Third-Party Power Purchase Agreements and Solar Installations: How Non-Profits can Take Advantage of this Growing Industry

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INTRODUCTION

2015 was a great year for solar energy. During the first three quarters of the year, thirty percent of all new electric generating capacity in the U.S. came from solar.[1] Despite this record-breaking year, 2016 looks to be even more promising.[2] Congress recently passed[3] an extension of the Solar Investment Tax Credit (ITC), which allows the industry to claim a thirty percent tax credit for the installation of both commercial and residential solar for the next three years. [4] It then drops down to twenty-six percent and twenty-two percent in 2020 and 2021 respectively.[5] Furthermore, according to job numbers released by the non-profit organization, The Solar Foundation (TSF), the U.S. solar industry employs 208,859 people and added 35,052 jobs in 2015.[6] The market for solar energy is expanding and more people are looking to invest in the solar market.

A large part of the attractiveness of solar energy investment hinges on the ability to utilize the 30 percent ITC, as well as other tax mechanisms. However, these tax benefits are not

[1] Justin Baca, *New Solar System Activated Every 1.6 Minutes in Q3*, SOLAR ENERGY INDUSTRIES ASSOCIATION (Dec. 9, 2015), http://www.seia.org/blog/new-solar-system-activated-every-16-minutes-q3 ("The pace of solar energy expansion in America is catching speed, with a new solar system activated every 1.6 minutes in quarter three of 2015, up from every 2.5 minutes in 2014.").
[2] Rhone Resch, 2015: Why it's Just the Beginning of America's Solar Boom, SOLAR ENERGY INDUSTRIES ASSOCIATION (DEC. 22, 2015), http://www.seia.org/blog/2015-why-it-s-just-beginning-america-s-solar-boom ("In fact, solar will quadruple in size from just over 24 GW of total capacity to nearly 100 GW by 2020.").
[3] Consolidated Appropriation Act, Pub. L. 114-113, § 303, 129 Stat. 2242, (2015).
[4] Samantha Page, *The Surprising Winner of Congress' Budget Deal*, THINKPROGRESS.ORG, (Dec. 18, 2015, 3:21 PM) http://thinkprogress.org/climate/2015/12/18/3733768/solar-wind-tax-credits-extended/.
[5] *Id*.
[6] Jennifer Runyon, *Solar Jobs Continue to Outpace US Economy*, RENEWABLEENERGYWORLD.COM, (Jan. 12, 2016), http://www.renewableenergyworld.com/articles/2016/01/solar-jobs-continue-to-outpace-us-economy.html (showing that the U.S. solar energy has a 20 percent increase in job growth compared to the national average of 1.7 percent).

available to non-profit entities (because they are tax exempt[7]), so such an entity needs to find an alternative solution if they want to capitalize on solar energy.[8] The most popular workaround that allows non-profits to take advantage of the tax benefits normally not available to them is having the non-profit enter into what is called a third-party power purchase agreement (PPA) with a developer who would build, own, and operate the solar project.[9] State universities are one type of tax-exempt entity that are now looking to invest in solar energy.[10] This note will analyze and try to determine the best way a non-profit entity in Minnesota can invest in a solar, overcoming the financial and legal obstacles in their way. The note will use the University of Minnesota as a specific example of an institution looking to invest in solar energy.

Part I will give a background on solar power generally, and then detail why a non-profit would want to invest in solar power. It includes a discussion of the different types of solar energy, how they work, and what benefits each provide. Part II will describe the third-party PPA structure and analyze the potential legal obstacles and hurdles the non-profit may face when entering one. One major obstacle is that many states do not allow third-parties – the solar developer – to sell electricity directly to retail customers because the developer would then be considered a public utility and thus be regulated as such. This section will examine how some

[7] When this note refers to non-profits, it is assuming that they are tax-exempt under 26 U.S.C. § 501(c) (2012).
[8] Jason Coughlin et al., *A Guide to Community Solar: Utility, Private and Non-profit Project Development* NAT'L RENEWABLE ENERGY LAB (May 2012), 4 http://www.nrel.gov/docs/fy12osti/54570.pdf.
[9] Samuel Farkas, Comment, *Third-Party PPAS: Unleashing America's Solar Potential*, 28 J. LAND USE & ENVTL L. 91, 98 (2012) (explaining how PPA's traditionally work for community solar gardens).
[10] For example, Arizona State University has installed 24.1 MW of solar power since 2008 and the University of California entered a record-breaking solar deal in 2014 for 80 MW. *See ASU Solar*, ASU Solar, https://cfo.asu.edu/solar (last updated Aug. 20, 2015); *Financing & Incentives*, ASU SOLAR, https://cfo.asu.edu/solar-financing (last updated Aug. 5, 2014); *University of California System Makes Largest Solar Energy Purchase in U.S.*, UNIVERSITY HERALD (Sept. 9, 2014, 3:21 AM), http://www.universityherald.com/articles/11295/20140909/university-california-system-largest-solar-energy-purchase.htm.

states have dealt with this issue. Finally, Part III will discuss the advantages and tax implications the non-profit will face by entering the PPA.

I. BACKGROUND

A. WHAT IS SOLAR ENERGY?

There are three basic types of solar energy – photovoltaic (PV), concentrated solar power (CSP), and solar thermal panels.[11] PV is the method that one thinks of when imagining traditional solar panels and works by allowing photons to knock electrons free from atoms, which generates the flow of electricity.[12] The solar panels consist of many smaller units called photovoltaic cells which are linked up to make the panel.[13] The PV cells are comprised of two semi-conductor layers; one layer contains the positive charge and the other contains the negative one.[14] Phosphorous is used to give the top layer the negative charge and the bottom layer is given boron to obtain its positive charge.[15] This produces an electric field at the intersection between the two layers, which when hit by a photon of sunlight will knock an electron free.[16] The electric field pushes the electron out and then other components turn the electrons into useable power

[11] Michael Dhar, *How Do Solar Panels Work,* LIVESCIENCE, (Dec. 16, 2013, 4:40 PM) http://www.livescience.com/41995-how-do-solar-panels-work.html (giving a basic explanation of how photovoltaic solar energy works in layman's terms). *See also*, *Photovoltaic (Solar Electric)*, SOLAR ENERGY INDUSTRIES ASSOCIATION, http://www.seia.org/policy/solar-technology/photovoltaic-solar-electric (last visited Jan. 13, 2016) (explaining briefly the history of photovoltaics and how they worked in the past and also how modern PV works). For a more technical and in depth explanation along with illustrations, see Gil Knier, *How do Photovoltaics Work?*, NASA SCIENCE (2002), http://science.nasa.gov/science-news/science-at-nasa/2002/solarcells/.
[12] Dhar, *supra* note 11.
[13] *Id.*
[14] *How Photovoltaic Cells Work*, SOLARENERGY.NET, http://solarenergy.net/solar-power-resources/how-photovoltaic-cells-work/ (last visited Jan. 13, 2016).
[15] Dhar, *supra* note 11.
[16] *Id.*

and it is collected by metal conductive plates and transferred into wires.[17] PV panels do not use the sun's heat to generate power; instead they use sunlight to do so.[18]

Concentrated solar power is the other major player in the solar energy market.[19] It is different than photovoltaics in that is uses the sun's heat rather than light to generate power.[20] CSP plants use mirrors to focus the sun's energy and convert it into high-temperature heat to create steam which drives a turbine to generate electricity.[21] There are four main classes of CSP systems: parabolic troughs, concentrating linear reflector systems, dish Stirling systems and Concentrated Power Towers.[22] Each of the four types have different attributes, such as working temperature levels, system boundaries and efficiency levels, and operating costs, but all work by heating a liquid (usually oil or molten salts) to generate steam to drive the turbine.[23]

Solar thermal panels are similar to CSP, but on a smaller scale and used mostly for heating hot water.[24] It is a popular system in China, but has not caught on in the United States, partly because it requires the home to have a storage tank on the roof, and Americans typically

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[17] *Id.*
[18] Dino Green, *Solar Energy Facts – Concentrated Solar Power (CSP) vs. Photovoltaic Panels (PV)*, RENEWABLE GREEN ENERGY POWER, (Jan. 13, 2012) http://www.renewablegreenenergypower.com/solar-energy-facts-concentrated-solar-power-csp-vs-photovoltaic-pv-panels/.
[19] *Id.*
[20] *Id.*
[21] *Concentrating Solar Power (CSP) Technologies*, SOLAR ENERGY DEVELOPMENT PROGRAMMATIC EIS INFORMATION CENTER, http://solareis.anl.gov/guide/solar/csp/ (last visited Jan. 13, 2016) ("[H]eat is then channeled through a conventional generator. The plants consist of two parts: one that collects solar energy and converts it to heat, and another that converts the heat energy to electricity.").
[22] Dino Green, *Solar Energy Systems: Concentrated Solar Power (CSP)*, RENEWABLE GREEN ENERGY POWER (Jan. 4, 2012), http://www.renewablegreenenergypower.com/concentrated-solar-power/ (explaining briefly how each of the four CSP types operate).
[23] *Id.*
[24] Umair Irfan & Kandy Wong, *Renewable Energy: Solar Water Heaters Bloom on China's Rooftops but not in the U.S.*, E & E PUBLISHING, LLC (July 2, 2013), http://www.eenews.net/stories/1059983772.

have water tanks in their basements or garages.[25] However, that is not to say that these systems are nonexistent in the U.S.[26]

In 2009 when President Barack Obama directed funds toward clean energy, CSP was favored by most developers over the rival PV technology.[27] However, over the past several years this has changed and now PV is leading the industry because of several advantages it has over CSP. CSP is only viable in large, ground mounted solar arrays, while PV can be used in both urban and rural areas.[28] PV systems also can now be built at a lower cost and in a shorter time than their CSP counterparts, and these costs have continued to drop.[29] An influx of PV panels (mostly from China), has pushed their prices down and PV has now become the favored technology, with planned CSP plants being converted to PV or cancelled outright.[30] The average cost of a completed PV system has been reduced by thirty-three percent since the beginning of 2011.[31] The one main advantage that CSP has over PV is that it can produce excess energy during the day that it can then store for usage overnight or on cloudy days.[32] However, this storage can be expensive and, therefore, not many concentrating power projects have it.[33] Since PV is the technology that is used most often in solar installations, its dropping costs and increased efficiency is a boon to the attractiveness of solar energy for non-profit institutions.

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[25] *Id.*
[26] *See e.g. Solstis Solar Powered Furnace*, RURAL RENEWABLE ENERGY ALLIANCE, http://www.rreal.org/#!solar-powered-furnace/c8xa (last visited Mar. 6, 2016); *Welcome: Save Money with Clean, Sustainable, Solar Energy*, SOLARSKIES, http://www.solarskies.com/ (last visited Mar. 6, 2016).
[27] Ken Wells & Mark Chediak, *Solar Energy Shakeout: Concentrating vs. Photovoltaic*, BLOOMBERG BUSINESS (Nov. 14, 2013), http://www.bloomberg.com/bw/articles/2013-11-14/2014-outlook-solar-energy-shakeout-concentrating-vs-dot-photovoltaic.
[28] Samantha Booth, Comment, *Here Comes the Sun: How Securities Regulations Cast a Shadow on the Growth of Community Solar in the United States*, 61 UCLA L. REV. 760, 773 (2014).
[29] Green, *supra* note 18.
[30] Wells & Chediak, *supra* note 27 (stating in a November 2013 report that 84 percent of "all industrial-scale solar projects under development in the U.S. use PV" and only about 16 percent use CSP).
[31] Photovoltaic (Solar Electric), *supra* note 11.
[32] Green, *supra* note 18. *See also*, Wells & Chediak, *supra* note 27.
[33] Wells & Chediak, *supra* note 27 (stating that the CSP project discussed in the article was built without storage to lower costs).

B. WHAT'S SO GREAT ABOUT SOLAR?

In Minnesota in particular, solar energy has never been more popular. For example, the state passed a law[34] in 2013, requiring Xcel Energy, which accounts for about half of the state's retail electricity sales, to submit a plan to operate a community solar garden program.[35] A community solar garden is a solar financing entity that allows anyone to invest in solar energy.[36] A common frustration of traditional solar markets is that many people are left out because they do not have the resources to pay the high up-front costs to access solar energy.[37] Community solar gardens allow people who would otherwise not be able to invest in solar power to jointly lease or own an offsite solar installation.[38] Customers buy into a solar project and receive a credit on their electric bill in return for doing so.[39] The gardens may be owned by a utility or other entity, and all energy generated by the facility is sold to the utility/entity "at the value of solar rate for distribution to subscribers."[40] In a state not known for its sunshine (only twenty-two – twenty-seven percent of residential rooftops are suitable for an on-site PV system), community solar gardens provide a way for many to take advantage of solar energy.[41]

[34] MINN. STAT. 216b.164 ("The public utility subject to section 116C.779 shall file by September 30, 2013, a plan with the commission to operate a community solar garden program which shall begin operations within 90 days after commission approval of the plan.").
[35] Bob Eleff, *2013 Solar Energy Legislation in Minnesota*, HOUSE RESEARCH (Aug. 2013), http://www.house.leg.state.mn.us/hrd/pubs/ss/sssolarleg.pdf (providing a brief overview of the 2013 solar legislation bill that contained several provisions "designed to promote the growth of solar energy").
[36] Kennedy Maize, *Solar Gardens: A Fast-Growing Approach to Photovoltaic Power*, POWER, (May 1, 2015), http://www.powermag.com/solar-gardens-a-fast-growing-approach-to-photovoltaic-power/.
[37] *Id.* A traditional problem by the conventional approach of putting up solar panels on a rooftop is that is disqualifies many people including renters, condo owners, and buildings in locations that cannot take advantage of the sun.
[38] Booth, *supra* note 28, at 764.
[39] Kirsti Marohn, *Plans Booming for Community Solar Gardens*, SCTIMES (Oct. 24, 2015, 11:00 AM), http://www.sctimes.com/story/news/local/2015/10/24/plans-booming-community-solar-gardens/73919774/.
[40] Minn. Stat. 216B.1641(d); Eleff, *supra* note 35.
[41] Herman K. Trabish, *Why Community Solar is Exploding in Minnesota*, D UTILITY DIVE (Feb. 5, 2015), http://www.utilitydive.com/news/why-community-solar-is-exploding-in-minnesota/360241/.

Xcel energy must meet a state mandate to get 1.5 percent[42] of its energy production from solar by 2020, but they expect to surpass that amount this year and anticipate getting ten percent from solar by 2030.[43] $31 million was invested in solar installations in Minnesota in 2015 alone, which was a 106% increase from 2014.[44] Using the community solar garden program as an example, when Xcel first began accepting applications to the program, developers submitted more than 400 megawatts (MW) the first day, and over 1000 MW[45] after just a few months.[46] Xcel believes the solar garden program will approve of projects adding up to more than 250 mW[47] by the end of 2016 and Green Tech Media (a market analysis and advisory firm for the electric industry) gave a conservative estimate of eighty-one MW of community solar will actually come online in 2016 in Minnesota.[48] In addition, now that the solar tax credit has been extended until 2022, financing future projects will be easier because it takes ten months to a year to build the gardens, and thus the previous deadline of 2017 for the ITC was making some developers worry.[49]

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[42] Minn. Stat. 216B.1691(2)(f) "[E]ach public utility shall generate or procure sufficient electricity generated by solar energy to serve its retail electricity customers in Minnesota so that by the end of 2020, at least 1.5 percent of the utility's total retail electric sales to retail customers in Minnesota is generated by solar energy."
[43] Mary Divine, *Scandia Officials Embrace Solar Garden Project*, TWINCITIES.COM (Jan 12, 2016, 12:01 AM), http://www.twincities.com/localnews/ci_29374813/scandia-officials-embrace-solar-garden-project.
[44] *Minnesota Solar*, SOLAR ENERGY INDUSTRIES ASSOCIATION, http://www.seia.org/state-solar-policy/minnesota-solar (last visited Apr. 10, 2016).
[45] The national average of residences that can be powered by a megawatt is 164. *What's in a Megawatt*, SOLAR ENERGY INDUSTRIES ASSOCIATION, http://finance-commerce.com/2015/11/some-businesses-embrace-community-solar-gardens/ (last accessed Feb. 28, 2016).
[46] Frank Jossi, *Sustainable: Some Businesses Embrace Community Solar Gardens*, FINANCE & COMMERCE (Nov. 3, 2015) http://finance-commerce.com/2015/11/some-businesses-embrace-community-solar-gardens/ (explaining advantages of community solar garden subscriptions).
[47] Frank Jossi, *A Year after Launch, Community Solar Picking up Pace in Minnesota*, MIDWEST ENERGY NEWS (Dec. 11, 2015), http://midwestenergynews.com/2015/12/11/a-year-after-launch-community-solar-picking-up-pace-in-minnesota/.
[48] *See* Cory Honeyman, *Community Solar: Minnesota PUC Approves 5MW System Size Cap for Solar Gardens*, GREEN TECH MEDIA (June 26, 2015), http://www.greentechmedia.com/articles/read/Minnesotas-Community-Solar-PUC-Approves-5-MW-System-Size-Cap-for-Solar-Ga.
[49] Frank Jossi, *Tax Credit Extension Removes 'Drop Dead Date' for Community Solar*, MIDWEST ENERGY NEWS (Dec. 23, 2015), http://midwestenergynews.com/2015/12/23/tax-credit-extension-removes-drop-dead-date-for-community-solar/.

C. WHY SHOULD A NON-PROFIT INVEST IN SOLAR?

There are many benefits to investing in a solar PV system as a non-profit. The first, and perhaps most important is financial. Recently, the University of California (UC) signed a record breaking solar deal that will provide solar energy to the school for twenty-five years.[50] The deal is supposed to provide enough solar power to offset sixty percent of the electricity used at five of the state's ten campuses, and will even deliver power to some university medical centers.[51] Other universities have also began to invest in solar energy. Arizona State has entered several PPA's[52] with third-parties that have resulted in a generating capacity of 24.1 MW, 22.5 MW of which comes from PV installations.[53] This avoids 23,267 metric tons of carbon dioxide emissions per year.[54] Additionally, it's not just the warm states that have schools investing in solar. Rutgers University has financed a solar power canopy that will generate eight MW of power (eleven percent of the electricity for its Livingston campus) and save about $225,000 in annual electric costs,[55] while Cornell University has invested in a two MW solar farm.[56] If the University of Minnesota were to invest in solar energy with a PPA, the savings could be ten to twenty percent off what is paid on the electric bill.[57]

Furthermore, such a deal would also help the school meet its climate and sustainability goals. In 2008, the University of Minnesota, along with other higher education institutions,

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[50] *University of California System Makes Largest Solar Energy Purchase in U.S.*, *supra* note 10.
[51] *University of California Signs Major Solar Deal*, PHYS.ORG (Sept. 9, 2014), http://phys.org/news/2014-09-university-california-major-solar.html.
[52] Although not specifically referred to as a power purchase agreement, Arizona State's financing page describes the third-party agreements that if not PPA's, are very similar. *Financing & Incentives*, *supra* note 10.
[53] *ASU Solar*, *supra* note 10.
[54] *Solar Initiatives*, ASU, http://www.asu.edu/tour/sustainability/solar.html (last visited Apr. 9, 2016).
[55] *Rutgers Board of Governors Approves 32-Acre Solar Canopy Project*, RUTGERS (Apr. 5, 2011), http://news.rutgers.edu/news-releases/2011/04/rutgers-board-of-gov-20110405#.Vwlgro-cHD4.
[56] D.W. Nutt, *Cornell Solar Farm to Produce Power in September*, ITHACA JOURNAL (July 30, 2014, 5:45 PM), http://www.ithacajournal.com/story/news/local/2014/07/29/cornell-solar-farm/13325215/.
[57] E-mail from Laura Burrington, Graduate Research Assistant for the Energy Transition Lab at the University of Minnesota, to author (Apr. 1, 2016) (on file with author).

signed the American College and University Presidents' Climate Commitment (ACUPCC) and more recently, the school signed the White House American Campuses Act on Climate Pledge.[58] The University has a goal of reducing carbon emissions by fifty percent by the end of 2020 and wants to make all of its campuses carbon neutral by 2050.[59] The University emits 640,000 tons of CO2, and 51.2% of this comes just from purchased electricity.[60] Solar energy is Minnesota's largest energy source,[61] and investing in a PV system can help the University achieve its climate goals as well as save money.

D. ALL THIS SOUNDS GREAT, WHAT'S THE PROBLEM?

Since a non-profit entity is tax exempt and thus could not employ the thirty percent ITC, it would need to look to alternative measures if they want to invest in solar energy. In order for a non-profit to safely invest in solar, it should partner with a business that has a tax appetite.[62] To accomplish this, they should execute what is called a power purchase agreement (PPA). However, there is some uncertainty in the laws of Minnesota about whether or not entering such an agreement would be allowed. There is a chance that they would be considered a public utility and need to be regulated as such. Then, if allowed to enter a PPA, the question becomes how to best limit the financial risks of building a solar project.

II. THIRD-PARTY OWNERSHIP STRUCTURE

[58] *Id.*; *U of M Experts Available to Discuss Upcoming Climate Change Negotiations in Paris*, UNIVERSITY OF MINNESOTA DISCOVER (Nov. 23, 2015), http://discover.umn.edu/news/environment/u-m-experts-available-discuss-upcoming-climate-change-negotiations-paris.
[59] *U of M Experts Available to Discuss Upcoming Climate Change Negotiations in Paris*, *supra* note 58.
[60] Email from Laura Burrington, *supra* note 57.
[61] *Minnesota Solar Suitability Analysis*, UNIVERSITY OF MINNESOTA DRIVEN TO DISCOVER, http://solar.maps.umn.edu/ (last visited Apr. 5, 2016).
[62] Coughlin et al., *supra* note 8 ("Individuals or businesses that can use tax credits to deduce the amount they owe in taxes are said to have a 'tax appetite.' For example, public and nonprofit organizations that are tax exempt, and therefore, do not have a tax appetite. In addition, taxpaying entities might be eligible to use tax-based incentives, but have insufficient tax appetite to make full use of them.").

A PPA would allow a third-party to take advantage of the Federal Solar Tax Credit, as well as other tax incentives. The third-party developer would build the solar project on the customer's property, usually with an option to have the project bought out after a number of years.[63] Under the PPA, the developer will sell the electricity to the host institution. However, as previously noted, some states will not allow this because then they would need to be regulated as public utilities. In Minnesota, the law requires strict regulation of public utilities,[64] but also states "[n]o person shall be deemed to be a public utility if it produces or furnishes service to less than 25 persons."[65] This creates some doubt as to third-party agreements, but they likely would not be considered public utilities in light of state judicial history and decisions made in the courts of other states.

A. POWER PURCHASE AGREEMENTS: HOW DO THEY WORK?

In order for a tax exempt entity to invest in a solar installation with as little risk as possible, they should enter into a PPA with a third-party. Financing is seen as the largest barrier preventing the development of solar gardens and a PPA can help reduce the cost of a solar project.[66] Under a third-party PPA, the customer interested in hosting the solar garden signs on with a project developer who then "builds, owns, and operates" the garden on the customer's land (also called the host site).[67] The developer then sells the electricity back to the host through the PPA, who has agreed to buy the electricity generated by the garden for a specified term.[68] The length of the PPA can be anywhere from ten to twenty-five years, although twenty years is

[63] Katherine Kollins et al., *Solar PV Project Financing: Regulatory and Legislative Challenges for Third-Party PPA System Owners*, NATIONAL RENEWABLE ENERGY LABORATORY 5 (2010), http://www.nrel.gov/docs/fy10sti/46723.pdf.
[64] *See* MINN. STAT. § 216B.01 (2015).
[65] MINN. STAT. § 216b.02 subdiv. 4 (2015).
[66] Farkas, *supra* note 9, at 98.
[67] Kollins et al., *supra* note, 63 at 3.
[68] *Id.*

the most common.[69] Many of these agreements will also contain an early buyout clause that is exercisable and certain points in the life of the contract, although never before the sixth year (because it takes six years for most of the tax benefits to be realized).[70] The PPA contract will determine what kind of revenues and incentives the developer receives in return for paying for the initial costs of the project.[71] Because of this, customers that want to avoid paying for the start-up costs will usually need to pay more for electricity.[72] The ability to transfer the up-front cost of building the project to an entity that is better suited to facilitate the cost of the project through tax incentives has been critical to the growth of the third-party PPA model.[73]

At the end of the of the PPA's term, the host can extend the agreement, have the developer remove the system (unlikely), or buy the system from the developer (called a "flip").[74] Under the flip scenario, once the developer has fully monetized its tax benefits and agreed upon rate of return, the allocation of benefits and majority ownership would flip to the host, who would then have the option to buy out the developer's interest at fair market value.[75] As noted previously, there can be purchase options in the PPA starting in year six of the operation. The purchase price can also have been included in the PPA, although must be at least for fair market value due to tax requirements.[76] If the price was less than fair market value, the Internal Revenue

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[69] Mark Bolinger et al., *Financing Non-Residential Photovoltaic Projects: Options and Implications*, ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY (Jan. 2009) 17, http://blog.solargaines.com/how-to-depreciate-your-commercial-solar-investment-with-macrs (giving a thorough and in-depth run-down of the financial implications of non-residential photovoltaic systems).
[70] *See* I.R.C. § 50(a) (2012); Bolinger, *supra* note 69.
[71] These incentives include electricity sales, sales of environmental attributes (RECs), cash incentives, and state and federal tax incentives. Kollins et al., *supra* note 63 at 3.
[72] *Id*.
[73] *Id.*
[74] *Solar Power Purchase Agreements*, SOLAR ENERGY INDUSTRIES ASSOCIATION, http://www.seia.org/research-resources/solar-power-purchase-agreements (last visited Jan. 18, 2016) (providing a brief overview of power purchase agreements for photovoltaic systems).
[75] Coughlin et al., *supra* note 8, at 18.
[76] John Hopkins, *A Guide to End of Term Options in a Solar PPA*, BREAKING ENERGY (Sept. 26, 2012, 1:30 PM), http://breakingenergy.com/2012/09/26/a-guide-to-end-of-term-options-in-a-solar-ppa/ (going over the three typical options for what happens to the photovoltaic system once the term of the power purchase agreement ends).

Service (IRS) may treat it has a sale and say the tax credits go to the building owner and not the third-party investor, so it is essential the purchase price is for fair market value so the third-party does not lose its tax benefits.[77]

B. THE NON-PROFIT MODEL FOR POWER PURCHASE AGREEMENTS

Until now, this note has mainly discussed how PPA's work for normal, taxable entities. However, in order for a non-profit to utilize the third-party PPA structure, there are a few additional steps they must take. For the most part, the PPA will be set up the same way, but because the non-profit host is tax exempt, it must take steps to ensure that it would be considered a "service contract" rather than a lease under the Internal Revenue Code (IRC).[78] The code distinguishes a service contract from a lease, which is an important distinction for the purposes of the PPA.[79] If the requirements of the IRC are not followed, then the service contract (in our case the PPA) will be considered a lease, jeopardizing the use of the project's tax benefits by the developer.[80] This makes it vital that the project adheres to § 7701.

Section 7701 of the IRC contains a list of four requirements that must be met in order for a service contract to avoid being considered a lease.[81] First, the service recipient (the non-profit host) cannot operate the facility that will be providing the service.[82] Second, the service recipient cannot bear "any significant financial burden if there is nonperformance under the contract or arrangement" (except for reasons beyond control of the service provider).[83] Third, the service recipient cannot join in any potential financial upside if the operating costs of the project are less

[77] *See Tax Equity Due Diligence*, GREENZU, http://greenzu.com/invest-advice/tax-equity-due-diligence (last visited Jan. 18, 2016). *See also* Hopkins, *supra* note 76.
[78] 26 U.S.C. § 7701(e) (2012).
[79] *Id.*
[80] Bolinger, *supra* note 69, at 24.
[81] 26 U.S.C. § 7701(e)(4)(A) (2012).
[82] 26 U.S.C. § 7701(e)(4)(A)(i) (2012).
[83] 26 U.S.C. § 7701(e)(4)(A)(ii) (2012).

than expected.[84] Fourth, the service recipient can only have a purchase option in the contract to buy the facility at fair market value.[85] All four of these requirements should be fairly easy to adhere to, but it is important to keep them in mind when setting up the PPA because failing to obey them would be disastrous to the project. Essentially, the PPA trades away the advantages of the host site being tax exempt for the potentially greater advantages available to the private sector for solar projects.[86] Although there is a method to set up a PPA for a tax-exempt entity, in some states the legality of the third-party ownership structure is unclear.

C. SHOULD THIRD-PARTY PPAS BE REGULATED AS PUBLIC UTILITIES?

In many states, the third-party PPAs are not allowed because by selling power to the end-use customers, developers are considered public utilities. However, half of the states (twenty-five states plus Washington DC and Puerto Rico) in the U.S. allow third-party ownership of solar, after Georgia Governor Nathan Deal signed the Solar Power Free-market Financing Act of 2015.[87] This is an increase from 2012 when only twenty-one states (plus Puerto Rico) had authorized third-party PPAs.[88] Minnesota is one state where the legal status of the third-party PPA is uncertain, but by examining the State's case law, as well as looking at other states who have recently ruled on these agreements, it seems that in Minnesota the third-party PPA would not need to be regulated as a public utility.

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[84] 26 U.S.C. § 7701(e)(4)(A)(iii) (2012).
[85] 26 U.S.C. § 7701(e)(4)(A)(iv) (2012).
[86] Bolinger, *supra* note 69, at 24.
[87] *In the Southeast, Could Third-Party Ownership of Solar Power be Taking Root?*, ROCKY MOUNTAIN INSTITUTE (June 30, 2015), http://blog.rmi.org/blog_2015_06_30_southeast_third_party_ownership_of_solar_power. For a full list of the laws and decisions authorizing third-party power purchase agreements for solar PV, as well as a map highlighting which states allow, disallow, or have not ruled one way or the other, *see* U.S. DEPARTMENT OF ENERGY, 3RD PARTY SOLAR PV POWER PURCHASE AGREEMENT (PPA), http://ncsolarcen-prod.s3.amazonaws.com/wp-content/uploads/2015/08/3rd-Party-PPA_072015.pdf (last visited Jan. 23, 2016).
[88] John Farrell, *Map of State 3rd Party PPA Rules*, INSTITUTE FOR LOCAL SELF-RELIANCE (May 9, 2012), https://ilsr.org/map-state-3rd-party-ppa-rules/ (showing a map that highlights which states allow, disallow, or have not ruled one way or the other on third-party PPA's, but from 2012).

i. Why are Public Utilities Regulated Anyway?

The primary reason electricity markets are regulated in the United States is to protect the consumers and to ensure a well-functioning electric grid.[89] Minnesota, along with twenty-nine other states, is a state where public utilities are regulated.[90] This essentially means that privately owned utilities are granted a legal monopoly with an exclusive service territory; in exchange they are subject to heavy regulation in order to keep service at a fair price.[91] In addition to protecting the consumers, granting the utilities a monopoly prevents many problems such as "unnecessary duplication of assets such as transmission and distribution facilities" as well as preventing anyone from connecting a generator to the grid and causing "congestion, blackouts, and maintenance concerns."[92] It also incentivizes the utilities to invest in the grid because they can be certain their investments will be profitable because they have guaranteed customers.[93]

ii. Public Interest Concerns: Why shouldn't they be regulated?

It has been argued that regulation of public utilities is an outdated product of the twentieth century and is, for the most part, no longer needed.[94] When utilities first began, regulation made sense. The early twentieth century produced two technologies that led to power plants getting larger and larger and moving away from population centers: steam turbines (which

[89] Kollins et al., *supra* note 63, at 4.
[90] John Farrell, *Why Utilities Need to act on the Coming "Solar Storm"*, RE NEW ECONOMY (Mar. 4, 2013), http://reneweconomy.com.au/2013/300-reasons-utilities-should-do-these-3-things-for-distributed-solar-14353.
[91] Peter Agresta, Note, *House of the Enterprising Sun: The Iowa Supreme Court Votes for Distributed Solar Power*, 17 VT. J. ENVTL. L. 283, 286.
[92] *Id*.
[93] Agresta, *supra* note 91.
[94] *See generally* David Roberts, *Power Utilities are Built for the 20th Century. That's why they're flailing in the 21st.*, VOX (Sept. 9, 2015, 9:10 AM) http://www.vox.com/2015/9/9/9287719/utilities-monopoly (arguing that utilities are structured the wrong way and the services they provide no longer need to be bundled by a single monopoly); Lynne Kiesling, *Implications of Smart Grid Innovation for Organizational Models in Electricity Distribution*, WILEY HANDBOOK OF SMART GRID DEVELOPMENT, (forthcoming February 2015), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2571251(follow "download this paper" link) (discussing how new technologies from outside the electric industry are changing the electric business model, and how this is and will affect the industry going forward).

were more powerful than the steam engines they replaced) and alternating current (AC) which could carry power over greater distances than direct current (DC).[95] These new technologies in turn created "two underlying structural conditions for the electricity market": high barriers to entry and large economies of scale.[96] The so called "natural monopoly"[97] of utility regulation came about because of these market conditions.[98] Now, because those two market conditions are no longer necessarily true, it may not make sense to continue vertical integration and the bundling of electric services.[99] But even within the regulated utility framework, the third-party power purchase agreement is another way for the consumer to have their electric needs met and should not be prevented because of outdated utility laws.

In addition, one of the traditional arguments in favor of regulating public utilities is that they provide an essential service and regulating them is in the public interest to ensure reliability.[100] According to the Supreme Court, utility regulation is needed where there is the looming possibility of "exorbitant charges and arbitrary control."[101] Third-party PPAs are not for

[95] Roberts, *supra* note 94.
[96] The high barrier to entry was "because big power plants and long-distance transmission lines were very expensive" while the large economies of scale occurred "because the average cost of delivered power got cheaper with every new expansion of demand." *Id*.
[97] A natural monopoly is "A type of monopoly that exists as a result of the high fixed or start-up costs of operating a business in a particular industry. Because it is economically sensible to have certain natural monopolies, governments often regulate those in operation, ensuring consumers get a fair deal." *Natural Monopoly*, INVESTOPEDIA.COM, http://www.investopedia.com/terms/n/natural_monopoly.asp.
[98] R. Richard Geddes, *A Historical Perspective on Electricity Utility Regulation*, CATO REV. BUS. & GOV'T 75, 76 (1992) http://object.cato.org/sites/cato.org/files/serials/files/regulation/1992/1/v15n1-8.pdf (providing an analysis of the history of electricity regulation, explaining the natural monopoly model, and providing critiques to this theory).
[99] Roberts, *supra* note 94.
[100] Kollins et al., *supra* note 63, at 4.
[101] Charles Wolf Packing Co. v. Court of Indus. Relations of State of Kansas 262 U.S. 522, 539 (1923); Memorandum from Bradley Klein & Rachel Granneman, Envtl. L. & Pol'y Center, to Minnesota Energy Policymakers & Stakeholders 6 (Oct. 27, 2015) http://elpc.org/wp-content/uploads/2015/10/Minnesota-TPO-Memo_FINAL_10-27-15.pdf.

the public use but rather for the benefit of the host site. The public does not need access to these systems and can continue to receive electricity from their connection to the grid.[102]

iii. The Situation in Minnesota

Minnesota is a state where the public utilities are regulated by the government.[103] If an entity is considered a public utility, it is subject to strict regulation by the Minnesota Public Utilities Commission.[104] The Minnesota Statutes divide the state into geographical regions and prohibit public utilities from furnishing electric service to a customer in the region of another public utility.[105] The statutes further state that an "electric utility" means anyone "operating, maintaining or controlling in Minnesota equipment or facilities for providing electric service at retail . . . ."[106] This statute could potentially create legal trouble for third-party PPA's because if the PPA developer is considered a public utility it will be subject to strict regulation.[107] If the reason that electricity markets are regulated is to protect the consumer, then it makes no sense to regulate third-party PPA's as utilities because doing so would protecting the monopoly the utilities maintain, not the consumers.[108] This section could effectively kill third-party PPA's if the owners are considered public utilities.[109] However, by examining Minnesota case law and public interest concerns, it appears that third-party PPAs would not need to be regulated as public utilities.

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[102] Klein & Granneman, *supra* note 101, at 8 ("The business of installing solar panels on rooftops, for example, has an essential private character that is much different that the vital *public* services that courts have described as 'clothed with the public interest.'").
[103] *Id*. at 2.
[104] MINN. STAT. § 216B.01 (2015). See Klein & Granneman, *supra* note 101, at 2, for a much more in depth and detailed legal analysis of the question of whether or not third-party owners of "distributed generation systems" should be regulated as public utilities under Minnesota law. Much of what I discuss in this section is drawn from their excellent legal analysis and expertise.
[105] § 216B.37; Klein & Granneman, *supra* note 101, at 2.
[106] §216B.38 subdiv. 5.
[107] Kollins et al., *supra* note 63.
[108] *See* Klein & Granneman, *supra* note 101**Error! Bookmark not defined.**.
[109] Klein & Granneman, *supra* note 101, at 2.

In determining if an entity should be considered a public utility in Minnesota, the Minnesota Supreme Court has looked to the specific facts of each case to decide if the entity has the necessary "public character."[110] There are several cases that are useful in determining what kinds of entities constitute public utilities. In *Northern Natural Gas Co. v. Minnesota Public Service Comm'n* (*Northern Natural I*) the Court held that a company selling natural gas directly from a pipeline to thirty-four large industries and 2,100 farmers fell within the state's statutory definition[111] of a public utility.[112] Northern Natural Gas's argument was that supplying natural gas to a small class of customers is not "to or for the public" as is needed under the definition of public utility.[113] The Court rejected this argument and determined that the company "in all aspects looked and felt like a utility" and therefore should be regulated as one.[114]

Another Minnesota Supreme Court case that deals with what constitutes a public utility is *Dairyland Power Cooperative v. Brennan*.[115] This case questioned whether a cooperative "engaged in the business of furnishing electric energy at wholesale" should be considered a public utility.[116] The Court again looked to the character of the entity under its particular circumstances in determining that it would be considered a public utility in fact.[117] Among other things, the cooperative had: a policy of extending electric service to all rural electric cooperatives within its service area and accepted them without discrimination, was interconnected with two power companies in what is known as a "'power pool'" making it a part of a "large integrated

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[110] *Id*.
[111] MINN. STAT. § 216B.02 subdiv. 4 (2015) ("'Public utility' means persons, corporations or other legal entities . . . operating, maintaining, or controlling, in this state equipment or facilities for furnishing at retail natural manufactured or mixed gas or electric service to or for the public . . . .").
[112] Northern Natural Gas Co. v. Minnesota Public Service Comm'n, 292 N.W.2d 759, 764 (Minn. 1980); Klein & Granneman, *supra* note 101**Error! Bookmark not defined.**, at 3.
[113] *Northern Natural I*, 292 N.W.2d 759, 762 (Minn. 1980).
[114] *Id*.
[115] Dairyland Power Cooperative v. Brennan, 82 N.W.2d 56 (Minn. 1956).
[116] *Id*. at 57.
[117] *Id*. at 59, 61 ("What constitutes a public utility depends upon the particular facts in each case.").

system on the same basis as other competitors who are public utilities," and had the right of eminent domain which cannot be given to entities that do not provide a public service.[118] In short, the cooperative "looked and felt like a public utility.[119]

Third-party ownership of PPAs do not share the characteristic of public utilities, and should not be regulated as such. They do not supply electricity to anyone who wants it, rather only to the entity who signs the agreement.[120] As stated above, Minnesota Supreme Court looks to the particular facts of each case in determining if the entity has the necessary "public character" to be considered a public utility.[121] Using this analysis "courts in Minnesota would likely conclude that electricity sales under a PPA are merely incidental to the system design, construction, operations, maintenance, and financing services provided by [third-party owners of on-site generation] in a competitive market."[122]

iv. Recent Iowa Ruling on the Issue

In July of 2014, the Iowa Supreme Court ruled third-party PPAs will not be treated as public utilities.[123] In this case, Eagle Point Solar (Eagle Point) entered into a PPA to build a solar energy system for the city of Dubuque and the city agreed to purchase all of the electricity produced by the system.[124] The case is particularly important because the Court relied upon another Iowa case, *Iowa State Commerce v. Northern Natural Gas* (*Northern Natural 2)*[125]

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[118] *Id*. at 61–2.
[119] Klein & Granneman, *supra* note 101, at 3.
[120] *Id*. at 8.
[121] *See supra* text accompanying note 110.
[122] Klein & Granneman, *supra* note 101, at 4. For an illustration of how the Minnesota Supreme Court may apply its analysis of whether the third-party PPA constitutes a public utility, see Minn. Microwave, Inc. v. Pub. Serv. Comm'n, 190 N.W.2d 661 (Minn. 1971) (determining that the supplier of a closed-circuit television service should not be regulated because it was too different and the "usual monopolistic evils" that warranted utility regulation were not present).
[123] SZ Enterprises, LLC v. Iowa Utilities Bd., 850 N.W.2d 441, (Iowa 2014).
[124] *Id*. at 443–444.
[125] *See id*., at 445 (citing Iowa State Commerce Comm'n v. Northern Natural Gas Co., 161 N.W.2d 111 (Iowa 1968)).

which was also cited in the Minnesota Supreme Court's discussion in *Northern Natural Gas I*.[126] The 2014 case, *SZ Enterprises*, essentially hinged on whether or not Eagle Point fell under one of two definitions from the Iowa Code.[127] The first definition (from Iowa code section 476.1) that the Court examined (and the one they spent the majority of the opinion analyzing) defined a public utility as "[a]ny person, partnership, business association, or corporation, domestic or foreign, owning or operating any facilities for: a. Furnishing gas by piped distribution system or electricity to the public for consumption."[128] It is also important to note that the Minnesota Supreme Court has referred to this definition as "much more restrictive" than their own statute's meaning of public utility.[129] Therefore, it would follow that if third-party PPAs are not found as public utilities in Iowa, they likely would not be public utilities in Minnesota either.

The Iowa Supreme Court looked to its own case law and found that it had previously interpreted the language from section 476.1 in *Northern Natural Gas II*. In that case, it adopted an eight part test from an Arizona Supreme Court Case, *Natural Gas Company v. Serv-Yu Cooperative, Inc.*.[130] The factors the Arizona Court used to determine if an entity was "'clothed with a public interest'" and needed to be regulated because they were "'indispensable to [the] population'" were:[131] (1) What the corporation actually does; (2) was it dedicated to public use?; (3) what do the article of incorporation, authorization and purposes say; (4) does the entity deal with the service of a commodity that the public has generally been held to have an interest; (5) has it monopolized the territory with a public service commodity; (6) does the entity accept

[126] *Northern Natural Gas I*, 292 N.W.2d 759, 763 (Minn. 1980) (citing Iowa State Commerce Comm'n v. Northern Natural Gas Co., 161 N.W.2d 111 (Iowa 1968)).
[127] *SZ Enterprises*, 850 N.W.2d 441, 444.
[128] IOWA CODE § 476.1 (2015).
[129] *Northern Natural Gas I*, 292 N.W.2d 759, 762. Although this case is from 1980, the relevant language in the Iowa statute the court was referring to has remained the same today. IOWA CODE § 476.1 (2015).
[130] *Northern Natural Gas II*, 161 N.W.2d 111, 114–115 (Iowa 1968).
[131] [131] *SZ Enterprises*, 850 N.W.2d 441, 458 (Iowa 1968) (quoting Southwest Transmission Co-op., v. Arizona Corp. Comm'n, 142 P.3d 1240, 1245).

substantially all requests for service; (7) does the entity retain the right to discriminate with whom it contracts with; and (8) does the entity compete with other entities whose business is clothed with public interest.[132] After analyzing these factors, the court came to the conclusion that Eagle Point is not a public utility under section 476.1[133] Since Minnesota has similar precedent and structure as their neighbor Iowa, and views the Iowa statute as more restrictive than their own, the Minnesota Supreme Court would likely find this recent Iowa decision very influential.

v. Other examples: California and Colorado

Other states have found legislative solutions for the third-party ownership issue.[134] California has allowed third-party PPA's for a number of years after the passage of legislation.[135] California's definition for "electrical corporation" does not include "a corporation or person employing cogeneration technology or producing power from other than a conventional power source for the generation of electricity solely for . . . [t]he use of or sale to not more than two other corporations or persons on the real property on which the electricity is generated."[136] Solar is exempt from utility regulation because it is a "non-conventional" power source and third-party PPA's are allowed as long as the electricity generated is used on the property where it is generated.[137]

Colorado is another state that allows third-party PPA's. They began to do so in 2009, when a challenge concerning the uncertainty of third-party ownership of solar PV systems was

[132] *Id.* at 458 (citing Southwest Transmission Co-op., v. Arizona Corp. Comm'n, 142 P.3d 1240, 1244). *See also* Agrestra, *supra* note 91**Error! Bookmark not defined.**.
[133] *Id*. at 468 ("In our view, in this case, the balance of factor point away from a finding that the third-party PPA for a behind-the-meter solar generation facility is sufficiently 'clothed with the public interest' to trigger regulation."). For an analysis of the reasoning behind coming to this conclusion, see Agrestra, *supra* note 91, at 290–94.
[134] Kollins et al., *supra* note 63, at 7.
[135] *Id.* at 7–8.
[136] CAL. PUB. UTIL. CODE § 218(b) (West 2016).
[137] Kollins et al., *supra* note 63, at 8.

brought to the Colorado Public Utilities Commission (CPUC).[138] The CPUC ruled that systems less than 10kW are not utilities and do not require regulation.[139] After this ruling, the Colorado Senate passed a bill that gave further clarification.[140] The law now allows third-party owned PV systems of any size without regulation, with the only caveat being they cannot generate more than 120% of the customer's average annual consumption.[141]

III. ADVANTAGES AND TAX IMPLICATIONS OF SOLAR PPA'S

Engaging in a PPA provides many advantages for both customers and developers. As previously stated, the PPA is the only way the non-profit is able to utilize the 30% ITC. In addition to giving non-profits a way to use the ITC, it also allows them to utilize another tax incentive, known as modified accelerated cost recovery system (MACRS), which will be discussed later.[142] Furthermore, it transfers the up-front start-up costs to the developer who is set up for and able to use numerous revenue streams from the project.[143] In other words, the developer is usually much better suited to utilize all available benefits, which allows them to transfer their savings to the non-profit host.[144] Furthermore, the developers are much better equipped to manage and run the project, because this is their principle line of business.[145] They may already have preexisting relationships within the tax equity financing market they can take

[138] *Id.*
[139] *Id.*
[140] Renewable Energy Financing Act of 2009, 2009 Colo. Legis. Serv. Ch. 157 (S.B. 09-051) (codified as amended Colo. Rev. Stat. Ann. § 40-1-103 (West 2016)).
[141] Colo. Rev. Stat. Ann. § 40-1-103(c) (West 2016) ("The supply of electricity or heat to a consumer of the electricity or heat from solar generating equipment located on the site of the consumer's property, which equipment is owned or operated by an entity other than the consumer, shall not subject the owner or operator of the on-site solar generating equipment to regulation as a public utility by the commission if the solar generating equipment is sized to supply no more than one hundred twenty percent of the average annual consumption of electricity by the consumer at that site").
[142] *See infra* Section II.B.
[143] Kollins et al., *supra* note 63, at 33. Appendix A provides a much more thorough overview of the advantages of the third-party power purchase agreement model (although not specifically for non-profits).
[144] Farkas, *supra* note 9, at 100.
[145] Kollins et al., *supra* note 63, at 33.

advantage of and even if not, are better suited for developing such relationships.[146] This allows them to do things such as find capital at lower costs than the host could by themselves.[147] Perhaps most importantly, the host has no responsibility to maintain the solar project, and only pays for the electricity generated.[148] They do not need to worry about running or managing the system, which removes much of the risk. The developer is incentivized to make sure the project is running smoothly, because if it does not produce electricity, they will not get paid.[149]

The PPA also provides the customer a way to reduce electricity costs and avoid rate increases by having a contract with a pre-determined price for the length of the agreement.[150] This stabilization of electricity price is possibly the most important financial incentive behind solar arrays.[151] Having an agreed upon price of electricity over the life of the contract avoids the unpredictable price fluctuations that comes with normal utility rates because they are dependent on fossil fuel prices in the United States.[152] The most common pricing scenarios for the PPA are fixed price and fixed escalator.[153] In a fixed-price PPA, the electricity produced by the system is sold at a fixed rate for the entire life of the contract.[154] In a fixed-escalator scheme, the electricity produced is sold back to the host at a price that increases at a predetermined rate, typically between two and five percent.[155]

A. FEDERAL SOLAR TAX CREDIT

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[146] *Id*.
[147] *Id*.
[148] *Id*.
[149] Farkas, *supra* note 9, at 100.
[150] Kollins et al., *supra* note 63, at 34.
[151] Farkas, *supra* note 9, at 99.
[152] Karlynn Cory et al., *Power Purchase Agreement Checklist for State and Local Governments*, NATIONAL RENEWABLE ENERGY LABORATORY 3, http://www.nrel.gov/docs/fy10osti/46668.pdf (last visited Jan. 23, 2016) (providing a checklist meant to guide state and local governments who are considering a power purchase agreement, but want more information).
[153] *Id*.
[154] *Id*.
[155] *Id*.

The Energy Policy Act of 2005[156] created the thirty percent federal solar tax credit for commercial and residential energy systems, which is the largest tax incentive available to solar investments.[157] In 2008, the credit was given an extension set to expire at the end of 2016[158] and now it has been extended further until 2021.[159] Codified under §§ 25D[160] and 48[161] of the United States Code, the ITC allows a "dollar-for-dollar reduction in the income taxes that a person or company claiming the credit would otherwise pay the federal government."[162] If this credit exceeds the tax liability, the unused portion of the ITC is allowed to be carried back one year by businesses or carried forward twenty years.[163] Previously, this credit was only available to solar arrays placed in service before January 1, 2017, after which the credit was scheduled to drop to ten percent for commercial solar property and zero percent for residential.[164] Now that the ITC has been extended until the end of 2021, the cost of solar should go down even further, and allows the industry time to achieve parity (or better) with conventional energy generation by the time the subsidy expires.[165] According to some projections, the extension of the credit could lead

[156] Energy Policy Act of 2005, Pub. L. No. 109–58, § 1337, 119 Stat. 1038.
[157] *Solar Investment Tax Credit (ITC)*, SOLAR ENERGY INDUSTRIES ASSOCIATION, http://www.seia.org/policy/finance-tax/solar-investment-tax-credit (last visited Jan. 14, 2016) (giving a brief history of the solar investment tax credit). *See also The Solar Investment Tax Credit (ITC)*, SOLAR ENERGY INDUSTRIES ASSOCIATION (JAN. 27, 2015), http://www.seia.org/sites/default/files/ITC%20101%20Fact%20Sheet%20-%201-27-15.pdf [hereinafter *Solar Investment Tax Credit 2*] (providing a fact sheet giving the basics of the ITC).
[158] *See Solar Investment Tax Credit (ITC)*, SOLAR ENERGY INDUSTRIES ASSOCIATION, http://www.seia.org/policy/finance-tax/solar-investment-tax-credit (last visited Jan. 14, 2016) (giving a brief history of the solar investment tax credit).
[159] Consolidated Appropriation Act, Pub. L. 114-113, § 303, 129 Stat. 2242, (2015).
[160] 26 U.S.C. § 25D (2012).
[161] 26 U.S.C. § 48 (2012).
[162] *Id*.
[163] Kevin Potter et. al., *Credits and Incentives Provide Green for going Green*, DELOIT (July 2015), http://www2.deloitte.com/content/dam/Deloitte/us/Documents/Tax/us-tax-mts-july-2015-credits-and-incentives-talk.pdf.
[164] *Id*.
[165] Chris Nelder & Mark Silberg, *Congress Extends the Renewable Investment Tax Credit: What Now*, GREENBIZ (Dec. 28, 2015, 12:30 AM), http://www.greenbiz.com/article/congress-extends-renewable-investment-tax-credit-what-now (providing a list of four key outcomes that the ITC extension may lead to).

to twenty-five more gigawatts of solar than would have been built had the ITC expired.[166] When utilized along with MACRS depreciation (discussed in the next section), these two tax mechanisms can provide a tax benefit equal to about fifty-six percent of the installation cost of the solar installation, cutting the cost of the system significantly.[167]

B. MODIFIED ACCELERATED COST RECOVERY SYSTEM (MACRS)

The other major tax benefit that a third-party PPA allows a non-profit entity to take advantage of is the modified accelerated cost recovery system also known as accelerated depreciation.[168] In the income tax system, businesses are allowed to deduct the cost of doing business; a business generating $100,000 while spending $90,000 in costs should only be taxed $10,000 – its net income.[169] The problem occurs when the taxpayer purchases something that will produce income for a period of time beyond the current tax year.[170] For example, if a business purchases a machine that is going to generate income for ten years (its "useful life"[171]), the business is not allowed to recover the full amount in the first year.[172] In theory, the business

[166] Travis Hoium, *Who Wins from the Solar Industry's $40 Billion Windfall*, THE MOTLEY FOOL (Dec. 26, 2015, 10:02 AM), http://www.fool.com/investing/general/2015/12/26/who-wins-from-the-solar-industrys-40-billion-windf.aspx (providing a chart that compares the U.S. solar market with and without the ITC extensions and shows the dramatic impact the ITC extension is expected to have).
[167] Bolinger, *supra* note 69
[168] 26 U.S.C. § 168 (2012); Yoram Margalioth, *Not a Panacea for Economic Growth: The Case of Accelerated Depreciation*, 26 VA. TAX REV. 493, 506 (2007).
[169] *Id*. at 503; Telephone interview with Gregory F. Jenner, Partner, Stoel Rives, (Dec. 1, 2015) (describing to me the general premise behind accelerated depreciation).
[170] Margalioth, *supra* note 168 at 503.
[171] 26 C.F.R. § 1.167(a)–1(b) (2015) (describing the useful life as "[T]he period over which the asset may reasonably be expected to be useful to the taxpayer in his trade or business or in the production of his income.").
[172] Interview with Gregory Jenner, *supra* note 169. This is a very basic example, for a more complicated one see Margalioth, *supra* note 168, at 503.

should spread the cost over ten years, allowing it to recover $100 per year.[173] This is the simplest method of depreciation, called straight line depreciation.[174]

The problem with this form of depreciation is that it does not account for inflation[175] and property does not wear out at an even rate.[176] Instead of adjusting the tax-basis of assets for inflation and different rates of wear, Congress allows the use of MACRS.[177] MACRS allows the taxpayer to recover their investment on an accelerated schedule.[178] These accelerated rates front-load the depreciation deductions, allowing for larger deductions in the early years of the recovery period.[179] The acceleration is achieved by four means:

> (a) [T]he deductions are calculated on the basis that is often shorter than actual useful lives – thus, machinery and equipment are now depreciable over periods of three to ten years, even though actual service lives typically longer; (b) salvage value is assumed to be zero; (c) using the half-year convention, taxpayers can take one-half of the total depreciation allowance for the year of purchase even if the depreciable asset was purchased late in the year; and (d) the annual depreciation is calculated on the basis of a double declining balance under which a straight-line percentage is increased by a factor of 200% for assets with short useful lives or 150% for assets with longer useful lives.[180]

The five year, double (200%) declining balance method is the one which is allowed for solar investment projects.[181] This declining balance method differs from straight line depreciation in that it uses a greater fixed rate and applies it to the cost less the depreciation deductions claimed for prior years rather than the total cost of the property each year.[182] Since solar projects qualify

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[173] Interview with Gregory Jenner, *supra* note 169.
[174] J. MARTIN BURKE & MICHAEL K. FRIEL, TAXATION OF INDIVIDUAL INCOME 329 (11th ed. 2015).
[175] *Margalioth*, *supra* note 168, at 509–10. Although accelerated depreciation is used instead of adjusting for inflation, it was not the primary reason Congress enacted the law. The rate of acceleration is faster than what is needed to overcome inflation. Their primary reason was to stimulate business. *Id*.
[176] BURKE & FRIEL, *supra* note 174.
[177] *Id*.
[178] Kevin Potter, *Credits and Incentives Provide Green for going Green*, 25 J. MULTISTATE TAXATION & INCENTIVES 30, 33 (2015).
[179] BURKE & FRIEL, *supra* note 174.
[180] Margalioth, *supra* note 168.
[181] I.R.C. § 168(e)(3)(B)(vi)(I) (2012).
[182] BURKE & FRIEL, *supra* note 174.

for an accelerated recovery period of five years, the projects depreciates as determined by the Internal Revenue Service.[183] Note that, although it is given a five year depreciation period, the actual depreciation takes place over six years due to something called the half-year convention.[184]

C. ITC AND MACRS WORKING TOGETHER

There are a few caveats to using both the ITC and MACRS depreciation. Normally, one hundred percent of a PV system's basis (cost) is depreciable.[185] If the project has received any non-taxable cash incentives, then the depreciable basis must be reduced by that amount (this is unlikely to occur because most cash incentives provided to the project will be taxable).[186] When using the ITC, the depreciable basis of the solar installation must be reduced by one-half of the value of the investment credit.[187] Thus, the depreciable basis for the project will be eighty-five percent of its installed cost (100% - 0.5 * 30%).[188] Then, assuming a forty percent combined effect federal and state tax bracket (for simplicity) and a ten percent nominal discount rate, this five year MACRS depreciation will provide a tax benefit that roughly equals twenty-six percent of the cost of the project.[189] Combining the ITC and MACRS depreciation, there is a tax benefit equal to about fifty-six percent of the project.[190]

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[183] Rev. Proc. 87–57, 1987–2 C.B. 687 (providing the applicable table to use for a five year accelerated depreciation schedule).

[184] Conventions are something Congress has implemented to avoid difficulties associatied with computing depreciation for fractions of a year. The half-year convention states that any property placed in service during the tax year is deemed to have been in place at the mid-point of the tax year. For example, if a business purchases a piece of equipment and puts it in place on December 1, it will be deemed to have been in place on July 1 and will be entitled to one-half year's depreciation on it. There is also a mid-point conventions that is not applicable for this note's purposes. BURKE & FRIEL, *supra* note 174, at 330–32.

[185] *Id*. at 6.

[186] *Id*.

[187] I.R.C. § 50(c).

[188] *Id*.

[189] *Id*. ("[O]nly 12% of which is attributable to the acceleration of the depreciation schedule; the remaining 14% would be realized even if commercial PV were instead depreciated using the less advantageous 20-year straight line schedule.").

[190] *Id*. at n. 12 ("[H]owever this combined 56% Tax Benefit is *reduced* by the income tax that a self-financed commercial PV system must pay on utility bill savings (because those savings offset and operating expense that would otherwise have reduced taxable income) or that a third-party-owned system must pay on net income from

D. BONUS DEPRECIATION

In addition to the traditional MACRS depreciation, there is also something called bonus depreciation that sites may be able to take advantage of. In December of 2015, Congress passed the Protecting Americans from Tax Hikes Act, which included a five-year extension of bonus depreciation.[191] The law allows fifty percent bonus depreciation in 2015-17, forty percent in 2018, thirty percent in 2019, and then none in 2020 and beyond.[192] This works in tandem with accelerated depreciation in the following way: half of the solar project can be depreciated after it is placed in service, while the other half is depreciated using the normal five year MACRS table.[193] In the first year, the fifty percent bonus depreciation reduces the post-ITC basis by half (remember this is eighty-five percent), then the first year MACRS depreciation rate of twenty percent is applied.[194] With a project costing one million dollars, this saves an additional $85,000.[195] Using the tax benefits within a PPA can save significant costs, some of which will be passed on to the non-profit. In addition to these savings, there is another mechanism that may be able to lower costs – the charitable deduction. However, the project may not be eligible for this deduction.

E. THE CHARITABLE DEDUCTION – WILL IT ENABLE MORE SAVINGS?

Instead of a buyout at fair market value of the solar project at the end of the PPA agreement, would it be possible for the third-party investors to donate the system to the non-profit at the end

power sales. On a present value basis these income tax payments come to somewhere around 30% of installed costs . . . leaving the *net* tax benefits available to commercial PV systems at slightly less than 30% of installed costs.").

[191] Consolidated Appropriations Act, Pub. L. No. 114-113, § 143, 129 Stat 2242 (2015).

[192] *Id*.

[193] Tom Millhoff, *Bonus Depreciation on Solar Projects – Explained*, HELIOPOWER (Jan. 6, 2016), http://heliopower.com/2016/01/06/bonus-depreciation-solar/ (providing detailed charts on how a one million dollar solar project can be depreciated using MACRS with and without bonus depreciation).

[194] *Id*.

[195] *Id*. *See also Commercial Guide to the Federal Investment Tax Credit for Solar PV*, NC CLEAN ENERGY TECH. CTR (Mar. 2015), http://solaroutreach.org/wp-content/uploads/2015/03/CommercialITC_Factsheet_Final.pdf (providing a good example of how the ITC, accelerated depreciation and bonus depreciation can work together with a one million dollar project).

of the contract? If so, this would allow the investor to realize further tax benefits, while saving the host more money. According to the IRC, a taxpayer is allowed to receive the charitable deduction for a "contribution or gift to or for the use of" a qualified organization.[196] An entity is eligible for a charitable gift (as a "qualified organization") if it was created within the United States, does not permit proscribed inurement of benefits to insiders, does not engage in political activity, and does not engage in substantial lobbying.[197] The entity also must not violate fundamental public policy, according to the Supreme Court's ruling in *Bob Jones University*.[198]

The Supreme Court issued a *quid pro quo* test to determine the meaning of "contribution or gift" in the case *United States v. American Bar Endowment*.[199] In a two-part test, the Court stated there can be no contribution or gift if the donor expects a substantial benefit in return for their payment to the qualified organization.[200] However, if the donor only receives an incidental benefit in which the payment size is "clearly out of proportion to the benefit received" the charitable deduction will not be completely denied.[201] In order to clarify the ruling of the case, theIRS issued a regulation that essentially adopted the Supreme Court's test stating that a payment that is in consideration for goods or services does not qualify as a contribution or gift unless the taxpayer, "(i) Intends to make a payment in an amount that exceeds the fair market value of the goods or services; and (ii) Makes a payment in an amount that exceeds the fair market value of the goods or services."[202]

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[196] I.R.C. § 170(c) (2012).
[197] I.R.C. § 170(c)(2) (2012).
[198] Bob Jones Univ. v. United states, 461 U.S. 574 (1983).
[199] United States v. American Bar Endowment, 477 U.S. 105 (1986). *See also* Kristin Balding Gutting, *Relighting the Charitable Deduction: A Proposed Public Benefit Exception*, 12 FLA. TAX REV. 453, (2012).
[200] *American Bar Endowment*, 477 U.S. 105, 116 (1983).
[201] *Id* at 117.
[202] Treas. Reg. § 1.170A–1 (2016).

In the case of the third-party gifting the solar installation to the host, it seems unlikely that the third-party would take this risk. They could be considered double-dipping in their investment, as they are already receiving substantial benefits in return for building the solar garden. The author was unable to find any instances of this kind of exchange happening in existing solar PPA's. The IRS has given guidance on the term gift stating it is "'[A] transfer of money or property without receipt of adequate consideration, *made with charitable intent*.'"[203] The IRS went on to say that "'[a] transfer is not made with charitable intent if the transferor expects a direct or indirect return benefit commensurate with the amount of the transfer.'"[204] If the third-party attempted to take a charitable deduction after gifting the solar garden to the non-profit, it would likely be found that the requisite charitable intent was not there, as the whole reason the third-party is investing is to acquire the valuable tax credits from depreciation and the ITC.

CONCLUSION

Clearly, there is a large amount of information that a non-profit needs to be aware of when considering whether to invest in a solar installation. Once all of the relative obstacles and mechanisms are laid out, there is still the problem of putting it all together to invest in a solar project with the least amount of risk possible. By utilizing the PPA in conjunction with the tax benefits, much of the cost of the investment can be recovered. The first thing that the non-profit needs to do is to find some entity with a significant tax appetite (individuals or businesses that can use tax credits to deduce the amount they owe in taxes[205]) who is willing to engage in a PPA. Without having a PPA, there is no way the non-profit could access the significant tax benefits

[203] Gutting, *supra* note 199, at 482 (quoting I.R.S. Chief Couns. Adv. 2004–35–001 (Aug. 27, 2004)) (emphasis added).
[204] *Id*. (quoting I.R.S. Chief Couns. Adv. 2004–35–001 (Aug. 27, 2004)).
[205] Coughlin et al., *supra* note 8.

afforded to solar projects.[206] Forming the PPA allows the project to take advantage of both the thirty percent ITC as well as the five years MACRS schedule.[207]

Solar energy is a booming market at the moment, and looks to remain one for the next several years.[208] The recent extension of the ITC will allow the market to maintain its upwards trajectory, and remain strong after it expires. In Minnesota in particular, there has never been a better time to invest in solar energy. Non-profits are at a disadvantage when investing in solar power because they cannot take advantage of the valuable tax incentives that are available to the private sector. This note has attempted to lay out the best way for a non-profit to enter the solar market, by identifying the obstacles and mechanisms needed to invest in a solar project with as little risk as possible. By entering a PPA with a third-party, a non-profit can exchange the ITC and MACRS depreciation tax incentives for the building and operation of the solar array. And with the recent Iowa ruling that third-party PPAs will not be regulated as public utilities it seems more than likely that Minnesota would follow suit if faced with a similar situation. The future of solar is bright and a solar PPA provides many benefits to both the third-party investor as well as the non-profit host.

[206] *Id*. at 27.
[207] Bolinger *supra* note 69, at 22.
[208] Runyon *supra* note 6.