

# Joint Ventures Play Major Part in Growing M&A Field for Renewables

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**T**he renewable energy merger-and-acquisition (M&A) marketplace has been a busy neighborhood in which to reside over the past 12–24 months, highly trafficked by industry players domestically and internationally, both upstream and downstream, and featuring transactions among large and small-to-mid-size players alike.

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In 2010 in the solar sector, Sharp Corporation's \$305 million acquisition of Recurrent Energy and First Solar's \$297 million acquisition of NextLight, and in the wind sector, Exelon's \$897 million acquisition of John Deere Renewables, collectively triggered a wave of optimism in the market for portfolio sale transactions in which value would be given to development pipelines.

In 2011, portfolio acquisitions have been less successful, particularly those featuring noncontracted project development pipelines. Nevertheless, other transactions, such as Total's \$1.38 billion acquisition of 60 percent of SunPower, helped continue to perpetuate deal-making aspirations in what con-

stituted a significant, large-scale joint venture conducted by means of a tender offer.

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As the market approaches year-end 2011, the data indicate that renewable energy M&A (inclusive of energy efficiency and clean-tech transactions) through the first half of 2011 exceeds the pace of 2010 by 8 percent measured by transaction value, albeit slightly lower than 2010 (4 percent) when measured by transaction volume, ultimately suggesting that a healthy balance of M&As continues.<sup>1</sup> On a sector basis, solar continues to show robust levels of M&A transaction activity, whereas the more mature wind industry has seen a shift toward consolidation and lower transaction volume with activity centering on contracted, late-stage projects. Earlier-stage development projects have seen less interest and face the typical cost-reimbursement plus milestone-based purchase-price structure.

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of the 2008–09 ethanol collapse, as evidenced by the Range Fuels bankruptcy filing in early 2011, the sector (inclusive of biofuels and biochemicals-related investment) has seen a surge in deal flow exceeding \$10 billion as well as significant new investment activity. The biofuels sector has also seen initial public offering (IPO) activity including four completed IPO transactions year to date—Solazyme, Kior, Mission NewEnergy, and Gevo—with several biofuel IPOs on file (Renewable Energy Group, Luca, Fulcrum, and, most recently, Elevance).

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## MARKET VOLATILITY AND FINANCIAL DEVELOPMENTS

The third quarter of 2011 marked the beginning of a new mini-crisis in financial markets, commencing with unprecedented volatility (e.g., the Dow Jones Industrial Average's 513-point plunge on August 4) reflecting concerns such as (a) the US debt downgrade and Washington gridlock over deficit-reduction policies; (b) ongoing fears of potential European (particularly Greek) debt defaults possibly spreading to other countries, including Portugal, Ireland, and Spain; and (c) continued US labor market weakness characterized by high unemployment above 9 percent (unlike most past post-recession recovery periods) coupled with fragile consumer and business confidence.

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Specific to the renewable energy sector, the entire Solyndra bankruptcy debacle, involving allegations of miscalculations and potentially hurried due diligence, led to a potential \$536 million loss for US taxpayers and has bruised and stained what other-

wise have been considered highly beneficial and professionally conducted federal loan guarantee programs.<sup>2</sup> The renewable energy market was already digesting the likely expiration of the 1603 cash grant program; thus, the Solyndra bankruptcy fueled industry fears of lost future federal subsidies at a time when tax equity participants may not have the capacity to plug the financing gap. Given such challenges, joint venture formation may be fueled by industry participants' desire to mitigate risk and share funding burdens of renewable energy development projects.

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## FREQUENCY AND Pervasiveness OF RENEWABLE ENERGY JOINT VENTURES

Against this backdrop, among independent energy project developers, equipment makers and contractors, infrastructure investors, venture capital funds, and other project equity sponsors, the utilization of joint ventures has been an integral part of the overall M&A transaction scene. Joint venture transactions have found significant appeal among energy firms that may prefer not to go forward alone in view of the capital-intensive nature of these projects or in situations involving large-scale deployment of new technologies. Joint ventures can serve both to expedite successful deployment of renewable energy technologies and projects and constitute a hedge against project-specific underperformance or failure.

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In many respects, the renewable energy field is tailor-made for joint venture struc-

tures based on the diverse ranges of expertise required for project development at each stage in the development chain, including upstream manufacturing of equipment and supplies; real property and site control; environmental and permitting requirements; negotiation of offtake arrangements; transmission and interconnection; construction engineering; interactions in the financial community with lenders; tax equity investors and other participants; and, finally, the operations and maintenance (O&M) providers. With such a diverse array of skills and assets required, it seems natural that parties may be motivated to partner with other experts at various stages of the development cycle either contractually or through the establishment of joint ventures in that another entity shares the risks as well as economic rewards in achieving a successfully operating green energy generation facility.

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Even pure tax equity investments, which are often thought of as more “debt-like” in the capital structure, in many cases (such as the classic Class A/Class B partnership flip structure) are actually forms of joint ventures at their core, typically consisting of a heavily negotiated partnership agreement at the intermediate holding company (LLC) level above the project company or, at times, at the project company level.

## CATEGORIES AND CLASSIFICATIONS OF RENEWABLE ENERGY JOINT VENTURES

### Vertical Integration

As with energy M&A transactions generally (both renewable and conventional), one of the most significant recent trends in joint venture activity has been the widespread formation of *vertical integration* joint ventures. Vertical integration occurs when a common owner (or group of indirect affiliates) controls supply chains for products (in this case,

green energy) either through (a) backward vertical integration, in which a producer owns or has interests in suppliers of product inputs, or (b) forward vertical integration, in which producers have interests in the distribution or retail channels of their products. It is well established among industry analysts that vertical integration has been making a “comeback” among business enterprises after suffering a period of disfavor with industries embracing outsourcing in the alternative. Some observers credit the unstable economic environment of the last few years as the impetus for a quasi-rebellion against outsourcing as companies find cost savings, enhancement of supply-chain relationship management and reduced risk from their many vertical integration maneuvers.<sup>3</sup>

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In renewable energy in particular, there has been a well-established trend of solar module manufacturers investing in and acquiring downstream energy generation projects that generate module supply contracts for their products. By using their corporate balance sheets to accelerate project development that otherwise might be stalled as a result of developers’ strained capital budgets, solar equipment makers (such as First Solar, Sharp Corporation, SunPower, and, recently, Trina Solar) have sought to use available capital to fill gaps in project development to ensure continuity and growth of their market share and develop project pipelines featuring their technology. In the wind industry, similar patterns have emerged in which joint ventures have been created between turbine makers and wind project developers for wind farm project development.

These joint ventures have been established by both first- and second-tier wind-turbine manufacturers, such as GE, Siemens, Clipper, Nordex, Suzlon, and others. For ex-

ample, GE Financial Services invested in a 183-megawatt Idaho wind portfolio together with Exergy, Atlantic Power, and Reunion Power, a project featuring 122 GE wind turbines that achieved its commercial operation date in early 2011. More recently, Nordex announced a wind joint venture for the development of a 120-megawatt Nebraska wind project, and in February 2011, Suzlon announced a joint venture with Affinity Wind, LLC, for a 150-megawatt wind project in Illinois.

The joint venture model has played an important role in these transactions because it enables the equipment makers to partner with developers who have localized knowledge and development expertise. The developer may have close relations with landowners, local permitting agencies, or regional contractors, as well as familiarity and experience with environmental, engineering, and other issues critical to successful project development. Similarly, second-tier turbine or module manufacturers, as well as new entrants into the turbine or module supply markets, have the opportunity to offer preferential warranties with above-market terms to enhance the financeability of the project being developed by the joint venture.

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Vertical integration joint ventures in wind and solar have led to varying roles by the upstream equipment makers in the development process. In certain instances, the equipment makers appear reluctant to stray far from their core competencies and business plans, indicating an unwillingness to establish large-scale development teams, instead relying on their carefully screened development partners for the requisite project development expertise. In these instances, the equipment makers play primarily a financial role, helping to fund the development budget but

doing little more than approving capital budgets and other high-level decisions. In these scenarios, the equipment maker often desires to ensure that the project reaches its commercial operation date (COD), but the strategy then shifts to marketing the project for sale to infrastructure-oriented investors or independent power producers. These equipment makers do not wish to be in the independent power generation business or to take on long-term roles post-COD in the operation and maintenance of wind or solar projects.

In other instances, equipment makers have revealed their willingness to “fully diversify” by forming joint ventures to develop, construct, operate, and maintain wind or solar projects, possibly for the longer term. In these situations, the equipment makers have established fully integrated project development teams to pursue development of project sites that would be a good fit for the equipment maker’s particular technology (e.g., wind sites with a wind resource that generates an attractive power curve with high output from the selected turbine given the anticipated hub speed). The joint venture model may serve as a “test run” with the development partner and ultimately constitutes a precursor for the future acquisition of the joint venture partner in its entirety. The turbine maker may, for example, develop one or two projects to determine how successful the partnership is in achieving on-time commercial operations within the parameters of the project budget. Following such achievement, the equipment makers may then align themselves more permanently with the developer by acquiring the entire development pipeline offered by the developer and retaining the developer in-house as part of their organization.

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Ultimately, whether the upstream partner’s plan is to expedite project development and then “flip” the project to a long-term in-

vestor, or to diversify their business by owning and operating independent power plants with development partnerships and acquisitions, the vertical integration model has been a frequent source of and motivation behind a substantial number of recent joint venture transactions in renewable energy. While the majority of the renewable energy joint ventures constitute downstream acquisitions of energy-generation projects, in some instances, there have been attempts by energy-generation firms to engage in forward vertical integration by acquiring interests in off-takers, distributors, and transmission providers, as well as O&M service providers, although these arrangements tend to be a minority of such transactions.<sup>4</sup>

Backward vertical integration has also occurred as some equipment makers acquire components manufacturers or developers align themselves with equipment makers.

### Unique Assets

Joint venture transactions and strategic relationships may also arise in special situations in which a foresightful but poorly financed project developer acquires a uniquely attractive project asset but lacks the capital resources to complete successful development of the project. In the renewable energy world, this scenario arises frequently. Examples include developers who (a) successfully bid in utility requests for offers and obtained attractive long-term power-purchase agreements with utilities or other creditworthy offtakers, (b) obtain favorable interconnection queue positions for transmission, (c) are awarded feed-in-tariff allocations in jurisdictions offering feed-in-tariff contracts,<sup>5</sup> (d) acquire site control over land or rooftops featuring particularly attractive wind resources or solar insolation levels, or (e) land an attractive wind turbine supply agreement or solar module supply contract. These developers often desire to use their hard-earned development accomplishments to either sell their project to raise capital or, in the alternative, to impress larger renewable energy developers, utilities, or investment funds to team up in a joint venture to pursue development of the project with all or most of the funding being pro-

vided by the equity sponsor but the developer retaining an interest as a minority member of the partnership (typically as a member of an LLC one level above the project companies).

These joint ventures often lead to long-term relationships between the developer and the equity sponsor and can be very successful so long as the parties' views regarding development strategy and cost control are harmonized.

### Technology and Intellectual Property

A significant number of competing renewable energy technologies are available, including proven technologies such as wind and solar photovoltaic as well as emerging and innovative technologies such as next-generation biofuels and various solar thermal and heliostat tower technologies with energy storage capabilities. Thus, it is no surprise that energy firms use joint venture structures to license the technology most suitable for their particular resource.

Venture capital firms frequently use joint ventures in clean-tech investments. Large solar project developers such as Solar Reserve (which recently completed \$15 million of a \$30 million capital raise) have raised funds from various equity sponsors while licensing certain technologies (such as Solar Reserve's licensing of molten salt power tower solar technology) that offer groundbreaking potential for converting intermittent energy resources into potential base-load resources. In the biofuels arena, large petrochemical and petroleum firms have established joint ventures at a rapid pace, such as the Shell/Cosan biofuel joint venture in Brazil for ethanol made from sugar cane and Valero's joint ventures with Enerkem in Canada and Darling in the United States for a renewable biodiesel plant in Louisiana.

In forming technology-driven joint ventures, it is important to carefully scrutinize the licensed intellectual property rights and to secure a license that is financeable and of sufficient duration.

### Combinations of Expertise

For new entrants in wind or solar development, it is often the case that partners in

joint ventures have unique skill sets that are complementary to the expertise of the other partners. For example, in the solar sector, developers may often form joint ventures with engineering, procurement, and construction contractors or roofing firms who have experience in rooftop and similar engineering operations. Real estate developers have found new streams of revenue by leasing rooftops to solar firms or vacant parcels of land near transmission substations to ground mount solar developers. In the wind industry, experts from the telecommunications tower area have found ways to contribute needed skills to wind developers in tower maintenance and similar services.

These types of joint ventures tend to be the simplest and are natural offshoots of individual or company talent.

### **Manufacturing**

In the renewable energy equipment manufacturing sector, joint ventures have been integral to rapid expansion of plant capacity and entry into lower-cost labor markets as the pressure continues to lower costs to match falling energy prices, and to access special technology and manufacturing capabilities.

Manufacturers are able to deleverage the cost of increasing manufacturing capacity by entering into manufacturing joint ventures and can simultaneously access the unique manufacturing expertise of their partner. Recent examples include the SunPower/AU Optronics 50-50 crystalline solar joint venture in Malaysia; the thin film manufacturing joint venture among Sharp, Enel, and ST-Micro; and Canadian Solar's 600-megawatt wafer production joint venture in China.

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With the joint venture model offering opportunities to reduce gross margin without substantial capital commitments, it is ex-

pected that manufacturing joint ventures will be an ongoing trend in this sector.

### **Diversification**

One of the classic rationales for joint ventures in M&A literature is to achieve diversification. Many types of diversification include geographic, product, fuel stock, technology, or even human capital. Conventional energy and power companies have used M&As as well as joint ventures to achieve instant diversification of their companies, such as Total's 60 percent acquisition of SunPower. In the geothermal sector, single-technology company Magma Energy merged with Plutonic to form Alterra earlier this year, in an effort to expand beyond pure geothermal plays.

The use of joint venture structures can be helpful in defraying costs associated with a move into a new segment of the industry and will likely continue in the near term.

### **Financing and Capital Recycling**

Finally, in many instances, the size and scale of certain ambitious renewable energy projects is so massive that even larger developers and power-generation companies have found the need to form joint ventures to develop and finance the projects. Examples include the BrightSource 392-megawatt Ivanpah solar thermal/heliostat project that has been funded by a diverse joint venture including the backers of BrightSource Energy and current majority owner NRG Energy, as well as Google and several other investors. In wind, the 845-megawatt Shepherd's Flat project also represented a consortium approach to financing, including investments by Google, Sumitomo, and Itochu. In addition to large-scale funding consortia, smaller developers use joint ventures to raise cash for deployment into other pipeline projects.

With the end of the DOE loan guarantee program, coupled with the increasing trend toward larger, utility-scale projects (particularly in solar), the consortium approach to financing renewable energy projects will likely accelerate.

### **CHALLENGES FACING JOINT VENTURES**

In establishing joint ventures, it is important to keep in mind that joint venture formation is easier said than done. Although joint ventures

offer many of the above benefits, there are parallel disadvantages associated with them as well.

In establishing joint ventures, it is important to keep in mind that joint venture formation is easier said than done.

First, a joint venture inherently complicates the documentation and negotiation process involved in an M&A transaction or other financings. The joint venture requires documentation not only of the proposed acquisition, but also of the postacquisition governance of the target entity. This can increase transaction costs and lead to delays in closing the transaction.

Second, an advantage is that joint ventures offer the opportunity to participate in an energy project that might not otherwise be available. However, joint ventures also create the downside of constraining possible future exit opportunities from such projects. In this regard, the use of drag-along, tag-along, and other features in the joint venture agreement is critical.

Third, as with M&As generally, joint ventures can seem appealing at first glance. However, once the parties commence the actual work of the joint venture, differences in corporate or nationality-based culture can lead to divergent expectations and inefficiencies. Seeking approvals or funding authorizations for certain actions can be time-consuming and frustrating to the party more accustomed to a streamlined process.


Finally, in both Europe and the United States, joint ventures need to be analyzed from the perspective of antitrust considerations, particularly in light of the FTC and Justice Department's aggressive moves against companies based on antitrust concerns. Antitrust investigations are extremely time-consuming and costly; thus, it is important to assess whether the joint venture transaction raises any warning signs on that front as well.

Ultimately, however, these concerns can be addressed by planning in advance and using joint venture management and governance structures that are best suited for the parties' needs.

## CONCLUSION

It is apparent that joint ventures will continue to permeate the renewable energy industry and constitute one of the most important forms of strategic transactions. In 2012, joint venture structures will continue to be used both at the early stages of technology-driven pilot projects as well as for exit strategy purposes upon commercial development of renewable energy projects. Each of the trends discussed in this article should continue at an accelerated pace. Joint ventures also will continue to be a strategy in cross-border transactions as investors look into other emerging territories in which favorable renewable energy pricing or manufacturing costs can be obtained.

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Joint ventures can be critical to expediting development and exploitation of renewable energy technologies and can help manufacturers improve capacity and market share at faster rates than could be accomplished absent the joint venture structure. However, careful consideration should be given to the negotiation and documentation of rights and obligations (including capital contributions and indemnification) of the partners in the applicable joint venture agreements. 

## NOTES

1. Peachtree Capital Advisors. *2011 Mid-Year Greentech M&A Review*, p. 3. Retrieved from <http://peachtreecapitaladvisors.com/lib/downloads/research/2011GreentechMidYear.pdf>.
2. In addition to Solyndra, the failure and/or bankruptcy of several other notable renewable companies, such as Evergreen Solar and Intel spinoff SpectraWatt, further dented the market's confidence levels. *Editor's note*: Still more fiascos are discussed in Jonathan Lesser's November column in this publication, "Sunburnt: Solyndra, Subsidies, and the Green Jobs Debacle."
3. See, e.g., Osak, M. (2010, August 12). Vertical integration's comeback. *Financial Post: FPExecutive*. Retrieved from <http://business.financialpost.com/2010/08/12/vertical-integration%E2%80%99s-comeback/>.
4. An example would be Infigen Energy's acquisition of Alinta Energy Markets Pty. Ltd., a distributor of energy to Sydney Water's Desalination Plant in Australia.
5. This has occurred, for example, among developers participating in the Gainesville Regional Utility feed-in-tariff program.