⁹ Coase, *supra* note 2, at 15-19; *See* Duke, *supra* note 5.

⁷⁰ *See* Coase, *supra* note 2.

⁷¹ *See* Duke, *supra* note 5; Duke, *supra* note 67, at 234.

⁷² *See* Duke, *supra* note 5; Duke, *supra* note 67, at 234.

do not involve formal easement contracts. It is possible that these informal agreements involve private side payments or exchanged services.

There is legal-economic theory to support these informal negotiations as an alternative to Coasean bargaining. Norms, as a field of conflict resolution, largely draw on Ellickson's work *Order Without Law*.⁷³ After conducting field research with farmers and ranchers in Shasta County, California, Ellickson concluded that bargaining contexts that exist outside of legal entitlement to initial rights create superior efficiency gains in private negotiation.⁷⁴ In fact, Ellickson juxtaposes his views with the "legal centrist tradition," pioneered by Thomas Hobbes,⁷⁵ who argued that a non-legal system of social control—"such as the decentralized enforcement of norms"⁷⁶—had no possibility of bringing order to a society. Coasean arguments align with Hobbes's, arguing that initial rights must be assigned by the state.⁷⁷ Ellickson disagrees: "Even in the parts of his article where he took transactions costs into account, Coase failed to note that in some contexts initial rights might arise through decentralized social processes, rather than from law."⁷⁸ In an Ellicksonian world, there are two forms of norms-based negotiation: those contexts in which initial rights are centrally defined and those contexts in which they are not defined.⁷⁹ When they are not defined, it is likely that decentralized social processes often determine initial rights. When they are defined, private bargaining likely often occurs outside of legal entitlement to those initial rights. Ellickson argues that due to the power of social norms and the complexities of the law, many will choose to enforce their own express contracts without the help of the law.⁸⁰

Both Coasean bargaining and Ellicksonian norms could potentially work to resolve solar rights enforcement conflicts. With property rights defined,

⁷³ See ELLICKSON, *supra* note 12.

⁷⁴ *Id.* at viii ("In short, contrary to standard law-and-economics analysis, in many contexts legal entitlements do not function as starting points for bargaining.").

⁷⁵ THOMAS HOBBS, *LEVIATHAN* 97-98, 110-113 (1st ed. 1909).

⁷⁶ ELLICKSON, *supra* note 12, at 138.

⁷⁷ Coase, *supra* note 2, at 15.

⁷⁸ ELLICKSON, *supra* note 12, at 139.

⁷⁹ *Id.*

⁸⁰ *Id.* at 138; See also Benjamin Klein & Keith B. Leffler, *The Role of Market Forces in Assuring Contractual Performance*, 89 J. POL. ECON. 615 (1981).

status quo rights assignment will often prevail, but when it is unsatisfactory to one party, that party will seek an informal or formal outcome *if no other, cheaper resolution process is available*. It is also possible, however, that the parties to the conflict may (1) not fully understand the exact property rights assigned and whether they are in compliance, or (2) will ignore the assigned rights seeking an entirely norm-based solution. In other words, solar rights form an important variable in negotiation with which the costs and benefits of adjustments to the status quo are negotiated. Enforcement through courts, though likely intended as the resolution process by those in government, may actually be far less attractive when compared to the net benefits of using decentralized processes.

If the government enforces solar rights with criminal actions — as California did prior to 2008 under the Solar Shade Act — then there is little incentive for solar owners to use private negotiation because the state bears the enforcement cost. That is the exception, however. As most statutes simply assign rights and then direct aggrieved solar owners to seek civil redress in courts at their own expense, private negotiation processes have potentially lower cost. This hypothesis is difficult to test empirically. It is largely an unobservable phenomenon of private negotiation. Yet, the theoretical predictions suggest that it is currently used to resolve conflicts. Further, the government should redirect solar conflicts from courts to a facilitated private negotiation process, which is built upon by the Coasean⁸¹ and Ellicksonian⁸² insights developed herein. In the following comparative institutional analysis, lessons are drawn about how a community dispute resolution process functions and compares to the litigated resolution in the case.

V. CASE STUDY: TESORO DEL VALLE MASTER HOMEOWNER'S ASSOCIATION V. MARTIN GRIFFIN ET AL.

This comparative institutional analysis of the conflict leading to the case of *Tesoro del Valle Master Homeowner's Association v. Griffin*⁸³ follows

⁸¹ See Coase, *supra* note 2.

⁸² See ELLICKSON, *supra* note 12.

⁸³ See *Tesoro Del Valle Master Homeowners Association v. Martin Griffin*, 200 Cal. App. 4th 619 (2011).

methods developed by Komesar⁸⁴ and extended by Duke,⁸⁵ seeking to determine the most effective resolution process to solve a specific type of environmental conflict. By collecting “transaction” data⁸⁶ adapting an approach developed by John R. Commons and elaborated upon by Daniel W. Bromley,⁸⁷ the researchers analyzed how a resource at stake is assigned formal property rights from an informal to fully formal property rights regime. Comparing the effectiveness of these allocation procedures concludes which processes are the “best of the bads” of available resolution processes.⁸⁸

This analysis compares the legislative process in terms of its passage and enforcement of the California Solar Rights Act⁸⁹ to the community dispute resolution process in terms of both the disputants’ procedural ability to participate and the substantive efficiency of the outcome. This allows conclusions to be drawn about how to use these resolution processes to achieve societal goals. This case study provides insight into a unique new category of resolution processes that have the potential to increase substantive efficiency in community-level solar conflicts. This analysis finds that the community dispute resolution process is potentially relatively effective in creating what is essentially a negotiated settlement that occurs with low transaction costs. This finding has wide implications for environmental policy because it represents the power of private negotiation in resolving environmental conflicts.

A. *Setting of the Conflict*

The conflict setting establishes the history of human interaction with the natural environment in the location that would eventually produce the case study conflict. This conflict is set in the city of Santa Clarita, California.⁹⁰

⁸⁴ See KOMESAR, *supra* note 9.

⁸⁵ See Duke, *supra* note 5.

⁸⁶ *Id.*

⁸⁷ John R. Commons, *Institutional Economics: Its Place in Political Economy*, New Brunswick, N.J.: Transaction Publishers (1990). See also John R. Commons, *Legal Foundations of Capitalism*, New Brunswick, N.J.: Transaction Publishers (1995); Daniel W. Bromley, *Economic Interests and Institutions: The Conceptual Foundations of Public Policy*, Oxford: Basil Blackwell (1989).

⁸⁸ See KOMESAR, *supra* note 9.

⁸⁹ Cal. Civ. Code § 714 (2015).

⁹⁰ See *Tesoro Del Valle Master Homeowners Association v. Martin Griffin*, 200 Cal.

With a population of about 180,000, and a median household income of \$82,607,⁹¹ Santa Clarita is a vibrant and wealthy suburb of Los Angeles situated in the northeast corner of Los Angeles County. The Santa Clarita Valley has a mild Southern California Mediterranean climate, characterized by warm and dry days most of the year with mild-moist winters.⁹² Throughout the valley, microclimates are common because of the proximity to the Mojave Desert and Pacific Ocean, and the dry portion of fall usually yields temperatures near 100 degrees and vulnerability to wildfires.⁹³ The city has a rich history steeped in early American Indians, the California Gold Rush, the oil boom, a disastrous flood, and the early silent film era.

B. Parties and Conflicting Interests

The homes in the Tesoro del Valle development, like most other master-planned communities, are subject to the community's CC&Rs.⁹⁴ The CC&Rs ensure that "there shall be no construction, alteration, or removal of any Improvement in the Project (other than repairs or rebuilding done by the Association pursuant hereto) without the approval of the Architectural Control Committee (ACC)."⁹⁵ The CC&R's "Design Guidelines" adopted by the Tesoro del Valle homeowners association reserved their right under the California Solar Rights Act⁹⁶ to impose "reasonable" restrictions on solar installations, pending review from the homeowner's association's ACC.⁹⁷

App. 4th 619 (2011).

⁹¹ 2010 U.S. Census. U.S. Census Bureau, available at

<http://quickfacts.census.gov/qfd/states/06/0669088.html>.

⁹² *Monthly Averages for Santa Clarita, CA*, October 4, 2014,

http://www.weather.com/outlook/health/achesandpains/climatology/monthly/USCA1019?from=36hr_newslinker2.

⁹³ *Id.*

⁹⁴ G. C. Hansen, *California Planning and Development Report* (Legal Digest No. Vol. 27 No. 1, 2012), <http://www.cp-dr.com/node/3100> (last visited September 21, 2014) ("In *Tesoro del Valle Master Homeowners Assn. v. Griffin*, defendants Martin and Carolyn Griffin were owners of property who sought to install a solar energy system at their residence in a development that is subject to conditions, covenants and restrictions").

⁹⁵ *Id.* ("The CC&Rs provided that '[t]here shall be no construction, alteration, or removal of any Improvement in the Project (other than repairs or rebuilding done by the Association pursuant hereto) without the approval of the Architectural Control Committee (ACC).").

⁹⁶ *See Tesoro Del Valle Master Homeowners Association v. Martin Griffin*, 200 Cal.

NEGOTIATED SOLAR RIGHTS CONFLICT RESOLUTION

In 2007, defendants Martin and Carolyn Griffin decided to install a solar PV renewable energy system on their property, which activated the conflict in this case.⁹⁸ Because the use of land for solar purposes involved a more technologically advanced and intensive use, the Griffins are the “high-intensity user” according to the typology developed by Duke.^{99,100,101} Tesoro’s ACC requires submission of a plot plan drawn to scale, a detailed description of the proposed materials, a landscape plan, and a drainage plan in order to review proposed property modification projects.¹⁰² The Griffins submitted what was determined to be an inadequate application, which contained “only a handwritten drawing with a rectangle signifying the approximate location of the proposed solar panels; it did not contain information concerning the panels’ dimensions, number, or color; the setback; the proposed alterations to the landscaping; or the amount of electricity proposed to be generated.”¹⁰³ The ACC did not approve the application, but suggested that the roof of the casita adjacent to the home could be a potential location for the proposed panels. Further, the ACC requested the missing elements to the application, including the “project’s dimensions and minimum setbacks on the site plan, how the slope beneath the solar panels

App. 4th 619 (2011).

⁹⁷ D. Praw & M. Laufer, *Testing the Limits of the California Solar Act* (April 18, 2012), (“The homes in Tesoro del Valle are governed by a homeowners association. The HOA, through its CC&Rs, imposes certain customary restrictions on the homeowners that protect the community and maintain architectural consistency.”).

⁹⁸ *Tesoro Del Valle Master Homeowners Association v. Martin Griffin*, 200 Cal. App. 4th 619, 623 (2011) (“In 2007, appellants met with Joe Hawley, then with Advanced Solar Electric, who gave them a proposal for the installation of a solar energy system for their property. They told Hawley they were interested in the system being installed on the slope adjacent to their residence. Appellants submitted an application to install a solar energy system on October 2, 2007.”).

⁹⁹ *See Duke*, *supra* note 67.

¹⁰⁰ *Id.*

¹⁰¹ *Id.*

¹⁰² *Tesoro* at 624 (2011) (“The CC&Rs and Design Guidelines listed the requirements for an application to the ACC, which included the submission of a plot plan drawn to scale, a detailed description of the proposed materials, a landscape plan and a drainage plan.”).

¹⁰³ *Id.* (“The Griffins’ application to the ACC for the solar system in this case did not meet those requirements. Their application contained only a handwritten drawing with a rectangle signifying the approximate location of the proposed solar panels; it did not contain information concerning the panels’ dimensions, number or color; the setback; the proposed alterations to the landscaping; or the amount of electricity proposed to be generated.”).

would be maintained, and photographs of the existing landscape and superimpose the proposed panel elevation.”¹⁰⁴ The ACC denied the proposed slope-mounted system because: (1) it was at the entry to the neighborhood; (2) adjacent homes had a direct line of sight; and (3) the CC&R’s prohibited slope alteration and any alteration or landscape removal that could impact drainage.¹⁰⁵

Tesoro’s ACC anticipated that the Griffins would submit a revised application, however, the Griffins instead proceeded with the roof-installed panels by signing a \$97,000 contract with Advanced Solar Electric for the installation of a 36-panel array on the roof of the home and the 22-panel slope-mounted array.^{106,107} Then, after a meeting with the ACC, they submitted a revised application for the entire project.¹⁰⁸ The ACC reapproved

¹⁰⁴ *Id.* at 625 (“Summarizing the ACC’s position, Tim Collins handwrote four comments on appellants’ application noting that the roof of the casita adjacent to appellants’ residence should be considered as a location for the panels; that the project’s dimensions and minimum setbacks needed to be provided on the site plan; that appellants needed to indicate how the slope beneath the solar panels would be maintained; and that they needed to submit photographs of the existing landscape and superimpose the proposed panel elevation.”).

¹⁰⁵ *Id.* (“The ACC was concerned about the proposed slope-mounted system because it was at the entry to the neighborhood, adjacent homes had a direct line of sight, the CC&R’s prohibited slope alteration and any alteration or landscape removal could impact drainage.”).

¹⁰⁶ Pat Murphy, *Solar Energy Enthusiasts Take on Homeowners Association, and Lose | Benchmarks*, LAWYERS USA ONLINE (November 3, 2011), <http://lawyersusaonline.com/benchmarks/2011/11/03/solar-energy-enthusiasts-take-on-homeowners-association-and-lose/> (“So, despite the association’s protests, the work started on the installation of the solar energy system. The contractor completed installation of the entire system – including the solar panels on the slope – by the end of March 2008.”).

¹⁰⁷ Jon E. Goetz, *Homeowners Association Has Broad Discretion To Regulate Homeowner Installation Of Solar Panels*, MARTINDALE (November 15, 2011), http://www.martindale.com/energy/article_Kronick-Moskovitz-Tiedemann-Girard-A_1374518.htm (“The Griffins decided to install 36 solar panels on their roof and 22 panels on the slope and signed a contract for installation prior to receiving approval from the HOA... The Griffins began construction despite the HOA Board’s denial of their application.”).

¹⁰⁸ *Tesoro* at 626 (2011) (“Following a January 23, 2008 meeting between appellants, Hawley, and Tesoro and Euclid Management representatives, appellants agreed to submit a revised application and Tesoro agreed to review and rule on the application within one

NEGOTIATED SOLAR RIGHTS CONFLICT RESOLUTION

the roof installation on the new application but again denied the slope installation.¹⁰⁹ The Griffins installed the slope-mounted panels in spite of the denied application, instigating the lawsuit brought by Tesoro's homeowner's association seeking declaratory and injunctive relief.¹¹⁰

The resource at stake is the use of air and sunlight above the Griffins' private home as well as the slope on their private property in the Tesoro subdivision. The high-intensity use, the installation of the solar array on the roof and on the slope adjacent to the house, triggered conflict because it is seen to be causing an aesthetic disamenity to the neighbors — who the homeowner's association represents.¹¹¹ The disamenity involves glare and unsightliness of the solar array, lowering the neighbor's enjoyment of their property. This disamenity, as well as the potential resulting reductions in property values borne by the neighbors resulting from the installation of the solar array, have the hallmarks of an externality, or shifted cost, borne by the neighbors in the Tesoro community when the Griffins install the solar array. The Griffins' interests perhaps stemmed from the desire to reduce their carbon footprint and their dependence on the utility company, perhaps net metering benefits, and to make a long-run financial return on their \$97,000 investment. These interests, though many would consider them noble, impose an external cost on Tesoro. Nevertheless, to restrain the Griffins would result in costs being borne by them.

week. The supplemental application added the installation of solar panels on the roof.”).

¹⁰⁹ *Id.* (“On January 29, 2008, the ACC denied the supplemental application in part, specifically disapproving the installation of solar panels on the slope and directing appellants to return the slope to its original condition. The ACC remained concerned about the same issues that led to the denial of the initial application, including that appellants had not considered alternative locations.”).

¹¹⁰ *California Court Upholds Solar Energy Restrictions of Homeowners Association*, (September 21, 2014), <http://www.environmental-law.net/2012/01/california-court-upholds-solar-energy-restrictions-of-homeowners-association/> (“However, the ACC rejected the application and ordered the defendants to restore the slope outside its perimeter wall. Tesoro subsequently filed a lawsuit, seeking declaratory and injunctive relief.”).

¹¹¹ The property owners, as well as all people who receive direct and existence benefits from knowing that this particular home is powered by renewable energy rather than conventional power, henceforth known as “the Griffins,” are the high-intensity user of the resource at stake.

Tesoro is comprised of the Griffins' neighbors in the Tesoro del Valle community and is represented by the Tesoro del Valle Master Homeowner's Association and its respective committees. Tesoro is the low-intensity user, seeking to maintain the airspace and sunlight above the home and the slope in the condition created by the initial construction of the development and, thereby, to prevent the solar array from being installed.

According to the opinion handed down by Court of Appeals Judge, Randy Rhodes, "Tesoro is a nonprofit mutual benefit corporation that manages, administers, maintains, preserves and operates the residences and common areas in the Tesoro community."¹¹² In doing so, the homeowner's association established and enforces the CC&Rs, with the stated purpose to "enhance and protect the value, desirability and attractiveness of the Tesoro community."¹¹³ These interests of the homeowner's association represent the interests of the residents of the Tesoro del Valle community, as they seek the same ends for their own private property in the community.

Tesoro's constituency seeks to coordinate the ways that other members of the community are able to enjoy land uses and modifications to their real property in order to maintain property values. Uncoordinated uses would likely give rise to external costs. These external costs can create a disamenity and lower neighboring property values, as well as cause the overall community's value to decline due to a lack of coordination in use and future expectations of use.

In this conflict, Tesoro is seeking to limit the aesthetic externality the Griffins' solar installation imposed on neighbors. Pursuant to the California Solar Rights Act,¹¹⁴ Tesoro's CC&Rs reiterate in Section 8.1.18 that all property modifications must be approved by the ACC.¹¹⁵ Specifically relating to the rules on slopes on different properties, the CC&Rs state that "no structure, planting, fencing, . . . [may] interfere with established slope ratios, create erosion or sliding problems, or which may change the direction of flow of drainage channels or obstruct or retard the flow of water through drainage

¹¹² *Tesoro*, 200 Cal. App. 4th at 623.

¹¹³ *Id.* at 623.

¹¹⁴ Cal. Civ. Code § 714 (2015).

¹¹⁵ *Tesoro*, 200 Cal. App. 4th at 623.

NEGOTIATED SOLAR RIGHTS CONFLICT RESOLUTION

channels.”¹¹⁶ This clause assigns the right to Tesoro to regulate the specific listed elements of the Griffins’ stream of benefits. The conflict stems from the inherent legal conflict between the institutions created by the California Solar Rights Act and the CC&Rs in the Tesoro community. Due to its vague technical nature, it is unlikely that the “reasonableness” clause in the California Solar Rights Act¹¹⁷ had yet been tested before this case.

VI. THE COMPARATIVE INSTITUTIONAL ANALYSIS METHOD

The environmental transactions data presented below are an analytical method developed by Duke, building on Bromley and Commons, that dovetails with the comparative institutional analysis methodology developed by Komesar.^{118,119} The analysis evaluates highly imperfect conflict resolution processes on their relative ability to achieve social goals, such as fairness and efficiency.^{120,121} This article defines fairness in terms of ability to participate, while efficiency is the substantive efficiency of the outcome. The ability to participate includes the opportunity to be heard by an impartial decision maker. Substantive efficiency requires that the property rights at stake be allocated to the highest and best use, or social efficiency. In this article, where all affected parties’ interests are collected into two disputing parties, resource allocation efficiency is achieved when the property rights at stake are allocated to the highest valued user.¹²²

The comparative institutional analysis methodology also incorporates Komesar’s “participation-centered approach,” which analyzes the “benefits and costs of participation” in the conflict resolution process and each party’s ability to bear the costs.¹²³ Some of these costs may include “average per capita stakes, information costs, contracting costs, enforcement costs,

¹¹⁶ *Id.* at 623.

¹¹⁷ Cal. Civ. Code § 714(b) (2015).

¹¹⁸ *See* KOMESAR, *supra* note 9; Commons, *supra* note 87; Bromley, *supra* note 87.

¹¹⁹ *Id.*

¹²⁰ *See* KOMESAR, *supra* note 9.

¹²¹ *See* KOMESAR, *supra* note 9; Duke & Csoboth, *supra* note 28, at 551 (“Comparative institutional analysis requires the assessment of the performance of each resolution process in terms of its ability to achieve social goals relative to the performance of other processes. Social goals are typically dichotomized as fairness and efficiency.”).

¹²² Duke & Csoboth, *supra* note 28, at 585.

¹²³ *See* KOMESAR, *supra* note 9.

organizational costs, group cohesiveness, sophistication, wealth, and number of members in each party.”¹²⁴ The participation-centered approach will be discussed in further detail below.

Seeking to determine which resolution process is the “best of the bads,”¹²⁵ this analysis will compare legislative action in the form of the California Solar Rights Act¹²⁶ to the hybrid resolution process that is part alternative dispute resolution and part market process. This hybrid process will be termed a community dispute resolution process, which will enforce the contractually binding CC&Rs of the Tesoro del Valle Master Homeowner’s Association. The legislative action in California protecting the property rights of homeowners wishing to purchase a solar installation is dealt a serious blow by the appellate decision in this case, as the homeowner’s association’s ACC (here, the vehicle of the community dispute resolution process) undercuts the authority of the California Solar Rights Act’s standards of reasonableness.¹²⁷ These two dispute resolution processes juxtapose the power of top-down institutional power and bottom-up negotiation as methods to bring about conflict resolution over solar rights in a cost-effective manner.

VII. ENVIRONMENTAL TRANSACTIONS DATA

In order to perform the comparative institutional analysis, data were collected to delineate the environmental transactions¹²⁸ that occurred over the resource at stake. These transactions contain events that conditionally assign rights to the conflicting interest parties; the parties to the conflict enter the Hohfeldian¹²⁹ formal rights regime when conditional rights have been assigned.¹³⁰ These transactions begin before the resource conflict emerged (nonactivation), and continue until the ultimate formal property rights

¹²⁴ Duke & Csoboth, *supra* note 28, at 553.

¹²⁵ See KOMESAR, *supra* note 9.

¹²⁶ Cal. Civ. Code § 714(b) (2015).

¹⁴⁷ *Id.*

¹²⁸ Duke, *supra* note 67, at 230.

¹²⁹ See Wesley Newcomb Hohfeld, *Fundamental Legal Conceptions as Applied in Judicial Reasoning*, 23 YALE L.J. 16 (1913).

¹³⁰ Duke & Csoboth, *supra* note 28, at 572.

NEGOTIATED SOLAR RIGHTS CONFLICT RESOLUTION

assignment. Each of these transactions consists of a resolution process, a transaction issue, and a conditional rights outcome.¹³¹

Prior to 1978, when the first solar rights were assigned in California,¹³² the resource at stake was not yet activated. In other words, the developed-use versus solar access conflict did not exist, as there was nothing to stop either party from pursuing their desired use of the resource. This is a Hohfeldian presumptive property rights regime;^{133,134} in economic terms, the resource at stake has no value — i.e., is not scarce by default.¹³⁵ The conflict issue in this market-based transaction is whether either party will act on a Hohfeldian privilege^{136, 137} to engage in high-intensity use of the resource at stake. In these pre-statute years, neither the Griffins' predecessor in interest nor the predecessors in interest of the neighbors pursued use of the resource at stake.

In 1978, the California State Assembly passed the California Solar Rights Act.¹³⁸ The legislation was designed to protect the rights of homeowners in master-planned communities to install solar photovoltaic energy systems on their property:

(a) Any covenant, restriction, or condition contained in any deed, contract, security instrument, or other instrument affecting the transfer or sale of, or any interest in, real property that effectively prohibits or restricts the installation or use of a solar energy system is void and unenforceable.¹³⁹

¹³¹ *Id.* at 563.

¹³² *Tesoro Del Valle Master Homeowners Association v. Martin Griffin*, 200 Cal. App. 4th 619, 625 (2011).

¹³³ *See Bromley, supra* note 87.

¹³⁴ *See Hohfeld, supra* note 148.

¹³⁵ *Duke, supra* note 67, at 247.

¹³⁶ *See Bromley, supra* note 87.

¹³⁷ *Hohfeld, supra* note 129, at 29.

¹³⁸ Cal. Civ. Code § 714 (2015).

¹³⁹ *Id.* at § 714(a) (“For photovoltaic systems that comply with state and federal law, ‘significantly’ means an amount not to exceed one thousand dollars (\$1,000) over the system cost as originally specified and proposed, or a decrease in system efficiency of an amount exceeding 10 percent as originally specified and proposed.”). *Id.* at § 714(d)(1)(B) (2015).

This Act does allow the CC&Rs to include provisions that impose “reasonable” restrictions on installations, which are defined in Section 714 of California Civil Code as those that do not increase the cost or decrease the energy efficiency of the system by more than 20 percent.¹⁴⁰ The statute’s language on reasonableness reads:

(b) This section does not apply to provisions that impose reasonable restrictions on solar energy systems. However, it is the policy of the state to promote and encourage the use of solar energy systems and to remove obstacles thereto. Accordingly, reasonable restrictions on a solar energy system are those restrictions that do not significantly increase the cost of the system or significantly decrease its efficiency or specified performance, or that allow for an alternative system of comparable cost, efficiency, and energy conservation benefits.

and

Notwithstanding Section 714, any association, as defined in Section 1351, may impose reasonable provisions which:

(a) Restrict the installation of solar energy systems installed in common areas, as defined in Section 1351, to those systems approved by the association.

(b) Require the owner of a separate interest, as defined in Section 1351, to obtain the approval of the association for the installation of a solar energy system in a separate interest owned by another.

(c) Provide for the maintenance, repair, or replacement of roofs or other building components.

¹⁴⁰ *Id.* at § 714(b) (“For photovoltaic systems that comply with state and federal law, ‘significantly’ means an amount not to exceed one thousand dollars (\$1,000) over the system cost as originally specified and proposed, or a decrease in system efficiency of an amount exceeding 10 percent as originally specified and proposed.”); *Id.* at § 714(d)(1)(B) (2015).

NEGOTIATED SOLAR RIGHTS CONFLICT RESOLUTION

(d) Require installers of solar energy systems to indemnify or reimburse the association or its members for loss or damage caused by the installation, maintenance, or use of the solar energy system.¹⁴¹

These benchmarks create significant property rights for solar owners and place corresponding duties on neighbors (represented by the homeowner's associations). The California Solar Rights Act¹⁴² created an adjudicative process for solar owners to overcome restrictions in the homeowners associations' CC&Rs and to install solar PV systems on their homes in homeowners' association-regulated communities. In allowing for reasonable restrictions at the twenty percent mark, the Act strongly favors assignment of property rights to solar owners. One key aspect of the Act involves enforcement:

(e) Whenever approval is required for the installation or use of a solar energy system, the application for approval shall be processed and approved by the appropriate approving entity in the same manner as an application for approval of an architectural modification to the property, and shall not be willfully avoided or delayed.

(f) Any entity, other than a public entity, that willfully violates this section shall be liable to the applicant or other party for actual damages occasioned thereby, and shall pay a civil penalty to the applicant or other party in an amount not to exceed one thousand dollars (\$1,000).

(g) In any action to enforce compliance with this section, the prevailing party shall be awarded reasonable attorney's fees.

(h) (1) A public entity that fails to comply with this section may not receive funds from a state-sponsored grant or loan program for solar energy. A public entity shall certify its compliance with the requirements of this

¹⁴¹ 9.2 Cal. Civ. Code § 714 and 714.1.

¹⁴² *Id.*

section when applying for funds from a state-sponsored grant or loan program.¹⁴³

The enforcement language of the California Solar Rights Act is vague, passing the burden of specific enforcement procedures on to local governments. As was detailed above, the brief and non-representative set of phone contacts made to state and local governments in California¹⁴⁴ implied that few local governments have experience with the enforcement of solar rights, and it is apparent that they have not interpreted the vague language of the California Solar Rights Act¹⁴⁵ to handle enforcement. This suggests it is likely that any disputes of this nature are settled privately.

In addition to this principal statute, there are several other statutes in California assigning property rights to solar owners. There are solar easement laws, local zoning enabling legislation for solar protection, and the aforementioned solar shading law.¹⁴⁶ Following the legislation, several other transactions occurred that affected the conflict.

In 1996,¹⁴⁷ the former 1,795-acre Clougherty Ranch, now owned by Montalvo Properties, was re-zoned for residential development. This was a local legislative transaction in the form of zoning allocated property rights with the intention of controlling and directing the use of property within Santa Clarita County. The purpose of zoning is to ensure that residential, commercial, and industrial property uses remain separate to minimize externalities between different categories of land use. This zoning decision specifically allowed the developer, Montalvo Properties, to develop the land into a CID. In terms of market value, this developed use is undoubtedly of greater marketed net benefits than the ranch's use; but it is probably the highest-valued social use of the property, too. This only has an indirect effect on the resource at stake because the development that results from this zoning leads the slope and its sunlight to become scarce. There is no clear rights allocation loser in this situation.

¹⁴³ *Id.* at § 714(e)(1), (f)-(h)(1).

¹⁴⁴ Addendum available upon request (on file with Mr. Ben Attia, Univ. of Del.).

¹⁴⁵ *See* Cal. Civ. Code § 714 (2015).

¹⁴⁶ Anders et al., *supra* note 57, at 363-65.

¹⁴⁷ Danica Kirka, *Boom Forecast and Builders Ready*, L.A. TIMES (February 5, 1996), http://articles.latimes.com/1996-02-05/news/mn-32603_1_santa-clarita-city.

NEGOTIATED SOLAR RIGHTS CONFLICT RESOLUTION

A few years after construction began and the Tesoro del Valle community started selling homes in the unfinished development community, the CC&Rs, including the portion of its charter that established the ACC, were filed with the recorder of deeds of Santa Clarita County.¹⁴⁸ Recording the CC&Rs is an environmental transaction in this approach to the comparative institutional analysis method because it established Tesoro's property right to regulate housing lot modifications and construction within the community — modifications that include solar arrays. This does not exhibit undue control over the Griffins in these cases because they must voluntarily subject themselves to the forfeiture of these rights and to the associated stream of benefits in order to purchase the home.

Approximately six months later, in December 2003, the ACC ratified its "Design Guidelines" for the forthcoming Tesoro del Valle community.¹⁴⁹ This transaction is also considered to be a community dispute resolution process. Similar to the transaction establishing the CC&Rs, the issue regarding the design guidelines was as follows: Do the design guidelines imposed by the Tesoro del Valle Master Homeowner's Association provide for the "reasonable" regulation of home improvement projects within the community? In this transaction, as in the previous transaction where the Griffins purchased their home in the Tesoro del Valle community, they accepted that they did not have full rights to make improvements to their property, but instead were subject to the approval of the ACC in accordance with the design guidelines.

On November 8, 2007, the Griffins' application to install the solar array was denied by the ACC because it was incomplete.¹⁵⁰ Again, this transaction falls under the community dispute resolution process framework. When the Griffins agreed to the CC&Rs and design guidelines upon moving into the home, they also accepted Tesoro's right to approve the solar array installation

¹⁴⁸ *Tesoro* at 170 (Cal. Ct. App. 2011). ("On May 29, 2003, the developer of the Tesoro community recorded with the Los Angeles County Recorder's Office a Master Declaration of Establishment of Covenants, Conditions, and Restrictions for Tesoro del Valle (CC&R's).").

¹⁴⁹ *Id.* at 171 ("In December 2003, Tesoro approved Design Guidelines to 'help assure continuity in design, which will help preserve and improve the appearance of the community.'").

¹⁵⁰ *Id.* at 172 ("Also on November 8, 2007—before the expiration of the 45-day time limit—the ACC issued a letter denying appellants' application.").

through the ACC. The denial of Griffins' application created a legal duty with respect to the solar panels.

The same day the Griffins were denied application, they signed a contract with Advanced Solar Electric for the installation of a solar array totaling \$97,000, and shortly thereafter oversaw the installation of the solar array on the slope outside the perimeter wall of their property.¹⁵¹ This action appeared to violate the duty to seek community permission — an “illegal externality” or a failed type of market transaction in the Duke typology.^{152,153} In terms of property rights analysis, the Griffins assumed the right to the high-intensity use of the slope and its sunlight rather than respecting the rights of the community articulated through the CC&Rs. The Tesoro community had to bear the temporary negative aesthetic costs of the panels, as well as perhaps reduced property values, until the property rights conflict could be settled.

The Tesoro ACC brought suit against the Griffins for breach of contract,¹⁵⁴ and on July 13, 2009, the Los Angeles County Superior Court ruled in favor of Tesoro.¹⁵⁵ The court held that the Griffins breached their contractual obligation to abide by the CC&Rs by installing a solar energy system on their property despite the denial of their application. In support of this claim, the Court of Appeals decision held that Tesoro complied with the CC&Rs, while the Griffins “were not entitled to any relief and were required to remove the 22 solar panels from their hillside slope.”¹⁵⁶ The California Court of Appeals found that the Griffins' appeal on the reasonableness standards of the California Solar Rights Act was a question of fact for the

¹⁵¹ *Id.* (“Instead, on November 8, 2007, they signed a \$97,000 contract with Advanced Solar Electric for the installation of the new proposed solar energy system... Nonetheless, appellants proceeded with the installation of a solar energy system in January 2008.”).

¹⁵² Duke & Csoboth, *supra* note 28, at 563-64, 579.

¹⁵³ See Duke, *supra* note 67.

¹⁵⁴ *Tesoro* at 173 (“Tesoro’s complaint alleged causes of action for breach of contract and negligence and sought declaratory and injunctive relief.”).

¹⁵⁵ See *Tesoro Del Valle Master Homeowners Ass’n v. Griffin*, No. PC042530 (Cal. App. Dep’t Super. Ct. July 13, 2009).

¹⁵⁶ *Tesoro*, 133 Cal. Rptr. 3d, at 174-75.

jury, not one of law, and that they impermissibly attempted to reverse this distinction on appeal.¹⁵⁷

The decision also cites a precedent-setting case in this arena, whose outcome results in reasonableness standards being set as a question of fact.¹⁵⁸ As a result of this decision, the Tesoro neighbors secured a formal right to manage the resource at stake — the ability to install or prevent the installation of a solar array — in accordance with the CC&R contract that the Griffins signed, limiting the rights the Griffins’ had to install a solar energy system, and specifically a restriction not to install on the slope.

The Griffins appealed the decision, but, on October 3, 2011, the California Court of Appeals also sided with Tesoro because the CC&Rs were ruled not to “unreasonably” regulate solar-array installations.¹⁵⁹ In the final judicial transaction, the California Appellate Court held that the Griffins would be forced to remove the portion of the solar array on the slope outside their perimeter wall because it violated the CC&Rs.

Thus, the transactions in this case study ultimately resulted in a nuanced property rights allocation; the solar rights owner was afforded some solar access rights, but not in ways that overly diminished the aesthetic expectations of neighbors as articulated through CC&Rs. With reference to Figure 1, the expensive enforcement action clarified that this solar rights regime existed between the two extremes of total developed use rights and total solar owner rights. The nuanced allocation offers some evidence that solar conflicts might arise because the solar owner thinks that solar rights statutes provide more complete property rights than they actually do. The nuanced allocation, in addition, suggests that expensive enforcement will result in a sharing of benefits and burdens. This further suggests that conflicts might be resolved in a win-win pattern — or one that attenuates any absolute rights to any one party. This case study, however, suggested that determining the shared benefit and burden outcome required costly litigation. The

¹⁵⁷ *Id.* at 176-77.

¹⁵⁸ *Palos Verdes Homes Ass’n v. Rodman*, 227 Cal. Rptr. 81, 83 (Cal. Ct. App. 1986) (regarding the *Palos Verdes* case: “According to the court: ‘The issue here is whether the Association’s Guidelines are a “reasonable restriction” on the installation of solar units, as required by section 714. This is a question of fact to be determined by the trier of fact.’”).

¹⁵⁹ *Tesoro*, 133 Cal. Rptr. 3d, at 174-75.

normative section below discusses whether this outcome might be available directly from the CID building upon their CC&Rs, or what we call the community dispute resolution process. The article next turns to a specification of the final rights allocation and then an analysis of the processes used to determine this allocation.

VIII. PROPERTY RIGHTS ANALYSIS AND HOHFELDIAN CORRELATES

The conflict in *Tesoro del Valle Master Homeowner's Association*¹⁶⁰ centers on the relative power of neighbors to use homeowner's associations to assert their property rights using CC&Rs. Specifically, when the CC&Rs seem to conflict with the statutory rights assigned to solar owners for the installation of solar PV panels under the California Solar Rights Act of 1978.¹⁶¹ The informal Hohfeldian¹⁶² correlates in this case shed light on the positions of both parties in relation to the property right in question. Specifically, the Griffins were the high-intensity user and thus the privileged party in the presumptive rights regime. The party of no right was Tesoro, who must move to formal conflict resolution in order to contest the Griffins' presumption of the right to install the panels.

The California Court of Appeals, Second District, denied the Griffins' appeal. Judge Rhodes wrote that the Griffins were "unmindful of applicable standards of review" in writing the appeal and affirmed the trial court and jury's decision to grant declaratory and injunctive relief to Tesoro.¹⁶³ The Court of Appeals affirmed the trial court's judgment that the CC&Rs, and their application, were considered satisfactory for the definition of reasonableness under the California Solar Rights Act.¹⁶⁴ This required the Griffins to pay to remove the contended panels (those on the slope adjacent

¹⁶⁰ *Id.*

¹⁶¹ See Cal. Civ. Code § 714 (2015).

¹⁶² Hohfeld, *supra* note 129.

¹⁶³ *Tesoro* at 170 ("Unmindful of applicable standards of review, appellants raise a host of issues in an effort to undermine the jury verdict. We affirm.").

¹⁶⁴ *Id.* at 175 ("Appellants raise several issues relating to the interpretation and application of section 714, contending that any issue relating to that provision should not have gone to the jury, the CC&R's as a matter of law failed to comply with that provision and Tesoro did not satisfy its burden under the statute. Keeping in mind that we review these questions from a jury verdict, we find no merit to appellants' contentions.").

NEGOTIATED SOLAR RIGHTS CONFLICT RESOLUTION

to their home), and to restore the drainage of the slope to its original condition.¹⁶⁵ With respect to the panels on the slope, the Griffins became the duty-bearer in the Hohfeldian¹⁶⁶ formal rights regime that resulted from the enforced CC&Rs.

The Tesoro neighbors won the case and, as a result, were awarded the property right for the development community to maintain their property values without bearing the cost of the aesthetic externality caused by the visible and reflective panels on the slope at the edge of their property. The homeowner's association was responsible for maintaining the homogeneity of the community's appearance and protecting the value of the equally zoned residential properties, and could do so through the result of the conflict resolution. As a result, the Tesoro neighbors became the right-holding party in the Hohfeldian¹⁶⁷ formal rights regime.

IX. COMPARATIVE INSTITUTIONAL ANALYSIS

The case study data can be used to provide broader insight about what happens when two different institutions assign formal property rights in conflict — but also when one institution specifies a “reasonableness” standard to handle inconsistencies. Beginning in a rights regime characterized by solar statutes, there are two competing conflict resolution processes for enforcement: the judicial system alone and local CC&Rs followed by the courts. These processes carry differing procedures, goals, and participation costs. Courts assign rights at high cost, while community-level dispute resolution seeks to reach a final allocation of rights efficiently through negotiated settlements at very low transaction and enforcement costs. Because there is a differential between the costs of participating in each of these resolution processes, the point of comparison is costs of enforcement.

The statutory assignment of rights to solar owners was previously argued to be a powerful force in determining rights and also a new and growing force in the United States. On the other hand, developed uses were also implied to be a waning force. This case study suggests that voluntary,

¹⁶⁵ *Id.* (“The jury determined that appellants were not entitled to any relief and were required to remove the 22 solar panels from their hillside slope.”).

¹⁶⁶ *See* Hohfeld, *supra* note 129.

¹⁶⁷ *Id.*

market-based restrictions on rights – in this case, CC&Rs – may be one vehicle for developed uses to restrict solar rights.

A. Participation-Centered Approach

In Komesar’s participation-centered approach, the “benefits and costs of participation”¹⁶⁸ are analytical constructs. An example of the benefits of participation is the ability to defend one’s interests within a resolution process and secure a valuable right. The extent to which the process protects the procedural rights of both parties can be used as a benchmark by which to assess its fairness, here defined as the ability to participate.¹⁶⁹ That is not to say that all processes strive for access to full participation for all parties. Market externalities are, by definition, inequitable to the victims of pollution. Or, as many in the law and economics school of thought argue, courts largely deliver efficient outcomes.¹⁷⁰ The costs of participation can occur as transaction costs (in markets), lobbying costs (in legislatures), or litigation costs (in courts).¹⁷¹ These costs might also include the costs of organizing a party, of negotiation between parties, or of enforcement or maintenance of a resulting institutional decision.¹⁷² In many environmental conflicts, these costs often impede the low-intensity user of a resource at stake from participating fully and challenging the privileged user.¹⁷³ Although the costs of assigning solar rights via statutes are low, there is an asymmetry in the costs of enforcing those rights between the two studied resolution processes. The case study suggests that the community dispute resolution processes offered less expensive participation for both parties.

When the Griffins bought their home in the Tesoro del Valle community in 2005, they purchased the property subject to limitations in the scope of uses in the CC&Rs. The legal question was whether the Griffins violated these terms when they installed the solar array without prior permission from the ACC. It is clear that their ability to participate in this process — which

¹⁶⁸ See KOMESAR, *supra* note 12.

¹⁶⁹ See Duke, *supra* note 66.

¹⁷⁰ See RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* (Wolters Kluwer Law & Business: Aspen Publishers, 7th ed. 2007).

¹⁷¹ See Duke, *supra* note 67.

¹⁷² See Komesar, *supra* note 9.

¹⁷³ *Id.*

combines elements of voluntary markets (land purchase) and a decentralized, market-based dispute resolution (CC&Rs) — is relatively high. In the language of the participation-centered approach,¹⁷⁴ the Griffins had a concentrated interest, high stakes per capita, low organization costs, and high cohesiveness.¹⁷⁵ The Griffins likely had a commensurate level of financial resources as their neighbors, though the homeowner’s association collects many neighbors’ interests into a single decision making unit, which likely provides an advantage in association votes and in overcoming the costs of litigation. Indeed, the Griffins’ association dues were likely used, in part, to pursue the legal case against them. However, the current estimated value of the Griffins’ property at time of this writing, about \$1.2 million,¹⁷⁶ as well as the \$96,000 cost of the solar installation,¹⁷⁷ suggested that the Griffins were less likely than the average household to be constrained by participation costs.

The Tesoro community is the low-intensity user, whose interests focus on reducing and eliminating external costs from other neighbors and mutually maintaining, or increasing, their property values by not allowing the Griffins to further develop this portion of their land with solar panels. The Tesoro homeowner’s association is a highly concentrated interest. Like the Griffins’ house, the neighborhood consists of relatively expensive housing. Tesoro’s homeowner’s association is also organized in that it is represented by the ACC and thus has a specialized mechanism to process applications for property modifications in the community — which effectively makes it, a catalytic subgroup.¹⁷⁸ Both the Griffins and Tesoro likely possess sufficient abilities to participate in the resolution processes.

The ability to participate in procedural conflict resolution involves the opportunity to be heard by an impartial decision maker and to face a similar

¹⁷⁴ See Komesar, *supra* note 9.

¹⁷⁵ *Tesoro* at 170 (“Defendants and appellants Martin and Carolyn Griffin appeal ...”).

¹⁷⁶ *29313 Hacienda Ranch Ct*, ZILLOW, INC. (September 21, 2014), http://www.zillow.com/homedetails/29313-Hacienda-Ranch-Ct-Santa-Clarita-CA-91354/65246960_zpid/.

¹⁷⁷ *Tesoro*, 133 Cal. Rptr. at 172 (“Instead, on November 8, 2007, they signed a \$97,000 contract with Advanced Solar Electric for the installation of the new proposed solar energy system.”).

¹⁷⁸ Neil A. Komesar, *A Job for the Judges: The Judiciary and the Constitution in a Massive and Complex Society*, 86 MICH. L. REV. 657, 674-75 (1988).

distribution of the benefits and burdens within a conflict resolution process.¹⁷⁹ The variance of the distribution of benefits and burdens throughout the conflict resolution process and their final distribution between the parties once the buyer and the seller have been established reveals the balance of procedural ability to participate and the substantive result of participation: effectively, a comparison of the ends and the means. In *Tesoro del Valle Master Homebuilders Association*, the legislative resolution process had a superior ability to protect the social goal of procedural fairness than the homeowner's association's ACC community dispute resolution process. However, when enforcement of these equitable results is considered, the result is not so clear.

The legislative resolution process in this conflict is the 1978 California Solar Rights Act. The Act created a framework that allowed homeowners to enter an adjudicative process to usurp the CC&Rs of their homeowner's associations and install solar installations on their homes in homeowner's association-regulated communities. It is also designed to protect the interests of homeowners and their rights to install solar energy systems.¹⁸⁰ The Act also coordinates expectations among all solar owners (existing and potential) and all neighbors - an important purpose given the common law tradition favoring developed uses. The Act "balances the needs of individual solar energy system owners with other property owners by developing solar access rights."¹⁸¹ However, the Solar Rights Act does allow CC&Rs to include provisions that impose "reasonable" restrictions on installations, which are defined in California Civil Code § 714 as those that do not increase the cost or decrease the energy efficiency of the system by more than twenty percent.¹⁸² This balancing, however, is skewed eighty percent in favor of the solar owner and twenty percent in favor of the neighbors, based on the Act's

¹⁷⁹ See Duke, *supra* note 67.

¹⁸⁰ PRAW & LAUFER, *supra* note 97. ("The California legislature enacted the Act in 1978 to protect a homeowner's right to install a solar energy system by limiting an HOA's ability to object to such installations through its CC&Rs.")

¹⁸¹ *Solar Rights: Access to the Sun for Solar Systems*, GO SOLAR CALIFORNIA, (last visited September 28, 2014), http://www.gosolarcalifornia.ca.gov/solar_basics/rights.php.

¹⁸² PRAW & LAUFER, *supra* note 97. ("'Significant' is further defined as those restrictions that increase the system's cost by over 20 percent or decrease the system's efficiency by over 20 percent.")

standard of reasonableness.¹⁸³

The Design Guidelines adopted by the Tesoro del Valle homeowners' association reserved its right under the California Solar Rights Act to impose "reasonable" restrictions on solar installations, pending review from the homeowner's association's ACC.¹⁸⁴ Although the provisions of the Act¹⁸⁵ fall heavily in favor of the homeowner — especially with respect to common law precedent — a neighbor's ability to participate is not necessarily limited by the initial assignment of rights. The owners of developed uses also had the ability to (1) pursue their uses prior to the Act, and (2) have their voices heard at the legislature. The twenty percent concession suggests that these voices were heard at the legislature. Furthermore, the weak enforcement mechanisms accompanying the rights allocation suggests that solar owners had less influence in the legislative resolution process than initially assumed.

Compared to the relative performance of the Tesoro ACC community dispute resolution process, the California Solar Rights Act at first appears better positioned to defend parties' ability to participate because it is universally applied across the state of California. Owners, regardless of resources, had their perspectives recognized by the legislative process, while the community dispute resolution process places additional hurdles on participation. However, when poorly centralized enforcement of legislated rights is considered, the two processes seem rather similar in terms of the disputants' abilities to participate. While the establishment of the CC&Rs by the homeowner's association and the Design Guidelines by the ACC are only contractually binding to those who agree with full knowledge to accept and abide by them and voluntarily live in the Tesoro community, these CC&Rs and Design Guidelines do not maintain an equal standard of participation

¹⁸³ *Id.* ("Section 714 of the Act permits CC&Rs to include provisions that impose reasonable restrictions on installations. 'Reasonable' restrictions included those that: 1) do not significantly increase the cost of the solar system, 2) do not significantly decrease the system's efficiency or specified performance, or 3) allow for an alternative system of comparable cost, efficiency and benefits.").

¹⁸⁴ PRAW & LAUFER, *supra* note 117. Section 714 of the Act permits CC&Rs to include provisions that impose reasonable restrictions on installations. "Reasonable" restrictions included those that: 1) do not significantly increase the cost of the solar system, 2) do not significantly decrease the system's efficiency or specified performance, or 3) allow for an alternative system of comparable cost, efficiency and benefits.

¹⁸⁵ Cal. Civ. Code § 714 (2015).

ability. This is because they are highly subjective to the interpretation of the decision makers on the ACC, which is comprised of other members of the Tesoro community who have a vested interest in not being harmed by the externality of the Griffins' solar panels. The members of the ACC are by no means an impartial body, and therefore may discolor the ease of entry present in their quasi-alternative dispute resolution or quasi-market resolution process. The California Solar Rights Act also exhibits limitations in procedural fairness arising at the enforcement stage.¹⁸⁶ Although the community dispute resolution process also has procedural limitations that vary with income, it is difficult to say that one is clearly superior when enforcement is considered.

B. *Substantive Efficiency Analysis*

This section follows the economic-efficiency analytical approach in Duke, which is built on the Coasean analysis of efficiency.¹⁸⁷ The analysis begins by establishing which of the conflicting parties is the highest-valued user of the resource at stake. This determination must be made on a case-by-case basis. As stated, according to the Coase Theorem, if there are positive transaction costs and the conditional right is not assigned to the highest-valued user, the outcome will be inefficient.¹⁸⁸ Here, as in Komesar's *Imperfect alternatives: Choosing Institutions in Law, Economics, and Public Policy*, substantive efficiency "reflects an allocation of resources that maximizes the value of social product."¹⁸⁹ Coasean efficiency simply means that the final right holder pursues a use of the resource at stake that results in the greatest gains for society.¹⁹⁰ In the case of solar conflicts, if there are large relative transaction costs, then the social product will be larger if the rights are assigned to the party with the highest valued use.

This conflict presents an atypical assignment of the high-intensity user and the low-intensity user.¹⁹¹ In most conflicts in environmental law, the

¹⁸⁶ *Id.*

¹⁸⁷ See Coase, *supra* note 2; See Duke, *supra* note 67.

¹⁸⁸ See Coase, *supra* note 2; See Duke, *supra* note 67.

¹⁸⁹ Duke & Csoboth, *supra* note 28, at 584.

¹⁹⁰ See Duke, *supra* note 5, Coase, *supra* note 2.

¹⁹¹ See Tesoro del Valle Master Homeowners Ass'n v. Griffin, 133 Cal. Rptr. 3d 167 (Cal. Ct. App. 2011).

high-intensity user is more sophisticated, wealthy, and organized, with a high concentration of interest and acting upon privilege, while the low-intensity user is often disorganized. However, in *Tesoro del Valle Master Homeowners Association*, the high intensity users are the Griffins, seeking to develop the slope on their property with a solar installation, and therefore the highest valued user.¹⁹² Consequently, the low intensity user is Tesoro, who represents the neighbors who are interested in the slope returning back to its previous, undeveloped state or at least securing a compensatory payment.

In the legislative-legal resolution process, transaction costs are quite high, whereas the community dispute resolution process has little to no transaction costs. This is a key insight of this case for a broader analysis — and one that likely applies in other solar disputes taking place in common interest developments (“CIDs”). Therefore, according to Coase, it is important that the legislative-legal process assign the initial allocation of rights to the highest valued user, if substantive efficiency is to be achieved.¹⁹³ However, in the community dispute resolution process, the initial allocation of rights ought to have no effect on the final allocation of rights, or on social efficiency. Thus the community dispute resolution will be more likely to deliver efficient results — regardless of who holds the highest valued use.

The efficiency of the legislative-legal in the case study necessarily depends on whether a process tends to assign rights to the highest-valued user. The value of the Griffins’ use of the solar PV installation is at least \$96,000, the cost of the system.¹⁹⁴ Additionally, they will accumulate cost savings on their electricity bill each month, potentially gain benefits from net metering, and enjoy non-pecuniary existence benefits because they have a reduced carbon footprint. These direct and existence benefits extend to others who gain a small amount of utility from simply knowing there is a solar installation on the Griffins’ house in Santa Clarita in the form of existence values, which are higher than one may suspect because there is a very large population who gain even a small benefit from this knowledge.

The value of Tesoro’s use of the land and its sunlight is likely lower,

¹⁹² See Coase, *supra* note 2.

¹⁹³ *Id.*

¹⁹⁴ See *Tesoro del Valle Master Homeowners Ass’n v. Griffin*, 133 Cal. Rptr. 3d 167 (Cal. Ct. App. 2011).

represented by the lack of lost property value for the neighbors due to the panels' unsightliness and glare. Additionally, Tesoro's use of the land results in smaller nonuse benefits because that small plot of land is not being developed and is remaining in a, arguably, natural state. Based on these results, the balance of evidence suggests that the Griffins are the highest valued users of the resource at stake. In other solar disputes in CIDs, however, one would suspect that the balance of valued interests might tip against the solar owner.

The substantive efficiency of the California Solar Rights Act is low because, although it assigns more complete rights to the highest valued user, it does not enforce them well.¹⁹⁵ The lack of enforcement is a transaction cost.¹⁹⁶ Although the Griffins were the highest valued user in their conflict, this is not always the case. Because the legislative enforcement resolution process has high transaction costs, overall social efficiency of the current legislative-legal process in this case study is suboptimal. The ability of the Act to result in maximum resource allocation efficiency is lost because of these high transaction costs in information, contracting, and especially enforcement.¹⁹⁷ Because the Act carries the rule of law, it is difficult and expensive to enforce evenly and justly, especially across a large state such as California.¹⁹⁸

The community dispute resolution process represented by the ACC is superior, because, barring complete and total non-compliance, the process essentially becomes a simple bargaining market transaction, when transaction costs are very low. This is a suggestive result for Coasean bargaining, but it also applies to less-formally resolved conflicts. As Ellickson argues, legally binding dispute resolution processes can often be avoided in favor of negotiating with informal norms while still reaching socially efficient outcomes.¹⁹⁹ His empirical research showed a remarkable trend: the law is often far less important in dispute resolution than previously assumed.²⁰⁰ Similar to Ellickson's research, conducted in nearby Shasta County,

¹⁹⁵ Cal. Civ. Code § 714 (2015).

¹⁹⁶ See Coase, *supra* note 2.

¹⁹⁷ Cal. Civ. Code § 714 (2015).

¹⁹⁸ *Id.*

¹⁹⁹ See ELLICKSON, *supra* note 12, at 282.

²⁰⁰ *Id.* at 113, 147-149.

California, the ACC creates a largely informal bargaining process that must operate inside the law, thus greatly increasing transaction costs, when there is a need to enforce a non-compliant breach of contract. However, this norms-based argument has the potential to leave final rights assignments to the law, and go directly to a market process to re-allocate property rights in a conflict with low transaction costs. Here, the ACC could bargain or negotiate with the Griffins over the conditions under which they could build the panels. For example, with an agreement to compensate their neighbors for the aesthetic externality they would create. The community dispute resolution process is therefore considered to maintain a greater degree of substantive efficiency than the legislative process.

C. Descriptive Policy Analysis

The central claim of this analysis of the case study is that there exist unrecognized enforcement costs of statutorily assigned solar rights that undercut the performance of the legislative resolution process. This is a topic that appears to be underappreciated in the legal literature on solar rights. Because statutes have the potential to assign initial rights to the lowest valued user and because there are significant transaction costs in resolution through courts, the Coasean conclusion follows that the final allocation of rights will not necessarily be efficient.²⁰¹ Indeed, it is very challenging for solar owners to enforce their rights.

In contrast, the case study also shows that community dispute resolution processes reflected in the CC&Rs — although working against the solar interests in this case — have a surprisingly great potential to resolve solar conflicts with low transaction costs. Moreover, the CC&R process shows that a nuanced property rights outcome was produced, one in which the solar owner and the neighbors both were awarded property rights. This result suggests the potential benefits of a more fully developed community dispute resolution process.

Of particular interest in the comparative institutional analysis of *Tesoro del Valle Master Homeowner's Association*, one sees that the transaction costs are lower at the neighborhood conflict-resolution level. The analysis suggests that this results in a related advantage with respect to procedural

²⁰¹ See Coase, *supra* note 2; See Duke, *supra* note 5.

fairness. In sum, the asymmetry between the enforcement costs of statutes in courts and the transaction costs of private negotiation suggests that community dispute resolution may be a better way to resolve residential solar conflicts in terms of both participation and efficiency.

X. NORMATIVE POLICY ANALYSIS

This section outlines ways in which the community dispute resolution process might be formally incorporated into the enforcement provisions of solar statutes so as to take advantage of the comparative institutional analysis results. We envision a process akin to alternative dispute resolution with enabling legislation supporting outcomes that are enforceable contracts. In other words, this is a quasi-alternative dispute resolution process that relies on local nongovernmental bodies to resolve disputes pursuant to private contracts and local, state, and federal laws outside formal legal resolution.

A key aspect of this new conflict resolution process is the necessity of local community stakeholders to be represented in the process, regardless of level of the stakes-per-capita. Barring total non-compliance, which requires formal litigation, this legislative-community dispute resolution process enables the parties to reach a highly efficient outcome with low transaction costs if both parties submit to the authority of the private body and the statute or binding contract backing the body's authority. In *Tesoro del Valle Master Homeowner's Association*, the private body responsible for administering this decision is the homeowners association and its ACC. Similar options include local government (city council, town board, community associations, etc.), a municipal mediation service, or even creation of a local-level certification for arbiters specializing in solar rights disputes.

Additionally, it is possible to align with Ellickson's and Klein & Leffler's view and provide no framework, allowing the initial assignment of rights to be left to social norms, and for negotiation to occur privately.²⁰² The community dispute resolution process has the potential to be a highly effective method of dispute resolution at the community level, which results in substantively efficient outcomes. Some of the technical levers involved in

²⁰² See ELLICKSON, *supra* note 12; See Klein & Leffler, *supra* note 80.

NEGOTIATED SOLAR RIGHTS CONFLICT RESOLUTION

private negotiation include location, azimuth, square footage, percentage of allowable shading, and even the albedo of the panels. States could develop standardized “negotiation sheets” for less-experienced community dispute resolution disputants to negotiate over.

From an economic perspective, this market-based solution likely involves negotiating side payments to homes in the viewshed of the array, possibly in the form of a proportion of energy savings, a portion of Solar Renewable Energy Credits (“SREC”) sales, or perhaps a subsidy from the Federal Investment Tax Credit benefits.²⁰³ However, the informal creation of what is effectively a private easement market depends on neighbors who are willing to negotiate and reach a socially efficient outcome. Colleen Kettles has delineated a list of well-defined factors that could be involved with a solar easement.²⁰⁴

XI. CONCLUSION

The comparative institutional analysis method seeks to determine the most efficient resolution process to solve a specific type of environmental conflict.²⁰⁵ By tracking the transactions data for a resource at stake from non-activation to final market outcome, it is possible to make defensible determinations regarding the “best of the bads” of available and appropriate resolution processes.²⁰⁶ Comparing the legislative-litigation process under the California Solar Rights Act to the CC&R enforcement and the related, newly titled community dispute resolution process in terms of these metrics, allows conclusions to be drawn about how to use these resolution processes to better meet societal goals.

Both the California Solar Rights Act and the homeowner’s association ACC have merits in terms of procedural fairness and substantive efficiency. However, in this conflict — which was the California Solar Rights Act’s first test — the legislative resolution process was less successful in enforcing the

²⁰³ These credits allow electricity suppliers to meet their renewable portfolio standards.

²⁰⁴ COLLEEN MCCANN KETTLES, A COMPREHENSIVE REVIEW OF SOLAR ACCESS LAW IN THE UNITED STATES: SUGGESTED STANDARDS FOR A MODEL STATUTE AND ORDINANCE (October 2008).

²⁰⁵ See Duke & Csoboth, *supra* note 28; *see also* KOMESAR, *supra* note 9.

²⁰⁶ See Duke & Csoboth, *supra* note 28; *see also* KOMESAR, *supra* note 9.

rights of the solar owner as it is intended to do. The community dispute resolution process was superior to the legislative because it allows disputants to participate and lowers transaction costs. This is more likely to lead to efficient outcomes, regardless of who holds the highest valued use.

The case study suggests a unique new category of resolution process that has the potential to greatly increased substantive efficiency in community-level conflicts. The community dispute resolution process is effective in creating what is essentially a market or informal negotiation that occurs with low transaction costs. These private and pseudo-private negotiations represent a potential means to an efficient end in conflicts that involve a community structure in which most or all of the associated parties in the community have at least a low-valued use of the resource at stake. Particularly in conflicts that involve majorities with low per-capita stakes or even dormant majorities, the parties' ability to participate²⁰⁷ will not be hindered as much as in an alternate resolution process. Additionally, this research dovetails with Ellickson's²⁰⁸ conclusions about informal norms, excepting the fact that the community dispute resolution process might also include a binding legal contract.

This finding has wide implications for environmental policy because it represents the power of markets and informal negotiation to solve environmental conflicts. If markets value the environment without creating externalities, resource extraction rates and use rates will be sustainable and efficient. There is difficulty in accurate measurement of the economic values of ecosystem services, non-use values, and other related theorized values on the environment, but using the judgment of people who have a direct stake in the conflict as members of the community, despite their slight personal bias, will allow fair determinations of highest-valued uses. Highest-valued use determinations are likely to arise from the community dispute resolution process. Support for similar community boards in situations where all members of the community have a stake in the conflict (such as in a development community in which each owns property) is a powerful tool. Community governance of environmental conflicts allows those directly affected to have a low cost "say" in the decision-making process, a valuable

²⁰⁷ See Duke & Csoboth, *supra* note 28; *see also* KOMESAR, *supra* note 9.

²⁰⁸ See ELLICKSON, *supra* note 12.

NEGOTIATED SOLAR RIGHTS CONFLICT RESOLUTION

tool for low per-capita stake conflicts and an especially powerful force in forwarding environmental justice in low-income communities.

To make this resolution process even fairer, California could mobilize a small force of state planners to help facilitate these types of community disputes. If an impartial third party can establish the percentage loss of efficiency and percentage increase in cost, the community board can use these data to make decisions within the context of the private contracts and the California Solar Rights Act. This new method of resolving environmental conflicts can be a highly powerful tool for assigning rights and creating market outcomes without the need for adjudication.