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September 27, 2011

VIA HAND DELIVERY & ELECTRONIC MAIL

Luly E. Massaro, Commission Clerk
Rhode Island Public Utilities Commission
89 Jefferson Boulevard
Warwick, RI 02888

RE: Distributed Generation Standard Contracts Act
Classes and Ceiling Prices for 2011

Dear Ms. Massaro:

The Rhode Island Office of Energy Resources, in accordance with the 2011 Distributed Generation Standard Contracts Act, sections 39-26.2-3(2) and 39-26.2-5(a), herewith submits an original and nine (9) of its Report and Recommendations regarding Classes and Ceiling Prices for 2011.

Very truly yours,

John A. Langlois
Deputy Chief Legal Counsel
RI Department of Administration

Rhode Island Office of Energy Resources
Distributed Generation—Standard Contracts

Classes and Ceiling Prices for 2011

TABLE OF CONTENTS

1. INTRODUCTION.

Recommended Classes and Ceiling Prices.

The Office of Energy Resources (OER or Office), as provided in the 2011 Public Laws, chapters 129 and 143, "The Distributed Generation Standard Contracts Act"[1] (hereinafter "DG-SCA")[2], hereby submits its recommendations for "renewable energy classes," "standard contract ceiling prices" and "class targets" to be applicable for proposals made during 2011, in accordance with the DG-SCA[3].

Technology	Size/Class	Ceiling Price Cents/KWh	Class Target (nameplate capacity)
Solar-PV	10-150 KW	33.35	0.5 MW
Solar-PV	151-500 KW	31.60	1.0 MW
Solar-PV	501-5000 KW	28.95	2.0 MW
Wind Turbine	1.5 MW	13.35	1.5 MW

If no wind turbine projects enroll for 2011, the Office recommends that the distribution company use the following classes, ceiling prices and targets in order to meet the statutory annual target of 5 MW for 2011.

Technology	Size/Class	Ceiling Price Cents/KWh	Class Target (nameplate capacity)
Solar-PV	10-150 KW	33.35	1.0 MW
Solar-PV	151-500 KW	31.60	1.5 MW
Solar-PV	501-5000 KW	28.95	2.5 MW

[1] The Distributed Generation Standard Contracts Act is Appendix 1 of this Report. Please note that three new chapters of the General Laws (Net-Metering, Distributed Generation Standard Contracts, and Interconnection Standards) were enacted using section numbers commencing with 39-26.2-1: to provide clarity in citations in this report, the short title for each act will be used and that will be followed by the section number used in the Act.

[2] DG-SCA section 39-26.2-3(3).

[3] DG-SCA sections 39-26.2-4(a), 39-26.2-4(a)(1), 39-26.2-4(e) and 39-26.2-5(a).

For the purposes of the application and use of the above ceiling prices in 2011, "small distributed generation project(s)" shall be those projects at "a nameplate capacity no larger than the following: Solar: five hundred kilowatts (500 KW); Wind: one and one-half megawatts (1.5 MW)."[4]

Overview of the Report.

This Report has eight sections including this introductory section and four appendices. Sections two and three, "Background" and "Relationship Among Renewable Energy Statutes" respectively, show how the DG-SCA is an integral part of a larger and as of July 2011 well integrated statutory structure. The ceiling prices being recommended in this Report need to be understood both in terms of meeting the internal requirements of the DG-SCA and in the overall statutory context that sets forth requirements for acquiring renewable energy for Rhode Island.

The fourth section of the Report "Public Involvement and Community Review" shows that the involvement of stakeholders in an open and participatory was a vital part of the developing the ceiling prices being recommended.

The fifth and sixth sections of the Report, together with Appendices C and D, are the heart of the Report, they present how the Cost of Renewable Energy Spreadsheet Tool ("CREST") Model was used in calculating the ceiling prices that are being recommended. The CREST Model is current (May 2011) and a publicly available for use rather than proprietary; the CREST Model was published as a

[4] DG-SCA, sec. 39-26.2-3 (12)

report of the National Renewable Energy Laboratory (NREL), a national laboratory of the U.S. Department of Energy, Office of Renewable Energy and Energy Efficiency.

Section seven of the Report by the OER briefly reviews how permissive factors, which under the DG-SCA may be considered, were taken into account in the development ceiling price recommendations.

Section eight of this Report summarizes how the ceiling prices as recommended fulfill the statutory requirements of the DG-SCA. They are for each technology by class size a price that should "allow a private owner to invest in a given project at a reasonable rate of return" and that achieves "cost effectiveness."[5]

2. BACKGROUND

The DG-SCA is to be understood in the context of the comprehensive and integrated overhaul of Rhode Island's renewable energy laws enacted by the General Assembly in 2011. The DG-SCA is both a response to prior enactments, a means to achieve their implementation, and an integral part of the 2011 comprehensive overhaul of renewable energy financing legislation.

A. Statutory Context: Incremental Evolution.

Over a decade and a half, Rhode Island had moved incrementally to facilitate the supply to Rhode Island of electricity from renewable resources. The Utility

[5] DG-SCA, sec. 39-26.2-5 (a).

Restructuring Act of 1996[6] was the first enactment in the current scheme of laws pertaining to renewable energy; it gave statutory life to the demand side management (DSM) charge of 2.3 mills per kilowatt hour. In implementation 2.0 mills were allocated to energy efficiency investments and 0.3 mills were allocated to renewable energy investments.[7] The life of the DSM charge was extended in 2002 and again in 2006.[8]

The next major enactment was the Renewable Energy Standard[9] in 2004. It established the statutory goal of obtaining by 2019 sixteen percent (16%) of electricity sold at retail in Rhode Island from eligible renewable energy resources, at least fourteen percent (14%) of which must come from post-restructuring new renewables. This was to be accomplished by acquiring NE-GIS certificates for "eligible renewable energy sources"[10]. If the distribution company did not meet annual goals, it had to make "alternative compliance payments", which could then be used to develop renewable energy resources.

Net metering was added to the Renewable Energy Standard chapter in 2007.[11] The relatively simple provisions of the 2007 Act were substantially

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[6] P.L. 1996, ch. 316.

[7] RIGL, sec. 39-2-1.2.

[8] P.L. 2002, ch. 144, P.L. 2006, ch. 236, 237.

[9] RIGL, ch. 39-26.

[10] RIGL, sec. 39-26-4 (d).

[11] P.L. 2007, ch. 173.

expanded in 2008[12] and again expanded in 2009[13], together these changes gave rise to a concept of “virtual net metering”. The 2008 amendment defined net metering as the “process of measuring difference between electric delivered by an electric distribution company and the electricity generated by a solar net-metering facility or a wind net metering facility, and fed back to the distribution company.”[14] The statute was silent on whether the difference could be small or great and whether it could be positive or negative. The owner of a net-metered new renewable energy resource could maximize the potential output of the site regardless of how much electricity was used at the site or by the owner. The 2008 amendment also specified how a renewable generation credit was to be computed, “the excess kWhs by the time of use billing period if applicable multiplied by the distribution company’s: (i) standard offer service kWh charge for the rate class applicable to the net metering customer; (ii) distribution kWh charge; (iii) transmission kWh charge; and (iv) transition charge….”[15] The 2009 amendment provided for monthly checks to be paid to customers if the amount of electricity generated by a net-metered facility exceeded the amount of energy used during the billing period.[16] The attractive value of rates avoided by net metering generation, coupled with the system of

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[12] P.L. 2008, ch. 356.

[13] P.L. 2009, ch. 91, 111.

[14] RIGL, sec. 39-26-2 (17).

[15] RIGL, sec. 39-26-2 (22).

[16] RIGL, sec. 39-26-6 (g)(3).

compensation by checks, came to be seen by some as a profitable way to supply renewable energy to the grid where siting conditions were favorable and the customer usage was less than what the generation facility would normally produce over time. By 2010 controversy surrounded how to interpret Rhode Island's net-metering law, with the validity of virtual net metering brought into question.[17]

In 2009, the General Assembly enacted a Long-Term Contracting Standard for Renewable Energy[18] The "minimum long-term contract capacity" was set "at ninety (90) megawatts of which three (3) megawatts must be solar or photovoltaic projects located in the state of Rhode Island," and the nameplate capacity of newly developed generation facilities was to be divided by its capacity factor in counting toward meeting the 90 megawatt minimum long-term contract capacity standard (a measure commonly referred to as 'average megawatts', or aMW).[19] Specific provision was made for a small off-shore wind farm near the Town of New Shoreham[20] and for a utility scale off-shore wind project of at least one hundred (100) megawatts but not more than one hundred fifty (150) megawatts, which would not be credited against the minimum long-term contract capacity.[21] In 2010 the Town of New Shoreham provision was amended and another was added

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17 DPUC Town of Portsmouth docket no. D 10-126.

18 RIGL, ch. 39-26.1.

19 RIGL, sec. 39-26.1-2 (7).

20 RIGL, sec. 39-26.1-7.

21 RIGL, sec. 39-26.1-8.

providing for a newly developed renewable energy resource fueled by landfill gas in the Town of Johnston.[22] The review standard for evaluating projects under the long term contracting standard was whether they were "commercially reasonable". There was no restriction on the power purchase agreements containing escalation clauses, as for example the Town of New Shoreham project did at 3.5 percent annually.[23] Escalation clauses mitigate the effect of the use renewable energy resources as a hedge against rising costs of non-renewable fuels to power traditional generating facilities. The Town of New Shoreham project resulted in litigation in 2010.[24].

The long-term contract standard of RIGL chapter 39-26.1 was to be considered "separate and distinct from the renewable energy standard set forth in chapter 26 of title 39."[25] Thus there was imposed a statutory barrier between the two chapters where the attributes of projects under the LT-CS could not count towards obligations contained in the RES: the two chapters were additive rather than mutually fulfilling obligations.

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22 RIGL, sec. 39-26.1-9.

23 Power Purchase Power Agreement between The Narragansett Electric Company, D/B/A National Grid and Deepwater Block Island Wind, LLC as of June 30, 2010, Exhibit E "Pricing and Payments, paragraph 4.

24 RI Supreme Court No. 2010-273-M.P.

25 RIGL, sec. 39-26.1-6.

B. 2011 Enactments: A Comprehensive Overhaul.

In 2011, the General Assembly resolved to bring coherence to the statutory framework that had evolved incrementally over a decade and a half.

Net Metering.[26] The most basic law pertaining to renewable energy supply to Rhode Island was the Renewable Energy Standard (RIGL 39-26), with the net-metering predominantly grafted into three subsections of the Act (RIGL 39-26-6(g), (h) and (i)). The Act had become unwieldy due its serving two distinct purposes. In 2011, the General Assembly made net metering a separate and distinct chapter. Within the new net-metering chapter, the prior definition of net-metering "as the process of measuring the difference between electricity delivered… and electricity generated by a [net metering facility]" was dropped and in its place, "'Eligible Net Metering System'" was defined as "a facility generating electricity using an eligible net metering resource that is reasonably designed and sized to annually produce electricity in an amount that is equal to or less than the renewable self-generator's usage at the eligible net metering system site…", with municipalities exempted from the "at the eligible net metering site" requirement.[27] If the system site were an especially good one, how would the predictable surplus electricity be treated, for the broad concept of "virtual net metering" was no longer operative? This possibility is handled in the DG-SCA.[28]

[26] 2011 P.L., ch 134, 147, hereinafter "NMA".

[27] NMA, sec. 39-26.2-2(2).

[28] DG-SCA, sec. 39-26.2-6 (g).

Distributed Generation Standard Contracts.[29] The DG-SCA is the most far reaching of the 2011 enactments. It provides a new mechanism for financing renewable energy projects that provide electricity to the electrical distribution grid serving Rhode Island. If the net metering statute provides a means for customers to meet their own load in whole or in part through eligible renewable resources, the DG Standard Contracts Act picks up where net metering leaves off and enables the use of small and medium sized renewable energy projects, *five megawatts or less nameplate capacity*, to supply electricity to the distribution grid. Large wind farms and vast solar photovoltaic arrays are not eligible to participate in the DG-SCA but can in bid for enrollment into the Long Term Contracting Standards.

The DG-SCA is explicitly designed to fall within the established goals of both the Renewable Energy Standard,[30] 16% of Rhode Island's electricity from eligible renewable energy resources by 2019, and the Long-Term Contracting Standard Act,[31] 90 average megawatts by the end of 2013; within the DG-SCA see sections 39-26.2-3(4), 39-26.2-4 (11), 39-26.2-4 (14), and 39-26.2-9. In other words the DG Standard Contracts Act does not add to established goals for acquiring electricity from eligible renewable energy resources; it is another means of meeting those goals.

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[29] 2011 P.L., ch. 129, 144.

[30] RIGL, ch. 39-26.

[31] RIGL, ch. 39-26.1.

The DG-SCA requires the distributed generation contract board, or in the absence of a duly constituted board, the Office of Energy Resources to annually establish ceiling prices for different types of eligible renewable energy resources and target amounts for each class of eligible renewal energy resource for which a ceiling price has been set. There are several statutory restrictions: Small solar systems cannot be greater than 500 KW nameplate capacity and small wind systems cannot be greater than 1.5 MW; all systems are capped at a maximum system size of 5 MW for participation in the DG-SCA program.[32] As has been noted, larger systems can participate in the Long-Term Contracting Standards program. The amount of nameplate capacity to be acquired through annual enrollments in the DG-SCA is set forth in statute:

For the 2011 enrollment, a minimum of 5 MW nameplate,

For the 2012 enrollments, a minimum aggregate of 20 MW nameplate,

For the 2013 enrollments, a minimum aggregate of 30 MW nameplate, and

For the 2014 enrollments, a minimum aggregate of 40 MW nameplate.[33]

In 2011 the distribution company must have one enrollment; in 2012, 2013, and 2014, it must have three each year.[34] For each of the program years, the board is to determine the number of classes "as are reasonably feasible for use in meeting distributed generation objectives," and for program years beginning in 2012, there

[32] DG-SCA, sec. 39-26.2-3(5).

[33] DG-SCA, sec. 39-26.2-4 (a).

[34] DG-SCA, sec. 39-26.2-6 (a).

must be at least four classes with at least two being for solar generation and at least one being for wind generation.[35]

The statutory guidance for developing ceiling prices is direct: the price is to be a "fixed rate for the purchase of all capacity, energy, and attributes generated by a distributed generation facility,"[36] attributes include but are not limited to renewable energy certificates.[37] The ceiling prices are to be "set" by the board for each technology, with the ceiling prices being those "that would allow a private owner to invest in a given project at a reasonable rate of return, based on recent and reported and forecast information on the cost of capital, and the cost of equipment. The calculation of the reasonable rate of return for a project shall include where applicable any state or federal incentives including, but not limited to, tax incentives."[38] In setting ceiling prices, the board *may* also consider "(1) Transactions for newly developed renewable energy resources, by technology and size, in the ISO-NE region and the northeast corridor; (2) Pricing for standard contracts received during the previous program year; (3) Environmental benefits, including, but not limited to, reducing carbon emissions, and system benefits; and (4) Cost effectiveness."[39]

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[35] DG-SCA, sec. 39-26.2-3 (10).

[36] DG-SCA, sec. 39-26.2-3 (13).

[37] DG-SCA, sec. 39-26.2-3 (14).

[38] DG-SCA, sec. 39-26.2- 5(a).

[39] DG-SCA, sec. 39-26.2- 5(a).

Once ceiling prices are approved by the commission, they are to be used by the distribution company. "For small distributed generation projects, the electric distribution company on a first come, first-served basis, shall enter into standard contracts at the applicable standard contract ceiling price with any distributed generation project which meets the requirements of all applicable tariffs and regulations, and meets the criteria of a renewable energy class in effect, until the class target is met."[40] "For large distributed generation projects, the electric distribution company shall select projects for standard contracts based on the lowest proposed prices received, but not to exceed the applicable standard contract ceiling price, provided, that the selected projects meet the class in effect until the class target is met."[41]

Distributed Generation Interconnection.[42] Finding that the "expeditious completion of the application process for distributed generation [interconnection with the electrical distribution grid] is in the public interest, the General Assembly enacted a new chapter, Distributed Generation Interconnection, that establishes standard fees and completion schedules for interconnection feasibility studies and impact studies. An "impact study" is "an engineering study that includes an of the cost of interconnecting to the distribution system."[43] For residential distributed

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[40] DG-SCA, sec. 39-26.2- 6(b).

[41] DG-SCA, sec. 39-26.2- 6(c).

[42] 2011 P.L., chapters 140, 144, hereinafter "DGIA".

[43] DGIA, sec. 39-26.2-2(2).

generation 25 kw or less, there are no feasibility study or impact study fees, for residential systems distributed generation greater than 25 kw, feasibility study fees are $50.00 and impact study fees are $100; for non-residential distributed generation, feasibility study fees range from $100 to $2,500 for systems over 1 megawatt and impact study fees range from $500 to $10,000 for systems over 1 megawatt.[44] Feasibility studies are to by completed by the distribution company within 30 days. Impact studies are to be completed with 90 days.[45]

<u>Demand-Side Management</u>.[46] The amendments to the demand side management programs removed the old statutory caps on demand side management programs for electricity and natural gas energy efficiency programs, which had been respectively 2 mills per kilowatt hour[47] and 15 cents per deca therm[48]. This removed an apparent restriction on undertaking energy efficiency and conservation measures justified and approved under least cost procurement, which includes "procurement of energy efficiency and energy conservation measures that are prudent and reliable and when such measures are lower cost than acquisition of additional supply, including supply for periods of high

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[44] DGIA, sec. 39-26.2-4.

[45] DGIA, sec. 39-26.2-3(c) and (d).

[46] RI Public Laws of 2011, chapters 19 and 28.

[47] RIGL 39-2-1.2 (b)

[48] RIGL 39-2-1.2 (g)

demand."[49] National Grid's recently filed its *2012-2014 Energy Efficiency and System Reliability Procurement Plan*[50] shows a total spending of $283 million over from 2012 through 2014 with $785 million in total benefits.[51] In the same Act, the capped systems benefit charge of .3 mills per kilowatt hour to support renewable energy development is extended to 2018.

Renewable Energy Coordinating Board. The General Assembly finding that "Rhode Island has lacked a comprehensive, long-term strategic renewable energy plan and an organizational structure responsible for coordinating the implementation of the state's renewable energy policies"[52] created a five member Rhode Island Renewable Energy Coordinating Board to adopt and maintain a strategic plan[53] to "(1) Coordinate the short and long-term implementation of renewable energy policies by state agencies; (2) Assess and include recommendations to realize the potential of renewable energy development to create new businesses, employment opportunities, and industries in Rhode Island; and (3) Address any other issues deemed appropriate by the board to advance renewable energy development in Rhode Island."

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[49] RIGL 39-1-27.7 (a)(2).

[50] RIPUC Docket No. 4284, filed 9/7/11.

[51] Table 1, 2012-2014 Three Year Plan Summary, p.5.

[52] RI Public Laws of 2011, Chapter 222, section 42-140.3-2 (4).

[53] Ibid., section 42-140.3-8.

3. The Relationship Among Renewable Energy Statutes.

The DG-SC Act is be understood both as a way to finance the development of grid-connected eligible renewable distributed generation resources and an integral part of accomplishing statutory purposes. This section of the report focuses on the latter matter, the accomplishment of statutory purposes.

The purpose of the Renewable Energy Standard Act (RES) is to "facilitate the development of new renewable energy resources to supply electricity to customers in Rhode Island with goals of stabilizing long-term energy prices, enhancing environmental quality, and creating jobs in Rhode Island in the renewable energy sector."[54]

The RES establishes the following obligations for acquiring electrical energy from eligible renewable energy resources:

> (a) Starting in compliance year 2007, all obligated entities shall obtain at least three percent (3%) of the electricity they sell at retail to Rhode Island end-use customers, adjusted for electric line losses, from eligible renewable energy resources, escalating, according to the following schedule:
> (1) At least three percent (3%) of retail electricity sales in compliance year 2007;
> (2) An additional one half of one percent (0.5%) of retail electricity sales in each of the following compliance years 2008, 2009, 2010;
> (3) An additional one percent (1%) of retail electricity sales in each of the following compliance years 2011, 2012, 2013, 2014, provided that the commission has determined the adequacy, or potential adequacy, of renewable energy supplies to meet these percentage requirements;
> (4) An additional one and one half percent (1.5%) of retail electricity sales in each of the following compliance years 2015, 2016, 2017, 2018 and 2019, provided that the commission has determined the adequacy, or potential adequacy of renewable energy supplies to meet these percentage requirements;

[54] RIGL 39-26-3.

> (5) In 2020 and each year thereafter, the minimum renewable energy standard established in 2019 shall be maintained unless the commission shall determine that such maintenance is no longer necessary for either amortization of investments in new renewable energy resources or for maintaining targets and objectives for renewable energy.
> (b) For each obligated entity and in each compliance year, the amount of retail electricity sales used to meet obligations under this statute that is derived from existing renewable energy resources shall not exceed two percent (2%) of total retail electricity sales."[55]

National Grid's 2011 Renewable Energy Standard Procurement Plan[56] shows an estimated standard offer load in 2011, of 5,611,467 MWhs. One percent of this load equals 56,611 MWhs, which is the additional renewable energy obligation to be acquired in 2011, which can be met by obtaining renewable energy certificates (RECs).

For purposes of illustration, assume that load growth is flat in 2012 due to the long recession, and that in 2013, 2014, and 2015 it grows at one percent annually. This would result in requirements of RECs from new renewable energy resources totaling about 260,200. If the split between solar and wind projects remains 70/30, if projects come on line in a year after their enrollment, and if the average capacity factor is 15 percent for solar and 25 percent for wind, this would generate a total of about 63,200 new RECs over the four year period 2012-2015, or just under 25 percent of National Grids total requirement for new RECs.

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[55] RIGL 39-26-4.

[56] RIPUC Docket 4149, National Grid 2011 Standard Offer Service Plan, 2011 Renewable Energy Procurement Plan (March 1, 2010), Schedule 8 Renewable Energy Procurement, pp. 38-39

DG-SCA Contribution to Added RES Requirements for RECs

Year	% of Load	Added RECs required (in thousands)	DG-SCA Added REC contribution
2012	1.0	56.6	7.9
2013	1.0	57.2	23.7
2014	1.0	57.7	15.8
2015	1.5	87.5	15.8
Total	4.5	260.2	63.2

The Long-Term Contracting Standard Act has its purpose "to encourage and facilitate the creation of commercially reasonable long-term contracts between electric distribution companies and developers or sponsors of newly developed renewable energy resources with the goals of stabilizing long-term energy prices, enhancing environmental quality, creating jobs in Rhode Island in the renewable energy sector, and facilitating the financing of renewable energy generation within the jurisdictional boundaries of the state or adjacent state or federal waters or providing direct economic benefit to the state."[57]

Under the Long-Term Contracting Standard Act, the schedule for entering into contracts is as follows:

> An electric distribution company shall not be required to enter into long-term contracts for newly developed renewable energy resources that exceed the following four (4) year phased schedule:
> By December 30, 2010: Twenty-five percent (25%) of the minimum long-term contract capacity;
> By December 30, 2011: Fifty percent (50%) of the minimum long-term contract capacity;

[57] RIGL, sec. 39-26.1-1.

By December 30, 2012: Seventy-five percent (75%) of the minimum long-term contract capacity;

By December 30, 2013: One hundred percent (100%) of the minimum long-term contract capacity; but may do so earlier voluntarily, subject to commission approval.

The Long-Term Contracting Standard is "Minimum long-term contract capacity" means ninety (90) average megawatts of which three (3) average megawatts must be solar or photovoltaic projects located in the state of Rhode Island. In determining whether the minimum long-term contract capacity has been reached, the capacity under contract shall be adjusted by the capacity factor of each renewable generator as determined by the ISO-NE rules, as they may change from time to time.

For purposes of illustration only, if the capacity factor for PV systems is an average of 15 percent of nameplate capacity, the amount of nameplate capacity needed for the 3MW solar is 20 MW, if the solar/wind split under the DG-SC Act is 70/30, then the DG-SCA would provide contracts for 28 MW of solar by December 30, 2014, with 21 MW coming in enrollments through the end of 2013. Thus the DG-SCA would simultaneously enable the electric distribution company to fulfill its obligation under Rhode Island's Long-Term Contracting Standard Act.

4. Public Involvement and Community Review

Immediately upon the passage of the Distributed Generation Standard Contracts legislation in both the Senate and the House of Representatives,[58] the

[58] The House bill 2011-6104 Substitute A as amended was passed in concurrence by the Senate on june 21, 2011, and the Senate 2011-S 723 Substitute A as amended was passed in concurrence by the House on June 23, 2011.

Office of Energy Resources gave public notice of a "Scoping Meeting" to take public and stakeholder input into how the requirements of the bills pertaining to ceiling prices should be implemented. Several persons at the meeting recommended consideration of the Cost of Renewable Energy Spreadsheet Tool (CREST) Model published by the National Renewable Energy Laboratory (NREL).

Following the scoping meeting, the Office of Energy Resources reviewed the precise requirements of the DG Standard Contracts Act with regard to their methodological implications for establishing ceiling prices and concluded that ceiling prices are to be cost-based[59] and inclusive of energy, capacity, renewable energy certificates and all other attributes and that the payments to projects, based on ceiling prices, are "for the output of a distributed generation facility."[60]

The OER then reviewed the NREL Report *Renewable Energy Cost Modeling: A Toolkit for Establishing Cost-Based Incentives in the United States*[61] and found that the Cost of Renewable Energy Spreadsheet Tool (CREST) model described in the Report was based on a Cost of Energy methodology taking into account an aggregation of cost inputs and was designed to inform rate making processes.

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[59] The ceiling price for each technology should be a price that would allow a private owner to invest in a given project at a reasonable rate of return, based on recent reported and forecast information on the cost of capital, and the cost of generation equipment. The calculation of the reasonable rate of return for a project shall include where applicable any state or federal incentives including, but not limited to, tax incentives.

[60] DG-SCA, section 39-26.2-3 (14).

[61] Gifford, Jason S., Robert C. Grace, and Wilson H. Rickerson. 2011. *Renewable Energy Cost Modeling: A Toolkit for Establishing Cost-Based Incentives in the United States.* Golden, CO: National Renewable Energy Laboratory, May 2011, NREL/SR-6A20-51093.

To a community review meeting on ceiling price methodology, held on August 3, 2011, at the Rhode Island Department of Administration, the OER presented its assessment of the requirements of the Act and of the potential applicability of the CREST model set forth in the NREL May 2011 Report as a means of meeting these requirements for developing ceiling price recommendations. The consensus of the meeting was that the OER's assessment of the requirements of the statute regarding the development of ceiling prices was correct and that the CREST model was an appropriate, current and formally published methodology.

A second community review meeting was held by the OER on September 9, 2011, at the Department of Administration to discuss factors other than those pertaining to project costs, which the DG-SCA provides may consider, these include "(1) Transactions for newly developed renewable energy resources, by technology and size, in the ISO-NE region and the northeast corridor; (2) Pricing for standard contracts received during the previous program year; (3) Environmental benefits, including, but not limited to, reducing carbon emissions, and system benefits; and (4) Cost effectiveness."[62]

The OER retained Sustainable Energy Advantage, LLC, with Robert C. Grace as its President and Jason S. Gifford as its Senior Consultant, with a subcontract to Meister Consultants Group, Inc., for the services of Wilson H. Rickerson, as the experts to the Office in using the CREST Model. Messrs. Grace, Gifford and Rickerson are the three co-authors of the May 2011 NREL Report.

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[62] DG-SCA, sec. 39-26.2-5.

On August 30, the OER sent to all persons who had attended the prior stakeholder meetings and to a broader list of those involved in energy issues, for example through attendance at Energy Efficiency and Resources Management Council meetings, a data request containing templates requesting inputs to consider in populating the CREST model.[63] A "straw-man proposal" set of ceiling prices was developed by September 12, 2011, circulated, and comments were requested.

A third community review meeting was held by the Office on September 20, 2011, at the Department of Administration to discuss the straw-man proposal, the comments received on it, and refinements to the ceiling prices based on the comments received.

In addition to the scoping meeting and the three community review meetings, the Office summarized the requirements of the Act and the approach taken being taken through the use of the CREST model to meet those requirements, to the Energy Efficiency and Resources Management Council at its regular meeting on September 8, 2011. The chairman of the Council was included on the notice and distribution for the scoping and community review meetings. The Office also met with representatives of The Energy Council-RI, which is the membership organization of major energy users in Rhode Island, on September 21, 2011, to review the requirements of the Act and its implications regarding cost effectiveness.

5. Ceiling Price Methodology.

[63] A copy of the Office of Energy Resources' Request for Data (August 30, 2011) is Appendix B of this Report.

The 2011 ceiling prices recommended in this Report are the product of three factors: (1) an assessment of the precise language of statute by the OER, (2) the use of an appropriate, current method of making price calculations, the CREST Model, which was deemed to be consistent with the statutory provisions, and with the authors of the CREST Model serving as the experts to the OER in developing data and running the Model, and (3) public and stakeholder involvement through community review meetings, requests for data in-puts and opportunities to review and comment on "straw-man proposal" ceiling prices.

Statutory Requirements

Although the purpose of the DG-SCA are broad, embedded in the DG-SCA is a fairly precise set of directives with regard to how ceiling prices are to be developed:

> The ceiling price for each technology should be a price that would allow a private owner to invest in a given project at a reasonable rate of return, based on recent reported and forecast information on the cost of capital, and the cost of generation equipment. The calculation of the reasonable rate of return for a project shall include where applicable any state or federal incentives including, but not limited to, tax incentives.[64] (emphases added)

Unless all project costs are met, a private owner cannot invest in a project at a reasonable rate of return, thus in addition to the cost of capital and generation equipment, necessary project costs for a project that has a useful life of greater than fifteen years are fairly implied.[65] This understanding of project costs was presented at the August 3, 2011,

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64 DG-SCA, sec. 39-26.2-5 (a).

65 While it is not used for calculating ceiling prices for the DG-SCA, the definition of "project cost" found in the Economic Development Corporation statute is informative: " 'Project cost' means the sum total of all costs incurred by the Rhode Island economic development

and there was consensus at the meeting that the understanding is reasonable and necessary for private owners to make investments in projects at reasonable rates of return.

A second key issue in establishing ceiling prices is the duration of the contracts under the DG-SCA. The DG-SCA contains the following definition: " 'Standard contract' means a contract with a term of fifteen (15) years at a fixed rate for the purchase of all capacity, energy, and attributes generated by a distributed generation facility."[66] Since certain costs change over time for projects with a long useful life, for example operations and maintenance costs, and the issue of the portion of the price that should be escalated and the rate escalation was an issue in other jurisdictions, the OER asked at the August 3, 2011, community review meeting whether the DG-SCA allowed for a set rate of escalation for such costs; the strong consensus was that it did not, the plain language of the statute was governing.

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corporation in carrying out all works and undertakings, which the corporation deems reasonable and necessary for the development of a project. These shall include, but are not necessarily limited to, the costs of all necessary studies, surveys, plans, and specifications, architectural, engineering, or other special services, acquisition of land and any buildings on the land, site preparation and development, construction, reconstruction, rehabilitation, improvement, and the acquisition of any machinery and equipment or other personal property as may be deemed necessary in connection with the project (other than raw materials, work in process, or stock in trade); the necessary expenses incurred in connection with the initial occupancy of the project; an allocable portion of the administrative and operating expenses of the corporation; the cost of financing the project, including interest on all bonds and notes issued by the corporation to finance the project from the date thereof to one year from the date when the corporation shall deem the project substantially occupied; and the cost of those other items, including any indemnity or surety bonds and premiums on insurance, legal fees, real estate brokers and agent fees, fees and expenses of trustees, depositories, and paying agent for bonds and notes issued by the Rhode Island economic development corporation, including reimbursement to any project user for any expenditures as may be allowed by the corporation (as would be costs of the project under this section had they been made directly by the corporation), and relocation costs, all as the corporation shall deem necessary." (RIGL, sec. 42-64-3(21)).

[66] DG-SCA, sec. 39-26.2-3 (13).

CREST Model.

The CREST model was developed by Sustainable Energy Advantage, LLC for NREL. The model and supporting documentation are publicly available at the NREL web site.[67] CREST can take as inputs assumptions for capital and operating cost, performance, incentive and financing parameters, and produce cost of energy estimates on a levelized, or escalating, basis.

CREST was developed as a publicly available and transparent tool for estimating renewable energy costs for various public policy purposes, such as establishing performance based incentives including feed-in-tariffs. The CREST model can help policymakers and stakeholders gain a better understanding of the economic drivers of renewable energy projects, and understand the relative economics of generation projects with differing characteristics, such as project size, resource quality, or location (e.g., near or far from transmission). The CREST model is designed to calculate the cost of energy, or minimum revenue per unit of production needed for the modeled renewable energy project to meet its equity investors' assumed minimum required after-tax rate of return. This calculation depends on the development and entry of several categories of inputs. The CREST model includes the flexibility to analyze a range in the level of capital and operating cost detail. This feature promotes transparency and allows costs to be treated differently for tax credit and depreciation purposes when such information is

[67] http://financere.nrel.gov/finance/content/CREST-model

available. Use of the "intermediate" approach is most consistent with this analysis, as it allows for the transparent differentiation of costs among projects of different sizes or locations. Currently the CREST Model has three specific versions (one for solar, wind, and geothermal), which share a majority of common architecture, features, and conventions, while allowing for modeling technology-specific factors.

6. Ceiling Price Calculations.

Having established that the CREST Model would be used for making ceiling price calculations (solar and wind), the critical issue was setting the values that would be put into the spread sheet. The following sources were used: stakeholder submissions (including importantly from National Grid, which has multi-state experience, including Massachusetts, with renewable energy facilities), Sustainable Energy Advantage experience with particular emphasis on Rhode Island and Southeastern Massachusetts feasibility studies, Meister Consultant Group's internal data base, industry data bases, industry interviews, and recent Vermont and Nova Scotia feed-in-tariff proceedings.

For classes at or below the statutory limit for small projects (solar: 10 KW-150 KW and 151-500 KW; wind 1500 KW),[68] it was decided to make calculation using the upper end of the size range of each class as a means for securing cost effectiveness. For solar projects over 500KW nameplate, it was decided to model ceiling prices on a 1500 KW nameplate project for 2011.

68 DG-SCA, sec. 39-26.2-3 (12).

It was recognized and taken into account that costs are dynamic. The cost of solar photovoltaic panels has dropped substantially over the last three years. And the cost of debt borrowing costs is historically low, although lenders are cautious. The renewable energy industry, and its suppliers, are maturing with effects of lowering costs and reducing risks. In sum, it had to be taken into account that costs now are lower than they were even as recently as a year ago. This made reasonable selecting data values in the lower end of the range.

The data request of August 30, 2011, asked stakeholders to provide for each technology size and class their recommendations regarding the following inputs:

Expected Annual Net Capacity Factor

Total installed cost ($/kW) excluding interconnection cost

Total expected all-in installed project cost, including all hardware, balance of plant, design construction, permitting, development (including developer fee), interest during construction and financing costs

Interconnection cost

O & M expenses (in $/kWy) in Year 1 of operations

Operations and maintenance including all fixed and variable expenses associated with project operations, including insurance, property taxes, land leases royalties, etc.

Annual average rate escalation rate for O&M expenses (%)

Length of construction period (months)

Debt-to-equity ratio

Debt tenor (years)

Interest rate on debt (%)

After Tax Return on Equity (e.g. IRR) (%)

With a range of values for data inputs into the CREST Model, it was decided to use roughly the twenty-fifth percentile in the range of each set values. This meant a low but not the lowest cost was being used for each set. The exception was debt tenor, where a term of 14 years, or one year less than the contract period, was used—this was a longer term than the stakeholders recommended. Sustainable Energy Advantage then ran the CREST Model using these inputs, the result it was understood would be an "idealized" or "straw-man proposal" set of ceiling prices. The idealization was a result of the fact that in actual practice the lowest quartile of costs is rarely achieved across the board, thus using 25th percentile costs is an idealization. The purpose was to generate a data-based set of ceiling prices, albeit these initial ceiling price would only be a straw-man proposal, something that constructively invites reaction and discussion.

The straw-man proposal set of ceiling prices[69] was circulated on September 12, 2011. Comments were requested by September 15th, and to accommodate stakeholders accepted later. A third community review meeting was held September 20, 2011. Its purpose was to discuss the straw-man proposal and the comments received on it. Within the range of views of those present or offering comments, there was a sense, especially among those with experience in developing projects in other states, that the straw-man proposal ceiling prices were somewhat,

[69] The initial "strawman" set of ceiling prices, as circulated for comment on 9/12 is Appendix C of this Report: PowerPoint presentation *Rhode Island Distributed Generation Standard Offer: Input Assumptions for Establishing Ceiling Prices & Preliminary Ceiling Prices*, Sustainable Energy Advantage, LLC, Meister Consultants Group, September 2011, see pages 4-5 for wind; pages 24-25 for solar 10 - 150 KW, pages 26-27 for solar 151-500 KW and pages 28-29 for solar over 500 KW.

but not egregiously, low in their ability to enable private owners to invest in projects at reasonable rates of return.

The specific concerns voiced were:

(1) The interest rate (6 % in the straw-man) was lower than what was being found generally in the market, although less concern was expressed about this interest rate as it applied to larger solar projects.

(2) Debt tenor was too long at 14 years, while there was little experience with the tenor of long term utility contracts for bundled commodity of power, capacity and attributes, still a widely held view was that lenders are currently unreceptive to debt of that tenor.

The above two applied to both wind and solar projects. With regard to solar, the following concerns were also expressed

(3) Assumptions impacting project annual capacity factors were too high because, as a practical matter, tilt was more likely to be 20 degrees or less rather than idealized 41.7 degrees used in the straw-man, this lower degree of tilt was seen as necessary for ease of construction and security of roof mounted systems and to avoid shading/spacing issues for ground mounted systems. It was also felt that there may be fewer sites (especially on roofs) with optimum due south orientation. On the other hand, DC rating warranty availability could justify an adjustment in the opposite direction.

(4) Operation and Maintenance costs were seen as too low, especially given that they include leases and taxes or payments in lieu of taxes (PILOTs), which may be a significant cost for ground mounted solar arrays.

The straw-man proposal was adjusted based on these comments considered in the context of other available data.

Two revised runs of the CREST Model were then made,[70] one using "Debt optimized to both minimum and average DSCR (debt service coverage ratio), with tax benefits realized as generated,"[71] and second using "Debt optimized to both minimum and average DSCR, with net operating losses carried forward and only used by the project." The different calculation produced a price range difference of approximately three percent (3%). The mid-point in the range was selected for recommending the ceiling prices set forth below.

Technology	Size/Class	Ceiling Price Cents/KWh	Class Target (nameplate capacity)
Solar-PV	10-150 KW	33.35	0.5 MW
Solar-PV	151-500 KW	31.60	1.0 MW
Solar-PV	501-5000 KW	28.95	2.0 MW
Wind Turbine	1.5 MW	13.35	1.5 MW

If no wind turbine projects enroll for 2011, the Office recommends that the distribution company use the following classes, ceiling prices and targets in order to meet the statutory annual target of 5 MW for 2011.

[70] The CREST Model for Revision for each ceiling price is Appendix D of this Report.

[71] This would be similar to the effect of Federal section 1603 grants, and represents an idealized financial situation not widely experienced in the absence of 1603 grants.

Technology	Size/Class	Ceiling Price Cents/KWh	Class Target (nameplate capacity)
Solar-PV	10-150 KW	33.35	1.0 MW
Solar-PV	51-500 KW	31.60	1.5 MW
Solar-PV	501-5000 KW	28.95	2.5 MW

It is fully expected that actual projects will have some cost components that are higher than those used in the ceiling price calculations and others that are lower. Project owners, their engineers, their financial advisors, and their contractors will have to "work" the numbers to achieve outcomes that are at or below the ceiling prices. The inputs into the CREST Model are only representative costs, which are deemed to be reasonable and cost-effective, they do not constitute recommendations. The above classes by technology, ceiling prices by class, and class targets are in sum the statutorily required recommendation.

7. Permissive Factors.

The DG-SCA allows, but does not require, the following factors to be considered:

(1) Transactions for newly developed renewable energy resources, by technology and size, in the ISO-NE region and the northeast corridor;

(2) Pricing for standard contracts received during the previous program year;

(3) Environmental benefits, including, but not limited to, reducing carbon emissions, and system benefits; and

(4) Cost effectiveness.[72]

Consideration of transactions for newly developed renewable energy resources, by technology and size, in the ISO-NE region and the northeast corridor was accomplished though the inputs used in the CREST Model for calculating the ceiling prices being recommended. Both Sustainable Energy Advantage and Meister Consultants Group have and maintain regional data on project costs; National Grid provided data, for example with regard to interconnection costs, from other states, specifically Massachusetts, and renewable energy project developers supplied input values based experience in other states in the ISO-NE region and New Jersey.

With regard to cost effectiveness, the inputs into the CREST Model would be those characteristic of a cost effective project: good capacity factors, lower range installed equipment costs, lower range operation and maintenance costs, lower range interest rates, and longer debt tenors. Since to be eligible for DG-SCA contracts, projects must be at or below the ceiling price, cost effectiveness is a integral feature of the recommended ceiling prices.

The ceiling prices are for renewable energy projects that are grid-connected, this is a statutory purpose.[73] While other ways of obtaining kilowatt hour values may be less expensive, energy efficiency for example, these are not "grid-connected renewable energy"—thus their comparative cost effectiveness is inapplicable to calculating recommended ceiling prices. Comparative cost effectiveness would be an "apples and oranges" situation (the expression was frequently used during

[72] DG-SCA, sec. 39-26.2-5 (a).

[73] DG-SCA, sec. 39-26.2-2.

community review meetings): buying oranges is not a cost effective way of obtaining apples. It is a matter of law that Rhode Island will obtain a portion of the electricity used in the state from renewable energy resources.[74] The obligations to acquire energy from eligible renewable energy resources in the Renewable Energy Standard Act and the Long Term Contracting Standard for Renewable Energy are independent of the DG-SCA and must be fulfilled even if the DG-SCA is not implemented; the DG-SCA, as has been discussed, is a specific means of contributing to the fulfillment of these obligations. The ceiling prices recommended in this Report explicitly take these renewable obligations into account and the methodology as used in developing the recommendations is intentionally concerned with cost effectiveness.

With regard to previous year experience, this is the first year of the ceiling price calculations, so there is no previous year experience.

With regard to environmental benefits, including reducing greenhouse gasses, the technologies (wind and solar) of the 2011 recommended ceiling prices are non-carbon emitting and therefore will reduce the system mix of emissions per megawatt hour of National Grid for Rhode Island. And with regard to "system benefits," the amount of capacity that would be added through the implementation of the recommended ceiling prices (5 MW nameplate) is small and its location is not now known, thus system benefits cannot practically be estimated for this Report.

[74] RIGL, ch. 39-26, Renewable Energy Standard; RIGL 39-26.1, Long Term Contracting Standard for Renewable Energy; and the DG-SCA.

The system benefits of distributed generation are a subject of National Grids recently filed *Three Year Systems Reliability Plan*.

8. Conclusion.

This Report presents a set of ceiling prices that should enable a private owner to invest in a good project at a reasonable rate of return; poorly located projects, projects with high debt service costs, or projects with high installed costs, for example, would be unlikely to produce a reasonable rate of return under the ceiling prices. The ceiling prices herein presented are designed to achieve cost effectiveness overall.

The ceiling prices were calculated using a methodology, the CREST Model, that has been published by an entity, NREL, of the U.S. Department of Energy. The Authors of the NREL report were the experts retained by the OER to run the Model.

Three community reviewing meetings and a public scoping meeting were held by the OER and satisfy the statutory requirement for a community review meeting.

This Report has further set forth how projects developed in accordance with the DG-SCA can contribute to fulfilling obligations under the Renewable Energy Standard and the Long Term Contracting Standard for Renewable Energy Acts, RIGL chapters 39-26 and 39-26.1 respectively.

APPENDIX A

DISTRIBUTED GENERATION STANDARD CONTRACT ACT

2011 -- H 6104 SUBSTITUTE A AS AMENDED

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LC02543/SUB A/2
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S T A T E O F R H O D E I S L A N D

IN GENERAL ASSEMBLY

JANUARY SESSION, A.D. 2011

A N A C T

RELATING TO PUBLIC UTILITIES AND CARRIERS - DISTRIBUTED GENERATION STANDARD CONTRACTS

Introduced By: Representatives Ruggiero, Edwards, Walsh, Chippendale, and Tanzi

Date Introduced: May 04, 2011

Referred To: House Environment and Natural Resources

It is enacted by the General Assembly as follows:

SECTION 1. Title 39 of the General Laws entitled "PUBLIC UTILITIES AND CARRIERS" is hereby amended by adding thereto the following chapter:

CHAPTER 26.2

DISTRIBUTED GENERATION STANDARD CONTRACTS

39-26.2-1. Short title. – This chapter shall be known as and may be cited as "The Distributed Generation Standard Contracts Act."

39-26.2-2. Purpose. – The purpose of this chapter is to facilitate and promote installation of grid-connected generation of renewable energy; support and encourage development of distributed renewable energy generation systems; reduce environmental impacts; reduce carbon emissions that contribute to climate change by encouraging the local siting of renewable energy projects; diversify the state's energy generation sources; stimulate economic development; improve distribution system resilience and reliability; and reduce distribution system costs.

39-26.2-3. Definitions. – When used in this chapter, the following terms shall have the following meanings:

(1) "Annual target" means the target for total renewable energy nameplate capacity of new distributed generation standard contracts set out in section 39-26.2-3.

(2) "Commission" means the Rhode Island public utilities commission.

(3) "Board" shall mean the distributed generation standard contract board established

pursuant to the provisions of chapter 39-26.2-9, or the office of energy resources. Until such time as the board is duly constituted, the office of energy resources shall serve as the board with the same powers and duties pursuant to this chapter.

(4) “Distributed generation contract capacity” means ten percent (10%) of an electric distribution company’s minimum long-term contract capacity under the long-term contracting standard for renewable energy in section 39-26.1-2, inclusive of solar capacity. The distributed generation contract capacity shall be reserved for acquisition by the electric distribution company through standard contracts pursuant to the provisions of this chapter.

(5) “Distributed generation facility” means an electrical generation facility that is a newly developed renewable energy resource as defined in section 39-26.1-2, located in the electric distribution company’s load zone with a nameplate capacity no greater than five megawatts (5 MW), using eligible renewable energy resources as defined by section 39-26-5, including biogas created as a result of anaerobic digestion, but, specifically excluding all other listed eligible biomass fuels, and connected to an electrical power system owned, controlled, or operated by the electric distribution company.

(6) “Distributed generation project” means a distinct installation of a distributed generation facility. An installation will be considered distinct if it is installed in a different geographical location and at a different time, or if it involves a different type of renewable energy class.

(7) "Electric distribution company" means a company defined in subdivision 39-1-2(12), supplying standard offer service, last resort service, or any successor service to end-use customers, but not including the Block Island Power Company or the Pascoag Utility District.

(8) “Large distributed generation project” means a distributed generation project that has a nameplate capacity that exceeds the size of a small distributed generation project in a given year, but is no greater than five megawatts (5 MW) nameplate capacity.

(9) “Program year” means a calendar year beginning January 1 and ending December 31.

(10) “Renewable energy classes” means categories for different renewable energy technologies using eligible renewable energy resources as defined by section 39-26-5. For each program year, the board shall determine the renewable energy classes as are reasonably feasible for use in meeting distributed generation objectives from renewable energy resources and are consistent with the goal of meeting the annual target for the program year. For the program year ending December 31, 2012, there shall be at least four (4) technology classes and at least two (2) shall be for solar generation technology, and at least one shall be for wind. The board may add, eliminate, or adjust renewable energy classes for each program year with public notice given at

least sixty (60) days previous to any renewable energy class change becoming effective. For each program year, the board shall set renewable energy class targets for each class established. Class targets are the total program-year target amounts of nameplate capacity reserved for standard contracts for each renewable energy class. The sum of all the class targets shall equal the annual target.

(11) "Renewable energy credit" means a New England Generation Information System renewable energy certificate as defined in subdivision 39-26-2(15);

(12) "Small distributed generation project" means a distributed generation project that has a nameplate capacity no larger than the following: Solar: five hundred kilowatts (500 KW); Wind: one and one-half megawatts (1.5 MW). For technologies other than solar and wind, the board shall set the nameplate capacity size limits, but such limits may not exceed one megawatt. The board may lower the nameplate capacity from year to year for any of these categories, but may not increase the capacity beyond what is specified in this definition. In no case may a project developer be allowed to segment a distributed generation project into smaller sized projects in order to fall under this definition.

(13) "Standard contract" means a contract with a term of fifteen (15) years at a fixed rate for the purchase of all capacity, energy, and attributes generated by a distributed generation facility. A contract may have a different term if it is mutually agreed to by the seller and the electric distribution company and it is approved by the commission. The terms of the standard contract for each program year and for each renewable energy class shall be set pursuant to the provisions of this chapter.

(14) "Standard contract ceiling price" means the standard contract price for the output of a distributed generation facility which price is approved annually for each renewable energy class pursuant to the procedure established in this chapter, for the purchase of energy, capacity, renewable energy certificates, and all other environmental attributes and market products that are available or may become available from the distributed generation facility.

39-26.2-4. Standard contracts – Annual targets. – (a) To the extent eligible projects are available and submit conforming applications, an electric distribution company shall enter into standard contracts for an aggregate nameplate capacity of at least forty megawatts (40 MW) of distributed generation projects by the end of 2014, unless such schedule is extended by the board. The contracting shall be spread over four (4) years, based on the annual targets, aggregated to reflect annual targets from prior program years, contained in the following four (4) year phased schedule, unless such schedule is adjusted by the board in any given year:

(1) By December 30, 2011: a minimum of five megawatts (5 MW) nameplate;

(2) By December 30, 2012: a minimum aggregate of twenty megawatts (20 MW) nameplate;

(3) By December 30, 2013: a minimum aggregate of thirty megawatts (30 MW) nameplate;

(4) By December 30, 2014: a minimum aggregate of forty megawatts (40 MW) nameplate.

(b) By October 15, 2011 and each calendar year following until October 15, 2013, the board may recommend to the commission that the annual target for the following program year be adjusted upward to reflect any shortfalls in meeting the previous program year's annual target or to reflect any standard contracts entered into during prior program years that are voided. The board may also recommend to the commission that the annual target for the following program year be adjusted downward by any amounts that the previous program year's annual targets were exceeded by the standard contracts entered into during that program year.

(c) The board may, based on market data and other information available to it including pricing for standard contracts received during previous program years, recommend a reduction of the annual target for the upcoming program year where the board determines that market conditions would be likely to produce unfavorably high target pricing for standard contracts during that upcoming program year. In considering such issues, the board may take into account the reasonableness of current pricing and its impact on all electric distribution customers who will be paying for the output for up to twenty (20) years at such prices. The board may also recommend an extension of time to achieve the forty megawatt (40 MW) target, to allow for contracting to occur after 2014, if necessary.

(d) The electric distribution company must contract for at least forty megawatts (40 MW) of nameplate capacity distributed generation projects by the end of 2014, unless such schedule is extended by the board. The electric distribution company may not be required to contract for more than forty megawatts (40 MW) or the distributed generation contract capacity, but may do so voluntarily, subject to commission approval.

(e) Each year, the board shall file its recommendations relating to the schedule, along with its report and recommendations regarding ceiling prices, for the commission's review and approval as specified in subsection 39-26.2-5(b).

(f) Nothing in this chapter shall derogate from the statutory authority of the commission or the division, including, but not limited to, the authority to protect ratepayers from unreasonable rates.

39-26.2-5. Standard contract ceiling price. – (a) Within a period of time sufficient to accomplish the purposes of this section, but not longer than ninety (90) days after the effective date of this chapter, the board shall set ceiling prices and annual targets for each renewable energy class of distributed generation for the 2011 program year and make a filing with the commission pursuant to this chapter recommending such prices and targets. Thereafter annually by no later than October 15 of each year, the board shall make filings with the commission to recommend the standard contract ceiling prices and annual targets for each renewable energy class of distributed generation facility. The ceiling price for each technology should be a price that would allow a private owner to invest in a given project at a reasonable rate of return, based on recent reported and forecast information on the cost of capital, and the cost of generation equipment. The calculation of the reasonable rate of return for a project shall include where applicable any state or federal incentives including, but not limited to, tax incentives. In setting the ceiling prices, the board also may consider: (1) Transactions for newly developed renewable energy resources, by technology and size, in the ISO-NE region and the northeast corridor; (2) Pricing for standard contracts received during the previous program year; (3) Environmental benefits, including, but not limited to, reducing carbon emissions, and system benefits; and (4) Cost effectiveness. The board shall in performing this assessment involve representation from its advisory council, if applicable, and from the office of energy resources, the electric distribution company, and the energy efficiency and resources management council. The board shall hold, with at least ten (10) business days notice, a public community review meeting. The board shall issue a report of its findings from the assessment process recommending standard contract ceiling prices for the upcoming program year. Such report shall be filed with the commission, along with a recommendation for the approval of the ceiling prices for the program year.

(b) The commission shall open a docket to consider for approval ceiling prices proposed by the board. In reviewing the recommended ceiling prices the commission shall give due consideration to the recommendations and report of the board and the standards set forth in subsection (a) of this section. The commission shall issue a decision within sixty (60) days after said recommendations and report are filed with the commission establishing the ceiling prices to be used by electric distribution companies in standard contracts applicable to each renewable energy class in order to effectuate the purposes and provisions of this chapter.

(c) During any program year, the board may on its own initiative, elect to revisit the ceiling prices if the board determines that the prices are either too low or too high. In such case, it may make a filing with the commission to seek a modification to the program for that year, which shall be acted upon by the commission within sixty (60) days. While such request is pending, the electric distribution company may suspend executing standard contracts until a decision is reached on the request.

39-26.2-6. Standard contract enrollment program. – (a) Each electric distribution company shall conduct at least three (3) standard contract enrollments during each program year; however, during 2011 the electric distribution company need only conduct one enrollment. Each enrollment shall be open for a two (2) week period during which the electric distribution company is required to receive standard short-form applications requesting standard contracts for distributed generation energy projects. The short-form applications shall require the applicant to provide the project owner's identity and the project's proposed location, nameplate capacity, and renewable energy class and allow for additional information relative to the permitting, financial feasibility, ability to build, and timing for deployment of the proposed projects. For small distributed generation projects, the applicant must submit an affidavit confirming that the project is not a segment of a larger project being planned for enlargement over time. For large distributed generation projects, the short-form application shall also require the applicant to bid a bundled price for the sale of the energy, capacity, renewable energy certificates, and all other environmental attributes and market products that are available or may become available from the distributed generation facility, on a per kilowatt-hour basis for the output of the project. Subject to the provisions of subsections (b) and (c) below, the electric distribution company shall not be required to enter into standard contracts in excess of the annual target for the applicable program year and shall not be required to enter into standard contracts in excess of any limit set by the board and approved by the commission for a given enrollment. However, the electric distribution company may voluntarily exceed an enrollment period limit as long as it does not exceed an annual target for the applicable program year.

(b) For small distributed generation projects, the electric distribution company on a first-come, first-served basis, shall enter into standard contracts at the applicable standard contract ceiling price with any distributed generation project which meets the requirements of all applicable tariffs and regulations, and meets the criteria of a renewable energy class in effect, until the class target is met. Enrollment periods will be governed by a solicitation and enrollment process rules that shall be filed with the commission each October 15 by the electric distribution company, and approved by the commission within sixty (60) days of such filing.

(c) For large distributed generation projects, the electric distribution company shall select projects for standard contracts based on the lowest proposed prices received, but not to exceed the applicable standard contract ceiling price, provided, that the selected projects meet the requirements of all applicable tariffs and regulations and meet the criteria of a renewable energy class in effect until the class target is met. Except for 2011, no enrollment period shall seek to enroll more than one-third (1/3) of the annual goal for the distribution company for large distributed generation projects.

(d) If there are more projects than what is specified for a class target at the same price, the electric distribution company shall review the applications submitted and select first those projects that appear to be the furthest along in development and likely to be deployed. Those projects that are likely to be deployed on the earliest timelines shall be selected. To the extent the electric distribution company is unable to make a clear distinction on this basis, the electric company shall report the results to the board and not enter into contracts with those projects that are tied on pricing. In such case, the board may take such action as it deems appropriate for the selection of projects, including seeking more information from the projects. Alternatively, the board may consider adjustments to the ceiling price and a rebid, or simply wait until the next enrollment.

(e) Should an electric distribution company determine that it has entered into sufficient standard contracts to achieve a program-year class target, it shall immediately report this to the board, the office of energy resources, and the commission, and cease entering into standard contracts for that renewable energy class for the remainder of the program year. An electric distribution company may exceed the renewable energy class target if the last standard contract entered into may cause the total purchased to exceed the target.

(f) The electric distribution company is authorized to enter into standard contracts up to the applicable ceiling price. As long as the terms of the standard contract are materially the same as the standard contract terms approved by the commission and the pricing is no higher than the applicable ceiling price, such contracts shall be deemed prudent and approved by the commission for purposes of recovering the costs in rates.

(g) A distributed generation project that also is being employed by a customer for net metering purposes may submit an application to sell the excess output from its distributed generation project. In such case, however, at the election of the self-generator all of the renewable energy certificates and environmental attributes pertaining to the energy consumed on site may be sold to the electric distribution company on a month-to-month basis outside of the terms of the standard contract. In such case, the portion of the renewable energy certificates that pertain to the energy consumed on site during the net metering billing period shall be priced at the average market price of renewable energy certificates, which may be determined by using the price of renewable energy certificates purchased or sold by the electric distribution company.

39-26.2-7. Standard contract – Form and provisions. – The following process shall be implemented to establish the non-price terms and conditions of the standard contract:

(1) A working group ("contract working group") shall be established and supervised by the board, consisting of the following members: (i) The director of the office of energy resources; (ii) A designee from the division of public utilities and carriers; (iii) Two (2) designees of the electric distribution company; (iv) Two (2) individuals designated by the office of energy resources who are experienced developers of renewable generation projects; (v) One individual designated by the office of energy resources who represents a customer of the electric distribution company; and (vi) A lawyer designated by the office of energy resources who has at least three (3) years of experience in negotiating and/or developing power purchase agreements. With respect to the lawyer designated in (vi) above, the electric distribution company shall enter into a cost reimbursement agreement with such lawyer, to compensate the lawyer for the time spent serving in the contract working group at the reasonable hourly rate negotiated by the office of energy resources. The costs incurred by the electric distribution company under the reimbursement agreement shall be recovered in rates by the electric distribution company in the year incurred or the year following incurrence through an appropriate filing with the commission. The contract working group shall be an advisory group that is not to be considered to be an agency for purposes of the administrative procedures act or any other laws pertaining to public bodies.

(2) The contract working group shall work in good faith to develop standard contracts that would be applicable for various technologies for both small and large distributed generation projects. The standard contracts should balance the need for the project to obtain financing against the need for the distribution company to protect itself and its distribution customers against unreasonable risks. The standard contract should be developed from contracting terms typically utilized in the wholesale power industry, taking into account the size of each project and the technology. The standard contracts shall provide for the purchase of energy, capacity, renewable energy certificates, and all other environmental attributes and market products that are available or may become available from the distributed generation facility. However, the electric distribution company shall retain the right to separate out pricing for each market product under the contracts for administrative and accounting purposes to avoid any detrimental accounting effects or for administrative convenience, provided that such accounting as specified in the contract does not affect the price and financial benefits to the seller as a seller of a bundled product. The standard contract also shall:

(i) Hold the distributed generation facility owner liable for the cost of interconnection from the distributed generation facility to the interconnect point with the distribution system, and for any upgrades to the existing distributed generation system that may be required by the electric distribution company. However, a distributed generation facility owner may appeal to the commission to reduce any required system upgrade costs to the extent such upgrades can be shown to benefit other customers of the electric distribution company and the balance of such costs shall be included in rates by the electric distribution company for recovery in the year incurred or the year following incurrence;

(ii) Require the distributed generation facility owner to make a performance guarantee deposit to the electric distribution company of fifteen dollars ($15.00) for small distributed generation projects or twenty-five dollars ($25.00) for large distributed generation projects for every renewable energy certificate estimated to be generated per year under the contract, but at least five hundred dollars ($500) and not more than seventy-five thousand dollars ($75,000), paid at the time of contract execution;

(iii) Require the electric distribution company to refund the performance guarantee deposit on a pro-rated basis of renewable energy credits actually delivered by the distributed generation facility over the course of the first year of the project's operation, paid quarterly;

(iv) Provide that if the distributed generation facility has not generated the output proposed in its enrollment application within eighteen (18) months after execution of the contract, the contract is automatically voided and the performance guarantee is forfeited. Any forfeited performance guarantee deposits shall be credited to all distribution customers in rates and not retained by the electric distribution company;

(v) Provide for flexible payment schedules that may be negotiated between the buyer and seller, but shall be no longer than quarterly if an agreement cannot be reached;

(vi) Require that an electric meter which conforms with standard industry norms be installed to measure the electrical energy output of the distributed generation facility, and require a system or procedure by which the distributed generation facility owner shall demonstrate creation of renewable energy credits, in a manner recognized and accounted for by the GIS; such demonstration of renewable energy credit creation to be at the distributed generation facility owner's expense. The electric distribution company may, at its discretion, offer to provide such a renewable energy credit measurement and accounting system or procedure to the distributed generation facility owner, and the distributed generation facility owner may, at its discretion, use the electric distribution company's program, or use that of an independent third party, approved by the commission, and the costs of such measurement and accounting are paid for by the distributed generation facility owner.

(3) If the contract working group reaches agreement on the terms of standard contracts, the board shall file the contracts with the commission for approval. If there are any

disagreements, they shall be identified to the commission. The commission shall review the standard contracts for conformance with the standards set forth in subsection (2). Should there be any disputes, the commission shall issue an order resolving them. To the extent the commission needs expert assistance to resolve any disagreements noted in the filing, the commission is authorized to hire a consultant to assist it in the proceedings, the costs of which shall be recovered from electric distribution customers pursuant to a uniform factor established by the commission in rates for recovery by the electric distribution company in the year incurred or the year following incurrence, as requested through a filing by the electric distribution company. The commission shall issue an order approving standard forms of contract within sixty (60) days of the filing.

39-26.2-8. Standard contract - Reporting. – (a) After each enrollment during a program year the electric distribution companies shall provide a report to the board, office of energy resources, and the commission of the aggregate amount of project nameplate capacity that was the subject of standard contracts entered into during that enrollment and the prices under each of the standard contracts that were executed.

(b) Each quarter of a program year, the electric distribution company shall provide an accounting to office of energy resource, the board, and the commission of the total amount paid to distributed generation facilities under standard contracts during that quarter, until the forty megawatt (40 MW) target is met;

(c) Until the forty megawatt (40 MW) target is met, the electric distribution company shall submit preliminary reports to office of energy resources, the board, and the commission indicating the number of standard contracts and total estimated annual generation, price, class, and any other relevant information for the purposes of better specifying classes, targets, or standard contract prices so as to achieve the purposes set forth in this chapter. Such reports shall be submitted no later than sixty (60) days prior to the end of the calendar year.

39-26.2-9. Interaction with other statutory provisions. – Except as expressly differentiated in this chapter, standard contracts entered into pursuant to this chapter shall be treated for all purposes as long-term contracts entered into under the provisions of the long-term contracting standards for renewable energy found in chapter 26.1 of title 39 of the general laws, and all such provisions shall apply to such contracts.

39-26.2-10. Establishment of board -- Purposes. – (a) There is hereby authorized, created and established a board to be known as "The Distributed Generation Standard Contract Board" with the powers and duties set forth in this chapter.

(b) The purposes of this board are to:

(1) Evaluate and make recommendations to the commission regarding ceiling prices and annual contracting targets, the make-up of renewable energy classes, and the terms of standard contracts under the provisions of this chapter;

(2) Provide consistent, comprehensive, informed and publicly accountable involvement by representatives of groups impacted by, involved in, and knowledgeable regarding the development of distributed generation projects that are eligible to enter into standard contracts; and

(3) Monitor and evaluate the effectiveness of the distributed generation standard contracting program for the purchase of the energy output of distributed renewable generation projects.

39-26.2-11. Composition and appointment. – (a) The board shall consist of ten (10) members appointed by the governor with the advice and consent of the senate; seven (7) members shall be voting members, and the governor shall give due consideration to appointing persons with knowledge of: (1) Energy regulation and law; (2) Large commercial/industrial users; (3) Small commercial/industrial users; (4) Residential users; (5) Low income users; (6) Environmental issues pertaining to energy; and (7) Construction of renewable generation. Three (3) members shall be ex officio, non-voting members, one representing an electric distribution company, one representing the commissioner of the office of energy resources and one representing the economic development corporation. From the seven (7) voting members, the governor shall appoint one person to be chairperson of the board and one person to be vice chairperson of the board; the commissioner of the office of energy resources shall be the executive secretary and executive director of the board.

(b) With the exception of the representative of the commissioner of the office of energy resources, and the representative of the economic development corporation, the initial appointments of the other ex officio, non-voting member shall be appointed for a term of two (2) years, to be thereafter reappointed or replaced by a nonvoting member with terms of two (2) years. Of the initial appointments of voting members, three (3) voting members shall be appointed for a term of two (2) years, to be thereafter reappointed or replaced by three (3) voting members with a term of two (2) years, and four (4) voting members shall be appointed for a term of one year, to be thereafter reappointed or replaced for each of the following three (3) years by four (4) voting members with a term of one year.

(c) A simple majority of the total number of voting members shall constitute a quorum.

(d) A vacancy other than by expiration shall be filled in the manner of the original appointment but only for the unexpired portion of the term. The appointing authority shall have the power to remove its appointee only for just cause.

(e) The members of the council shall not be compensated for their service but shall be reimbursed for their actual expenses necessarily incurred in the performance of their duties. The provisions of this subdivision shall not apply to the executive secretary/executive director.

39-26.2-12. Powers and duties. – The board shall have the power to:

(1) Develop and recommend to the public utilities commission for review and approval ceiling prices for standard contracts under the distributed generation standard contracts;

(2) Develop and recommend to the commission adjustments up or down to the annual target for standard contracts for the following program year;

(3) Monitor and evaluate performance under the distributed generation standard contracts act, including an assessment of ratepayer impact, to be submitted annually in a report to the governor and the general assembly.

(4) Participate in proceedings of the public utilities commission that pertain to the purposes of the board.

(5) In order to provide funding for the purposes of engaging consultants and professional services as necessary and appropriate for the board to fulfill its duties and purposes, an allocation of no less than fifty thousand dollars ($50,000) from unused portions of Regional Greenhouse Gas Initiative ("RGGI") auction proceeds not dedicated to efficiency measures but to overhead expenses shall be transmitted from the office of energy resources to the board.

39-26.2-13. Liberal construction of chapter required. – This chapter shall be construed liberally in aid of its declared purposes.

39-26.2-14. Severability. – If any provision of this chapter or the application thereof to any person or circumstances is held invalid, such invalidity shall not affect other provisions or applications of the chapter, which can be given effect without the invalid provision or application, and to this end the provisions of this chapter are declared to be severable.

SECTION 2. This act shall take effect upon passage.

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LC02543/SUB A/2
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EXPLANATION

BY THE LEGISLATIVE COUNCIL

OF

A N A C T

RELATING TO PUBLIC UTILITIES AND CARRIERS - DISTRIBUTED GENERATION STANDARD CONTRACTS

***

This act would facilitate, promote, support and develop the grid connected generation renewable energy.

This act would take effect upon passage.

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LC02543/SUB A/2
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APPENDIX B

OFFICE OF ENERGY RESOURCES DATA REQUEST

RI Office of Energy Resources

CALL FOR CEILING PRICE DATA

DUE DATE FOR SUBMISSION: TUESDAY, SEPTEMBER 6

Submit electronically to: Kenneth.Payne@energy.ri.gov and bgrace@seadvantage.com

Dear Colleagues and Distributed Renewable Energy Generation Stakeholders:

As I described in my e-mail of last Thursday (sent by Charles.Hawkins@energy.ri.gov), we will be using a multi-step process to develop distributed generation-long term contracting ceiling prices for renewable energy generation resources:

(1) Data from stakeholders and other sources,
(2) Development of initial "straw man" ceiling prices and request stakeholder comments,
(3) Development of refined "straw man" ceiling prices and community review meeting, and
(4) Submission of recommended ceiling prices for 2011 to the PUC.

OER is working on a very tight timetable: the ceiling prices by law must be submitted to the Public Utilities Commission within ninety (90) after the passage of the legislation, the legislation was signed into law on June 29, 2011, and the OER is both using a highly appropriate, current, nationally recognized methodology for developing ceiling prices and providing for maximum feasible stakeholders in-put. **Your involvement is welcomed and vital!**

Pursuant to the Public Laws of 2011, chapters 129 and 143, *An Act Relating to Public Utilities and Carriers – Distributed Renewable Energy* (the Act), the OER will be developing recommended ceiling prices for Distributed Generation (DG) Standard Contracts for 2011.

To do this, the OER will be utilizing the National Renewable Energy Laboratory's Cost of Renewable Energy Spreadsheet Tool (CREST) in order to model our recommendations for submission to the RI Public Utilities Commission. CREST was developed specifically to support the development of performance-based renewable energy incentive rates, and has been vetted by a national network of peer reviewers. The CREST models for wind and solar installation, and their supporting documentation, can be downloaded from the NREL website: http://financere.nrel.gov/finance/content/CREST-model.

To provide expert support for this effort the OER has retained Sustainable Energy Advantage with a subcontract to Meister Consulting Group; Jason Gifford and Robert Grace of Sustainable and Wilson Rickerson of Meister were the three co-authors of the NREL report. OER is working with them as a team.

For use during 2011, we propose to develop ceiling rates for four 'classes', three for different sized solar photovoltaic (PV) installations, and one for wind installations. Additional technologies and classes may be considered for 2012 or thereafter. While the rates are envisioned to be available to the full range of project sizes allowed under the Act, four 'standard' installations will be modeled for purposes of informing the setting of ceiling rates for each class.

We invite you to offer recommendations for data inputs that we should include in each model. When making recommendations, keep in mind that we are seeking ceiling prices that achieve the law's goals – namely to "support and encourage development of distributed renewable energy generation systems" in a manner that is "cost effective", and provides an adequate rate of return to private investors.

A list of the inputs sought is included in the attached tables. There is one table for each technology and standard size class. Please fill out as much information as you feel qualified to provide. In addition to the column for Recommended Input, there are additional columns to elaborate on your recommendation and to note the source for the data provided. Please let us know if your data is based on your own expert opinion, or on specific sources of published (or unpublished) data. To ensure that we meet our deadlines, we ask that you submit your recommended inputs no later than **September 6, 2011.**

Once we have received all recommendations and considered other available data sources, we will calculate our recommended ceiling prices and distribute the recommendations accompanied by the underlying assumptions for your review and written comment.

We look forward to continuing collaboration with you during the weeks ahead; the process is, I know, daunting, exciting and important. With many thanks for your interest and cooperation,

Best regards,

Kenneth F. Payne

Administrator, Office of Energy Resources

Data Request:

CREST is a levelized cost of energy (LCOE) model. It converts input for fixed and variable costs, system performance characteristics, and Federal and State incentives into a revenue stream required to provide the specified return to investors. For purposes of establishing ceiling prices, we propose to assume a private sector investor, who utilizes available tax incentives. Furthermore, while the Standard Contract will be available for excess generation from customer-sited generators located behind the retail meter, the ceiling prices will be based on modeling for a project interconnected to the utility side of the retail meter.

The following represent the key inputs for which we seek your recommendations. Please fill out the tables below. Short definitions of each of the inputs follow the tables.

Wind generator (1.5 MW)			
Input category	Recommended Input	Notes on Assumptions	Source
Expected Annual Average Net capacity factor, (%)			
Total installed cost ($/kW), excluding Interconnection Cost			
Interconnection cost ($)			
O&M expenses (in $/kW-year) in Year 1 of operations			
Annual average escalation rate for O&M expenses (%)			
Length of construction period (months)			
Debt-to-equity ratio			
Debt tenor (years)			
Interest rate on debt (%)			
After Tax Return on Equity (e.g. IRR) (%)			

Solar PV generator (150 kW DC)			
Input category	Recommended Input	Notes on Assumptions	Source
Expected Annual Average Net capacity factor, (%)			
DC to AC Inverter Efficiency (%)			
Total installed cost ($/kW$_{DC}$), excluding Interconnection Cost			
Interconnection cost ($)			
O&M expenses (in $/kW$_{DC}$-year) in Year 1 of operations			
Annual average escalation rate for O&M expenses (%)			
Length of construction period (months)			
Debt-to-equity ratio			
Debt tenor (years)			
Interest rate on debt (%)			
After Tax Return on Equity (e.g. IRR) (%)			

Solar PV generator (500 kW DC)			
Input category	Recommended Input	Notes on Assumptions	Source
Expected Annual Average Net capacity factor, (%)			
DC to AC Inverter Efficiency (%)			
Total installed cost ($/kW$_{DC}$), excluding Interconnection Cost			
Interconnection cost ($)			
O&M expenses (in $/kW$_{DC}$-year) in Year 1 of operations			
Annual average escalation rate for O&M expenses (%)			
Length of construction period (months)			
Debt-to-equity ratio			
Debt tenor (years)			
Interest rate on debt (%)			
After Tax Return on Equity (e.g. IRR) (%)			

Solar PV generator (1500 kW DC)			
Input category	Recommended Input	Notes on Assumptions	Source
Expected Annual Average Net capacity factor, (%)			
DC to AC Inverter Efficiency (%)			
Total installed cost ($/kW$_{DC}$), excluding Interconnection Cost			
Interconnection cost ($)			
O&M expenses (in $/kW$_{DC}$-year) in Year 1 of operations			
Annual average escalation rate for O&M expenses (%)			
Length of construction period (months)			
Debt-to-equity ratio			
Debt tenor (years)			
Interest rate on debt (%)			
After Tax Return on Equity (e.g. IRR) (%)			

Net capacity factor (NCF), Year 1 (%) - Capacity Factor is the % representation of the actual annual production vs. the theoretical maximum annual production of an energy project. This model requires the input of a Net Capacity Factor, meaning that the estimate of actual energy production should take into account all electricity losses (including those incurred between the generating facility and the contract delivery point), scheduled and unscheduled maintenance, shading, forced outages, and any other factors that could reduce production. For a wind plant, this number should reflect the average annual P50 estimate. Note, this model assumes an AC capacity factor. Therefore, for solar PV, the net capacity factor is calculated by converting DC capacity to AC capacity (if applicable) and then applying the following formula:

$$\textbf{net capacity .c.f. = expected annual kWh sales/(kW}_{AC}\textbf{ x 8760 hours)}$$

For Solar PV, in the ‘Notes on Assumptions’ column, indicate the assumed tracking (e.g. fixed, single or double axis tracking) and orientation: (degrees tilt).

Total installed cost: This includes the total expected all-in installed project cost, which should include all hardware, balance of plant, design, construction, permitting, development (including developer fee), interest during construction and financing costs. This figure should not account for any tax incentives, grants, or other cash incentives, which will be accounted for separately. It should also exclude the assumed interconnection cost, which is specified separately.

Interconnection cost: Please include your assumptions about the “typical” interconnection cost for a system in Rhode Island. Interconnection costs include costs relating to connecting to the grid, such as the construction of transmission lines, permitting costs with the utility, and start-up costs. This category will also include the cost of a new substation, if necessary.

O&M expenses: Operations and maintenance include all fixed and variable expenses associated with project operations, including insurance, property taxes, land leases, royalties, etc.

Length of construction period: The # of months from construction start to commercial operation.

Interest rate (during construction period only): The annual interest rate on construction debt.

Debt-to-equity ratio. This specifies the ratio of the portion of funds borrowed (as a percentage of the total hard costs) to the portion of project funds supplied as equity. This is typically expressed as Debt / Equity – i.e. 70/30 or 50/50, etc.

Debt tenor: This is the number of years in the debt repayment schedule. It is also referred to as debt "term."

Interest rate: The all-in interest rate is the financing rate provided by the bank or other debt investor.

Return on equity: This is the minimum after-tax internal rate of return required to attract equity investment to a project of the indicated scale, with the indicated D/E ratio.

APPENDIX C

INITIAL STRAW-MAN PROPOSAL CEILING PRICES

Rhode Island Distributed Generation Standard Offer: *Input Assumptions for Establishing Ceiling Prices & Preliminary Ceiling Prices*

September 2011

Sustainable Energy Advantage, LLC
Meister Consultants Group

Sustainable Energy Advantage, LLC

Mission: Sustainable Energy

Approach: Sustainable Advantage

We help build Renewable Energy Businesses, Markets, Policies & Projects… through Analysis, Strategy & Implementation

Services	***Practice Areas***
• ***Interdisciplinary consulting & advisory services*** (regional & national) • ***New England Renewable Energy Market Outlook***[sm] (REMO) subscription briefings • ***New England Eyes & Ears***[sm] Regulatory, Policy & Legislative Tracking and Analysis Subscription Service	• ***Power market and public policy analysis, tracking, development & implementation***. • ***Strategy development.*** • ***Financial analysis & economic feasibility*** • ***Renewable Energy supply & procurement***. • ***Quantitative analysis and modeling***. • ***Transaction facilitation, contract development and negotiation support***. • ***Business infrastructure development***. • ***Green power product development & pricing***

2011 Ceiling Prices to be established for 4 Classes…

- 1 Wind
- 3 Solar
- ‘standard’ installations will be modeled to inform setting of ceiling rates for each class

Class	Eligible Sizes	Standard Size for Modeling Ceiling Price
Wind	Up to 1.5 MW	1.5 MW
Solar – Small	10 – 150 kW DC	150 kW
Solar – Medium	151 – 500 kW DC	500 kW
Solar - Large	500 – 5000 kW DC	1500 kW

WIND

Researched cost, O&M and financing inputs: Wind ≈ 1.5 MW

Input category
Expected Annual Average Net capacity factor, (%) **Proposed Input** = **25%**
Total installed cost ($/kW), **excluding** Interconnection Cost **Proposed Input** = **$2,750/kW** **(excl. interconnection costs)**
Interconnection cost ($/kW) **Proposed Input** = **$117/kW**
O&M expenses (in $/kW-year) in Year 1 of operations **Proposed Input** = **$55/kW**

Researched cost, O&M and financing inputs: Wind ≈ 1.5 MW

Input category
Annual avg. escalation rate for O&M expenses (%) **Proposed Input** = **2%**
Length of construction period (months) **Proposed Input** = **5 months, but incl. in cap. cost**
Debt-to-equity ratio **Proposed Input** = **50/50 target** **(debt optimized to cash flow)**
Debt tenor (years) **Proposed Input** = **14 Yrs.**
Interest rate on debt (%) **Proposed Input** = **6%**
After Tax Return on Equity (e.g. IRR) (%) **Proposed Input** = **13%**

Capital Cost, Installed

(Includes soft costs & construction financing; excludes Interconnection)

Details, Sources

- Stakeholder DR
- SEA Experience
  - Incl. several recent RI & SE MA project feasibility studies
- MCG Internal Database
- NS & VT FIT Proceedings
- Interviews
- Industry Databases (CanWEA)

Costs embedded in total installed cost estimates include:

***Soft Costs**: interest incurred during construction, the initial funding of all required reserve accounts, financing closing costs, and lender fees (if applicable)*

O&M Cost

Details, Sources

- Stakeholder DR
- Interviews
- SEA Experience
  - Incl. several recent RI & SE MA project feasibility studies
- VT, NS & Ontario benchmarking, FIT Proceedings

Interconnection

Details, Sources

- SEA Experience
- NS FIT Proceeding
- National Grid: random sample of 7 projects in MA; best fit of cost curve applied.

Finance Structure & Costs of Debt and Equity

Details, Sources

- Interviews
- SEA Experience
- VT & NS FIT Proceedings
- Model optimized based on available cash flows
- NREL REFTI
- Stakeholder DR

Incentives

- Federal Investment Tax Credit (ITC) assumed available at time of initial operation (2012)
- Assume full monetization
- 50% Bonus Depreciation utilized

- No federal, state, local or other grants assumed

Performance

Details, Sources

- SEA Experience
- MA CEC PTS
- Stakeholder DR

Additional Assumptions

- Commercial operation achieved in 2012
- Project Useful Life: 20 years
- 0.5% annual production degradation
- Minimum Debt Service Coverage Ratio: 1.20X
- Average Debt Service Coverage Ratio: 1.45X
- Interconnection Costs depreciated on 15-year MACRS schedule
- All other project costs:
  - 96% depreciated on 5-year MACRS
  - 2% depreciated on 15-year MACRS
  - 2% not depreciable
- Federal Income Tax rate 35%; State rate 9%
- All tax benefit utilized in period generated, unless otherwise noted
- Market value of production (assumed revenue) post-contract = 90% of sum of energy and capacity price forecasts from 2011 Avoided Energy Supply Cost Study and $5/REC (see next slide)

Additional Assumptions:

Forecast of Market Value of Production

Project Year	Calendar Year	Market Value of Production (incl. energy, capacity & RECs) (cents/kWh)
16	2027	11.10
17	2028	11.32
18	2029	11.54
19	2030	11.76
20	2031	11.99

Est. of 15-year levelized contract: Wind (1.5 MW)

Scenario (Modeling Assumptions)	**Estimated Contract Price** (cents/kWh)
Debt optimized to meet min DSCR; Tax Benefits utilized as generated	11.85
Debt optimized to meet min DSCR; NOL carried forward and used only by project	12.25
Debt optimized to meet both min + average DSCR; Tax Benefits utilized as generated	12.25
Debt optimized to meet both min + average DSCR; NOL carried forward and used only by project	12.65

Min DSCR = 1.20X
Avg. DSCR = 1.45X

SOLAR

Capital Cost, Installed

(Includes soft costs & construction financing; excludes Interconnection)

Details, Sources

- Industry Databases
  - MA Comm Solar
  - MA SREC Data base
  - NYSERDA Rebate program
  - RI EDC
- Stakeholder Data Request

Costs embedded in total installed cost estimates include:

Soft Costs*: interest incurred during construction, the initial funding of all required reserve accounts, financing closing costs, and lender fees (if applicable)*

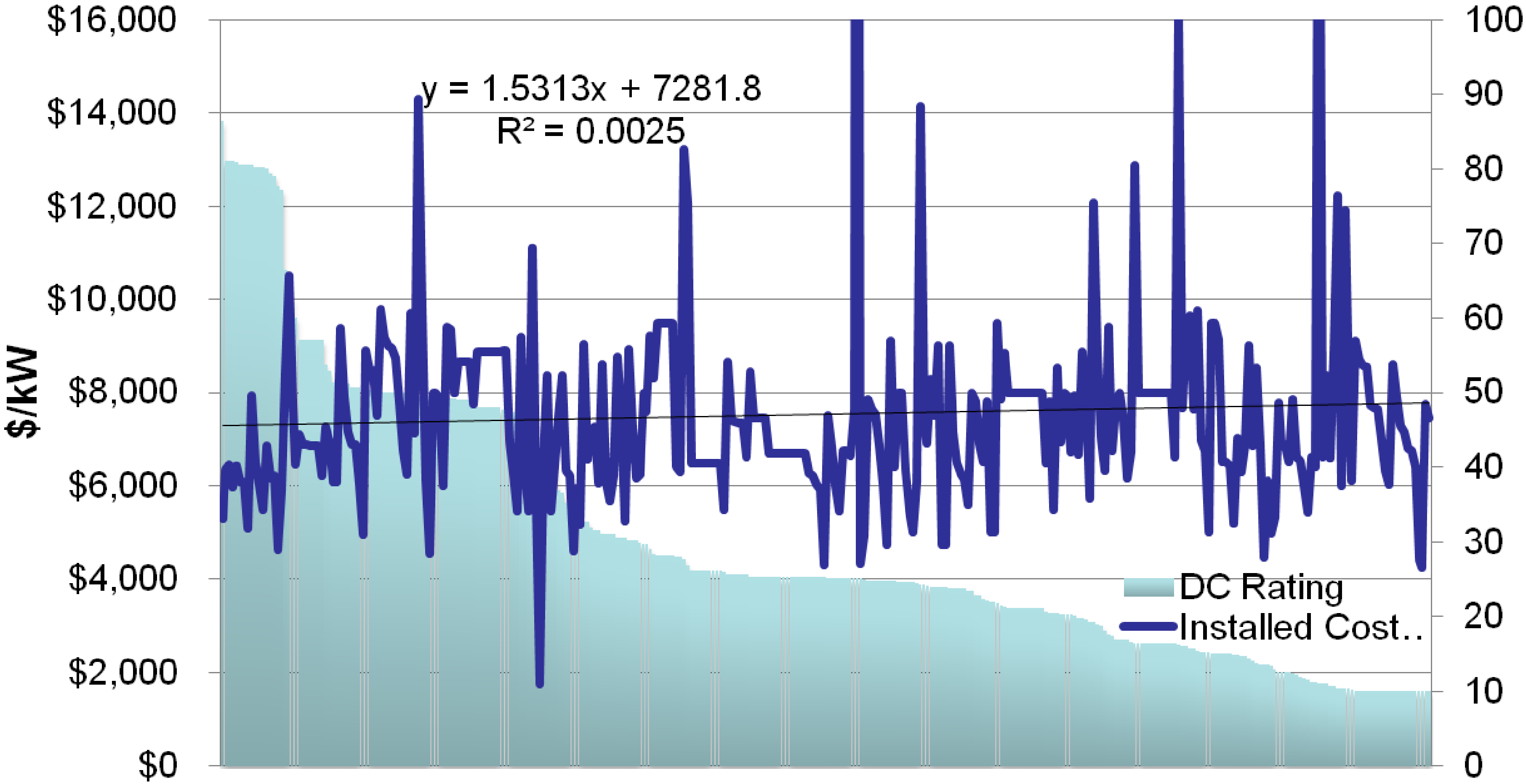
Inverter Warrantee*: The solar CREST model has the ability to incorporate two capital expenditures during operations, which could be used to model inverter replacements. In response to recent data and stakeholder feedback, however, this analysis assumes that a $50/kW adder to the initial capital cost (applied equally to all project sizes) secures a 20-year inverter warrantee. No additional inverter replacement costs are modeled.*

Capital Costs* (10kW – 100kW) NYSERDA Powerclerks Database

Installed Cost Trends	AVERAGE	MIN	MAX	STD DEV	COUNT
2008 Installed Cost	$8,431	$7,396	$9,250	$648	9
2009 Installed Cost	$8,255	$4,678	$13,508	$1,371	125
2010 Installed Cost	$7,534	$1,748	$46,655	$2,889	328
2011 Installed Cost	$6,863	$3,544	$13,609	$1,708	145

*Note: Total capital costs including interconnection

2010 Installed Costs (10kW - 100kW)
NYSERDA Powerclerks

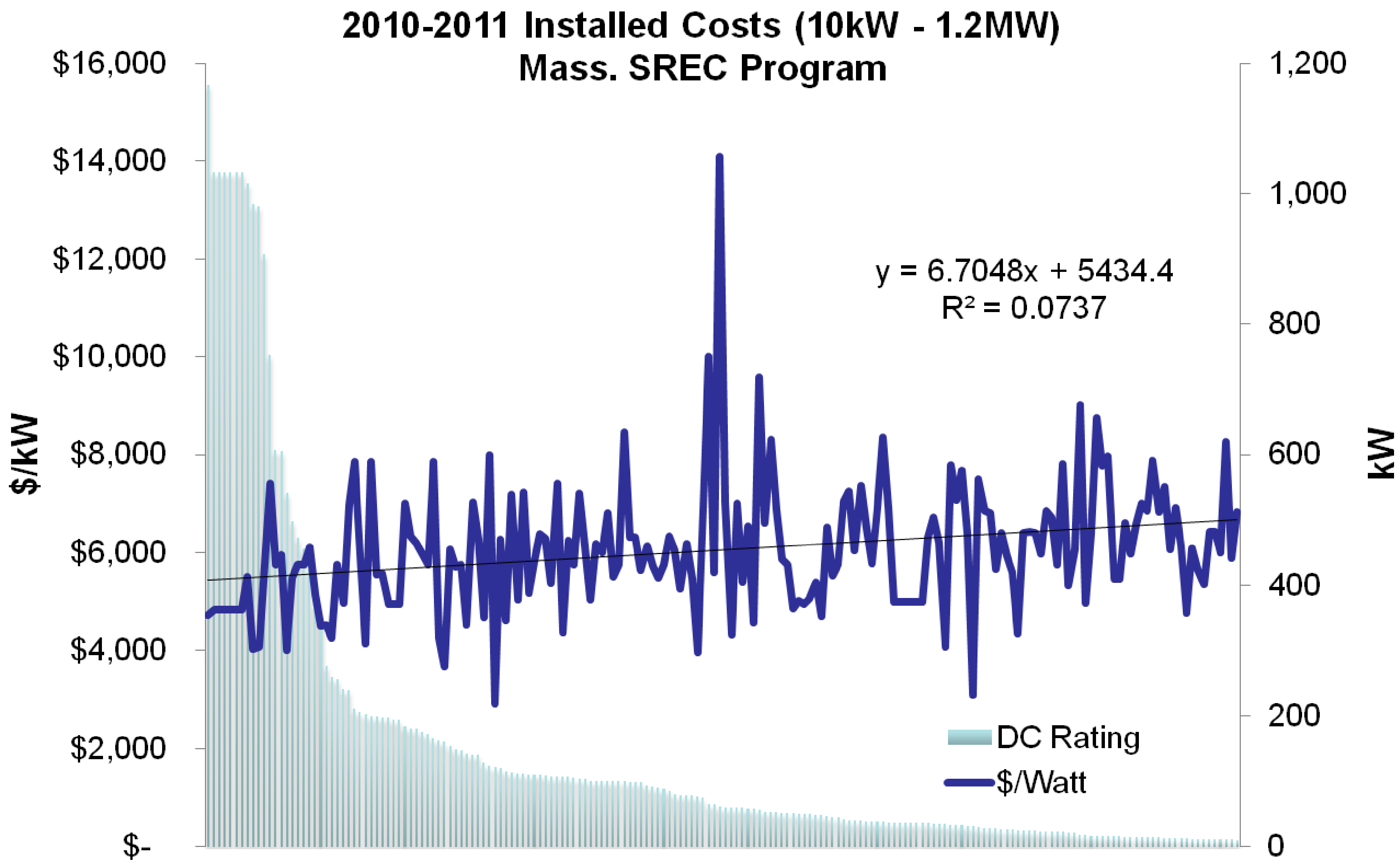


Capital Costs* (10kW – 1.5MW)

Mass. SREC Database (2010-2011)

System Size	Average Cost	StDev	MIN	Max	Median Size	N
10kW to 149kW	$6,241	$1,335	$2,908	$14,098	41	140
150kW to 500kW	$5,659	$1,109	$3,684	$7,417	200	29
500kW to 1.5 MW	$5,085	$886	$4,012	$7,417	1,016	15

*Note: Total capital costs including interconnection


2010-2011 Installed Costs (10kW - 1.2MW)
Mass. SREC Program
$16,000
$14,000
$12,000
$10,000
$8,000
$6,000
$4,000
$2,000
$-
$/kW
1,200
1,000
800
600
400
200
0
kW
y = 6.7048x + 5434.4
R² = 0.0737
DC Rating
$/Watt

Capital Costs* (10kW – 500kW)
Commonwealth Solar Database (Q1/Q2 2010)

System Size	Average Cost	StDev	MIN	Max	Median Size	N
10kW to 149kW	$5,914	$1,256	$3,056	$10,456	40	79
150kW to 500kW	$5,748	$853	$4,647	$7,170	197	13

*Note: Total capital costs including interconnection

O&M Cost

Sources

- MCG experience
- Stakeholder DR
- VT FIT proceedings

PVWatts Production Data* capacity factor$_{DC}$ ~ 14.25-14.85%

kWh per kW	1,248	(.77 derate with 92% inverter efficiency)
kWh per kW	1,299	(.803 derate with 96% inverter efficiency)

*Note: Providence, R.I. case; array tilt: 41.7 deg; array azimuth: 180 deg

Researched cost, O&M & financing inputs: Solar ≈ 150 kW dc (1)

Input category
Expected Annual Average Net capacity factor, (%) DC **Proposed Input** = **13.5%**
DC to AC Inverter Efficiency (%) **Proposed Input = 94%**
Total installed cost ($/kW$_{DC}$), excluding Interconnection Cost **Proposed Input = $3,900** **(excl. Interconnection costs)** **+ $50/kW 20-yr inverter warrantee**
Interconnection cost ($) **Proposed Input = $210/kW**

Researched cost, O&M & financing inputs: Solar ≈ 150 kW dc (2)

Input category
O&M expenses (in $/kW_{DC}$-year) in Year 1 of operations **Proposed Input** = **$20/kW**
Annual average escalation rate for O&M expenses (%) **Proposed Input** = **3%**
Length of construction period (months) **Proposed Input** = **(included in installed cost)**
Debt-to-equity ratio **Proposed Input** = **50/50 target (debt optimized to cash flow)**
Debt tenor (years) **Proposed Input** = **14 years**
Interest rate on debt (%) **Proposed Input** = **6%**
After Tax Return on Equity (e.g. IRR) (%) **Proposed Input** = **13%**

Researched cost, O&M and financing inputs: Solar ≈ 500 kW dc (1)

Input category
Expected Annual Avg. Net capacity factor, (%) **Proposed Input** = **14.0%**
DC to AC Inverter Efficiency (%) **Proposed Input** = **95%**
Total installed cost ($/kW$_{DC}$), excluding Interconnection Cost **Proposed Input** = **$3,700** **(excl. Interconnection costs)** **+ $50/kW 20-yr inverter warrantee**
Interconnection cost ($) **Proposed Input** = **$185/kW**

Researched cost, O&M and financing inputs: Solar ≈ 500 kW dc (2)

Input category
O&M expenses (in $/kW$_{DC}$-year) in Year 1 of operations **Proposed Input** = **$20/kW**
Annual avg. escalation rate for O&M expenses (%) **Proposed Input** = **3%**
Length of construction period (months) **Proposed Input** = **(included in installed cost)**
Debt-to-equity ratio **Proposed Input** = **50/50 target** **(debt optimized to cash flow)**
Debt tenor (years) **Proposed Input** = **14 years**
Interest rate on debt (%) **Proposed Input** = **6%**
After Tax Return on Equity (e.g. IRR) (%) **Proposed Input** = **13%**

Researched cost, O&M and financing inputs: Solar ≈ 1,500 kW dc (1)

Input category
Expected Annual Avg. Net capacity factor, (%) **Proposed Input** = **14%**
DC to AC Inverter Efficiency (%) **Proposed Input** = **95.5%**
Total installed cost ($/$kW_{DC}$), excluding Interconnection Cost **Proposed Input** = **$3,600** **(excl. Interconnection costs)** **+ $50/kW 20-yr inverter warrantee**
Interconnection cost ($) **Proposed Input** = **$132**

Researched cost, O&M and financing inputs: Solar ≈ 1,500 kW dc (2)

Input category
O&M expenses (in $/kW$_{DC}$-year) in Year 1 of operations **Proposed Input = $15/kW**
Annual average escalation rate for O&M expenses (%) **Proposed Input = 2.5%**
Length of construction period (months) **Proposed Input = (included in installed cost)**
Debt-to-equity ratio **Proposed Input = 50/50 target** **(debt optimized to cash flow)**
Debt tenor (years) **Proposed Input = 14 yrs**
Interest rate on debt (%) **Proposed Input = 6%**
After Tax Return on Equity (e.g. IRR) (%) **Proposed Input =13%**

Interconnection

Details, Sources

- Stakeholder DR
- National Grid:
  - random sample of 7 projects; best fit of cost curve applied.

Finance Structure & Costs of Debt and Equity

Details, Sources

- Interviews
- VT FIT Proceeding
- Stakeholder DR
- NREL REFTI
- Model optimized based on avail cash flows

Incentives

- Federal Investment Tax Credit (ITC) assumed available at time of initial operation (2012)
- Assume full monetization
- 50% Bonus Depreciation utilized
- No federal, state, local or other grants assumed

Performance

Details, Sources

- PV Watts assumes no tracking, idealized orientation & tilt
- Stakeholder Data Request
- Inverter conversion factor based on data request and manufacturer input
- MA CEC PTS: actual historic production

Additional Assumptions

- Commercial operation achieved in 2012
- Project Useful Life: 25 years
- 0.5% annual production degradation
- Minimum Debt Service Coverage Ratio: 1.20X
- Average Debt Service Coverage Ratio: 1.45X
- Interconnection Costs depreciated on 15-year MACRS schedule
- All other project costs:
  - 96% depreciated on 5-year MACRS
  - 2% depreciated on 15-year MACRS
  - 2% not depreciable
- Federal Income Tax rate 35%; State rate 9%
- All tax benefit utilized in period generated, unless otherwise noted
- Market value of production (assumed revenue) post-contract = 90% of sum of energy and capacity price forecasts from 2011 Avoided Energy Supply Cost Study and $5/REC (see next slide)

Additional Assumptions:
Forecast of Market Value of Production

Project Year	Calendar Year	Market Value of Production (incl. energy, capacity & RECs) (cents/kWh)
16	2027	11.10
17	2028	11.32
18	2029	11.54
19	2030	11.76
20	2031	11.99
21	2032	12.22
22	2033	12.46
23	2034	12.70
24	2035	12.94
25	2036	13.19

Est. of 15-year levelized contract: Solar (150 kW)

Scenario (Modeling Assumptions)	**Estimated Contract Price** (cents/kWh)
Debt optimized to meet min DSCR; Tax Benefits utilized as generated	26.25
Debt optimized to meet min DSCR; NOL carried forward and used only by project	27.25
Debt optimized to meet both min + average DSCR; Tax Benefits utilized as generated	27.65
Debt optimized to meet both min + average DSCR; NOL carried forward and used only by project	28.75

Min DSCR = 1.20X
Avg. DSCR = 1.45X

Est. of 15-year levelized contract: Solar (500 kW)

Scenario (Modeling Assumptions)	**Estimated Contract Price** (cents/kWh)
Debt optimized to meet min DSCR; Tax Benefits utilized as generated	23.95
Debt optimized to meet min DSCR; NOL carried forward and used only by project	24.95
Debt optimized to meet both min + average DSCR; Tax Benefits utilized as generated	25.25
Debt optimized to meet both min + average DSCR; NOL carried forward and used only by project	26.25

Min DSCR = 1.20X
Avg. DSCR = 1.45X

Est. of 15-year levelized contract: Solar (1500 kW)

Scenario (Modeling Assumptions)	Estimated Contract Price (cents/kWh)
Debt optimized to meet min DSCR; Tax Benefits utilized as generated	22.25
Debt optimized to meet min DSCR; NOL carried forward and used only by project	23.15
Debt optimized to meet both min + average DSCR; Tax Benefits utilized as generated	23.55
Debt optimized to meet both min + average DSCR; NOL carried forward and used only by project	24.45

Min DSCR = 1.20X
Avg. DSCR = 1.45X

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APPENDIX D

CREST MODEL OF RECOMMENDED 2011 CEILING PRICES

SUMMARY TABLE
<u>With Final Ceiling Prices Shown</u>

WIND 1500
(Tax Benefits Used as Generated)

SOLAR 150 KW
(Tax Benefits Used as Generated)

SOLAR 500 KW
(Tax Benefits Used as Generated)

SOLAR 1500 KW
(Tax Benefits Used as Generated)

Final Ceiling Prices

Debt optimized to meet both min + average DSCR; NOL carried forward and used only by project

(cents/kWh)	Presented to Stakeholders	**Revision 1**	Change	% Change	**Revision 2**	Change	% Change
Wind	12.65	13.75	1.1	8.7%	13.55	0.9	7.1%
Solar 150 kW	28.75	34.15	5.4	18.8%	33.85	5.1	17.7%
Solar 500 kW	26.25	31.55	5.3	20.2%	32.05	5.8	22.1%
Solar 1500 kW	24.45	30.95	6.5	26.6%	29.35	4.9	20.0%

Debt optimized to meet both min + average DSCR; Tax Benefits utilized as generated

(cents/kWh)	Presented to Stakeholders				**Revision 2**	Change	% Change
Wind	12.25				13.15	0.9	7.3%
Solar 150 kW	27.65				32.85	5.2	18.8%
Solar 500 kW	25.25				31.15	5.9	23.4%
Solar 1500 kW	23.55				28.55	5	21.2%

Final #s

(cents/kWh)	Ceiling Price (cents/kWh)
Wind	13.35
Solar 150 kW	33.35
Solar 500 kW	31.60
Solar 1500 kW	28.95

Wind 1,500 KW
Tax Benefits Used as Generated

Performance, Cost, Operating, Tax & Financing Inputs

Project Size and Performance	Units	Input Value	Notes
Generator Nameplate Capacity	kW	1,500	?
Net Capacity Factor, Yr 1	%	25.0%	?
Production, Yr 1	kWh	3,285,000	?
Annual Production Degradation	%	0.5%	?
Project Useful Life	years	20	?

Capital Costs	Units	Input Value	Notes
Select Cost Level of Detail		Intermediate	?
Generation Equipment	$	$4,125,000	?
Balance of Plant	$	$0	?
Interconnection	$	$175,500	?
Development Costs & Fee	$	$0	?
Reserves & Financing Costs	$	$0	?
Total Installed Cost	$	$4,300,500	?
Total Installed Cost	$/kW	$2,867	?
Total Value of Grants (excl. pmt in lieu of ITC, if applicable)	$	$0	?
Net Project Cost	$	$4,300,500	?
Net Project Cost	$/kW	$2,867	?

Operations & Maintenance	Units	Input Value	Notes
Select Cost Level of Detail		Simple	?
Fixed O&M Expense, Yr 1	$/kW-yr	$55.00	?
Variable O&M Expense, Yr 1	¢/kWh	0.00	?
O&M Cost Inflation, initial period	%	2.0%	?
Initial Period ends last day of:	year	10	?
O&M Cost Inflation, thereafter	%	2.0%	?

Construction Financing	Units	Input Value	Notes
Construction Period	months	5	?
Interest Rate (Annual)	%	0.0%	?
Interest During Construction	$	$0	?

Permanent Financing	Units	Input Value	Notes
% Debt (% of hard costs) (mortgage-style amort.)	%	43%	?
Debt Tenor	years	12	?
Interest Rate on Term Debt	%	6.50%	?
Lender's Fee (% of total borrowing)	%	0.0%	?
Required Minimum Annual DSCR		1.20	?
Actual Minimum DSCR, occurs in→	Year 12	1.36	?
Minimum DSCR Check Cell (If "Fail," read note ==>)	Pass/Fail	Pass	?
Required Average DSCR		1.45	?
Actual Average DSCR		1.45	?
Average DSCR Check Cell (If "Fail," read note ==>)	Pass/Fail	Pass	?
% Equity (% hard costs)(soft costs also equity funded)	%	57%	?
Target After-Tax Equity IRR	%	13.00%	?
Weighted Average Cost of Capital (WACC)	%	9.08%	?
Other Closing Costs	$	$0	?

Summary of Sources of Funding for Total Installed Cost			
Senior Debt (funds portion of hard costs)	43%	$1,840,304	?
Equity (funds balance of hard costs + all soft costs)	57%	$2,460,196	?
Total Value of Grants	0%	$0	?
Total Installed Cost	$	**$4,300,500**	?

Tax	Units	Input Value	Notes
Is owner a taxable entity?		Yes	?
Federal Income Tax Rate	%	35.0%	?
Federal Tax Benefits used as generated or carried forward?		As Generated	?
State Income Tax Rate	%	9.0%	?
State Tax Benefits used as generated or carried forward?		As Generated	?
Effective Income Tax Rate	%	40.85%	?
Depreciation Allocation		see table ==>	?

Cost-Based Tariff Rate Structure	Units	Input Value	Notes
Payment Duration for Cost-Based Incentive	years	15	?
% of Year-One Tariff Rate Escalated	%	0.0%	?
Cost-Based Tariff Escalation Rate	%	0.0%	?

Forecasted Market Value of Production; applies after Incentive Expiration			?
Select Market Value Forecast Methodology		Year-by-Year	?
Click Here for Complex Input Worksheet			?

Federal Incentives	Units	Input Value	Notes
Select Cost-Based (ITC/Grant) or Performance-Based (PTC/REPI)		Cost-Based	?
Investment Tax Credit (ITC) or Cash Grant?		ITC	?
ITC or Cash Grant Amount	%	30%	?
ITC utilization factor, if applicable	%	100%	?
ITC or Cash Grant	$	$1,188,000	?
Federal Tax Benefits used as generated or carried forward?		As Generated	?
Federal Grants (Other than Section 1603)	$	$0	?
Federal Grants Treated as Taxable Income?		Yes	?

State Incentives	Units	Input Value	Notes
Select Cost-Based (ITC) or Performance-Based (PTC/Cash Pmt)		Neither	?
Total State Grants (or Rebates)	$	$0	?
State Grants Treated as Taxable Income?		Yes	?

Capital Expenditures During Operations: E.g. Gearbox or Blade Replacements			
1st Equipment Replacement	year	7	?
1st Replacement Cost ($ in year replaced)	$/kW	$0	?
2nd Equipment Replacement	year	14	?
2nd Replacement Cost ($ in year replaced)	$/kW	$0	?
3rd Equipment Replacement	year	15	?
3rd Replacement Cost ($ in year replaced)	$/kW	$0	?
4th Equipment Replacement	year	20	?
4th Replacement Cost ($ in year replaced)	$/kW	$0	?

Reserves Funded from Operations	Units	Input Value	Notes
Decommissioning Reserve			
Fund from Operations or Salvage Value?		Salvage	?

Initial Funding of Reserve Accounts	Units	Input Value	Notes
Debt Service Reserve			
# of months of Debt Service	months	0	?
Initial Debt Service Reserve	$	$0	?
O&M Reserve/Working Capital			
# of months of O&M Expense	months	0	?
Initial O&M and WC Reserve	$	$0	?
Interest on All Reserves	%	1.5%	?

Depreciation Allocation	Input Values	Notes
Bonus Depreciation	Yes	?
% of Bonus Depreciation applied in Year 1	50%	?

Allocation of Costs	5-year MACRS	7-year MACRS	15-year MACRS	20-year MACRS	5-year SL	15-year SL	20-year SL	39-year SL	Non-Depreciable	Notes
Generation Equipment	96.0%	0.0%	2.0%	0.0%	0.0%	0.0%	2.0%	0.0%	0.0%	?
Balance of Plant	75.0%	0.0%	0.0%	0.0%	0.0%	25.0%	0.0%	0.0%	0.0%	?
Interconnection	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	?
Development Costs & Fee	80.0%	0.0%	0.0%	0.0%	0.0%	5.0%	5.0%	0.0%	10.0%	?
Reserves & Financing Costs	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	0.0%	50.0%	?

Unit Definitions
(kW) kilowatt – a standard measure of electrical capacity, equal to 1000 Watts.
(kWh) kilowatt hour – a standard measure of electrical output. A 1 kW generator operating at rated capacity for one hour will produce 1 kWh of electricity.
($/kW-yr) – an annual expense (or revenue) based on generator capacity
($) – All CREST model values are in nominal dollars
(¢/kWh) –cents per kilowatt hour
(%) – an input with units expressed as a percentage
(years or year) – an input applicable to a specified duration or project year
($/yr) – inputs measured in dollars and applied annually
(months) –designates the number of months to which an input applies
Pass/Fail – denotes whether the two debt service coverage ratio tests have passed or failed.

Summary Results

Results of multiple scenarios may be compared here by using t

Press F9 each time inputs are changed to ensure completion of the COE calculation. When "#N/A" appears, press "F9" in the upper row on your keyboard to complete the calculation. It may be necessary to press F9 more than once. See note for details.

Outputs Summary	*units*	*Current Model Run*
Year-One Cost of Energy (COE)	*¢/kWh*	**13.15**
Annual Escalation of Year-One COE	*%*	**0.0%**
Percentage of Tariff Escalated	*%*	**0.0%**
Does modeled project meet *minimum* DSCR requirements?		**Yes**
Does modeled project meet *average* DSCR requirements?		**Yes**
Did you confirm that all minimum required inputs have green check cells?		

Equivalent Nominal Levelized Tariff Rate	*¢/kWh*	**13.15**

Inputs Summary		
Generator Nameplate Capacity	*kW*	*1,500*
Net Capacity Factor, Yr 1	*%*	25.0%
Payment Duration for Cost-Based Incentive	*Years*	15
Net Project Cost	*$*	$4,300,500
Net Project Cost	*$/kW*	$2,867
% Equity (% hard costs) (soft costs also equity funded)	*%*	57%
Target After-Tax Equity IRR	*%*	13.00%
% Debt (% of hard costs) (mortgage-style amort.)	*%*	43%
Interest Rate on Term Debt	*%*	6.50%
Is owner a taxable entity?		Yes
Type of Federal Incentive Assumed		Cost-Based
Tax Credit Based or Cash Based?		ITC
Other Grants or Rebates		No
Notes: (Users may enter descriptive text about their model run)		

Wind 1,500KW

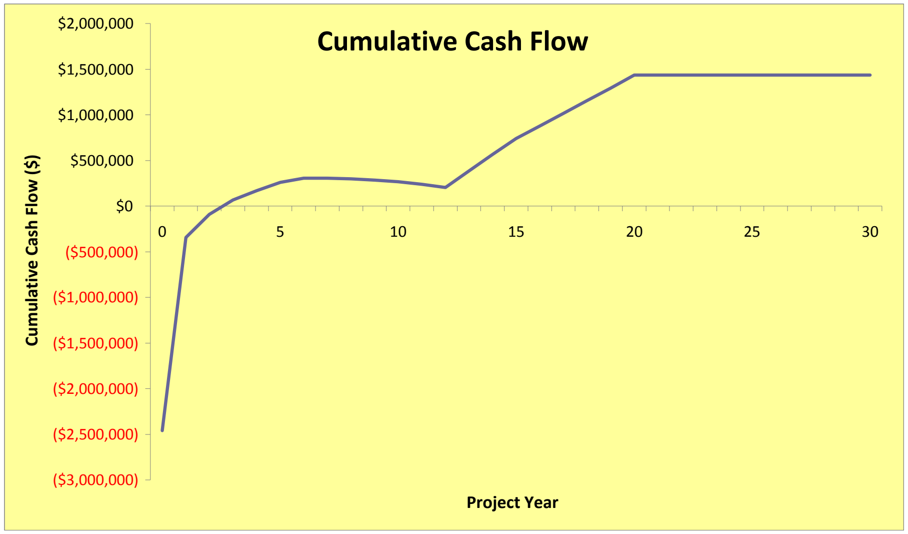
Tax Benefits Used as Generated

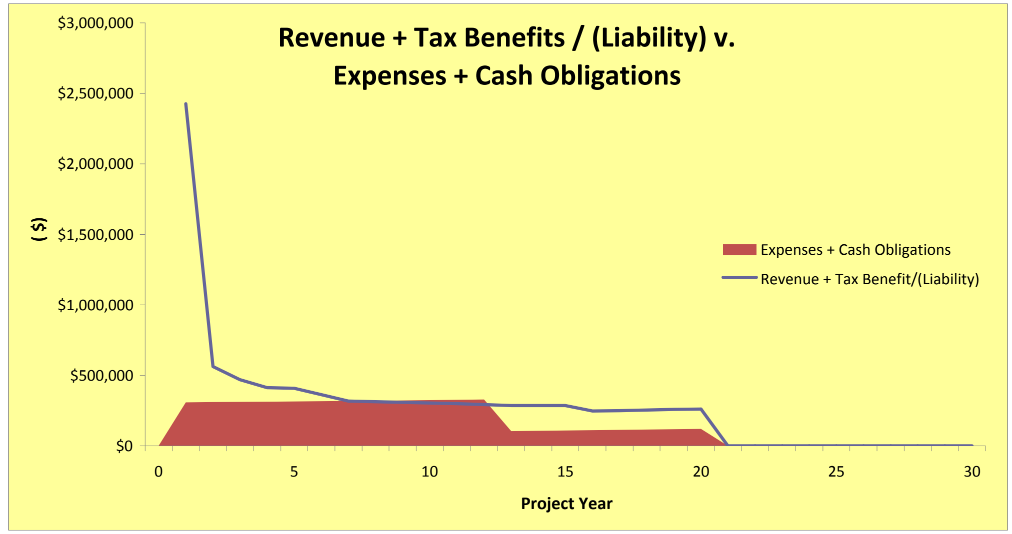
Annual Project Cash Flows, Returns & Other Metrics

Project Year	Tariff or Market Value ¢/kWh	Revenue $	Operating Expenses $	Debt Service $	Reserves $	Pre-Tax Cash Flow $	Federal Taxable Income $	State Taxable Income $	Federal Tax Benefit/ (Liability) $	State Tax Benefit/ (Liability) $	After Tax Cash Flow $	Cumulative Cash Flow $	After Tax IRR %	Debt Service Coverage
0											($2,460,196)	($2,460,196)		
1	13.15	$431,978	($82,500)	($225,563)	$0	$123,915	($1,971,143)	($1,971,143)	$1,815,809	$177,403	$2,117,127	($343,069)	-13.94%	1.55
2	13.15	$429,818	($84,150)	($225,563)	$0	$120,105	($325,491)	($325,491)	$103,669	$29,294	$253,068	($90,001)	-3.31%	1.53
3	13.15	$427,669	($85,833)	($225,563)	$0	$116,273	($102,499)	($102,499)	$32,646	$9,225	$158,144	$68,143	2.26%	1.52
4	13.15	$425,530	($87,550)	($225,563)	$0	$112,418	$33,462	$33,462	($10,658)	($3,012)	$98,748	$166,891	5.11%	1.50
5	13.15	$423,403	($89,301)	($225,563)	$0	$108,539	$38,758	$38,758	($12,344)	($3,488)	$92,706	$259,597	7.31%	1.48
6	13.15	$421,286	($91,087)	($225,563)	$0	$104,636	$142,788	$142,788	($45,478)	($12,851)	$46,307	$305,905	8.23%	1.46
7	13.15	$419,179	($92,908)	($225,563)	$0	$100,708	$246,956	$246,956	($78,656)	($22,226)	($174)	$305,731	8.22%	1.45
8	13.15	$417,083	($94,767)	($225,563)	$0	$96,754	$253,050	$253,050	($80,597)	($22,775)	($6,617)	$299,114	8.12%	1.43
9	13.15	$414,998	($96,662)	($225,563)	$0	$92,773	$259,760	$259,760	($82,733)	($23,378)	($13,339)	$285,775	7.91%	1.41
10	13.15	$412,923	($98,595)	($225,563)	$0	$88,765	$267,159	$267,159	($85,090)	($24,044)	($20,370)	$265,405	7.61%	1.39
11	13.15	$410,858	($100,567)	($225,563)	$0	$84,728	$275,249	$275,249	($87,667)	($24,772)	($27,711)	$237,694	7.20%	1.38
12	13.15	$408,804	($102,578)	($225,563)	$0	$80,663	$284,121	$284,121	($90,493)	($25,571)	($35,401)	$202,294	6.67%	1.36
13	13.15	$406,760	($104,630)	$0	$0	$302,130	$293,781	$293,781	($93,569)	($26,440)	$182,120	$384,414	8.80%	N/A
14	13.15	$404,726	($106,723)	$0	$0	$298,004	$289,666	$289,666	($92,259)	($26,070)	$179,675	$564,089	10.15%	N/A
15	13.15	$402,702	($108,857)	$0	$0	$293,845	$285,497	$285,497	($90,931)	($25,695)	$177,220	$741,309	11.10%	N/A
16	11.10	$338,343	($111,034)	$0	$0	$227,309	$222,251	$222,251	($70,787)	($20,003)	$136,519	$877,828	11.66%	N/A
17	11.32	$343,264	($113,255)	$0	$0	$230,009	$228,232	$228,232	($72,692)	($20,541)	$136,777	$1,014,604	12.11%	N/A
18	11.54	$348,146	($115,520)	$0	$0	$232,626	$230,848	$230,848	($73,525)	($20,776)	$138,324	$1,152,929	12.48%	N/A
19	11.76	$353,103	($117,830)	$0	$0	$235,272	$233,495	$233,495	($74,368)	($21,015)	$139,890	$1,292,819	12.78%	N/A
20	11.99	$358,135	($120,187)	$0	$0	$237,948	$236,170	$236,170	($75,220)	($21,255)	$141,472	$1,434,291	13.03%	N/A
21														
22														
23														
24														
25														
26														
27														
28														
29														
30														

Wind 1,500KW

Tax Benefits Used as Generated





Wind 1,500KW

Tax Benefits Used as Generated

Graph Data	
Revenue + Tax Benefit/(Liability)	Expenses + Cash Obligations
$2,425,190	$308,063
$562,781	$309,713
$469,539	$311,396
$411,861	$313,112
$407,570	$314,863
$362,957	$316,649
$318,297	$318,471
$313,712	$320,329
$308,886	$322,225
$303,788	$324,158
$298,419	$326,130
$292,740	$328,141
$286,750	$104,630
$286,397	$106,723
$286,077	$108,857
$247,553	$111,034
$250,031	$113,255
$253,844	$115,520
$257,720	$117,830
$261,659	$120,187

Wind 1,500KW
Tax Benefits Used as Generated

	units	COD 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Project/Contract Year	units	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Production Degradation Factor			1.00	0.995	0.990	0.985	0.980	0.975	0.970	0.966	0.961	0.956	0.951	0.946	0.942	0.937	0.932	0.928	0.923	0.918	0.914	0.909	0.905	0.900	0.896	0.891	0.887	0.882	0.878	0.873	0.869	0.865
Production	kWh		3,285,000	3,268,575	3,252,232	3,235,971	3,219,791	3,203,692	3,187,674	3,171,735	3,155,877	3,140,097	3,124,397	3,108,775	3,093,231	3,077,765	3,062,376	3,047,064	3,031,829	3,016,670	3,001,586	2,986,578	0	0	0	0	0	0	0	0	0	0
Tariff Rate & Cash Incentives																																
Tariff Rate Escalator, if applicable			1.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Federal PBI Escalator, if applicable			1.00	1.020	1.040	1.061	1.082	1.104	1.126	1.149	1.172	1.195	1.219	1.243	1.268	1.294	1.319	1.346	1.373	1.400	1.428	1.457	1.486	1.516	1.546	1.577	1.608	1.641	1.673	1.707	1.741	1.776
State PBI Escalator, if applicable			1.00	1.020	1.040	1.061	1.082	1.104	1.126	1.149	1.172	1.195	1.219	1.243	1.268	1.294	1.319	1.346	1.373	1.400	1.428	1.457	1.486	1.516	1.546	1.577	1.608	1.641	1.673	1.707	1.741	1.776
Tariff Rate (Fixed Portion)	¢/kWh	100%	13.15	13.15	13.15	13.15	13.15	13.15	13.15	13.15	13.15	13.15	13.15	13.15	13.15	13.15	13.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tariff Rate (Escalating Portion)	¢/kWh	0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tariff Rate (Total)	¢/kWh		13.15	13.15	13.15	13.15	13.15	13.15	13.15	13.15	13.15	13.15	13.15	13.15	13.15	13.15	13.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Revenue from Tariff	$		$431,978	$429,818	$427,669	$425,530	$423,403	$421,286	$419,179	$417,083	$414,998	$412,923	$410,858	$408,804	$406,760	$404,726	$402,702	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Post-Tariff Market Value of Production	¢/kWh		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.10	11.32	11.54	11.76	11.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Market Revenue	$		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$338,343	$343,264	$348,146	$353,103	$358,135	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Federal Cash Incentive Rate	¢/kWh		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Federal Cash Incentive	$		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
State Cash Incentive Rate	¢/kWh		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
State Cash Incentive	$		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Interest Earned on Reserve Accounts	$		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Project Revenue, All Sources	$		$431,978	$429,818	$427,669	$425,530	$423,403	$421,286	$419,179	$417,083	$414,998	$412,923	$410,858	$408,804	$406,760	$404,726	$402,702	$338,343	$343,264	$348,146	$353,103	$358,135	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Project Expenses																																
Operating Expense Inflation Factor			1.00	1.0200	1.0404	1.0612	1.0824	1.1041	1.1262	1.1487	1.1717	1.1951	1.2190	1.2434	1.2682	1.2936	1.3195	1.3459	1.3728	1.4002	1.4282	1.4568	1.4859	1.5157	1.5460	1.5769	1.6084	1.6406	1.6734	1.7069	1.7410	1.7758
Fixed O&M Expense	$		($82,500)	($84,150)	($85,833)	($87,550)	($89,301)	($91,087)	($92,908)	($94,767)	($96,662)	($98,595)	($100,567)	($102,578)	($104,630)	($106,723)	($108,857)	($111,034)	($113,255)	($115,520)	($117,830)	($120,187)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Variable O&M Expense	$		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Insurance	$		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Project Administration	$		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Property Tax or Payment in Lieu of Taxes (PILOT)	$		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Land Lease	$		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Royalties	$		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Operating Expenses	$		($82,500)	($84,150)	($85,833)	($87,550)	($89,301)	($91,087)	($92,908)	($94,767)	($96,662)	($98,595)	($100,567)	($102,578)	($104,630)	($106,723)	($108,857)	($111,034)	($113,255)	($115,520)	($117,830)	($120,187)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Operating Expenses ($/kWh)	¢/kWh		($2.51)	($2.57)	($2.64)	($2.71)	($2.77)	($2.84)	($2.91)	($2.99)	($3.06)	($3.14)	($3.22)	($3.30)	($3.38)	($3.47)	($3.55)	($3.64)	($3.74)	($3.83)	($3.93)	($4.02)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
EBITDA (Operating Income)	$		$349,478	$345,668	$341,836	$337,981	$334,102	$330,199	$326,271	$322,317	$318,336	$314,328	$310,291	$306,226	$302,130	$298,004	$293,845	$227,309	$230,009	$232,626	$235,272	$237,948	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Avg. DSCR	Min DSCR																														
Annual Debt Service Coverage Ratio	1.45	1.36	1.55	1.53	1.52	1.50	1.48	1.46	1.45	1.43	1.41	1.39	1.38	1.36	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Minimum DSSCR Year														Year 12																		
Loan Interest Expense			($119,620)	($112,733)	($105,400)	($97,589)	($89,271)	($80,412)	($70,977)	($60,929)	($50,228)	($38,831)	($26,693)	($13,767)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Operating Income After Interest Expense			$229,858	$232,934	$236,436	$240,392	$244,831	$249,787	$255,294	$261,388	$268,108	$275,497	$283,598	$292,459	$302,130	$298,004	$293,845	$227,309	$230,009	$232,626	$235,272	$237,948	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Repayment of Loan Principal			($105,943)	($112,829)	($120,163)	($127,974)	($136,292)	($145,151)	($154,586)	($164,634)	($175,335)	($186,732)	($198,869)	($211,796)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
(Contributions to), and Liquidation of, Reserve Accounts			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Adjustment(s) for Major Equipment Replacement(s)			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pre-Tax Cash Flow to Equity			$123,915	$120,105	$116,273	$112,418	$108,539	$104,636	$100,708	$96,754	$92,773	$88,765	$84,728	$80,663	$302,130	$298,004	$293,845	$227,309	$230,009	$232,626	$235,272	$237,948	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Project Cash Flows																																
Equity Investment		($2,460,196)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pre-Tax Cash Flow to Equity			$123,915	$120,105	$116,273	$112,418	$108,539	$104,636	$100,708	$96,754	$92,773	$88,765	$84,728	$80,663	$302,130	$298,004	$293,845	$227,309	$230,009	$232,626	$235,272	$237,948	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Net Pre-Tax Cash Flow to Equity		($2,460,196)	$123,915	$120,105	$116,273	$112,418	$108,539	$104,636	$100,708	$96,754	$92,773	$88,765	$84,728	$80,663	$302,130	$298,004	$293,845	$227,309	$230,009	$232,626	$235,272	$237,948	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Running IRR (Cash Only)			NA	NA	NA	NA	NA	NA	NA	NA	-15.9%	-13.5%	-11.5%	-9.9%	-5.8%	-3.3%	-1.5%	-0.4%	0.5%	1.2%	1.9%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%
Depreciation Expense			($2,201,001)	($558,425)	($338,935)	($206,929)	($206,073)	($107,000)	($8,337)	($8,337)	($8,348)	($8,337)	($8,348)	($8,337)	($8,348)	($8,337)	($8,348)	($5,057)	($1,778)	($1,778)	($1,778)	($1,778)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Taxable Income (operating loss used as generated)			($1,971,143)	($325,491)	($102,499)	$33,462	$38,758	$142,788	$246,956	$253,050	$259,760	$267,159	$275,249	$284,121	$293,781	$289,666	$285,497	$222,251	$228,232	$230,848	$233,495	$236,170	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Taxable Income (Federal), operating loss treatment ==>>		As Generated	($1,971,143)	($325,491)	($102,499)	$33,462	$38,758	$142,788	$246,956	$253,050	$259,760	$267,159	$275,249	$284,121	$293,781	$289,666	$285,497	$222,251	$228,232	$230,848	$233,495	$236,170	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Taxable Income (State), operating loss treatment ==>>		As Generated	($1,971,143)	($325,491)	($102,499)	$33,462	$38,758	$142,788	$246,956	$253,050	$259,760	$267,159	$275,249	$284,121	$293,781	$289,666	$285,497	$222,251	$228,232	$230,848	$233,495	$236,170	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Federal Income Taxes Saved / (Paid), before ITC/PTC			$627,809	$103,669	$32,646	($10,658)	($12,344)	($45,478)	($78,656)	($80,597)	($82,733)	($85,090)	($87,667)	($90,493)	($93,569)	($92,259)	($90,931)	($70,787)	($72,692)	($73,525)	($74,368)	($75,220)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
State Income Taxes Saved / (Paid), before ITC/PTC			$177,403	$29,294	$9,225	($3,012)	($3,488)	($12,851)	($22,226)	($22,775)	($23,378)	($24,044)	($24,772)	($25,571)	($26,440)	($26,070)	($25,695)	($20,003)	($20,541)	($20,776)	($21,015)	($21,255)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Cash Benefit of Federal ITC, Cash Grant, or PTC			$1,188,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Cash Benefit of State ITC and/or PTC			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
After-Tax Cash Flow to Equity		($2,460,196)	$2,117,127	$253,068	$158,144	$98,748	$92,706	$46,307	($174)	($6,617)	($13,339)	($20,370)	($27,711)	($35,401)	$182,120	$179,675	$177,220	$136,519	$136,777	$138,324	$139,890	$141,472	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Running IRR (After Tax)			-13.9%	-3.3%	2.3%	5.1%	7.3%	8.2%	8.2%	8.1%	7.9%	7.6%	7.2%	6.7%	8.8%	10.2%	11.1%	11.7%	12.1%	12.5%	12.8%	13.0%	13.0%	13.0%	13.0%	13.0%	13.0%	13.0%	13.0%	13.0%	13.0%	13.0%

Pre-Tax (Cash-only) Equity IRR (over defined Useful Life)	**2.44%**
After Tax Equity IRR (over defined Useful Life)	**13.03%**
Net Present Value @ 13.00% (over defined Useful Life)	$1,448

Yr 1 COE (cents/kWh)
13.15

Supporting Calculations

Debt Service:
Debt Sizing (Defined Capital Structure Method)

Installed Cost (excluding cost of financing)	4,300,500
Defined Debt-to-Total-Capital	43%
Size of Debt	1,840,304

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Loan Repayment																															
Structured Debt Service Payment	-	($225,563)	($225,563)	($225,563)	($225,563)	($225,563)	($225,563)	($225,563)	($225,563)	($225,563)	($225,563)	($225,563)	($225,563)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Interest	-	($119,620)	($112,733)	($105,400)	($97,589)	($89,271)	($80,412)	($70,977)	($60,929)	($50,228)	($38,831)	($26,693)	($13,767)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Principal	-	($105,943)	($112,829)	($120,163)	($127,974)	($136,292)	($145,151)	($154,586)	($164,634)	($175,335)	($186,732)	($198,869)	($211,796)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Loan Amortization																															
Beginning Balance	-	1,840,304	1,734,361	1,621,532	1,501,369	1,373,395	1,237,103	1,091,952	937,366	772,732	597,397	410,665	211,796	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Drawdowns	1,840,304	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Principal Repayments	-	($105,943)	($112,829)	($120,163)	($127,974)	($136,292)	($145,151)	($154,586)	($164,634)	($175,335)	($186,732)	($198,869)	($211,796)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Ending Balance	1,840,304	1,734,361	1,621,532	1,501,369	1,373,395	1,237,103	1,091,952	937,366	772,732	597,397	410,665	211,796	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

Depreciation:	Project Cost Allocation																																	
Project/Contract Year	Before Adjustments	% Allocation	After Adjustments	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Depreciation Schedules, Half-Year Convention																																		
5 Year MACRS	$3,960,000	92%	$1,706,516		20.00%	32.00%	19.20%	11.52%	11.52%	5.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
7 Year MACRS	$0	0%	$0		14.29%	24.49%	17.49%	12.49%	8.93%	8.92%	8.93%	4.46%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15 Year MACRS	$258,000	6%	$111,182		5.00%	9.50%	8.55%	7.70%	6.93%	6.23%	5.90%	5.90%	5.91%	5.90%	5.91%	5.90%	5.91%	5.90%	5.91%	2.95%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
20 Year MACRS	$0	0%	$0		3.75%	7.22%	6.68%	6.18%	5.71%	5.29%	4.89%	4.52%	4.46%	4.46%	4.46%	4.46%	4.46%	4.46%	4.46%	4.46%	4.46%	4.46%	4.46%	4.46%	2.23%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
5 Year SL	$0	0%	$0		10.00%	20.00%	20.00%	20.00%	20.00%	10.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15 Year SL	$0	0%	$0		3.33%	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%	6.66%	6.66%	6.66%	6.66%	3.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
20 Year SL	$82,500	2%	$35,552		2.50%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	2.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
39 Year SL	$0	0%	$0		1.28%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%
Bonus Depreciation			$1,853,250		100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Non-Depreciable	$0	0%	$0																															
	Unadjusted		Adjusted																															
Project Cost Basis	$4,300,500	100%	$3,706,500																															
	OK	OK	OK																															
Adjustment to Cost Basis for ITC & Non-taxable Grants	$594,000																																	
Annual Depreciation Expense, Initial Installation																																		
Total Project Cost, adj for ITC/Grant if applicable			check																															
5 Year MACRS			$1,706,516		$341,303	$546,085	$327,651	$196,591	$196,591	$98,295	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
7 Year MACRS			$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
15 Year MACRS			$111,182		$5,559	$10,562	$9,506	$8,561	$7,705	$6,927	$6,560	$6,560	$6,571	$6,560	$6,571	$6,560	$6,571	$6,560	$6,571	$3,280	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
20 Year MACRS			$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
5 Year SL			$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
15 Year SL			$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
20 Year SL			$35,552		$889	$1,778	$1,778	$1,778	$1,778	$1,778	$1,778	$1,778	$1,778	$1,778	$1,778	$1,778	$1,778	$1,778	$1,778	$1,778	$1,778	$1,778	$1,778	$1,778	$889	$0	$0	$0	$0	$0	$0	$0	$0	$0
39 Year SL			$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Bonus Depreciation			$1,853,250		$1,853,250	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Non-Depreciable			$0																															
Total			$3,706,500	OK																														
Annual Depreciation Expense, Repairs & Replacements																																		
1st Replacement			$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Depreciation Timing					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation Expense					$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2nd Replacement			$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Depreciation Timing					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation Expense					$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3rd Replacement			$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Depreciation Timing					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation Expense					$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4th Replacement			$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Depreciation Timing					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation Expense					$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Annual Depreciation Expense					$2,201,001	$558,425	$338,935	$206,929	$206,073	$107,000	$8,337	$8,337	$8,348	$8,337	$8,348	$8,337	$8,348	$8,337	$8,348	$5,057	$1,778	$1,778	$1,778	$1,778	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Annual Depreciation Benefit					$899,109	$228,117	$138,455	$84,531	$84,181	$43,709	$3,406	$3,406	$3,410	$3,406	$3,410	$3,406	$3,410	$3,406	$3,410	$2,066	$726	$726	$726	$726	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Operating Loss Carry-Forward, if applicable:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Taxable Income / (Operating Loss)	($1,971,143)	($325,491)	($102,499)	$33,462	$38,758	$142,788	$246,956	$253,050	$259,760	$267,159	$275,249	$284,121	$293,781	$289,666	$285,497	$222,251	$228,232	$230,848	$233,495	$236,170	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Federal Carry-Forward																														
Operating Loss Carry-Forward, Beginning Balance	$0	$1,971,143	$2,296,634	$2,399,133	$2,365,670	$2,326,912	$2,184,125	$1,937,168	$1,684,118	$1,424,358	$1,157,199	$881,949	$597,828	$304,046	$14,380	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional Operating Loss Carried-Forward	$1,971,143	$325,491	$102,499	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Utilization of Operating Loss Carry-Forward	$0	$0	$0	($33,462)	($38,758)	($142,788)	($246,956)	($253,050)	($259,760)	($267,159)	($275,249)	($284,121)	($293,781)	($289,666)	($14,380)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Wind 1,500KW
Tax Benefits Used as Generated

Operating Loss Carry-Forward, Ending Balance		$1,971,143	$2,296,634	$2,399,133	$2,365,670	$2,326,912	$2,184,125	$1,937,168	$1,684,118	$1,424,358	$1,157,199	$881,949	$597,828	$304,046	$14,380	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Taxable Income with Operating Loss Carry-Forward		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$271,117	$222,251	$228,232	$230,848	$233,495	$236,170	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

State Carry-Forward

Operating Loss Carry-Forward, Beginning Balance		$0	$1,971,143	$2,296,634	$2,399,133	$2,365,670	$2,326,912	$2,184,125	$1,937,168	$1,684,118	$1,424,358	$1,157,199	$881,949	$597,828	$304,046	$14,380	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional Operating Loss Carried-Forward		$1,971,143	$325,491	$102,499	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Utilization of Operating Loss Carry-Forward		$0	$0	$0	($33,462)	($38,758)	($142,788)	($246,956)	($253,050)	($259,760)	($267,159)	($275,249)	($284,121)	($293,781)	($289,666)	($14,380)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Operating Loss Carry-Forward, Ending Balance		$1,971,143	$2,296,634	$2,399,133	$2,365,670	$2,326,912	$2,184,125	$1,937,168	$1,684,118	$1,424,358	$1,157,199	$881,949	$597,828	$304,046	$14,380	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Taxable Income with Operating Loss Carry-Forward		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$271,117	$222,251	$228,232	$230,848	$233,495	$236,170	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Federal Tax Credit Benefits, if applicable:

Federal ITC (as generated)		$1,188,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Federal PTC (as generated)		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Applicable Tax Credits, as generated		$1,188,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Carry-Forward Scenario:

Federal Income Taxes Saved / (Paid), before ITC/PTC		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tax Benefit Carry-Forward, Beginning Balance		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional Tax Benefit Carry-Forward		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Utilization of Tax Benefit Carry-Forward		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tax Benefit Carry-Forward, Ending Balance	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

State Tax Credit Benefits, if applicable:

State ITC (as generated)		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
State PTC (as generated)		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Applicable Tax Credits, as generated		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Carry-Forward Scenario:

State Income Taxes Saved / (Paid), before ITC/PTC		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tax Benefit Carry-Forward, Beginning Balance		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional Tax Benefit Carry-Forward		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Utilization of Tax Benefit Carry-Forward		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tax Benefit Carry-Forward, Ending Balance	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Reserve Accounts:

Beginning Balance	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Debt Service Reserve	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
O&M/Working Capital Reserve	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Major Equipment Replacement Reserves #1 *(max funding period, yrs)* 10	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Major Equipment Replacement Reserves #2 *(max funding period, yrs)* 10	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Major Equipment Replacement Reserves #3 *(max funding period, yrs)* 10	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Major Equipment Replacement Reserves #4 *(max funding period, yrs)* 10	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Decommissioning Reserve	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Ending Balance	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Interest on Reserves		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Annual Contributions to/(Liquidations of) Reserves		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

COE Data Tables		NPV				NPV				NPV			Range Min	Range Max
Calculation of COE when tax benefits are "Carried Forward"		$1,448				$1,448				$1,448			13.1	13.2
	0	($1,425,097)			10.0	($340,272)			13.0	($14,825)				
	10	($340,272)	($340,272)		11.0	($231,790)			13.1	($3,976)	($3,976)			
	20	$744,553		$744,553	12.0	($123,307)			13.2	$6,872		$6,872		
	30	$1,829,377			13.0	($14,825)	($14,825)		13.3	$17,720				
	40	$2,914,202			14.0	$93,658		$93,658	13.4	$28,568				
	50	$3,999,027			15.0	$202,140			13.5	$39,417				
	60	$5,083,852			16.0	$310,623			13.6	$50,265				
	70	$6,168,677			17.0	$419,105			13.7	$61,113				
	80	$7,253,502			18.0	$527,588			13.8	$71,961				
	90	$8,338,326			19.0	$636,070			13.9	$82,810				
	100	$9,423,151			20.0	$744,553			14.0	$93,658				

Complex Inputs for Deriving Total Project Capital Cost, if applicable

Sample inputs provided on this tab are illustrative only, all inputs must be provided and validated by the user

Generation Equipment	$	% Eligible for ITC	Depreciation Classification
Wind Turbine Generator and Blades	$6,000,000	100%	5-year MACRS
Tower	$3,000,000	100%	5-year MACRS
SCADA	$250,000	100%	5-year MACRS
Cold Weather Package	$250,000	100%	5-year MACRS
FAA Lighting	$30,000	100%	5-year MACRS
Man-Lift	$0	100%	5-year MACRS
Transportation to Site	$600,000	100%	5-year MACRS
Sales Tax	$0	100%	5-year MACRS
Commissioning	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
Total Generation Equipment Cost	$10,130,000	100%	

Click Here to Return to Inputs Worksheet

Balance of Plant	$	% Eligible for ITC	Depreciation Classification
Mobilization	$500,000	100%	5-year MACRS
Site Survey	$500,000	0%	15-year MACRS
Clear & Grub	$250,000	0%	15-year MACRS
Site Preparation	$750,000	0%	15-year MACRS
Access Roads	$2,500,000	100%	5-year MACRS
Foundations	$2,000,000	100%	5-year MACRS
Wind Turbine Generator Installation	$1,500,000	100%	5-year MACRS
Engineering	$750,000	100%	5-year MACRS
Sales Tax	$0	100%	5-year MACRS
O&M Building	$250,000	0%	15-year SL
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
Total Balance of Plant Cost	$9,000,000	81%	

Click Here to Return to Inputs Worksheet

Interconnection	$	% Eligible for ITC	Depreciation Classification
Substation	$750,000	50%	20-year SL
Transformer	$500,000	50%	20-year SL
Metering	$250,000	50%	20-year SL
Utility System Improvements	$1,500,000	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
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placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
Total Interconnection Cost	$3,000,000	50%	

Click Here to Return to Inputs Worksheet

Development Costs & Fee	$	% Eligible for ITC	Depreciation Classification
Site Selection & Evaluation	$250,000	100%	5-year MACRS
Site Acquisition Cost	$50,000	100%	5-year MACRS

Permitting	$350,000	100%	5-year MACRS
Engineering/Design	$200,000	100%	5-year MACRS
Resource Analysis	$50,000	100%	5-year MACRS
Other Development Costs	$100,000	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
Total Development Costs & Fees	$1,000,000	100%	

Click Here to Return to Inputs Worksheet

Reserves & Financing Costs	*$*	*% Eligible for ITC*	*Depreciation Classification*
Lender Fee	$0	0%	Non-Depreciable
Interest During Construction	$0	0%	20-year SL
Other Equity & Debt Closing Costs	$0	0%	20-year SL
Initial Funding of Debt Service & Working Capital/O&M Reserves	$0	0%	Non-Depreciable
Total Installed Cost	$0	#DIV/0!	

Click Here to Return to Inputs Worksheet

Total Project Costs			***Depreciation Allocation***									
Cost Category	*$*	*$ Eligible for ITC*	*Cost Category*	*5-year MACRS*	*7-year MACRS*	*15-year MACRS*	*20-year MACRS*	*5-year SL*	*15-year SL*	*20-year SL*	*39-year SL*	*Non-Depreciable*
Generation Equipment	$10,130,000	$10,130,000	Generation Equipment	$10,130,000	$0	$0	$0	$0	$0	$0	$0	$0
Balance of Plant	$9,000,000	$7,250,000	Balance of Plant	$7,250,000	$0	$1,500,000	$0	$0	$250,000	$0	$0	$0
Interconnection	$3,000,000	$1,500,000	Interconnection	$0	$0	$0	$0	$0	$0	$3,000,000	$0	$0
Development Costs & Fee	$1,000,000	$1,000,000	Development Costs & Fee	$1,000,000	$0	$0	$0	$0	$0	$0	$0	$0
Reserves & Financing Costs	$0	#DIV/0!	Reserves & Financing Costs	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Installed Cost	**$23,130,000**	**#DIV/0!**		**$18,380,000**	**$0**	**$1,500,000**	**$0**	**$0**	**$250,000**	**$3,000,000**	**$0**	**$0**

Taxable Entity? (turns on/off ITC and depreciation input cells) Yes

Year-by-Year Inputs for Market Value of Production, if applicable

Project Year	Bundled* Market Value of Production (¢/kWh)
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	11.10
17	11.32
18	11.54
19	11.76
20	11.99
21	12.22
22	12.46
23	12.70
24	12.94
25	13.19
26	13.45
27	13.71
28	13.97
29	14.24
30	14.52

* Includes energy, capacity & RECs

Solar 150KW

Performance, Cost, Operating, Tax & Financing Inputs

Check			Notes
	Selected Technology	Photovoltaic	?

Project Size and Performance	Units	Input Value	Notes
Generator Nameplate Capacity	kW dc	150	?
DC-to-AC Conversion Efficiency	%	95.0%	?
Net Capacity Factor, Yr 1	%, ac	15.1%	?
Production, Yr 1	AC kWh	189,085	?
Annual Production Degradation	%	0.5%	?
Project Useful Life	years	25	?

Capital Costs	Units	Input Value	Notes
Select Cost Level of Detai		Intermediate	?
Generation Equipment	$	$595,500	?
Balance of Plant	$	$0	?
Interconnection	$	$31,500	?
Development Costs & Fee	$	$0	?
Reserves & Financing Costs	$	$0	?
Total Installed Cost	$	$627,000	?
Total Installed Cost	$/Watt dc	$4.18	?
Total Value of Grants (excl. pmt in lieu of ITC, if applicable)	$	$0	?
Net Project Cost	$	$627,000	?
Net Project Cost	$/Watt dc	$4.18	?

Operations & Maintenance	Units	Input Value	Notes
Select Cost Level of Detai		Intermediate	?
Fixed O&M Expense, Yr 1	$/kW-yr dc	$22.00	?
Variable O&M Expense, Yr 1	¢/kWh	0.00	?
O&M Cost Inflation, initial perioc	%	3.0%	?
Initial Period ends last day of	year	10	?
O&M Cost Inflation, thereafter	%	3.0%	?
Insurance, Yr 1 (% of Total Cost)	%	0.3%	?
Insurance, Yr 1 ($) (Provided for reference	$	$1,881	?
Project Management Yr 1	$/yr	$0	?
Property Tax or PILOT, Yr 1	$/yr	$5,250	?
Annual Property Tax Adjustment Factor	%	-10.0%	?
Land Lease	$/yr	$1,500	?
Royalties (% of revenue	%	0.0%	?
Royalties, Yr 1 ($) (Provided for reference	$	$0	?

Construction Financing	Units	Input Value	Notes
Construction Period	months	4	?
Interest Rate (Annual)	%	0.0%	?
Interest During Construction	$	$0	?

Permanent Financing	Units	Input Value	Notes
% Debt (% of hard costs) (mortgage-style amort.)	%	44%	?
Debt Tenor	years	12	?
Interest Rate on Term Debt	%	6.50%	?
Lender's Fee (% of total borrowing)	%	0.0%	?
Required Minimum Annual DSCR		1.20	?
Actual Minimum DSCR, occurs in →	Year 12	1.41	?
Minimum DSCR Check Cell (If "Fail," read note ==>	Pass/Fail	Pass	?
Required Average DSCR		1.45	?
Actual Average DSCR		1.45	?
Average DSCR Check Cell (If "Fail," read note ==>	Pass/Fail	Pass	?
% Equity (% hard costs) (soft costs also equity funded	%	56%	?
Target After-Tax Equity IRR	%	13.00%	?
Weighted Average Cost of Capital (WACC)	%	8.94%	?
Other Closing Costs	$	$0	?

Summary of Sources of Funding for Total Installed Cost			
Senior Debt (funds portion of hard costs)	44%	$277,986	?
Equity (funds balance of hard costs + all soft costs	56%	$349,014	?
Total Value of Grants	0%	$0	?
Total Installed Cost	$	**$627,000**	?

Tax	Units	Input Value	Notes
Is owner a taxable entity?		Yes	?
Federal Income Tax Rate	%	35.0%	?
Federal Tax Benefits used as generated or carried forward?		As Generated	?
State Income Tax Rate	%	9.0%	?
State Tax Benefits used as generated or carried forward?		As Generated	?
Effective Income Tax Rate	%	40.85%	?
Depreciation Allocation		see table ==>	?

Cost-Based Tariff Rate Structure	Units	Input Value	Notes
Payment Duration for Cost-Based Incentive	years	15	?
% of Year-One Tariff Rate Escalated	%	0.0%	?
Cost-Based Tariff Escalation Rate	%	0.0%	?

Forecasted Market Value of Production; applies after Incentive Expiration			?
Select Market Value Forecast Methodology		Year-by-Year	?
Click Here for Complex Input Worksheet			?

Federal Incentives	Units	Input Value	Notes
Select Cost-Based (ITC/Grant) or Performance-Based (PTC/REPI)		Cost-Based	?
Investment Tax Credit (ITC) or Cash Grant?		ITC	?
ITC or Cash Grant Amount	%	30%	?
ITC utilization factor, if applicable	%	100%	?
ITC or Cash Grant	$	$171,504	?
Federal Tax Benefits used as generated or carried forward?		As Generated	?

Federal Grants (Other than Section 1603)	$	$0	?
Federal Grants Treated as Taxable Income?		Yes	?

State Incentives	Units	Input Value	Notes
Select Cost-Based (ITC) or Performance-Based (PTC/Cash Pmt)		Cost-Based	?
ITC Amount	%	0%	?
Utilization Factor, if applicable	%	100%	?
State ITC realization period	yrs	5	?
Total State ITC, over realization period	$	$0	?
PBI Rate	¢/kWh	1.50	
PBI Duration	yrs	10	
PBI Escalation Rate	%	2.0%	
PBI Utilization Factor, if applicable	%	100%	
Benefits used as generated or carried forward?		As Generated	?
Total State Grants (or Rebates)	$	$0	?
State Grants Treated as Taxable Income?		Yes	?

Capital Expenditures During Operations: Inverter Replacement		Input Value	Notes
1st Equipment Replacement	year	10	?
1st Replacement Cost ($ in year replaced	$/Watt dc	$0.000	?
2nd Equipment Replacement	year	20	?
2nd Replacement Cost ($ in year replaced)	$/Watt dc	$0.000	?

Reserves Funded from Operations	Units	Input Value	Notes
Decommissioning Reserve			
Fund from Operations or Salvage Value?		Salvage	?

Initial Funding of Reserve Accounts	Units	Input Value	Notes
Debt Service Reserve			
# of months of Debt Service	months	0	?
Initial Debt Service Reserve	$	$0	?
O&M Reserve/Working Capital			
# of months of O&M Expense	months	0	?
Initial O&M and WC Reserve	$	$0	?
Interest on All Reserves	%	2.0%	?

Depreciation Allocation	Input Values									
Bonus Depreciation	Yes		?							
% of Bonus Depreciation applied in Year 1	50%		?							
Allocation of Costs	5-year MACRS	7-year MACRS	15-year MACRS	20-year MACRS	5-year SL	15-year SL	20-year SL	39-year SL	Non-Depreciable	
Generation Equipment	96.0%	0.0%	2.0%	0.0%	0.0%	0.0%	2.0%	0.0%	0.0%	?
Balance of Plant	50.0%	0.0%	0.0%	0.0%	0.0%	50.0%	0.0%	0.0%	0.0%	?
Interconnection	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	?
Development Costs & Fee	80.0%	0.0%	0.0%	0.0%	0.0%	5.0%	5.0%	0.0%	10.0%	?
Reserves & Financing Costs	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	0.0%	50.0%	?

Unit Definitions

(kW) kilowatt – a standard measure of electrical capacity, equal to 1000 Watts.
(kWh) kilowatt hour – a standard measure of electrical output. A 1 kW generator operating at rated capacity for one hour will produce 1 kWh of electricity.
(DC) direct current – the unidirectional flow of electric charge
(AC) alternating current – the multidirectional flow of electric charge
($/kW-yr) – an annual expense (or revenue) based on generator capacity
($) – All CREST model values are in nominal dollars
(¢/kWh) –cents per kilowatt hour
(%) – an input with units expressed as a percentage
(years or year) – an input applicable to a specified duration or project year
($/yr) – inputs measured in dollars and applied annually
(months) –designates the number of months to which an input applies
Pass/Fail – denotes whether the two debt service coverage ratio tests have passed or failed.

Solar 150KW

Tax Benefits Used as Generated

Summary Results

Results of multiple scenarios may be compared here by usi

Press F9 each time inputs are changed to ensure completion of the COE calculation. When "#N/A" appears, press "F9" in the upper row on your keyboard to complete the calculation. It may be necessary to press F9 more than once. See note for details.

Outputs Summary	*units*	***Current Model Run***
Year-One Cost of Energy (COE)	*¢/kWh*	**32.85**
Annual Escalation of Year-One COE	*%*	**0.0%**
Percentage of Tariff Escalated	*%*	**0.0%**
Does modeled project meet *minimum* DSCR requirements?		**Yes**
Does modeled project meet *average* DSCR requirements?		**Yes**

Did you confirm that all minimum required inputs have green check cells?

Equivalent Nominal Levelized Tariff Rate	*¢/kWh*	**32.85**

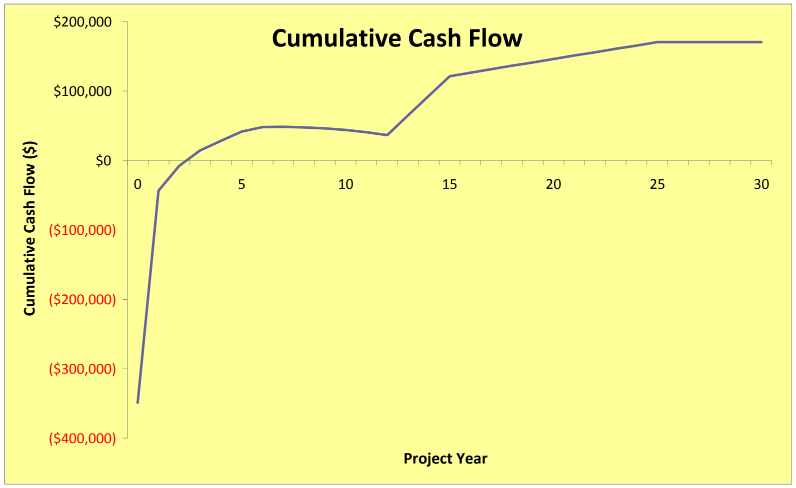
Inputs Summary		
Selected Technology		Photovoltaic
Generator Nameplate Capacity	*kW dc*	*150*
Net Capacity Factor, Yr 1	*%, ac*	15.1%
Payment Duration for Cost-Based Incentive	*Years*	15
Net Project Cost	*$*	$627,000
Net Project Cost	*$/Watt*	$4.18
% Equity (% hard costs) (soft costs also equity funded)	*%*	56%
Target After-Tax Equity IRR	*%*	13.00%
% Debt (% of hard costs) (mortgage-style amort.)	*%*	44%
Interest Rate on Term Debt	*%*	6.50%
Is owner a taxable entity?		Yes
Type of Federal Incentive Assumed		Cost-Based
Tax Credit Based or Cash Based?		ITC
Other Grants or Rebates		No

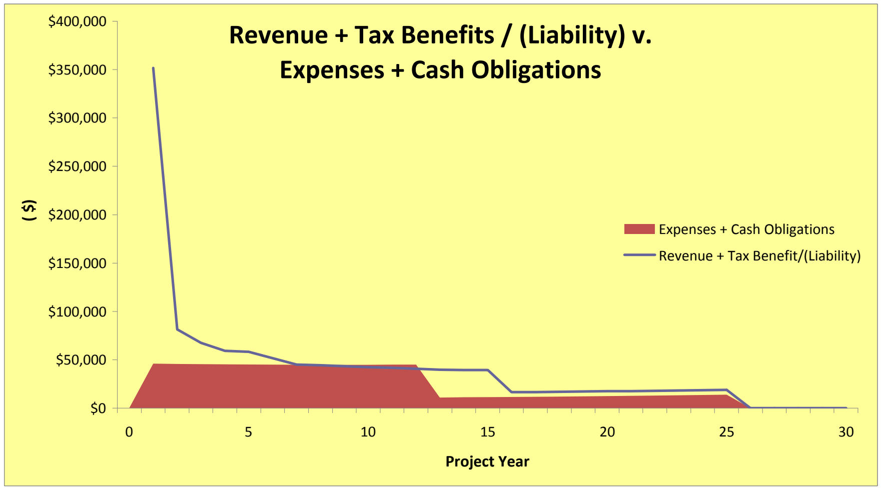
Solar 150KW
Tax Benefits Used as Generated

Annual Project Cash Flows, Returns & Other Metrics

Project Year	Tariff or Market Value ¢/kWh	Revenue $	Operating Expenses $	Debt Service $	Reserves $	Pre-Tax Cash Flow $	Federal Taxable Income $	State Taxable Income $	Federal Tax Benefit/ (Liability) $	State Tax Benefit/ (Liability) $	After Tax Cash Flow $	Cumulative Cash Flow $	After Tax IRR %	Debt Service Coverage
0											($349,014)	($349,014)		
1	32.85	$62,114	($11,931)	($34,072)	$0	$16,111	($288,925)	($288,925)	$263,526	$26,003	$305,641	($43,373)	-12.43%	1.47
2	32.85	$61,804	($11,606)	($34,072)	$0	$16,125	($47,828)	($47,828)	$15,233	$4,304	$35,663	($7,710)	-2.00%	1.47
3	32.85	$61,495	($11,340)	($34,072)	$0	$16,082	($15,001)	($15,001)	$4,778	$1,350	$22,210	$14,500	3.41%	1.47
4	32.85	$61,187	($11,128)	($34,072)	$0	$15,987	$5,193	$5,193	($1,654)	($467)	$13,866	$28,365	6.16%	1.47
5	32.85	$60,881	($10,964)	($34,072)	$0	$15,845	$6,452	$6,452	($2,055)	($581)	$13,209	$41,575	8.31%	1.47
6	32.85	$60,577	($10,845)	($34,072)	$0	$15,659	$21,948	$21,948	($6,991)	($1,975)	$6,694	$48,268	9.21%	1.46
7	32.85	$60,274	($10,768)	($34,072)	$0	$15,434	$37,423	$37,423	($11,919)	($3,368)	$147	$48,415	9.23%	1.45
8	32.85	$59,973	($10,728)	($34,072)	$0	$15,173	$38,679	$38,679	($12,319)	($3,481)	($628)	$47,788	9.16%	1.45
9	32.85	$59,673	($10,723)	($34,072)	$0	$14,877	$39,998	$39,998	($12,739)	($3,600)	($1,462)	$46,326	9.01%	1.44
10	32.85	$59,374	($10,751)	($34,072)	$0	$14,551	$41,395	$41,395	($13,184)	($3,726)	($2,359)	$43,967	8.79%	1.43
11	32.85	$59,078	($10,809)	($34,072)	$0	$14,196	$42,872	$42,872	($13,655)	($3,858)	($3,317)	$40,650	8.48%	1.42
12	32.85	$58,782	($10,896)	($34,072)	$0	$13,814	$44,445	$44,445	($14,156)	($4,000)	($4,341)	$36,308	8.09%	1.41
13	32.85	$58,488	($11,008)	$0	$0	$47,480	$46,116	$46,116	($14,688)	($4,150)	$28,642	$64,950	10.09%	N/A
14	32.85	$58,196	($11,146)	$0	$0	$47,050	$45,688	$45,688	($14,551)	($4,112)	$28,387	$93,337	11.38%	N/A
15	32.85	$57,905	($11,307)	$0	$0	$46,598	$45,234	$45,234	($14,407)	($4,071)	$28,120	$121,457	12.30%	N/A
16	11.10	$19,475	($11,490)	$0	$0	$7,985	$7,176	$7,176	($2,285)	($646)	$5,054	$126,511	12.43%	N/A
17	11.32	$19,758	($11,694)	$0	$0	$8,064	$7,807	$7,807	($2,487)	($703)	$4,875	$131,386	12.54%	N/A
18	11.54	$20,039	($11,918)	$0	$0	$8,121	$7,864	$7,864	($2,505)	($708)	$4,909	$136,295	12.63%	N/A
19	11.76	$20,325	($12,162)	$0	$0	$8,163	$7,906	$7,906	($2,518)	($712)	$4,933	$141,228	12.72%	N/A
20	11.99	$20,614	($12,424)	$0	$0	$8,190	$7,933	$7,933	($2,527)	($714)	$4,949	$146,177	12.79%	N/A
21	12.22	$20,906	($12,705)	$0	$0	$8,201	$8,073	$8,073	($2,571)	($727)	$4,903	$151,081	12.85%	N/A
22	12.46	$21,202	($13,003)	$0	$0	$8,199	$8,199	$8,199	($2,611)	($738)	$4,850	$155,930	12.91%	N/A
23	12.70	$21,503	($13,318)	$0	$0	$8,184	$8,184	$8,184	($2,607)	($737)	$4,841	$160,772	12.95%	N/A
24	12.94	$21,808	($13,651)	$0	$0	$8,157	$8,157	$8,157	($2,598)	($734)	$4,825	$165,597	12.99%	N/A
25	13.19	$22,118	($14,000)	$0	$0	$8,118	$8,118	$8,118	($2,586)	($731)	$4,802	$170,398	13.03%	N/A
26														
27														
28														
29														
30														

Solar 150KW
Tax Benefits Used as Generated





Solar 150KW
Tax Benefits Used as Generated

Graph Data	
Revenue + Tax Benefit/(Liability)	*Expenses + Cash Obligations*
$351,644	*$46,003*
$81,341	*$45,679*
$67,623	*$45,413*
$59,066	*$45,200*
$58,246	*$45,036*
$51,611	*$44,917*
$44,987	*$44,840*
$44,172	*$44,800*
$43,334	*$44,796*
$42,464	*$44,823*
$41,564	*$44,882*
$40,627	*$44,968*
$39,650	*$11,008*
$39,532	*$11,146*
$39,427	*$11,307*
$16,544	*$11,490*
$16,569	*$11,694*
$16,827	*$11,918*
$17,095	*$12,162*
$17,374	*$12,424*
$17,608	*$12,705*
$17,853	*$13,003*
$18,160	*$13,318*
$18,476	*$13,651*
$18,802	*$14,000*

Solar 150KW
Tax Benefits Used as Generated

Project/Contract Year	*units*	COD 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Production Degradation Factor			1.00	0.995	0.990	0.985	0.980	0.975	0.970	0.966	0.961	0.956	0.951	0.946	0.942	0.937	0.932	0.928	0.923	0.918	0.914	0.909	0.905	0.900	0.896	0.891	0.887	0.882	0.878	0.873	0.869	0.865
Production	*kWh*		189,085	188,139	187,198	186,262	185,331	184,405	183,482	182,565	181,652	180,744	179,840	178,941	178,046	177,156	176,270	175,389	174,512	173,640	172,771	171,907	171,048	170,193	169,342	168,495	167,653	0	0	0	0	0
Tariff Rate & Cash Incentives																																
Tariff Rate Escalator, if applicable			1.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Federal PBI Escalator, if applicable			1.00	1.020	1.040	1.061	1.082	1.104	1.126	1.149	1.172	1.195	1.219	1.243	1.268	1.294	1.319	1.346	1.373	1.400	1.428	1.457	1.486	1.516	1.546	1.577	1.608	1.641	1.673	1.707	1.741	1.776
State PBI Escalator, if applicable			1.00	1.020	1.040	1.061	1.082	1.104	1.126	1.149	1.172	1.195	1.219	1.243	1.268	1.294	1.319	1.346	1.373	1.400	1.428	1.457	1.486	1.516	1.546	1.577	1.608	1.641	1.673	1.707	1.741	1.776
Tariff Rate (Fixed Portion)	*¢/kWh*	*100%*	*32.85*	*32.85*	*32.85*	*32.85*	*32.85*	*32.85*	*32.85*	*32.85*	*32.85*	*32.85*	*32.85*	*32.85*	*32.85*	*32.85*	*32.85*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
Tariff Rate (Escalating Portion)	*¢/kWh*	*0%*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
Tariff Rate (Total)	*¢/kWh*		*32.85*	*32.85*	*32.85*	*32.85*	*32.85*	*32.85*	*32.85*	*32.85*	*32.85*	*32.85*	*32.85*	*32.85*	*32.85*	*32.85*	*32.85*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
Revenue from Tariff	*$*		$62,114	$61,804	$61,495	$61,187	$60,881	$60,577	$60,274	$59,973	$59,673	$59,374	$59,078	$58,782	$58,488	$58,196	$57,905	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Post-Tariff Market Value of Production	*¢/kWh*		*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*11.10*	*11.32*	*11.54*	*11.76*	*11.99*	*12.22*	*12.46*	*12.70*	*12.94*	*13.19*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
Market Revenue	*$*		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$19,475	$19,758	$20,039	$20,325	$20,614	$20,906	$21,202	$21,503	$21,808	$22,118	$0	$0	$0	$0	$0
Federal Cash Incentive Rate	*¢/kWh*		*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
Federal Cash Incentive	*$*		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
State Cash Incentive Rate	*¢/kWh*		*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
State Cash Incentive	*$*		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Interest Earned on Reserve Accounts	*$*		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Project Revenue, All Sources	***$***		**$62,114**	**$61,804**	**$61,495**	**$61,187**	**$60,881**	**$60,577**	**$60,274**	**$59,973**	**$59,673**	**$59,374**	**$59,078**	**$58,782**	**$58,488**	**$58,196**	**$57,905**	**$19,475**	**$19,758**	**$20,039**	**$20,325**	**$20,614**	**$20,906**	**$21,202**	**$21,503**	**$21,808**	**$22,118**	**$0**	**$0**	**$0**	**$0**	**$0**
Project Expenses																																
Operating Expense Inflation Factor			1.00	1.0300	1.0609	1.0927	1.1255	1.1593	1.1941	1.2299	1.2668	1.3048	1.3439	1.3842	1.4258	1.4685	1.5126	1.5580	1.6047	1.6528	1.7024	1.7535	1.8061	1.8603	1.9161	1.9736	2.0328	2.0938	2.1566	2.2213	2.2879	2.3566
Fixed O&M Expense	*$*		($3,300)	($3,399)	($3,501)	($3,606)	($3,714)	($3,826)	($3,940)	($4,059)	($4,180)	($4,306)	($4,435)	($4,568)	($4,705)	($4,846)	($4,992)	($5,141)	($5,296)	($5,454)	($5,618)	($5,787)	($5,960)	($6,139)	($6,323)	($6,513)	($6,708)	$0	$0	$0	$0	$0
Variable O&M Expense	*$*		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Insurance	*$*		($1,881)	($1,937)	($1,996)	($2,055)	($2,117)	($2,181)	($2,246)	($2,313)	($2,383)	($2,454)	($2,528)	($2,604)	($2,682)	($2,762)	($2,845)	($2,931)	($3,018)	($3,109)	($3,202)	($3,298)	($3,397)	($3,499)	($3,604)	($3,712)	($3,824)	$0	$0	$0	$0	$0
Project Administration	*$*		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Property Tax or Payment in Lieu of Taxes (PILOT)	*$*		($5,250)	($4,725)	($4,253)	($3,827)	($3,445)	($3,100)	($2,790)	($2,511)	($2,260)	($2,034)	($1,831)	($1,648)	($1,483)	($1,334)	($1,201)	($1,081)	($973)	($876)	($788)	($709)	($638)	($574)	($517)	($465)	($419)	$0	$0	$0	$0	$0
Land Lease	*$*		($1,500)	($1,545)	($1,591)	($1,639)	($1,688)	($1,739)	($1,791)	($1,845)	($1,900)	($1,957)	($2,016)	($2,076)	($2,139)	($2,203)	($2,269)	($2,337)	($2,407)	($2,479)	($2,554)	($2,630)	($2,709)	($2,790)	($2,874)	($2,960)	($3,049)	$0	$0	$0	$0	$0
Royalties	*$*		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Operating Expenses	***$***		**($11,931)**	**($11,606)**	**($11,340)**	**($11,128)**	**($10,964)**	**($10,845)**	**($10,768)**	**($10,728)**	**($10,723)**	**($10,751)**	**($10,809)**	**($10,896)**	**($11,008)**	**($11,146)**	**($11,307)**	**($11,490)**	**($11,694)**	**($11,918)**	**($12,162)**	**($12,424)**	**($12,705)**	**($13,003)**	**($13,318)**	**($13,651)**	**($14,000)**	**$0**	**$0**	**$0**	**$0**	**$0**
Total Operating Expenses ($/kWh)	*¢/kWh*		*($6.31)*	*($6.17)*	*($6.06)*	*($5.97)*	*($5.92)*	*($5.88)*	*($5.87)*	*($5.88)*	*($5.90)*	*($5.95)*	*($6.01)*	*($6.09)*	*($6.18)*	*($6.29)*	*($6.41)*	*($6.55)*	*($6.70)*	*($6.86)*	*($7.04)*	*($7.23)*	*($7.43)*	*($7.64)*	*($7.86)*	*($8.10)*	*($8.35)*	*$0.00*	*$0.00*	*$0.00*	*$0.00*	*$0.00*
EBITDA (Operating Income)	*$*		**$50,183**	**$50,197**	**$50,154**	**$50,059**	**$49,917**	**$49,732**	**$49,506**	**$49,245**	**$48,950**	**$48,623**	**$48,268**	**$47,887**	**$47,480**	**$47,050**	**$46,598**	**$7,985**	**$8,064**	**$8,121**	**$8,163**	**$8,190**	**$8,201**	**$8,199**	**$8,184**	**$8,157**	**$8,118**	**$0**	**$0**	**$0**	**$0**	**$0**
	Avg. DSCR	*Min DSCR*																														
Annual Debt Service Coverage Ratio	*1.45*	*1.41*	*1.47*	*1.47*	*1.47*	*1.47*	*1.47*	*1.46*	*1.45*	*1.45*	*1.44*	*1.43*	*1.42*	*1.41*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
Minimum DSSCR Year														*Year 12*																		
Loan Interest Expense			($18,069)	($17,029)	($15,921)	($14,741)	($13,485)	($12,147)	($10,721)	($9,204)	($7,587)	($5,866)	($4,032)	($2,080)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Operating Income After Interest Expense			**$32,114**	**$33,168**	**$34,233**	**$35,318**	**$36,433**	**$37,585**	**$38,785**	**$40,041**	**$41,362**	**$42,758**	**$44,236**	**$45,807**	**$47,480**	**$47,050**	**$46,598**	**$7,985**	**$8,064**	**$8,121**	**$8,163**	**$8,190**	**$8,201**	**$8,199**	**$8,184**	**$8,157**	**$8,118**	**$0**	**$0**	**$0**	**$0**	**$0**
Repayment of Loan Principal			($16,003)	($17,043)	($18,151)	($19,331)	($20,588)	($21,926)	($23,351)	($24,869)	($26,485)	($28,207)	($30,040)	($31,993)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
(Contributions to), and Liquidation of, Reserve Accounts			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Adjustment(s) for Major Equipment Replacement(s)			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pre-Tax Cash Flow to Equity			**$16,111**	**$16,125**	**$16,082**	**$15,987**	**$15,845**	**$15,659**	**$15,434**	**$15,173**	**$14,877**	**$14,551**	**$14,196**	**$13,814**	**$47,480**	**$47,050**	**$46,598**	**$7,985**	**$8,064**	**$8,121**	**$8,163**	**$8,190**	**$8,201**	**$8,199**	**$8,184**	**$8,157**	**$8,118**	**$0**	**$0**	**$0**	**$0**	**$0**
Project Cash Flows																																
Equity Investment		($349,014)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pre-Tax Cash Flow to Equity			$16,111	$16,125	$16,082	$15,987	$15,845	$15,659	$15,434	$15,173	$14,877	$14,551	$14,196	$13,814	$47,480	$47,050	$46,598	$7,985	$8,064	$8,121	$8,163	$8,190	$8,201	$8,199	$8,184	$8,157	$8,118	$0	$0	$0	$0	$0
Net Pre-Tax Cash Flow to Equity		($349,014)	$16,111	$16,125	$16,082	$15,987	$15,845	$15,659	$15,434	$15,173	$14,877	$14,551	$14,196	$13,814	$47,480	$47,050	$46,598	$7,985	$8,064	$8,121	$8,163	$8,190	$8,201	$8,199	$8,184	$8,157	$8,118	$0	$0	$0	$0	$0
Running IRR (Cash Only)			*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*-18.5%*	*-15.2%*	*-12.7%*	*-10.6%*	*-8.9%*	*-4.9%*	*-2.5%*	*-0.7%*	*-0.5%*	*-0.2%*	*0.0%*	*0.2%*	*0.4%*	*0.6%*	*0.8%*	*1.0%*	*1.2%*	*1.3%*	*1.3%*	*1.3%*	*1.3%*	*1.3%*	*1.3%*
Depreciation Expense			($321,039)	($80,996)	($49,234)	($30,125)	($29,981)	($15,637)	($1,362)	($1,362)	($1,364)	($1,362)	($1,364)	($1,362)	($1,364)	($1,362)	($1,364)	($810)	($257)	($257)	($257)	($257)	($129)	$0	$0	$0	$0	$0	$0	$0	$0	$0
Taxable Income (operating loss used as generated)			($288,925)	($47,828)	($15,001)	$5,193	$6,452	$21,948	$37,423	$38,679	$39,998	$41,395	$42,872	$44,445	$46,116	$45,688	$45,234	$7,176	$7,807	$7,864	$7,906	$7,933	$8,073	$8,199	$8,184	$8,157	$8,118	$0	$0	$0	$0	$0
Taxable Income (Federal)	operating loss treatment ==>> *As Generated*		($288,925)	($47,828)	($15,001)	$5,193	$6,452	$21,948	$37,423	$38,679	$39,998	$41,395	$42,872	$44,445	$46,116	$45,688	$45,234	$7,176	$7,807	$7,864	$7,906	$7,933	$8,073	$8,199	$8,184	$8,157	$8,118	$0	$0	$0	$0	$0
Taxable Income (State)	operating loss treatment ==>> *As Generated*		($288,925)	($47,828)	($15,001)	$5,193	$6,452	$21,948	$37,423	$38,679	$39,998	$41,395	$42,872	$44,445	$46,116	$45,688	$45,234	$7,176	$7,807	$7,864	$7,906	$7,933	$8,073	$8,199	$8,184	$8,157	$8,118	$0	$0	$0	$0	$0
Federal Income Taxes Saved / (Paid), before ITC/PTC			$92,022	$15,233	$4,778	($1,654)	($2,055)	($6,991)	($11,919)	($12,319)	($12,739)	($13,184)	($13,655)	($14,156)	($14,688)	($14,551)	($14,407)	($2,285)	($2,487)	($2,505)	($2,518)	($2,527)	($2,571)	($2,611)	($2,607)	($2,598)	($2,586)	$0	$0	$0	$0	$0
State Income Taxes Saved / (Paid), before ITC/PTC			$26,003	$4,304	$1,350	($467)	($581)	($1,975)	($3,368)	($3,481)	($3,600)	($3,726)	($3,858)	($4,000)	($4,150)	($4,112)	($4,071)	($646)	($703)	($708)	($712)	($714)	($727)	($738)	($737)	($734)	($731)	$0	$0	$0	$0	$0
Cash Benefit of Federal ITC, Cash Grant, or PTC			$171,504	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Cash Benefit of State ITC and/or PTC			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
After-Tax Cash Flow to Equity		**($349,014)**	**$305,641**	**$35,663**	**$22,210**	**$13,866**	**$13,209**	**$6,694**	**$147**	**($628)**	**($1,462)**	**($2,359)**	**($3,317)**	**($4,341)**	**$28,642**	**$28,387**	**$28,120**	**$5,054**	**$4,875**	**$4,909**	**$4,933**	**$4,949**	**$4,903**	**$4,850**	**$4,841**	**$4,825**	**$4,802**	**$0**	**$0**	**$0**	**$0**	**$0**
Running IRR (After Tax)			*-12.4%*	*-2.0%*	*3.4%*	*6.2%*	*8.3%*	*9.2%*	*9.2%*	*9.2%*	*9.0%*	*8.8%*	*8.5%*	*8.1%*	*10.1%*	*11.4%*	*12.3%*	*12.4%*	*12.5%*	*12.6%*	*12.7%*	*12.8%*	*12.9%*	*12.9%*	*13.0%*	*13.0%*	*13.0%*	*13.0%*	*13.0%*	*13.0%*	*13.0%*	*13.0%*

Pre-Tax (Cash-only) Equity IRR (over defined Useful Life)	**1.32%**
After Tax Equity IRR (over defined Useful Life)	**13.03%**
Net Present Value @ 13.00% (over defined Useful Life)	**$168**

Yr 1 COE
(cents/kWh)
32.85

Supporting Calculations

Debt Service:
Debt Sizing (Defined Capital Structure Method)

Installed Cost (excluding cost of financing)	627,000
Defined Debt-to-Total-Capital	44%
Size of Debt	277,986

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Loan Repayment																															
Structured Debt Service Payment	-	($34,072)	($34,072)	($34,072)	($34,072)	($34,072)	($34,072)	($34,072)	($34,072)	($34,072)	($34,072)	($34,072)	($34,072)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Interest	-	($18,069)	($17,029)	($15,921)	($14,741)	($13,485)	($12,147)	($10,721)	($9,204)	($7,587)	($5,866)	($4,032)	($2,080)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Principal	-	($16,003)	($17,043)	($18,151)	($19,331)	($20,588)	($21,926)	($23,351)	($24,869)	($26,485)	($28,207)	($30,040)	($31,993)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Loan Amortization																															
Beginning Balance	-	277,986	261,983	244,940	226,789	207,457	186,870	164,944	141,593	116,725	90,240	62,033	31,993	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Drawdowns	277,986	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Principal Repayments	-	($16,003)	($17,043)	($18,151)	($19,331)	($20,588)	($21,926)	($23,351)	($24,869)	($26,485)	($28,207)	($30,040)	($31,993)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Ending Balance	277,986	261,983	244,940	226,789	207,457	186,870	164,944	141,593	116,725	90,240	62,033	31,993	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

Depreciation:	**Project Cost Allocation**																																	
Project/Contract Year	Before	%	After	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Depreciation Schedules, Half-Year Convention	Adjustments	Allocation	Adjustments																															
5 Year MACRS	$571,680	91%	$246,747		20.00%	32.00%	19.20%	11.52%	11.52%	5.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
7 Year MACRS	$0	0%	$0		14.29%	24.49%	17.49%	12.49%	8.93%	8.92%	8.93%	4.46%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15 Year MACRS	$43,410	7%	$18,737		5.00%	9.50%	8.55%	7.70%	6.93%	6.23%	5.90%	5.90%	5.91%	5.90%	5.91%	5.90%	5.91%	5.90%	5.91%	2.95%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
20 Year MACRS	$0	0%	$0		3.75%	7.22%	6.68%	6.18%	5.71%	5.29%	4.89%	4.52%	4.46%	4.46%	4.46%	4.46%	4.46%	4.46%	4.46%	4.46%	4.46%	4.46%	4.46%	4.46%	2.23%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
5 Year SL	$0	0%	$0		10.00%	20.00%	20.00%	20.00%	20.00%	10.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15 Year SL	$0	0%	$0		3.33%	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%	6.66%	6.66%	6.66%	6.66%	3.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
20 Year SL	$11,910	2%	$5,141		2.50%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	2.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
39 Year SL	$0	0%	$0		1.28%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%
Bonus Depreciation			$270,624		100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Non-Depreciable	$0	0%	$0																															
	Unadjusted		**Adjusted**																															
Project Cost Basis	$627,000	100%	$541,248																															
	OK	*OK*	*OK*																															
Adjustments for ITC, ITC Grant and non-taxable grants	$85,752																																	
Annual Depreciation Expense, Initial Installation																																		
Total Project Cost, adj for ITC/Grant if applicable			*check*																															
5 Year MACRS			$246,747		$49,349	$78,959	$47,375	$28,425	$28,425	$14,213	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
7 Year MACRS			$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
15 Year MACRS			$18,737		$937	$1,780	$1,602	$1,443	$1,298	$1,167	$1,105	$1,105	$1,107	$1,105	$1,107	$1,105	$1,107	$1,105	$1,107	$553	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
20 Year MACRS			$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
5 Year SL			$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
15 Year SL			$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
20 Year SL			$5,141		$129	$257	$257	$257	$257	$257	$257	$257	$257	$257	$257	$257	$257	$257	$257	$257	$257	$257	$257	$257	$129	$0	$0	$0	$0	$0	$0	$0	$0	$0
39 Year SL			$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Bonus Depreciation			$270,624		$270,624	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Non-Depreciable			$0																															
Total			$541,248	*OK*																														
Annual Depreciation Expense, Repairs & Replacements																																		
1st Replacement			$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Depreciation Timing					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation Expense					$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2nd Replacement			$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Depreciation Timing					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation Expense					$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Annual Depreciation Expense					$321,039	$80,996	$49,234	$30,125	$29,981	$15,637	$1,362	$1,362	$1,364	$1,362	$1,364	$1,362	$1,364	$1,362	$1,364	$810	$257	$257	$257	$257	$129	$0	$0	$0	$0	$0	$0	$0	$0	$0
Annual Depreciation Benefit					$131,144	$33,087	$20,112	$12,306	$12,247	$6,388	$557	$557	$557	$557	$557	$557	$557	$557	$557	$331	$105	$105	$105	$105	$52	$0	$0	$0	$0	$0	$0	$0	$0	$0

Operating Loss Carry-Forward, if applicable:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Taxable Income / (Operating Loss)	($288,925)	($47,828)	($15,001)	$5,193	$6,452	$21,948	$37,423	$38,679	$39,998	$41,395	$42,872	$44,445	$46,116	$45,688	$45,234	$7,176	$7,807	$7,864	$7,906	$7,933	$8,073	$8,199	$8,184	$8,157	$8,118	$0	$0	$0	$0	$0
Federal Carry-Forward																														
Operating Loss Carry-Forward, Beginning Balance	$0	$288,925	$336,752	$351,753	$346,560	$340,108	$318,160	$280,737	$242,059	$202,061	$160,665	$117,794	$73,349	$27,234	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional Operating Loss Carried-Forward	$288,925	$47,828	$15,001	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Utilization of Operating Loss Carry-Forward	$0	$0	$0	($5,193)	($6,452)	($21,948)	($37,423)	($38,679)	($39,998)	($41,395)	($42,872)	($44,445)	($46,116)	($27,234)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Operating Loss Carry-Forward, Ending Balance	$288,925	$336,752	$351,753	$346,560	$340,108	$318,160	$280,737	$242,059	$202,061	$160,665	$117,794	$73,349	$27,234	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Taxable Income with Operating Loss Carry-Forward	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$18,454	$45,234	$7,176	$7,807	$7,864	$7,906	$7,933	$8,073	$8,199	$8,184	$8,157	$8,118	$0	$0	$0	$0	$0
State Carry-Forward																														
Operating Loss Carry-Forward, Beginning Balance	$0	$288,925	$336,752	$351,753	$346,560	$340,108	$318,160	$280,737	$242,059	$202,061	$160,665	$117,794	$73,349	$27,234	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional Operating Loss Carried-Forward	$288,925	$47,828	$15,001	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Utilization of Operating Loss Carry-Forward	$0	$0	$0	($5,193)	($6,452)	($21,948)	($37,423)	($38,679)	($39,998)	($41,395)	($42,872)	($44,445)	($46,116)	($27,234)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Operating Loss Carry-Forward, Ending Balance	$288,925	$336,752	$351,753	$346,560	$340,108	$318,160	$280,737	$242,059	$202,061	$160,665	$117,794	$73,349	$27,234	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Taxable Income with Operating Loss Carry-Forward	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$18,454	$45,234	$7,176	$7,807	$7,864	$7,906	$7,933	$8,073	$8,199	$8,184	$8,157	$8,118	$0	$0	$0	$0	$0

Solar 150KW
Tax Benefits Used as Generated

Federal Tax Credit Benefits, if applicable:																															
Federal ITC (as generated)		$171,504	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Federal PTC (as generated)		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Applicable Tax Credits, as generated		$171,504	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Carry-Forward Scenario:																															
Federal Income Taxes Saved / (Paid), before ITC/PTC		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tax Benefit Carry-Forward, Beginning Balance		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional Tax Benefit Carry-Forward		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Utilization of Tax Benefit Carry-Forward		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tax Benefit Carry-Forward, Ending Balance	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
State Tax Credit Benefits, if applicable:																															
State ITC (as generated)		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
State PTC (as generated)		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Applicable Tax Credits, as generated		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Carry-Forward Scenario:																															
State Income Taxes Saved / (Paid), before ITC/PTC		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tax Benefit Carry-Forward, Beginning Balance		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional Tax Benefit Carry-Forward		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Utilization of Tax Benefit Carry-Forward		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tax Benefit Carry-Forward, Ending Balance	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Reserve Accounts:																															
Beginning Balance	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Debt Service Reserve	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
O&M/Working Capital Reserve	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Major Equipment Replacement Reserves	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Decommissioning Reserve	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Ending Balance	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Interest on Reserves		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Annual Contributions to/(Liquidations of) Reserves		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

COE Data Tables		NPV				NPV				NPV			Range Min	Range Max
Calculation of COE when tax benefits are "Carried Forward"		$168				$168				$168			32.8	32.9
	0	($204,956)			30.0	($17,629)			32.0	($5,140)				
	10	($142,514)			31.0	($11,384)			32.1	($4,516)				
	20	($80,071)			32.0	($5,140)	($5,140)		32.2	($3,891)				
	30	($17,629)	($17,629)		33.0	$1,104		$1,104	32.3	($3,267)				
	40	$44,814		$44,814	34.0	$7,348			32.4	($2,642)				
	50	$107,257			35.0	$13,593			32.5	($2,018)				
	60	$169,699			36.0	$19,837			32.6	($1,393)				
	70	$232,142			37.0	$26,081			32.7	($769)				
	80	$294,584			38.0	$32,325			32.8	($145)	($145)			
	90	$357,027			39.0	$38,570			32.9	$480		$480		
	100	$419,469			40.0	$44,814			33.0	$1,104				

Complex Inputs for Deriving Total Project Capital Cost, if applicable
Sample inputs provided on this tab are illustrative only, all inputs must be provided and validated by the user.

Generation Equipment	$	% Eligible for ITC	Depreciation Classification
Solar Panels	$3,500,000	100%	5-year MACRS
Transportation/Delivery	$500,000	100%	5-year MACRS
Mounting Hardware	$800,000	100%	5-year MACRS
Installation Labor	$200,000	100%	15-year SL
Inverters	$1,000,000	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
Total Generation Equipment Cost	$6,000,000	100%	

Click Here to Return to Inputs Worksheet

Balance of Plant	$	% Eligible for ITC	Depreciation Classification
Site Survey & Preparation	$175,000	100%	20-year SL
Balance of Facility / Electrical Collection System	$2,150,000	100%	5-year MACRS
Maintenance Building	$0	0%	20-year SL
Access Roads	$100,000	100%	20-year SL
Spare Parts	$25,000	100%	5-year MACRS
Commissioning	$50,000	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
Total Balance of Plant Cost	$2,500,000	100%	

Click Here to Return to Inputs Worksheet

Interconnection	$	% Eligible for ITC	Depreciation Classification
Substation	$200,000	50%	20-year SL
Transformer	$50,000	50%	20-year SL
Metering	$25,000	50%	20-year SL
Utility System Improvements	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
Total Interconnection Cost	$275,000	50%	

Click Here to Return to Inputs Worksheet

Development Costs & Fee	$	% Eligible for ITC	Depreciation Classification
Site Selection & Evaluation	$100,000	100%	15-year SL

Site Acquisition Cost	$10,000	100%	20-year SL
Permitting	$350,000	100%	5-year MACRS
Engineering/Design	$500,000	100%	5-year MACRS
Resource Analysis	$20,000	100%	20-year SL
Other Development Costs	$300,000	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
Total Development Costs & Fees	$1,280,000	100%	

Click Here to Return to Inputs Worksheet

Reserves & Financing Costs	*$*	*% Eligible for ITC*	*Depreciation Classification*
Lender Fee	$0	0%	Non-Depreciable
Interest During Construction	$0	0%	20-year SL
Other Equity & Debt Closing Costs	$0	0%	20-year SL
Initial Funding of Debt Service & Working Capital/O&M Reserves	$0	0%	Non-Depreciable
Total Installed Cost	$0	#DIV/0!	

Click Here to Return to Inputs Worksheet

Total Project Costs			***Depreciation Allocation***									
Cost Category	*$*	*$ Eligible for ITC*	*Cost Category*	*5-year MACRS*	*7-year MACRS*	*15-year MACRS*	*20-year MACRS*	*5-year SL*	*15-year SL*	*20-year SL*	*39-year SL*	*Non-Depreciable*
Generation Equipment	$6,000,000	$6,000,000	Generation Equipment	$5,800,000	$0	$0	$0	$0	$200,000	$0	$0	$0
Balance of Plant	$2,500,000	$2,500,000	Balance of Plant	$2,225,000	$0	$0	$0	$0	$0	$275,000	$0	$0
Interconnection	$275,000	$137,500	Interconnection	$0	$0	$0	$0	$0	$0	$275,000	$0	$0
Development Costs & Fee	$1,280,000	$1,280,000	Development Costs & Fee	$1,150,000	$0	$0	$0	$0	$100,000	$30,000	$0	$0
Reserves & Financing Costs	$0	#DIV/0!	Reserves & Financing Costs	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Installed Cost	**$10,055,000**	**#DIV/0!**		**$9,175,000**	**$0**	**$0**	**$0**	**$0**	**$300,000**	**$580,000**	**$0**	**$0**

Taxable Entity? (turns on/off ITC and depreciation input cells) Yes

Year-by-Year Inputs for Market Value of Production, if applicable

Project Year	Bundled* Market Value of Production (¢/kWh)
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	11.10
17	11.32
18	11.54
19	11.76
20	11.99
21	12.22
22	12.46
23	12.70
24	12.94
25	13.19
26	13.45
27	13.71
28	13.97
29	14.24
30	14.52

* Includes energy, capacity & RECs

Solar 500KW

Performance, Cost, Operating, Tax & Financing Inputs

Check		Notes
	Selected Technology — Photovoltaic	?

Project Size and Performance	Units	Input Value	Notes
Generator Nameplate Capacity	kW dc	500	?
DC-to-AC Conversion Efficiency	%	95.0%	?
Net Capacity Factor, Yr 1	%, ac	15.3%	?
Production, Yr 1	AC kWh	637,728	?
Annual Production Degradation	%	0.5%	?
Project Useful Life	years	25	?

Capital Costs	Units	Input Value	Notes
Select Cost Level of Detail		Intermediate	?
Generation Equipment	$	$1,880,000	?
Balance of Plant	$	$0	?
Interconnection	$	$92,500	?
Development Costs & Fee	$	$0	?
Reserves & Financing Costs	$	$0	?
Total Installed Cost	$	$1,972,500	?
Total Installed Cost	$/Watt dc	$3.95	?
Total Value of Grants (excl. pmt in lieu of ITC, if applicable)	$	$0	?
Net Project Cost	$	$1,972,500	?
Net Project Cost	$/Watt dc	$3.95	?

Operations & Maintenance	Units	Input Value	Notes
Select Cost Level of Detail		Intermediate	?
Fixed O&M Expense, Yr 1	$/kW-yr dc	$22.00	?
Variable O&M Expense, Yr 1	¢/kWh	0.00	?
O&M Cost Inflation, initial period	%	3.0%	?
Initial Period ends last day of	year	10	?
O&M Cost Inflation, thereafter	%	3.0%	?
Insurance, Yr 1 (% of Total Cost)	%	0.3%	?
Insurance, Yr 1 ($) (Provided for reference)	$	$5,030	?
Project Management Yr 1	$/yr	$0	?
Property Tax or PILOT, Yr 1	$/yr	$17,500	?
Annual Property Tax Adjustment Factor	%	-10.0%	?
Land Lease	$/yr	$7,500	?
Royalties (% of revenue)	%	0.0%	?
Royalties, Yr 1 ($) (Provided for reference)	$	$0	?

Construction Financing	Units	Input Value	Notes
Construction Period	months	4	?
Interest Rate (Annual)	%	0.0%	?
Interest During Construction	$	$0	?

Permanent Financing	Units	Input Value	Notes
% Debt (% of hard costs) (mortgage-style amort.)	%	44%	?
Debt Tenor	years	12	?
Interest Rate on Term Debt	%	6.50%	?
Lender's Fee (% of total borrowing)	%	0.0%	?
Required Minimum Annual DSCR		1.20	?
Actual Minimum DSCR, occurs in →	Year 12	1.40	?
Minimum DSCR Check Cell (If "Fail," read note ==>)	Pass/Fail	Pass	?
Required Average DSCR		1.45	?
Actual Average DSCR		1.45	?
Average DSCR Check Cell (If "Fail," read note ==>	Pass/Fail	Pass	?
% Equity (% hard costs) (soft costs also equity funded	%	56%	?
Target After-Tax Equity IRR	%	13.00%	?
Weighted Average Cost of Capital (WACC)	%	8.94%	?
Other Closing Costs	$	$0	?

Summary of Sources of Funding for Total Installed Cost			
Senior Debt (funds portion of hard costs)	44%	$873,994	?
Equity (funds balance of hard costs + all soft costs	56%	$1,098,506	?
Total Value of Grants	0%	$0	?
Total Installed Cost	$	**$1,972,500**	?

Tax	Units	Input Value	Notes
Is owner a taxable entity?		Yes	?
Federal Income Tax Rate	%	35.0%	?
Federal Tax Benefits used as generated or carried forward?		As Generated	?
State Income Tax Rate	%	9.0%	?
State Tax Benefits used as generated or carried forward?		As Generated	?
Effective Income Tax Rate	%	40.85%	?
Depreciation Allocation		see table ==>	?

Cost-Based Tariff Rate Structure	Units	Input Value	Notes
Payment Duration for Cost-Based Incentive	years	15	?
% of Year-One Tariff Rate Escalated	%	0.0%	?
Cost-Based Tariff Escalation Rate	%	0.0%	?

Forecasted Market Value of Production; applies after Incentive Expiration			?
Select Market Value Forecast Methodology		Year-by-Year	?
Click Here for Complex Input Worksheet			?

Federal Incentives	Units	Input Value	Notes
Select Cost-Based (ITC/Grant) or Performance-Based (PTC/REPI)		Cost-Based	?
Investment Tax Credit (ITC) or Cash Grant?		ITC	?
ITC or Cash Grant Amount	%	30%	?
ITC utilization factor, if applicable	%	100%	?
ITC or Cash Grant	$	$541,440	?
Federal Tax Benefits used as generated or carried forward?		As Generated	?
Federal Grants (Other than Section 1603)	$	$0	?
Federal Grants Treated as Taxable Income?		Yes	?

State Incentives	Units	Input Value	Notes
Select Cost-Based (ITC) or Performance-Based (PTC/Cash Pmt)		Cost-Based	?
ITC Amount	%	0%	?
Utilization Factor, if applicable	%	100%	?
State ITC realization period	yrs	5	?
Total State ITC, over realization period	$	$0	?
PBI Rate	¢/kWh	1.50	
PBI Duration	yrs	10	
PBI Escalation Rate	%	2.0%	
PBI Utilization Factor, if applicable	%	100%	
Benefits used as generated or carried forward?		As Generated	?
Total State Grants (or Rebates)	$	$0	?
State Grants Treated as Taxable Income?		Yes	?

Capital Expenditures During Operations: Inverter Replacement		Input Value	Notes
1st Equipment Replacement	year	10	?
1st Replacement Cost ($ in year replaced)	$/Watt dc	$0.000	?
2nd Equipment Replacement	year	20	?
2nd Replacement Cost ($ in year replaced)	$/Watt dc	$0.000	?

Reserves Funded from Operations	Units	Input Value	Notes
Decommissioning Reserve			
Fund from Operations or Salvage Value?		Salvage	?

Initial Funding of Reserve Accounts	Units	Input Value	Notes
Debt Service Reserve			
# of months of Debt Service	months	0	?
Initial Debt Service Reserve	$	$0	?
O&M Reserve/Working Capital			
# of months of O&M Expense	months	0	?
Initial O&M and WC Reserve	$	$0	?
Interest on All Reserves	%	2.0%	?

Depreciation Allocation	*Input Values*									
Bonus Depreciation	Yes		?							
% of Bonus Depreciation applied in Year 1	50%		?							
Allocation of Costs	5-year MACRS	7-year MACRS	15-year MACRS	20-year MACRS	5-year SL	15-year SL	20-year SL	39-year SL	Non-Depreciable	
Generation Equipment	96.0%	0.0%	2.0%	0.0%	0.0%	0.0%	2.0%	0.0%	0.0%	?
Balance of Plant	50.0%	0.0%	0.0%	0.0%	0.0%	50.0%	0.0%	0.0%	0.0%	?
Interconnection	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	?
Development Costs & Fee	80.0%	0.0%	0.0%	0.0%	0.0%	5.0%	5.0%	0.0%	10.0%	?
Reserves & Financing Costs	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	0.0%	50.0%	?

Unit Definitions

(kW) kilowatt – a standard measure of electrical capacity, equal to 1000 Watts.
(kWh) kilowatt hour – a standard measure of electrical output. A 1 kW generator operating at rated capacity for one hour will produce 1 kWh of electricity.
(DC) direct current – the unidirectional flow of electric charge
(AC) alternating current – the multidirectional flow of electric charge
($/kW-yr) – an annual expense (or revenue) based on generator capacity
($) – All CREST model values are in nominal dollars
(¢/kWh) –cents per kilowatt hour
(%) – an input with units expressed as a percentage
(years or year) – an input applicable to a specified duration or project year
($/yr) – inputs measured in dollars and applied annually
(months) –designates the number of months to which an input applies
Pass/Fail – denotes whether the two debt service coverage ratio tests have passed or failed.

Solar 500KW

Tax Benefits Used as Generated

Summary Results

Results of multiple scenarios may be compared here by usi

Press F9 each time inputs are changed to ensure completion of the COE calculation. When "#N/A" appears, press "F9" in the upper row on your keyboard to complete the calculation. It may be necessary to press F9 more than once. See note for details.

Outputs Summary	*units*	***Current Model Run***
Year-One Cost of Energy (COE)	*¢/kWh*	**31.15**
Annual Escalation of Year-One COE	*%*	**0.0%**
Percentage of Tariff Escalated	*%*	**0.0%**
Does modeled project meet *minimum* DSCR requirements?		**Yes**
Does modeled project meet *average* DSCR requirements?		**Yes**
Did you confirm that all minimum required inputs have green check cells?		

Equivalent Nominal Levelized Tariff Rate	*¢/kWh*	**31.15**

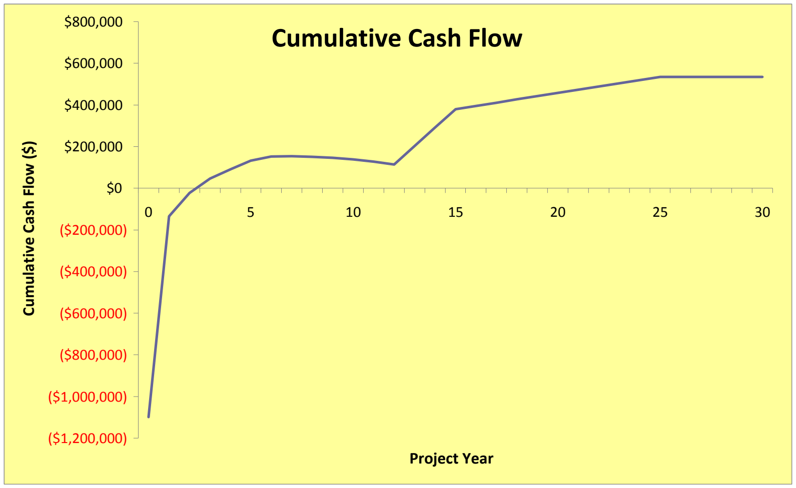
Inputs Summary		
Selected Technology		Photovoltaic
Generator Nameplate Capacity	*kW dc*	*500*
Net Capacity Factor, Yr 1	*%, ac*	15.3%
Payment Duration for Cost-Based Incentive	*Years*	15
Net Project Cost	*$*	$1,972,500
Net Project Cost	*$/Watt*	$3.95
% Equity (% hard costs) (soft costs also equity funded)	*%*	56%
Target After-Tax Equity IRR	*%*	13.00%
% Debt (% of hard costs) (mortgage-style amort.)	*%*	44%
Interest Rate on Term Debt	*%*	6.50%
Is owner a taxable entity?		Yes
Type of Federal Incentive Assumed		Cost-Based
Tax Credit Based or Cash Based?		ITC
Other Grants or Rebates		No

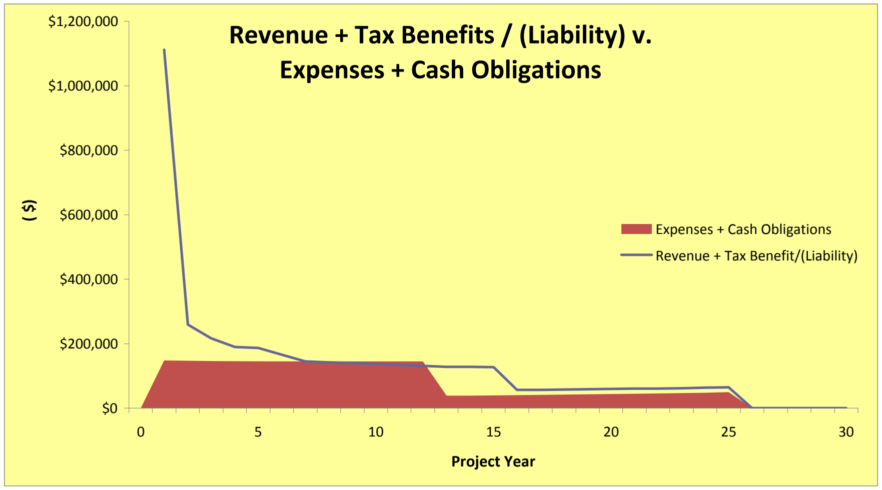
Solar 500KW
Tax Benefits Used as Generated

Annual Project Cash Flows, Returns & Other Metrics

Project Year	Tariff or Market Value ¢/kWh	Revenue $	Operating Expenses $	Debt Service $	Reserves $	Pre-Tax Cash Flow $	Federal Taxable Income $	State Taxable Income $	Federal Tax Benefit/ (Liability) $	State Tax Benefit/ (Liability) $	After Tax Cash Flow $	Cumulative Cash Flow $	After Tax IRR %	Debt Service Coverage
0											($1,098,506)	($1,098,506)		
1	31.15	$198,652	($41,030)	($107,124)	$0	$50,499	($908,998)	($908,998)	$830,956	$81,810	$963,264	($135,242)	-12.31%	1.47
2	31.15	$197,659	($39,986)	($107,124)	$0	$50,549	($151,144)	($151,144)	$48,139	$13,603	$112,292	($22,950)	-1.89%	1.47
3	31.15	$196,671	($39,138)	($107,124)	$0	$50,409	($47,614)	($47,614)	$15,165	$4,285	$69,859	$46,909	3.50%	1.47
4	31.15	$195,687	($38,469)	($107,124)	$0	$50,094	$16,050	$16,050	($5,112)	($1,445)	$43,538	$90,447	6.25%	1.47
5	31.15	$194,709	($37,965)	($107,124)	$0	$49,620	$19,959	$19,959	($6,357)	($1,796)	$41,467	$131,914	8.38%	1.46
6	31.15	$193,735	($37,611)	($107,124)	$0	$49,000	$68,783	$68,783	($21,908)	($6,191)	$20,902	$152,816	9.27%	1.46
7	31.15	$192,767	($37,396)	($107,124)	$0	$48,247	$117,540	$117,540	($37,437)	($10,579)	$232	$153,048	9.28%	1.45
8	31.15	$191,803	($37,309)	($107,124)	$0	$47,370	$121,436	$121,436	($38,677)	($10,929)	($2,236)	$150,812	9.21%	1.44
9	31.15	$190,844	($37,340)	($107,124)	$0	$46,380	$125,522	$125,522	($39,979)	($11,297)	($4,896)	$145,916	9.05%	1.43
10	31.15	$189,890	($37,481)	($107,124)	$0	$45,285	$129,845	$129,845	($41,356)	($11,686)	($7,757)	$138,159	8.81%	1.42
11	31.15	$188,940	($37,724)	($107,124)	$0	$44,092	$134,411	$134,411	($42,810)	($12,097)	($10,815)	$127,345	8.50%	1.41
12	31.15	$187,995	($38,063)	($107,124)	$0	$42,809	$139,273	$139,273	($44,358)	($12,535)	($14,084)	$113,261	8.09%	1.40
13	31.15	$187,056	($38,490)	$0	$0	$148,565	$144,437	$144,437	($46,003)	($12,999)	$89,562	$202,823	10.09%	N/A
14	31.15	$186,120	($39,003)	$0	$0	$147,118	$142,995	$142,995	($45,544)	($12,870)	$88,704	$291,527	11.38%	N/A
15	31.15	$185,190	($39,594)	$0	$0	$145,595	$141,467	$141,467	($45,057)	($12,732)	$87,806	$379,333	12.29%	N/A
16	11.10	$65,684	($40,262)	$0	$0	$25,422	$22,955	$22,955	($7,311)	($2,066)	$16,045	$395,377	12.43%	N/A
17	11.32	$66,639	($41,001)	$0	$0	$25,638	$24,827	$24,827	($7,907)	($2,234)	$15,496	$410,873	12.54%	N/A
18	11.54	$67,587	($41,810)	$0	$0	$25,777	$24,966	$24,966	($7,952)	($2,247)	$15,578	$426,452	12.64%	N/A
19	11.76	$68,549	($42,685)	$0	$0	$25,864	$25,053	$25,053	($7,979)	($2,255)	$15,630	$442,082	12.72%	N/A
20	11.99	$69,526	($43,624)	$0	$0	$25,902	$25,091	$25,091	($7,992)	($2,258)	$15,652	$457,734	12.79%	N/A
21	12.22	$70,510	($44,625)	$0	$0	$25,885	$25,479	$25,479	($8,115)	($2,293)	$15,476	$473,211	12.86%	N/A
22	12.46	$71,509	($45,687)	$0	$0	$25,822	$25,822	$25,822	($8,224)	($2,324)	$15,273	$488,484	12.91%	N/A
23	12.70	$72,523	($46,809)	$0	$0	$25,714	$25,714	$25,714	($8,190)	($2,314)	$15,210	$503,694	12.96%	N/A
24	12.94	$73,552	($47,989)	$0	$0	$25,563	$25,563	$25,563	($8,142)	($2,301)	$15,121	$518,815	13.00%	N/A
25	13.19	$74,597	($49,227)	$0	$0	$25,370	$25,370	$25,370	($8,080)	($2,283)	$15,006	$533,821	13.03%	N/A
26														
27														
28														
29														
30														

Solar 500KW
Tax Benefits Used as Generated





Solar 500KW
Tax Benefits Used as Generated

Graph Data	
Revenue + Tax Benefit/(Liability)	*Expenses + Cash Obligations*
$1,111,418	$148,154
$259,401	$147,110
$216,121	$146,262
$189,131	$145,593
$186,556	$145,089
$165,637	$144,735
$144,752	$144,520
$142,196	$144,433
$139,568	$144,464
$136,848	$144,605
$134,033	$144,848
$131,103	$145,186
$128,053	$38,490
$127,707	$39,003
$127,400	$39,594
$56,306	$40,262
$56,497	$41,001
$57,388	$41,810
$58,315	$42,685
$59,276	$43,624
$60,102	$44,625
$60,961	$45,687
$62,019	$46,809
$63,110	$47,989
$64,234	$49,227

Solar 500KW
Tax Benefits Used as Generated

Project/Contract Year	units	COD 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Production Degradation Factor			1.00	0.995	0.990	0.985	0.980	0.975	0.970	0.966	0.961	0.956	0.951	0.946	0.942	0.937	0.932
Production	kWh		637,728	634,539	631,367	628,210	625,069	621,943	618,834	615,740	612,661	609,598	606,550	603,517	600,499	597,497	594,509
Tariff Rate & Cash Incentives																	
Tariff Rate Escalator, if applicable			1.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Federal PBI Escalator, if applicable			1.00	1.020	1.040	1.061	1.082	1.104	1.126	1.149	1.172	1.195	1.219	1.243	1.268	1.294	1.319
State PBI Escalator, if applicable			1.00	1.020	1.040	1.061	1.082	1.104	1.126	1.149	1.172	1.195	1.219	1.243	1.268	1.294	1.319
Tariff Rate (Fixed Portion)	¢/kWh	100%	31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.15
Tariff Rate (Escalating Portion)	¢/kWh	0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tariff Rate (Total)	¢/kWh		31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.15	31.15
Revenue from Tariff	$		$198,652	$197,659	$196,671	$195,687	$194,709	$193,735	$192,767	$191,803	$190,844	$189,890	$188,940	$187,995	$187,056	$186,120	$185,190
Post-Tariff Market Value of Production	¢/kWh		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Market Revenue	$		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Federal Cash Incentive Rate	¢/kWh		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Federal Cash Incentive	$		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
State Cash Incentive Rate	¢/kWh		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
State Cash Incentive	$		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Interest Earned on Reserve Accounts	$		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Project Revenue, All Sources	$		$198,652	$197,659	$196,671	$195,687	$194,709	$193,735	$192,767	$191,803	$190,844	$189,890	$188,940	$187,995	$187,056	$186,120	$185,190
Project Expenses																	
Operating Expense Inflation Factor			1.00	1.0300	1.0609	1.0927	1.1255	1.1593	1.1941	1.2299	1.2668	1.3048	1.3439	1.3842	1.4258	1.4685	1.5126
Fixed O&M Expense	$		($11,000)	($11,330)	($11,670)	($12,020)	($12,381)	($12,752)	($13,135)	($13,529)	($13,934)	($14,353)	($14,783)	($15,227)	($15,683)	($16,154)	($16,638)
Variable O&M Expense	$		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Insurance	$		($5,030)	($5,181)	($5,336)	($5,496)	($5,661)	($5,831)	($6,006)	($6,186)	($6,372)	($6,563)	($6,760)	($6,963)	($7,171)	($7,387)	($7,608)
Project Administration	$		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Property Tax or Payment in Lieu of Taxes (PILOT)	$		($17,500)	($15,750)	($14,175)	($12,758)	($11,482)	($10,334)	($9,300)	($8,370)	($7,533)	($6,780)	($6,102)	($5,492)	($4,943)	($4,448)	($4,003)
Land Lease	$		($7,500)	($7,725)	($7,957)	($8,195)	($8,441)	($8,695)	($8,955)	($9,224)	($9,501)	($9,786)	($10,079)	($10,382)	($10,693)	($11,014)	($11,344)
Royalties	$		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Operating Expenses	$		($41,030)	($39,986)	($39,138)	($38,469)	($37,965)	($37,611)	($37,396)	($37,309)	($37,340)	($37,481)	($37,724)	($38,063)	($38,490)	($39,003)	($39,594)
Total Operating Expenses ($/kWh)	¢/kWh		($6.43)	($6.30)	($6.20)	($6.12)	($6.07)	($6.05)	($6.04)	($6.06)	($6.09)	($6.15)	($6.22)	($6.31)	($6.41)	($6.53)	($6.66)
EBITDA (Operating Income)	$		$157,622	$157,673	$157,533	$157,218	$156,744	$156,124	$155,371	$154,494	$153,504	$152,409	$151,216	$149,933	$148,565	$147,118	$145,595
	Avg. DSCR	Min DSCR															
Annual Debt Service Coverage Ratio	1.45	1.40	1.47	1.47	1.47	1.47	1.46	1.46	1.45	1.44	1.43	1.42	1.41	1.40	N/A	N/A	N/A
Minimum DSSCR Year														Year 12			
Loan Interest Expense			($56,810)	($53,539)	($50,056)	($46,347)	($42,396)	($38,189)	($33,708)	($28,936)	($23,854)	($18,441)	($12,677)	($6,538)	$0	$0	$0
Operating Income After Interest Expense			$100,813	$104,134	$107,477	$110,871	$114,348	$117,935	$121,662	$125,558	$129,650	$133,967	$138,539	$143,395	$148,565	$147,118	$145,595
Repayment of Loan Principal			($50,314)	($53,585)	($57,068)	($60,777)	($64,728)	($68,935)	($73,416)	($78,188)	($83,270)	($88,682)	($94,447)	($100,586)	$0	$0	$0
(Contributions to), and Liquidation of, Reserve Accounts			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Adjustment(s) for Major Equipment Replacement(s)			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pre-Tax Cash Flow to Equity			$50,499	$50,549	$50,409	$50,094	$49,620	$49,000	$48,247	$47,370	$46,380	$45,285	$44,092	$42,809	$148,565	$147,118	$145,595
Project Cash Flows																	
Equity Investment		($1,098,506)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pre-Tax Cash Flow to Equity			$50,499	$50,549	$50,409	$50,094	$49,620	$49,000	$48,247	$47,370	$46,380	$45,285	$44,092	$42,809	$148,565	$147,118	$145,595
Net Pre-Tax Cash Flow to Equity		($1,098,506)	$50,499	$50,549	$50,409	$50,094	$49,620	$49,000	$48,247	$47,370	$46,380	$45,285	$44,092	$42,809	$148,565	$147,118	$145,595
Running IRR (Cash Only)			NA	NA	NA	NA	NA	NA	NA	-18.5%	-15.3%	-12.8%	-10.7%	-9.0%	-5.0%	-2.6%	-0.8%
Depreciation Expense			($1,009,811)	($255,278)	($155,091)	($94,821)	($94,389)	($49,152)	($4,122)	($4,122)	($4,128)	($4,122)	($4,128)	($4,122)	($4,128)	($4,122)	($4,128)
Taxable Income (operating loss used as generated)			($908,998)	($151,144)	($47,614)	$16,050	$19,959	$68,783	$117,540	$121,436	$125,522	$129,845	$134,411	$139,273	$144,437	$142,995	$141,467
Taxable Income (Federal)	operating loss treatment ==>>	As Generated	($908,998)	($151,144)	($47,614)	$16,050	$19,959	$68,783	$117,540	$121,436	$125,522	$129,845	$134,411	$139,273	$144,437	$142,995	$141,467
Taxable Income (State)	operating loss treatment ==>>	As Generated	($908,998)	($151,144)	($47,614)	$16,050	$19,959	$68,783	$117,540	$121,436	$125,522	$129,845	$134,411	$139,273	$144,437	$142,995	$141,467
Federal Income Taxes Saved / (Paid), before ITC/PTC			$289,516	$48,139	$15,165	($5,112)	($6,357)	($21,908)	($37,437)	($38,677)	($39,979)	($41,356)	($42,810)	($44,358)	($46,003)	($45,544)	($45,057)
State Income Taxes Saved / (Paid), before ITC/PTC			$81,810	$13,603	$4,285	($1,445)	($1,796)	($6,191)	($10,579)	($10,929)	($11,297)	($11,686)	($12,097)	($12,535)	($12,999)	($12,870)	($12,732)
Cash Benefit of Federal ITC, Cash Grant, or PTC			$541,440	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Cash Benefit of State ITC and/or PTC			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
After-Tax Cash Flow to Equity		($1,098,506)	$963,264	$112,292	$69,859	$43,538	$41,467	$20,902	$232	($2,236)	($4,896)	($7,757)	($10,815)	($14,084)	$89,562	$88,704	$87,806
Running IRR (After Tax)			-12.3%	-1.9%	3.5%	6.2%	8.4%	9.3%	9.3%	9.2%	9.0%	8.8%	8.5%	8.1%	10.1%	11.4%	12.3%

Project/Contract Year	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Production Degradation Factor	0.928	0.923	0.918	0.914	0.909	0.905	0.900	0.896	0.891	0.887	0.882	0.878	0.873	0.869	0.865
Production	591,537	588,579	585,636	582,708	579,794	576,895	574,011	571,141	568,285	565,444	0	0	0	0	0
Tariff Rate & Cash Incentives															
Tariff Rate Escalator, if applicable	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Federal PBI Escalator, if applicable	1.346	1.373	1.400	1.428	1.457	1.486	1.516	1.546	1.577	1.608	1.641	1.673	1.707	1.741	1.776
State PBI Escalator, if applicable	1.346	1.373	1.400	1.428	1.457	1.486	1.516	1.546	1.577	1.608	1.641	1.673	1.707	1.741	1.776
Tariff Rate (Fixed Portion)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tariff Rate (Escalating Portion)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tariff Rate (Total)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Revenue from Tariff	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Post-Tariff Market Value of Production	11.10	11.32	11.54	11.76	11.99	12.22	12.46	12.70	12.94	13.19	0.00	0.00	0.00	0.00	0.00
Market Revenue	$65,684	$66,639	$67,587	$68,549	$69,526	$70,510	$71,509	$72,523	$73,552	$74,597	$0	$0	$0	$0	$0
Federal Cash Incentive Rate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Federal Cash Incentive	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
State Cash Incentive Rate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
State Cash Incentive	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Interest Earned on Reserve Accounts	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Project Revenue, All Sources	$65,684	$66,639	$67,587	$68,549	$69,526	$70,510	$71,509	$72,523	$73,552	$74,597	$0	$0	$0	$0	$0
Project Expenses															
Operating Expense Inflation Factor	1.5580	1.6047	1.6528	1.7024	1.7535	1.8061	1.8603	1.9161	1.9736	2.0328	2.0938	2.1566	2.2213	2.2879	2.3566
Fixed O&M Expense	($17,138)	($17,652)	($18,181)	($18,727)	($19,289)	($19,867)	($20,463)	($21,077)	($21,709)	($22,361)	$0	$0	$0	$0	$0
Variable O&M Expense	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Insurance	($7,836)	($8,071)	($8,314)	($8,563)	($8,820)	($9,085)	($9,357)	($9,638)	($9,927)	($10,225)	$0	$0	$0	$0	$0
Project Administration	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Property Tax or Payment in Lieu of Taxes (PILOT)	($3,603)	($3,243)	($2,919)	($2,627)	($2,364)	($2,128)	($1,915)	($1,723)	($1,551)	($1,396)	$0	$0	$0	$0	$0
Land Lease	($11,685)	($12,035)	($12,396)	($12,768)	($13,151)	($13,546)	($13,952)	($14,371)	($14,802)	($15,246)	$0	$0	$0	$0	$0
Royalties	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Operating Expenses	($40,262)	($41,001)	($41,810)	($42,685)	($43,624)	($44,625)	($45,687)	($46,809)	($47,989)	($49,227)	$0	$0	$0	$0	$0
Total Operating Expenses ($/kWh)	($6.81)	($6.97)	($7.14)	($7.33)	($7.52)	($7.74)	($7.96)	($8.20)	($8.44)	($8.71)	$0.00	$0.00	$0.00	$0.00	$0.00
EBITDA (Operating Income)	$25,422	$25,638	$25,777	$25,864	$25,902	$25,885	$25,822	$25,714	$25,563	$25,370	$0	$0	$0	$0	$0
Annual Debt Service Coverage Ratio	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Loan Interest Expense	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Operating Income After Interest Expense	$25,422	$25,638	$25,777	$25,864	$25,902	$25,885	$25,822	$25,714	$25,563	$25,370	$0	$0	$0	$0	$0
Repayment of Loan Principal	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
(Contributions to), and Liquidation of, Reserve Accounts	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Adjustment(s) for Major Equipment Replacement(s)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pre-Tax Cash Flow to Equity	$25,422	$25,638	$25,777	$25,864	$25,902	$25,885	$25,822	$25,714	$25,563	$25,370	$0	$0	$0	$0	$0
Equity Investment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pre-Tax Cash Flow to Equity	$25,422	$25,638	$25,777	$25,864	$25,902	$25,885	$25,822	$25,714	$25,563	$25,370	$0	$0	$0	$0	$0
Net Pre-Tax Cash Flow to Equity	$25,422	$25,638	$25,777	$25,864	$25,902	$25,885	$25,822	$25,714	$25,563	$25,370	$0	$0	$0	$0	$0
Running IRR (Cash Only)	-0.5%	-0.3%	-0.1%	0.2%	0.4%	0.6%	0.8%	1.0%	1.1%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%
Depreciation Expense	($2,467)	($811)	($811)	($811)	($811)	($405)	$0	$0	$0	$0	$0	$0	$0	$0	$0
Taxable Income (operating loss used as generated)	$22,955	$24,827	$24,966	$25,053	$25,091	$25,479	$25,822	$25,714	$25,563	$25,370	$0	$0	$0	$0	$0
Taxable Income (Federal)	$22,955	$24,827	$24,966	$25,053	$25,091	$25,479	$25,822	$25,714	$25,563	$25,370	$0	$0	$0	$0	$0
Taxable Income (State)	$22,955	$24,827	$24,966	$25,053	$25,091	$25,479	$25,822	$25,714	$25,563	$25,370	$0	$0	$0	$0	$0
Federal Income Taxes Saved / (Paid), before ITC/PTC	($7,311)	($7,907)	($7,952)	($7,979)	($7,992)	($8,115)	($8,224)	($8,190)	($8,142)	($8,080)	$0	$0	$0	$0	$0
State Income Taxes Saved / (Paid), before ITC/PTC	($2,066)	($2,234)	($2,247)	($2,255)	($2,258)	($2,293)	($2,324)	($2,314)	($2,301)	($2,283)	$0	$0	$0	$0	$0
Cash Benefit of Federal ITC, Cash Grant, or PTC	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Cash Benefit of State ITC and/or PTC	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
After-Tax Cash Flow to Equity	$16,045	$15,496	$15,578	$15,630	$15,652	$15,476	$15,273	$15,210	$15,121	$15,006	$0	$0	$0	$0	$0
Running IRR (After Tax)	12.4%	12.5%	12.6%	12.7%	12.8%	12.9%	12.9%	13.0%	13.0%	13.0%	13.0%	13.0%	13.0%	13.0%	13.0%

Pre-Tax (Cash-only) Equity IRR (over defined Useful Life)	1.28%
After Tax Equity IRR (over defined Useful Life)	13.03%
Net Present Value @ 13.00% (over defined Useful Life)	$577

Yr 1 COE
(cents/kWh)
31.15

Supporting Calculations

Debt Service:
Debt Sizing (Defined Capital Structure Method)

Installed Cost (excluding cost of financing)	1,972,500
Defined Debt-to-Total-Capital	44%
Size of Debt	873,994

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Loan Repayment																
Structured Debt Service Payment	-	($107,124)	($107,124)	($107,124)	($107,124)	($107,124)	($107,124)	($107,124)	($107,124)	($107,124)	($107,124)	($107,124)	($107,124)	$0	$0	$0
Interest	-	($56,810)	($53,539)	($50,056)	($46,347)	($42,396)	($38,189)	($33,708)	($28,936)	($23,854)	($18,441)	($12,677)	($6,538)	$0	$0	$0
Principal	-	($50,314)	($53,585)	($57,068)	($60,777)	($64,728)	($68,935)	($73,416)	($78,188)	($83,270)	($88,682)	($94,447)	($100,586)	$0	$0	$0
Loan Amortization																
Beginning Balance	-	873,994	823,679	770,095	713,027	652,250	587,523	518,588	445,172	366,985	283,715	195,032	100,586	(0)	(0)	(0)
Drawdowns	873,994	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Principal Repayments	-	($50,314)	($53,585)	($57,068)	($60,777)	($64,728)	($68,935)	($73,416)	($78,188)	($83,270)	($88,682)	($94,447)	($100,586)	$0	$0	$0
Ending Balance	873,994	823,679	770,095	713,027	652,250	587,523	518,588	445,172	366,985	283,715	195,032	100,586	(0)	(0)	(0)	(0)

	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Structured Debt Service Payment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Interest	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Principal	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Beginning Balance	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Drawdowns	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Principal Repayments	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Ending Balance	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

Depreciation:

Project Cost Allocation	Before Adjustments	% Allocation	After Adjustments
Depreciation Schedules, Half-Year Convention			
5 Year MACRS	$1,804,800	91%	$778,548
7 Year MACRS	$0	0%	$0
15 Year MACRS	$130,100	7%	$56,122
20 Year MACRS	$0	0%	$0
5 Year SL	$0	0%	$0
15 Year SL	$0	0%	$0
20 Year SL	$37,600	2%	$16,220
39 Year SL	$0	0%	$0
Bonus Depreciation			$850,890
Non-Depreciable	$0	0%	$0
	Unadjusted		**Adjusted**
Project Cost Basis	$1,972,500	100%	$1,701,780
	OK	OK	OK
Adjustments for ITC, ITC Grant and non-taxable grants	$270,720		

Project/Contract Year	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
5 Year MACRS		20.00%	32.00%	19.20%	11.52%	11.52%	5.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
7 Year MACRS		14.29%	24.49%	17.49%	12.49%	8.93%	8.92%	8.93%	4.46%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15 Year MACRS		5.00%	9.50%	8.55%	7.70%	6.93%	6.23%	5.90%	5.90%	5.91%	5.90%	5.91%	5.90%	5.91%	5.90%	5.91%
20 Year MACRS		3.75%	7.22%	6.68%	6.18%	5.71%	5.29%	4.89%	4.52%	4.46%	4.46%	4.46%	4.46%	4.46%	4.46%	4.46%
5 Year SL		10.00%	20.00%	20.00%	20.00%	20.00%	10.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15 Year SL		3.33%	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%	6.66%	6.66%	6.66%	6.66%
20 Year SL		2.50%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
39 Year SL		1.28%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%
Bonus Depreciation		100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Project/Contract Year	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
5 Year MACRS	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
7 Year MACRS	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15 Year MACRS	2.95%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
20 Year MACRS	4.46%	4.46%	4.46%	4.46%	4.46%	2.23%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
5 Year SL	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15 Year SL	3.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
20 Year SL	5.00%	5.00%	5.00%	5.00%	5.00%	2.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
39 Year SL	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%
Bonus Depreciation	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Annual Depreciation Expense, Initial Installation	check	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Total Project Cost, adj for ITC/Grant if applicable																	
5 Year MACRS	$778,548		$155,710	$249,135	$149,481	$89,689	$89,689	$44,844	$0	$0	$0	$0	$0	$0	$0	$0	$0
7 Year MACRS	$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
15 Year MACRS	$56,122		$2,806	$5,332	$4,798	$4,321	$3,889	$3,496	$3,311	$3,311	$3,317	$3,311	$3,317	$3,311	$3,317	$3,311	$3,317
20 Year MACRS	$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
5 Year SL	$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
15 Year SL	$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
20 Year SL	$16,220		$405	$811	$811	$811	$811	$811	$811	$811	$811	$811	$811	$811	$811	$811	$811
39 Year SL	$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Bonus Depreciation	$850,890		$850,890	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Non-Depreciable	$0																
Total	$1,701,780	OK															
Annual Depreciation Expense, Repairs & Replacements																	
1st Replacement	$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Depreciation Timing			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation Expense			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2nd Replacement	$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Depreciation Timing			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation Expense			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Annual Depreciation Expense			$1,009,811	$255,278	$155,091	$94,821	$94,389	$49,152	$4,122	$4,122	$4,128	$4,122	$4,128	$4,122	$4,128	$4,122	$4,128
Annual Depreciation Benefit			$412,508	$104,281	$63,355	$38,734	$38,558	$20,078	$1,684	$1,684	$1,686	$1,684	$1,686	$1,684	$1,686	$1,684	$1,686

	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
5 Year MACRS	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
7 Year MACRS	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
15 Year MACRS	$1,656	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
20 Year MACRS	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
5 Year SL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
15 Year SL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
20 Year SL	$811	$811	$811	$811	$811	$405	$0	$0	$0	$0	$0	$0	$0	$0	$0
39 Year SL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Bonus Depreciation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1st Replacement	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Depreciation Timing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation Expense	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2nd Replacement	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Depreciation Timing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation Expense	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Annual Depreciation Expense	$2,467	$811	$811	$811	$811	$405	$0	$0	$0	$0	$0	$0	$0	$0	$0
Annual Depreciation Benefit	$1,008	$331	$331	$331	$331	$166	$0	$0	$0	$0	$0	$0	$0	$0	$0

Operating Loss Carry-Forward, if applicable:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Taxable Income / (Operating Loss)	($908,998)	($151,144)	($47,614)	$16,050	$19,959	$68,783	$117,540	$121,436	$125,522	$129,845	$134,411	$139,273	$144,437	$142,995	$141,467
Federal Carry-Forward															
Operating Loss Carry-Forward, Beginning Balance	$0	$908,998	$1,060,142	$1,107,756	$1,091,706	$1,071,747	$1,002,964	$885,424	$763,988	$638,466	$508,621	$374,210	$234,937	$90,500	$0
Additional Operating Loss Carried-Forward	$908,998	$151,144	$47,614	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Utilization of Operating Loss Carry-Forward	$0	$0	$0	($16,050)	($19,959)	($68,783)	($117,540)	($121,436)	($125,522)	($129,845)	($134,411)	($139,273)	($144,437)	($90,500)	$0
Operating Loss Carry-Forward, Ending Balance	$908,998	$1,060,142	$1,107,756	$1,091,706	$1,071,747	$1,002,964	$885,424	$763,988	$638,466	$508,621	$374,210	$234,937	$90,500	$0	$0
Taxable Income with Operating Loss Carry-Forward	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$52,495	$141,467

	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Taxable Income / (Operating Loss)	$22,955	$24,827	$24,966	$25,053	$25,091	$25,479	$25,822	$25,714	$25,563	$25,370	$0	$0	$0	$0	$0
Operating Loss Carry-Forward, Beginning Balance	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional Operating Loss Carried-Forward	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Utilization of Operating Loss Carry-Forward	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Operating Loss Carry-Forward, Ending Balance	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Taxable Income with Operating Loss Carry-Forward	$22,955	$24,827	$24,966	$25,053	$25,091	$25,479	$25,822	$25,714	$25,563	$25,370	$0	$0	$0	$0	$0

Solar 500KW
Tax Benefits Used as Generated

State Carry-Forward																															
Operating Loss Carry-Forward, Beginning Balance		$0	$908,998	$1,060,142	$1,107,756	$1,091,706	$1,071,747	$1,002,964	$885,424	$763,988	$638,466	$508,621	$374,210	$234,937	$90,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional Operating Loss Carried-Forward		$908,998	$151,144	$47,614	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Utilization of Operating Loss Carry-Forward		$0	$0	$0	($16,050)	($19,959)	($68,783)	($117,540)	($121,436)	($125,522)	($129,845)	($134,411)	($139,273)	($144,437)	($90,500)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Operating Loss Carry-Forward, Ending Balance		$908,998	$1,060,142	$1,107,756	$1,091,706	$1,071,747	$1,002,964	$885,424	$763,988	$638,466	$508,621	$374,210	$234,937	$90,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Taxable Income with Operating Loss Carry-Forward		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$52,495	$141,467	$22,955	$24,827	$24,966	$25,053	$25,091	$25,479	$25,822	$25,714	$25,563	$25,370	$0	$0	$0	$0	$0
Federal Tax Credit Benefits, if applicable:																															
Federal ITC (as generated)		$541,440	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Federal PTC (as generated)		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Applicable Tax Credits, as generated		$541,440	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Carry-Forward Scenario:																															
Federal Income Taxes Saved / (Paid), before ITC/PTC		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tax Benefit Carry-Forward, Beginning Balance		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional Tax Benefit Carry-Forward		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Utilization of Tax Benefit Carry-Forward		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tax Benefit Carry-Forward, Ending Balance	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
State Tax Credit Benefits, if applicable:																															
State ITC (as generated)		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
State PTC (as generated)		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Applicable Tax Credits, as generated		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Carry-Forward Scenario:																															
State Income Taxes Saved / (Paid), before ITC/PTC		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tax Benefit Carry-Forward, Beginning Balance		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional Tax Benefit Carry-Forward		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Utilization of Tax Benefit Carry-Forward		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tax Benefit Carry-Forward, Ending Balance	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Reserve Accounts:																															
Beginning Balance	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Debt Service Reserve	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
O&M/Working Capital Reserve	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Major Equipment Replacement Reserves	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Decommissioning Reserve	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Ending Balance	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Interest on Reserves		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Annual Contributions to/(Liquidations of) Reserves		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

COE Data Tables		NPV				NPV				NPV			Range Min	Range Max
Calculation of COE when tax benefits are "Carried Forward"		$577				$577				$577			31.1	31.2
	0	($655,444)			30.0	($23,642)			31.0	($2,582)				
	10	($444,843)			31.0	($2,582)	($2,582)		31.1	($476)	($476)			
	20	($234,242)			32.0	$18,478		$18,478	31.2	$1,630		$1,630		
	30	($23,642)	($23,642)		33.0	$39,539			31.3	$3,736				
	40	$186,959		$186,959	34.0	$60,599			31.4	$5,842				
	50	$397,560			35.0	$81,659			31.5	$7,948				
	60	$608,160			36.0	$102,719			31.6	$10,054				
	70	$818,761			37.0	$123,779			31.7	$12,160				
	80	$1,029,362			38.0	$144,839			31.8	$14,266				
	90	$1,239,962			39.0	$165,899			31.9	$16,372				
	100	$1,450,563			40.0	$186,959			32.0	$18,478				

Solar 500 KW
Tax Benefits Used as Generated

Complex Inputs for Deriving Total Project Capital Cost, if applicable
Sample inputs provided on this tab are illustrative only, all inputs must be provided and validated by the user.

Generation Equipment	$	% Eligible for ITC	Depreciation Classification
Solar Panels	$3,500,000	100%	5-year MACRS
Transportation/Delivery	$500,000	100%	5-year MACRS
Mounting Hardware	$800,000	100%	5-year MACRS
Installation Labor	$200,000	100%	15-year SL
Inverters	$1,000,000	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
Total Generation Equipment Cost	$6,000,000	100%	

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Balance of Plant	$	% Eligible for ITC	Depreciation Classification
Site Survey & Preparation	$175,000	100%	20-year SL
Balance of Facility / Electrical Collection System	$2,150,000	100%	5-year MACRS
Maintenance Building	$0	0%	20-year SL
Access Roads	$100,000	100%	20-year SL
Spare Parts	$25,000	100%	5-year MACRS
Commissioning	$50,000	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
Total Balance of Plant Cost	$2,500,000	100%	

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Interconnection	$	% Eligible for ITC	Depreciation Classification
Substation	$200,000	50%	20-year SL
Transformer	$50,000	50%	20-year SL
Metering	$25,000	50%	20-year SL
Utility System Improvements	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
Total Interconnection Cost	$275,000	50%	

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Development Costs & Fee	$	% Eligible for ITC	Depreciation Classification
Site Selection & Evaluation	$100,000	100%	15-year SL
Site Acquisition Cost	$10,000	100%	20-year SL

Solar 500 KW
Tax Benefits Used as Generated

Permitting	$350,000	100%	5-year MACRS
Engineering/Design	$500,000	100%	5-year MACRS
Resource Analysis	$20,000	100%	20-year SL
Other Development Costs	$300,000	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
Total Development Costs & Fees	$1,280,000	100%	

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Reserves & Financing Costs	*$*	*% Eligible for ITC*	*Depreciation Classification*
Lender Fee	$0	0%	Non-Depreciable
Interest During Construction	$0	0%	20-year SL
Other Equity & Debt Closing Costs	$0	0%	20-year SL
Initial Funding of Debt Service & Working Capital/O&M Reserves	$0	0%	Non-Depreciable
Total Installed Cost	$0	#DIV/0!	

Click Here to Return to Inputs Worksheet

Total Project Costs			***Depreciation Allocation***									
Cost Category	*$*	*$ Eligible for ITC*	*Cost Category*	*5-year MACRS*	*7-year MACRS*	*15-year MACRS*	*20-year MACRS*	*5-year SL*	*15-year SL*	*20-year SL*	*39-year SL*	*Non-Depreciable*
Generation Equipment	$6,000,000	$6,000,000	Generation Equipment	$5,800,000	$0	$0	$0	$0	$200,000	$0	$0	$0
Balance of Plant	$2,500,000	$2,500,000	Balance of Plant	$2,225,000	$0	$0	$0	$0	$0	$275,000	$0	$0
Interconnection	$275,000	$137,500	Interconnection	$0	$0	$0	$0	$0	$0	$275,000	$0	$0
Development Costs & Fee	$1,280,000	$1,280,000	Development Costs & Fee	$1,150,000	$0	$0	$0	$0	$100,000	$30,000	$0	$0
Reserves & Financing Costs	$0	#DIV/0!	Reserves & Financing Costs	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Installed Cost	**$10,055,000**	**#DIV/0!**		**$9,175,000**	**$0**	**$0**	**$0**	**$0**	**$300,000**	**$580,000**	**$0**	**$0**

Taxable Entity? (turns on/off ITC and depreciation input cells) Yes

Year-by-Year Inputs for Market Value of Production, if applicable

Project Year	Bundled* Market Value of Production (¢/kWh)
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	11.10
17	11.32
18	11.54
19	11.76
20	11.99
21	12.22
22	12.46
23	12.70
24	12.94
25	13.19
26	13.45
27	13.71
28	13.97
29	14.24
30	14.52

* Includes energy, capacity & RECs

Solar 1,500KW

Performance, Cost, Operating, Tax & Financing Inputs

Check			Notes
	Selected Technology	Photovoltaic	?

Project Size and Performance	Units	Input Value	Notes
Generator Nameplate Capacity	kW dc	1,500	?
DC-to-AC Conversion Efficiency	%	95.5%	?
Net Capacity Factor, Yr 1	%, ac	15.3%	?
Production, Yr 1	AC kWh	1,925,010	?
Annual Production Degradation	%	0.5%	?
Project Useful Life	years	25	?

Capital Costs	Units	Input Value	Notes
Select Cost Level of Detail		Intermediate	?
Generation Equipment	$	$5,175,000	?
Balance of Plant	$	$0	?
Interconnection	$	$198,000	?
Development Costs & Fee	$	$0	?
Reserves & Financing Costs	$	$0	?
Total Installed Cost	$	$5,373,000	?
Total Installed Cost	$/Watt dc	$3.58	?
Total Value of Grants (excl. pmt in lieu of ITC, if applicable)	$	$0	?
Net Project Cost	$	$5,373,000	?
Net Project Cost	$/Watt dc	$3.58	?

Operations & Maintenance	Units	Input Value	Notes
Select Cost Level of Detail		Intermediate	?
Fixed O&M Expense, Yr 1	$/kW-yr dc	$24.00	?
Variable O&M Expense, Yr 1	¢/kWh	0.00	?
O&M Cost Inflation, initial period	%	2.5%	?
Initial Period ends last day of	year	10	?
O&M Cost Inflation, thereafter	%	2.5%	?
Insurance, Yr 1 (% of Total Cost)	%	0.2%	?
Insurance, Yr 1 ($) (Provided for reference	$	$10,692	?
Project Management Yr 1	$/yr	$0	?
Property Tax or PILOT, Yr 1	$/yr	$52,500	?
Annual Property Tax Adjustment Factor	%	-10.0%	?
Land Lease	$/yr	$33,000	?
Royalties (% of revenue)	%	0.0%	?
Royalties, Yr 1 ($) (Provided for reference	$	$0	?

Construction Financing	Units	Input Value	Notes
Construction Period	months	10	?
Interest Rate (Annual)	%	0.0%	?
Interest During Construction	$	$0	?

Permanent Financing	Units	Input Value	Notes
% Debt (% of hard costs) (mortgage-style amort.	%	44%	?
Debt Tenor	years	12	?
Interest Rate on Term Debt	%	6.00%	?
Lender's Fee (% of total borrowing)	%	0.0%	?
Required Minimum Annual DSCR		1.20	?
Actual Minimum DSCR, occurs in →	Year 12	1.41	?
Minimum DSCR Check Cell (If "Fail," read note ==>)	Pass/Fail	Pass	?
Required Average DSCR		1.45	?
Actual Average DSCR		1.45	?
Average DSCR Check Cell (If "Fail," read note ==>	Pass/Fail	Pass	?
% Equity (% hard costs) (soft costs also equity funded	%	56%	?
Target After-Tax Equity IRR	%	13.00%	?
Weighted Average Cost of Capital (WACC)	%	8.82%	?
Other Closing Costs	$	$0	?

Summary of Sources of Funding for Total Installed Cost			
Senior Debt (funds portion of hard costs)	44%	$2,378,389	?
Equity (funds balance of hard costs + all soft costs	56%	$2,994,611	?
Total Value of Grants	0%	$0	?
Total Installed Cost	$	**$5,373,000**	?

Tax	Units	Input Value	Notes
Is owner a taxable entity?		Yes	?
Federal Income Tax Rate	%	35.0%	?
Federal Tax Benefits used as generated or carried forward?		As Generated	?
State Income Tax Rate	%	9.0%	?
State Tax Benefits used as generated or carried forward?		As Generated	?
Effective Income Tax Rate	%	40.85%	?
Depreciation Allocation		see table ==>	?

Cost-Based Tariff Rate Structure	Units	Input Value	Notes
Payment Duration for Cost-Based Incentive	years	15	?
% of Year-One Tariff Rate Escalated	%	0.0%	?
Cost-Based Tariff Escalation Rate	%	0.0%	?

Forecasted Market Value of Production; applies after Incentive Expiration			?
Select Market Value Forecast Methodology		Year-by-Year	?
Click Here for Complex Input Worksheet			?

Federal Incentives	Units	Input Value	Notes
Select Cost-Based (ITC/Grant) or Performance-Based (PTC/REPI)		Cost-Based	?
Investment Tax Credit (ITC) or Cash Grant?		ITC	?
ITC or Cash Grant Amount	%	30%	?
ITC utilization factor, if applicable	%	100%	?
ITC or Cash Grant	$	$1,490,400	?
Federal Tax Benefits used as generated or carried forward?		As Generated	?
Federal Grants (Other than Section 1603)	$	$0	?
Federal Grants Treated as Taxable Income?		Yes	?

State Incentives	Units	Input Value	Notes
Select Cost-Based (ITC) or Performance-Based (PTC/Cash Pmt)		Cost-Based	?
ITC Amount	%	0%	?
Utilization Factor, if applicable	%	100%	?
State ITC realization period	yrs	5	?
Total State ITC, over realization period	$	$0	?
PBI Rate	¢/kWh	1.50	
PBI Duration	yrs	10	
PBI Escalation Rate	%	2.0%	
PBI Utilization Factor, if applicable	%	100%	
Benefits used as generated or carried forward?		As Generated	?
Total State Grants (or Rebates)	$	$0	?
State Grants Treated as Taxable Income?		Yes	?

Capital Expenditures During Operations: Inverter Replacement		Input Value	Notes
1st Equipment Replacement	year	10	?
1st Replacement Cost ($ in year replaced	$/Watt dc	$0.000	?
2nd Equipment Replacement	year	20	?
2nd Replacement Cost ($ in year replaced	$/Watt dc	$0.000	?

Reserves Funded from Operations	Units	Input Value	Notes
Decommissioning Reserve			
Fund from Operations or Salvage Value?		Salvage	?

Initial Funding of Reserve Accounts	Units	Input Value	Notes
Debt Service Reserve			
# of months of Debt Service	months	0	?
Initial Debt Service Reserve	$	$0	?
O&M Reserve/Working Capital			
# of months of O&M Expense	months	0	?
Initial O&M and WC Reserve	$	$0	?
Interest on All Reserves	%	2.0%	?

Depreciation Allocation	Input Values									
Bonus Depreciation	Yes		?							
% of Bonus Depreciation applied in Year 1	50%		?							
Allocation of Costs	5-year MACRS	7-year MACRS	15-year MACRS	20-year MACRS	5-year SL	15-year SL	20-year SL	39-year SL	Non-Depreciable	
Generation Equipment	96.0%	0.0%	2.0%	0.0%	0.0%	0.0%	2.0%	0.0%	0.0%	?
Balance of Plant	50.0%	0.0%	0.0%	0.0%	0.0%	50.0%	0.0%	0.0%	0.0%	?
Interconnection	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	?
Development Costs & Fee	80.0%	0.0%	0.0%	0.0%	0.0%	5.0%	5.0%	0.0%	10.0%	?
Reserves & Financing Costs	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	0.0%	50.0%	?

Unit Definitions

(kW) kilowatt – a standard measure of electrical capacity, equal to 1000 Watts.
(kWh) kilowatt hour – a standard measure of electrical output. A 1 kW generator operating at rated capacity for one hour will produce 1 kWh of electricity.
(DC) direct current – the unidirectional flow of electric charge
(AC) alternating current – the multidirectional flow of electric charge
($/kW-yr) – an annual expense (or revenue) based on generator capacity
($) – All CREST model values are in nominal dollars
(¢/kWh) –cents per kilowatt hour
(%) – an input with units expressed as a percentage
(years or year) – an input applicable to a specified duration or project year
($/yr) – inputs measured in dollars and applied annually
(months) –designates the number of months to which an input applies
Pass/Fail – denotes whether the two debt service coverage ratio tests have passed or failed.

Solar 1,500KW

Tax Benefits Used as Generated

Summary Results

Results of multiple scenarios may be compared here by using t

Press F9 each time inputs are changed to ensure completion of the COE calculation. When "#N/A" appears, press "F9" in the upper row on your keyboard to complete the calculation. It may be necessary to press F9 more than once. See note for details.

Outputs Summary	*units*	***Current Model Run***
Year-One Cost of Energy (COE)	*¢/kWh*	**28.55**
Annual Escalation of Year-One COE	*%*	**0.0%**
Percentage of Tariff Escalated	*%*	**0.0%**
Does modeled project meet *minimum* DSCR requirements?		**Yes**
Does modeled project meet *average* DSCR requirements?		**Yes**
Did you confirm that all minimum required inputs have green check cells?		

Equivalent Nominal Levelized Tariff Rate	*¢/kWh*	**28.55**

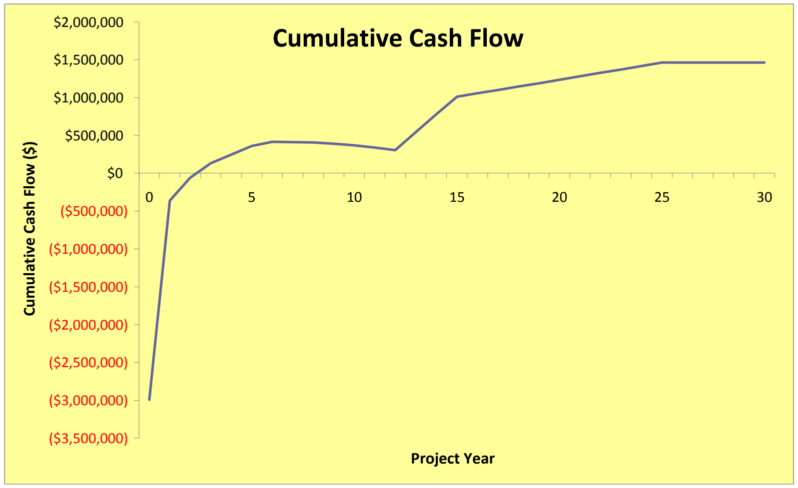
Inputs Summary		
Selected Technology		Photovoltaic
Generator Nameplate Capacity	*kW dc*	*1,500*
Net Capacity Factor, Yr 1	*%, ac*	15.3%
Payment Duration for Cost-Based Incentive	*Years*	15
Net Project Cost	*$*	$5,373,000
Net Project Cost	*$/Watt*	$3.58
% Equity (% hard costs) (soft costs also equity funded)	*%*	56%
Target After-Tax Equity IRR	*%*	13.00%
% Debt (% of hard costs) (mortgage-style amort.)	*%*	44%
Interest Rate on Term Debt	*%*	6.00%
Is owner a taxable entity?		Yes
Type of Federal Incentive Assumed		Cost-Based
Tax Credit Based or Cash Based?		ITC
Other Grants or Rebates		No

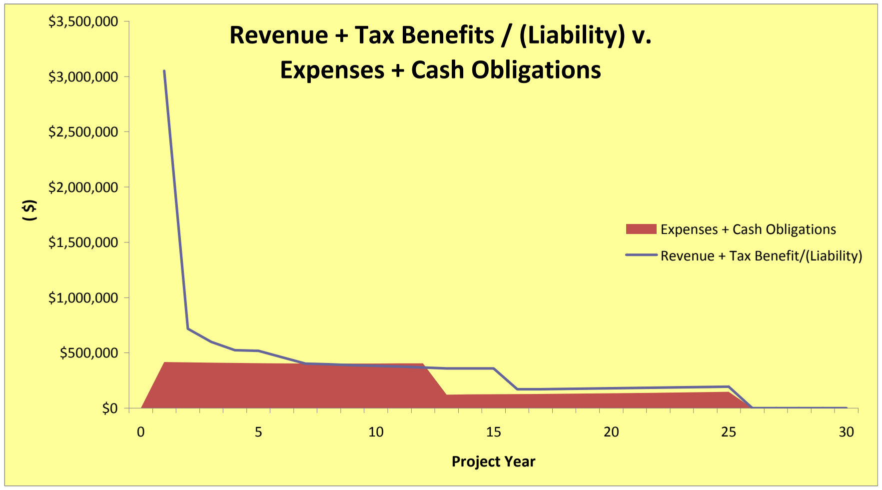
Solar 1,500KW
Tax Benefits Used as Generated

Annual Project Cash Flows, Returns & Other Metrics

Project Year	Tariff or Market Value ¢/kWh	Revenue $	Operating Expenses $	Debt Service $	Reserves $	Pre-Tax Cash Flow $	Federal Taxable Income $	State Taxable Income $	Federal Tax Benefit/ (Liability) $	State Tax Benefit/ (Liability) $	After Tax Cash Flow $	Cumulative Cash Flow $	After Tax IRR %	Debt Service Coverage
0											($2,994,611)	($2,994,611)		
1	28.55	$549,590	($132,192)	($283,687)	$0	$133,711	($2,474,709)	($2,474,709)	$2,278,595	$222,724	$2,635,029	($359,582)	-12.01%	1.47
2	28.55	$546,842	($128,935)	($283,687)	$0	$134,221	($415,535)	($415,535)	$132,348	$37,398	$303,967	($55,615)	-1.68%	1.47
3	28.55	$544,108	($126,252)	($283,687)	$0	$134,169	($131,533)	($131,533)	$41,893	$11,838	$187,900	$132,285	3.63%	1.47
4	28.55	$541,388	($124,092)	($283,687)	$0	$133,608	$42,827	$42,827	($13,640)	($3,854)	$116,113	$248,399	6.32%	1.47
5	28.55	$538,681	($122,411)	($283,687)	$0	$132,583	$52,876	$52,876	($16,841)	($4,759)	$110,983	$359,382	8.42%	1.47
6	28.55	$535,987	($121,165)	($283,687)	$0	$131,135	$186,251	$186,251	($59,321)	($16,763)	$55,051	$414,433	9.28%	1.46
7	28.55	$533,307	($120,319)	($283,687)	$0	$129,301	$319,400	$319,400	($101,729)	($28,746)	($1,174)	$413,259	9.27%	1.46
8	28.55	$530,641	($119,840)	($283,687)	$0	$127,114	$329,212	$329,212	($104,854)	($29,629)	($7,369)	$405,890	9.17%	1.45
9	28.55	$527,988	($119,697)	($283,687)	$0	$124,604	$339,408	$339,408	($108,102)	($30,547)	($14,045)	$391,846	9.00%	1.44
10	28.55	$525,348	($119,864)	($283,687)	$0	$121,796	$350,096	$350,096	($111,506)	($31,509)	($21,218)	$370,628	8.77%	1.43
11	28.55	$522,721	($120,318)	($283,687)	$0	$118,715	$361,294	$361,294	($115,072)	($32,516)	($28,873)	$341,755	8.45%	1.42
12	28.55	$520,107	($121,038)	($283,687)	$0	$115,382	$373,122	$373,122	($118,839)	($33,581)	($37,038)	$304,716	8.06%	1.41
13	28.55	$517,507	($122,005)	$0	$0	$395,502	$385,600	$385,600	($122,814)	($34,704)	$237,985	$542,701	10.03%	N/A
14	28.55	$514,919	($123,201)	$0	$0	$391,718	$381,829	$381,829	($121,612)	($34,365)	$235,741	$778,442	11.31%	N/A
15	28.55	$512,345	($124,613)	$0	$0	$387,731	$377,829	$377,829	($120,339)	($34,005)	$233,388	$1,011,830	12.22%	N/A
16	11.10	$198,269	($126,227)	$0	$0	$72,041	$65,982	$65,982	($21,015)	($5,938)	$45,088	$1,056,917	12.36%	N/A
17	11.32	$201,153	($128,032)	$0	$0	$73,121	$70,892	$70,892	($22,579)	($6,380)	$44,161	$1,101,079	12.48%	N/A
18	11.54	$204,014	($130,017)	$0	$0	$73,997	$71,768	$71,768	($22,858)	($6,459)	$44,680	$1,145,758	12.58%	N/A
19	11.76	$206,918	($132,173)	$0	$0	$74,745	$72,517	$72,517	($23,097)	($6,527)	$45,122	$1,190,880	12.67%	N/A
20	11.99	$209,867	($134,492)	$0	$0	$75,375	$73,146	$73,146	($23,297)	($6,583)	$45,495	$1,236,375	12.75%	N/A
21	12.22	$212,837	($136,968)	$0	$0	$75,870	$74,755	$74,755	($23,810)	($6,728)	$45,332	$1,281,707	12.82%	N/A
22	12.46	$215,853	($139,594)	$0	$0	$76,259	$76,259	$76,259	($24,288)	($6,863)	$45,107	$1,326,814	12.88%	N/A
23	12.70	$218,914	($142,366)	$0	$0	$76,548	$76,548	$76,548	($24,380)	($6,889)	$45,278	$1,372,092	12.93%	N/A
24	12.94	$222,021	($145,279)	$0	$0	$76,742	$76,742	$76,742	($24,442)	($6,907)	$45,393	$1,417,485	12.97%	N/A
25	13.19	$225,176	($148,329)	$0	$0	$76,846	$76,846	$76,846	($24,476)	($6,916)	$45,455	$1,462,940	13.01%	N/A
26														
27														
28														
29														
30														

Solar 1,500KW
Tax Benefits Used as Generated





Solar 1,500KW
Tax Benefits Used as Generated

Graph Data	
Revenue + Tax Benefit/(Liability)	*Expenses + Cash Obligations*
$3,050,909	$415,879
$716,589	$412,622
$597,839	$409,939
$523,893	$407,779
$517,081	$406,098
$459,904	$404,852
$402,833	$404,006
$396,158	$403,527
$389,339	$403,384
$382,333	$403,551
$375,133	$404,006
$367,687	$404,725
$359,989	$122,005
$358,942	$123,201
$358,002	$124,613
$171,315	$126,227
$172,193	$128,032
$174,696	$130,017
$177,295	$132,173
$179,987	$134,492
$182,300	$136,968
$184,701	$139,594
$187,644	$142,366
$190,672	$145,279
$193,784	$148,329

Solar 1,500KW

Tax Benefits Used as Generated

Project/Contract Year	units	COD 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Production Degradation Factor			1.00	0.995	0.990	0.985	0.980	0.975	0.970	0.966	0.961	0.956	0.951	0.946	0.942	0.937	0.932	0.928	0.923	0.918	0.914	0.909	0.905	0.900	0.896	0.891	0.887	0.882	0.878	0.873	0.869	0.865
Production	kWh		1,925,010	1,915,385	1,905,808	1,896,279	1,886,798	1,877,364	1,867,977	1,858,637	1,849,344	1,840,097	1,830,897	1,821,742	1,812,633	1,803,570	1,794,552	1,785,580	1,776,652	1,767,768	1,758,930	1,750,135	1,741,384	1,732,677	1,724,014	1,715,394	1,706,817	0	0	0	0	0
Tariff Rate & Cash Incentives																																
Tariff Rate Escalator, if applicable			1.00	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Federal PBI Escalator, if applicable			1.00	1.020	1.040	1.061	1.082	1.104	1.126	1.149	1.172	1.195	1.219	1.243	1.268	1.294	1.319	1.346	1.373	1.400	1.428	1.457	1.486	1.516	1.546	1.577	1.608	1.641	1.673	1.707	1.741	1.776
State PBI Escalator, if applicable			1.00	1.020	1.040	1.061	1.082	1.104	1.126	1.149	1.172	1.195	1.219	1.243	1.268	1.294	1.319	1.346	1.373	1.400	1.428	1.457	1.486	1.516	1.546	1.577	1.608	1.641	1.673	1.707	1.741	1.776
Tariff Rate (Fixed Portion)	¢/kWh	100%	28.55	28.55	28.55	28.55	28.55	28.55	28.55	28.55	28.55	28.55	28.55	28.55	28.55	28.55	28.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tariff Rate (Escalating Portion)	¢/kWh	0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tariff Rate (Total)	¢/kWh		28.55	28.55	28.55	28.55	28.55	28.55	28.55	28.55	28.55	28.55	28.55	28.55	28.55	28.55	28.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Revenue from Tariff	$		$549,590	$546,842	$544,108	$541,388	$538,681	$535,987	$533,307	$530,641	$527,988	$525,348	$522,721	$520,107	$517,507	$514,919	$512,345	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Post-Tariff Market Value of Production	¢/kWh		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.10	11.32	11.54	11.76	11.99	12.22	12.46	12.70	12.94	13.19	0.00	0.00	0.00	0.00	0.00
Market Revenue	$		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$198,269	$201,153	$204,014	$206,918	$209,867	$212,837	$215,853	$218,914	$222,021	$225,176	$0	$0	$0	$0	$0
Federal Cash Incentive Rate	¢/kWh		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Federal Cash Incentive	$		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
State Cash Incentive Rate	¢/kWh		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
State Cash Incentive	$		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Interest Earned on Reserve Accounts	$		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Project Revenue, All Sources	$		$549,590	$546,842	$544,108	$541,388	$538,681	$535,987	$533,307	$530,641	$527,988	$525,348	$522,721	$520,107	$517,507	$514,919	$512,345	$198,269	$201,153	$204,014	$206,918	$209,867	$212,837	$215,853	$218,914	$222,021	$225,176	$0	$0	$0	$0	$0
Project Expenses																																
Operating Expense Inflation Factor			1.00	1.0250	1.0506	1.0769	1.1038	1.1314	1.1597	1.1887	1.2184	1.2489	1.2801	1.3121	1.3449	1.3785	1.4130	1.4483	1.4845	1.5216	1.5597	1.5987	1.6386	1.6796	1.7216	1.7646	1.8087	1.8539	1.9003	1.9478	1.9965	2.0464
Fixed O&M Expense	$		($36,000)	($36,900)	($37,823)	($38,768)	($39,737)	($40,731)	($41,749)	($42,793)	($43,863)	($44,959)	($46,083)	($47,235)	($48,416)	($49,626)	($50,867)	($52,139)	($53,442)	($54,778)	($56,148)	($57,551)	($58,990)	($60,465)	($61,977)	($63,526)	($65,114)	$0	$0	$0	$0	$0
Variable O&M Expense	$		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Insurance	$		($10,692)	($10,960)	($11,234)	($11,514)	($11,802)	($12,097)	($12,400)	($12,710)	($13,027)	($13,353)	($13,687)	($14,029)	($14,380)	($14,739)	($15,108)	($15,486)	($15,873)	($16,270)	($16,676)	($17,093)	($17,521)	($17,959)	($18,408)	($18,868)	($19,339)	$0	$0	$0	$0	$0
Project Administration	$		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Property Tax or Payment in Lieu of Taxes (PILOT)	$		($52,500)	($47,250)	($42,525)	($38,273)	($34,445)	($31,001)	($27,901)	($25,111)	($22,600)	($20,340)	($18,306)	($16,475)	($14,828)	($13,345)	($12,010)	($10,809)	($9,728)	($8,756)	($7,880)	($7,092)	($6,383)	($5,744)	($5,170)	($4,653)	($4,188)	$0	$0	$0	$0	$0
Land Lease	$		($33,000)	($33,825)	($34,671)	($35,537)	($36,426)	($37,336)	($38,270)	($39,227)	($40,207)	($41,212)	($42,243)	($43,299)	($44,381)	($45,491)	($46,628)	($47,794)	($48,989)	($50,213)	($51,469)	($52,755)	($54,074)	($55,426)	($56,812)	($58,232)	($59,688)	$0	$0	$0	$0	$0
Royalties	$		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Operating Expenses	$		($132,192)	($128,935)	($126,252)	($124,092)	($122,411)	($121,165)	($120,319)	($119,840)	($119,697)	($119,864)	($120,318)	($121,038)	($122,005)	($123,201)	($124,613)	($126,227)	($128,032)	($130,017)	($132,173)	($134,492)	($136,968)	($139,594)	($142,366)	($145,279)	($148,329)	$0	$0	$0	$0	$0
Total Operating Expenses ($/kWh)	¢/kWh		($6.87)	($6.73)	($6.62)	($6.54)	($6.49)	($6.45)	($6.44)	($6.45)	($6.47)	($6.51)	($6.57)	($6.64)	($6.73)	($6.83)	($6.94)	($7.07)	($7.21)	($7.35)	($7.51)	($7.68)	($7.87)	($8.06)	($8.26)	($8.47)	($8.69)	$0.00	$0.00	$0.00	$0.00	$0.00
EBITDA (Operating Income)	$		$417,398	$417,908	$417,857	$417,295	$416,270	$414,822	$412,988	$410,801	$408,291	$405,483	$402,402	$399,069	$395,502	$391,718	$387,731	$72,041	$73,121	$73,997	$74,745	$75,375	$75,870	$76,259	$76,548	$76,742	$76,846	$0	$0	$0	$0	$0
	Avg. DSCR	Min DSCR																														
Annual Debt Service Coverage Ratio	1.45	1.41	1.47	1.47	1.47	1.47	1.47	1.46	1.46	1.45	1.44	1.43	1.42	1.41	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Minimum DSSCR Year														Year 12																		
Loan Interest Expense			($142,703)	($134,244)	($125,278)	($115,773)	($105,698)	($95,019)	($83,699)	($71,700)	($58,980)	($45,498)	($31,207)	($16,058)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Operating Income After Interest Expense			$274,695	$283,664	$292,579	$301,522	$310,572	$319,803	$329,289	$339,102	$349,310	$359,985	$371,196	$383,011	$395,502	$391,718	$387,731	$72,041	$73,121	$73,997	$74,745	$75,375	$75,870	$76,259	$76,548	$76,742	$76,846	$0	$0	$0	$0	$0
Repayment of Loan Principal			($140,984)	($149,443)	($158,409)	($167,914)	($177,989)	($188,668)	($199,988)	($211,988)	($224,707)	($238,189)	($252,481)	($267,629)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
(Contributions to), and Liquidation of, Reserve Accounts			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Adjustment(s) for Major Equipment Replacement(s)			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pre-Tax Cash Flow to Equity			$133,711	$134,221	$134,169	$133,608	$132,583	$131,135	$129,301	$127,114	$124,604	$121,796	$118,715	$115,382	$395,502	$391,718	$387,731	$72,041	$73,121	$73,997	$74,745	$75,375	$75,870	$76,259	$76,548	$76,742	$76,846	$0	$0	$0	$0	$0
Project Cash Flows																																
Equity Investment		($2,994,611)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pre-Tax Cash Flow to Equity			$133,711	$134,221	$134,169	$133,608	$132,583	$131,135	$129,301	$127,114	$124,604	$121,796	$118,715	$115,382	$395,502	$391,718	$387,731	$72,041	$73,121	$73,997	$74,745	$75,375	$75,870	$76,259	$76,548	$76,742	$76,846	$0	$0	$0	$0	$0
Net Pre-Tax Cash Flow to Equity		($2,994,611)	$133,711	$134,221	$134,169	$133,608	$132,583	$131,135	$129,301	$127,114	$124,604	$121,796	$118,715	$115,382	$395,502	$391,718	$387,731	$72,041	$73,121	$73,997	$74,745	$75,375	$75,870	$76,259	$76,548	$76,742	$76,846	$0	$0	$0	$0	$0
Running IRR (Cash Only)			NA	NA	NA	NA	NA	NA	NA	NA	-15.6%	-13.0%	-10.9%	-9.2%	-5.2%	-2.8%	-1.0%	-0.7%	-0.5%	-0.2%	0.0%	0.3%	0.5%	0.7%	0.9%	1.1%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%
Depreciation Expense			($2,749,403)	($699,199)	($424,111)	($258,695)	($257,695)	($133,552)	($9,889)	($9,889)	($9,902)	($9,889)	($9,902)	($9,889)	($9,902)	($9,889)	($9,902)	($6,059)	($2,229)	($2,229)	($2,229)	($2,229)	($1,114)	$0	$0	$0	$0	$0	$0	$0	$0	$0
Taxable Income (operating loss used as generated)			($2,474,709)	($415,535)	($131,533)	$42,827	$52,876	$186,251	$319,400	$329,212	$339,408	$350,096	$361,294	$373,122	$385,600	$381,829	$377,829	$65,982	$70,892	$71,768	$72,517	$73,146	$74,755	$76,259	$76,548	$76,742	$76,846	$0	$0	$0	$0	$0
Taxable Income (Federal)	operating loss treatment ==>>	As Generated	($2,474,709)	($415,535)	($131,533)	$42,827	$52,876	$186,251	$319,400	$329,212	$339,408	$350,096	$361,294	$373,122	$385,600	$381,829	$377,829	$65,982	$70,892	$71,768	$72,517	$73,146	$74,755	$76,259	$76,548	$76,742	$76,846	$0	$0	$0	$0	$0
Taxable Income (State)	operating loss treatment ==>>	As Generated	($2,474,709)	($415,535)	($131,533)	$42,827	$52,876	$186,251	$319,400	$329,212	$339,408	$350,096	$361,294	$373,122	$385,600	$381,829	$377,829	$65,982	$70,892	$71,768	$72,517	$73,146	$74,755	$76,259	$76,548	$76,742	$76,846	$0	$0	$0	$0	$0
Federal Income Taxes Saved / (Paid), before ITC/PTC			$788,195	$132,348	$41,893	($13,640)	($16,841)	($59,321)	($101,729)	($104,854)	($108,102)	($111,506)	($115,072)	($118,839)	($122,814)	($121,612)	($120,339)	($21,015)	($22,579)	($22,858)	($23,097)	($23,297)	($23,810)	($24,288)	($24,380)	($24,442)	($24,476)	$0	$0	$0	$0	$0
State Income Taxes Saved / (Paid), before ITC/PTC			$222,724	$37,398	$11,838	($3,854)	($4,759)	($16,763)	($28,746)	($29,629)	($30,547)	($31,509)	($32,516)	($33,581)	($34,704)	($34,365)	($34,005)	($5,938)	($6,380)	($6,459)	($6,527)	($6,583)	($6,728)	($6,863)	($6,889)	($6,907)	($6,916)	$0	$0	$0	$0	$0
Cash Benefit of Federal ITC, Cash Grant, or PTC			$1,490,400	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Cash Benefit of State ITC and/or PTC			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
After-Tax Cash Flow to Equity		($2,994,611)	$2,635,029	$303,967	$187,900	$116,113	$110,983	$55,051	($1,174)	($7,369)	($14,045)	($21,218)	($28,873)	($37,038)	$237,985	$235,741	$233,388	$45,088	$44,161	$44,680	$45,122	$45,495	$45,332	$45,107	$45,278	$45,393	$45,455	$0	$0	$0	$0	$0
Running IRR (After Tax)			-12.0%	-1.7%	3.6%	6.3%	8.4%	9.3%	9.3%	9.2%	9.0%	8.8%	8.5%	8.1%	10.0%	11.3%	12.2%	12.4%	12.5%	12.6%	12.7%	12.7%	12.8%	12.9%	12.9%	13.0%	13.0%	13.0%	13.0%	13.0%	13.0%	13.0%

Pre-Tax (Cash-only) Equity IRR (over defined Useful Life)	**1.24%**
After Tax Equity IRR (over defined Useful Life)	**13.01%**
Net Present Value @ 13.00% (over defined Useful Life)	**$647**

Yr 1 COE
(cents/kWh)
28.55

Supporting Calculations

Debt Service:

Debt Sizing (Defined Capital Structure Method)

Installed Cost (excluding cost of financing)	5,373,000
Defined Debt-to-Total-Capital	44%
Size of Debt	2,378,389

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Loan Repayment																															
Structured Debt Service Payment	-	($283,687)	($283,687)	($283,687)	($283,687)	($283,687)	($283,687)	($283,687)	($283,687)	($283,687)	($283,687)	($283,687)	($283,687)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Interest	-	($142,703)	($134,244)	($125,278)	($115,773)	($105,698)	($95,019)	($83,699)	($71,700)	($58,980)	($45,498)	($31,207)	($16,058)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Principal	-	($140,984)	($149,443)	($158,409)	($167,914)	($177,989)	($188,668)	($199,988)	($211,988)	($224,707)	($238,189)	($252,481)	($267,629)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Loan Amortization																															
Beginning Balance	-	2,378,389	2,237,405	2,087,962	1,929,553	1,761,639	1,583,650	1,394,982	1,194,993	983,006	758,299	520,110	267,629	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drawdowns	2,378,389	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Principal Repayments	-	($140,984)	($149,443)	($158,409)	($167,914)	($177,989)	($188,668)	($199,988)	($211,988)	($224,707)	($238,189)	($252,481)	($267,629)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Ending Balance	2,378,389	2,237,405	2,087,962	1,929,553	1,761,639	1,583,650	1,394,982	1,194,993	983,006	758,299	520,110	267,629	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Depreciation:	Project Cost Allocation																																	
Project/Contract Year	Before	%	After	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Depreciation Schedules, Half-Year Convention	Adjustments	Allocation	Adjustments																															
5 Year MACRS	$4,968,000	92%	$2,139,485		20.00%	32.00%	19.20%	11.52%	11.52%	5.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
7 Year MACRS	$0	0%	$0		14.29%	24.49%	17.49%	12.49%	8.93%	8.92%	8.93%	4.46%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15 Year MACRS	$301,500	6%	$129,842		5.00%	9.50%	8.55%	7.70%	6.93%	6.23%	5.90%	5.90%	5.91%	5.90%	5.91%	5.90%	5.91%	5.90%	5.91%	2.95%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
20 Year MACRS	$0	0%	$0		3.75%	7.22%	6.68%	6.18%	5.71%	5.29%	4.89%	4.52%	4.46%	4.46%	4.46%	4.46%	4.46%	4.46%	4.46%	4.46%	4.46%	4.46%	4.46%	4.46%	2.23%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
5 Year SL	$0	0%	$0		10.00%	20.00%	20.00%	20.00%	20.00%	10.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15 Year SL	$0	0%	$0		3.33%	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%	6.66%	6.66%	6.66%	6.66%	3.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
20 Year SL	$103,500	2%	$44,573		2.50%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	2.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
39 Year SL	$0	0%	$0		1.28%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%
Bonus Depreciation			$2,313,900		100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Non-Depreciable	$0	0%	$0																															
	Unadjusted		**Adjusted**																															
Project Cost Basis	$5,373,000	100%	$4,627,800																															
	OK	*OK*	*OK*																															
Adjustments for ITC, ITC Grant and non-taxable grants	$745,200																																	

Annual Depreciation Expense, Initial Installation	check	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Total Project Cost, adj for ITC/Grant if applicable																																
5 Year MACRS	$2,139,485		$427,897	$684,635	$410,781	$246,469	$246,469	$123,234	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
7 Year MACRS	$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
15 Year MACRS	$129,842		$6,492	$12,335	$11,101	$9,998	$8,998	$8,089	$7,661	$7,661	$7,674	$7,661	$7,674	$7,661	$7,674	$7,661	$7,674	$3,830	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
20 Year MACRS	$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
5 Year SL	$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
15 Year SL	$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
20 Year SL	$44,573		$1,114	$2,229	$2,229	$2,229	$2,229	$2,229	$2,229	$2,229	$2,229	$2,229	$2,229	$2,229	$2,229	$2,229	$2,229	$2,229	$2,229	$2,229	$2,229	$2,229	$1,114	$0	$0	$0	$0	$0	$0	$0	$0	$0
39 Year SL	$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Bonus Depreciation	$2,313,900		$2,313,900	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Non-Depreciable	$0																															
Total	$4,627,800	*OK*																														
Annual Depreciation Expense, Repairs & Replacements																																
1st Replacement	$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Depreciation Timing			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation Expense			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2nd Replacement	$0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Depreciation Timing			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation Expense			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Annual Depreciation Expense			$2,749,403	$699,199	$424,111	$258,695	$257,695	$133,552	$9,889	$9,889	$9,902	$9,889	$9,902	$9,889	$9,902	$9,889	$9,902	$6,059	$2,229	$2,229	$2,229	$2,229	$1,114	$0	$0	$0	$0	$0	$0	$0	$0	$0
Annual Depreciation Benefit			$1,123,131	$285,623	$173,249	$105,677	$105,269	$54,556	$4,040	$4,040	$4,045	$4,040	$4,045	$4,040	$4,045	$4,040	$4,045	$2,475	$910	$910	$910	$910	$455	$0	$0	$0	$0	$0	$0	$0	$0	$0

Operating Loss Carry-Forward, if applicable:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Taxable Income / (Operating Loss)	($2,474,709)	($415,535)	($131,533)	$42,827	$52,876	$186,251	$319,400	$329,212	$339,408	$350,096	$361,294	$373,122	$385,600	$381,829	$377,829	$65,982	$70,892	$71,768	$72,517	$73,146	$74,755	$76,259	$76,548	$76,742	$76,846	$0	$0	$0	$0	$0
Federal Carry-Forward																														
Operating Loss Carry-Forward, Beginning Balance	$0	$2,474,709	$2,890,244	$3,021,777	$2,978,950	$2,926,073	$2,739,822	$2,420,422	$2,091,210	$1,751,802	$1,401,706	$1,040,412	$667,290	$281,691	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional Operating Loss Carried-Forward	$2,474,709	$415,535	$131,533	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Utilization of Operating Loss Carry-Forward	$0	$0	$0	($42,827)	($52,876)	($186,251)	($319,400)	($329,212)	($339,408)	($350,096)	($361,294)	($373,122)	($385,600)	($281,691)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Operating Loss Carry-Forward, Ending Balance	$2,474,709	$2,890,244	$3,021,777	$2,978,950	$2,926,073	$2,739,822	$2,420,422	$2,091,210	$1,751,802	$1,401,706	$1,040,412	$667,290	$281,691	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Taxable Income with Operating Loss Carry-Forward	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$100,138	$377,829	$65,982	$70,892	$71,768	$72,517	$73,146	$74,755	$76,259	$76,548	$76,742	$76,846	$0	$0	$0	$0	$0

Solar 1,500KW
Tax Benefits Used as Generated

State Carry-Forward																															
Operating Loss Carry-Forward, Beginning Balance		$0	$2,474,709	$2,890,244	$3,021,777	$2,978,950	$2,926,073	$2,739,822	$2,420,422	$2,091,210	$1,751,802	$1,401,706	$1,040,412	$667,290	$281,691	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional Operating Loss Carried-Forward		$2,474,709	$415,535	$131,533	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Utilization of Operating Loss Carry-Forward		$0	$0	$0	($42,827)	($52,876)	($186,251)	($319,400)	($329,212)	($339,408)	($350,096)	($361,294)	($373,122)	($385,600)	($281,691)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Operating Loss Carry-Forward, Ending Balance		$2,474,709	$2,890,244	$3,021,777	$2,978,950	$2,926,073	$2,739,822	$2,420,422	$2,091,210	$1,751,802	$1,401,706	$1,040,412	$667,290	$281,691	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Taxable Income with Operating Loss Carry-Forward		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$100,138	$377,829	$65,982	$70,892	$71,768	$72,517	$73,146	$74,755	$76,259	$76,548	$76,742	$76,846	$0	$0	$0	$0	$0
Federal Tax Credit Benefits, if applicable:																															
Federal ITC (as generated)		$1,490,400	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Federal PTC (as generated)		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Applicable Tax Credits, as generated		$1,490,400	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Carry-Forward Scenario:																															
Federal Income Taxes Saved / (Paid), before ITC/PTC		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tax Benefit Carry-Forward, Beginning Balance		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional Tax Benefit Carry-Forward		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Utilization of Tax Benefit Carry-Forward		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tax Benefit Carry-Forward, Ending Balance	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
State Tax Credit Benefits, if applicable:																															
State ITC (as generated)		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
State PTC (as generated)		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Applicable Tax Credits, as generated		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Carry-Forward Scenario:																															
State Income Taxes Saved / (Paid), before ITC/PTC		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tax Benefit Carry-Forward, Beginning Balance		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional Tax Benefit Carry-Forward		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Utilization of Tax Benefit Carry-Forward		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tax Benefit Carry-Forward, Ending Balance	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Reserve Accounts:																															
Beginning Balance	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Debt Service Reserve	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
O&M/Working Capital Reserve	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Major Equipment Replacement Reserves	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Decommissioning Reserve	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Ending Balance	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Interest on Reserves		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Annual Contributions to/(Liquidations of) Reserves		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

COE Data Tables		NPV				NPV				NPV			Range Min	Range Max
Calculation of COE when tax benefits are "Carried Forward"		$647				$647				$647			28.5	28.6
	0	($1,814,297)			20.0	($542,882)			28.0	($34,317)				
	10	($1,178,590)			21.0	($479,312)			28.1	($27,959)				
	20	($542,882)	($542,882)		22.0	($415,741)			28.2	($21,602)				
	30	$92,825		$92,825	23.0	($352,170)			28.3	($15,245)				
	40	$728,532			24.0	($288,599)			28.4	($8,888)				
	50	$1,364,240			25.0	($225,029)			28.5	($2,531)	($2,531)			
	60	$1,999,947			26.0	($161,458)			28.6	$3,826		$3,826		
	70	$2,635,654			27.0	($97,887)			28.7	$10,183				
	80	$3,271,362			28.0	($34,317)	($34,317)		28.8	$16,540				
	90	$3,907,069			29.0	$29,254		$29,254	28.9	$22,897				
	100	$4,542,776			30.0	$92,825			29.0	$29,254				

Solar 1,500KW
Tax Benefits Used as Generated

Complex Inputs for Deriving Total Project Capital Cost, if applicable
Sample inputs provided on this tab are illustrative only, all inputs must be provided and validated by the user.

Generation Equipment	$	% Eligible for ITC	Depreciation Classification
Solar Panels	$3,500,000	100%	5-year MACRS
Transportation/Delivery	$500,000	100%	5-year MACRS
Mounting Hardware	$800,000	100%	5-year MACRS
Installation Labor	$200,000	100%	15-year SL
Inverters	$1,000,000	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
Total Generation Equipment Cost	$6,000,000	100%	

Click Here to Return to Inputs Worksheet

Balance of Plant	$	% Eligible for ITC	Depreciation Classification
Site Survey & Preparation	$175,000	100%	20-year SL
Balance of Facility / Electrical Collection System	$2,150,000	100%	5-year MACRS
Maintenance Building	$0	0%	20-year SL
Access Roads	$100,000	100%	20-year SL
Spare Parts	$25,000	100%	5-year MACRS
Commissioning	$50,000	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
Total Balance of Plant Cost	$2,500,000	100%	

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Interconnection	$	% Eligible for ITC	Depreciation Classification
Substation	$200,000	50%	20-year SL
Transformer	$50,000	50%	20-year SL
Metering	$25,000	50%	20-year SL
Utility System Improvements	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
placeholder	$0	50%	20-year SL
Total Interconnection Cost	$275,000	50%	

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Development Costs & Fee	$	% Eligible for ITC	Depreciation Classification
Site Selection & Evaluation	$100,000	100%	15-year SL
Site Acquisition Cost	$10,000	100%	20-year SL

Solar 1,500KW
Tax Benefits Used as Generated

Permitting	$350,000	100%	5-year MACRS
Engineering/Design	$500,000	100%	5-year MACRS
Resource Analysis	$20,000	100%	20-year SL
Other Development Costs	$300,000	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
placeholder	$0	100%	5-year MACRS
Total Development Costs & Fees	$1,280,000	100%	

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Reserves & Financing Costs	*$*	*% Eligible for ITC*	*Depreciation Classification*
Lender Fee	$0	0%	Non-Depreciable
Interest During Construction	$0	0%	20-year SL
Other Equity & Debt Closing Costs	$0	0%	20-year SL
Initial Funding of Debt Service & Working Capital/O&M Reserves	$0	0%	Non-Depreciable
Total Installed Cost	$0	#DIV/0!	

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Total Project Costs			*Depreciation Allocation*									
Cost Category	*$*	*$ Eligible for ITC*	*Cost Category*	*5-year MACRS*	*7-year MACRS*	*15-year MACRS*	*20-year MACRS*	*5-year SL*	*15-year SL*	*20-year SL*	*39-year SL*	*Non-Depreciable*
Generation Equipment	$6,000,000	$6,000,000	Generation Equipment	$5,800,000	$0	$0	$0	$0	$200,000	$0	$0	$0
Balance of Plant	$2,500,000	$2,500,000	Balance of Plant	$2,225,000	$0	$0	$0	$0	$0	$275,000	$0	$0
Interconnection	$275,000	$137,500	Interconnection	$0	$0	$0	$0	$0	$0	$275,000	$0	$0
Development Costs & Fee	$1,280,000	$1,280,000	Development Costs & Fee	$1,150,000	$0	$0	$0	$0	$100,000	$30,000	$0	$0
Reserves & Financing Costs	$0	#DIV/0!	Reserves & Financing Costs	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Installed Cost	**$10,055,000**	**#DIV/0!**		**$9,175,000**	**$0**	**$0**	**$0**	**$0**	**$300,000**	**$580,000**	**$0**	**$0**

Taxable Entity? (turns on/off ITC and depreciation input cells) Yes

Year-by-Year Inputs for Market Value of Production, if applicable

Project Year	Bundled* Market Value of Production (¢/kWh)
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	11.10
17	11.32
18	11.54
19	11.76
20	11.99
21	12.22
22	12.46
23	12.70
24	12.94
25	13.19
26	13.45
27	13.71
28	13.97
29	14.24
30	14.52

* Includes energy, capacity & RECs