

**THE S-REIT:
An Investment-Driven Solution to Solar Development Problems
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1. Summary¹

Notwithstanding the substantial benefits of solar power, this renewable energy source remains underdeveloped, and effective financial incentive policies are not currently in place to support the development of large-scale solar facilities over the long-term. However, there is room for innovative ideas and structures to stimulate the pace and breadth of solar energy development. One potential approach that would further this goal is to extend a tax structure, which already exists and benefits the commercial real estate market, to stimulate large-scale solar energy development. Just as real estate investment trusts (REITs) have spurred investment into commercial real estate, solar real estate investment trusts (S-REITs) could bring solar development to the masses and would increase capital flows into solar energy markets. The REIT concept is particularly applicable to solar photovoltaics (PV) because of the nature of this technology, particularly its dependable output independent of most market risks (e.g, fuel price increases and risks related to new green house gas regulation) and its long useful life.

However, the existing tax code must be clarified in order to make this vision of a solar investment a reality. Specifically, confirmation that proceeds from power purchase agreements qualify as revenue as defined by § 856 of the Internal Revenue Code is needed. Such a clarification could be achieved by securing a favorable revenue ruling or private letter ruling from the Internal Revenue Service. Alternatively, Congress could enact legislation amending the Internal Revenue Code to achieve this objective. The immediate effectiveness of the REIT structure in the solar energy context also would require the restructuring of some of the current financial incentives for large-scale solar projects.

This paper addresses two major problems in the current U.S. financial incentives for solar energy:

¹ This summary is also available on the GW Solar Institute homepage. Visit <http://solar.gwu.edu/>.

1. Eligibility for the current financial incentives is restricted to a very limited group of companies, and the private capital available to support solar energy development is limited. This proposal would expand the pool of eligible investors to virtually all individual investors, thus greatly expanding the amount of private capital available to support solar energy development.
2. As a result of turmoil in financial markets in the past two years and limited ability to take advantage of the available investment tax credit (ITC) for large-scale solar projects, Congress amended the Federal tax code to allow eligible companies to receive cash grants but set a termination date for this authority which is approaching at the end of the year. The REIT proposal would include refundable tax credits or a new framework for tax deductions to address this problem. Because REITs are qualified and SEC-registered investments, REITs form an attractive category for such special Federal treatment.

2. Introduction

Though the environmental movement and systemic events such as price spikes have increased America's awareness of some of the world's energy problems, natural resources are still being depleted at a rapid rate. For example, many projections suggest that supply will struggle to keep pace with demand as the developing world catches up to the West.² Oil, coal and natural gas, resources that account for more than 85% of energy consumed in the US³, are becoming more difficult and dangerous to find and extract and many sources of these minerals are controlled by dictators and unfriendly states.⁴

Because of these factors and others, many experts see the future of energy lying not in fossil fuels, but in so-called new renewable resources such as wind, thermal and solar power. The latter holds particular promise. Indeed, according to some projections, the supply of solar energy is so great that the power of the sun could hypothetically be used to meet the entire global demand for energy. For example, Amory Lovins has observed,

² US Energy Information Administration, see long-term energy supply projections available at <http://www.eia.doe.gov/oiaf/forecasting.html> compared to demand projections available at <http://www.eia.doe.gov/oiaf/ieo/ieohecon.html>.

³ US Department of Energy, available at <http://www.energy.gov/energysources/fossilfuels.htm>

⁴ CIA World Factbook, available at <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2178rank.html>.

‘The sunlight falling on the Earth every ~70 minutes equals humankind’s entire annual energy use. An average square meter of land receives each year as much solar energy as a barrel of oil contains, and that solar energy is evenly distributed across the world within about twofold. The U.S., “an intense user of energy, has about 4,000 times more solar energy than its annual electricity use. This same number is about 10,000 worldwide [, so] ...if only 1% of land area were used for PV, more than ten times the global energy could be produced....”⁵

A scenario where solar energy exclusively provides the world’s energy supply may seem closer to science fiction than current reality. However, if even a fraction of the potential of the sun were captured, this could go a long way toward resolving many of the environmental, sustainability and geopolitical issues the US faces today. That alone should be a strong incentive to maximize plans for solar research and the deployment of solar technology. There are additional short-term benefits to shifting energy demand toward solar sources. Economies maximizing the use of solar technology could benefit short-term from the evening out of supply curves, providing more certainty and less price fluctuation than those which are fossil fuel dependent. Further economic benefits would include job creation⁶ and the potential economic growth a frontrunner nation could gain as an exporter of complex energy solutions.⁷

However, despite great potential and inherent benefits both in the short- and long run, solar power remains an underdeveloped resource. In fact, all new renewables, a list including wind and some other minor sources in addition to solar, met only 2% of global energy demand as of 2007.⁸ There are many reasons for this. For one, fossil fuels are still heavily subsidized,

⁵ Amory Lovins, *Four Nuclear Myths*, available at http://www.rmi.org/rmi/Library/2009-09_FourNuclearMyths (citing World Energy Council, available at www.worldenergy.org/publications/survey_of_energy_resources_2007/solar/720.asp, and USDOE and Electric Power Research Institute, *Renewable Energy Technology Characterizations*, pg. 4-19, TR-109496 1997, available at www.nrel.gov/docs/gen/fy98/24496.pdf)

⁶ US Energy Information Administration, see Employment in the Photovoltaic Manufacturing Industry, 1999 – 2008, available at http://www.eia.doe.gov/cneaf/solar.renewables/page/solarreport/table3_16.pdf

⁷ US Energy Information Administration, see Export Shipments of Photovoltaic Cells and Modules by Type, 1999 – 2008, available at http://www.eia.doe.gov/cneaf/solar.renewables/page/solarreport/table3_13.pdf.

⁸ Katherine Kennedy, *The Importance of Renewable Energy*, in UNEP HANDBOOK FOR DRAFTING LAWS ON ENERGY EFFICIENCY AND RENEWABLE ENERGY RESOURCES, 106 (Richard Ottinger and Adrian J. Bradbrook eds., United Nations Environmental Program 2007).

leading to price advantages over renewables in many cases.⁹ Additionally, traditional forms of regulation at both the transmission and distribution levels ‘tend to favor continuously supplied centralized fossil fuel generation over renewable generation, that is often more distributed and intermittent...’¹⁰ Other factors hindering the development of solar as a leading resource include political opposition from utilities due to distribution management issues and producers of fossil fuels who are concerned that future supply from renewable resources could cut into profits.¹¹

Because of these hurdles, and despite the current schemes used in the US and elsewhere to incentivize solar and other renewable development, there is room for innovative ideas and structures that will stimulate the rate and breadth of solar development globally. One potential solution would be to adopt a tax structure which already exists and has been hugely successful in the commercial real estate market to stimulate large-scale solar development. Similar to the benefits that real estate investment trusts (REITs) have brought to both commercial real estate owners and investors, solar investment trusts (S-REITs)¹² could bring solar development to the masses, increase capital flows to the space and incentivize lawmakers give the solar industry the same treatment as fossil fuel counterparts.

Slight changes to the existing tax code are required to make this vision of a solar investment a reality including the qualification of proceeds from power purchase agreements as ‘rents’ under § 856 of the Code. In addition, it would require a shift in tax policy from incentivizing investment to incentivizing production for the structure to result in the greatest possible immediate impact. However, the timing and political environment seem right. REITs and solar companies have already formed alliances as real estate developers have sought cost savings and attempted to provide value to tenants. This has lead to familiarity with solar development among the type of investors who might find SITs attractive. The Reinvestment and Recovery Act of 2009 included several provisions for the stimulation of green growth, with a potentially updated and more efficient grid making large-scale solar more feasible. In addition, pioneers are already developing other investment structures to stimulate green development, indicating that there is a market for innovative solutions. However, none of the solutions

⁹ *Id.*

¹⁰ *Id.*

¹¹ *Id.* at 107.

¹² Not to be confused with the currently better known Singaporean REIT.

currently in the marketplace are geared toward the wider investing public, and that is where a REIT-like solar investment trust model could find its niche.

3. The Solar Development Framework of Today

Solar development is not a new idea. Many companies already exist that build solar projects, and there are financiers dedicated to funding solar and other renewable projects. Additionally, the government, both at the federal and state levels, has put measures into place in attempt to stimulate further solar development. These facts are evidence of the idea that there is both an economic appetite to invest in renewable energy technologies and a political appetite to change the energy mix that exists today. However, solar development has not advanced at a level commensurate with the potential production capacity of the US. This is due largely to two problems with the solar development framework that exists today. First, the potential pool of investors is limited due to the types of investment vehicles that are currently available. Second, the current solar incentive regime has not succeeded in stimulating large-scale PV developments. Both of these current difficulties are addressed below.

The Investment Framework

Investors interested in solar development currently have a few different avenues into the sector. A non-exhaustive list of the most common vehicles currently available includes limited liability corporations (LLCs), private-equity structures, master lease partnerships (MLPs)¹³ and publicly traded solar development company stocks.¹⁴ All have benefits as well as limitations.

The first two forms, the LLC and private equity investments, both, to some extent, stimulate solar development and provide investors with access to the solar market. However, both vehicles lack the inclusivity required to be considered tools for common investors. This is due to a number of factors, including minimum investment requirements, limited knowledge

¹³ Kinder Morgan manages one of the best-known examples of the MLP structure in the energy world. However, this vehicle does not focus on renewables. For more information on Kinder Morgan Energy Partners see <http://www.kne.com/>.

¹⁴ Interview with Jigar Shah, CEO, The Carbon War Room, in Washington, DC (Mar. 23, 2010).

regarding these vehicles, and a dearth of options. Because of this, the common retail investor is not able to use these vehicles to gain access to solar projects. Investors in both forms face additional risks ranging from illiquidity to lack of transparency and valuation conflicts. Private equity investors can face the additional risk of long lock-up periods with reduced or limited access to cash as well as what are often high fees.¹⁵ Because of these issues and the risks of investing in these vehicles, they cannot accomplish the goal of attracting new sources of capital to the sector.

Investors in the latter two forms, the MLP and publicly traded solar stocks, don't necessarily confront the same risks as investors in LLCs and private equity vehicles. For example, these publicly traded options are more accessible and liquid and grant investors greater insight into operations due to the availability of SEC filings. However, both MLPs and stocks can be volatile. Though higher returns often accompany a greater appetite for risk, investor attitudes coming out of recent financial market crises have reduced the effectiveness of these vehicles as tools to broaden the investor base of solar development. Going forward, this trend toward lowered risk appetite could become ever more prominent as a large segment of the US population looks forward to asset protection rather than appreciation ahead of the retirement of the baby boomer generation. Both vehicles are also rather limited in their available options, and the MLP investment has the additional downside of not necessarily being allowed in retirement accounts.

For the right investors in the right situations, each of the above investments offers opportunities, and often very lucrative ones. However, the risks and barriers to entry of these vehicles reduces their ability to act as conduits for large-scale investment into the solar sector.

The Incentive Structure

As noted above, the current vehicles for solar development are insufficient to meet the capital needs of the space. However, an argument could be made that even larger problems exist

¹⁵ Notably, some in the private equity field are attempting to reduce some of the inherent risks of the typical private equity model, including Green Power Funding. However, the inclusion issue will always count as a downside for the typical retail investor in private equity instruments. For more information on alternative private equity models, *see* <http://www.greenpowerfunding.com/index.html>. Special thanks to John Cravenho for taking the time to discuss his model. Telephone Interview with John Cravenho, CEO, Green Power Funding (Mar. 19, 2010).

with the incentive structures currently in place to stimulate solar PV development. The imbalance between potential capacity and America's energy demand on the one side and the lack of solar development on the other is the best evidence that the incentives currently in place are not sufficient to meet the needs of the industry. Though strong arguments can be made by either side in the energy subsidization debate, the fact is that it has long been the policy of the US federal government to provide subsidies to the energy industry as a tool to supplement research as well as production.¹⁶ Because it is unlikely that the basic policy to provide incentives for energy production will change anytime in the foreseeable future, it makes sense to put into place the most efficient and effective incentives possible. Unfortunately, the history of PV incentives has proven that new ideas are needed.

Prior to the financial crisis, the PV incentive regime placed the emphasis on investment tax credits (ITCs), most notably the 30% Business Solar Investment Tax Credit¹⁷ which was due to expire in 2016.¹⁸ The ITC regime produced mixed results.¹⁹ For one, the lack of certainty before the renewal of the credit in 2008 stifled new development as many potential projects were put on hold. Even after the extension of the credit to 2016, it was unclear that companies were being stimulated to develop new arrays. In other words, the credit didn't sufficiently address the tax appetite of potential investors.²⁰ During the financial crisis, Congress amended the Federal tax code to allow eligible companies to receive cash grants but set a termination date for this authority which is approaching at the end of the year. This has seemingly led to even more uncertainty as many tax-motivated investors have since left the market.²¹ In addition to the uncertainty that the current regime has caused there are other criticisms. Among these include

¹⁶ These are often supplemented with state and local incentives. *See*, The Database of State Incentives for Renewables and Efficiency, *available at* <http://www.dsireusa.org/> for a listing of current state and federal incentives for solar development.

¹⁷ I.R.C. § 48.

¹⁸ The Solar Investment Tax Credit Frequently Asked Questions, *available at* http://www.seia.org/galleries/pdf/ITC_Frequently_Asked_Questions_10_9_08.pdf.

¹⁹ Interview with Joe Cordes, Associate Director, The GW Trachtenburg School of Public Policy and Public Administration (Apr. 14, 2010).

²⁰ Cordes Interview.

²¹ *See*, Collapse of Tax-Motivated U.S. RE Investor Market, .ppt presentation slide provided by Hudson Clean Energy Partners, which estimated that tax-motivated investor based dwindled from 25 to 6 investors from 2007 to 2009.

the idea that incentivizing initial investments stimulates the wrong kind of behavior. For example, it may incentivize smaller-scale, and therefore more expensive, solar array projects.²²

Because of the failures of the structure outlined above, new strategies must be explored if the goals of a cleaner, more sustainable and more secure economy and environment are to be met. One such solution would be to take a well established and successful tax regime and allow solar developers to adopt it. For example, if solar developers were allowed to adopt, with minimal changes to existing laws, the REIT regime, it would both stimulate retail investment into the field and provide the proper incentives for developers to expand operations.²³

4. Introduction to the REIT Model

The origins of real estate investment trusts reach to the 19th century and the use of common law ‘Massachusetts Trusts’ to pool property investments.²⁴ A line of both legislative and judicial decisions leading up to *Morrissey v. Commissioner*, 296 U.S. 344 (1935) had varying impacts on the real estate trust regime, which continued to be favored with tax exempt status to that point.²⁵ However, under *Morrissey*, the Supreme Court ‘established a three-part inquiry for determining whether an entity was an association taxable as a corporation.’²⁶ Under this test, a form would be taxable if it had 1) associates who have come together for a joint enterprise; 2) a business purpose; 3) and a preponderance of traditional corporate attributes such as centralized management and freely transferable ownership interests.²⁷ After the Second

²² Cordes Interview.

²³ Going forward, all analysis of REITs and discussion of the S-REIT structure will deal exclusively with publicly-traded vehicles. Though the current REIT regime allows and facilitates private real estate investment trusts, these entities create some of the same problems noted above with the current vehicles currently available in the solar sector, notably transparency and liquidity.

²⁴ See, David L Brandon., *Federal Taxation of Real Estate Investment Trusts*, in REAL ESTATE INVESTMENT TRUSTS, STRUCTURE, ANALYSIS, AND STRATEGY, 83 (Richard T. Garrigan and John F.C. Parsons, eds., McGraw Hill 1998) (*the author noted the review and editorial comments of Mr. Tony Edwards, General Counsel for the National Association of Real Estate Investment Trusts, Inc. and Mr. Neil Rosenburg, Partner, Coopers & Lybrand L.L.P., New York, (now Price Waterhouse Coopers)*).

²⁵ See The Revenue Act of 1909, *Eliot v. Freeman*, 220 US 178 (1910), *Crocker v. Malley*, 249 U.S. 223 (1918) for historical background and details.

²⁶ *Brandon* at 84.

²⁷ *Id.*

Circuit ruled seven years later that a business purpose meant only that trustees had the ability to vary the investments of beneficiaries²⁸, it was clear that real estate trusts would be unable to escape corporate taxation without legislative change.²⁹

This key change occurred in 1960 as Congress passed its first REIT tax legislation as an amendment to ‘An Act to Amend the Internal Revenue Code With Respect to the Excise Tax on Cigars.’^{30 31} Congress at the time recognized a need to make income-producing real estate assets available to the broader investing public, and determined that the best way to do this would be through liquid investment vehicles.³² Since the original legislation in 1960, Congress has made revisions to existing REIT rules several times, most notably in 1986 and with 1999’s REIT Modernization Act.³³ Aforementioned judicial and legislative action from the 19th century to today has dragged the real estate trust from humble beginnings to its current position as an extremely robust investment sector marked by multiple property types and boasting a market capitalization of over \$271 billion as of year-end 2009.³⁴

This contemporary REIT structure is amenable to a wide array of property types. Among these include apartment communities, office properties, shopping centers, regional malls, storage centers, industrial parks and warehouses, lodging facilities, healthcare facilities, mortgage companies and natural resource developments.³⁵ This regime has produced tremendous benefits for the commercial real estate sector including increased capital flows and increased efficiency in

²⁸ See, *Commissioner v. North America Bond Trust*, 122 F.2d 545 (2d. Cir 1941) (cert. denied 314 U.S. 701 (1942)).

²⁹ *Brandon* at 84.

³⁰ Pub. L. No. 86-779, e 10(a), 74 Stat. 1004.

³¹ This was marked the beginning of a trend that, to this day, sees REIT legislation buried within other bills. As applied to the S-REIT model, this could be a benefit as the proposed changes could find a home in, for example a jobs or an energy bill. Such an opportunity will be discussed below.

³² See, All About REITs, available at <http://www.reit.com/AllAboutREITs/tabid/54/Default.aspx> .

³³ H.R. 1180

³⁴ Historical REIT Industry Market Capitalization: 1972-2009, available at <http://www.reit.com/IndustryDataPerformance/MarketCapitalizationofUSREITIndustry/tabid/85/Default.aspx>.

³⁵ The Investor’s Guide to REITs, NAREIT’s Guide to the Real Estate Investment Trust Industry, pg. 7, available at <http://www.reit.com/Portals/0/PDF/2009Kekst.pdf> .

property and management valuation.³⁶ In addition to providing structural benefits to the commercial real estate world, the REIT structure provides investment benefits for investors. At their heart, REITs are companies that own and often operate income-producing properties for the benefit of shareholders. This structure, with its steady dividend payments, favorable tax treatment (see below for further discussion of the tax treatment of REITs), and diversification benefits, makes them very popular investment vehicles with both retail investors.

Indeed, it was a desire of Congress to ensure that these ‘small investors (could) secure advantages normally available only to those with large resources’³⁷ that led to the enactment of the initial REIT legislation in 1960. Prior to the creation of listed real estate equities, access to the investment returns of commercial real estate equity as a core asset was available only to institutions and wealthy individuals having the financial wherewithal to undertake direct real estate investment.^{38 39} In other words, to the extent that most investors were and are unable to purchase commercial real estate properties on their own, the REIT vehicle allows them access to top real estate properties and management in a highly liquid, high yield form.⁴⁰ Since the inception of the publicly traded REIT model, it has also provided them with a total return rivaling many other more volatile sectors.⁴¹

In addition to the returns available to investors in REITs, the structure has become well-established as a portfolio management tool due to its low correlation to other investments, including stocks and bonds. Essentially, the fact that yields on REITs are not directly correlated to bonds, and the fact that REIT stock prices, which are reflective to at least some extent on

³⁶ Mark O Decker, *The Modern Real Estate Investment Trust Industry, An Overview*, in REAL ESTATE INVESTMENT TRUSTS, STRUCTURE, ANALYSIS, AND STRATEGY, 3,7 (Richard T. Garrigan and John F.C. Parsons, eds., McGraw Hill 1998).

³⁷ *Decker* at 3.

³⁸ See All About REITs, available at <http://www.reit.com/AllAboutREITs/tabid/54/Default.aspx>.

³⁹ In this regard, it is worthwhile to note the similarities the state of the commercial real estate industry before the development of the REIT structure to the current state of the solar industry.

⁴⁰ *Decker* at 8.

⁴¹ See, Annual Return Components by Investment Sector, 1972-2009, available at <http://www.reit.com/tabid/211/Default.aspx>.

property values, do not move in lockstep with stocks in other sectors means that it can serve as a tool to even out the peaks and valleys of a broader asset portfolio's return.⁴²

In summary, the REIT structure has proven to be a very successful tool for allowing individual investors to access commercial real estate, a sector they would otherwise not have the wherewithal or means to invest in. This has led to positive returns and opportunities to diversify their portfolios in a tax efficient manner that would not otherwise be available to them. However, small retail investors are not the only class of the investment community which has benefitted from the advent of the REIT structure. In addition to small retail investors, pension funds, insurance companies and other large institutional investors have greatly benefitted from the REIT structure as well.

Despite origins as a tool for small investors to gain a foothold in the commercial real estate world, this interest in REITs by larger institutional investors deserves recognition as one of the driving forces behind the success of the sector today. Much like smaller investors, institutional investors have benefitted from both the total returns and diversification benefits of real estate without having to make direct investments in commercial properties. Though institutional investors have more resources available to them, and therefore the ability to invest directly in commercial real estate, the liquidity benefits and the lack of a need to engage in property management make REIT stocks very useful to the institutional investor. One example of this would be the history of insurance company investment in real estate. Over the years there has been a dramatic shift from a predominantly direct investment model to the current strategy of many companies of indirect investment in real estate via REITs.⁴³

⁴² David Geltner and Joe V. Rodriguez, *Public and Private Real Estate, Performance Implications for Asset Allocation*, in REAL ESTATE INVESTMENT TRUSTS, STRUCTURE, ANALYSIS, AND STRATEGY, 373, 74 (Richard T. Garrigan and John F.C. Parsons, eds., McGraw Hill 1998).

⁴³ Though some of this may have been in private REITs, the principle is the same; the investor wanted the benefits of real estate investment without the downside. For more on the history of insurance company investment in REITs, see, Eugene R. Skaggs, Robert M. Ruess and Richard T Garrigan, *Life Insurance Companies' Investments in REITs*, in REAL ESTATE INVESTMENT TRUSTS, STRUCTURE, ANALYSIS, AND STRATEGY, 195-207 (Richard T. Garrigan and John F.C. Parsons, eds., McGraw Hill 1998).

5. The REIT Structure

The main benefit of the REIT structure is the avoidance of corporate level taxes.⁴⁴ It should be no surprise that such a structure would come with certain restrictions. For the purpose of REITs these restrictions can be found in Section 856 of the IRS Tax Code,^{45 46} and can be broadly pooled into the categories of organizational requirements, distribution requirements, asset tests and income tests. If an entity fails to pass the income or assets tests, or it does not fulfill its organizational or distribution requirements, it will have its REIT status revoked, and will be required to pay taxes as a C-corporation.⁴⁷ It may also face taxes and penalties for other disqualified years,⁴⁸ and could face restrictions on reclaiming REIT status in the future.⁴⁹ Therefore, following the requirements is critical in avoiding potentially severe tax consequences. Though all the above requirements must be satisfied, the lack of ambiguity regarding organizational, asset and distribution requirements means that only brief consideration of these rules is required below. Therefore, the focus of the discussion will be the income requirements of REITs under the IRC, the area of the code which will have the biggest impact on whether solar entities are able to qualify for REIT status.

The first hurdle a REIT must pass is a list of several organizational requirements. Among these are rules regarding when an entity must make its election to claim REIT status.

⁴⁴ *Brandon* at 120.

⁴⁵ I.R.C. § 856

⁴⁶ For purposes of the code, REIT means ‘a corporation, trust, or association-

- (1) which is managed by one or more trustees or directors;
- (2) the beneficial ownership of which is evidenced by transferable shares, or by transferable certificates of beneficial interest;
- (3) which (but for the provisions of this part) would be taxable as a domestic corporation;
- (4) which is neither
 - (A) a financial institution referred to in section 582 (c)(2), nor
 - (B) an insurance company to which subchapter L applies;
- (5) the beneficial ownership of which is held by 100 or more persons;
- (6) subject to the provisions of subsection (k), which is not closely held (as determined under subsection (h)); and
- (7) which meets the requirements of subsection (c)

⁴⁷ *Brandon* at 121.

⁴⁸ *Id.* at 122.

⁴⁹ *Id.* at 121.

Additionally, REITs must have trustees or directors, transferable shares, ownership by 100 or more persons and not be closely held. There are also restrictions against insurance companies and other financial institutions claiming REIT status. None of these requirements should be difficult for an entity considering REIT status to meet, particularly if that entity is already public. Additionally, the rules are slightly relaxed around the time the REIT is formed, alleviating any concerns about possible rule-breaking.⁵⁰

In addition to organizational requirements, REITs have distribution requirements. These mandate the dividends which must be paid to shareholders on an annual basis. REITs typically compute taxable income like other corporations, then take a dividends paid deduction to significantly reduce or avoid corporate-level income tax.⁵¹ REITs are currently required to distribute 90% of taxable income, as calculated before the dividend deduction, on an annual basis. The taxable income calculation is similar to that for other corporations with a few slight differences.^{52 53}

REITs also face tests. The first of these, the asset test, mandates that at least 75% of a REIT's total assets be represented by real estate assets, cash instruments, and government securities at the close of each quarter of a taxable year.⁵⁴ Directors or trustees have a good faith requirement to determine fair value of items, and must determine which items qualify based on generally accepted accounting principles.⁵⁵

The second test a REIT must face is the income test. Among other things, Subsection (c) mandates that REITs must derive at least 75% of their gross income from rents or interest from mortgages. To aid in the understanding of what this key test entails, legislators have provided a lengthy definition of the term which includes what amounts may be included.⁵⁶ The list of included amounts includes (A) rents from interests in real property, (B) charges for services customarily furnished or rendered in connection with the rental of real property, whether or not

⁵⁰ *Id.* at 89.

⁵¹ *Id.* at 108.

⁵² *Id.*

⁵³ Notably, this threshold was changed from 95% with the REIT Modernization Act of 1999.

⁵⁴ *Id.* at 105.

⁵⁵ *Id.* at 105.

⁵⁶ I.R.C. § 856 (d).

such charges are separately stated, and (C) rent attributable to personal property which is leased under, or in connection with, a lease of real property, but only if the rent attributable to such personal property for the taxable year does not exceed 15 percent of the total rent for the taxable year attributable to both the real and personal property leased under, or in connection with, such lease.

As noted above, the other requirements should not prove to be very difficult for a REIT to meet so long as it satisfies the various organizational requirements, distributes 90% of its income to shareholders, and most of its assets are in real estate. The income test, however, provides some challenges in interpretation and application for a potential S-REIT structure. The limitations and possibilities of the income test are explored further below.

6. A Proposed Solar Development Framework for Tomorrow: The S-REIT

The commercial real estate sector has experienced strong growth and efficiencies due to the structure provided by the REIT regime. Whether or not the solar industry could benefit from a similar structure depends, at least in part, on whether the appetites of investors and the attitudes of politicians would allow the idea to thrive. This section is dedicated to proposing a framework which could prove successful.

Although the REIT structure, with its ability to attract a broad base of investors, could be a very attractive tool for solar development, it is not clear that solar developments could, at this point, qualify for REIT status. There are some aspects of the REIT tax structure which would present little to no barrier for a solar developer. For example, the organizational and distributive requirements of REITs could effectively be satisfied with very little planning. Indeed, many solar developers likely satisfy many of the requirements already, such as having directors and transferable shares, *inter alia*. Additionally, it is not difficult to envision a solar developer satisfying the asset test as property is typically a significant category on many developers' balance sheets. However, because of the novel approach of a solar development utilizing a REIT tax structure, whether or not an S-REIT could satisfy the income test as it is currently configured is less clear, and could be the largest hurdle to the S-REIT structure.

As noted in discussion of the REIT structure, an entity must earn 75% of its income from rents. There is also a provision that part of this, 15% of total income, may come from personal

property related to the real property. Since the income gained by solar developments is in the form of payments based on a power purchase agreement linked to energy produced by solar panels, which could possibly be considered personal property, it is unclear whether all the income from a PPA could qualify as rents from real property.^{57 58}

I.R.C. 856 is silent in regard to solar development. Additionally, the IRS has not made any published rulings on whether income from a PPA would qualify as rent.⁵⁹ However, it is possible to find some support for the proposition that PPA income could qualify as rent from real property. As noted above, it might appear that solar panels are personal property. This would be problematic as rents gained from personal income can only contribute 15% to gross income. However, this personal property rule typically pertains to moveable property used in connection with broader business activities. For example, one retail mall was able to claim rents from baby strollers under this clause.⁶⁰ Immoveable solar panels, which serve the purpose of income generation, and not just add-ons to broader corporate activities, would not seem to fit into this category. A more appropriate comparison might be to the assets that railroads use to generate income, such as tracks and bridges. Therefore, a broad reading of ‘interests in real property’ that includes income gained from solar panels would likely be appropriate.

However, despite these possible avenues it would not be appropriate or financially prudent for a solar developer to move forward on claiming REIT status without determining first whether this broad definition of interests in real property was shared by tax authorities. Because of the lack of statutory clarity on the topic and with no past rulings on point, it would be therefore be necessary for interested parties to gain a revenue ruling on whether income from PPAs would qualify as pure rents from real property. There would be two possible avenues to

⁵⁷ I.R.C. § 856 (c), (3), (A).

⁵⁸ There are other core activities in which a REIT may partake to reach this 75% threshold; however they involve mostly asset sales and tax refunds and are outside the scope of this paper. In addition to the 75% threshold there are other income tests. Ultimately, a REIT must derive 75% of its income from core activities, 95% must be derived from these core activities plus dividends and interest and 100% percent must be gained from the foregoing sources with up to 5% from unrelated activities.

⁵⁹ In a private letter ruling dated March 13, 2007, the IRS held that income gained from a solar array would indeed qualify as revenue for § 856 purposes using the logic found in this paper. However, the letter critically applied ‘only to the taxpayer requesting it’ and provided that the letter was not to be cited or used as precedent. A public document would be needed in order to provide certainty that the S-REIT structure could be utilized by a solar developer. *See* I.R.S. Priv. Ltr. Rul. 147229-06 Mar. 13, 2007).

⁶⁰ *Brandon* at 99, *citing* I.R.S. Priv. Ltr. Rul. 961309.

request the Secretary to issue a favorable revenue ruling. One would be for a Congressional Committee to request one. This would be the more effective route, as the tool of political pressure could be used to ensure that the issue received prompt attention. However, the support of a Congressional Committee may be difficult to gain, or at least may not be as prompt as solar developers would want. A second route would be for solar developers and or industry groups to apply for a revenue ruling. Though this could be done much more rapidly, it is also true that such a request would carry less political weight than one issued by a Committee.

Alternatively, a valid claim could be made that solar development should be afforded safe harbor status under the tax code, similar to the benefits given to healthcare REITs and REITs in the hotel business. This makes intuitive sense when one considers the functions of a traditional REIT as opposed to these newer forms. For example, an office REIT gains income from renting space to corporations and individuals. A warehouse REIT rents out space to companies which require large areas to hold or transfer goods. An apartment REIT makes most of its income from tenants. Each of these is a clear example of a company earning rental income from real property.

However, hotels and healthcare facilities have obvious differences. Their business models necessarily entail that much of their income is derived from sources other than rent. For example, patients at hospitals are not necessarily paying rent for their rooms; indeed most could undoubtedly find much better places to spend the night. What they are paying for is the services and care provided by the hospital staff. Similarly hotels have high staff to customer ratios and often amenities such as gyms, internet service, breakfasts and conference space which are included in the cost of a room. Additionally, larger hotels with conference space often earn significant income from event hosting. It is not clear that much of the income gained by healthcare and healthcare entities would otherwise qualify as rents from real property. Therefore, each of these entities are granted special status in IRC 856. It seems that a solar development, with similar problems meeting a strict rent from real property requirement otherwise could also be a candidate for safe harbor status. However, such safe harbor status would need to be granted legislatively, and would not therefore be the best avenue for immediate impact. This safe harbor solution should only be sought in the event that a favorable revenue ruling could not be gained.

Based on the current lack of clarity regarding a potential S-REIT, a solar developer would require assurances that its development would be eligible for tax exempt status. Two different paths, one administrative, and one legislative seem to be open. The easiest and most

efficient would be a revenue ruling declaring that the income gained from a power purchase agreement qualifies as rents from real property. This would come from the IRS and would be an administrative solution under the broad power given to the Secretary in defining what qualifies as rental income. Though a favorable revenue ruling seems likely and would be the easiest and quickest way for a solar developer to gain REIT status, REIT recognition could also be obtained via a slight legislative change to the code. A legislative solution where solar developments would be given treatment comparable to other niche REITs such as healthcare and hotel REITs would be a policy-based recognition of the fact that a unique revenue structure would require a unique solution under the tax code. However, the legislative solution is not likely necessary, and should only be recommended as an alternative to a failed revenue ruling.⁶¹

Despite benefits, there could be some hurdles to this structure. For example, it is not likely that coal industry representatives would be the first in line to voice support for the S-REIT idea. Additionally, there could be some resistance to the possible tax changes recommended below. However, despite this, there is no reason to believe that utilizing the REIT tax structure to incentivize solar development would lack strong levels of investor and political support.⁶² This is truly an issue that could bring together both sides of the aisle as the goals of such a plan would satisfy everyone from environmentalists to capitalists to investor rights advocates. This breadth and depth of support would ensure that little resistance to such a plan would arise among these key constituencies and their representatives.

Though hurdles exist, the main ingredient in a successful plan is often timing. Fortunately, timing seems to favor an investment vehicle that could both benefit the investor

⁶¹ Though the actual steps necessary to create a REIT are probably deserving of more attention than a footnote, for purposes of this paper it is enough to note that the formation of an S-REIT would likely be structured similarly to an UPREIT. The UPREIT structure was developed as a tool to ‘avoid the federal income tax that would result upon recognition of gain on the transfer of real estate already owned by an individual or by a partnership to a REIT.’ See, William B. King, *REITs as Legal Entities*, in, REAL ESTATE INVESTMENT TRUSTS, STRUCTURE, ANALYSIS, AND STRATEGY, 31, 53 (Richard T. Garrigan and John F.C. Parsons, eds., McGraw Hill 1998). King goes on to explain that ‘a transfer of property directly to a REIT... would result in recognition of gain to the individual owner or partner of the transferring partnership; however a contribution by that individual owner or by an existing partnership owning the property to another partnership in exchange for a continuing interest in the transferee partnership, can be effected without recognition of gain. *Id.* In other words, so long as a solar developer retains an interest in an S-REIT that it forms, it can avoid a taxable sale of property. The suggestion that the UPREIT would be the model for solar developers to follow implies that most, if not all firms taking advantage of the structure, at least initially, would already be going concerns with developments established or underway.

class and help to stimulate green development. Many factors play into this. For example, both the legislative and executive branches are currently in the hands of Democrats. Just as Republican majorities wouldn't preclude extending the REIT regime to solar development, Democratic majorities do not ensure it. However, political realities suggest that a Democratic president coupled with Democratic majorities in both houses of Congress might provide fertile ground for innovative environmental solutions. Evidence of this can be found in the American Reinvestment and Recovery Act, which provides considerable benefits to the renewable energy industry. Further evidence can be found in the proliferation of renewable portfolio standards, particularly on the local level, which indicate a desire to shift the energy mix toward renewable sources.⁶³

7. Creating an Immediate Impact – Using the Tax Structure to Stimulate Development

Assuming *arguendo*, that an S-REIT tax regime becomes a legal reality, whether by administrative declaration or legislative changes to the tax code, it is not clear that this would be enough to ensure optimal short-term development of solar facilities. It is true that such a structure could entice some first-movers to action. Additionally many in the industry believe that solar could become competitive on a large scale anywhere from 5 to 15 years from now.⁶⁴ Having the S-REIT structure in place ahead of such technological advances could certainly prove helpful. However, In order for the S-REIT regime to have its highest present impact, it will be necessary for changes to be made to the incentive structure for solar developers.

Though under an S-REIT plan, investors would provide some capital which could be used to finance projects, the costs of solar energy without subsidy are still currently too high to be competitive with cheaper forms, so long as fossil fuel sources continue to receive federal and state subsidies. The current solar regime, which includes investment tax credits, evens the playing field somewhat and allows developers to start projects with a lower risk level than would otherwise exist. But ITCs and rebates have proven to be inadequate tools to fully stimulate solar

⁶³ More information on federal renewable portfolio standards is available at http://www.epa.gov/chp/state-policy/renewable_fs.html.

⁶⁴ Interviews with Jigar Shah, CEO, The Carbon War Room, in Washington, DC (3/23/2010) and Ken Zweibel, Director, The GW Solar Institute, In Washington, DC (4/14/2010).

development. Further, there are the negative incentives noted above for developers to game the system in certain circumstances, focusing on smaller, more expensive installations to the detriment of both energy production and progress. Finally, it is not entirely clear that the current investment tax credit structure would be allowed to co-exist with an S-REIT model.⁶⁵

Because stimulus in addition to investor capital will be required, and because the current ITC regime has proven to be an ineffective and inefficient means to provide this stimulus, a new structure will be required to ensure that the S-REIT can meet its full potential. Although it is possible that this stimulus could come in one of many forms depending on what legislators determine the best route may be, this paper proposes the enactment of a refundable production tax credit (PTC) for large-scale solar projects, available only to developers organized under the S-REIT structure. Though PTCs have been explored in the past, the lack of early stage incentives lead to ineffective results. However, the up-front capital provided by REIT investors could go some way toward facilitating this later stage tax benefit.

In order to be most effective while remaining palatable for legislators and their constituents, a PTC would need to be well-structured. This paper proposes the following:

1. A credit which could be passed through to investors, and would replace the ITC and any other existing cash grant plans.⁶⁶ This would both increase investment in the space and ensure that this investment would be used efficiently, incentivizing production rather than high-cost development which is susceptible to system-gaming. Notably, the publicly traded REIT would be a particularly good vehicle for a PTC due to the high levels of disclosure that would be required per Securities and Exchange Commission regulations.

⁶⁵ For example, it seems that the current law would not allow REITs to take full advantage of tax credits. According to tax lawyer David Jacobson, tax credits would only apply to the 5% of funds that are not annually distributed, meaning that the current tax law structure for REITs does not provide the financial incentives necessary to ‘marry’ REITs with potential tax incentives. Telephone Interview with David Jacobson, Partner, Troutman Sanders, LLP (Apr. 23, 2010). However, H.R. 4599 , The Renewable Energy Expansion Act of 2010, introduced by Congressman Blumenauer (a member of the House Ways and Means Committee), appears to address the problem above on page 7 (line 4-6) of the bill. According to Rep. Blumenauer’s floor statement in early February 2010, his “legislation adopts changes that will increase the ability for real estate investment trusts to access investment.”

⁶⁶ The initial REIT concept to spur solar energy investment was recommended by Ken Zweibel, Director of The George Washington University Solar Institute. The overall recommendations involved a collaboration of the author with Ken Zweibel, Debra Jacobson, Co-Director of the Institute, and Joseph Cordes, Associate Director of The George Washington University’s Trachtenberg School of Public Policy and Public Administration.

2. The proposed PTC incentive would be phased out over a specified time period and at a certain rate. Based on many projections, a 10-15 year phase out would be appropriate as this would track the projected cost reduction trends for solar technology.⁶⁷
3. The REIT structure would remain in place even after the PTC is phased out. The structure itself will remain attractive at the point that solar production is competitive with fossil fuel-produced energy. This will provide certainty for developers and investors and ensuring that development continues beyond the initial PTC phase.
4. Though not a part of the incentive structure, an additional tax issue is the treatment of depreciation for S-REITs. This paper proposes that S-REIT investors should be allowed to take advantage of depreciation in the same way that commercial real estate investors can. This would mean a reduction in taxable income on the investor's 1099 Div commensurate with the depreciation claimed by the S-REIT. This additional benefit would allow developers to recognize the deterioration of their solar arrays to the benefit of investors.^{68 69}
5. Finally, it is worthwhile to note that this proposal would have no impact on the current 30% tax incentive for individuals installing residential solar arrays. This would leave the current structure in place and would allow local generation free to continue growth at its current rate.

⁶⁷ For some projections on how a PTC could work to improve the competitiveness of PV, *see* Ken Zweibel, *The Arithmetic of Solar Trusts*, available at http://thesolarreview.org/2010/04/21/the-arithmetic-of-solar-royalty-trusts/?utm_source=feedburner&utm_medium=email&utm_campaign=Feed%3A+TheSolarReview+%28The+Solar+Review%29.

⁶⁸ For examples, see Year End Tax Reporting Data (1099 Div), 2009 Tax Year, available at <http://www.reit.com/IndustryDataPerformance/YearEndTaxReportingData/tabid/88/Default.aspx>.

⁶⁹ One possible legislative vehicle for such a provision would be the legislation concerning energy tax incentives and the green job economy that is currently under development by the House Ways and Means Committee.

8. Implications and Potential Benefits of the S-REIT Model

As noted, an S-REIT regime would provide numerous investment benefits to participants including steady returns and as a portfolio diversification tool. It would also provide an outlet for those interested in investing using a socially-responsible strategy. There are, of course, other benefits to the structure as well. Although it would be naïve to overstate the immediate impact that the S-REIT structure could have on energy policy by itself, in the long-term and as part of a more comprehensive energy strategy, it could lead to subsidiary benefits which are worth discussion.⁷⁰

Because solar energy production does not require inputs the way that coal, natural gas or even nuclear facilities do, increasing solar energy's percentage as part of the overall energy mix would result in a decreased emphasis on fossil fuels required for energy production. This, in turn, would produce security, safety and environmental benefits. With a reduction in the demand for foreign sources of fossil fuels would potentially come a reduction in reliance upon dictators and unfriendly governments. This has obvious policy implications, and, taken to its logical end, could lead to a reduction in the necessity for foreign entanglements in the future. Additionally, unlike nuclear facilities and the constant, though debatably valid concerns regarding terror and safety, no such concerns exist with respect to solar arrays. Finally, the reductions in emissions, fuel spills in the transport process and strategies such as surface mining for coal that would come with a reduction in demand for fossil fuels make the increased use of solar energy particularly attractive from an environmental perspective.

The impact of an S-REIT structure on the environment could extend beyond some of the obvious ones noted above and into the policy realm. For example, utilities could embrace this type of solution as part of their state-mandated renewable portfolio standards (RPSs). Renewable portfolio standards are one mechanism that states are increasingly using to increase the proportion of renewable energy purchased in their jurisdiction.⁷¹ RPSs typically place

⁷⁰ Though overall energy strategy is outside the scope of this paper, some other solutions that could be considered as part of a broader plan could include increased energy efficiency, an increased dependence on wind power, and increased local generation among others.

⁷¹ *Kennedy* at 108.

requirements on utilities to supply a portion of their load with renewables.⁷² Though RPSs have been introduced into Congress on several occasions, most of the regulations now in place are mandates put into place by state legislators and utility regulators.⁷³ If a cheap source of renewables were available due to the S-REIT structure, it would help utilities meet these standards.

In addition to investment, safety, security and environmental benefits, the S-REIT structure could provide a prototype development model for other renewables. The closest parallel could be drawn to wind power. Wind could be a strong candidate for inclusion in the REIT structure for a few reasons. Though solar can be a very effective and steady fuel source, there are geographic limitations on where it can be most effective. And, though the electric network is being upgraded across the US, there are limits to how far electricity from any source, including solar, can be efficiently transported. Fortunately, many of the regions where solar would be least effective have great potential as production sites for wind-generated power. Allowing wind developers to take advantage of the REIT structure would allow energy supply gaps to be filled and could factor heavily into a more comprehensive plan for the future of energy production. There are additionally benefits in areas of geographic overlap. Most notably, wind could potentially be blowing 24 hours a day, while there are some fairly obvious restrictions on how many hours in a given day solar could be relied upon. Also, the same inclement weather that could render a solar array useless might generate more than enough wind to compensate for deficiencies in solar production during any given time period.

There are some reasons why wind would not thrive in a REIT regime currently. For example, the annual variability in production from wind⁷⁴ dictates that it is not eligible for the same contract structures with utilities that the more steady solar developers can put into place. Additionally the production costs of wind do not currently make it as attractive for the structure. However, if wind were included in any REIT-like structure that is implemented for solar, this could ensure that the proper framework would be in place at the point that the calculus of wind production made the REIT structure attractive. Additional practical considerations of this inclusion would possibly include broader support, both in the political and corporate spheres,

⁷² *Id.*

⁷³ *Id.* at 109.

⁷⁴ Zweibel Interview.

for the types of changes that are necessary to put the S-REIT structure in place.⁷⁵

Finally, there could be some broader global implications in the wake of an adoption of the S-REIT structure in the US. Many nations already have REIT regimes for commercial real estate.⁷⁶ Additionally, many nations are struggling with the same type of fossil fuel dependence issues that the US has. Though REIT laws vary, sometimes significantly from nation to nation, it would not be difficult for many states to modify existing REIT structures to allow for the inclusion of solar development. This could have implications for both the developed and the developing worlds. Many developed countries, such as Germany, stimulate solar development with incentives such as feed-in tariffs. A REIT structure could eventually replace this type of regime as the industry becomes more mature and requires less government assistance, producing the same benefits to investors as noted above. In the developing world, a REIT structure with the right incentives could be a tool for governments to invite foreign investment, save costs on imported fossil fuel supplies, and decrease emissions to ensure compliance with any regional or international emission standards regimes. Such a development could have interesting applications in regions such as Northern Africa and the Middle East, particularly if the investments themselves could be structured in accordance with tenets of Shariah finance

9. Conclusion

The S-REIT structure could be the solar investment vehicle of the future with minor clarifications to the tax code and with the enactment of a production-based tax credit. This would provide safety, sustainability and security benefits, and would ensure that the US remains at the forefront of the green revolution.

⁷⁵ On a tangential side-note, a little foresight could go a long way if wind were also to be included in the proposed structure, in particular regarding naming. Some proposals could include Energy REIT or RE (for renewable energy) REIT.

⁷⁶ See, List of Country Names, available at <http://www.reits.com/h/countries/>.