

## INNOVATIVE SOLAR SYSTEMS, LLC

Docket # SP-3475 SUB 0

Innovative Solar 34, LLC (SP-3475, Sub 0)  
50 MW Solar Photovoltaic Project

Application for  
Certificate of Public Convenience and Necessity  
By a Qualifying Small Power Producer

As Administered by the  
North Carolina Utilities Commission

April 23, 2014

Prepared for:

North Carolina Utilities Commission  
Dobbs Building  
430 N. Salisbury St. | Raleigh, NC 27603-5918

Prepared by:

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## EXECUTIVE SUMMARY

Innovative Solar Systems, LLC (ISS) is pleased to submit to the North Carolina Utilities Commission the enclosed application for a Certificate of Public Convenience and Necessity on behalf of our solar project currently under development, Innovative Solar 34, LLC.

ISS is a North Carolina developer of commercial and utility scale solar energy projects, with a particular focus on utility scale ground mounted systems. Over the last three years, our management team has developed a number of renewable energy projects and currently has over 600 MW of projects in various approval stages with Duke Energy. We look forward to providing the State of North Carolina with a transmission line solar facility that further adds to the renewable energy portfolio in North Carolina.

Innovative Solar 34, LLC (IS 34) will be a 50 MW AC solar photovoltaic system located at the corner of Currie Rd. and Derby Rd. in Jackson Springs, NC. The system will be ground mounted and comprised of major system components considered “Tier 1” quality in the solar industry. This distinction is required by the institutional investment community who need for the manufacturers to be “bankable” with enough to service the warranties that accompany their products.

IS 34 will be located on privately owned land that is currently under a long-term land lease which demonstrates site control. The lease agreement provides IS 34 with the legal right to develop, construct, own, operate and maintain a solar energy system on the property for a base period of 20 years after the commencement of electrical generation. In addition, IS 34 has two (2) five (5) year option periods available.

IS 34 has already submitted a Self-Certification Filing to the Federal Energy Regulatory Commission (FERC) and has had their submission accepted under Docket No. QF13-581-001. IS 34 will obtain Qualifying Facility (QF) certification through FERC as recognized under the Public Utility Regulatory Policies Act of 1978 (PURPA). At such time, the facility will be eligible to sell energy production directly to Duke Energy.

Thank you for your time and consideration. Should you have any questions, please contact John E. Green, Senior Electrical Engineer and co-founder, at 828-215-9064 or [johnngreen@bellsouth.net](mailto:johnngreen@bellsouth.net).

## PART 1

### 1- I APPLICANT NAME AND CONTACT INFORMATION

*The full and correct name, business address and business telephone number of the applicant.*

Applicant: Innovative Solar 34, LLC (a limited liability company with its Manager being Innovative Solar Systems, LLC (ISS).

Office Address: 171 Rolling Meadows Road | Fletcher, NC 28732  
Mailing Address: 171 Rolling Meadows Road | Fletcher, NC 28732  
Office Phone: (828) 777-0052  
Email Address: [RHGreen@aol.com](mailto:RHGreen@aol.com)

### 1 – II APPLICANT INCORPORATION

*A statement of whether the applicant is an individual, a partnership, or a corporation and, if a partnership, the name and business address of each general partner and, if a corporation, the state and date of incorporation and the name and business address of an individual duly authorized to act as corporate agent for the purpose of the application and, if a foreign corporation, whether domesticated in North Carolina.*

Innovative Solar 34, LLC is a North Carolina Limited Liability Company with the business address: 171 Rolling Meadows Road, Fletcher, NC 28732. The company was organized in the State of North Carolina on August 14, 2013.

The Applicant is a single purpose vehicle (SPV) limited liability company with its Manager being Innovative Solar Systems, LLC, a North Carolina limited liability company. The address for Innovative Solar Systems, LLC and the Applicant is the same.

The majority members and officers of Innovative Solar Systems, LLC are as follows:

- Richard Green, Member/Manager
- John Green, Member/Manager



### **1 – III NATURE OF GENERATING FACILITY**

*The nature of the generating facility, including the type and source of its power or fuel.*

The applying facility is a ground mounted solar photovoltaic (PV) facility. The photovoltaic modules absorb sunlight and convert it into direct current electricity, which is then converted to alternating current through on-site solar inverters. The nameplate of the facility will be 50.00 MW AC.

### **1 – IV LOCATION OF GENERATING FACILITY**

*The location of the generating facility set forth in terms of local highways, streets, rivers, streams, or other generally known local landmarks together with a map, such as a county road map, with the location indicated on the map.*

Innovative Solar 34, LLC (IS 34) is located at the corner of Currie Road and Derby Road in Jackson Springs, NC.

Please see the attachments at the end of this application package for maps providing further clarity on the location of the generating facility:

- Attachment 1: Map of the property where the project will be sited
- Attachment 2: Preliminary System Layout of the solar project

### **1 – V SITE OWNERSHIP**

*The ownership of the site and, if the owner is other than the applicant, the applicant's interest in the site.*

The applying facility is located on a site owned by Robert L. Currie, Jr., William O. Currie, John A. Currie and Nancy Elizabeth C. Pittman. The landowner's mailing address is Robert L. Currie, Jr. at 1311 W. Fifth Street, Lumberton, NC 28358. The applicant has secured a long-term land lease with a base period of 20 years with two (2) five year option periods.

## 1 – VI DESCRIPTION OF GENERATING FACILITY

*A description of the buildings, structures and equipment comprising the generating facility and the manner of its operation.*

The facility will consist of approximately 200,000 solar photovoltaic modules on an aluminum or steel racking structure. The facility will have a nameplate capacity of 50.00 MW AC. The entire site area will be approximately 243 acres, which will be surrounded by a 6-foot high chain link fence with barbed wire on the top for security and safety purposes. The racking system will be approximately 12 feet off the ground at its tallest point and it will tilt the modules at approximately a 30-degree tilt. Depending on the final system design, the racking system may rotate to efficiently track the solar energy. The modules will be certified by UL 1703 or another comparable UL rating and comply with IEC 61215 and 61730 or other comparable IEC Codes.

Each of the fifty concrete pads will hold a 1,000 kW inverter and switchgear. All inverters will be certified by UL 1741 or another comparable UL rating and comply with IEEE 1547 and NEC 690 or other comparable Codes. The approximate dimensions for each pad are 40' x 20' x 10" thick. Therefore, the maximum height of the pad plus the inverter will not likely exceed 15' above the ground. The point of Common Coupling with the grid will include the appropriate switchgear, which will be determined during the Interconnection Facilities Study with Duke Energy.

The facility will produce power during daylight hours all year. The system will be producing its maximum power in the summer months when the grid load is at its peak. The facility will have minimal audio and aesthetic impact on the surrounding area due to the design of the system and the nature of solar photovoltaic technology.

## 1 – VII MAXIMUM CAPACITY

*The projected maximum dependable capacity of the facility in megawatts.*

The applying facility is sized at 50.00 MW AC.

## 1 – VIII PROJECTED COST

*The projected cost of the facility.*

The applying facility is estimated to cost \$90,000,000. A comprehensive pro forma is enclosed.



## 1 – IX PROJECTED IN-SERVICE DATE

*The projected date on which the facility will come on line.*

The Innovative Solar 34, LLC solar project is estimated to have a commercial operation date of November 1, 2015. The facility will reach substantial completion by October 1, 2015.

## 1 – X SALE OF ELECTRICITY

*The applicant's general plan for sale of the electricity to be generated, including the utility to which the applicant plans to sell the electricity; any provision for wheeling of the electricity; arrangements for firm, non-firm or emergency generation; the service life of the project; and the projected annual sales in kilowatt-hours.*

The Innovative Solar 34, LLC solar project will be interconnecting to Duke Energy at the transmission level and selling electricity via a 15 year Power Purchase Agreement to Duke Energy with the Qualified Facilities Tariff.

The service life of the facility will be at least 25 years. Actual productive life for the facility will be more than 30 years. However, Innovative Solar Systems, LLC uses the manufacturer's warranty for solar modules as a conservative estimate for service life. The solar modules selected for this project include a 25-year manufacturer's warranty.

Forecasted annual sales for the facility are 82,683,127 kilowatt-hours in Year 1, with an expected 0.5% reduction in sales each year thereafter, as per the standard expected long-term degradation of photovoltaic systems.

The project does intend to produce Renewable Energy Credits (REC's) pursuant to the State's renewable energy and energy efficiency portfolio standard. The project will utilize NC-RETS (Renewable Energy Tracking System).

## 1 – XI LICENSES, PERMITS, AND EXEMPTIONS

*A complete list of all federal and state licenses, permits and exceptions required for construction and operation of the generating facility and a statement of whether each has been obtained or applied for. A copy of those that have been obtained should be filed with the application; a copy of those that have not been obtained at the time of the application should be filed with the commission as soon as they are obtained.*

The applying facility will comply with all necessary federal, state, and local permits required for construction and operation. The permitting process is expected to begin the second quarter of 2014.

The permits that will be required (either through a study, an issued permit or a Finding of No Significant Impact) will include:

- Wetlands,
- Riparian Buffer,
- Grading
- Erosion Sediment Control,
- Endangered Species,
- Storm water,
- Site Plan,
- Any special Permits,
- Electrical
- Building, if structures are required.



## PART 2

### 2 – I EXPERIENCE AND EXPERTISE

*A statement detailing the experience and expertise of the persons who will develop design, construct and operate the project to the extent such persons are known at the time of the application.*

Established in 2011, Innovative Solar Systems, LLC (ISS) now has a North Carolina pipeline of over 700 megawatts of ground mounted solar projects under development and is working with a number of clients including utilities and private companies both domestic and foreign.

ISS started in 2011 with the development of 800 kW to 1.99 MW ground mounted solar projects that were distribution line projects. After developing a number of solar projects that were primarily in the 1.99 MW AC size, it became obvious that the equity and tax investors were more interested in the larger projects. Larger projects allow the equity and tax investors to spread their transaction and soft costs to reduce their price per MW of project size.

In the last year, ISS has moved into the development of 20 to 80 MW transmission line projects as a result of market conditions in North Carolina. At the present time, ISS has over twelve transmission line projects in various review stages with Duke Energy in North Carolina.

Bios for key personnel are provided below. All personnel identified in this response will work directly on this project and will be supported by qualified staff and subcontractors as the project progresses through development and construction.

#### **John E. Green | Principal and Co-Founder**

John Green is a graduate of the University of South Carolina with a B.S. degree in electrical engineering. John worked for a number of years in corporate America as a senior electrical engineer on major electrical projects for companies including Kimberly-Clark and Augusta Newsprint, the largest electrical consumer in Georgia at the time. His specialty involved power generation and projects involving power purchase reduction and peak load shifting. He was responsible for obtaining significant monetary grants from the Department of Energy (DOE) as well as publishing a number of “white papers” that are still in existence on the DOE website. In 2011, John became more frustrated with corporate America and decided to co-found ISS in Asheville, NC. John has been the driving force behind the growth of ISS as the company has moved from the development of small distribution line projects to the major transmission line projects today that will tie into 230 KV Duke Energy lines.



**Richard H. Green | Principal and Co-Founder**

Richard Green is a graduate of the University of South Carolina with a B.S. degree in engineering with a focus on Civil and Structural. Richard worked for a number of years with national companies such as Daniel Construction and Gilbane Building Co. as a Project Engineer on diverse projects including Michelin Tire, Procter & Gamble, Miller Brewing and Hoffman LaRoche Pharmaceutical in the United States and Puerto Rico. He left corporate America in 1987 and has worked the last 25 years as a principal with companies involved with commercial real estate development and construction in the southeastern United States. In 2011, he co-founded ISS with his brother to bring renewable energy to the mainstream of power generation in the US.

**2 – II INVOLVEMENT OF REGULATED UTILITY**

*Information specifically identifying the extent to which any regulated utility will be involved in the actual operation of the project.*

The applying facility will be interconnecting to the transmission grid of Duke Energy and selling electricity via a Power Purchase Agreement to Duke Energy in accordance with the Qualified Facilities Tariff.

**2 – III STATEMENT FROM ELECTRIC UTILITY**

*A statement obtained by the applicant from the electric utility to which the applicant plans to sell the electricity to be generated setting forth an assessment of the impact of such purchased power on the utility's capacity reserves, generation mix, capacity expansion plan, and avoided costs.*

See attachment from Scott Tharp at Duke Energy.



## **2 – IV BALANCE SHEET**

*The most current available balance sheet of the applicant.*

Innovative Solar 34, LLC (SP-3475, Sub 0) is a project-level LLC with no current balance sheet. As discussed in Section 2 – VII below, the project will ultimately be financed and owned by a large institutional investor (e.g. a Fortune 200 bank or investor-owned utility), at which point the balance sheet of the owner/investor would be publicly available.

## **2 – V INCOME STATEMENT**

*The most current available income statement of the applicant.*

Innovative Solar 34, LLC (SP-3475, Sub 0) is a project-level LLC with no current income statement. As discussed in Section 2 – VII below, the project will ultimately be financed and owned by a large institutional investor (e.g. a Fortune 200 bank or investor-owned utility), at which point the income statement of the owner/investor would be publicly available.

## **2 – VI ECONOMIC FEASIBILITY STUDY**

*An economic feasibility study of the project.*

Please find enclosed a comprehensive pro forma budget for the proposed project.

## **2 – VII FINANCING ARRANGEMENTS**

*A statement of the actual financing arrangements entered into in connection with the project to the extent known at the time of the application.*

Access to project finance is a distinct competitive advantage among clean energy development companies. With three years of experience working successfully with several investors in the space, the principals of Innovative Solar Systems, LLC (ISS) have earned a reputation as seasoned developers capable of delivering technically viable and financially attractive investment opportunities. ISS typically has utilized project development agreements with different organizations to finance, own and operate large-scale PV projects under Power Purchase Agreements.

At the present time, ISS is under a development agreement with FLS Energy, based in Asheville, NC, to complete development of the project while FLS Energy provides all of the financial arrangements to bring the project to commercial operation.

## 2 – VIII MONTHLY OUTPUT

*A detailed explanation of the anticipated kilowatt and kilowatt-hour outputs, on peak and off-peak, for each month of the year.*

### **Output (kW):**

The Innovative Solar 34, LLC solar project will be rated at 50,000 kW AC. Although solar is a variable, intermittent resource, the system inverters will regulate, convert and “de-rate” the system’s DC output for a maximum output of 50,000 kW (AC) at any given time.

### **Maximum System AC Capacity By Month**

<b>Month</b>	<b>AC Energy (MW)</b>
<b>January</b>	<b>40.60</b>
<b>February</b>	<b>46.23</b>
<b>March</b>	<b>48.96</b>
<b>April</b>	<b>48.96</b>
<b>May</b>	<b>48.96</b>
<b>June</b>	<b>48.96</b>
<b>July</b>	<b>48.96</b>
<b>August</b>	<b>48.95</b>
<b>September</b>	<b>48.95</b>
<b>October</b>	<b>45.54</b>
<b>November</b>	<b>41.20</b>
<b>December</b>	<b>37.26</b>



**Output (kWh):**

Innovative Solar Systems, LLC and its partners utilize both the National Renewable Energy Laboratory's PVWatts calculator and the simulation software PVSyst to model estimated Year 1 AC production. PVWatts conducts an hour-by-hour simulation using 20 years of location specific meteorological and insolation data and is often used for state incentive programs such as the New Jersey Renewable Energy Incentive Program. PVSyst also conducts an hour-by-hour simulation and includes additional data sets such as Meteoronorm synthetic data. While both PVWatts and PVSyst incorporate standard array design inputs including a DC-to-AC derate factor/performance ratio (or their component parts), tilt, azimuth and tracking in their simulations, PVSyst has better flexibility in dealing with unique array components and design challenges. Both platforms were used for production forecasting associated with this proposal, with PVSyst providing the hourly interval data requested herein.

MONTH	ON-PEAK kWh	OFF-PEAK kWh	TOTAL kWh
January	3,897,610	976,572	4,874,182
February	4,869,841	1,219,630	6,089,471
March	6,111,174	1,527,794	7,638,966
April	6,265,254	1,566,856	7,832,110
May	6,731,839	1,679,704	8,413,714
June	6,393,294	1,597,238	7,990,533
July	6,924,984	1,733,959	8,658,942
August	6,534,354	1,631,961	8,166,315
September	5,870,285	1,469,199	7,339,484
October	5,236,598	1,310,776	6,547,375
November	3,802,121	950,530	4,752,653
December	3,493,959	870,234	4,364,194
TOTAL	66,148,672	16,534,455	82,683,127

## **2 – IX ENERGY INPUTS AND OUTPUTS**

*A detailed explanation of all energy inputs and outputs, of whatever form, for the project, including the amount of energy and the form of energy to be sold to each purchaser.*

The applying facility will produce 82,683,127 kilowatt-hours in Year 1 with a 0.5% decrease in annual production thereafter. Energy will be produced from the photovoltaic effect, the conversion of sunlight to DC power. All electricity generated on the site will be sold to Duke Energy.

## **2 – X FUEL SUPPLY ARRANGEMENTS**

*A detailed explanation of arrangements for fuel supply, including the length of time covered by the arrangements, to the extent known at the time of the application.*

N/A – Fuel supply arrangements are not required for solar PV facilities.



*All applications shall be signed and verified by the applicant or the individual duly authorized to act on the behalf of the applicant for the purpose of the application.*

Signature:

Richard H. Green

NAME: Richard H. Green

TITLE: Member/Manger

DATE: 4/23/14

Verification:

STATE OF NORTH CAROLINA <sup>COUNTY OF</sup> Burcombe  
~~CITY OF~~

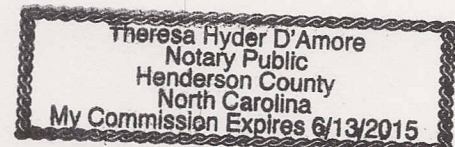
Personally appeared before me this day and being first duly sworn, says that the facts in the foregoing application and any exhibits, documents and statements thereto attached are true as he or she believes.

WITNESS my hand and notarial seal, the 23<sup>rd</sup> day of April, 2014

My Commission Expires: 6-13-2015

Theresa Hyder D'Amore  
Signature of Notary Public

Theresa Hyder D'Amore  
Name of Notary Public - Typed or Printed

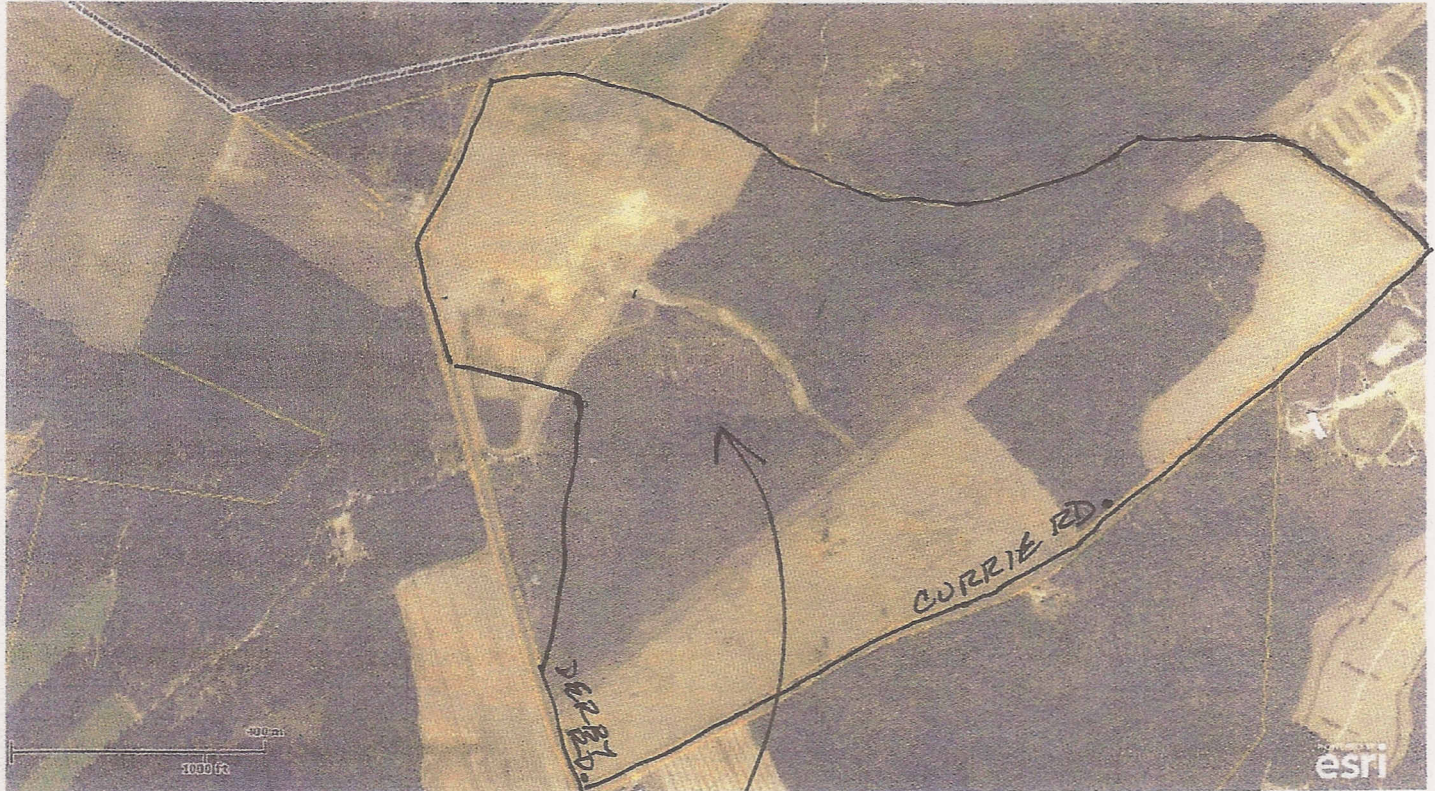




# CURRIE PROPERTY

SOLAR LEASE

EXHIBIT A



Copyright 2011 Esri. All rights reserved. Mon Jul 1 2013 03:53:34 PM.

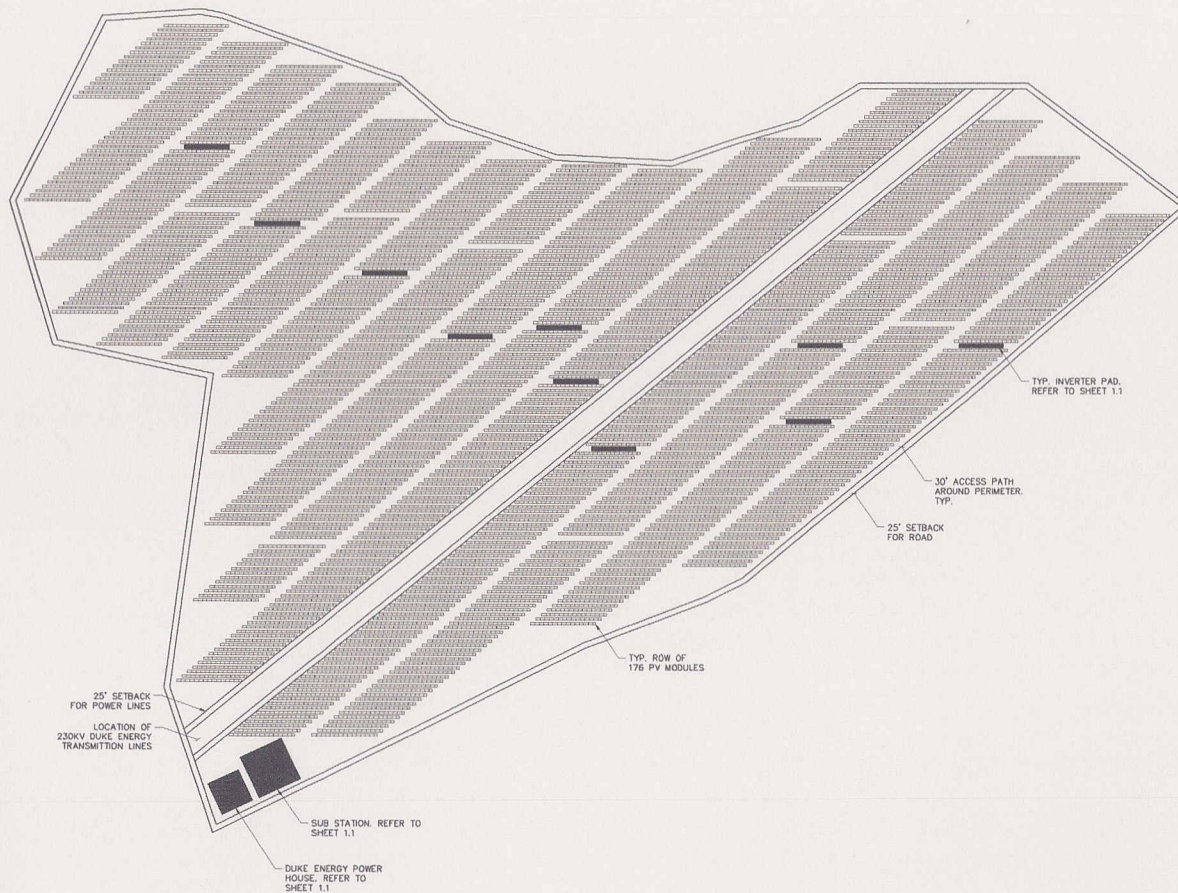
PROPOSED 226 ACRE SOLAR FARM  
RICHMOND COUNTY  
PARCEL # 851100116602

LATITUDE  
35.153916

LONGITUDE  
-79.631788

CURRIE RD. AT DERBY RD.  
JACKSON SPRINGS, NC. 27281

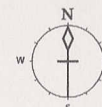




**A** **SITE PLAN**  
1.0 **SCALE: NTS**



NOTE: GOOGLE EARTH IMAGE IS FOR REFERENCE ONLY.



**B SITE PLAN OVERLAY**  
1.0 SCALE: NTS

### GROUND MOUNT SYSTEM SPECS.

PV MODULE	:	CANADIAN SOLAR CSP6-250W
TOTAL PV MODULES	:	200.000 MODULES
TOTAL WATTS DC	:	50.0MW
ARRAY TYPE	:	FIXED TILT
ARRAY TILT	:	20 DEGREES
ARRAY ROW SPACING	:	20'-0"
CLEAR SPACE	:	9' - 9 7/8"
STRING SIZE	:	22
ARRAY AZIMUTH	:	180 DEGREES
(NOT ADJUSTED FOR MAGNETIC DECLINATION)		

## NOTES:

1. OWNER/CUSTOMER SHALL VERIFY LOCATION OF UNDERGROUND UTILITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.
2. DIMENSION SHOWN ON PLAN SHALL BE VERIFIED IN FIELD.
3. LAYOUT IS SUBJECT TO CHANGE PER REQUEST AND/OR EXISTING CONDITIONS IN THE FIELD.
4. ALL SHADING ANALYSIS AND/OR PRODUCTION ANALYSIS SHALL BE PERFORMED AND VERIFIED BY OTHERS. RBT IS NOT RESPONSIBLE FOR SYSTEM DESIGN AS IT PERTAINS TO ELECTRICAL OR SYSTEM PRODUCTION.



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CINCINNATI, OHIO 45217  
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o ENGINEERS STAMP:

ENCLOSURE 1242, APPLIES TO  
DIVISION OF STRUCTURAL  
COMPONENTS ONLY

NOT FOR CONSTRUCTION

RBI SOLAR IS NOT  
RESPONSIBLE FOR  
CONSTRUCTION THAT IS BUILT  
FROM SET LABELED  
"NOT FOR CONSTRUCTION"

## REVISION RECORD

[illegible]

CUSTOMER:



PROJECT ADDRESS:

RICHMOND COUNTY  
SOLAR FARM  
CURRIE RD. AT DERBY RD.  
JACKSON SPRING, NC  
(RICHMOND COUNTY)

R.B.I. NO.:

SHEET TITLE
-------------

SITE PLAN

DESIGNED BY:	CHECKED BY:
--------------	-------------

DOCUMENT DA

10/29/2013

SHEET

1.0



## Innovative 34

[illegible]

		Operating Expenses	
Actual General Labor Payroll	\$115,063	Total Actual	1,00%
Property Tax Rate	\$0.11	\$12,564	10.9%
Insurance Cost Rate	\$0.11	\$123,879	10.0%
Actual Operating and Maintenance Cost	\$10,00	\$886,500	6.0%
Interpretation of cost (see also actual)	\$15,000,000	12.5%	10.0%
Actual Management Fees	\$117,000		10.0%
Actual Accounting and Admin Expense	\$5,000		2.0%
Accounting/ Admin Fees	\$100		0.0%
Financial Inputs	\$100		
System Contributions from Client (Sage)	\$0.00	Amount	
Depreciation Provided by IRS	2.11%	% of total cost available	
RFID Card System Rate	\$1.00	\$626,250.00	
RFID Primary Rates	2.00%	\$1,125,000.00	
RFID Card System Rate	20.50%	\$20,625,000.00	
SVAT Payroll Hours	6,000	\$0.00	
Developer Fee	6,000	\$0.00	
Payroll of total bill just	5,000	\$4,291.25	
Pay for Service	6,000	% of TCR received	
Business Depreciation Rate	6,000	Revised	

Energy Generation		Label
Electricity Output (GWh/year)	79.2 (1975)	
Electricity Output (Million kw-hr)	79,200 (1985)	

Key STEPA Output	
Point Emissions	51,277 t/d, A. Winkler Indicator
Point Emissions	Not
<ul style="list-style-type: none"> <li>SO<sub>2</sub> (t/d)</li> <li>CO<sub>2</sub> (t/d)</li> <li>NO<sub>x</sub> (t/d)</li> <li>Unburned Hydrocarbon</li> <li>Mercury</li> <li>Other</li> </ul>	<ul style="list-style-type: none"> <li>Energy Sector Emissions</li> <li>1.2</li> <li>Energy Sector Emissions</li> <li>5,000</li> <li>Percentage</li> <li>20</li> <li>Years</li> </ul>
<ul style="list-style-type: none"> <li>Known as total cost by 1</li> </ul>	L2
<ul style="list-style-type: none"> <li>Net Present Value of 1</li> <li>Net Present Value of 2</li> <li>Net Present Value of 3</li> <li>Net Present Value of 4</li> <li>Net Present Value of 5</li> <li>Net Present Value of 6</li> <li>Net Present Value of 7</li> <li>Net Present Value of 8</li> <li>Net Present Value of 9</li> <li>Net Present Value of 10</li> <li>Net Present Value of 11</li> <li>Net Present Value of 12</li> <li>Net Present Value of 13</li> <li>Net Present Value of 14</li> <li>Net Present Value of 15</li> <li>Net Present Value of 16</li> <li>Net Present Value of 17</li> <li>Net Present Value of 18</li> <li>Net Present Value of 19</li> <li>Net Present Value of 20</li> <li>Net Present Value of 21</li> <li>Net Present Value of 22</li> <li>Net Present Value of 23</li> <li>Net Present Value of 24</li> <li>Net Present Value of 25</li> <li>Net Present Value of 26</li> <li>Net Present Value of 27</li> <li>Net Present Value of 28</li> <li>Net Present Value of 29</li> <li>Net Present Value of 30</li> <li>Net Present Value of 31</li> <li>Net Present Value of 32</li> <li>Net Present Value of 33</li> <li>Net Present Value of 34</li> <li>Net Present Value of 35</li> <li>Net Present Value of 36</li> <li>Net Present Value of 37</li> <li>Net Present Value of 38</li> <li>Net Present Value of 39</li> <li>Net Present Value of 40</li> <li>Net Present Value of 41</li> <li>Net Present Value of 42</li> <li>Net Present Value of 43</li> <li>Net Present Value of 44</li> <li>Net Present Value of 45</li> <li>Net Present Value of 46</li> <li>Net Present Value of 47</li> <li>Net Present Value of 48</li> <li>Net Present Value of 49</li> <li>Net Present Value of 50</li> <li>Net Present Value of 51</li> <li>Net Present Value of 52</li> <li>Net Present Value of 53</li> <li>Net Present Value of 54</li> <li>Net Present Value of 55</li> <li>Net Present Value of 56</li> <li>Net Present Value of 57</li> <li>Net Present Value of 58</li> <li>Net Present Value of 59</li> <li>Net Present Value of 60</li> <li>Net Present Value of 61</li> <li>Net Present Value of 62</li> <li>Net Present Value of 63</li> <li>Net Present Value of 64</li> <li>Net Present Value of 65</li> <li>Net Present Value of 66</li> <li>Net Present Value of 67</li> <li>Net Present Value of 68</li> <li>Net Present Value of 69</li> <li>Net Present Value of 70</li> <li>Net Present Value of 71</li> <li>Net Present Value of 72</li> <li>Net Present Value of 73</li> <li>Net Present Value of 74</li> <li>Net Present Value of 75</li> <li>Net Present Value of 76</li> <li>Net Present Value of 77</li> <li>Net Present Value of 78</li> <li>Net Present Value of 79</li> <li>Net Present Value of 80</li> <li>Net Present Value of 81</li> <li>Net Present Value of 82</li> <li>Net Present Value of 83</li> <li>Net Present Value of 84</li> <li>Net Present Value of 85</li> <li>Net Present Value of 86</li> <li>Net Present Value of 87</li> <li>Net Present Value of 88</li> <li>Net Present Value of 89</li> <li>Net Present Value of 90</li> <li>Net Present Value of 91</li> <li>Net Present Value of 92</li> <li>Net Present Value of 93</li> <li>Net Present Value of 94</li> <li>Net Present Value of 95</li> <li>Net Present Value of 96</li> <li>Net Present Value of 97</li> <li>Net Present Value of 98</li> <li>Net Present Value of 99</li> <li>Net Present Value of 100</li> </ul>	<ul style="list-style-type: none"> <li>16,000</li> <li>32,437.95</li> <li>725</li> <li>825,530.80</li> <li>100%</li> </ul>

Year Three Development Expenses	Methodology
FED Intellectual Commission	\$4,019.42 No
STATE Replication Commission	\$4,019.42 No
Accounting fees	\$25,000 No
Legal fees	\$150,000 No
Property purchase	\$1 Yes
Project purchase	\$2,500,000 Yes
Corp Buyout	\$5 Yes
Investment fund	\$1,200,000 Yes
MISC	\$1 Yes
Total Development costs	\$4,439,437

[illegible]



Subj: RE: Innovative Solar 34  
Date: 2/6/2014 10:26:41 A.M. Eastern Standard Time  
From: Scott.Tharp@duke-energy.com  
To: RHGreen@aol.com  
Richard,

CPCN statement attached.

Thx  
Scott

Scott Tharp  
Duke Energy - Business Development Manager  
1000 E Main Street  
Plainfield, IN 46168  
317.838.1968 (office)  
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#### Innovative Solar 34 CPCN Statement

The proposed 50 MW Innovative Solar 34 generation addition has been analyzed to determine the impact to DEP. It is prudent to analyze solar resources over a range of values for firm coincident capacity at the time of system peak. Assuming a 42% solar contribution to peak, the Innovative Solar 34 facility will add approximately 0.8% of DEP's nominal reserves. DEP recognizes that the 42% coincident contribution to system peak for solar resources can vary. Therefore, should the peak contribution vary, for each 10% change to the coincident contribution of the solar resources, reserves vary approximately 0.19%.

In addition, this capacity impacts DEP's reserve margin by approximately 0.13%. Every 10% change in the coincident contribution to system peak equates to 0.03% of reserve margin.

For 2015, DEP's forecasted sales are 66,338 GWh. The collective generation impact of this solar facility would represent 0.12% of the forecasted sales.

While alone, this facility does not have a significant impact on future DEP capacity needs, when combined with other QF facilities being submitted for CPCN, the impact to DEP's future capacity needs are substantial. DEP will continue to study the impacts of the aggregation of the QF facilities to the DEP system.